



52ND
ISOCARP
CONGRESS

12 - 16 SEPTEMBER 2016
DURBAN, SOUTH AFRICA

"CITIES WE HAVE VS. CITIES WE NEED"

Proceedings

#ISOCARP2016



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Proceedings of the 52nd ISOCARP Congress
Durban, South Africa, 12-16 September 2016
Cities We Have vs. Cities We Need
Editor: Guy Perry & Slawomir Ledwon
©ISOCARP 2016
Produced and published by ISOCARP
ISBN: 978-94-90354-47-3

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

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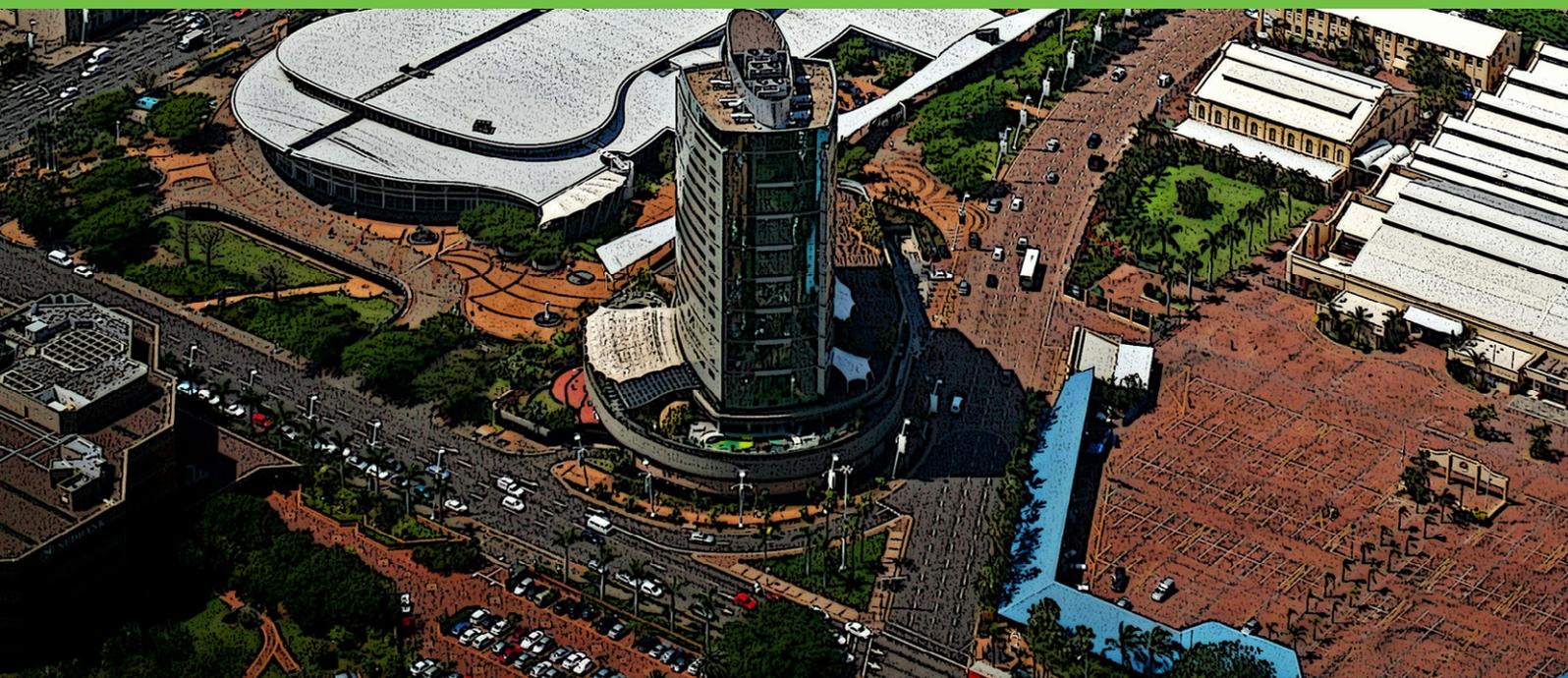


Short Outlines

Papers

1. Transforming human settlements
2. Planning activism and social justice
3. Envisaging planning theory and practice for the next decades
4. Urban planning and policy making in times of uncertainty, fragility and insecurity
5. Intelligent cities for people
6. Planning for an interlinked and integrated rural-urban development

Authors are responsible for the content of the short outlines and the full papers that are listed in the order of their presentations in each track.



Track 1

Transforming human settlements

**Co-rapporteurs: Malgorzata Hanzl,
Ahmed Sangaré & Peter Robinson**

Cities arise out of man's social needs, they are often described as an embodiment of collective art and techniques (Lewis Mumford, 1970). They reveal in time; layers of material heritage overlap, while physical structures preserve values and habits until their replacement with new, more contemporary ones. The constant process of transformations stemming from many reasons, factors which influence them include changing societal needs, life style, migrations, economic development, climate adjustments, political decisions, military conflicts and many more. Current interest in the ways how cities change, in the processes which are behind and in the possibilities to influence the ongoing changes, gave way to the popularity of this topic. Our record clearly shows how relevant the understanding of urban transformations is for urban planners. The track contains the overall number of 32 presentations from 14 countries, selected from the initial record number of 88 abstracts submitted to this track's topic. They will bring us the current depiction of manifold processes going on in cities all over the world. Brought under the common umbrella of urban transformations, the topics range from cities' growth, through different approaches to heritage, public spaces and transportation, including municipalities and planners' efforts to make them more sustainable.

The track is organised into six sessions, their specific topics contributing to the bigger picture of processes going on in urban areas nowadays:

Session 1: Rural transformations, fringe, sprawl

In the era of progressing urbanisation, when the numbers of urban dwellers grow rapidly along with growing of urban areas, the transformations taking place in the areas surrounding major urban centres focus our attention.

Starting with problems of planning in the scale of the region and agglomeration in Kazakhstan, presenters in this session discuss numerous case studies of transformations taking place in the edge zones of cities in locations as diverse as Thailand, China, South Africa, Nigeria and Ivory Coast. Each situation faces its own limitations, which follow local political

situation and specific local conditions. Problems as distant as the integration of the former gated communities in the sprawl areas in Thailand, the rural settlements evolution in urban fringe during the rapid process of urbanisation in China, or issues facing inhabitants of urban fringes in Delta State Nigeria, in South Africa, or in Ivory Coast, all require looking for answers to essential societal problems. They need multidimensional planning, which would joint together concerted efforts at various levels of governance, and appropriate organisation framework gathering authorities, local communities, enterprises and citizens. All papers point at some of the main weaknesses of public policies, indicate which elements should be altered or improved.

Session 2: Morphology, rehabilitation

Changes in lifestyles and local cultures strongly influence the design solutions and construction methods; the morphology of housing estates and urban cores providing the most clear evidence to this theses. On this background the attitude towards cultural heritage represents a specific case study. The role of the architectural heritage in the current development of urban areas cannot be overestimated. Material settings preserve values and meanings of our ancestors, they maintain communal identity and bring back its past, attracting visitors and providing a notion of continuity. The heritage sites undergo multiple transformations, usually they need to adjust to the changing lifestyles.

This session presenters discuss values of sites representing locations as dispersed as Thailand, Nigeria, China, Turkey and Poland. The successful urban management and appropriate policies remain key factor when dealing with the immediate problems. In the longer perspective the transformation background needs to be understood better, in order to get more sustainable and efficient outcomes. Four heritage sites' case studies, addressed by our presenters, show various aspects of reuse of the historical structures and give recommendations to the rehabilitation strategies. In the Turkish presentation the question arises, whether the political correctness and hospitality should make us accept changes to our

heritage, which testifies our own past. Re-approaching the rationale behind transformation processes, what should be the wisdom of future use and re-use of densely built urban cores?

Session 3: Walking, running, soft transportation, public space

Public spaces provide settings for urban activities, their transportation role remaining just one of them. They serve as scene of public gatherings, their role becoming then strongly political. The social functions of streets and squares, the unfolding of interpersonal contacts must be undoubtedly preceded with presence of people, who walk, spend time, hang around. All these functions require proper settings. The situation understood as a scene of everyday life or uncommon events carries meaning which completes the picture with hints on appropriate behaviour. This semantics happens to go far beyond the functional role, sometimes it reveals past events or conveys specific atmosphere.

The keynote paper in this session introduces the requirements imposed by the essential societal problem which is the ageing population. Elderly people need settings adjusted to their needs. The changing society means also diversification and quest for the healthy life styles. In order to eliminate essential health problems stemming from obesity the need to accommodate new habits and needs should be recognised, including people fascinated with sports such as running. By the same token, cities need to provide convenient milieu for people with disabilities, letting them use opportunities it offers on their own. Finally the last presentation in this session addresses using public space for political demonstrations.

Session 4: Transportation and sustainable infrastructure

Carefully selected, site-specific sustainable infrastructure is called for, both in African cities and all over the world. Still in the developing countries, the opportunity to leapfrog the obsolete trajectories of development and use the newest technologies and methods remains available. This way accruing benefits unavailable elsewhere may occur possible much faster and much more efficiently. Among sustainable infrastructure, transportation takes prominent place. It enhances development, enables fast urban growth and creates favourable milieu for urbanisation. Multimodal, properly shaped transportation models enhance economic viability.

The session starts with a keynote talk, introducing broader topic of building sustainable infrastructure in two locations in South Africa, to further pass to examination of policies, management strategies and

outcomes of sustainable transportation development in this country. The authors, representing both theory and practice of urban planning, successfully join these two fields, this way providing convincing evidence for shifting towards more sustainable and efficient solutions.

Session 5: Building sustainable cities

Sustainability remaining one of the key concepts in contemporary urban planning research and practice for years already, it still requires proper understanding and what's more important proper implementation strategies.

Collected together under the common umbrella of sustainable development, the presentations in this session address variegated societal challenges in the quest for solutions, 'which would satisfy current needs without disturbing resources belonging to our heirs'. Coming from several dispersed locations, including Mumbai in India, Lagos in Nigeria, China, Belgium and Brazil, authors discuss topics viable from the point of view of ecology, economics, community development and enhancement of public life. The changes started by, both, public government and private developers, give us the opportunity to understand the agency behind and to look for the better strategies for future.

Session 6: Transforming African cities

South African society goes through a period of intensive transformations as the content of this session clearly shows. The changes of life styles, the development of brand new social groups, progressing diversification, globalisation and internationalisation, all these find their reflection in urban life and as a consequence in transforming of the urban structures.

Starting with the keynote talk which tries to explain reasons behind transformations, which had enormous impact on local cultures and also severe ecological consequences. Understanding the reasons is in this case crucial to finding the solutions for future. Further presentations refer to various aspects of planning in the changing social and political situation, including legislation framework, economic conditions, environmental impact and other aspects specific for the local situation.

In all, Track One demonstrates that transformations of urban settlements remain inseparably linked with societal transformations, and the role of planning in these processes still needs to be redefined.

Session 1: Rural transformations, fringe, sprawl

Madina JUNUSSOVA, University of Central Asia, Almaty, Kazakhstan

Planning economic development of city and region: strategic assumptions of the state versus local capacities

The paper aims to present immediate outcomes from the research on planning roles of the local governments in Kazakhstan. The national government pushes urbanisation by assigning new roles to certain cities. The local governments struggle to promote economic development under the pressure of growing urban-rural disparities.

Siwaporn KLINMALAI, Thammasat University, Pathumthani, Thailand

The adaptation of former gated communities in urban sprawl of Bangkok metropolitan area, Thailand

A gated community development has been developed in the Bangkok Metropolitan Area for 50 years. The physical elements have been adapted and transformed according to the residents and socio-economic situation. The categories of adaptation will reveal the relevant factors of changes.

Xiaoxiao DENG, Shanghai Tongji Urban planning & Design institute, Shanghai, China; Xiao ZHANG, Jiangsu Institution of Urban Planning and Design, Nanjing, China

Spatial evolution of rural settlements in urban fringe of Shanghai metropolitan area

The rural settlements in the Shanghai urban fringe transformed considerably in the past 30 years under the influence of urbanization, presenting characteristics such as heterogenization, gathering, communitization, etc. A comprehensive structure was established to explain it from five aspects, including driving force, interacting path, supporting facility, promotion mechanism and regulatory mechanism.

Ernst DREWES, Mariske VAN ASWEGEN, North-West University, Potchefstroom, South Africa

Rural resilience: transforming mining towns and settlements

The focus of this research is on transforming traditional mining villages as well as surrounding urban settlements into a more resilient urban conurbation. The study area focuses on a rural region in South Africa that has been transformed the past twelve years.

Prince Ike ONYEMENAM, Oluwabukola A. AYANGBILE, Ayobami POPOOLA, Bamiji M. ADELEYE, University of Ibadan, Ibadan, Nigeria

Towards transforming human settlements in urban fringes of delta state, Nigeria

Spatial exclusion is a negative occurrence, universally. It implies a socio-spatial segregation of Urban-Fringe dwellers, given its major hindrance to both functional urban development and the inclusive vision of cities we need. The need towards transforming these fringe areas in Urban-Delta forms the underpinning rationale for this paper.

Ahmed SANGARE, Totem Architects, Abidjan, Ivory Coast

Deprived human settlements in Abidjan: from theory to action

The UIA-CIMES and MOST-UNESCO "Base Plan" method was designed as a light planning tool for intermediate cities that allows them to trigger immediate actions for the improvement of their daily living conditions. This paper describes the implementation of the method in Adjouffou, an illegal settlement south-east of Abidjan.

Session 2: Morphology, rehabilitation

Payap PAKDEELAO, Thammasat University, Pathumthani, Thailand; Korawan RUNGSAWANG, Silpakorn University, Bangkok, Thailand

Four decades of vertical living: a comprehensive analysis of the architectural development of the vertical housing projects by the national housing authority in Bangkok and the greater metropolitan area between 1973 and 2013

A multifaceted architectural and urban analysis of the vertical housing projects created by Thailand's National Housing Authority in the Greater Bangkok Metropolitan Area between 1973 and 2013 examines the projects' design evolutions, the factors that contributed to such changes and the relationships between the inhabitants and their residences.

Bamiji ADELEYE, Mohammed NDANA, Federal University of Technology Minna, Niger, Nigeria; Oluwabukola AYANGBILE; Ayobami POPOOLA, University of Ibadan, Ibadan, Nigeria

Urban transformation: a changing phase of Minna central area

Urban centres in the world are undergoing various facets of changes; these changes are also evident in developing countries. This phenomenon is not different with the central area of Minna, Nigeria. This calls for the SDGs approach that emphasized participation and inclusive planning in the management of Minna central area.

Yuansha NIU, Jiangsu Institute of Urban Planning and Design, Nanjing, China

The preservation and sustainable utilization research of Suitang Luoyang ancient city based on the precise historical information re-mapping

Taking Suitang Luoyang city as an example, this paper advances the concept of “information network of space and time in historic cities” and tries to explore the proper methods to guide and manage urban development in the course of urban renewal grounded in holistic historic preservation and development.

Xiao ZHANG, Jinsong JIANG, Jiangsu Institution of Urban Planning and Design, Nanjing, China; Xiao DENG, Tongji Institution of Urban Planning and Design, Shanghai, China

Regeneration for traditional residential community of water towns south of the Yangtze River based on cultural planning

By applying the cultural planning approach to the regeneration of the traditional residential communities, it establishes a culture-led regeneration framework for water towns south of the Yangtze River and analyses its application in practice by using a case study of historical community regeneration in Guangfu town.

Yizhou ZHAO, Tsinghua University, Beijing, China

Micro-transforming: a new strategy for hutong settlement in historic districts. Case study on Yangmeizhu-Xiejie in Beijing

Based on a systematic overview and case study in Yangmeizhu-Xiejie this paper puts forward a new and sustainable strategy of micro-transforming in Hutong settlement, including micro-scope, micro-space and micro-structure, which indicate a significant and valuable methodology both for research and practice.

Zeynep GUNAY, Istanbul Technical University, Istanbul, Turkey

Limits to hospitality and right to the city in the ruins of a world heritage site: Suleymaniye in Istanbul historic peninsula

The paper introduces Suleymaniye in the Istanbul Historic Peninsula to discuss spatial and social consequences of renewal policies and to question the ways in which planning can respond to the problematic of hospitality, while highlighting the sociality formed by undesirables including Syrian refugees.

Malgorzata HANZL, Lodz University of Technology, Łódź, Poland

The transformation of former Jewish structures in the towns of central Poland – spatial order and its perception

The notion of spatial order influences the perception of urban scape, with culture related meaning directly affecting their acceptance. The current paper presents the case study of sites inhabited in pre-war times by Jews in central Poland, and elaborates on differentiated situations of their reuse, partial alterations or demolitions.

Session 3: Walking, running, soft transportation, public space

Hao WU, Yong CHEN, Tongji University, Shanghai, China

Urban design factors associated with perceived assessment in elderly's walking activities: case study of central Shanghai, China

This paper identifies urban design factors which are related to environmental satisfaction assessment and walking attitude among the elderly in Shanghai, China.

Shylet NYAMWANZA, James CHAKWIZIRA, University of Venda, Thohoyandou, South Africa

An assessment of infrastructure provisions and services for persons with disability at University of Venda and its surroundings

The paper assesses infrastructure and service provisions for persons with disabilities at tertiary institutions. The findings revealed a general lack of awareness regarding disability issues in building designs and the street environment. Therefore the recommendations focus on how the universal design concept can be incorporated effectively in tertiary institutions.

Ebru KURT, Istanbul Technical University, Taksim-Istanbul, Turkey

Transformation of public space in terms of politics and power: the case of Beyazit square

Governments want to create their own power images by using the public spaces we have. While we are losing our existing public spaces, now we need new or alternative ones to come together, meet or try to express ourselves sometimes with supportive discourses or by protesting.

Session 4: Transportation and sustainable infrastructure

Ryan ALEXANDER, Aurecon South Africa (PTY) Ltd, Cape Town, South Africa; Karen SHIPPEY, Provincial Government of the Western Cape, Cape Town, South Africa

Delivering sustainable urban infrastructure – a feasibility study of two Western Cape municipalities

This paper presents the findings of a feasibility study for alternative, sustainable forms of urban infrastructure provision through two Western Cape case studies. It details the selection of sustainable infrastructure options, making the financial case for a different approach to municipal infrastructure compared to the Business As Usual approach.

Geoffrey BICKFORD, South African Cities Network, Johannesburg, South Africa

Transit Oriented Development approaches for developing world cities: some insights based on the South African context

Transit Oriented Development (TOD) remains a concept rooted in formal planning and development approaches. Locating the principled benefits in contexts of large informality, this paper explores potential approaches required for realising TOD outcomes in formal and informal urban contexts found in the developing world by drawing on South African insights.

Sean COOKE, Roger BEHRENS, University of Cape Town, Cape Town, South Africa

Transforming human settlements to support viable public transport in developing cities: results of a public transport corridor operating cost model

Some rapidly growing cities in developing countries are struggling to implement large-scale public transport systems due to unsustainable subsidy levels, despite conventional measures purporting the conduciveness of their urban environments. This study analyses the effects that human settlement characteristics can have on the viability of public transport in this context.

Sisa MABOZA, Passenger Rail Agency of South Africa, Kempton Park, South Africa

Transit oriented development as a tool for transforming negative urban spaces in South African townships

Transit Oriented Development (TOD) is a tool that could be utilised to transform human settlements. This paper focuses on collaboration as a non-negotiable prerequisite for the successful implementation of TOD to transform South African townships from negative urban spaces to great human settlements.

Yuan HAN, Jiangsu Institute of Urban Planning & Design, Nanjing, China

Industrial land redevelopment in rapid urbanization area under “stock development” background: an empirical analysis of a city in the Yangtze River delta, China

This is a study of the industrial land redevelopment under new urban development background in Eastern China. It offers an empirical analysis to describe the change affected by the new trend of ‘stock development’.

Session 5: Building sustainable cities

Amit CHATTERJEE, School of Planning and Architecture, Bhopal, Bhopal, India; Soumendu CHATTERJEE, Presidency University, Kolkata, India; R.N. CHATTOPADHYAY, Indian Institute of Technology, Kharagpur, India

Transforming Mumbai city: removing the bottlenecks to achieve future sustainability

Growth of Mumbai city (population 12.4 million, 2011) has almost saturated and problems such as housing shortage, infrastructure deterioration, environmental degradation, transportation, and scarcity of land resources, income inequalities etc. are prevalent in the city. This calls for redefining the ways of future urban development to achieve sustainability.

Andrea SOUZA CRUZ, Mauro César SANTOS, UFRJ, Rio de Janeiro, Brazil; Adriana Fiorotti CAMPOS, UFES, Vitória, Brazil; Joyce TENÓRIO, UNISUAM, Rio de Janeiro, Brazil

Transforming the urban chaos with environmental recovery: Pedra Branca forest case, Brazil

The study proposes a transformation of urban chaos observed in the region of Pedra Branca forest, with the development of a new mechanism for planning and management involving multi-use and integration between social, environmental and urban spheres, on the suburban area of Rio de Janeiro, Brazil.

Yisha ZHANG, Yifan YU, Tongji University, Shanghai, China

Residential differentiation and socioeconomic reorganization under spatial reconstruction - a case study of the new town plan of new Beichuan, Sichuan, China

The residential differentiation and socioeconomic reorganization in the post-earthquake spatial reconstruction of New Beichuan is analysed in this paper to point out that the design and implementation of the reconstruction plan and settlement policies might contribute a lot to the spatial and social differentiation during the reallocation.

Session 6: Transforming African cities

Tasyam GOVENDER, Nisa MAMMON, NM & Associates, Cape Town, South Africa

The American dream: urban densities in South African cities

South African cities are some of the least dense in the world, more similar to their Western counterparts, than cities in the Global South. This paper investigates the causes and implications of this phenomenon, and argues that in addressing the issue, inspiration must be drawn from the Global South.

Kelebone LEKUNYA, Mark ORANJE, University of Pretoria, Pretoria, South Africa

Exploring the spatial and economic development impacts of the African Growth and Opportunity Act (AGOA) in Lesotho

This paper explores the spatial and economic development impacts of the African Growth and Opportunity Act in the developing nation of Lesotho.

Rajesh MAKAN, Rural Development and Land Reform, Pretoria, South Africa

A new framework for spatial planning and land use management legislation in South Africa

South Africa has inherited a fragmented, unequal and incoherent spatial planning and land use management legislative environment. The task of developing framework legislation towards addressing this challenge has been an intensive and difficult process. The paper shares the process and challenges towards the development of a new legislation framework.

George ONATU, University of Johannesburg, Johannesburg, South Africa

Mixed income housing development model for South Africa: a case of Cosmo city, Johannesburg and Cornubia, Ethekewini

This paper contributes to the conversation by investigating the opportunities and prospects of investing in mixed-income housing development as a new human settlement model for South Africa.

Jakob SCHACKMAR, University of Kaiserslautern, Kaiserslautern, Germany

22 years of post-apartheid urban change in South Africa. Done enough?

The paper discusses the two main development strategies of urbanisation and melting corridors for townships in South Africa. It analyses and evaluates 22 years of projects and initiatives to equalize living conditions among South Africans.

Track 2

Planning activism and social justice

**Co-rapporteurs: Brett Calvio, Dorota Kamrowska-Zaluska
& Thulisile Ncamsile Mphambukeli**

Track Two on 'Social Justice and Planning Activism' presents meaningful insight, research, analysis and ideas on how to obtain the cities and habitats we want. The concepts of planning activism and social justice are made clear in this track from presenters who deliver new philosophical and scientific plateaus of thought on the subject. This track is organized into blocks of prevailing themes: 'Planning and Social Justice,' 'Social Structures,' 'Public Policy and Capacity Building,' 'Economic Justice,' 'Planning Activism' and 'Inclusive Planning,' though individual papers may address more than one theme.

The contemporary planning issues facing the new South Africa and other parts of the world are knowledgeably addressed in these sessions and are relevant not only to former colonial states, but to any country desiring improved social justice, healthier settlements and more natural habitats.

The acts of empowerment and public participation are revealed as key factors for achieving a more inclusive democracy and effective planning process that create the cities and habitats we want. An important dimension of this track is the discussion of balancing and bridging the spatial and personal distances and relationships between traditional and modern cultures in South Africa and beyond. The new South African planning systems are reforming the planning dynamic by integrating layers of traditional culture and leadership with modern culture and democratic leadership. This track however, is not only focused on the South African experience- it presents 23 works that explore and discuss different aspects of social justice and planning activism in over 15 countries, including: Kenya, Sudan, Nigeria, Thailand, Indonesia, Russia, Slovakia, Poland, India, China, Turkey, New Zealand, Sweden, the Netherlands and Serbia.

New approaches to planning with a more inclusive public participation process are discussed as a means to improve social justice, social and personal empowerment and win:win situations for our cities and habitat. This track also presents different socio-economic and design cases of win:win, win:lose and lose:lose scenarios and ideas on how to improve them.

Session 1: 'Planning and social justice', discussing its history, legal framework and politics

This session discusses the relationship between social justice and planning activism. The presenters discuss contemporary legislative actions, social empowerment, public participation, adapting to migration, achieving win:win development and investment, bridging traditional and modern cultures, and developing genuine organizations that promote social empowerment and participation. The first author speaks on issues concerning South Africa describes the evolution of its planning system in the 20th and 21st century and offers policy recommendations for legislative transformation of the system. The second author speaks on urban transportation policies and infrastructure development in Nairobi, Kenya, placing its processes into the social justice context of other developing countries. The third author speaks on the desires of the new generation of Chinese migrant workers, exploring their quality of life issues and the design factors which influence their settlement choices. The fourth authors speak on the challenges and opportunities of integrating traditional leadership in a modern democratic government and offer a critique of the Spatial Planning and Land Use Management Act (SPLUMA) adopted by South Africa in 2013.

Session 2: 'Social structures' and planning for social justice

This session discusses social structures and social systems and how they affect social justice, economic justice, political justice and civil rights. The case studies in this session are from South Africa, Poland, Slovakia, Hungary and Sweden. The first authors speak on a variety of situations related to the role of existing social structures in emerging or established planning systems, addressing the questions of how their cases refer to planning activism and community involvement. The second author speaks on the impact of current and past planning policies and explores the challenges that they pose on planning activism and social justice in South African cities today. The third author speaks on the strategy of revitalizing public spaces within panel building estates and discusses a comparative

analysis of revitalization projects done through participation by its inhabitants in Central and Eastern European countries. The fourth author speaks on the integration of a nomadic and marginalized population in Sweden, showing that projects which provide basic infrastructure can also be used as a tool for the inclusion of slum dwellers into the upgrade planning and implementation process.

Session 3: 'Public policy and capacity building' for social justice and planning

This session discusses challenges that the public sector and the non-governmental organizations (NGO) face when creating and implementing public policy. The session discusses vital components for achieving social justice in planning: human and organizational capacity building, achieving win:win planning scenarios through public participation, inclusivity and integration, and the idea of creating dedicated organizations to help improve settlements and habitat from the bottom-up. The first author speaks on public participation in an 'Integrated Development Plan' (IDP) process, evaluating the capacity of both civil society and civil servants to engage in and jointly design solutions to current socio-economic and design problems. The role of the participatory approach in planning is discussed as a crucial factor in which to develop sound strategies and more responsive strategic development plans. The research discusses legislative and development policy recommendations for a new 'democratic developmental state.' The second author speaks on curriculum development and capacity building for South Africa and introduces a framework tool as a means to confer the necessary competencies and capabilities onto a cross-section of planning stakeholders. The research presents capacity goals in support of an effective implementation of the new land use classification and management system. The third author speaks on the Thai Baan Mankong Secure Housing Programme, a community-driven housing program and discusses the possibility of successfully transferring its ideas into governmental policies in other countries of Southeast Asia. The fourth author speaks on the shifting continuum of spatial patterns between the urban, peri-urban and rural areas in South Africa and stresses the importance of inclusive leadership and a regional planning approach for land use management.

Session 4: 'Economic justice' and its relation to social justice

This session describes the relationship between socio-economics and development projects and discusses a need for integrating social justice, economic opportunity, human rights and equality issues into them. Cases examined present lose:lose, win:lose and win:win socio-economic and design developments.

This session discusses achieving win:win planning scenarios for economic and social justice and how to get around legacy roadblocks to public participation and inclusive planning. This session features presenters from Nigeria, China, Turkey and Poland. The case studies here discuss concerns from their respective countries as well as one concerning African mega-project developments. These papers address the complexities and issues related to economic justice for both green-field development projects and for the transformation of existing urban developments. They describe the role and influence of different stakeholders within these processes. The first author speaks on the transformation and integration of the Makoko community located in the heart of the city of Lagos and within the overall socio-economic system of the city. The research evaluates the policies and strategies of a capital improvement project employed for Lagos towards fighting spatial inequality and integrating a disadvantaged community. The second author speaks on the topic of a revitalization process in the historic district of Dalian, China, showing a model applicable to other inner-cities where historic districts are faced with decline, community stratification and a loss of design heritage. The research employs a statistical analysis of retrieved questionnaires using SPSS software to analyze the problems and challenges as well as their spatial distribution. The third author speaks on recent African mega-project developments, examining the influence of such projects on the place and contrasts these investment approaches with a more comprehensive and sustainable policy approach. The fourth author speaks on a case of Port Alaçati in Izmir, Turkey, discussing this coastal development project as an example of a non-inclusive, top-down planning process. The high-end master-planned project and planning process are evaluated with recommendations for a more inclusive public participation process and policy to sustainably manage the natural habitat and public access to the coast.

Session 5: Planning activism

The session presents new models and new technologies for communicating and organizing activism. This session discusses planning activism and community planning empowerment in countries where the public participation framework is still developing.

It discusses topics of social empowerment, leadership, technology and the art of activism. Case studies come from South Africa, New Zealand, Russia, the Netherlands and Serbia. The presenters here describe projects and activities with social activism and community involvement in planning. The first authors speak on a critical review of top-down models vs. bottom-up approaches in South Africa, providing a comprehensive analysis of the informal settlement upgrading process. They identify barriers-to and

drivers-of effective upgrading models and provide a critical assessment of the existing regulations and planning policies. The research identifies an advantage to bottom-up approaches because participatory and consensus-building techniques can be used to enhance local empowerment and provide a sense of local ownership. The second author speaks on civic leadership in transportation planning, introducing new ad-hoc community planning activism groups voicing their quality of life issues and desires for a more inclusive and participatory planning process to improve mobility in Auckland, New Zealand. The research explores how information technology is influencing planning activism models and how transportation and transit interest groups are forming to change the public transportation planning discussion. It employs the concept of path dependence and development to identify challenges and possible future institutional and policy changes needed for a more inclusive planning capacity. The third author speaks on the role of civil activism as a means of promoting participation in planning and empowerment in Tula, Russia, where the public participation framework and process is still emerging. The fourth author speaks on the possibilities of connectivity for civic engagement in urban planning using smart technology. Initial guidelines are drawn on how to link digital communications between citizens and municipal authorities - helping leaders and urban planners to engage and shape more livable, intelligent cities. The cases in this session are strongly anchored in their own local context, yet they provide strategies and models that can be transferable to cities in other parts of the world.

Session 6: Inclusive planning

The session presents new research and findings for inclusive social policies, urban design and architecture.

It provides a discussion on the best practices for inclusive urban design and architecture, as well as policy considerations with flexibility for change. The presenters in this session report on planning for and from the point view of people in often overlooked demographics, such as children, the elderly, the differently-abled and homemakers. The speakers present various possible solutions to integrate disadvantaged groups into the city by improving the physical accessibility of the public and commercial services to them and focusing on their social empowerment and the inclusion of their social desires into the public realm. The first authors speak about the process of creating and developing a participatory, youth-driven, environmentally sensitive vision of Khartoum by 2030. The research discusses how to involve the young population in envisioning the city. The second author speaks on Kampung Cikini in Central Jakarta, Indonesia, focusing on women's empowerment and their enterprising home extensions. The research presents a bottom-up planning, urban design and empowerment process and discusses the planning policy tolerances and social considerations needed for high density, urban Kampung. The third author speaks on a case from Vijayawada, India, exploring and evaluating accessibility concerns in public buildings with indexed parameters like safety, comfort, convenience and the environmental barriers encountered by mobility-impaired individuals in the built environment. The research concludes with recommendations for enhanced accessibility at the Inter State Bus Terminal. The fourth authors speak on factors influencing the choice of commercial facilities for the elderly in Shanghai, China. The research uses a survey method and establishes multiple linear regression models to discuss the impact of the multiple factors. The research concludes with proposed measures that can improve the everyday convenience and lifestyle of the elderly traveling to shop and the shop design too!

Session 1: Planning and social justice

Mthokozisi MHLONGO, Zama LONDIWE, City of Umhlathuze Municipality, Umhlathuze, South Africa

A new dawn for the South African planning system

Apartheid legislative and policy framework led to spatial imbalances in many cities in South Africa. Many poor people were moved to the peripheries, far from socio-economic centres. Since spatial segregation is a result of apartheid policies, the solution to address these imbalances heavily relies on the integrated planning legislative framework.

Francisco ACHWOKA, Ben-Gurion University of The Negev, Beersheba, Israel

Transportation issues of cities in developing countries - case study of Nairobi, Kenya

Despite increased expenditures on urban transport systems, current transportation problems in cities within developing countries continue to worsen. Will a shift to an increased reliance on inter-related features of decision making in transportation planning enable cities to achieve the goals of sustainable transport in the long run?

Wan LI, Shuying DAI, Renmin University of China, Beijing, China

The desire of settling in cities of the new generations of Chinese migrant workers

For the new generation of migrant workers in China, the desire for permanent residence in cities is not strong enough. Based on a nationwide investigation in 2014, this study explores some factors and their impact on this desire through a binary logistic model.

Verna NEL, Tony WILLIAMS, Simangu NKOSI, University of the Free State, Bloemfontein, South Africa

A framework for sustainable land use management in rural areas under traditional authority

Limited attention was given in the past to spatial planning and land use management in rural traditional areas, giving rise to unsustainable practices. New legislation seeks to address this, but it also creates challenges. This paper sets out a framework for more sustainable land use management in such rural areas.

Session 2: Social structures

Siyabonga NJEKE, Vishnu GOVENDER, KZN COGTA, Durban, South Africa

The rise of the social elite: a challenge to planning activism and social justice in South African cities

Discussing the disjuncture of the past that is still influential in the present African planning context. Through reflecting and evaluating the impact by the past and current planning policies, the paper explores the challenges posed on planning activism and social justice in South African cities by the rise of the social elitists.

Magdalena WISNIEWSKA, Cracow University of Technology, Kielce, Poland

Citizen participation – a successful strategy in revitalization of panel building estates’ public space or a marketing slogan

The aim of this paper is to attempt an answer whether the idea of citizen participation in the revitalization of panel housing estates, as implemented in many local strategies, is only a buzzword, a marketing slogan used just in theory or it is an actually used tool.

Antje HEYER, HEM-Organisation for vulnerable EU-migrants, Täby, Sweden

Criticising Sweden’s treatment of Europe’s most vulnerable citizens – what can we learn from slum upgrading projects in South Africa when it comes to increasing poverty and informality in Northern Europe?

I discuss Sweden’s treatment of discriminated EU-citizens from Romania and the evictions of their informal camps. Facing this increasing poverty and informality, I question what northern Europe can learn from South African NGOs when it comes to informal settlement upgrading and mobilisation of marginalized groups.

Session 3: Public policy and capacity building

Khethukuthula ZULU, Hibiscus Coast Municipality, Port Shepstone, South Africa

Public participation in IDP, Kwazulu-Natal, South Africa

A developmental local government is a critical part to realise a development-based state that effectively transforms its society to ensure equity and improved living conditions for all of its citizens. To achieve this, local governments need to have a robust participatory process for their IDPS.

James CHAKWIZIRA, Mac MASHIRI, Gwarajena TRD, Pretoria, South Africa; Cecilia NJENGA, Peter NJENGA, Kena Consult Pvt/Ltd, Pretoria, South Africa; Maartin FRIEDRICH, Manna Development Consultancy (Pty) Ltd, Pretoria, South Africa; Rajesh MAKAN, Department of Rural Development & Land Reform, Pretoria, South Africa

Towards a curriculum & capacity development framework in support of a land use classification system in South Africa

Through this work, the Department of Rural Development and Land reform (DRDLR) is seeking to make significant headway into narrowing the current capacity gaps in terms of delivering sustainable land use management practices in South Africa, especially on the local authority level.

Caroline NEWTON, KU Leuven and OVAM, Mechelen, Belgium

The successful transferability of community driven housing programs in South-East Asia and the role of international NGOs

Community driven housing programs that successfully transformed human settlements are often considered as locally embedded, the transferability of their success questioned. We show how ACHR, an Asian NGO, has been the key in successfully introducing the ideas of the Thai Baan Mankong Secure Housing Programme to the region and to Cambodian policy.

Renee Karen HULLEY, Black Balance Projects, South Africa

South African cities: changing spaces

This paper explores the emerging of a new spatial pattern in the province and the extent to which city builders and/or planners are geared towards facilitating and embracing this change. The shifting spatial patterns are also an opportunity to support the spatial transformation agenda that is currently unfolding.

Session 4: Economic justice

Oriyomi AKINYEMI, Wale ALADE, Vistaplan Consulting, Lagos, Nigeria

The socio-economic transformation of Makoko community, Lagos, Nigeria

The study looks at the appropriateness of the policies and strategies of Lagos state government towards social and economic transformation of poor communities and their integration within the overall city system in Nigeria using Makoko, Lagos as case study.

Xiaojun WANG, China Academy of Urban Planning and Design, Beijing, China

Revitalizing a historic district: Dalian Xinglong historic district case study

Many historic districts in China's inner cities are now ghettos for the poor, socially isolated despite their central location. This paper uses Xinglong Historic District in Dalian as a case example to study the community stratification and renovation of a historic district.

Özgün TUTAR, Richard SZERI, Eylem BAL, Dokuz Eylül University, Izmir, Turkey

Neoliberal intervention to the coastal areas: the case study of Port Alaçati, Turkey

The Port Alacati project is an example of direct intervention of capital into coastal areas. Besides, it is aimed to propose and develop solutions by discussing spatial transformation caused by neoliberal urbanization policies on coastal areas, based on the relative acts, planning mechanisms and the actors.

Session 5: Planning activism

Maria Christina GEORGIADOU, Isis NUNEZ FERRERA, Ben FAGAN-WATSON, University of Westminster, London, United Kingdom

A critical review of top-down vs. Bottom-up models for informal settlement upgrading in South Africa

The paper presents a review of top-down vs. bottom-up models for slum upgrading in South Africa (SA), uncovering associated barriers and drivers for community-led approaches. The study is based on a three-year research programme funded by the UK ESRC Newton Fund in collaboration with the SA NRF.

Mikhail MALASHENKO, Higher School of Economics, Tula, Russia

Civil activism as a means of promoting participatory planning: the case of Tula

The paper addresses issues of civil activism as a means of promoting participatory planning in circumstances in which it is otherwise unlikely to be applied, like in those of authoritarian and centralized state system.

Milena IVKOVIC, Blok74 urban gaming | built environment, Rotterdam, Netherlands

Hello city!

Hello City! researches the patterns of communication on urban issues among the digitally active citizens of two different European cities: Rotterdam and Belgrade. The results of the quick-scan give some insights about how to use the energy of connected citizens to create more liveable, intelligent cities.

Session 6: Inclusive planning

Meidesta PITRIA, The University of Tokyo, Chiba, Japan

Housewives empowerment in urban Kampung house extension strategy a case study in Kampung Cikini, central Jakarta, Indonesia

A research looking at the indispensable relation between women empowerment and house extension in dealing with high density in urban Kampong.

Genrong CAO, Jian ZHUO, Tongji University, Shanghai, China

Analysis on influencing factor of the choice on commercial facilities for the elderly going shopping on foot—an empirical study of four typical residential communities in central Shanghai

This paper analyses the influencing factors on choice of commercial facility for the elderly going shopping on foot and proposes measures to improve the convenience of the elderly using commercial facilities.

Track 3

Envisaging planning theory and practice for the next decades

**Co-rapporteurs: Milena Ivkovic,
Nuin-Tara Key & Mark Oranje**

Summary

Urbanisation is taking place at an unprecedented scale worldwide. The pressure to find answers to the many challenges caused by rapid urbanisation is rising against the existing legacy of planning theories and practices. In Track 3, twenty-four papers from fourteen countries contributed to the topic of how planning should look in the decades to come, the majority coming from a continent facing some of the greatest urban pressures – Africa. The track is divided into 4 sections, each one dealing with different aspects of planning and practice for the future: (1) how to manage innovation and change, (2) how to implement the next generation of environmental planning, (3) what are the post-colonial planning challenges, and (4) what are the tools for integrated planning.

Session 1: Managing innovation and change

Session 1 opens by exploring the critical question of how to manage innovation and change in the urban and regional planning context. As urban communities around the globe are facing compounding and complex issues that stress existing economic, environmental, and social systems many practitioners are looking for new and innovative approaches to dealing with rapidly changing and growing urban environments.

First, we start with a critical role that evaluation metrics play in understanding innovation. The role of conflict management in the context of ever-changing physical, social and economic spaces is presented in by a case study from Italy that explores how global economic pressures manifest in local conflicts around land use and form; the paper explores how planning can innovate beyond this challenge by adopting a multi-centered, flexible and heterogeneous approach to change management. And in Brazil, "Through a Rhizomatic Process of Planning" continues on this theme of change management by exploring how self-organization — as opposed to elite, top-down hierarchical planning—can allow for spontaneous, self-organized innovations in land use to emerge. "Mis-Romanticism of hidden spaces and gentrification" explores the global challenge of gentrification and proposes an innovative theory that major urban centers

are being transformed by specific social and economic groups according to their desired "lifestyle" rather than according to urban planning theory. The "hipster" aesthetic, which is the dominant aesthetic of the social group leading urban transformations, is merely an appropriation of existing "hidden" spaces and does not reflect a innovative approach to new urban form and transformation.

Looking to the future, "In Search for New Urban Planning Education and Research Formulas" explores how the practice of planning, in an effort to maintain relevance, needs to constantly innovate as we look to the ever-increasing complexity of the urban context. By exploring three research and educational urban planning projects in Poland, this comparative case study highlights the importance of cross-cultural and international cooperation as core elements of planning education. Future planners will be tasked with making decisions that affect our collective future, while also responding to the local impacts of complex problems. To equip future planners with the skills needed to manage this complex dynamic, planning education and research needs to adopt innovative approaches to filling the gap between theory and practice. In the context of China's rapid urbanisation process of the last decades, the practice of implementation evaluation has been largely overlooked. "Evaluating the Implementation Performance of Conservation Planning for Historic Township: Case of Guangfu Town, Suzhou, China" establishes a framework for implementation evaluation.

Session 2: Environmental planning

This session presents a cross-section of project and planning samples that integrate multi-sector approaches to environmental planning and design. Specifically looking at the challenges that rapid urbanisation place on environmental systems, this session explores how an integrated approach to planning that includes environmental considerations improves economic and social outcomes.

Starting in the Netherlands, "Using the Natural Ecosystem to Achieve Urban Societal Ambitions" explores how including environmental considerations

in an integrated urban strategy improves social and economic contexts, as well as reduces urban vulnerability. "Planning for Sustainable Communities is Planning for Green Spaces" explores, through a design assessment, how green and open spaces are under valued in South Africa and the need to increase their priority when designing high-value urban environments.

The question of how you integrate environmental planning into rapidly-changing and high-value urban and regional contexts is presented in "Sustainability and the Revolution in Urban Planning". Recognizing the high value that natural and environmental planning plays in developing resilient and livable urban spaces, as outlined by the cases in the Netherlands and South Africa, the case studies presented from the United Arab Emirates and Malawi, explore the critical role that technical and analytical mythologies play in implementing environmental considerations in complex, fast-pace planning contexts. Given the current pace of urban development, and the rise of technology, there is an opportunity to utilize systems that simplify basic environmental indicators in a way that keeps pace with the rapid urban development process.

Sessions 3 and 4: Post-colonial planning challenges

The papers in the Sessions 3 and 4 deal with the dynamic challenges of post-colonial planning by exploring the questions of how to develop the necessary localized knowledge and capacity, and how to change existing theory and practice to keep up with rapid urbanisation. The term often referred to in these papers is the "African Renaissance" – a new, broad societal, cultural and economic movement based on embracing and re-discovering African value systems and African identity.

In the "Visualizing neo-mercantile planning theory for Africa in the twenty-first century" the authors plead for developing a new planning and spatial theory, based on the principles of the traditional African market towns, and inspired by the neo-mercantile ideology. By taking a critical view on neo-liberal planning models, the authors conclude that moving toward neo-mercantile principles and re-invention of market towns will benefit the current African state of urbanisation.

By analyzing the shortcomings of the past planning legislation in Nigeria, "Bi-conceptual planning modeling in tackling a rural threshold challenges in Nigeria" suggests a new model to address the issues of sustainable development of the Ibadan region. The region is characterized by a dispersed structure of villages and small towns, and the paper proposes to formulate a new, bi-conceptual planning model allows for the regrouping of settlements. In this way, the

exchange of goods, provision of services and necessary infrastructural investments can be realised more efficiently.

ring the principles of African Renaissance, "Normal Informal Living Spaces in Low-Income Human Settlements in South Africa" explains the "normal of the informal" in South African settlements. It argues that Western-style planning approach to standardized housing has disrupted the traditional South-African way of living, and that embracing and understanding informality can be a better approach to the needs of people actually living in informal settlements.

"Spatial Planning In Nairobi: Beyond the Post-Colonial Paradigm?" also takes a critical view of the Western planning methods of the past and compares the results of those methods with the current major planning forces coming from the East (China and Japan). The conclusion is pointing out to the fact that neither of these two approaches can actually address entirely the complexity of issues in Nairobi, and suggests that local knowledge development, not outside intervention, is essential to facing localized post-colonial challenges.

The gap between theory and practice is a central component of the current challenges of the African planning reality. "Bridging the Gap Between Planning Theory and Practice in Africa: Towards a Theoretical Solution" looks at the African city as an interface (or an intermediary) between planning theory and practice, and measures the level of "acceptance" of new planning theories in several (10 total) African cases.

Finally, one of the biggest post-colonial planning challenges is how to include the complex structure of many stakeholders in the planning process, many of which were deliberately excluded in the past. "A Reflection on the Changing Faces of Urban Land Use Planning in Ghana" explains the positive changes in the planning and legislative systems in Ghana, aimed at improving land-use planning. In its conclusions, the paper raises the questions of how to recognize stakeholders and include them in the planning process.

That the issue of participation within current planning theories can be a tricky one is illustrated in "What Theory Explains the Tale of Two Cities?: Community Engagement in Urban Planning in New South Wales, Australia". Analyzing the ability (or inability) of two neighborhoods in Sidney's to influence developments in their immediate surroundings, the author builds a strong case for defining a planning theory that takes into account the rift between "rich and poor", and moves towards more an inclusive and just planning system.

Sessions 5 and 6: Tools for integrated planning

Sessions 5 and 6 dig deeper into the practical issues of implementing so-called “integrated planning” theories, and explores tools to realise this planning goal in countries where legislative frameworks for integrated planning is present.

“Investigating the Lack of Integration Within District Municipalities: Effects of SPLUMA on Integration” observes the effects of the recent South-African SPLUMA Act (which enables integrated urban planning across several spatial levels and administrative bodies) and asks the question “will the new act work?”. Pursuing the answers to this question, the paper proposes a method to test the level of integration, starting with the integration of spatial planning and transportation.

The implementation of the SPLUMA Act, in order to fulfill its promise of making resilient and inclusive cities, is the subject of the paper “Growing the Seed of Spatial Transformation: An Overview of the Capacity Building and Training Dimensions of SPLUMA (2013), South Africa”. The authors call for further action in capacity building and training. Analysis of efforts to date shows that a great deal of work still lies ahead.

As a practical tool for implementing SPLUMA, “Transforming the Inner City of Durban – A new Approach to the Preparation of a Local Area Plan for the Inner City of Durban, eThekweni Municipality” proposes the so-called “enquiry by design” method. Illustrating efforts in the eThekweni Municipality of Durban, the authors present their model of design-based approach to community stakeholders. In this way, the many problems of the neighbourhood are addressed through direct dialogue with the citizens and organisations working in the area, ensuring that any further plans for the transformation of the neighbourhood will be positively embedded with local community input.

The importance of a design-based approach to urban planning is also the theme of the paper “A paradigm Shift from Resources Economy to Knowledge Economy: The Case of Urban Development in Qatar”. The Gulf-state of Qatar and its capital, Doha, are determined to move from resources-based to knowledge-based economy, and therefore are exploring different spatial models (some of them based on traditional structures) in order to create an environment in which a knowledge-based economy and its professionals will flourish.

Session 6 continues with the exploration of practical tools that support integrated planning, with each case study highlighting an important planning issue for the coming decades.

Urban regeneration is an increasingly challenging issue, especially given the rapid rate of urban growth over the last few decades. The increasing complexity of urban regeneration leaves planning practitioners with the challenge of needing to identify on-the-ground redevelopment opportunities that optimize spatial patterns, functionality and efficiency, and the existing social conceptions and culture of place. The case study from Kolkata, “Understanding variables for contextual re-generation of Urban Areas - Case study of Kolkata, India” shares a quantitative methodology that integrates all of these complex and divergent needs.

Knowledge transfer and development, as well as overcoming the inertia of local experts, are the subjects of the paper “UN-Habitat’s Rapid Planning Studio: A Case Study of Integrated Planning for City Extensions in Africa”. By developing a specific workshop methodology, (“Rapid Planning Studios”) the urban planning professionals of UN Habitat are continuously training local authorities in Sub-Saharan Africa on how to approach the problems of urban development in their countries.

Lastly, our current global urbanisation trajectory is causing ecological instability, both locally and globally. Given that urban planning and design have a significant impact on the structure, process, and dynamics of the urban landscape there is tremendous opportunity to better integrate ecological sustainability and urban form. To achieve this integration, in practical terms, “A focus on Biodiversity and Ecosystem Services Redefines Urban Planning and Design” presents a conceptual landscape ecology framework — one that integrates green infrastructure, biodiversity and ecosystem services.

Session 1: Managing innovation and change

Jingyi ZHU, Tongji University, Shanghai, China; Ming TONG, College of Architecture and Urban Planning, Shanghai, China

Heterotopia and equilibrium of contest urban space-an investigation of an accommodation-assimilation mechanism

The paper deals with applying the concept of heterotopia to the contemporary city as a mechanism of handling changes in spatial features and social relations. Heterotopia works through accommodation and assimilation of changing elements to help maintain the coherence of urban physical and social space.

Nilton TORRES, USP - University of Sao Paulo, Sao Paulo, Brazil

Through a Rhizomatic process of planning

This paper analyses the contemporary planning in Brazil, focusing the action of informal networks of agents seeking to promote their own social life. Based on Deleuze-Guattari's vision, it understands planning as a multiple, relational and mixed social process for dealing with the contingencies of a dynamic and complex world.

Jacob KALMAKOFF, UN Habitat, Nairobi, Kenya

Mis-romanticism of hidden spaces and gentrification

Urbanism projects tend to glorify certain spatial typologies, specifically when they are seen to breed community and foster unexpected interaction between people. Yet consequentially the aesthetic of many of these spaces is uniform throughout the world, inspiring questions of what roles these spaces have in gentrification and as planned environments.

Hanna OBRACHT-PRONDZYNSKA, Dorota KAMROWSKA-ZALUSKA, Gdansk University of Technology, Gdansk, Poland

In search for new urban planning education and research formulas

This paper shows research and educational urban planning projects based on international and multicultural cooperation including innovative elements to conduct research on the built environment. Their common aim is to search for a new perspective on city development and challenge results from changing conditions.

Xiao ZHANG, Jiangsu Institution of Urban Planning and Design, Nanjing, China; Jinsong JIANG, Yinlong LIANG, China

Evaluating the implementation performance of historical and cultural town planning: case of Guangfu town

Focusing on whether the plans are implemented and effective in historical and cultural towns, this research establishes a framework of planning performance evaluation by analyzing factors, criteria and methods through a case study of Guangfu town.

Session 2: Environmental planning

Lena NIEL, Maaikje BLAUW, Deltares, Utrecht, Netherlands

Using the natural ecosystem to achieve urban societal ambitions

The (negative) effects of climate change call for a change in the urban planning profession. In this research we have investigated a new planning approach. It studies the metabolism of the urban ecosystem and specially focuses on the interaction between the urban layer and the natural soil-water layer.

Zhan GOOSEN, North West University, Eshowe, South Africa; Elizelle Juanee CILLIERS, North West University, Potchefstroom, South Africa

Planning for sustainable communities is planning for green spaces

Literature proves the benefits and need for green spaces within urban environments. Regrettably the planning, development and implementation of these spaces do not realize in many instances, due to a lack of municipal priorities driven by the urgent need to provide housing.

Stephen GOLDIE, Abu Dhabi Department of Municipal Affairs, Al Ain, United Arab Emirates

Sustainability and the revolution in urban planning

The key paradigm for sustainable planning is the 3-circle 'Triple Bottom Line Model' but it provides no guidance as to implementation. To improve on this model, two important innovations are developed that could turn the diagram into the centrepiece of an urban planning model suited to the 21st Century.

Tjark GALL, Urban Framework, Lilongwe, Malawi

Tackling urban challenges in Sub-Saharan Africa through indicator-based sustainability assessment

This paper examines the scientific background and practical possibilities of indicator-based sustainability assessment in urban Sub-Saharan Africa. The proposed methods act as a platform for site and project selections as well as an evaluation tool for existing approaches of different stakeholders. It will be exemplary tested on projects in Malawi.

Session 3: Post-colonial planning challenges

Claudia Luisa Teresa LOGGIA, Judith OJO-AROMOKUDU, University of KwaZulu-Natal, Durban, South Africa; Maria Christina GEORGIADOU, University of Westminster, London, United Kingdom

Normal informal living spaces in South African low income human settlements

The intended “normality” is compared to the indigenous normality in informal settlements. The study suggests the incorporation of indigenous normality in policy and upgrading programs led by the community.

Keziah MWANG'A, Gran Sasso Science Institute, L'Aquila, Italy

Spatial planning in Nairobi: beyond the post-colonial paradigm?

The inheritance of Global North developments and planning approaches is accused of creating and reinforcing social-spatial segregation in African cities. Changing global politics is attracting other players in African development such as China and Japan. This paper seeks to understand the nature of development by these new players.

Session 4: Post-colonial planning challenges

Awais PIRACHA, Western Sydney University, Minchinbury, Australia

What explains the tale of two cities: community engagement in urban planning in New South Wales, Australia

Planning reforms in New South Wales, Australia have resulted in weakening of community engagement. Independent scholars have used neoliberal planning theory to explain the reforms. However, theoretical underpinnings of effective community action by the affluent in the East and resignation to fate by the poor in West have not been explored.

Umar JIMOH, Philip IGHOSOYIWI, University of Ibadan, Ibadan, Nigeria

Bi-conceptual planning modelling in tackling a rural threshold challenges in Nigeria

Rural development involves a set of designed policies aimed at raising the pattern of living of the rural population. Problems still persist despite research efforts targeted at solving them due to single theoretical approaches. This study is designed to tackle the rural threshold challenges in Nigeria using a bi-conceptual planning model.

Eden Tekpor GBECKOR-KOVE, Ho Municipal Assembly, Ho, Ghana

A reflection on the changing faces of urban land use planning in Ghana

The master-planning practices of town planning officers in practice do not consider the opinion of people leaving in informal/unauthorized settlements. The new three tier system is envisaged to incorporate them in the urban land use planning system under the new land use law.

Session 5: Tools for integrated planning

Jessica PAGE, Carel SCHOEMAN, North West University, Potchefstroom, South Africa

Investigating the lack of integration within district municipalities: effects of Spluma on integration

There is a need to address the lack of integration within municipalities, policies and legislation. An investigation is done into the effect and promise of the recent SPLUMA regulations on municipalities and their current capacity, as well as, the integration between spatial planning and transportation instruments within District Municipalities.

Catherine DALE, The Planning Initiative, Durban, South Africa; Joanne LEES, Lees & Short Associated Architects and LSF Designco Lab (Pty) Ltd, Durban, South Africa; Paul WIJGERS, Urban Solutions, Durban, South Africa

Transforming the shape of Durban – a local area plan for the inner city of Durban, EtheKwini municipality

This paper explores the preparation of a Local Area Plan for the Inner City of Durban and considers the contribution that it could make to the restructuring of the City and an alternate approach to spatial planning that has the potential to contribute to a more relevant city structure.

James CHAKWIZIRA, Cecilia NJENGA, Peter NJENGA, Kena Consult Pvt/Ltd, Pretoria, South Africa; Mac MASHIRI, Gwarajena TRD, Pretoria, South Africa; Buyisiwe ZUMA, Rajesh MAKAN, Department of Rural Development & Land Reform, Pretoria, South Africa; Maartin FRIEDRICH, Manna Development Consultancy (Pty) Ltd, Pretoria, South Africa

Growing the seed of spatial transformation: an overview of the capacity building and training dimensions of Spluma (2013), South Africa

SPLUMA (2013) can be viewed as both an instrument and approach serving the purpose of being “an interface in promoting alignment and integration within the existing policy and legislative framework guiding planning and development” in South Africa (Schoeman, 2015: 57).

Ali ALRAOUF, Urban Planning Department Qatar, Doha, Qatar

A paradigm shift from resources economy to knowledge economy: the case of urban development in Qatar

The paper articulates a solid model to be followed by Gulf cities seeking a transformational change similar to Doha. A change from resources and industrial economies to a creative and knowledge economy. A transformation is presented, which has been seen as inevitable change for Gulf cities in a rapidly approaching post-carbon paradigm.

Session 6: Tools for integrated planning

Solanki GHOSH, Ronita BARDHAN, Indian Institute of Technology, Bombay, Mumbai, India

Understanding variables for contextual re-generation of urban areas - case study of Kolkata, India

The Aim of this study is to see how spatial pattern and functional distribution of the city affect its cognitive image. This paper presents a conceptual framework to quantify the variables and arrive at contextual planning policies and guidelines. The results of this study would help planners formulate appropriate policies for urban regeneration.

Benjamin SCHEERBARTH, Thomas STELLMACH, Gianluca CRISPI, UN-Habitat, Nairobi, Kenya

Un-Habitat's rapid planning studio: transdisciplinary planning for periods of rapid urban growth

Current urbanisation rates in the developing world outpace municipal ability to effectively plan for the expected population growth. This case study reflects on key challenges of contemporary planning practice as identified through conducting UN-Habitat's Rapid Planning Studio, a workshop module to formulate and implement city extension plans.

Tessa JOUBERT, North-West University, Pretoria, South Africa

A focus on biodiversity and ecosystem services redefines urban planning and design

Urban planning and design have a significant impact on the structure, processes and dynamics of the urban landscape. Sustainable urban development requires the application of ecological and landscape principles to create a green infrastructure. A conceptual landscape ecological framework will be presented that supports biodiversity and ecosystem services.

Track 4

Urban planning and policy making in times of uncertainty, fragility and insecurity

**Co-rapporteurs: Jacob Babarinde,
Elizabeth Reynolds & Geci Karuri-Sebina**

How far can you look into the future of your city and what do you see? If you can, now think back to 30 years ago – what was your world like? For better or worse how has it changed? Could you have foreseen how different the world around you would be? Track four considers the role of urban planning as a tool for managing positive change in places with an uncertain future. Yet also acknowledges that, from the futuristic concepts of American architect Harvey Corbett to Le Corbusier's Utopian vision for Chandigarh, there is often a mismatch between the aspirations of planning and the reality. We ask what tools could be used to mitigate uncertainty and how to avoid planning becoming part of the problem, rather than a solution. This introductory report aims to provide a background to topics we will be discussing in track 4.

Uncertainty

{Not able to be relied on; not known or definite}

In our work as urban planners we map our aspirations for places and people, without knowing for certain the future context in which they will exist. In his book *The Art of the Long View*, Futurist Peter Schwartz encourages the use of scenarios to 'rehearse the future', so that we might better prepare for what might lay ahead. In *Urban futures: anticipating a world of cities* (foresight, Volume 18 Issue 5, 2016) Future-oriented Technology Analysis (FTA) is promoted as a more evolved process to help planners and policymakers understand complexity, anticipate impending changes, and begin engaging more robustly with future scenarios.

100 Resilient Cities was founded in New York by the Rockefeller Foundation and aims to help cities around the world become more resilient to physical, social and economic challenges including the affects of climate change. Cities are encouraged to join the network and nominate a chief Resilience Officer to mitigate against shocks such as natural disasters, as well as other stresses that weaken the fabric of a city on a day to day or cyclical basis. To learn more about Durban's Resilience Challenge see: <http://www.100resilientcities.org/cities/entry/durbans-resilience-challenge>

In the United Kingdom, the future Cities Catapult brings aims to help innovators from a range of professions to turn ideas into working prototypes that can be tested in real urban settings. Through their Cities Lab based in London, the catapult is focused on three core themes: promoting healthy cities, building resilience in urban infrastructure, and designing strategies to help cities adopt and finance smarter technologies.

Fragility

{Easily destroyed or threatened}

In the case of some cities and regions, baseline conditions that inform plan making are difficult to sustain - fragile to changes in politics, ecology and human conflict. In 2015 ISOCARP arranged an Urban Planning Advisory Team to visit the West Bank and Gaza Strip where the team and all those they engaged with were asked to look beyond the present situation and provide a spatial vision for a future state of Palestine. Ours was by no means the first attempt at planning for a sustainable urban future, with spatial land use plans in place for each of the five governorates in the Gaza Strip, along with a National Spatial Strategy, and detailed studies on infrastructure, commercial and residential development. In addition to the challenges of plan making, plan implementation is harder still, with the Gaza Strip afflicted by three wars in the past seven years, and trying to survive under a suffocating blockade. In the face of these very significant obstacles, we asked people to consider how they hoped Gaza would look, feel and function at an unspecified time in the future. To understand more about this spatial visioning exercise, the third in a series of magazines will be launched at the ISOCARP congress.

Insecurity

{Liable to change for the worse; not permanent or settled}

To ensure that urban planning frameworks are sufficiently robust to withstand shocks from natural disasters and other serious but infrequent events, it is

important that risk assessment form part of the planning process. Urban threat assessments generally consider the probability, consequence and severity of a threat manifesting itself in an urban environment. The threats could stem from natural, accidental, criminal, terrorist or state sponsored events, and once identified could have an improved chance of being mitigated.

In the United Arab Emirates, the Abu Dhabi government has introduced a Safety and Security Planning Manual (SSPM) to support the Plan Capital 2030: Urban Structure Framework Plan. Eight key principles are key to the Manual, namely: Access and Connectivity; Structure and Spatial Layout; Ownership; Surveillance; Activity; Physical Security; Public Image; and Adaptability. In the case study of the Saadiyat Island Cultural District project this meant including a safety and security specialist as part of the multi-disciplinary team in the earliest stages of planning; creating a remote logistics facility; realigning a canal to create a natural barrier; and integrating pedestrian screening facilities.

In South Africa the Integrated Urban Development Framework (IUDF) aims to steer urban growth towards a sustainable growth model of compact, connected and coordinated cities and towns. The IUDF includes commentary on urban resilience and safety, identifying that: 'the pervasive fear of violence and crime is one of the greatest barriers to urban residents, especially women and girls, being able to take full advantage of the economic, social and cultural opportunities offered by cities'. With respect to climate change it is said that a whole-of-government and all-of-society approach is needed to emphasise the linkages between mitigation and adaptation, as well as the multiple economic, social and environmental benefits of urban climate action.

Over three days, our track will feature presentations by urban academics and practitioners from 13 countries, on subjects ranging from assessment of socio-economic vulnerability to climate action planning. We hope that the track will provide participants with insightful research, critical debate, and practical tools to help plan the cities we need.

Session 1-3: Master-strategic-futuristic planning and the property development process

Jacob BABARINDE, Papua New Guinea University of Technology, Lae, Papua New Guinea

Application of a holistic land development model for city sustainability: a flux of messy situations extending the frontiers of planning theory

The paper argues that existing planning theories are inadequate for analysing challenges faced by cities pursuing sustainable development goals and protection from insecurity due to terror attacks, crimes and uncertainty. Therefore, a new planning theory, hinged on planners' deserved control of a holistic land development process, is needed.

Laura SCHATZ, Western Sydney University, Penrith, Australia

When planning becomes litigation: comparative case studies of the ideologies of appeal decisions in New South Wales and Ontario

This research examines the ideological conflicts inherent in progressing planning disputes into the legal realm, where the public interest nature of planning encounters the traditional tendency of courts to protect private property rights. I examine this conflict using 'existing user rights' cases in Ontario and New South Wales.

Miranda SCHUT, The Spontaneous City International, London, United Kingdom

The future of urban living – planning for the unknown in Amsterdam

The Future of Urban Living is an applied research project with a focus on Amsterdam's metropolitan region. The paper will focus on the research questions and principles, its theoretical framework and the methodology to be used.

Caroline BOS, UNStudio, Amsterdam, Netherlands; Justyna KARAKIEWICZ, The University of Melbourne, Melbourne, Australia

Masterplanning as trouble shooting. Networks of professionals replace planning authorities in the planning of Arnhem Centraal

Case study of the masterplan of central Arnhem realized between 1996-2016. Shifting public policies and public-private partnerships were utilized to try to fill the void caused by global and local economic crises as well as the decline of both policy-related and professional services retained by national and local authorities.

Ito AKPAN, University of Uyo, Uyo, Nigeria

Effects of changing land uses on intra-city roads in Calabar municipality, Cross River State, Nigeria

The rapid rate of changing land uses in cities has reached alarming proportions. Changes in both road usage as well as the physical network of intra-city roads are traceable to changes in the use of land. These changes have profound effects in the cities we live in today.

Michele MELCHIORRI, Domodossola, Italy

Intergovernmental organizations and human settlements; how the world polity is shaping the debate on cities

These years cities emerge in the agenda of intergovernmental organisations like ever before. It is meaningful to reflect on the tendencies of this discussion and investigate on the future being shaped for planning for the cities we want.

Eloise ROUSSEAU, Riaan VAN EEDEN, City of Cape Town, Cape Town, South Africa

Growing small businesses in South African townships: how planning tools can facilitate economic growth

The paper explores how planning tools can be used to help grow small businesses located in South African townships. It reflects on a pilot project that demonstrates the financial benefits and costs associated with formalization from the perspective of the small business owner.

Herbert MUSOGA, Rose MUSYOKA, National Land Commission, Nairobi, Kenya

Opportunities and challenges for urban planning under Kenya's new constitutional dispensation

This paper highlights the opportunities for urban planning presented under the new constitutional dispensation for Kenya and discusses the transitional challenges in actualizing the envisaged urban planning framework. The paper is based on a review of the constitution, and legislation against the practice of urban planning at the county level.

Peter Njeru NIUE, Joshua Munge MANAGE, University of Nairobi, Nairobi, Kenya

An investigation into the application of improved building technology in office blocks to mitigate the impact of terrorist attacks in Nairobi

Following the various terrorist attacks in Kenyan buildings, the paper seeks to find out the preparedness of the built environment professionals in designing robust buildings, especially offices.

Joanna PRIGARA, Gdansk, Poland

Strategic planning for uncertain times

Strategic planning is a powerful tool for predicting possible paths of development. Not only does it base on a detailed analysis of the current state but it also provides with predictive scenarios for the future. This is why it can be helpful in times of uncertainty.

Muhammed Ziya PAKÖZ, Ahmet GÜN, Istanbul Technical University, Istanbul, Turkey

The transformation and reorganization of cities in South-Eastern Turkey: an examination from the safety perspective

This study addresses the transformation and reorganization of cities, especially the south-eastern cities of Turkey, which are going to be planned and designed after demolitions during the conflict, in terms of the safety perspective.

Session 4: Climate change, sustainability and infrastructure services

Hildegard Edith ROHR, I@Consulting; Water Research Commission, Pretoria, South Africa

Spatial resilience, adapting to water sensitive planning in South Africa

The emphasis on inter-disciplinary research approach towards planning for water sustainability has been highlighted in many policies, plans and legislations. This article illustrates how spatial planning in terms of the Spatial Planning and Land use Management Act No. 16 of 2013 can contribute to the practice of water sensitive planning.

Zhejiang CAO, Tsinghua University, Beijing, China

The framework of resolving water issue in spatial planning in Netherlands

This paper firstly reviews spatial planning policies in terms of water planning and design in the Netherlands both in history and at present. Secondly, it probes into three major spatial water planning programmes and explains how they are implemented and embedded within the existing spatial planning framework.

Mswankile ZITHUTHA, South Africa

Designing rainwater harvesting cities

The South African cities are designed to channel water from the rooftop through pipes to water drainage. As water becomes scarcer there is a need to change this general approach of design and start designing buildings that accommodate rainwater harvesting.

Alwaka Kent MUKOYA, Nairobi City Water and Sewerage Company, Nairobi, Kenya

Climate change, water and wastewater, risks and uncertainties: case study of Kenya cities and towns

Kenya is classified among the water-stressed countries. This notwithstanding; the country is highly vulnerable to the impact of climate change, particularly its main economic sectors.

Session 5-6: Spatial analysis and environmental risk modeling

Jublee MAZUMDAR, Saikat Kumar PAUL, Indian Institute of Technology, Kharagpur, India

Determining the social and spatial vulnerability of a place from potential natural hazards

We cannot stop the occurrences of natural hazards on Earth, it can only be reduced to a large extent. Nevertheless, biophysical factors play a vital role in determining the vulnerability of a place. Social attributes escalate the vulnerability exponentially; hence it needs to be explored.

Jeremy GIBBERD, CSIR, Pretoria, South Africa - combined presentations

Sustainable goods and services

What are sustainable goods and services? How can the built environment be configured to support the achievement of sustainable goods and services?

Sustainable waste streams

What are sustainable waste streams? What is required in urban built environments to achieve these?

Basudatta SARKAR, National Institute of Technology Rourkela, Rourkela, India; Haimanti BANERJI, Joy SEN, Indian Institute of Technology Kharagpur, Kharagpur, India

Assessment of socio-economic vulnerability using select indicators

The paper tries to explain different degrees of socio-economic vulnerability through the nature and degree of interdependence of key socio-economic and demographic vulnerability components.

Pablo PESSOA, Gabriel SALLES REGO, Raiza GOMES FRAGA, Tainá LABREA FERREIRA, University of Brasília, Brasília, Brazil

The contribution of risk relations to urban planning practices: rethinking floods and other natural disasters of anthropic synergy

Based on interpretative tools from epistemology of risks, an adjustment was made on the typological categories set traditionally used to understand the processes involved on urban flooding risk. Underlined risk relations highlight the structural connections among social and environmental vulnerabilities with the magnitude of natural hazards.

Track 5 Intelligent cities for people

**Co-rapporteurs: Awais Piracha,
Jianxiang Huang & Aurobindo Ogra**

This theme tackles the definition of smart cities where technology and access to data can be exploited for an unprecedented awareness and control of our built environment. Papers in this track grapple with the question, “while technology flourishes, have the human priorities of these cities been appropriately defined”?

The cities of the world are facing a number of new and difficult challenges often at scales unimagined before. To begin with fast pace of population and economic growth and the sheer number of people migrating to cities in search of better lives is unprecedented. That leads to very high demand for housing, employment, transport and leisure. In addition, due to very hyper connectedness people are highly aware of what exists in other parts of the world. The city dwellers thus expect facilities of the highest standard that other places have managed to provide. Intelligent cities try to address those expectations and demands.

Intelligent cities are not only about ICT manipulation. These are the cities that are good at learning and finding innovative and novel solutions for their problems. From the protective walls of the ancient cities to the dykes of Netherlands cities have been coming up with clever and daring solutions. Intelligent cities is thus a broad field. The value of this concept lies in the potential it offers in rethinking interventions by city managers and city dwellers typically using the latest technologies to ensure the interventions are clever, out of the box measures.

Intelligent Cities, a year-long initiative of the National Building Museum supported by partners TIME and IBM, and funded by The Rockefeller Foundation, explored the intersection of information technology and urban design to understand where we are, where we want to be, and how to get there. It contains a broad range of themes under the umbrella intelligent cities title. Time presented a number of different examples of what were deemed as intelligent city in action. That includes the cases where ICTs were cleverly used to achieve improvements in health, transport, clean energy, jobs, walkability, identity, convenience, leisure and security.

The distinction between smart and intelligent cities is not clear. They are overlapping concepts and at times are used as synonyms. The discussions in this track will inevitably discuss this fundamental question. The following sub-themes have been identified from the papers selected for presentation in this track.

Session 1: Intelligent cities of emerging economies

Emerging economies such as China, India, Southeast Asia and Sub-Saharan Africa have wholeheartedly embraced the Intelligent/smart city concepts. The notion is attractive for cities in these countries as it offers them the potential to leapfrog on the path to development. It is also attractive because the traditional (unintelligent) measures cannot cope with the needs of sheer numbers of existing and incoming citizens. However, there seems to be some evidence of the excessive use/misuse of the intelligent/smart cities concept. In some cases, the prefix intelligent/smart is simply added to existing and routine measures and developments as a catchy title/phrase.

Session 2: Intelligent cities of developed countries

Some cities in the developed countries have been highly successful in tapping intelligence for resolving their problems and attracting young, energetic and creative people. Other cities are trying to learn from the successful example such as Boston. Some scholars in the developed countries are sceptical about the blind following of the intelligent cities concept. They suspect, in some cases, gizmos are not what people require.

Session 3: Planning with big data / complex systems

Use of big data such as mobile phone, smart travel card and other large data in planning is fast emerging a very promising area of study. A number of papers in this track present case studies of use of big data is studying and improving various planning related issues such as land use, housing provision, mega projects, commercial activities and more.

Session 4: Smart transport / infrastructure

A number of case studies in this track explore how intelligence/smartness can assist in improving mobility. The topics in this area range from smart mobility, promotion of non-motorised transport, to integration of the airports to provision of health services. Health, access and equity are recurring and underlying themes in this sub area.

Session 5: Participatory smart planning

A number urban planning scholars grapple with the following questions. Who can participate and who benefits from all the intelligence introduced in the city planning endeavours? Are citizen able to participate in consultations related to smart planning? Are their voices being heard? Do planners and policy makers even care if quest for smartness does not engage with the marginalized? Is smartness leaving sections of society even further behind?

Session 6: Smart energy in cities

Intelligent systems are enabling cities across the world to make use of complex, dispersed and renewable sources of power. Smart electricity grids and meters allow households to feed electricity produced from rooftop solar systems back into the grid. They also enable the peak and off-peak electricity charging leading to dampening of demand for peak times and thus avoiding the need to build/run peak load power plants. Smart energy systems are enabling isolated developing country cities to maximize the utility of off-national-grid local energy generation including that from the renewables. A number of scholars from both developed and the developing country cities will present their experiences in this area.

Session 1: Intelligent cities of emerging economies

Xingping WANG, Southeast University, Nanjing, China; Kai ZHU, Zhejiang University of Technology, Hangzhou, China

Innovative space of metropolitan area: types, patterns and evolution

We present refined and systematic development process of innovative space and analyse the distribution pattern and interrelation characteristics of it.

Qingqing WANG, Nanjing, China

The research of spatial form in Xinjiang vernacular settlement focuses on water resources

This article focuses on the water resources in vernacular settlements of China's typical arid region. It studies the impact of location, spatial form, functional layout and other aspects caused by water resources. The paper summarizes the conventional wisdom in settlement-construction and makes reference to recommendations in further settlement construction of arid regions.

Xiaojun WANG, China Academy of Urban Planning and Design, Beijing, China

Eco-smart research parks: Shanxi Science and Technology City case study

China recently started building its third generation of research parks: eco-smart research parks. This paper analyses and compares the key characteristics of the three generations and takes Shanxi Science and Technology City as the research object, to study the connected eco-smart strategies for research parks.

Naniek WIDAYATI, Tarumanagara University, Jakarta, Indonesia

Old city restoration of Jakarta, Indonesia

The sub-district of Glodok is part of a to-be embryo of Jakarta city located between the Jakarta West and North. The emerging problem is an unfortunate image of traffic jams, etc. Becoming the Manhattan of Asia needs presidential regulation stipulating restoration.

Session 2: Intelligent cities of developed countries

David LUDLOW, UWE, Bristol, United Kingdom

Intelligent city planning – meeting people's requirements?

Innovation, both societal and ICT driven provides major opportunity to realise the full potentials of bottom-up engagement in integrated urban planning leveraging collaborative ICT technologies for responsive urban planning. However, intelligent city planning meeting people's requirements must mobilize ecosystems of research actors and policy makers to support research driven strategies.

Bruno MONARDO, Leonardo BIANCHI, Nicole DEL RE, Andrea SIMONE, Almona TANI, Sapienza University of Rome, Roma, Italy

Smart specialization strategies for supporting the Europe 2020 vision

These reflections aim to highlight the crucial challenge that European Regions face applying the 'Smart Specialization Strategy' principles for pursuing the virtuous implementation of the Europe 2020 Agenda. The different cultural style of the 'US model' represents a significant lesson.

Chelsea ERWEE, University of Kwa-Zulu Natal, Durban, South Africa

Rebranding Umhlanga as an intelligent city

The shift towards the intelligent city model, as a response to traditional city challenges, embodies inter-connectedness between sustainability and efficiency in order to create a conducive environment for all age groups and diversities to prosper together in a more liveable urban habitat.

Jianxiang HUANG, The University of Hong Kong, Hong Kong, Hongkong; Lishuai LI, Department of System Engineering and Engineering Management, the City University, Hong Kong, China

Pleasant urban experiences: re-examining place-making theories using social media data in high-density cities

Creating enjoyable places are of growing importance for post-industrial cities. This paper re-examined classic urban design theories using geo-located social media data in Hong Kong, a high-density cities in Asia. The purpose is to identify what attributes of the built environment correlate with pleasant experiences.

Session 3: Planning with Big Data / complex systems

Justyna KARAKIEWICZ, The University of Melbourne, Melbourne, Australia; Caroline BOS, UNStudio and University of Melbourne, Amsterdam, Netherlands

Ever smarter, cities that learn: the application of complex adaptive systems theory to urban development

This paper examines the challenge of designing and implementing cities that can be incrementally smarter, that are able to learn. We address the question of what it means for a city to be smart.

Ning ZHAO, Jianjun WANG, Shoujia ZHU, Guangzhou Urban Planning & Design Survey Research Institute, Guangzhou, China

An empirical study on mega-city commercial spaces distribution characteristics: exploratory big-data analysis on Guangzhou, China

The distribution of the modern service industry becomes one of the important factors influencing the layout of a metropolis. This paper, taking Guangzhou as an example, explores its layout characteristics and general laws by statistical and spatial analysis based on big-data mining from Baidu.

Zhenyu WANG, Jiangsu Institute of Urban Planning and Design, Nanjing, China; Pengpeng ZHOU, Nanjing Institute of Technology, Nanjing, China

The role big data plays in the construction of smart city: a case study in Shanghai

Smart city construction is a good solution to Chinese city-problems in the context of globalization. The paper introduces how Big Data influences the construction of a Smart City through the case study of Shanghai.

Zhejiang CAO, Tsinghua University, Beijing, China

The interaction mechanism between urban planning, land supply and tertiary industry spatial structure in Hong Kong

This paper established the socio-economic model to examine the interaction mechanism between urban planning, land supply and tertiary industrial spatial structure in Hong Kong. It analyses the city's spatial economic and concentration structure through GIS and judges the relationships between the aforementioned three key elements, based on pre-built model and assumptions.

Prasanth VARUGHESE CHARAKUNNEL, Kiranjith CHULLIPARAMPIL, Anuradha CHAKRABARTI, Drishti Center for Urban Research, India

The urban conundrum in defining smartness; citizen or technology: a critique into the Indian idea of smart city

The research deciphers the contextual and non-contextual notions of smartness and the idea of smart-cities based on the 100 smart-cities project initiated by the Government of India. It brings out the inherent contradictions within the smart city proposals in the realization of urban commons and the right to city.

Session 4: Smart transport / infrastructure

Giovanni SERGI, University of Genoa, Senigallia, Italy

Intelligent cities for local growth, smart city in Italy: the case of the Municipality of Genoa

In 2016, 158 municipalities in Italy like Genoa have worked on the issue of Smart City and prepared 1800 projects using a holistic approach, which considers the city as a system that is able to support and spread innovation.

Ntsieni Colin KHWATHISI, James CHAKWIZIRA, Peter BIKAM, University of Venda, Thohoyandou, South Africa

Smart mobility: challenges of integrating intelligent transport systems for enhanced transportation systems performance

Achieving smart mobility through intelligent transport systems still faces paramount challenges. The paper investigates the challenges of integrating intelligent transport systems for enhanced transportation performance through the review of case studies from developed and developing countries.

Oluwafemi OJO, Eric MBAUKAAN, Federal University of Technology, Minna, Nigeria; Paul AJAYI, University of The Witwatersrand, Johannesburg, South Africa

Urban core health vulnerability: assessment of carbon monoxide level in Bida, Niger State

The study aims at determining the urban core dwellers vulnerability for Carbon Monoxide (CO) along major roads. The study employs a portable meter to determine the spatial variation of CO and residents related health challenges.

Robynne HANSMANN, Durban University of Technology, Durban, South Africa

How integrated is the airport in the production of space?

The study explores the movement of goods through airports in order to understand the relationship between flows and the production of space, and specifically how integration occurs between modalities and land uses within the context of the Dube Trade Port case study.

Session 5: Participatory smart planning

John VAN DEN HOF, Saxion University of Applied Sciences, Enschede, Netherlands

Digitalization and planning empowerment

An important precondition for planning empowerment is the availability of reliable data. Partners of Saxion UAS anticipate on the coming Environmental and Planning Act by experimenting in three LivingLabs with new methods for sharing data to enhance involvement of civil society with planning policy at a local scale.

Nancy ODENDAAL, University of Cape Town, Cape Town, South Africa

How smart are we about smart cities? Exploring opportunities for empowering alternatives

The relationship between technology and planning is under new exploration due to the current publicity on smart cities. This paper suggests alternative conceptions that are not infrastructure-led.

Guy VLOEBERGH, OMGEVING and University ANTWERP, Antwerp, Belgium; Philippe VAN WESENBEECK, Department Spatial Planning, Ghent, Belgium

Inspire and be inspired: an innovative, citizen-centered design of the spatial structural vision 'Room for Ghent'

Ghent (300.000 inhabitants) is creating a Spatial Structural Vision 2030 for the city. This focuses on a 'citizen-centred design approach' to create opportunities, practices for citizens, (social) entrepreneurs and policy makers. The idea is to inspire each other by sharing, collecting and testing ideas, experiments and concept for the future.

Tathagata CHATTERJI, School of Planning and Architecture Vijayawada, Vijayawada, India; Souvanic ROY, Indian Institute of Engineering Science and Technology, Shibpur, India

Participatory planning in the age of smart cities in India

This paper reviews India's new urban agenda to develop 100 Smart Cities from the angle of participatory planning - to understand whether this new urban agenda would promote more inclusionary form of development through dissemination of information or further perpetuate social polarisation through a technocratic planning.

Alberto CENDOYA, University of Navarra, Pamplona, Spain

Digital slums - understanding the importance of the digital connectivity to transform African slums: the case of Cape Town

61.7% of urbanites in Africa are slum dwellers, and this number is set to increase. This paper aims to show the most efficient way to combine traditional urban policies with digital and technological ones to ensure agile and durable solutions for slum dwellers.

Session 6: Smart energy in cities

Ntombenhle NDWANDWE, GSC Holdings Pty, Johannesburg, South Africa

Green energy for African cities - the changing landscape of our cities

The rise of energy supply in response to the demand of electricity has become one of the corner stone in tackling urbanization and rural migration within the urban development paradigm.

Somayeh TAHERI MOOSAVI, University of Manchester, Manchester, United Kingdom

Distributed ledger technologies (Blockchain) in urban energy systems, the case study of smart plugs in the UK

This paper seeks to explore the potential opportunities and challenges involved in the implication of smart plugs to address fuel poverty in the UK. The block chain technology attempts to change the interaction between the UK government and the citizens and improve trust, transparency, governance, disintermediation, and security in the system.

Garfield Wayne HUNTER, Guanzeng ZHANG, Lan WANG, Tongji University, Shanghai, China; Daniele VETTORATO, European Academy of Bolzano, Bolzano, Italy

Urban energy planning of human settlements: taxonomy, frameworks, and tools to guide planning evaluation and support decision-making

This paper aims to propose a framework to develop insights into the complexity of urban energy planning. This will sensitize stakeholders on current trends, challenges and transitional theoretical and analytical frameworks and models, tools and mechanisms, which will ensure a seamless integration to achieve a sustainable future.

Adriano BISELLO, Daniele VETTORATO, EURAC Research, Bolzano, Italy

Verifying and weighting citizens' priorities for energy refurbished dwellings

What characteristics are driving the citizens' decision to buy an energy refurbished dwelling? Are the monetary savings in energy bills really the most relevant benefit? Are citizens' priorities appropriately addressed by designers? To answer these, this study applies the AHP methodology to a local real estate market in Europe.

Track 6

Planning for an interlinked and integrated rural-urban development

**Co-rapporteurs: Lorraine Gonzales,
Tathagata Chatterji & James Chakwizira**

This subtheme explores the changing conceptualization of the urban rural divide and the possibility of new forms of urbanity and rural existence. Should or can rural-urban migration be mitigated by intelligent villages and rural development? Must urban development be more shaped by its non-urban context?

Session 1: Application of spatial planning tools, models and processes

Session 6.1 deals with the application of spatial planning as an instrument to achieve a more harmonious relationship between rural and urban areas. The application of spatial planning, to achieve a more sustainable and balanced developmental, faces several challenges, especially in rapidly urbanized and newly industrialized economies, in this era of market-led growth and development of regional polarization. Papers in this segment are focused on South Africa, Nigeria and China, three large countries with high degree of regional disparity. Examples of developmental complexities are addressed as well as new planning methods to resolve the identified planning issues.

The session begins with track keynote speaker Gilberte Lincoln whom sets the tone by addressing the complex relationship between spatial planning at a regional scale and the mechanics of public policy. Through a case study of iLembe district municipality, the paper investigates regional planning process in post-apartheid South Africa. Ngidi's empirical study of the Durban Metropolitan area, further argues the need to develop spatial planning based on specific trends of a city or region as opposed to previously used growth models.

Looking at the application of spatial planning tools from a different perspective, Ning explores the latest efforts in integrating the rural migrants into China's urban fabric, by using the planning process of Nanjing City as a case study. Makgalemele's paper, through case studies in KwaZulu-Natal region, discuss district level rural development planning as a tool to improve rural productivity and livelihood, through improved access to nearby urban markets and closer integration

with the production value chain.

Session 2: Generating local economic development through spatial planning

Session 6.2 focuses on the use of spatial planning to generate economic growth opportunities at the local level and continues the discussion from the previous session on application of planning tools and processes to design and improve spatial order. The theme is of particular importance to the host country, the papers presented under the track provide valuable lessons for the international planning community as a whole. While the concept of local economic development is enshrined in South Africa's post-1994 democratic constitution, the country also passed a Spatial Planning and Land Use Management Act in 2013. Consequently, a large body of research about the interface between spatial and economic planning had emerged out of South Africa.

The paper by Gama, Mpondo and Bannister discusses, South Africa's National Development Plan, which aims to transform space relations of the country's economy. A special economic opportunity atlas has been prepared as part of the process to aide in the decision making process by national, provincial, regional and local governments.

Mlonyeni's case-study of the KwaNzimakhwe area, examines how past Local Economic Development strategies focused on the high-income countries of the North to centralize economic centers. Recent strategies focus on pro-poor approaches to strengthen the economic assets in poor communities.. Green et al, investigates how application of a catchment area analysis and other GIS based spatial analysis tools can help prioritize facility investment decisions to best serve the public in non-metro areas of South Africa . Research by Gibbens and Schoeman underscore the importance of the scalar dimension in planning, as a fundamental step to increase our understanding about the micro and macro level variables that impact rural livelihood. Pretorius and Drewes explore the possibility of tighter regional economic integration between 15 countries, which constitute the Southern African Development Community by building development

corridors, based on experience drawn from European Union.

Session 3: Changes due to migration and urbanisation

Session 6.3 deals with fundamental changes in rural-urban relations brought about due to urbanization and migration, and resultant need for protection and conservation of threatened settlement patterns, cultural attributes and qualities of life. The track has papers from Botswana, China, South Africa and the USA.

Track keynote by Pobiner sets the stage by discussing the impact of population increase and urban migration on global sustainability and quality of life. The research focuses on the interrelationships between - urban Form, Food, Energy, Water, and Transport – as five key attributes of sustainable settlement pattern. Mulaba-Bafubiandi's research, based on case studies in the rural areas of Tzaneen (Limpopo) Local Municipality, South Africa, addresses the classic developmental dilemma - between the need for modernization of the rural areas vis-a-viz protection of indigenous traditions and cultural practices. Research by Shu Wan, documenting unique lifestyle of the traditional boat dwellers in coastal China, also bring out similar question, between the preservation of traditional on-water settlements and the developing vision of boat dwellers. The paper by Luo et al demonstrates how they are trying to strike a balance between modernity and conservation, in their developmental strategy of Linhai in China. Olivier's paper on Detroit, USA suggests that integrated urban and rural strategies must be deployed to meet current and future needs. Cavric's research looks at the planning issues in Tlokweng, Botswana, a transitional settlement, undergoing change.

Session 4: Urban-rural relationships

Session 6.4 looks at the complexities involved in rural-urban relations from various national stand points – China, India, Nigeria, Zimbabwe and South Africa. Experience of these four major Afro-Asian countries could yield rich lessons in development planning for other developing countries.

Sinovuyo and Musakwa's paper questions the inbuilt urban-bias in contemporary development thinking, which equates urbanization with modernization and development. Adopting a comparative framework, they investigate developmental trajectories in two communities Qunu South Africa and Tsolotsho in Zimbabwe. They suggest adaptation of a new policy regime which would take into account unique attributes of the rural settlements and economies, rather than complete urban transformation. Omosulu and Osunsanmi investigate the existing economic

linkages between the rural and urban areas Nigeria's Owo region. The research not only identifies the road blocks which hinder greater integration between the two types of settlements but also growth potentials. Bandopadhaya's paper provides an overview of lessons from three planning initiatives from India, targeted to achieve greater developmental synergy between rural and urban areas. Two of these schemes are countrywide in scope and the third one covers the National Capital Region of Delhi. Zheng's research explores the impact of China's National Rural Policy on urban rural relationships through a case study of Changfu in Guangxi.

Session 5: Peri-urban interface

One of the defining phenomena of the contemporary pattern of urbanization is the dynamic transformation of the fringe areas of the urban boundaries, also known as peri-urban areas. These areas are often situated outside the formal city boundaries. Session 6.5, focuses on peri-urban interface and the metropolitan region. This session will explore the challenges and opportunities for rural-urban transitional areas, which often depict a mix of rural-urban land use characteristics. Discussions under this track cover a diverse urban range from the countries of Brazil, India, New Zealand, USA, Turkey and Zimbabwe.

Keynote speaker Baker, addresses sustainability from a metropolitan scale. He provides two case studies, Belo Horizonte Minas Gerais, and Portland, Oregon to address metropolitan growth, governance and planning strategies in major urban centers. The paper discusses concepts of sustainability at the metropolitan scale; and determines the best practice tools and policies used in both Brazil and North America to promote sustainability, through a comparative lens. The peri-urban interface discussion continues into the region of Auckland where planning issues in association with climate change are addressed from the perspective of a compact urban core and a resilient city region. Ingwani and Gumbo's attempts to overcome the rural-urban binaries which inform traditional planning instruments and policy documents, and propose a new framework on the basis of case studies in Domboshava, Zimbabwe.

Choudhury and Alam's research is based on transformation of two small settlements located at the outer periphery of Bhopal, India. The authors argue that rural and urban settlements should not be treated as dichotomous entities, because they are intimately tied to each other through functional linkages. Erdogan's research uses a case study of Akhran, Denizli in Turkey to illustrate application of a fractal geometric analysis to identify and characterize transformation patterns of urban fringe areas.

Understanding of this significant transformation and its relationship between urban areas and the surrounding area is intended to further define the urban boundary and effectively plan for future growth.

Session 1: Application of spatial planning tools, models and processes

Gill LINCOLN, Durban University of Technology, Durban, South Africa

Regional planning in South Africa: a mandate absent since 1994?

Exploring the relational complexity between regional planning and public policy deployment in the case of South Africa using the case of iLembe district municipality, the paper traces post-democracy regional planning and argues that the role of regional planning is largely absent in the current suite of planning instruments.

Yuxi NING, Southeast University, Nanjing, China; Lingjin WANG, China

Study on residential spatial integration of migrant population in China—a case study of Nanjing city

Based on questionnaire data and statistics of the migrant population in Nanjing understanding their migratory trajectories and living conditions, studying the degree of residential spatial integration of the different categories of migrant population help them really integrate into the urban life and promote China's urbanization.

Mbalenhle NGIDI, University of KwaZulu Natal, Durban, South Africa

A critical analysis on the applicability of previously established theoretical growth models in post-apartheid South Africa (the case of the Durban metropolitan area)

This paper seeks to discuss and contrast between the 3 growth models (Burgess Concentric Zone Theory, The Hoyt Sectoral Theory and Bid Rent Theory) and the various growth trends that are currently shaping the development of the DMA.

Nozizwe MAKGALEMELE, Department of Rural Development and Land Reform, Pretoria, South Africa

District rural development planning to guide the transformation and uplift of the lives of rural communities through linking economic production to the value chains and rural-urban markets

The development of District Rural Development Plans as a tool to guide the implementation of the Comprehensive Rural Development Program aims to enhance balanced and sustainable rural development linked to urban areas and the livelihoods of rural communities using the establishment of agri-parks as one of the vehicles.

Session 2: Generating local economic development through spatial planning

Inga MLONYENI, University of Kwa-Zulu Natal, Durban, South Africa

Investigating the needed development to be proposed using communicative planning as a tool to enhance local economic development at Nzimakhwe location

The topic and aim of this study wishes to use the amalgamation of LED and communicative planning at community level as a tool to address socioeconomic issues at Kwa-Nzimakhwe and makes a comparison between the IDP and what the community deems suitable development for them.

Chéri GREEN, Gerbrand MANS, Mawande NGIDI, Zukisa SOGONI, Johan MARITZ, Council for Scientific and Industrial Research, Stellenbosch, South Africa

Using catchment areas analysis and GIS based spatial analysis for prioritising spatial investment in non-metro South Africa

Accessibility and central place principles are used to identify prioritised towns to enable the spatially targeted investments of middle-order social facilities in non-metro South Africa. This supports spatially balanced and the just distribution of facilities to serve the largest number of people from the least service points for better resource allocation.

Menini GIBBENS, Carel SCHOEMAN, North West University, Alberton, South Africa

The spatial context of sustainable rural livelihood development

Not all spatial systems are similar in nature and being cognisant of the micro and macro relations (including that of urban-rural linkages). The spatial context of a rural community provides a fundamental awareness of what constitutes rural livelihoods.

Ockert PRETORIUS, Ernst DREWES, North West University, Potchefstroom, South Africa

The spatial integration of the Sadc through development corridors

Regional policies, based on regional integration emphasising economic cooperation and spatial linkages through development corridors, have the potential to stimulate intra-regional trade and economic growth in the SADC. Developing policy implementation mechanisms eliminating trade barriers and improving fragmented development corridors is imperative in the success of regional integration policy directives.

Session 3: Changes due to migration and urbanisation

Joseph POBINER, Gensler, Dallas, United States of America

The impact of population increase and urban migration on global sustainability and quality of life

As global population grows and rural populations shift to urbanized areas, new proactive and scalable development policies and regulations allow for equitable access to transport and anticipate increasing needs while promoting sustainable development patterns in order to accommodate growth.

Victoria OLIVIER, Detroit Future City, Detroit, United States of America

New Detroit—where the urban and rural meet

Detroit, in its current form, is both urban and rural. With vacant land as the greatest opportunity to distinguish itself as an innovative and resilient city for all, both urban and rural strategies must be deployed to meet current and future challenges.

Wen LUO, Xiaowei HUO, Ning JIA, Xiaofeng LIU, Jie ZHANG, Tstinghua Tongheng Urban Planning & Design Institute, Beijing, China

Rural: the history and future of the city: research on the current situation and utilization strategy of the traditional villages in Linhai

Based on an investigation commissioned by the government of Linhai, this paper sorts out and analyses the current situation of the traditional villages in Linhai and puts forward the overall strategy for the harmonious development and revival of these urban and rural areas.

Shu WANG, Tongji University, Shanghai, China

Evolution of traditional boat dwellers' settlements in the process of urbanization in southeast coastal region of China

This paper illustrates the evolution process of the unique boat dwellers' settlements in south-eastern China including the settlement form as well as economic and cultural phenomenon. After using cases to analyse the dilemmas from the social-economic and urban space aspect, some corresponding strategies are put forward.

Antoine MULABA-BAFUBIANDI, University of Johannesburg, Johannesburg, South Africa

Rural development and modernisation of villages in Tzaneen (Limpopo) district municipality: an equivocal dilemma

Technology in rural development and the villages' modernisation generates challenges affecting biodiversity. This precipitates the loss of village tranquilising and peace-of-mind characteristics. Triangulation, observations and non-structured interviews led to interrogate the dilemma brought to rural Tzaneen by the use of technology and the resulting urbanisation and modernism of villages.

Session 4: Urban / rural relationships

Lulin ZHENG, Guoping XIONG, Southeast University, Nanjing, China

Impacts of national rural policy on the urban-rural relationship: a case study from Changfu, Guangxi, China

Chinese rural policies on land use rights, population migration and social support have changed the urban-rural economic and social relationships since the reform and opening in 1978.

Bamikole OMOSULU, Gbolabo OSUNSANMI, Rufus Giwa Polytechnic, Owo, Nigeria

A study of rural-urban linkages in a developing economy of Owo region, Nigeria

The paper examined the differences in spatial planning between rural and urban communities in Owo Region, Nigeria. It emphasized the need for rural-urban integration via physical and economic planning, since the survival of the future cities depends on sustainable rural economy.

Abir BANDYOPADHYAY, National Institute of Technology Raipur, Raipur, India

Integrated rural-urban development in India: an introspection

Various policies have been implemented by the Indian Government to control in-migration from rural to urban areas. The latest policy (SPMRM), introduced in September 2015, promises a better integrated rural-urban development in the country. This paper analyses these policies along with their pros and cons.

Walter MUSAKWA, Sinovuyo. B SITINGA, University of Johannesburg, Johannesburg, South Africa

Urban development versus rural development and ruralism in South Africa and Zimbabwe: what the people really want

Urban development, industrialisation and technological development are not what the people often want in rural areas.

Session 5: Peri-urban interface

Nathaniel BAKER, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Planning for a sustainable metropolitan region in Brazil and North America: challenges and strategies

What can planners possibly learn by comparing metropolitan planning between two countries as different as the United States and Brazil, each with vastly different urban spatial structures, legal frameworks, and institutional contexts? It turns out there are more lessons than one might think.

Mfanafuthi GAMA, Department of Rural Development and Land Reform, Midrand, South Africa

The national spatial economic opportunity atlas (NSEOA): a tool for trans-disciplinary rural and urban development planning

The Department of Rural Development and Land Reform will demonstrate the NSEOA. The Atlas provides planners with data and information to understand South Africa's urban and rural development opportunities and challenges and provides a wide variety of data needed for planning in a single portal.

Emaculate INGWANI, University of Venda, Polokwane, South Africa; Trynos GUMBO, University of Johannesburg, Johannesburg, South Africa

Peri-urbanities as incubators of sustainable rural-urban development frameworks: experiences in Domboshava, Zimbabwe

Peri-urban areas represent spaces with mixed land use that exudes competing interests and conflicting characteristics. The peri-urban space presents opportunities for sustainable development of both rural and urban areas. Paradoxically, no scholarship has so far managed to provide solid and informative policy and legislative frameworks tailored for these areas.

Ashfaque ALAM, Binayak CHOUDHURY, School of Planning and Architecture, Bhopal, India

The dynamics of urbanisation – a case of Bhopal district of India

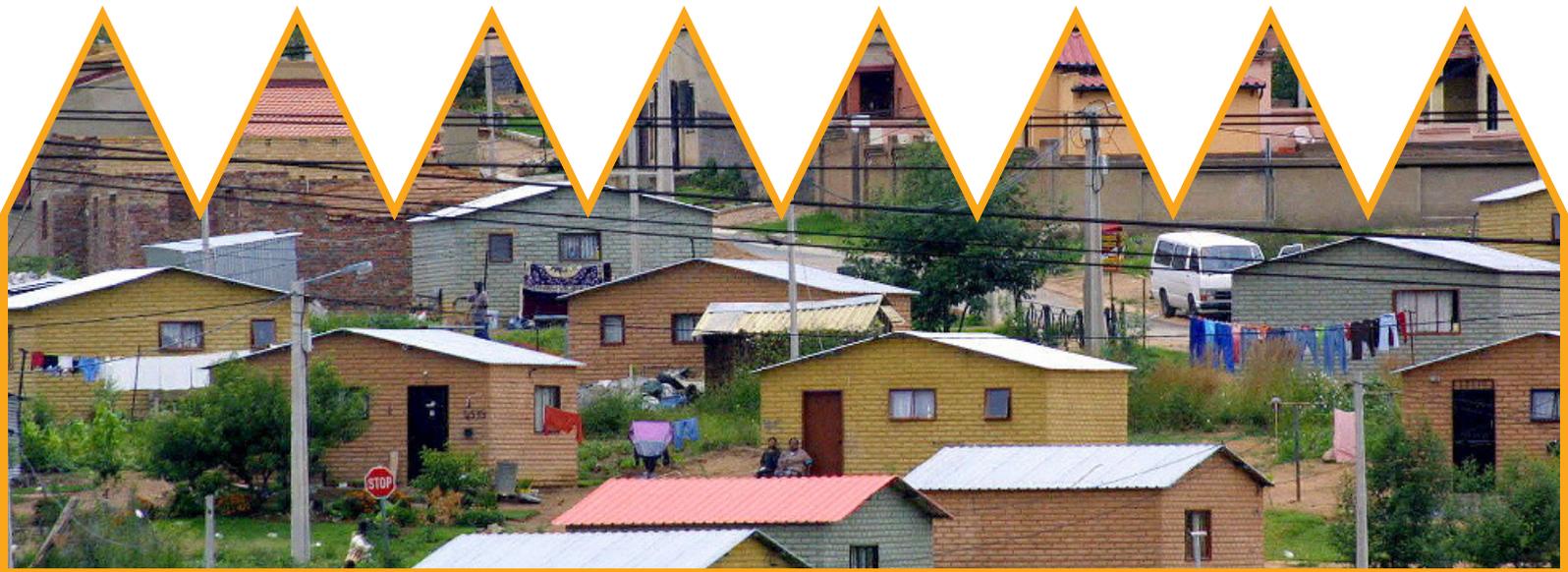
Neither a town nor a village exists in a vacuum detached from the proximate settlements along their administrative boundaries. Villages and towns cannot be seen simply as dichotomous entities. They are intimately interlinked. It is required to unfold the dynamics of rural transformation by identifying the transformational path.

Gizem ERDOGAN, Pamukkale University, Denizli, Turkey

Identifying and characterizing urban fringe with fractal analysis on Akhan, Denizli, Turkey

Urban fringe transformation is important determining of urban boundaries; however, controlling the expansion of urban sprawl is the most important topic for urban planners and decision makers. Fringe belts were considered to be fundamental in the development of the morphological structure and various methodical attempts are identified.

Track 1 Transforming human settlements



Planning economic development of city and region: strategic assumptions of the state versus real local capacities

Madina JUNUSSOVA; PhD Candidate of the SPPA/Carleton University, Canada; Research Fellow of the IPPA/University of Central Asia, Kazakhstan; Research Intern of the Leibniz Institute for Regional Geography, Germany.

Short abstract *The paper aims to present some of the immediate outcome of the research on the planning roles of the local governments of Kazakhstan. The national government promotes urbanisation by assigning new roles to some cities. However, the local governments struggle to promote economic development as they are constrained in their managerial decision-making by lack of supportive institutional conditions and strategic planning capacities.* **Acknowledgements** *The study has been conducted thanks to the funding support of the Central Asian Faculty Development Program (CAFDP) of the University of Central Asia. The paper was developed during the internship in the framework of the project "Urban reconfiguration in post-Soviet space" (ira.urban) at the Leibniz Institute for Regional Geography.*

1. Urbanization, regional disparities and administrative decentralization

Urbanization has caused many social and environmental problems that are globally recognized. Also, cities are widely acknowledged as one of the main drivers of economic development (Rapilla et al., 2015). Recently, Kazakhstan cities have been assigned a clear leading role in driving local as well as national economic development. In his Strategy 2050, the President of Kazakhstan emphasises the role of cities in the country's intensive urbanisation (Nazarbayev, 2012). According to the strategy, by 2050 Kazakhstan aims to become one of the 30 most developed countries with 70% of the total population living in urban areas. The national plan includes the creation of four urban agglomerations with as their centres the Almaty, Astana, Shymkent and Aktobe cities (Government of Kazakhstan Decree # 728, 2014). Recently, the government approved the newly developed plan for the Almaty urban agglomeration that intends to enhance the economic development of the city. However, it is not yet clear if these ambitious plans do help boost local economic development of the neighbouring region. In fact, although both city and regional governments constantly attempt to intervene in urban development by planning, they fail to control physical and territorial urban growth.

The policy intervention takes place in times when the local governments have to deal with such challenges as growing regional disparities (Figure 1). The gross regional product (GRP) per capita of the Almaty city was only 3 times higher than the GRP of the neighbouring Almaty region in 2000, whereas it became almost 5 times more in 2013. Most of the national and foreign investments are concentrated in Almaty and Astana cities that generate about 30 percent of the country's gross domestic product (GDP) (Agency for Statistics of the Republic of Kazakhstan, 2014). Not surprisingly these cities became one of the most attractive destinations for internal migrants. At the same time, urban living in Almaty has begun to be associated with high expenses and bad ecology (Shedenova and Beimisheva, 2013). Many former city-dwellers and newcomers now prefer settling in the cheaper rural neighbourhoods of the city. The areas of the Almaty region surrounding Almaty city are experiencing the

highest migration and construction boom (Figure 2). Private players are interested to benefit from the boom, and little state- or region-owned land is left around the city. The most urgent social inequality issues are appearing close to Almaty city and it will be hard to resolve the increasing imbalance of development without involving the municipal and regional governments in strategic co-planning and co-management of local economic development.

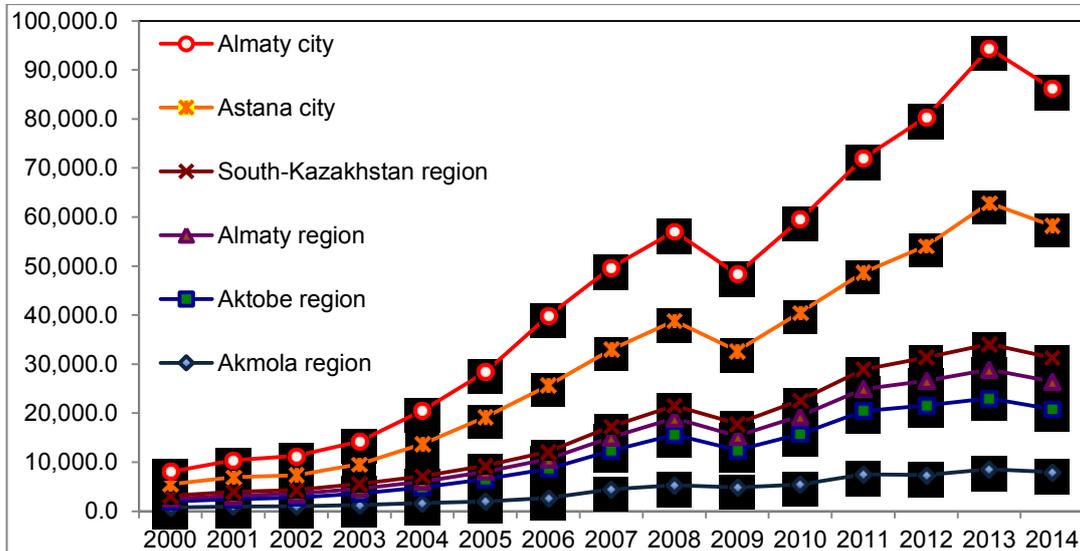


Figure 1: Gross Regional Product per capita by the cities and regions selected to form the urban agglomerations in Kazakhstan, in USD. Source: State Agency on Statistic of Kazakhstan, retrieved in May 2015 from www.stat.kz

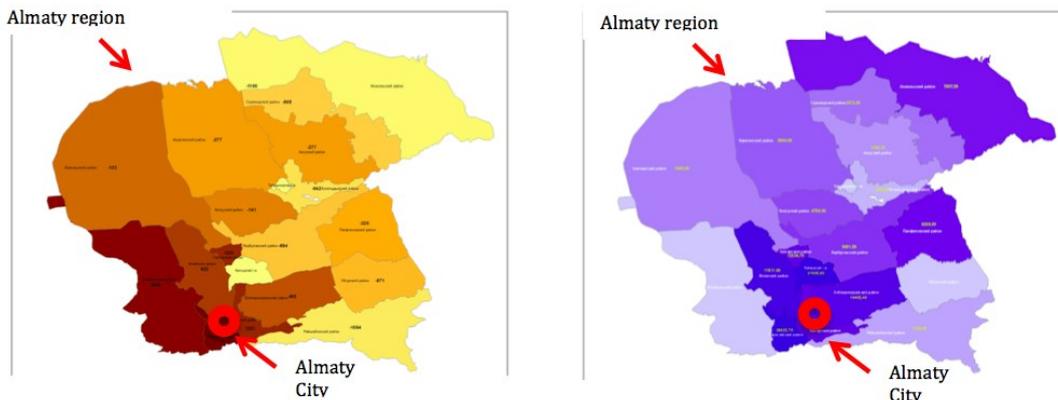


Figure 2: Almaty regional development by district in 2013: the map on the left shows the concentration of people (net migration); the map on the right shows the main areas of construction works. Source: Passport of Social and Economic Development of Almaty region in 2013.

The participation of the city and regional governments in the cooperative planning and development is challenged by on-going decentralization. Administrative decentralization supplied local governments with physical planning, but it is not clear if devolution of planning, without fiscal and decision-making capacities, could help local governments to use it as the local tool for development of urban agglomerations. In the case of Kazakhstan, there is no overall decentralization strategy covering all levels of local governments (Nellis, 2014). There is a lack of fiscal and decision-making autonomy at the local levels: the top-down control over local decisions remains a crucial part of the unitary state public administration (Ibraeva and Nezhina, 2013). Most of the decentralization reforms cover only the first tier of local government, responding to the demands of the wealthier city governments to be increasingly economically independent (Jones Luong, 2004). As Asian countries' experience shows, the

lack of attention of the national government to the growing power of cities due to partial decentralization may not help combat regional inequality in Kazakhstan (Miller, 2013). Such decentralization will not help avoid territorial centralization of resources in a few urban locations (Manor, 1999). According to the Regional Development Program 2020, it is assumed that new agglomerations will be developed in line with the Interregional Master Plans of Urban Agglomerations. These interregional master plans aim to serve as a tool for inter-governmental cooperation above the existing administrative borders of cities and regions (Figure 3). At the same time, it is not clear if “physical planning by production of master plans” delegated to local government can serve as an adequate regulatory tool for the management of urban development.

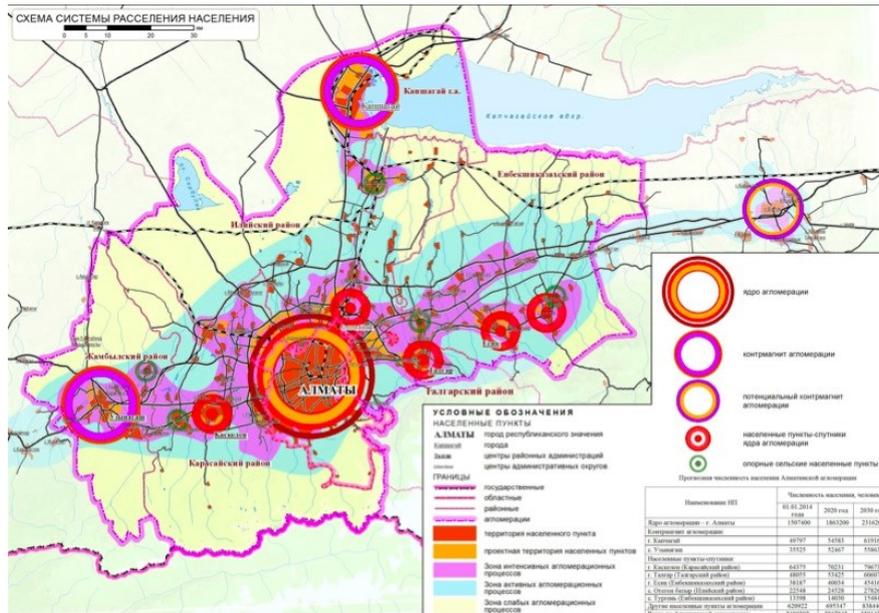


Figure 3: Interregional Master Plan of the Almaty Agglomeration 2050: Scheme of Main Urban Development Centers. The new metropolitan borders are proposed overlapping the existing administrative borders of Almaty city. Source: Ministry of National Economy of Republic of Kazakhstan, retrieved from www.economy.gov.kz in May 2016

2. Research objectives and design

The paper aims to contribute to a better understanding of the potential effects of administrative decentralization and the delegation of planning responsibilities from central to local levels of government. The research is based on the qualitative analysis of the case studies of Almaty city and Almaty region, representing two neighbouring territorial units of Kazakhstan. How the local government capacities use “physical planning” as a tool to achieve economic development objectives is analyzed on the basis of detailed study of the master plans and the results of the informal interviews conducted with the relevant decision-makers from local and central levels of government. The key actors were selected based on the level of their involvement in the development and implementation of the local development plans.

3. Master planning of Almaty city

The Master Plan 2020 is one of the first urban planning documents of Almaty city that was developed and adopted in 2002. At that time the land privatization had just been started and most of the city land was owned by the municipality (Akimat of the Almaty city, 2006). However, the presence of the master plan did not help the city government to control urban

development (Alexander, 2007). The implementation of the master plan was complicated by the existing institutional and legal gap separating physical planning from land use. Segregation between physical planning, control over physical development, and land use still prevail in the system of urban planning and management of Kazakhstan (Junussova and Muldagalieva, 2016). Legally, land should only be allocated according to the approved master plan and local governments are accountable for rational use of land and the provision of land for different uses (Government of Kazakhstan, 2003a, 2003b). However, in practice, land-use planning is separated from local government, because it is also under the responsibility of the land management department, which is one of the many branches of the National Center of Land Registry. This duplication of tasks by local government and representatives of the central government creates many difficulties for land-use management. Local authorities provide a land parcel for private purposes without referring to the land use suggested by the current master plan. To the same extent, planners, developing master plans, ignore the current land use, proposing new functions for privately owned land (Figure 4).

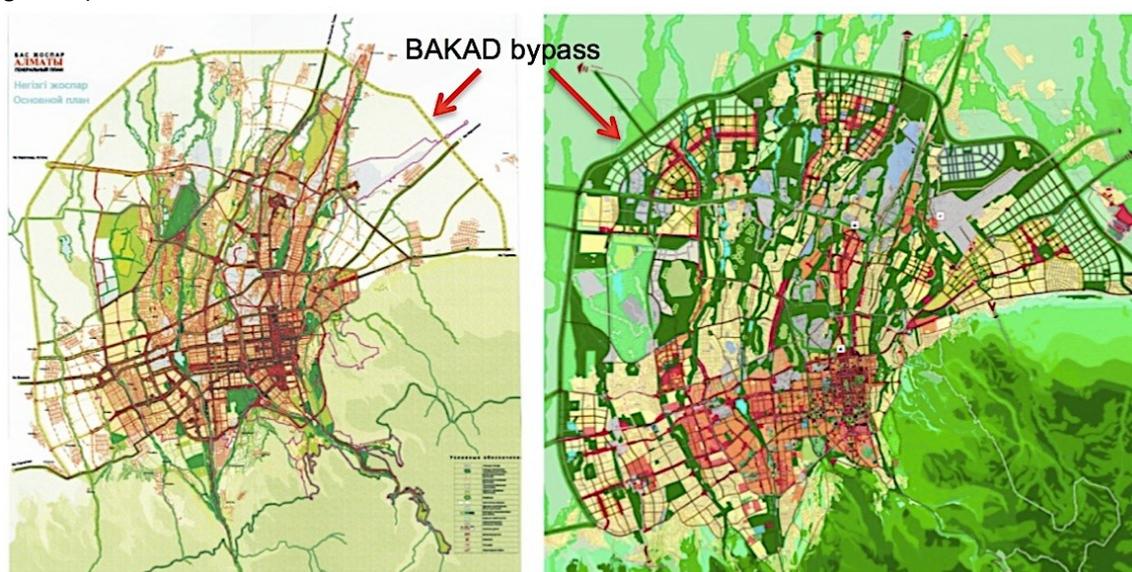


Figure 4: On the left - approved Master Plan of Almaty City Development 2020; on the right - the draft of the Master Plan of Almaty City Development 2050. Both projects propose demographic and territorial growth on land that no longer belongs to the state. Source: Almaty City Akimat, retrieved from www.almaty.gov.kz in May 2006 and May 2015.

Developed without access to information about the current land use structure, one of the main objectives of the city master plans is to insure the city's demographic growth based on optimistic demographic forecasts. The city government supports this positivistic planning although the master plan does not answer the question of how to supply all these new citizens with jobs (Coulibaly, 2012). The incentive for the city government is to attract more people because it helps them acquire additional fiscal transfers from the national government as the provision of public goods is tightly linked to the number of population (Makhmutova, 2006). A local budget position is assigned to develop a master plan, but no specially allocated financial resources are available for its implementation and the monitoring of local development. Master plan proposals are still tightly linked to the forecast number of people (Construction Norms and Standarts, 2008). Knowing the estimated number of people, the work of the urban planner is limited to the spatial distribution of these normative provisions through functional zoning of the city map and distribution of the communal infrastructure.

Such master plan proposals can be used by the city governments to calculate public expenses needed for the construction of public facilities such as schools, hospitals, roads and communal infrastructure. However, even the implementation of public infrastructure development plans is not always successful. Master planning, ignoring current land uses and scarcity of local resources, forces the city government to deal with constant costly and lengthy land acquisition procedures for the public projects.

Local investment for public infrastructure and development is centrally constrained by the existing budget system not allowing setting aside money for long-term projects or changing the assigned distribution of the local public expenditures. The budgeting procedures are lengthy and complicated (Government of Kazakhstan, 2008). By the time the Almaty city administration finally received the transfers of funds for the construction of the planned public facilities in the 'restricted for construction' on the pre-mountainous areas, land formerly reserved by the Master Plan for public use has been already purchased and is now owned by the private sector (Junussova, 2015). The big challenge is to develop engineering infrastructure and main transport roads. The construction of the planned Almaty city bypass named BAKAD (see Figure 4) took more than 10 years and the initial route was constantly adjusted due to failed negotiations to buy land from the private owners (MIDRK, December 9, 2014). In many cases, local governments cannot borrow money from external financial institutions or freely engage in the cooperation with private actors. Therefore, even some of the good development solutions proposed by private actors were not implemented due to lack of financial decision-making capacities at the local government level. A good example is the failed cooperation of the city government with owners of the large industrial sites of Almaty (Junussova, 2015). The privately owned heavy industries could be moved outside the city limits and investors were interested in developing new commercial and residential estates. Nevertheless, the city government could not financially support this private initiative and clean up the former brown fields for new types of functional uses. In the end, almost none of the industries moved outside of the city, they still occupy a considerable amount of valuable urban land and are contributing to the pollution of the city.

The lack of integrated city planning and development, supported by adequate control over land use, financial autonomy and strategic decision-making capacities, led to some permanent challenges of urban development in Almaty. The city is losing its traditional comfort and the competitive advantage of locating close to natural mountain ranges. The intensive development of multi-level residential estates blocked the visual access and the fresh airflow from the mountains thus accelerating the level of air pollution (Figure 5). As in some of other Asian countries, most of the new developments were built violating safety regulation: located close to the riverbeds, not protected from possible natural hazards, such as flooding and earthquakes (ESCAP, 2015). These new developments appeared ahead of the development of public transport and communal infrastructure, and public facilities such as schools and hospitals. This led to a decrease in overall city living standards in Almaty city (Akimat of the Almaty city, 2011). Citizens started to be interested in filling in sub-urban areas around the city. The uncontrolled construction of low-density individual housing appeared in most of the peripheral areas close to the city border. The development of peripheral trade complexes formed an illegal sprawl named "Barakholka". These large commercial areas turned into street markets located along the main transit roads, which hampered transportation systems in these areas and caused traffic congestion almost all day long. Recently, the city government started to close some of these commercial areas, but

they re-located in adjacent areas (Junussova, 2015). In their new locations, they appear to violate the existing master plan close to the main regional roads, blocking the main transit flow. Instead of proactive planning and investing in long-term economic sustainability, the city government is constantly spending money by reacting to the on-going challenges. The problem of traffic congestion resulted in massive construction of roads and multi-level junctions. The new commercial and social developments which appeared in the new city districts are supplied with schools and communal infrastructure. Instead of re-using the city and promoting compactness and density, the easier solution for the city government was to exercise power within its limited autonomy to change the city borders to obtain new land and resources for the development from the region.

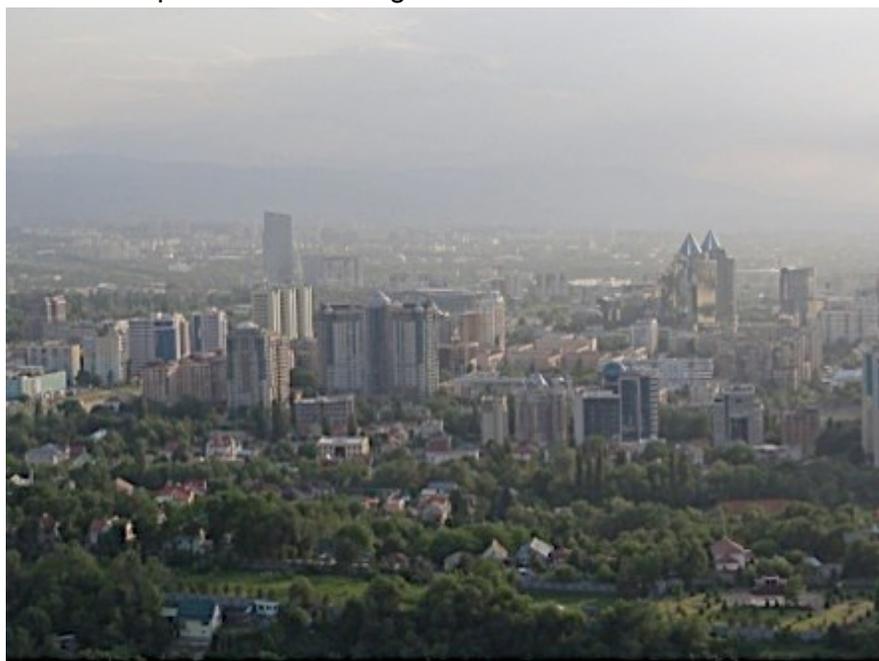


Figure 5: The view from Kok-Tobe Mountain to the multi-level residential estates blocking the fresh airflow from the mountains. Source: Photo by Junussova in Almaty city, June 2011.

Lacking financial autonomy, but having a special status (Government of Kazakhstan Decree # 258, 1998), the city government was left to execute its decision-making power to promote local economic development through constant request of the territorial expansion from the national government. The extension of the city borders became a kind of solution to ensure availability of new resources for further urban development, despite the Master Plan 2020 including the need to develop the city within its existing administrative limits. The first considerable expansion of Almaty's administrative borders took place in 1998 during the preparation of the first edition of the Master Plan 2020 (President of Kazakhstan, 1998). The total area of the new territories amounted to 4,700 hectares taken from the Almaty region. With these additional territories the city incorporated not only enterprises, but also 28 Almaty region villages. A mixture of legal and illegal housing appeared on these new city territories within a few years (1998-2005) (Junussova, 2015). By the time the local government finally started thinking about clearing these territories of illegal occupants, there were already hundreds of houses and local communities of 'city-villagers.' Despite official enforcement of the *Master Plan of Almaty 2020* in 2002, two years later in 2004, real-time development forced the municipal government to integrate considerable changes in the master plan. In 2012, city limits were expanded even further. Now, the city's territorial growth was justified

based on the updated version of the *Master Plan of Almaty 2020*. Little attention was still paid to the fact the city government's decision is conflicting with the Almaty region's master plan of sub-urban areas approved in 2010.

4. Master planning of suburban areas located in the Almaty region

There is no established culture of national and regional planning in Kazakhstan. Most of the physical planning activities are limited to the production of master plans of cities, whereas the regional governments have not yet been supplied with finances to initiate regional plans of physical development. Nevertheless, the territorial pressure of the city forced the Almaty regional government to initiate the development of the Master Plan of the Suburban Area of Almaty City Development until 2040 (Government of Kazakhstan, 2010). Almaty regional government and the Government of the Republic of Kazakhstan approved the master plan of suburban area in 2010. The master plan of suburban area had to establish special planning regulations covering: main functional zones, protected natural reserves and special environmentally sensitive areas, the development of a transportation system, safety and emergency management within the city neighbourhood. However, despite its official approval, the master plan of suburban area could not serve as the local level tool for the regulation of Almaty city's growth. The master plan of suburban area failed to preserve existing administrative limits of the city and of the region. The reason was the same as in the case of Almaty city. There were no institutional conditions and legal mechanisms to allow the regional government to use the master plan of suburban area as a regulatory tool to constrain land use in the sub-urban areas. The dispositions of individual plots were determined without proper attention to the master plan proposals, nor how new development impacts on the long-term economic development of Almaty city and the Almaty region. The lack of vacant and affordable land in Almaty city forced private actors to be interested in developing new sites in sub-urban areas, which leads to continuous urban sprawl.

According to the master plan's objectives, the suburban area had to serve as a buffer zone for mutually beneficial use of local resources by the city and the region. Nevertheless, it could not be institutionally implemented. Only 2 years after the approval of the master plan of suburban area in 2012, the city limits were expanded again at the cost of land in the Almaty regional (Figure 6). The total area of new municipal territories was equal to 11,900 hectares taken from the Almaty regional jurisdictions (President of Kazakhstan, 2012). The city government's reason for growth was the need to improve urban and industrial infrastructure to expand entry routes to the city, and to develop mountain recreation and sport facilities for the national level project of Universiade 2017. At the same time the regional government's concern to protect mountain areas from development was ignored. The inclusion in the city territory of the National Ile-Alatau Nature Park belonging to the Almaty region was not fully supported even by the city community. The local environmental NGOs, based in Almaty city, raised awareness about the construction of the new sport complex on the territory of the national park (NGO Green Salvation, 2014). In their opinion, the inclusion of the park in the city means that its land is no longer secured from being used for further city development. There is a certain public awareness of the city governments' decisions to ignore not only regional plans but also not to properly communicate with the local community. The post-factum involvement of the community during the official public disclosure of the master plan or other development projects is not having a proper impact on the top-down development decisions.

Formally, the city government is responsible for initiating public consultation and public disclosure of information about new development plans (Government of Kazakhstan, 2001). The recent expansion of the city border in 2014 included some preliminary public consultations with the local dwellers of the added regional areas (President of Kazakhstan, 2014). However, given the shortage of time and financial resources, the city governments could not cover all local communities. In 2014, the city received 23,200 hectares of Almaty region land with 27 settlements and a population of more than 92,000 people, see Figure 6. It is hard to imagine how all these people could be properly consulted. Due to the absence of public negotiations ahead of taking decisions, city dweller status was not granted to new residents, mainly because it ensued considerable costs that not all former rural farmers could afford. All of them had to undergo a complex procedure of re-registration of their properties and land plots. Some of them even were issued with fees related to the poor conditions of their constructions, as they did not comply with the city development regulations. The procedure of getting the city dweller status in Almaty was carried out without adequate compensation and limited time was allocated to the transition. Not surprisingly, during the last public reporting period of the Almaty city administration in 2016, the main issue of discussion was the adaptation of the former rural dwellers to new urban conditions (Akimat of the Almaty city, 2015). In fact, having Almaty city dweller status came as a surprise for most of the rural dwellers. This is a signal that through their proactive measures the local governments started to lose their competence in front of the general public. At the same time, it is worth to mention that the city government's actions are partly driven by the national will to promote the growth Almaty city.

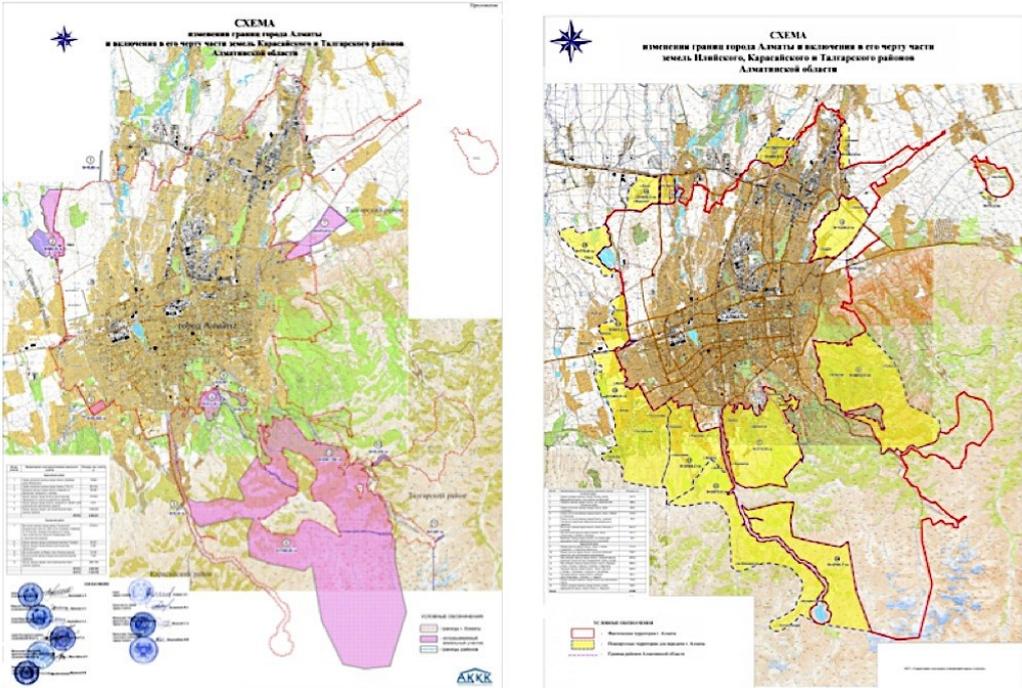


Figure 6: The left-side map shows territories added to the city in 2012 in pink; the right-side map shows territories added in 2014 (in yellow). Source: Official web-site of Almaty city akimat: <http://almaty.gov.kz/>, retrieved in March, 2015

The last extension of the borders of Almaty city' in 2014 was implemented based on the Presidential Decree because new territories were claimed from the region due to national safety concerns. It was suggested that the city government is better able to cope with local extremist groups, which had started to move into villages located near the largest city of

Kazakhstan. There was a lack of attention to the economic outcomes of the decision to the financial sustainability of Almaty city which has thus become dependent of the national transfers (Akimat of the Almaty city, 2016). This meant that the city government had to deal with pressures from the new dwellers who were demanding to be served as legitimate city dwellers. In 2014, the city received additional national transfers equal to 3.3 billion KZT to develop engineering and social infrastructures in the new territories. However, that transfer did not cover the full modernization of the city's infrastructure or the provision of services to the outer parts of the city. Most of the newly added settlements are located at a considerable distance from energy sources and this increased the cost of construction to link former regional settlements to the city. The extension of the city borders has not yet brought any economic value to local development. At the same time, it created additional daily routines and expenses for the city government, due to the necessity of building public facilities (hospitals and schools) for new residents and supplying them with city communal services (electricity and fresh water). Moreover, the taking the responsibility to guarantee security from the regional governments and putting it on the shoulders of the city government cannot be a sustainable solution in a long run. The presence of insecure rural neighbourhoods will continue to be a danger if there is no investment into building up planning and development control capacities of local governments responsible for the management of rural districts closely located to the city.

5. Perspective of urban agglomeration

Master planning has not yet brought any local economic benefits to residents, leaving the city government with new challenges and the regional government without valuable agricultural land and capacities to create safe environments around the city. At the same time, the national government still assumes that the new Interregional Master Plan of Almaty Agglomeration 2050 can help protect Almaty city from territorial growth by means of restricting land use and development of new urban centers in the Almaty region (Government of Kazakhstan, 2015). At the same time, the national government accepts the Almaty city development as a priority, whereas the Almaty region is left with the role of supplier of local resources required for development. A good example is the national plans to develop the food belt of Almaty (Akimat of the Almaty city, 2011). According to this plan, the food belt of Almaty city includes areas of the Almaty region within a radius of 300 km from Almaty city borders. The city development programme includes investment projects such as greenhouses, food storage, and facilities for the collection of milk and meat, as well as the modernization of main food processing enterprises located in the city. One of the largest agricultural producer of the country, Almaty region has been given the role of "safety belt", saving the city not only from food shortages but also from all growth related problems (Junussova, 2015). It is clear that the new master plan of the urban agglomeration cannot protect Almaty city from territorial expansion on valuable agriculturally land. The question is how well the Almaty region will continue to supply the city with food in along run if it constantly loses valuable agricultural land located around the city.

The Interregional Master Plan of Almaty Agglomeration 2050 does not stop at the objective of linking the city to regional urban centers of agricultural excellence, but it also advocates to develop main supply chains such as transport and logistic links (Figure 7). It is suggested to develop high-speed regional public transport links. However, there is no provision of how this new type of inter-regional public transport system will be managed, given that the public

transport services are one of the most privatized local development sectors in Kazakhstan. None of the master plans' decisions can direct the development of public transport, simply because there are no municipal transport systems available to serve regional transport links. The management of the inter-regional public transport system requires high level cooperation between city and regional governments (OECD, 2014). However, it may be difficult to achieve because there are no real incentives for inter-governmental dialogue in Kazakhstan. The current public administration system does not allow inter-governmental or any other horizontal interactions. The budget system does not support any budget exchange between local governments belonging to the same tier of the sub-national government.

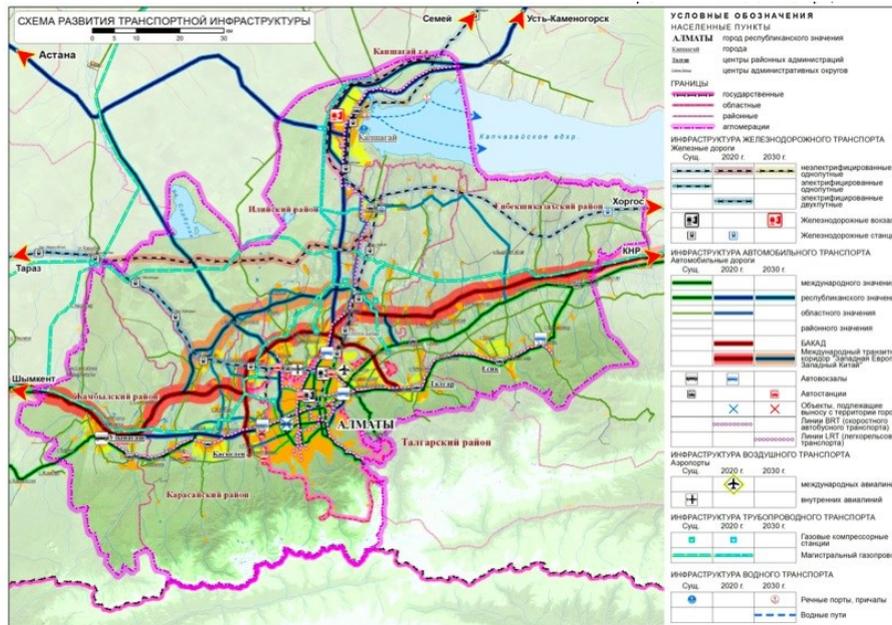


Figure 7: Interregional Master Plan of Almaty Agglomeration 2050: Scheme of Transport Infrastructure Development. Source: Ministry of National Economy of Republic of Kazakhstan, retrieved from www.economy.gov.kz in May 2016

6. Conclusion

The national government of Kazakhstan promotes further urbanization of the country by actively promoting the growth of the largest cities such as Almaty. Administrative decentralization supplied both Almaty city and Almaty region with autonomy to plan, but did not provide them with the institutional conditions to implement local level planning. Master plans do not provide local governments with any real power to control urban development. Implementation of master plans is difficult because they are still too distant from current land use practice, budgeting and development needs of the local communities. These planning documents are currently developed without proper involvement of the affected bodies. At the same time, private actors are carrying out crucial transformations of city neighbourhoods turning them into areas of growing social, environmental and economic conflict.

The current public administrative structure does not permit city governments to engage in intergovernmental cooperation in dealing with urban agglomeration challenges. The link between city and regional planning is weak. No institutional conditions exist (or are even conceived) for cooperation between local governments. The current planning capacities of city and regional governments are not adequate for fair participation in the co-creation of new urban agglomerations. The national government has been decentralizing physical planning and attempting to concentrate economic resources in urban agglomerations. However, in the

absence of equally strong city and regional governments able to plan and control urban development, these reforms may only accelerate the existing regional inequalities and conflict of interests between public and private sectors. Possibly the planned economic growth of the country by 2050 will benefit only cities at the cost of their neighbouring regions.

There is a need to enhance institutional capacities for urban planning and development in Kazakhstan at all levels of government. The administrative decentralization has to be a part of the overall fiscal and political decentralization strategy supported by the enhancement of legislation to supply the local government with workable, strategic planning tools and capacities. The country needs a decentralization strategy that does not only provide the city government with opportunities and incentives to cooperate with local community and private actors, but also to build local professional capacities and skills. The planning capacities of both city and regional governments have to be improved before their engagement in the co-management and co-development of urban agglomerations.

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The Adaptation of Former Gated Communities in Urban Sprawl of Bangkok Metropolitan Area, Thailand

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Abstract/Short abstract *The growth of gated communities has been increasing, especially in vicinity area of Bangkok in Thailand. Its situation seems to be urban sprawl development (Klinmalai and Kanki, 2013). It results in an insufficiency of infrastructure and a recklessness of urban planning in vicinity area of Bangkok city. These gaps open to private developers accelerate the gated community's development in order to response high demand of housing market. The significant characteristic of these gated communities is complete enclosure of high concrete wall with only entrance in every project for security and prestige. That impacts not only social relationship of residents who live inside and local communities, but also obstructed on the existing road network surround (Klinmalai, 2014). In terms of urbanism, this kind of residential development presents as a recent unsustainable trend of security-oriented and social equity (Le Goix and Callen, 2008). One of these effects is about physical factors as similar as other countries in Southeast Asia (Leisch, 2002). In Thailand, the gated communities have developed for 50 years (since 1967), then their physical of development and usages have changed such as locations, scale of project, style, and layout of project. Therefore, the prior gated communities might be adapted in physical way according by lifestyle of residents. That reflects how to gated communities transform into the urban fabric and residents' life. This paper investigates what physical elements of former gated communities have adapted and then categorize the format of transformation in urban sprawl of Bangkok and vicinity area. The study is conducted by physical observation on prior gated communities in study areas and reviewed literature about gated community's development. The findings are analyzed and concluded into categories of adaptation and revealed the relevant factors of changing of previous gated communities. The prospected outcomes are about a recommendation to developers recognizing the physical elements factors that impact on urban development and inhabitants' life. It also contributes to be a guideline for architects and urban planners, involving residential development to design a new modern residential settlement in the future.*

1. Introduction

Over 50 years ago, residential development has been increasing to response the massive population growth and migration in Bangkok Metropolitan Area. This city is one of mega-city that have rapidly developed and needed well-direction of urban development. This causes of urban sprawl development and leads to negative consequences to city and quality of life. Nowsadays, the city are mainly occupied by low-rise residential area with weak housing regulation and urban planning. The modern living style that private developers have proposed to buyers is gated community since 1970. When inhabitants' life and context have changed, the physical adaptation in gated community could be occurred. Therefore, this paper aims to study the adaptation of former gated communities to understand the changes of one type of human settlement in Bangkok Metropolitan Area.

2. Influencers of former gated community development in Bangkok

According to understand former housing estate development in Bangkok, the secondary sources of previous researches and theories are reviewed. The relevant issues are about history of housing estate, urban development, and gated communities. These can be verified as follow;

2.1 Urban sprawl development in Bangkok

According to timeline of housing development is shown in Figure 1, that reveals non-updated housing regulations influencing on housing growth. It is illustrated urbanization area of Bangkok Metropolitan Region since 1957 that has been influenced by socio-economic situation, while policies for housing development have been applied inertly. During 1987-1996, the 6th and 7th National Economic and Social Development Plan were announced that included development plan in Bangkok Metropolitan Area and vicinity areas. These encouraged out of control developed areas across Bangkok and vicinity areas, especially from 1995 to 2005. This phenomena is known as 'urban sprawl development' that emerged in other mega-city as well.

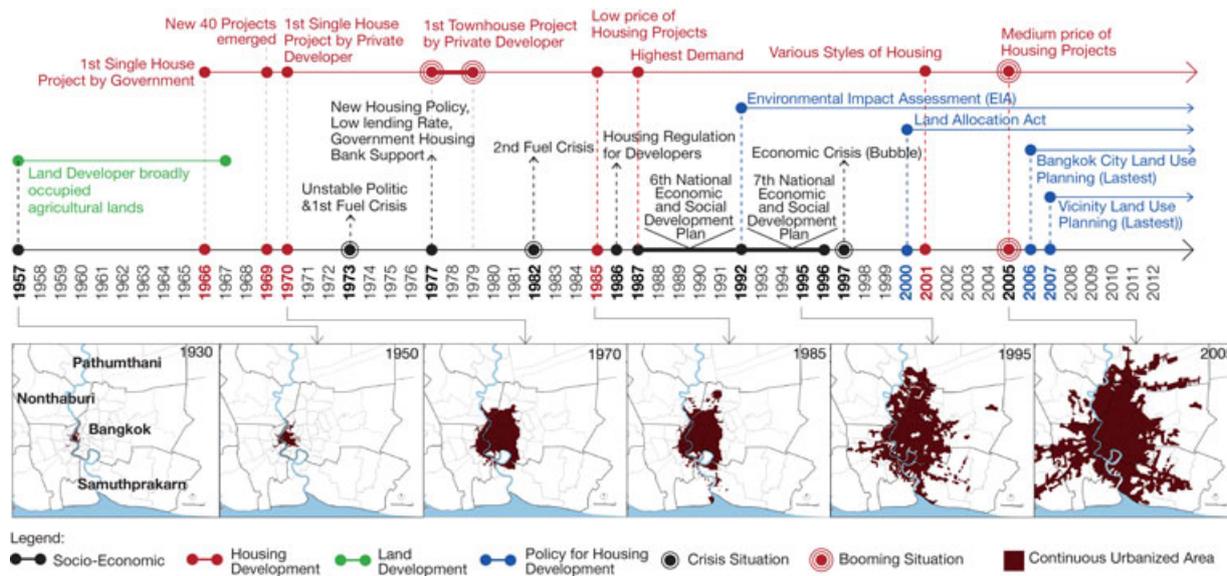


Figure 1: Housing estate situation and urbanization area of Bangkok Metropolitan Region
Source: Klinmalai, 2014

General urban sprawl study (Overman, 2005) found common causes of sprawl development are involved with; the explosive population growth, uncontrolled development of expansion of squatters' settlements, and highly using road network. However, the sprawl growth in Asian cities also should be considered differently, cases of urban sprawl in Bangkok city (Klinmalai, 2014) are concluded as follow;

- Low density: creating further distance between residential and commercial land use, bring about increasing of private automotive vehicles
- Discontinuous development: motivating decentralization of urban development
- Land use: lacking of diversity that physical separation of land use
- Chronology of urbanized area expansion: speedy diffusion of built-up areas to peripheral BMR without well-preparation
- Huge migration: leading to higher housing demand and polarization between former citizen and newcomers

- Weak urban and land use planning: resulting in haphazard residential development by private developers
- Non-effective road network: encouraging ribbon development and poor accessibility of residential settlement
- Low density of residential unit diffusion: encroachment of housing development on agricultural area

The significant features of sprawl in BMR seem to be low density of residential development, which diffuse on suburban area, remarkable in Figure 2. Bangkok comprehensive plan in 2006 affirmed that the largest occupied area in Bangkok Metropolitan Region is low-density of residential area (Figure 2). The scope of low-rise residential development in urban planning of Bangkok is limited for detached houses, semi-detached houses, townhouses, and shophouses development. In housing market (The Thai Real Estate Association, 2015), the major segment is housing projects which are developed by private developers (30,828 units (55.5% of low rise housing market) in 2014). These developers have proposed modern living for home buyer with better quality of living environment and prestige style of living that is known as 'gated community'. Its characteristics will be explained in next section.

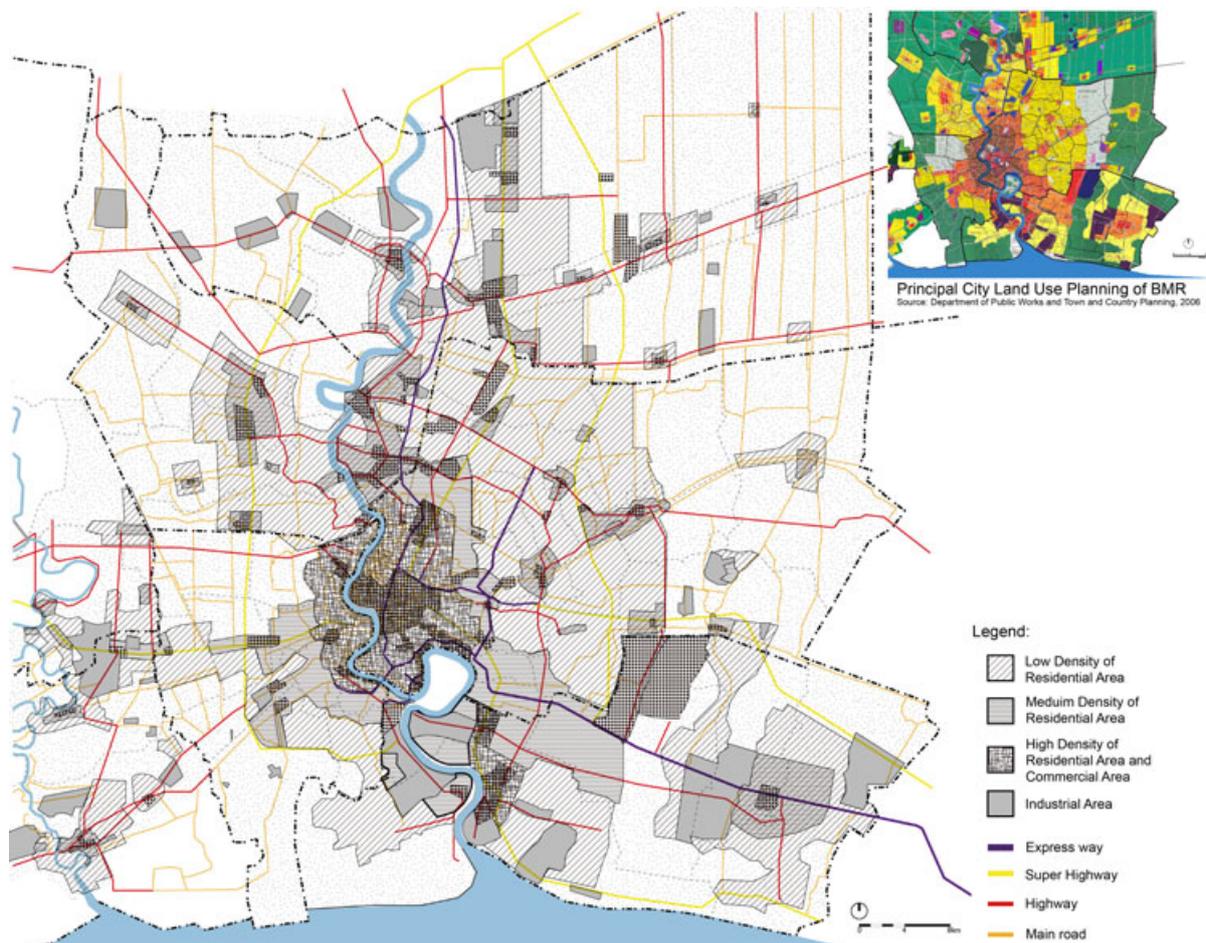


Figure 2: Housing estate situation and urbanization area of Bangkok Metropolitan Region
Source: Klinmalai, 2014

2.2 Gated Community in Bangkok Metropolitan Area

The typical compositions of gated community in Bangkok Metropolitan Area are 1) Houses, 2) A gate with security guards, 3) Concrete fences enclosing project site, 4) Common facilities such as park, playground, club house, and 5) Basic infrastructure such as water

supply, common road, and wastewater treatment. Only the gate with security guard and the concrete fence of project site are not determined by housing regulation in government gazette (Department of Lands, 2007). Figure 3 presents position of typical elements inside a gated community project.

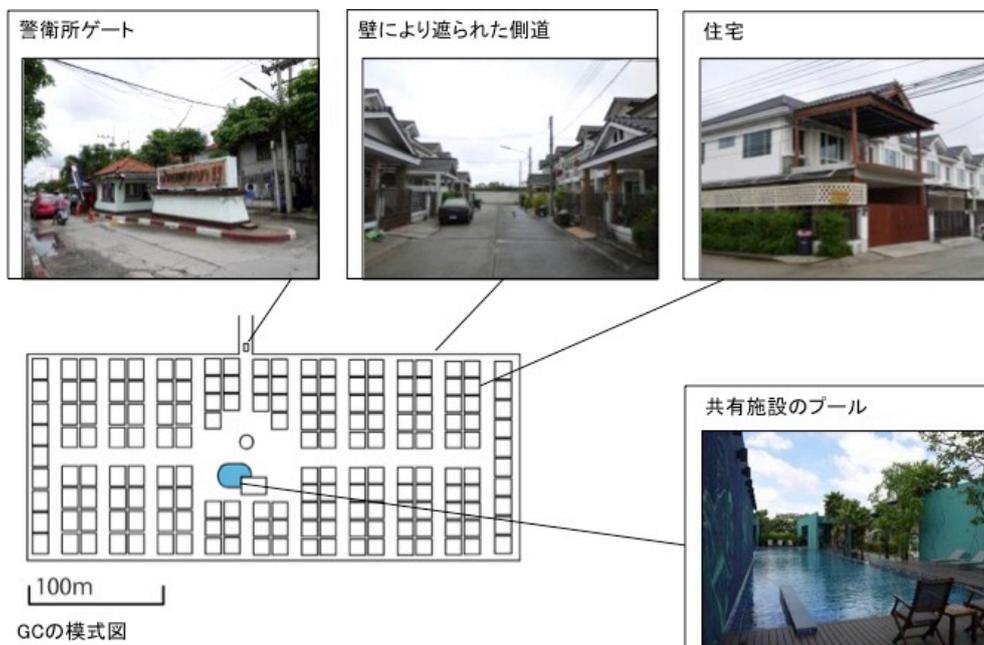


Figure 3: Typical elements of gated housing projects in Bangkok Metropolitan Area (Source: Tanaka, Klinmalai, and Kanki, 2012)

2.3 Period of gated community development

Reviews of chronology of housing development in Bangkok Metropolitan Area are studied in many approaches (Saksrimaneekul, 2007). However, there are mentioned in general and overall situation including all types of residential development, this study focuses on low-rise gated community development through relevant factors of development.

2.3.1 Period I (1951-1956) : Land development

Private sector was a main player in land development market since 1951. The landlords have started to trade empty lands in suburban area of Bangkok. After land price was higher, the land owners divided lands into smaller plots to generate more incomes. Consequencely, buyers faced crisis economy that could not construct their houses on these plots. This became a business opportunity for developers to make a pack of plots and houses for sell. It can generate more margins per sqaure meters returning to developers. Then housing estate development has begun.

2.3.2 Period II (1957-1966) : Land allocation

This period, Thailand was in the industrial development era that applied the first National Economic and Social Development Plan. This made rapid population growth and high demand of residence. Private developers have traded land plots with standard infrastructure such as electronic system, water supply, and street inside the projects. Meanwhile, financial support from government and institutions were awareness to support this rapid development.

2.3.3 *Period III (1967-1986) : The beginning of housing estate development*

The beginning of housing estate in Bangkok has started in the North and the North-east of Bangkok by public sector in 1967. It was emerged because public sector was aware of inadequate situation of housing by rapid population growth. In 1970, private sector has started to develop the first 40 housing projects by financial support from government. This stage typified of modern housing development in Bangkok. There was only an act of land allocation was established to reduce confliction among land owners. During the flat economic situation (1973-1975), a townhouse projects was developed under an act of comprehensive urban plan (1975) to control density of residential area.

The booming period of low-rise residential development was during 1976-1979 after the first economic crisis through encouraging of government sector. The low-rise housing projects were expanded to northern part of Bangkok rapidly. In next stage, the higher of cost of residential construction made private developers figured out solutions such as reducing scale of housing project, phasing of development, and modeling a residential unit to promote the total sales. Moreover, the first vertical living project (condominium) was developed because this kind of development could make higher margin on limited land. After the second crisis, architectural style of housing projects was changed in to classical architecture to represent a luxury image of buyer.

2.3.4 *Period IV (1987-1996) : The booming of economy before crisis*

The massive encouragement of government sector on social – economic development was the launching of the 6th – 7th National Economic and Social Development Plan (1987-1996). Both plans aimed to spread urbanization areas to vicinity area of Bangkok by extremely providing infrastructure. This situation led to to higher competition in housing market that architectural style of residential projects were turned to modern style. At the same period, an environmental regulation for real estate, Environmental Impact Assessment (EIA), was applied to evaluate a large scale of residential or commercial projects (over 500 plots or total area is over 16 hectares) that needed to approve EIA before construction.

In 1997, the terrible economic crisis influenced on purchasing power and decision making of home buyers. After the crisis, mass transit transportation (skytrain and subway) has constructed and improved rapidly. This infrastructure development has promoted housing growth that become high competitive situation. Since 2000, act of land allocation has determined setting up of a juristic committee in high-rise and low-rise gated communities to manage common facilities inside projects.

Table 1: Housing estate development

Year	Social and Economic Situation	Housing Situation	Regulation (Residential/ Urban development)
1966	Government sector realized inadequate situation of housing in Bangkok because of rapid population growth.	The beginning of Housing Estate, the first project was constructed by government sector in the North and North-east of Bangkok.	No regulation
1970	Private sector supported and cooperated with government sector to provide housing for people.	There were over 40 housing projects occurred with financial support.	No regulation
1972	Government launched regulation of land allocation to reduce confliction between land owners	Developers reduced production of house	Land allocation act (1972)
1973 - 1975	1st Flat Economic because of Fuel price crisis and uncertain political situation in Thailand	Developers reduced production of house 1975: The first "Townhouse project" was developed	Land allocation act (1972), Comprehensive Urban Plan (1975)

1976	Business tendency was better that led to an increase of real estate development.	Private developers were assured in housing market	
1977	There was certain housing policy by government sector, rate of interest was lowered, and government housing bank support finance for private sector and the housing market competitors were increased.	Competitive situation in housing market; Developers provided better housing quality and management; Providing low-income houses	Land allocation act (1972), Comprehensive Urban Plan (1975)
1979	Government housing bank supported financial loan for customers	Growth of housing estate increased 35%; housing projects expanded to northern of Bangkok	
1980 - 1981	2nd Flat Economic because of construction material price and wage was getting higher, and international interest was getting higher as well.	1. Main housing developers divided phases of construction into small projects; made a model of house before sell 2. The first "condominium project" was developed in 1981	
1982 - 1986	Recovered economic period because of liquidity of financial institution. Decreasing of interest, lower fuel price and electrical cost.	Architectural style of housing was changed from unspecific style to luxury, and western style such as classical architecture.	
1987	After economic recovery, purchasing power of homebuyers got stronger.	Housing units were adequate for demand of population.	
1992	The seventh National Economic and Social Development Plan was launched	Tendency of housing demand focused on location, quality, and infrastructure for living. This led to higher competition in housing market. Designers concentrated with layout design and modern style.	Environmental Impact assessment (EIA)
1994	Although, overall economic was improved, there were 9 million people who were not able to buy their own houses.		
1997	Terrible economic crisis; bubble economy	The entrepreneurs lost their margin. Buyers had low purchasing power and slower decision making.	
2001 - 2002	Economic was improved The first Skytrain line was opened	This was the highest competition in market that brought various alternatives of housing type for consumers.	Every housing project has to set a juristic committee (Act of land allocation, 2000)
2004	Real Estate market was over supplied The first subway line was opened	The growth of housing development was obstructed.	
2005	Housing stock slightly decreased. Cost of construction material was increased.	Tendency of low-rise housing was peaked again because of higher interest but housing price still was more expensive.	
2006	Improvement of law and regulation for housing development		Bangkok city land use planning was updated

Source: Klinmalai, 2014

2.3.5 Period V (1997-2003) : Recovery of economy

After crisis economic in previous period, government invested in constructing the mass transportation system in city center; skytrain and subway lines. This significantly encouraged private investors and public future projects that could recover economic in overall. In 1999, the first skytrain line was opened which influenced on housing estate development and higher land price. Policy and regulation that related to housing development also were brushed up. For example, act of land allocation (2000) determined providing of common areas and standard infrastructure inside the housing projects. Furthermore, a juristic committee has to be set up to manage and maintain those common areas and common infrastructure within every housing projects. In the next year, a principle propotion of green area in housing project was specified at least 5% of whole are of project.

2.3.6 Period VI (2004-2011) : Improving housing regulations

The former regulations that relevant housing development become obsolete. Therefore, Bangkok comprehensive urban plan that used to apply since 1999 was updated. The improvement of planning that related with housing development was about size of plots for

detached housing project. The minimum plot size was 400 square meters to develop a detached house. This condition has impacted on density of urban fabric in Bangkok.

2.3.7 Period VII (2012-present) : Improving quality of living

In 2012, Environmental Impact Assessment (EIA) has added a condition of scale of housing project that need approval from EIA. In case of a housing project has over 500 plots, it need to be approved EIA before asking permission construction. Bangkok comprehensive urban plan that was applied in previous period has been updated again in 2013. The minimum size of land plots for a detached house becomes 200 square meters in some residential area. This improvement influences on density of housing units and quality of living environment within housing project development.

Therefore, chronology of housing estate development presented the social and economic factors that impacts on situation of housing development in terms of housing market, scale-down of development, architectural style of housing unit. While relevant regulation of housing development has been developed steadily, it is difficult to control growth of housing development.

3. Scope of study and methodology

3.1 Scope of study

This paper scopes on understanding an adaptation of low-rise gated communities in terms of physical elements following the timeline of housing development. These physical elements in this paper focuses on three levels of study; (1) location of gated communities, (2) size of gated community's project, and (3) common areas inside the project. The results of study are conducted through timeline of housing development, mapping on urbanization area of Bangkok Metropolitan Area.

3.2 Research methodology

In order to understand adaptation of gated communities, chronological study of gated communities necessary at the beginning of study. Secondly, gated communities were divided by segmentation of pricing and mapped via location in Bangkok Metropolitan Area. This step could reflects relevant factors that influenced on location of gated communities. Thirdly, scale of gated community's projects could be analyzed through aggregation of number of units and projects in chronology. Then, selected gated community's projects were observed their physical elements. Finally, factors of changes in gated communities were analyzed and concluded in the final section.

4. The adaptation of former Gated Communities

4.1 Location

Since 1970, most of gated communities have been developed by private developers as shown in Table 1. They have approached to many segments of housing buyers. In Figure 4, locations of gated community's project were mapped and divided by level of housing price (only new construction of project). The price of dwelling unit inside gated communities could illustrate situation of housing development; demand – supply of housing market, socio-economic situation, and movement of gated communities' diffusion. This paper separated dwelling unit price into 6 levels (GHB, 2012); under 1 million baths, 1-2 million baths, 2-3 million baths, 3-5 million baths, 5-10 million baths, and over 10 million baths.

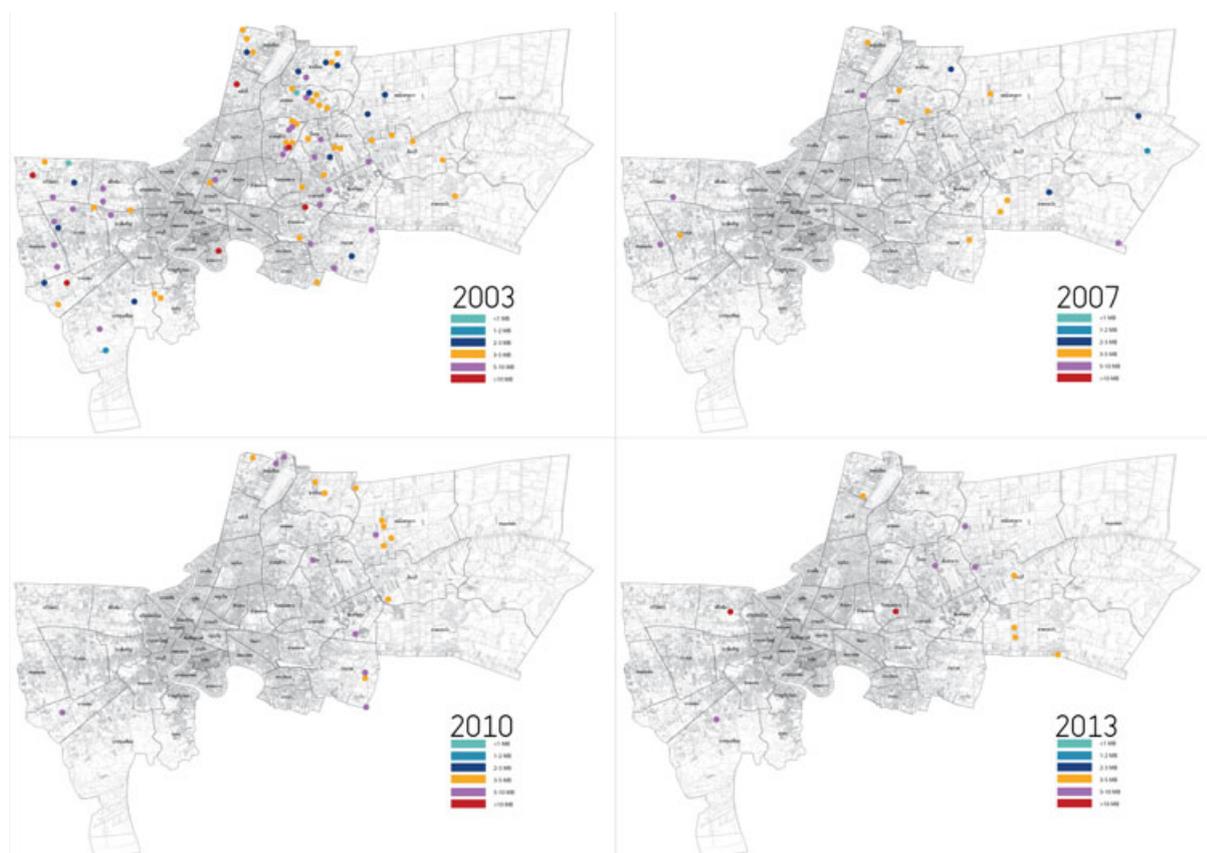


Figure 4: Location of gated communities by pricing

In 2003 (period VI), many new gated community projects were developed in segment 3-5 million baht that located in eastern and western area of Bangkok. These locations conform to low density of residential zone in Bangkok comprehensive urban plan. It reflects high supply of housing development before decreasing number of projects in eastern and western residential area. According to report of Real Estate Information Center (REIC, 2015), revealed that popular location of low-rise housing project become vicinity areas of Bangkok (Nonthaburi province). Since 2004, skytrain and subway lines as have been developed which impulse land price and high-rise residential projects in Bangkok city. This is a major reason to encourage developers built low-rise housing projects further from the city in later years. However, gated communities in middle to high segmentation have been developing in the similar location (Eastern side of Bangkok).

4.2 Project's scale and density

National Housing Authority (NHA) have gathered data of number of low-rise gated communities in three types of dwelling unit (detached house, semi-detached house, townhouse). These data were analyzed to understand and compare scale of gated communities via different period of housing development, as shown in Table 3. Overall units/year in each period presents decreasing tendency of low-rise gated community development because of slowing down economic growth. On the other hand, overall number of units/project is increasing that illustrates scale of gated communities become larger and higher density in a project. By type of dwelling unit, number of detached housing units per year has been decreasing while density in project is increasing. This tendency is opposite of townhouse development project, namely, both units/year and density in project is increasing.

Different period of development exposes different situation of gated community growth, according by socio-economic factors as shown in section 4.1. Period VI (1997-2004) is recovering time of housing development after bubble crisis economy. There were many regulations had been updated and edited. Moreover, the first line of skytrain and subway was opened in 1999 and 2003 respectively that impacted on real estate development directly. This is a supported reason why aggregation number of gated communities in this period reached highest.

Table 3: Aggregation number of gated communities (permission of construction)

Type	Number	Period VI (1997-2003)		Period VII (2004-2011)				Period VIII (2012 – present)		
		2002	2003	2004	2006	2007	2010	2012	2013	2014
Detached House	Total units	2,143	4,608	3,965	1,523	1,223	1,632	1,517	1,217	1,606
	Total projects	29	82	51	22	17	18	12	11	10
	Units/projects	73.90	56.20	77.75	69.23	71.94	90.67	126.42	110.64	160.60
	Avr (units/project)	65.05		77.40				132.55		
	Avr (units/year)	3,375.50		2,085.75				1,446.67		
Semi-Detached House	Total units	0	47	295	116	175	299	0	110	0
	Total projects	0	4	2	4	3	2	0	2	0
	Units/projects	0	11.75	147.50	29.00	58.33	149.50	0	55.00	0
	Avr (units/project)	11.75		96.08				55.00		
	Avr (units/year)	47		221.25				110.00		
Townhouse	Total units	1,237	2,614	1,229	865	1,269	1,277	1,781	4,167	1,876
	Total projects	19	33	14	12	13	20	16	29	12
	Units/projects	65.11	79.21	87.79	72.08	97.62	63.85	111.31	143.69	156.33
	Avr (units/project)	72.16		80.33				137.11		
	Avr (units/year)	1,925.50		2,085.75				2,608.00		
Overall (units/project)		148.95		253.81				324.66		
Overall (units/year)		5,312.75		4,392.75				4,164.67		

4.3 Physical adaptation inside the project

In scale of physical elements inside a gated community, the study selected a townhouse development project that was constructed around 10 years ago (Period VI). There are townhouse units around 3,000 units. The adaptation of physical elements have been founds three points;

- (1) Adding a secondary access at the back of project (Figure 5(a)) because inhabitants need to release traffic inside the project.
- (2) Adapting dwelling units at front zone of project into commercial units or shops (Figure(c) and (d)).
- (3) Controlling time to access the commercial zone although this area opens for anyone including people outside the project. This presents attempt of inhabitants to connect surrounding context.

In detached house development project, a form of adaptation is different from townhouse project. This selected project is constructed in the same period of townhouse case. As a casual interview with some inhabitants during observation, the study found that project's swimming pool (Figure (a)) has been temporary opened for visitors by charge (50 THB/time). Inside inhabitants may lost their privacy to use common facility and difficult to keep security. Secondly, we found physical adaptation of detached house units, namely, some units were added a garage and extended living space at the second floor (Figure 6(c)).

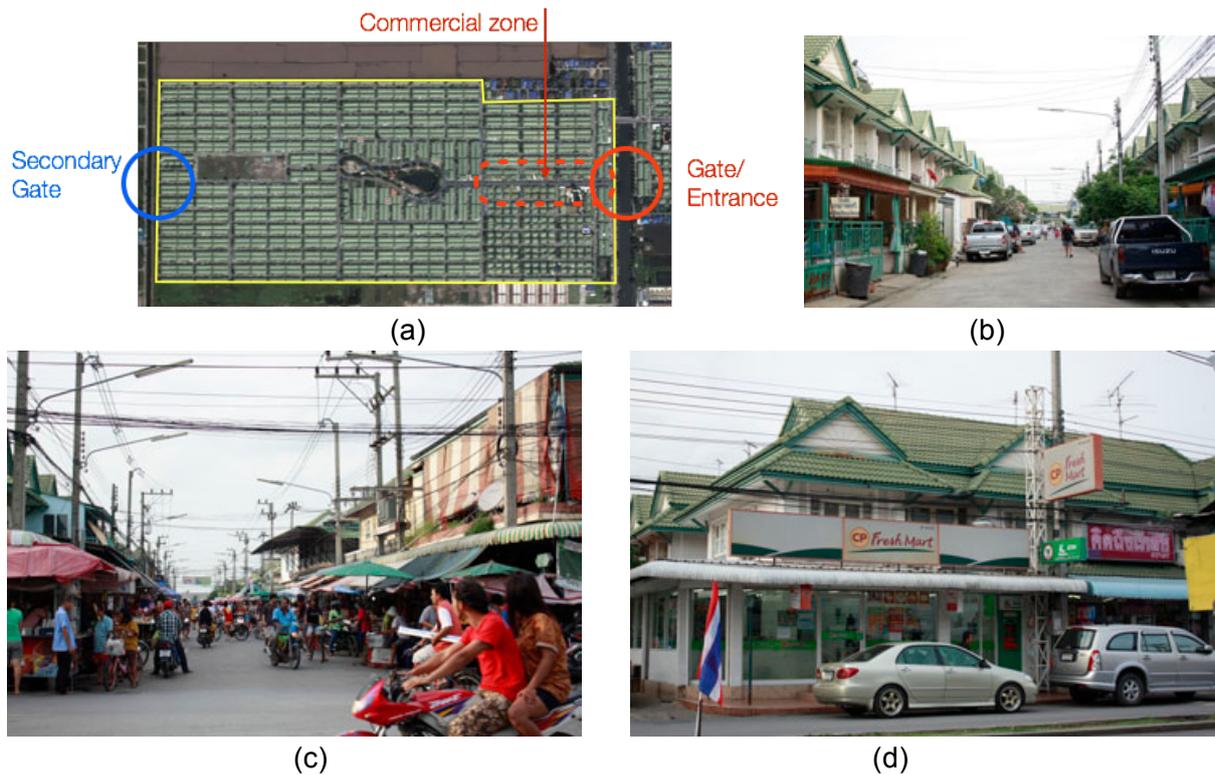


Figure 5: Physical observation in gated communities (Townhouse project)
 (a) Layout of townhouse development project (b) original style of dwelling unit
 (c) Atmosphere in the commercial zone (d) a sample of adaptation of townhouse unit



Figure 6: Physical observation in gated communities (Detached house project)
 (a) Layout of detached house development project (b) original style of dwelling unit
 (c) A sample of adaptation of detached house unit

5. Conclusion

Physical adaptation in gated communities could emerged according by changes of lifestyle and socio-economic context. Location of gated communities is shaped by drivers of future

urban planning and infrastructure development from public sector. Tendency of location has been expanding out of the city because of higher cost of land price and density controlling from regulation. Meanwhile, physical adaptation inside gated communities has changed by agreement of inhabitants such as dwelling unit, zoning, including management system. Summary, gated communities become a typical modern living in Bangkok Metropolitan Area. They have related with urban sprawl development that may lead to negative consequences in term of social and environmental feedbacks. It is necessary to delicately develop plan in order to improve a better living for inhabitants.

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Spatial Evolution of Rural Settlements in Urban-rural fringe of Shanghai Metropolitan Area

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The research is under the support of the project "Spatial organization mode and motivation of rural settlements in urban-rural fringe of Yangtze river delta metropolitan area during transformation period"(No. 41171148) from Natural Science Foundation of China

ABSTRACT

Urban fringe as a transitional zone connecting urban and rural areas, plays a significant role in urbanization process due to the its unique geographical and economic status. The rural settlements in this area are severely influenced by the impact of large city around; therefore they have totally different space evolution paths compared with other rural settlements.

To discover the feature of rural settlements evolution in urban-rural fringe during this process, Shanghai is taken as a case to do the empirical research. The rural settlements in Shanghai urban fringe transformed greatly in the past 30 years under the influence of urbanization, presenting characteristics such as heterogenization, gathering, communitization, etc. A comprehensive structure was established to explain it from five aspects, including driving force, interacting path, supporting facility, promotion mechanism and regulatory mechanism.

Key Words: urban fringe, rural settlement, space evolution, Shanghai

1. Research background

Coinciding with the acceleration of the industrialization process since the beginning of twentieth century, urban population has been keeping increasing all around the world. As a result, cities are expanding and rural lands are being transformed to urban built up lands. Urbanization is one of the most striking human induced land transformations of the current era (Aguilar, 2008).

The thesis is based on the understanding of urbanization process in developing country, believing that the urban-rural fringe, which acts the transition area between city and countryside, faces great challenges and opportunities. Urbanization process influence the evolution pattern of rural settlements in urban-rural fringe profoundly. Although the settlement site was chosen originally in close relation to the natural environment, the final pattern is both the result of natural and cultural (political) factors (Antrop, 2000). Thus, the rural villages in urban-rural fringe which experience great transformation in terms of economy, society and space under the influence of the city nearby, show the different evolution pattern from

traditional rural villages that used to keep in slow and stable developing path.

In the past 30 years, China has experienced a tremendous economic growth and cities in it kept expanding rapidly, during this process a great deal of problems emerged, including not only the general problems of rural development during urbanization all around the world, but also specific problems due to Chinese unit context. The city of Shanghai is taken as study case because of its representativeness in terms of urban development in developing countries.

2. Macro background of Shanghai urban-rural fringe

Since 1979, a policy of reform and opening-up has guided China's transition from a planned economy to a market economy. Chinese cities have experienced radical developing during this economic transition. Shanghai, as the largest economic center of China, is probably the best illustration of urban expanding and urban-rural fringe development during the process. From 1979 to 2009, the total urban build-up area of the Municipality of Shanghai was increasing from 254 km² to 6341km² (Yi, et al., 2011). The expansion of urban build-up area directly resulted to the outward shift of rural urban fringe area. The previous rural urban fringe transferred to current core area and the distant rural hinterland were attracted by urban activities and involved in rural urban fringe area instead. Consequently, the spatial evolution of Shanghai rural urban fringe area shows a law of concentric ring-layer expansion.

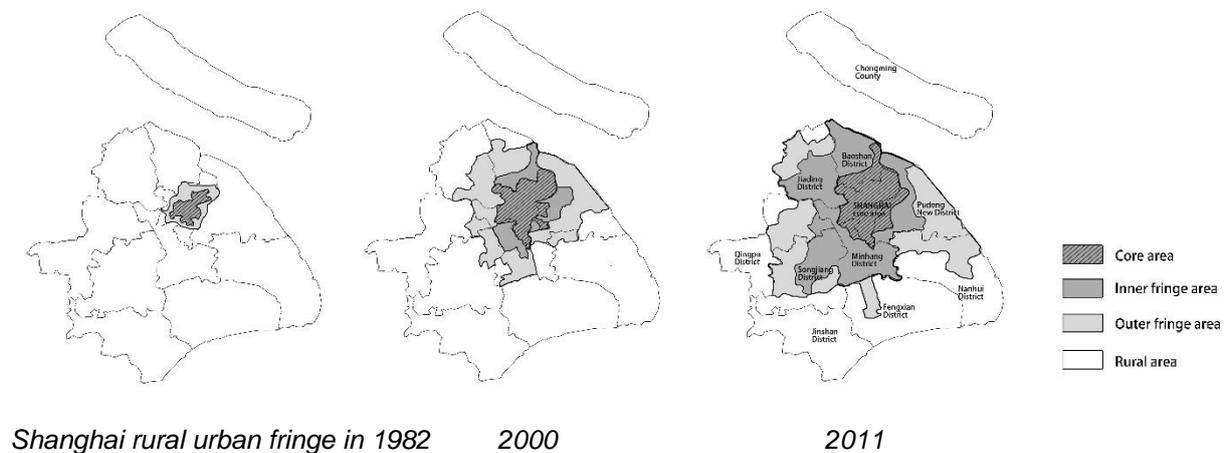


Fig. 1. Expansion of Shanghai urban-rural fringe

3. Spatial evolution pattern of rural settlements in Shanghai urban-rural fringe (Taking Siting Township of Shanghai as a case)

Siting Township which is 24.08 km² with residential population of 94279, located in the southwest of Shanghai, is a typical suburban township. Since 2000, it has been incorporated gradually into the range of Shanghai urban-rural fringe, during which the rural-urban relations, land use and social-economic structure in it have changed simultaneously, as well as its rural settlements; therefore, it could be regarded as a typical case of the spatial evolution of rural

settlements in Shanghai urban-rural fringe. The study of Siting Township is focused mainly on the period after 2000, i.e. the period when it began to be affected by the central city of Shanghai comprehensively and sped up its process of urbanization.

Expansion of urban construction land and shrinkage of rural construction land

During the 20 years from 1992-2003 the urban construction land in Siting Township increased greatly. In 1992, the urban construction land was 91.1 hectares; till 2003, it increased to 792.5 hectares, with the annual growth rate of 21.7%. From 2003 to 2008, the expanding pace of the urban construction land decreased slightly, but still remaining the expanding speed of 6%. After 2008, the expansion of urban construction land accelerated again, with the growth rate of 9.1%. Till 2003, the urban construction land in Siting Township reached 1641.2 hectares, which covered 66.9% of the total area of Siting Township.

Corresponding to the expansion of urban construction land is the shrinkage of rural construction land. In 1992, the area of the rural construction land of Siting Township was 88.1 hectares, which was equal to that of the urban construction land. Till 2003, the rural construction land increased to 137.4 hectares. Since the latter half year of 2003, Siting Township has ceased officially the peasants' application for house site, stating that the villages could not construct new rural settlements. Conversely, new-type rural communities shall be planned and constructed uniformly. Since then, the scale of rural construction land began to shrink. Till 2013, there were only 86.4 hectares left.

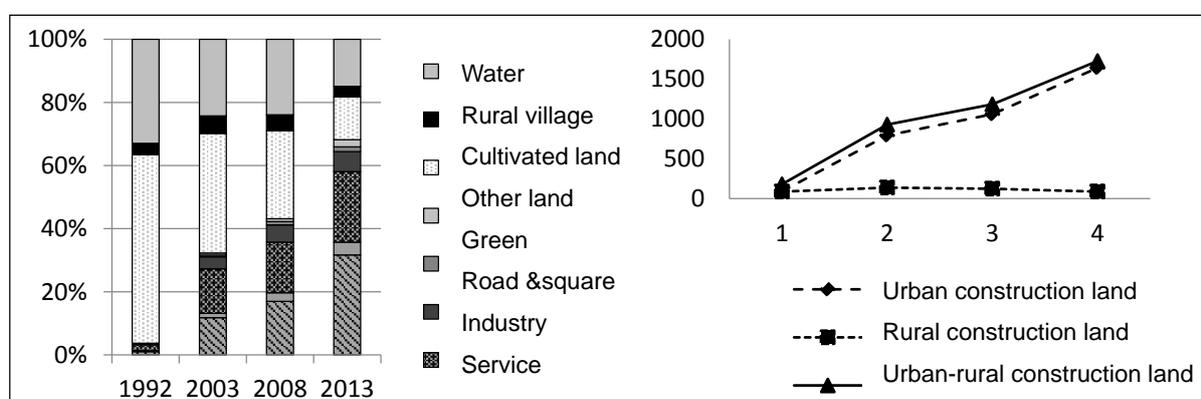


Fig. 2. Land use changes graph in Sijing Township

Source: 1:10000 digital maps of Sijing Township, Master plan of Sijing Township (2010-2020)

The urban-rural border becoming increasingly vague

In 1990s, Siting Township still kept separate urban-rural structure and there was no spatial connection between the large bulk of urban area and the scattered small-scale rural settlements. Entering the twentieth century, the rapid urbanization has made the urban-rural relationship increasingly closer in Siting Township. Till 2003, the border between the rural village and the urban area in Siting Township could hardly be distinguished.

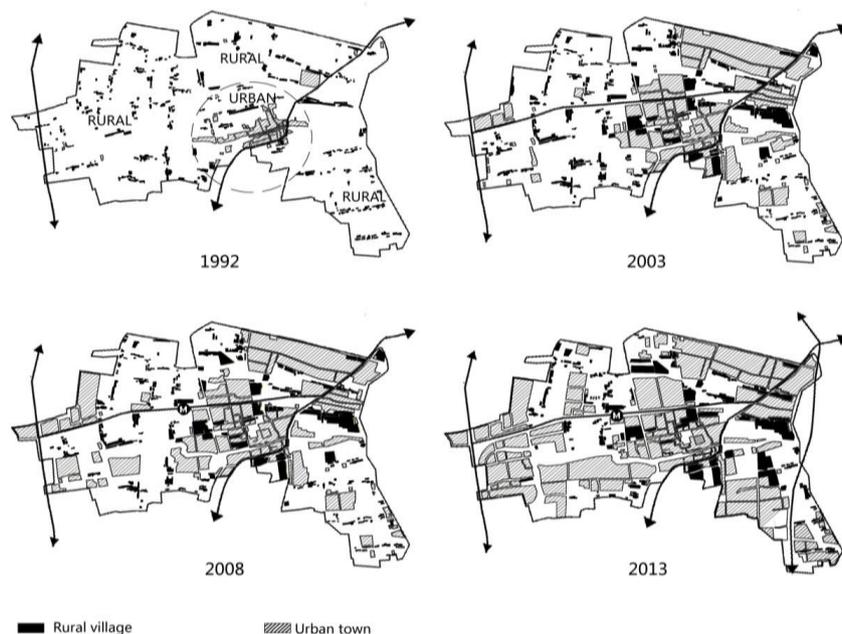


Fig. 3. Increasingly vague border between the urban and the rural

Decreasing of rural settlements in terms of scale and quantity

10 years before entering the urban-rural fringe of Shanghai, the general scale of the rural settlements in Sijing Township was in fast expansion process. In 1992, the overall area of the rural settlement was 88.7 hectares and in 2003 it was increased to 181 hectares.

After Sijing Township was incorporated into the scope of Shanghai fringe, the overall area of traditional rural settlements began to decline. Till 2008, the area of traditional rural settlements decreased from 132 hectares in 2003 to 121 hectares; meanwhile the overall area of new rural communities increased 5 hectares, i.e. the overall areas of rural settlements decreased slightly. Thus, it could be seen that at the initial stage of Sijing Township entering the scope of Shanghai urban-rural fringe, though the numbers of the settlements decreased slightly, the overall scale remained in a stable state. After 2008, the urbanization of Sijing Township accelerated gradually. Traditional villages declined quickly within 5 years. Traditional rural settlements of Sijing Township decreased from 120.8 hectares in 2008 to 95.2 hectares in 2013.

Year	Scale of rural settlement (m ²)			Total quantity			Average scale (m ²)		
	Total	Rural settlement	New rural community	Total	Rural settlement	New rural community	Rural settlement	New rural community	
1992	886878	886878	0	114	114	0	7780	0	
2003	1810472	1321003	489469	93	86	7	15360	69924	
2008	1747491	1207603	539888	87	79	8	15286	67486	
2013	1723387	951871	771507	78	70	10	13598	83452	

Table. 1. Changing scales of rural settlements in Sijing Township

Source: Satellite maps and 1:10000 digital maps of Sijing Township in 1992,2003,2008,2013

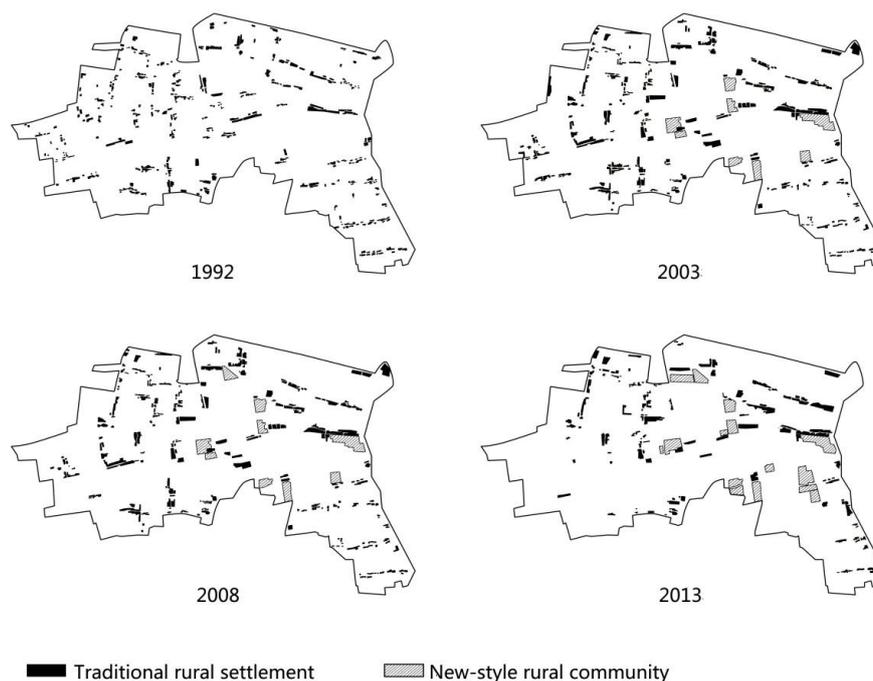


Fig. 4. Scale of rural settlements in Sijing Township

Increasingly diversified types of the rural settlements in Siting Township

With adjustment of land use structure, types of rural settlements in Siting Township were increasingly diversity, including traditional village, village in town, resettlement community and central village. Among them, the resettlement community and central village, which are new type rural settlements with increasing amount, reflect the modernized life pursuit of rural population. They will be the main trends of rural settlement development in the future.

Traditional village

It's the major types of the rural settlements in Siting Township in history. Natural environment was the decisive factor of the spatial structure of traditional rural settlement, influencing unconsciously the site selection of settlements. Guided by Feng Shui, a kind of traditional Chinese construction principle to keep balance between human settlements and nature environment, rural settlements have formed interactive relations with the mountain, the water and the land surrounding, which made rural settlements in the same natural environment show similar style and features.

In spite of pleasant settlement environment, scattered space arrangement of traditional village results in low-efficiency of the land use and infrastructure construction. The investments in infrastructure as water, electricity, road and afforestation in concentrated traditional villages are 183 yuan per family, while those for small-scale scattered traditional villages are 5,100 yuan per family (Ren, et al., 2000) .

Within the scope of Siting Township, villages of this kind are decreasing continually. From 2003 to 2013, the average area of traditional rural settlements in Siting Township was reduced from 1.5 hectares to 1.3 hectares.



Fig. 5. Maps and photos of traditional villages.

Village in town

Among uninterrupted urban build-up area in Siting Township, there are still some traditional village island which are surrounded by urban construction land. Since the cost of relocation compensation was high, such villages were passed by urban sprawl and remain the rural form while their peripherals had been urbanized. Because of land use interpenetration, it is hard to differentiate the border between such villages and the urban area nearby.

Since the surrounding lands have been urbanized, such traditional rural settlements show quiet different social and economic characteristics from the traditional pattern which they used to be. Though these villages still belong to rural land in terms of land ownership, they also carry on diversified urban functions, such as retailing business, food service or renting. Compared with neighboring city communities, the residential conditions of the villages in town are poorer, so the renting price of the house are low, which make village in town become the first choice for migrant workers.



Fig. 6. Maps and photos of village in town.

Resettlement community

Due to the expansion of cities and towns, construction of infrastructure and industrial zones, removal and land acquisition of rural settlements in Siting Township is common. To place the villagers whose lands have been taken over by the municipality, the government usually plans and constructs unified resettlement community to settle the villagers.

The resettlement community for the peasants whose lands have been taken over is the same as common urban commercial residential community in spatial arrangement and physical form. The supporting facilities are enhanced greatly compared with those of traditional rural settlements; however, the existing traditional rural life styles in the community conflict to some degree with the urbanized living space. In traditional villages, the peasants' houses were the space for agricultural production as well as for living. "The central room is the largest, which is used for labor, such as rearing silkworms and beating harvest rice. When it is cold or rains, people would rest, take meals in here, or receive guests or store farm tools and agricultural products."(Li, 2007). Since the residence has been transformed from courtyard houses to high rise apartments, these traditional rural activities have lost their spatial carriers, the open spaces in resettlement community are turned to store agricultural products consequently.



Fig. 7. Maps and photos of resettlement community

Central village community

Since 2000, several villages in Siting Township have been merged and removed to well-designed central village communities, the scale of which is about 5-10 hectares, about 6 times of the average area of traditional rural settlements. Different from the resettlement communities which always locate in the city or town center, central village communities are generally scattered in the well-located position of the rural area. The communities are connected with the urban area by convenient transporting system. Since the lands are collective-owned, at present the house sites could not be transferred in real estate market but only transferred and replaced among the villagers.



Fig. 8. Maps and photos of central villages

4. Spatial evolution mechanism of rural settlements in Shanghai urban-rural fringe

Based on the influencing factors analysis, the evolution mechanism of the of rural settlements in Shanghai urban-rural fringe are established from five aspects, i.e. driving force, interacting path, supporting facility, promotion mechanism and regulatory mechanism. These five aspects are interrelated and interacted on each other and form together the mechanism of actions of the spatial evolution of rural settlements at the urban-rural fringe.

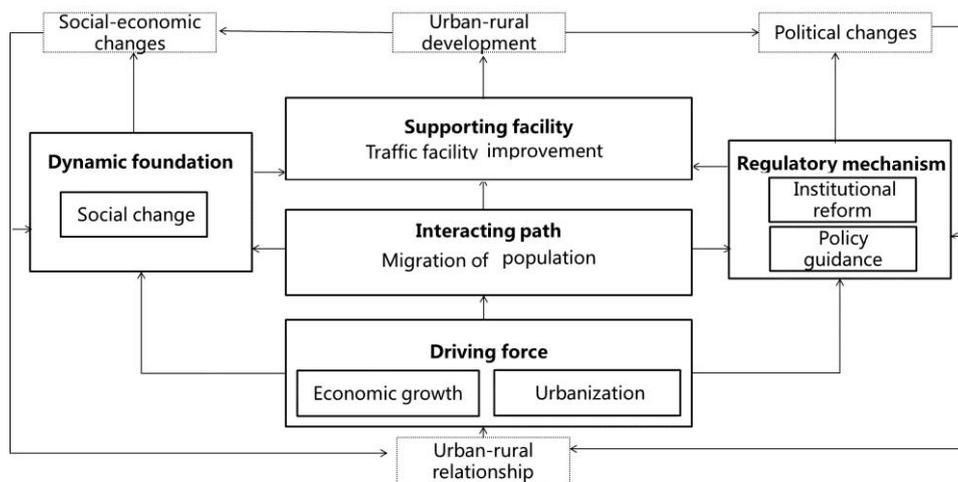


Fig. 9. Comprehensive mechanism structure of spatial evolution of the rural settlements

Driving force--- Economic growth and urbanization

As the center of regional economic activities, economic development levels of the central city leads decide the speed and scale of the urban construction. According to the studies discussed above, the period from the implementation of the reform and opening-up policy in 1990 is the starting stage of the expansion of Shanghai urban-rural fringe, which is also the starting stage of the acceleration of economic growth of Shanghai; the period from 1990 to 2000 is the period when the expansion of Shanghai fringe entering acceleration, during which the growth rate of Shanghai's gross national product increased obviously than the previous stage; since 2007, Shanghai fringe entered the stage of stable development, meanwhile the annual growth rate

of Shanghai's GNP kept higher levels. Thus, the growth of the urban-rural economy of Shanghai is in positive correlations with the expansion of urban-rural fringe and the growth of economy has provided sufficient motive power to the development of urban-rural fringe.

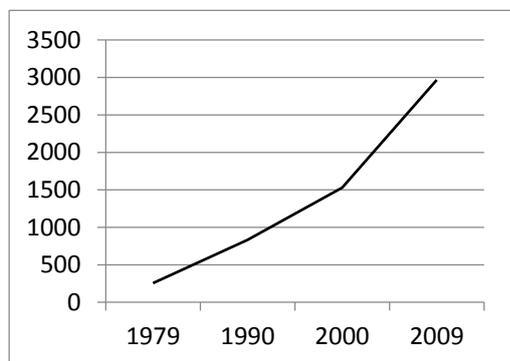


Fig. 10. Expansion of urban construction land in Shanghai

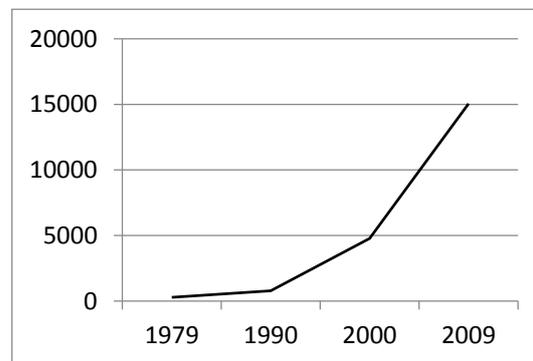


Fig. 11. Development of urban-rural economic development in Shanghai

With the development of urban and rural economies, the aggregations of central cities keep intensifying. This has promoted the expansion of both population and land use and resulted in overflow of city functions and urban population, i.e. urbanization. Since the implementation of the reform and opening-up policy, the urbanization level of Shanghai keeps increasing. After 1990, the urbanization rate of Shanghai urban center was declining while the urbanization rates of urban fringe was increasing, especially the inner fringe which closed to urban center.

area	1982		1990			2000		
	Total population (10000 person)	Urbanization rate (%)	Total population (10000 person)	Urbanization rate (%)	rate	Total population (10000 person)	Urbanization rate (%)	rate
Whole area	1185.97	59.17	1334.19	64.27		1640.77	69.21	
Urban center	607.93	100	739.68	100		827.26	100	
Inner fringe	245.05	24.64	244.91	28.1		192.97	45.31	
Outer fringe	333.00	10.04	349.60	14.02		115.41	29.77	

Table. 2. Urbanization rate changes of Shanghai urban-rural fringe

Source: Development studying the status quo of Shanghai suburb, Wang Guixin, 2005

As the result of urbanization, the scale of urban land use expands quickly while the scope of rural land use shrinks gradually and the spatial arrangement of the rural settlements also changes accordingly. Thus, it could be seen that expansion of the urban construction land to the rural areas is the major reason for decrease of rural settlements and the concentration of the settlement arrangement.

Interacting path--Migration of population

Shanghai has always been one of the largest immigrant cities in Asia with high level of population density. In 1978, per capita living space in Shanghai was 4.3 square meters, with per square kilometers residing 41 thousand persons, whose density ranked top in the country (Wang, 2013). To evacuate population pressure of city center, Shanghai city has established continuously several satellite towns in urban-rural fringe, which result to the migration of population from city center to urban-rural fringe.

Since 2000, total population in urban center of Shanghai began to decrease, from 7.6 million in 2000 to 7.1 million in 2012; while at the same time, the population in the urban-rural fringe increased from 6.9 million in 2000 to 16.7 million in 2012.

Population	2000	2003	2012
Urban center	7,584,256	7,503,456	7,074,897
Urban fringe	6,934,178	10,906,481	16,730,052

Table. 3. Increasing population in urban center and decreasing population in urban fringe

Migration of the population from urban center and the aggregation of the mobile population at the rural-urban fringe have relieved to some certain the population pressure of Shanghai centers, strengthened urban-rural social, economic, technological communications, promoted commodity circulation and economic development and changed the population structures of the rural-urban fringe. All these have in turn affected the residing structure and inhabiting ways at the rural-urban fringe transforming towards urbanization and the rural settlements at the rural-urban fringe also transform gradually.

Supporting facility--Traffic facility improvement

Influences of traffic facilities on Shanghai rural-urban fringe are manifested mainly in the following two aspects. The first is the construction of major infrastructures. Take Siting Township as an example. At the end of 2007, the completion of rail transit Line 9 brought significant chances to Siting Township. Taking rail transit Line 9, it takes only 30 minutes to the center of Shanghai, which has shortened greatly the commuting time from Siting Township to the Shanghai city center.

In addition, improvement of traffic network also produced significant influences on the development of rural-urban fringe. Since 1992, the land for road traffic of Siting Township has increased from 8.5 hectares to 162.1 hectares. So far, all the villages of the town have constructed village roads and they are linked with tractor-ploughing roads, which increase the accessibility of rural settlements. The influences of traffic facilities are also reflected in site

selection and arrangement of the settlements. Site selection of traditional agricultural rural settlements considered mainly farming factors. Areas with flat landform, easy to irrigate and satisfying farming radius were usually the first choice. Perfection of traffic network has expanded the radius of the rural residents' production and changing their traveling modes. Rural population aggregates towards the towns, rural settlements transforms from dispersion to aggregation and the site selection of rural settlements transforms from resource-dependent to traffic-dependent.

Promotion mechanism – Lifestyle changes in urban-rural fringe

Rural industrial development, transformation of rural land use and influences of urban cultures have all promoted the changes of the rural society at the rural-urban fringe and affected the transformation of the behavioral patterns of the villagers at the rural-urban fringe.

Firstly, social change at the rural-urban fringe is manifested first in the changes of the employment structure of rural residents. Take Siting Township as an example. From 2003 to 2011, the working population of the primary industry and secondary industry decreased greatly while the working population of the tertiary industry increased. Non-agriculturization of the employment structure has changed fundamentally the life-styles and inhabiting ways of the rural residents and has promoted traditional rural settlements to transform towards new-type rural communities.

Secondly, with the transformation of the employment structures, the living demands of the rural residents at Shanghai fringe also change, which results to the changes of building patterns. The agricultural function of rural residents was declining, while the modern life demand was increasing. Rural residents are putting forward higher demands for residing quality, functional arrangement and living conditions. The residence is transiting from "improvement" to "enjoyment".

Thirdly, urbanization and industrialization also shaped their modern life concepts, making them liberated from the farmlands and have the chance to contact more organized and modernized life styles. Population mobility between urban and rural area broke the enclosed rural social network at the rural-urban fringe and expanded the social contact range which had limited to single family to the whole region, making the interpersonal relationship of traditional emotional contact transform towards new-type interpersonal relationship with gaining economic profits as the objects (Li, 2007). The mass media with television and internet have permeated the urban life concepts into the village, which has promoted rural settlements at the rural -urban fringe transformed towards new-type communities.

Regulatory mechanism –Guidance and restraint of top-down policy decision-making

National, regional and local macro-controls guide and restrict the spatial evolution of rural settlements in urban-rural fringe, which includes institutional reform and policy guidance.

The most essential regulatory factors was reform of the housing system. In times of planned economy, Chinese housing system was planned distribution system with full control by the state with. In 1990s, with the deepening of reform of housing system, Chinese housing distribution was changing towards monetization and market became the major way of regulating housing supply, allocation and circulation while housing price became the core factor for residents selecting their housing locations. Because of high price of the commercial residential buildings at the center, taking advantage of convenient traffic conditions and lower housing price, rural-urban fringe has become the major selection for common urban residents, which has promoted the floating of population at the urban centers to the urban fringe.

Policy is another important influence factor for rural settlement evolution. For a long time, the rural village distribution in Shanghai is disperse, by the end of 1996, the average territory of the village in Shanghai was 13 hectares and the average population was 90. The size of the rural settlement was small and the land was wasted severely (Ren et. al., 2000). Aim at more intensive rural land use, Shanghai put forward the policy of “relocation and merger of villages”, which refers that villagers in small-scale, scattered villages with high occupation of land and poor environment are planned to assemble towards the central villages with better conditions. The policy of “relocation and merger of villages” has led the cluster of rural settlement, which will increase the land-use efficiencies of rural settlements in urban-rural fringe. According to the data provided by Shanghai Lands Department, reasonable merger of central villages could save 153-square kilometer land for the whole city.

5. Conclusions:

Through the studies of the urban-rural spatial structures, the arrangement forms of the rural settlements and the types of the rural settlement in Siting Township, 4 characteristics of the spatial evolution of the rural settlements in Siting Township could be concluded:

First one is the integration of urban-rural lands. In 1990s, Siting Township still took agricultural economy as its basis and retained urban-rural dual spatial structure with obvious urban-rural space border. After 2000 when Siting Township was incorporated into the scope of Shanghai fringe, the border between the urban and the rural are in Siting Township was increasingly mixed and the urban-rural spatial structure began to change towards integration.

The second characteristic is the heterogenization of rural settlements. Before Siting Township was incorporated into the scope of Shanghai urban-rural fringe, the rural settlements was distributed averagely, with little differences between the levels and scales of the settlements. After entering the urban-rural fringe, the homogeneous spatial pattern of traditional rural settlements was broken, the social border of rural settlements and urban communities are blurred and the level, scale and functions of rural settlements change towards heterogeneity.

The third characteristic is the aggregation of rural settlements. In traditional economic stage, limited by the farming radius and traffic conditions, the scale of rural settlements was small, with scattered arrangement. After being incorporated into Shanghai urban-rural fringe, the total number of rural settlements in Siting Township is decreasing gradually, while the average scale is increasing little by little. The location of rural settlements is also concentrating towards the rural communities in village center or the central town.

The last evolution feature is the communitization of rural settlements. Before being incorporated into Shanghai fringe, rural settlement in Siting Township was the unique traditional type. After being incorporated into the scope of urban-rural fringe in 2000, the pattern of the rural settlements in Siting Township changed fundamentally. The rise of new-type rural communities (such as resettlement community, central village community) replaced the status of traditional villages, which pushed the transformation of rural settlements in Siting Township.

The evolution mechanism to explain the reasons of spatial evolution of rural settlements in Shanghai urban-rural fringe is a comprehensive structure which can be analyzed from five aspects, i.e. driving force, interacting path, supporting facility, promotion mechanism and regulatory mechanism. Driving force, interacting path and supporting facility are the core mechanism of the evolution, which bring along the transformation of urban-rural fringe through the interactions between the urban centers and the urban fringes. Promotion mechanism is the catalyst of the spatial evolution of rural settlements in urban-rural fringe through the economic, social and life style changes of villagers. Regulation mechanism is the guide of the spatial evolution of rural settlements in urban-rural fringe, which shows the macroscopic readjustment and control of the government.

Those aspects are not separated from each other but working together. Jointly, they have promoted the integration of urban and rural land use in the urban-rural fringe areas as well as the transformation of the settling ways of rural residents, which in turn pushed the spatial evolution of the heterogenization, aggregation, diversification and communitization of the rural settlements.

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Rural Resilience: transforming mining towns and settlements

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Abstract

The focus of this research is on transforming traditional mining villages and the surrounding urban settlements into more resilient urban conurbations. "Housing stands at the center of the new Urban Agenda" (UNCHS 2016). Historically, the entire global mining sector has been providing housing for its employees on mine-owned land, close to or within the mining operations itself. This led to the current spatially dispersed pattern and unsustainable location of settlements and numerous 'ghost towns', especially in developing countries and specifically in Southern Africa. The provision of housing has become a pressing issue in the mining sector due to several new policy approaches impacting on housing for employees. Global policy dictates that 'housing policies' should be embedded into urban plans and sectoral strategies, and secure tenure should receive special focus (UNCHS 2016). South-African policies in the mining sector (DMR 2010) and various spatial planning policies (SA 2013a), encourage the settlement of employees in sustainable and viable towns. This study aims to establish a unique approach towards housing provision and urban development in South Africa by offering a resilient urban conurbation model applied to three towns with significant success over the past ten years.

1. Mining towns and settlements

The central research problem analysed in this study centres on the occurrence and development of isolated, non-central (Hirschman 1958) towns scattered around Southern Africa's natural resource deposits. The isolated location of most primary resources extracted in the mining sector has led to a spatially dispersed pattern of the so-called mining towns. History has shown that a significant number of mining towns globally end as 'ghost towns' after the relevant commodity cycle has played itself out.

In South Africa, the acquisition of labour has historically been seen as a significant challenge in far-off locations since most mining activities make use of intensive labour. Naturally, housing became a problematic issue within the mining sector. Mines throughout South Africa were traditionally faced with the problem of minimising capital costs and this proved impossible to do, which in turn led to the realisation that if capital cost can't be cut, labour cost should be reduced (Demissie 1998). The only workable alternative for expensive labour was to make use of the cheap and abundant supply of African labour in the region, for whom the mining companies had to provide some form of accommodation.

As part of a strategy to reduce the dependence on foreign workers, two complimentary schemes were pursued. Firstly, the industry began to build more rental housing for married African workers and secondly, accommodation provision was accelerated through the development of less costly private company towns on mine property. The abovementioned housing types are still the main form of provision for housing in mine areas and for mine workers, especially in the remote areas where most of the South African mines operate. The hostel concept is no longer as common, but still exists on many of the South African mines, while the township model and the company town model is still found all over South Africa.

2. Policy perspective

One of the constant and visible legacies of Apartheid in South Africa is the extent of the housing backlog in general and the housing struggle that mine workers in particular face throughout the country. It became apparent that mining companies could no longer sustain the models of housing provision they instated at the mines in the 20th century. The following section describes the two main streams of policy that influenced mine housing in general and that form the focus

of this research project. Firstly, policy from a spatial planning (including the housing sector) perspective are evaluated, and secondly, policy from a mining perspective (referred to as accommodation). Figure 1 indicates the development of both streams of policy over the course of 22 years (since the first democratic elections in 1994 to date). 2005 marks the year in which this research project was initiated.

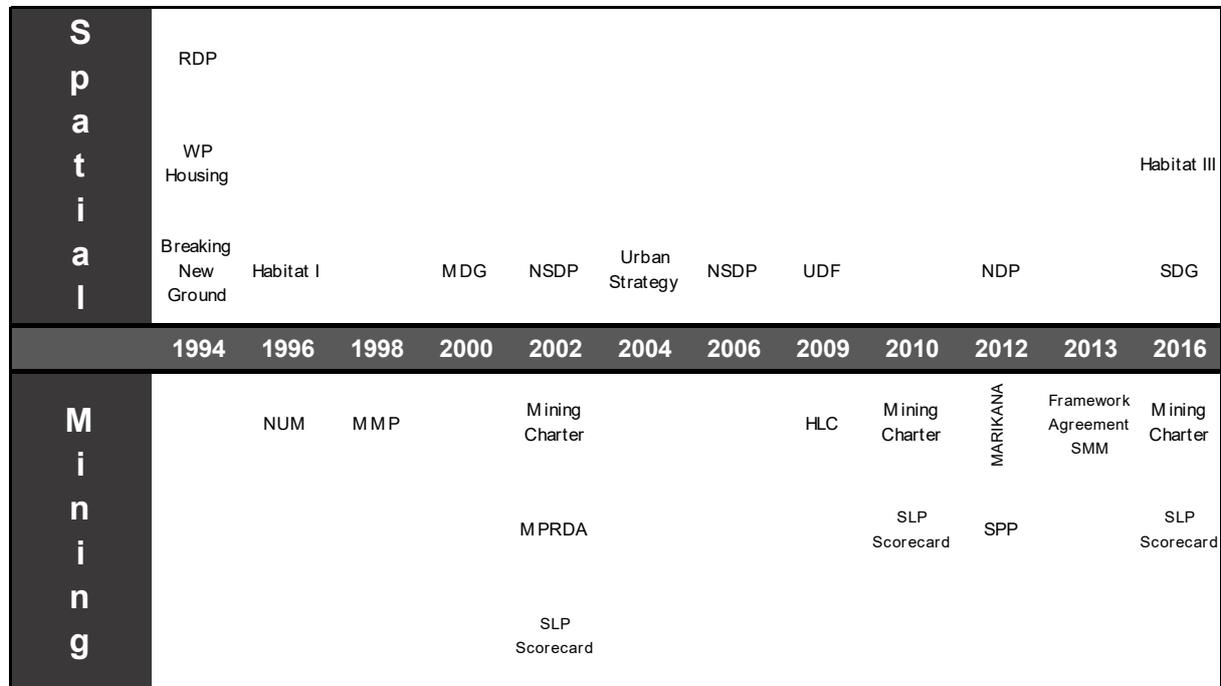


Figure 1: Policy timeline

2.1 Spatial Planning Policy

After the 1994 democratic elections, government committed itself to developing more liveable, equitable and sustainable cities. Key elements of these policy frameworks included pursuing a more compact urban form, facilitating higher densities, mixed land use development, and integrating land use and public transport planning to ensure more diverse and responsive environments while reducing travelling distances (ANC, 1994).

In this regard a number of national post-Apartheid policies have been implemented, including the White Paper on Housing (DOH 1994a), and the Reconstruction and Development Programme (ANC 1994). The Reconstruction and Development Programme (RDP) initiated by the African National Congress-led government served as a blueprint for transforming the housing legacy of the Apartheid era. In October 1994 the Housing Accord: Housing the Nation (DOH 1994b) was signed by 600 delegates. This “incremental policy” was incorporated in the White Paper on Housing (DOH 1994a), which included “facilitating the establishment of housing support mechanisms to help communities improve their living conditions” as one of the main relevant principles. In terms of housing provision for the mining sector, the White Paper (DOH 1994a) clearly stated that “circular migration and dual households, hostel accommodation, the prevalence of single (often female-headed) households, cultural and legal impediments to access for women housing, and traditional tenure systems” pose important constraints on housing policy and housing provision. The White Paper did not, however, provide for specific housing policy regarding mine housing, but did call for employers to “know the housing circumstances of their employees and to, within their means, provide advisory, administrative, financial and other material assistance in order to improve the housing circumstances of their employees” (DOH 1994a).

The government also encouraged spatial analysis and a more responsible approach to the construction of housing in existing urban settlements with the necessary infrastructure and social amenities. It is, therefore, only natural that the mining sector, although it is not a single entity like the government, also aim to contribute to the responsible settlement of their employees within structured and able environments. Government, furthermore, made provision for financial assistance for housing South African residents in the form of subsidy assistance. In the case of the mining industry, this subsidy assistance did not play such an important role due to the average income of mine employees usually being higher than the minimum requirement. Most mine employees therefore faced an affordability constraint due to the absence of assistance from the government.

Various other legislative guidelines broadly referred to the issue of mining villages, one of which stated that “the whole structure of mining towns and settlements must be altered to integrate mineworkers into the local economy and to end the racially discriminatory provisions that apply to housing for black mineworkers” (DME 1998). It further proposed that a tripartite structure should be established between the State, the mining industry and representatives of employees (labour unions) to seek ways and means of improving the lot of workers who live on the mines and to investigate the whole question of housing and accommodation for workers and their families at mines with due regard for the continued viability of communities thus established.

In the National Spatial Development Perspective (NSDP) (SA 2002 & 2006), government called for mine companies to “ensure empowerment of employees through home ownership; and move away from providing housing at unsustainable locations on mine land”. The NSDP further encouraged mining companies to ensure that housing development is promoted in sustainable towns near the mining operations and not as isolated villages on mine-owned land. This is regarded as the first direct guidance for mining companies that directs them to place an emphasis on sustainable location of company housing rather than on on-site housing, which in due course will fall into disuse and decay, leading to the typical mining ghost towns. In 2004 the Draft National Urban Strategy (SA 2004) proposed a vision for South African towns and cities as spatially and socially inclusive, well-designed and developed in an environmentally efficient way. Through this new strategy, the department shifted towards a reinvigorated contract with the people and partner organisations to achieve more sustainable human settlements.

This was followed by the Urban Development Framework (SA 2009), which was more applicable to larger cities within the national urban hierarchy. A number of strategic outcomes related to the effective urban management goal have been identified based on the analysis of various trends and challenges. Achieving these outcomes will require a consistent, multi-sphere, multi-sectoral approach. Outcome 5 has specific relevance to this study: “Improved competitiveness and resilience of urban and regional economies”. This outcome is focused on strengthening regional economic clusters and regional and rural-urban economic linkages, as well as reinforcing competitiveness within the global market. The UDF highlighted the importance of regional service centres and aims to strengthen such centres by identifying those with the most potential and investing in the necessary infrastructure and ‘place-making’ activities.

In 2012 a need was identified for the coordinated and focused implementation of a plan on national level to eradicate poverty and exclusion in South Africa, from which the National Development Plan (NDP) was born (SA 2013a). The main argument of the National Planning Commission (NPC) regarding the need for a national plan referred to the poverty cycle and exclusion of the majority of people from opportunities for further education. The report outlined nine major challenges that South Africa faces. The challenges fall into two major focus categories, namely the need to eliminate poverty and to reduce inequality. The NDP addresses the future of human settlements in terms of five spatial challenges, i.e. i) transforming the national space economy; ii) differences and inequalities in rural areas; iii) urban inefficiencies; iv) the accommodation conundrum; and v) the weak capabilities of spatial governance. From

a physical planning perspective, the NDP also proposed the development of a national spatial framework (NSF) involving government, business and civil society to create a collective vision. This hasn't been done yet, but the NSF will target a number of spatial areas, of which the following are mentioned: national competitiveness corridor; nodes of competitiveness; rural restructuring zones; resource-critical regions (typically mining regions); transnational development corridors; special intervention areas. Lastly, despite all these well-intended measures, the inequalities and inefficiencies of the Apartheid space economy have lingered on until this day.

At a global level, relevant housing policy is mainly guided and influenced by the Habitat-policies. The Habitat Agenda (UN 1996) places great emphasis on the development of sustainable human settlements that should be planned, developed and improved in a manner that takes full account of sustainable development principles and all their components. These development principles include concepts and principles of social integration, combating segregation, improved access, promoting geographically balanced settlements and more sustainable human settlement with more integrated housing, transport and social facilities. This was reiterated in the most recent Habitat III Zero Version (UN 2016a) document. This most recent document places an even stronger emphasis on the supply of housing in a sustainable and integrated manner. This implies a more sustainable location with the necessary ancillary services (infrastructural and social amenities) to support the community, with the desired effect of urban resilience.

This research further draws on the framework and guidance offered by the Habitat III, with specific reference to SDG Goal 11: "Make cities and human settlements safe, inclusive, resilient and sustainable", and the accompanied goals to i) address both resilience and sustainability; ii) involve local governments in addition to national governments; iii) focus not only on cities, but entails a territorial approach, including regional and rural-urban linkages; iv) allows for local multiple stakeholder engagement in data collection and reporting; v) needs involvement of research community for a systems and evidence based approach. Lastly, the International Guidelines on Urban and Territorial Planning (IG-UTP) (UN 2015) aims to establish a global structure for refining policies, plans and designs for more dense, socially inclusive, better integrated and connected cities and territories that foster sustainable urban development. The Millennium Development Goals and the subsequent South African interpretation thereof also addresses issues of housing and inequality, with sub-Saharan Africa regarded as the epicentre of the crisis (UN 1999).

2.2 Mining legislation and policy

Although these policies all address concepts of integration, sustainability, mixed-use development and resilience, it is not applied in mining villages. A distinct and apparent void therefore exists in the spatial planning domain, specifically aimed at suitably structuring housing as part of the mining sector in South Africa. No specific national policy or legislation exists to address the provision of housing for mine employees. Over the past two decades, however, numerous attempts have been made in the mining sector to provide guidance to companies in this respect. This section briefly touches on some of these approaches and guiding principles.

Two decades ago, the National Union of Mineworkers (NUM 1996) voiced its concern on the lack of proper housing policy and addressed a number of issues related to the existing housing policy. They argued that "giving the unique nature and historical background, both in terms of the migrant labour policies of the Apartheid government and the racially-based provision of accommodation in the mines,...special attention (be) given to the mines with respect to housing policy, hostel redevelopment and provision of family housing". The NUM called for a range of measures (NUM 1996), including: i) the duties of employers regarding the accommodation of their workforce should be regulated; ii) government must oblige all employers to meet the minimum requirements for housing their workforce and their families;

iii) mines must be obliged to produce annually, plans for improvement to their employees' housing with budgets and timeframes, with short, medium and long-term objectives; and iv) a tripartite committee of government, employers and employees must be established to oversee the phased upgrading and conversion of the current hostel system with a view of providing accommodation for the mine workers and their families.

In 2002, the Mineral and Petroleum Resources Development Act (MPRDA) (DME 2002a) was the first official and legally binding document that called for the Minister (Department Minerals and Energy, later renamed DMR) to, within five years from the date on which this Act took effect and after consultation with the Minister for Housing, develop a housing and living conditions standard for the minerals industry. This Act was closely followed by the Mining Charter (DME 2002b), with a general development goal of improved living standards. The Mining Charter also promoted home ownership amongst all mine employees in South Africa. It further called for an undertaking by stakeholders to establish measures for improving the standard of housing, including the conversion of hostels to family units and the promotion of home ownership options for mine employees. However, all these guidelines from the minerals industry made no reference to sustainable settlement choices, as illustrated in the above section on policy in the spatial planning domain.

In 2009, the Department of Mineral Resources (DMR 2009) published a Housing and Living Conditions Standard for the Minerals Industry, which was the first document with more specific guidelines regarding the living conditions of mine employees. The overall objective of these conditions is to “provide standards which will enable mine workers to have a choice in pursuing suitable housing and living conditions for themselves” (DMR 2009). In accordance with this objective, the following broad principles were identified. Mining companies in respect of a company providing accommodation must (DMR 2009):

- Ensure a decent standard of housing for mine workers;
- Develop social, physical and economically integrated housing development within or outside the mining areas;
- Ensure secure tenure for the employees in housing institutions on the basis of the general provision;
- Promote the use of financing schemes in such a manner that is transparent and accountable.

A Revised Mining Charter was issued in 2010, again highlighting that the mine communities form an integral part of mining development, and therefore there must be a meaningful contribution from mining companies towards community development. It further called for mining companies to conduct an assessment to determine the developmental needs and to, in collaboration with mining communities, identify projects within the needs analysis for their contribution to community development. In this regard mining companies must implement measures to improve the standards of housing and living conditions for mineworkers by the i) conversion or upgrading of hostels into family units; and ii) facilitating home ownership options for all mine employees in consultation with organised labour (Unions) by 2014. This should be done in line with the Integrated Development Plan (IDP) (in terms of the Municipal Systems Act) of the specific community. The DMR instated various monitoring and evaluation measures, referred to as a “Scorecard”. The Scorecard measures what the mining company has done to improve housing, showing a plan to progress the issue over time as well as the implementation of said plan. The Charter specifies that the Minister shall constantly assess progress against plans to establish acceptable living standards for mineworkers. The assessment will be based on an annual report of compliance compiled by the mining company and submitted to the Minister. Noncompliance with the revised Mining Charter will amount to a breach of the MPRDA, resulting in the potential suspension or cancellation of a mining licences granted under the Act (DME 2002a). In addition to the revised Mining Charter (DMR 2010), the DMR revised the Guide to Social and Labour Plan (2010) to include “the measures to address the housing and living conditions of employees”. Accordingly, the mine must consult

and cooperate in the formulation and review of the Integrated Development Plans (IDPs) of the mine communities, referring to the local municipalities within which they are based. The mine, or production operation, must furthermore consult with other economic development frameworks like the Provincial Growth and Development Strategy (PGDS), National Spatial Development Strategy (NSDS), National Priorities and any other relevant stakeholders. The latter principle, again, highlights the highly sectoral approach and application of policy and legislation in South-Africa (Drewes 2015), i.e. reference is made to spatial planning policy, but there is no cross-reference between or integration of both sectors.

A turning point in the social and housing conditions for South African mineworkers came in 2012 as a result of the “Marikana massacre”. The Presidency announced a “Special Presidential Package” in response to the tragic occurrence in the mining towns of the North-West Province with a focus on bettering housing and social conditions. It also called for the integration of mine workers into municipal human settlement plans and programmes, in this instance referring to the Integrated Development Plans (IDP), the relevant Spatial Development Frameworks (SDF) and the Housing Sector Plans (HSP) required by law (Municipal Systems Act SA 2000); Municipal Structures Act (SA 1998)). This was trailed by a “Framework Agreement for a Sustainable Mining Industry” (SA 2013b) in which national Government, organized labour, and organized business “... recognised that the working and living conditions of many mine workers are not optimal. Housing and community development remains a key concern. Workers have to see rapid changes in their working and living conditions and visibly improved career prospects. We need to take urgent steps to build integrated communities with adequate social amenities, including labour sending areas”.

In summary, although more emphasis on the “housing issue” has been visible over the past decade, it is evident that the existing policy does not effectively address the larger spatial issues at hand and that a more integrated spatial approach to the settlement of mine employees is necessary. Mining companies want to focus on its core business, which doesn’t necessarily include housing. However, one can’t get past the fact that the indirect responsibility of housing for mine employees falls solely on the shoulders of mining companies, who in the past provided accommodation in an unsustainable manner within isolated and enclosed settlements away from established urban settlements.

One can deduct from the above discussion of policy and legal guidance, that progress has been made regarding a more resilient approach to managing towns and regions. However, in South Africa, there is weak guidance from a spatial planning point of view, with only the mining sector coming out strongly for more sustainable and resilient urban centres. This research and the applied model endeavours to bridge this gap in local policy and legislation and investigates its conformance to international resilience guidelines in the following sections.

3 An integrated regional approach

A combination of quantitative and qualitative methods was applied to reach the said objectives and aims. The empirical investigation included a qualitative analysis of past spatial planning, housing and mining policy in South Africa. The study further applied evidence-based practice (international) regarding strategic planning initiatives focused on regional resilience for evaluation purposes. The qualitative analysis (document analysis protocol) indicated the success of various policies and plans during the regional planning past of South Africa, which in turn transpired into potential proposals on successful integrated regional policy for mining villages. Surveys within specified regions and provinces added to the quantitative measurement and determine the physical impact of plans and policies.

During 2005, at the beginning of a commodity upturn cycle, the authors started a process of compiling a unique home-ownership model for the South African mining environment, with the absence of policy and mining-town-specific guidelines in mind. The study area related to South Africa’s largest, but most sparsely populated province (Northern Cape), well known for its rich iron ore and manganese deposits. Although initially focused on the requirement of a single

operation (Khumani Mine), the project quickly grew to include three other operations (Nchwaning and Gloria mines; Beeshoek mine), spatially representing three different local municipalities. The spatial dilemma was severe: the mining operations were located between 15 and 80 kilometres from the nearest town, and the time frame for developing housing stock (approximately 2000 residential units) in time to roll out the expanded mining operations was extremely limited (refer Table 1).

Town	# households in 2004	# households in 2014	Households added by the project
<i>Kathu</i>	7,100	8,000	1,200
<i>Kuruman</i>	16,700	18,000	400
<i>Postmasburg</i>	6,600	7,600	450

Table 1: Household growth in study area (Census data)

However, in an effort to deal with housing and urban development in a more resilient manner, a regional analysis was done with regard to numerous towns surrounding the proposed operation. The analysis included the determination of several sustainability (vitality) indicators, including welfare-, social-, satisfaction-, spatial indicators (Drewes & van Aswegen 2010). The approach underlying this research was to establish the feasibility of developing the relevant housing projects in existing, sustainable towns. As such, the regional influence sphere was evaluated and suitable towns for investment (housing stock as well as physical infrastructure) were scientifically determined. Contrary to other mining operations in the region – and the rest of Southern Africa – a model was developed where the mining company ventured to establish sufficient housing stock in the designated towns (Postmasburg, Kuruman, and Kathu) and to transfer these stands to its employees in a focused home ownership drive. The approach envisaged the integration of housing and associated land-use types into the urban fibre of towns that have illustrated its resilience in the past century (refer Figure 2).



Figure 2: New integrated housing development in three towns

3.1 Towards rural resilience

As previously mentioned, housing forms an integral part of the larger urban system, therefore housing provision cannot be planned for in isolation. Consequently, the approach followed was that future housing development must be done in collaboration with those who plan infrastructure and social development in an integrative and multi-partnering approach. The authors urged the mining companies to take into account the various national policies and legislation, provincial development policy (regional level), and municipal policy and legislation (local level) as mentioned in this paper. In South Africa most of the municipalities lack capacity to facilitate these processes and therefore the mining company has an indirect responsibility to safeguard property value for employees. This is stressed by the State of Local Government Report (COGTA 2009), which highlights the numerous challenges and backlogs facing the local municipalities. The mining company is consequently indirectly responsible for

coordinating and securing social and economic amenities for employees i.e. private schools, hospitals, shopping centres, etc.

The concept of resilience, with its origins in an environmental perspective and its evolution into its various classifications (social, economic, engineering, psychology, disaster studies, ecological etc.) and application in the 21st century (especially in rural marginalised areas), supported the vision of this approach. The principle of regional resilience is a continuously adapting notion that asks for a multi-disciplinary approach to strengthening the region. Chapple and Lester (2010) refer to regional resilience as “the ability to transform regional outcomes in the face of a challenge”. Regional resilience has many forms and is a derivative from “adaptive ability” (Simmie & Martin 2010) in its path-dependency-nature (Pendall *et al.* 2010; Hudson 2010; Grabner 1993; Simmie & Martin 2010).

The determinants of the Vitality Index (Drewes & van Aswegen 2010) were utilised in a spatial, economic, social and environmental analysis of the identified study area. This was done by means of spatial data analysis, spatial interaction, regional simulation and spatial modelling, which, as mentioned, resulted in a geospatial database by means of geo-visualisation techniques. This geospatial database indicated a spatial network of clusters (connectivity-based cluster analysis) of growth potential – which was utilised to inform local spatial strategies (LED and SDF), provincial forward planning (PGDS), and SLP budget allocation (SLP-projects). This approach was unique in establishing a tripartite symbiotic relationship between local government (municipalities), the mining company and its employees.

Early on in the pursuit of a suitable policy for housing development, it was emphasised that a mining company should approach this spatial dilemma from a strategic point of view by accessing information on the availability and physical suitability of land, the long-term sustainability of surrounding settlements, the availability of the necessary engineering services, as well as the affordability of and investment value for employees. It was proposed that mining companies consequently attempt to establish a housing policy as a guiding document to state their official viewpoint and approach to housing in order to transfer this stance to employees and labour unions alike.

A unique approach regarding policy was followed over the course of this research. The housing policy designed for these mining operations in the study area integrated the two main streams of policy and legislation (refer Figure 1) into the objectives of more resilient urban centres and a more resilient interlinked region as a whole. The specific aim of the policy document was to: i) redress historical social and economic inequalities; ii) promote equitable access to land and housing for all employees; iii) play a facilitating role with regard to housing; iv) establish a vehicle to accommodate housing matters; v) expand skills and knowledge base of employees (with regard to housing matters by means of education, training and development); vi) encourage sustainable settlement choice; vii) promote private home-ownership and security of tenure of employees; viii) provide a number of choices and options for employees with regard to housing; ix) promote the development of family units and housing for the employees; and x) discourage the materialisation of informal settlements.

According to the newly developed regional housing policy, the mining companies had to play a facilitating role in the process of land acquisition, service installation and housing acquisition and provision. The choice of urban centre was based on a detailed analysis of the surrounding towns' vitality (Drewes & Van Aswegen 2010). The vision was to integrate employees within the urban fabric of the specified urban settlements, i.e. to discourage an isolated mining village within these nodes and regions. The mining company's approach to housing and service provision was therefore to create options that would allow employees to implement long-term sensible and affordable choices with regard to accommodation and investment. It was further proposed that the mining company facilitate the financing and construction of the housing by appointing a dedicated “housing association” to assist employees in this regard.

4 Discussion

It is evident from the previous sections that South Africa had a long history of developing non-central places with no long-term economic base, i.e. mining towns. Numerous policy and legislation directives were passed since the establishment of a democratic government in 1994. However, these directives were linear and sectoral. Spatial planning policies warned against these practices, but weren't legislative in character. The mining industry couldn't be held responsible for ignoring this approach. The mining sector issued various housing directives focused on a shift from single quarters towards family quarters and home ownership. It was clear that these legal and policy initiatives, supporting resilience, weren't integrated or enforced on the mining industry and its regional footprint. Accordingly, there was a firm view that, "... resilience is not a property of a location – it is a property of a system" (Elmqvist 2014). According to Pickett *et al.* (2004), resilience is a more strategic than normative concept, because, to be effective, resilience must be explicitly based on and informed by, the environmental, ecological, social, and economic drivers and dynamics of a particular place, and it must be integrated across a range of linked scales. A fifth component of "spatial" drivers and dynamics was added to our policy approach for the study area (see Figure 3). Accordingly, with this strategic, inclusive, sustainable, integrated and forward-looking approach, the interrelated settlements and the region became more resilient in terms of the following components:

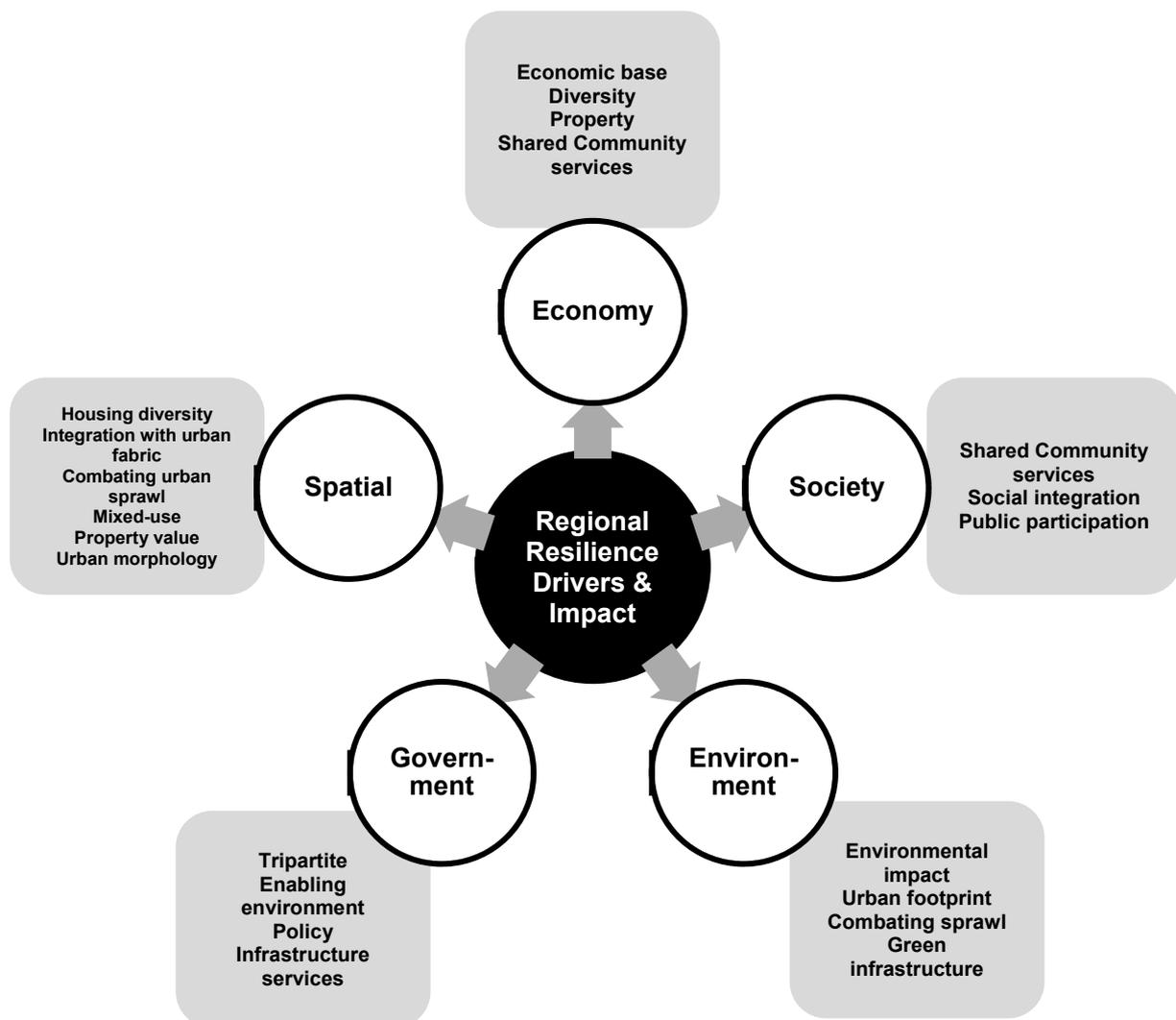


Figure 3: Resilience drivers - impact of project (adapted from Pickett *et al.* 2004).

With the regional adoption of this housing and development approach, the mining companies halted all expansions in the existing mining towns and used the housing stock (as specified via the housing policy) for standby-workers and emergency personnel. In one mining town, all the housing stock was actually demolished and fenced off as a safety precaution. The consequence of the implementation of this policy was the reinforcement of three sustainable towns as opposed to the traditional approach with three formal towns and three mining towns – the latter with duplicated engineering and community services, a significant ecological footprint, no economic base except for the mining operation and no integration with citizens from other sectors of society. As has often been seen in the past, the basic test of resilience, i.e. resurgence (and thriving) after an exogenous shock and economic downturn would probably never happen in these enormously expensive, but entirely unsustainable, non-resilient mining towns.

According to Wilkinson (2012), “resilience (defined in particular ways by particular people) becomes the normative goal to be pursued through adaptive co-management engaging various ‘strategies for resilience’”. These strategies include i) to assume change and uncertainty; ii) to nurture conditions for recovery and renewal after disturbance; iii) to combine different types of knowledge for learning; iv) to create opportunities for self-organisation. The implemented housing and development policy in this mining region furthered the relevant urban conurbations’ resilience as illustrated in Table 1.

Strategies for resilience	Application in study area
1. Assume change and uncertainty	<i>Housing Policy Housing Strategy</i>
2. Nurture conditions for recovery and renewal after disturbance	<i>Social integration Urban fabric Broaden economic base Government-Mine relationship</i>
3. Combine different types of knowledge for learning	<i>Planning theory Planning practice Multi-disciplinary approach Government / Private Sector</i>
4. Create opportunities for self-organisation	<i>SDF LED projects Infrastructure projects SLP projects</i>

Table 1: Strategies for resilience as applied in the study area

5 Conclusion

This unique and problematic spatial planning issue within the mining industry allows the country and the industry to right-size past transgressions and to constructively address future mining development in a sustainable and integrated manner. Mining companies have the opportunity to address the housing issue by means of a comprehensive approach with regard to the well-being and future financial position of their employees. This methodology allows mining companies to analyse and evaluate feasible possibilities with regard to housing development and infrastructure before establishing a new mining operation as well as adapting to expansion plans.

It is of further value for mining companies to get involved in this pressing issue from a spatial planning perspective and to evaluate urban nodes and housing provision from a regional resilience perspective. Local government and mining companies should attempt to create a housing environment conducive to mining development and to regularly evaluate adequate provision of housing to the mining employees. This approach will also allow sound spatial

planning since future development can be aligned with proposals in the relevant planning policies (IDP's and SDF's) on provincial, district and local levels.

According to Habitat III Policy Paper 6 (UN 2016b) (focused on urban spatial strategies), the strong urban spatial strategies must address six challenges now present across the world: i) Unsustainable form and configuration of cities and territories; ii) Land: failure to use land policy as a tool to promote equality and secure resources; iii) Inequitable access to the benefits of urbanisation; iv) Poor coordination among different levels of plans and policies and among sectors; v) Inadequate and uneven provision and distribution of good green and public space; vi) Incoherent and disassembled knowledge about balanced territorial development and urban spatial strategies. "Addressing these challenges calls for explicit, broadly conceived and executed urban spatial strategies focused on the sustainable use of land and space, provision of basic services and the equitable functioning of land markets".

The Future Earth 2025 Vision inspires ground-breaking research aligned to major sustainability challenges, one of which is to "build healthy, resilient and productive cities by identifying and shaping innovations that combine better urban environments and lives with declining resource footprints, and provide efficient services and infrastructures that are robust to disasters" (Future Earth 2015). This research project and methodology is regarded as a small but notable step into the direction of more resilient interconnected urban systems and regions, and the approach followed imitates the above goals set by leading global agents like the UN-Habitat in 2016.

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Towards Transforming Human Settlements in Urban Fringes of Delta State, Nigeria.

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Synopsis

Spatial exclusion is a negative occurrence, universally. It implies a socio-spatial segregation of Urban-Fringe dwellers, given its major hindrance to both functional urban development and the inclusive vision of cities we need. The need towards transforming these fringe areas in Urban-Delta forms the underpinning rationale for this paper.

1. Introduction

The UNCHS and ILO, (2006b:188), asserts that urban areas in developing countries are confronted with problems of unsustainable geographical expansion patterns; ineffective urban planning, governance and financing systems; inefficient resource use; poverty, inequalities and slums, as well as inadequate delivery of basic services; including, water, sanitation and waste management. Subsequently, the weakness as well as advantage of urbanization was affirmed, as the council states that urbanization constitutes both a challenge and an opportunity to sustainable development. Extreme deprivation remains a major concern with one billion people living in urban fringes. In addition, cities continue to be the major contributor to the total greenhouse gas emissions.

Organisations like UNCHS (Habitat), ILO and World Bank, including several scholars in their recent work individually and collectively agree that these challenges, as centres for business and innovation, urban areas are also a source of growth, development and jobs. Urban densities offer opportunities for economies of scale and scope in development efforts, in particular in addressing poverty, health and education issues. In fact, the positive correlation between urbanization and development has long been recognized and, throughout history, urbanization has been, and continues to be, a source rather than simply an outcome of development (UN-Habitat 2014:1).

According to UNCHS, (1993) and UNCSO, et al., in Rio+20 (2012: 8) Governments can use urbanization as a powerful tool for transforming production capacities, income levels and living standards, especially in developing countries; considering the enormous world's gross domestic product (GDP), above 70% accounted for by the urban centres of all world economies (85%, 73%, and 55% in high-income economies, middle-income countries, and in low-income countries respectively). There is need for a change in mindset of the decision makers, away from viewing urbanization as a problem, towards viewing urbanization as a tool for sustainable development (UNCHS 1993:1). Consequently, if cities were well planned and developed, including through integrated planning and management approaches, they could promote economically, socially and environmentally sustainable societies.

It has thus, become increasingly evident that there is an urgent need for action-oriented efforts aimed at advocating and inducing the acceptance of appropriate and workable planning strategies that would facilitate the combating of the problem posed by this urbanization and dysfunctional planning resulting from an unplanned urban fringes, patterns within our cities with specific references on Asaba, Warri, and Ughelli urban areas in Delta state, Nigeria. Hence, a more programmatic and comprehensive regional approach of

"survey and plan" or "diagnosis and treatment" as expressed by Geddes (1947: 22), would facilitate the combating of these problems, and as well transform the fringe areas in Delta State.

2. Statement of Problem

Essentially, urban-fringes emerge as a result of urbanization process. With more infrastructures, facilities, utilities and services provision at the urban centres, employment opportunities and higher standard of living, more people migrate from different locations, especially rural areas, to over-crowd and congested the urban centres leading to problems of unguided expansion otherwise known as fringe area. Emphatically, the alarming rate of poverty in the surrounding rural environments, urban centres attract more migrants than they can cope with in terms of housing, employment, and urban services so much of this growth do result to scattered, uncoordinated and great pressure of population on the limited infrastructural facilities. It is thus, this dynamism that is reflected within the urban area of Delta State, which has a rapid growth of its population and consequently rapid and unplanned physical growth. This eventually flows into areas of least physical and economic resistance to the expansion.

Asaba, Ughelli and Warri urban areas as apparent examples, emerged as a result of this trend, and therefore their fringes are characterized by poor housing, inadequate infrastructure facilities, utilities and services and uncoordinated land use and management. Considering these nature, this research critically surveys these thought provoking issue with specific reference to Asaba, Warri and Ughelli. Against this background, this paper identifies the development potential of these urban fringes in determining the fringe-area transformation policy framework process.

3. Aim and Objectives

This paper assesses the challenges inherent in human settlements in urban-fringes of Delta state, Nigeria, with the view to transforming these human settlements in Delta state by advancing a policy framework for city transformation planning procedure.

The objectives of the study are to:

- i. Examine the quality of the existing land use types
- ii. Assess the availability of public infrastructure facilities, utilities and services.
- iii. Assess the standard of housing quality.
- iv. Propose a transformation model and policy framework for the study areas.

4. The Study Area

Delta State, lies between longitudes 5⁰ 00 and 6⁰ 45 east and latitudes 5⁰ 00 and 6⁰ 30 north. The State is bounded on the North by Edo State, West by Ondo State, Anambra, and Imo States on the East and Bayelsa State on the South East. On the Southern flank is the Bight of Benin, which covers approximately 160 kilometers of the State's coastline. Generally, the State is low-lying without remarkable hills. The wide coastal belt interlaced with rivulets and streams, which Delta State has, form the Niger-Delta. Asaba, the Capital of the State, is a developing town located on the Right bank of the River Niger. It is the gateway to the east for travelers from the western part of the Country. Delta State has a tropical climate. This is marked by two distinct seasons - the dry and rainy seasons. The dry season is between November and April, while the rainy season begins in April and lasts till October.

The average annual rainfalls about 266.5cm especially in the coastal areas while the northern part, it is 190.5cm. In the state, rainfall is heaviest in July. Delta State has a high temperature ranging between 39^{0c} and 44^{0c} with an average of 30^{0c}. The population of Delta State according to the 2006 national population census (provisional figure) is put at

4,112,445, it has been projected using the exponential method to 2016, which is about 5,592,925. This figure is made up of 2,978,762 males and 2,943,163 females.

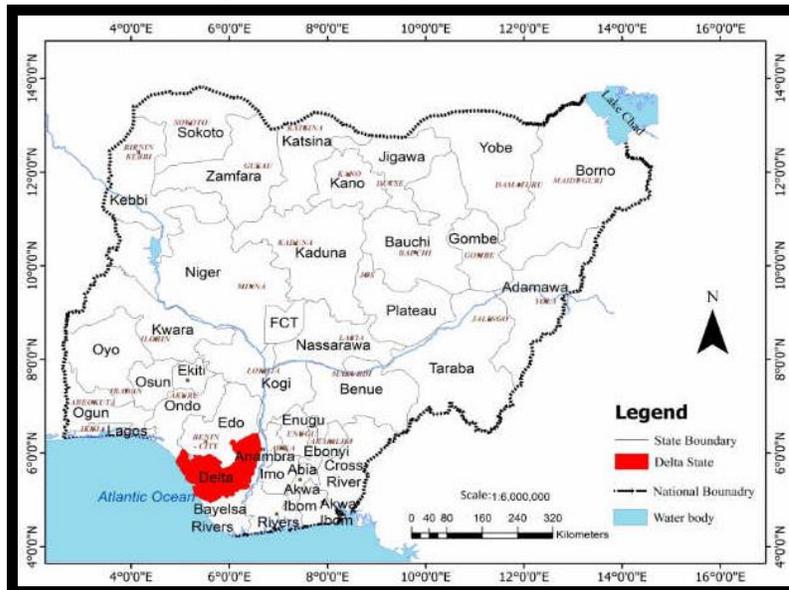


Figure 1: Map of Nigeria in the context of Delta State.

Source: Field survey 2016.



Figure 2: Map of Delta State in the context of Asaba, Warri and Ughelli Urban areas.

Source: Delta state ministry of Land and Surve, 2016.



Plate 1: Pictorial realities of the study area.

Source: Field survey 2016.

5. Literature Review

The literature highlights relevant views of existing studies, on the insight and nature of informal settlements, with which this study is concerned. Several scholars have given their expositions about the situations of the informal settlements. Collins (1994) and Haubermann et al. (2001) provide definition of spatial segregation and fringe area, the latter as a squalid, overcrowded section of a city, characterized by inferior living conditions; while the earlier was defined simply as the opposing form to integration. Similarly, Srinivas, (2005) suggests that there are essentially three defining characteristics that help us to understand squatter settlement: The Physical - having services and infrastructure below the acceptable standard. Such services are both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage; schools, health centres, market places and it likes. The Social - households belong to the lower income group, working especially in informal sector enterprises, and The Legal - lack of ownership of the parcel of land on which they have built their houses with the reasons behind them being interrelated.

UN-Habitat (2003: 16) divides the urban fringe area in developing countries into two broad classes: *Slums of hope*: progressing settlements, which are characterized by new, normally self-built structures, usually illegal that are in a process of development, consolidation and improvement, and *Slums of despair*: declining neighbourhoods in which environmental conditions and domestic services are undergoing a process of degeneration. UN-Habitat (2002) describes a slum as a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. An informal settlement found around urban fringes is often not recognized and addressed by the public authorities as an integral or equal part of the city. Some are more than fifty years old and some are land invasions just underway (Agbola & Agunbiade, 2007: and UN-Habitat, 2002).

Agbola *et al.* (2009:81) explain that the literature on informal settlements and land development has significantly grown in the last decade. Nevertheless, they agreed that, research into the economic, social, and political forces that generate and sustain the formation of informal settlements is abundant. They establish that the works of Kombe and Kreibich (1997), Durand-Lasserve (1996), Payne (1989), Rakodi *et al.* (2004), Satterthwaite *et al.* (1989), Archer (1992) and UNCHS Habitat (1996, individually, observe that because of informal settlements' inherently illegal status, squatter settlements have services and infrastructures below the acceptable level and standard.

According to UN Millennium Project, (2005) urban fringe in developing countries are usually slum, and are a group of individuals living under the same roof, lacking one or more of these conditions: "Access to improved water" - a household is considered to have access to improved drinking water if it has sufficient amount of it (20 litres per person per day) for family use, at an affordable price (less than 10% of the total household income), available to household members without being subject to extreme effort. Dwyer (1974: 29) describes urban fringes as characterized by neglect, it may not be according to local circumstances at any particular time. He further stressed that being unplanned, unpretentious and apparently chaotic, is usually either totally neglected in delineation of the image of the future.

Meanwhile, several authors refer to urban fringes as where uncontrolled building is set in without any guidance or direction by the relevant regulatory agencies. This is as result of the intra-urban mobility of houses without proper planning and policy making which adversely affect the natural standard of living quality in our urban centers. Considering these context, Dickenson (1966) asserts that informal settlements exists in areas in which there is lack of coordination between built-up areas, urban utilities access to central place services and journey to work. This problem of unplanned settlement is a two trends phenomenon, i.e. one of dispersion and centralization.

6. Research Methodology

Survey research design method was adopted, because it allows the establishment of unique characteristics of the population and the ability to develop a detailed picture and intensive knowledge of the case study. The study also addressed the performance of existing infrastructure from the perspective of the households and identified their aspirations on the public infrastructural facilities. Two main types of data – spatial and attributes were used for the study, these was obtained from both Primary and Secondary sources. Questionnaire was designed and administered as the data collection instrument to elucidate information on socio-economic characteristics, building conditions, infrastructural facilities and environmental condition of the study area.

This study adopts cross-sectional survey research design method, because it allows the establishment of unique characteristics of the population and the ability to develop a detailed picture and intensive knowledge of the study area. It was observed that the total number of buildings in Asaba, Warri and Ughelli urban fringes were 2608, 3475 and 2377 units respectively. These make a total of 8460 houses from which 10% (approximately 846) of its head of households were sampled through systematic random sampling method, and 839 questionnaires were successfully responded to.

S/No	Study Area (Locations)	No. of Building	Total building sampled (10%)
1	Asaba	2608	260
2	Warri	3475	343
3	Ughelli	2377	236
	Total	8460	839

Table 1: Sample Frame and Size

Source: *Field survey 2016.*

Statistical Package for Social Sciences (SPSS) was used to descriptively analyze data from the questionnaires administered, and presented with percentages, while tables and photographs were used to enhance vivid illustration. A Pearson Correlation Analysis and Analysis of Variance (ANOVA) techniques were adopted for analyses of the findings on the residents. This paper analyses the findings of the outcome of the investigation on infrastructure conditions based on the objectives of the study, and the development potential of the settlements in determining the integration model of the selected areas have been analysed and interpreted from various responses.

Pearson Correlation test was used to determine the relationship between regularization of informal settlement and social inclusion of informal settlement at 5% of significance level. Subsequently, survey has shown that there is strong correlation between regularization of informal settlement and social inclusion of informal settlement. The result reveals a significant and negative relationship ($r = -.5, N = 839, p < .005$). The output indicates that compliance to Land regulations was associated with social inclusion. The analyses also indicates a strong correlation between economic integration and employment opportunity in the informal settlements. The results reveals a significant and positive relationship ($r = .5, N = 839, p < .005$).

Given the outcome of the cross-tabulation of Distance to Market from Locations that indicates significance of .000 (over 95% confidence level) in the Pearson Chi-square 2-ways test of confidence level. It however shows 100% of households within Asaba, Warri and Ughelli respectively indicate that the distance to Market is far from settlement. There was indication that the distance to market, public school and public health care from these settlements are over 4km. Furthermore, there were indications that public services like motorable roads and drainage system, fire service and public water supply system were not available, as 57.1% of households make purchase of water at ₦20 (12 Cent) per 20litres, while 42.9% individually sink water borehole.

Subsequently, the survey shows difference within settlements, and amongst households' locations, this was done using the Pearson Chi-square 2-ways test of confidence level. It indicates that there was significance of .000 (over 95% confidence level). The survey indicates that 52% and 45.1% of households within Warri and Ughelli respectively, travel over 5km to access public health facility. It is about 4km distance that is covered to access public health facility as indicated by 85.1% of households in Asaba fringe-area, whereas only 14.9% of households travel less than 3km to access health facility. This indicates that more people travel above 4km to access this facility, which is situated at the city centre.

Essentially, it was deduced from the analyses that inspite of the difference between settlements on pipe borne water availability, there is no clear difference on the effect of water sources availability and distance to the available sources of water in the opinion of households of Warri and Ughelli urban-fringe, based on the stated hypothesis. While, there is clear difference on the effect of water sources availability and distance to the available sources of water in the opinion of households of Asaba fringe area.

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Availability of Public Pipeborne Water	Between Groups	.000	3	.000	.	.
	Within Groups	.000	387	.000		
	Total	.000	839			
Distance to available sources of Water	Between Groups	7.237	3	2.412	8.309	.000
	Within Groups	112.349	387	.290		
	Total	119.586	839			

(Post Hoc Tests) Multiple Comparisons

Least Significant Difference (LSD)							
Dependent Variable	(I) Location of Households	(J) Location of Households	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Distance to water source Sources of Water	1 Asaba	2 Warri	.232 [*]	.088	.009	.06	.41
		3 Ughelli	.343 [*]	.087	.000	.17	.51
	2 Warri	1 Asaba	-.232 [*]	.088	.009	-.41	-.06
		3 Ughelli	.111	.107	.303	-.10	.32
	3 Ughelli	1 Asaba	-.343 [*]	.087	.000	-.51	-.17
		2 Warri	-.111	.107	.303	-.32	.10

*. The mean difference is significant at the 0.05 level.

Table 2: Test of Difference btw Spatial Integration & Infrastructural Facility availability
Source: Field survey, 2016.

7. Summary of Findings

Globally, spatial segregation has been considered as a negative condition, and it is understood as a socio-spatial segregation of urban dwellers. It should be considered as the opposing form to urban integration, considering its major hindrance to both functional urban development and the inclusive vision that cities are supposed to nurture for sustainable development. These problems that arise from urban fringe or informal settlement is as a result of coalescence and contiguous spread of building, as buildings springing up around unplanned area of the city, that tend to lead to a deplorable state of natural and scenic beauty of landscape.

Importantly, major problem of these human settlement is the consequence of the pattern of which they are formed, that makes government neglect these fringe area owing to their informality. There are lack of goods and services. Since urban fringes are considered to be illegal residential areas, the local authorities are not obliged to provide them with socio-economic facilities, utilities and services obtainable in statutory residential areas (Simposya, 2010).

Subsequently, residents at Warri and Ughelli urban fringes travel over 5km to access public health care, and other essential social services. Dwellers of Asaba fringe-area (85.1%) travel about 4km distance to access public health care services, and other public services like motorable roads and functional drainage system, fire service and public water supply system were not available. These point to both economic, social and spatial segregation. These outcome justifies the postulation earlier stated that informs the underpinning rationale for this paper given the situation of these three urban fringe-areas in Delta state, Nigeria, as its subject of analysis.

8. Conclusion

Generally, spatial and socio-economic segregation is obvious in the situation of these urban fringes under study, these conditions conform with the definition of spatial segregation in the work of Haubermann et al. (2001). Although, on the whole the findings show that the prospect is high for instituting a workable strategies that would ensure perspicacity and effective control of all physical and spatial problems of the fringe-areas. It is logical therefore to consequently restructure the various approaches that have resulted to the set of dynamics ascribed to the study area and it should be through a comparatively inclusive planning, good governance and administrative measures as put forward in the recommendations and policy framework. Beyond doubt, if the recommendations are taken into account the environmental problems and fringe-areas factors identified in the various settlements would be eliminated, thereby ensuring an ideal transformation of these settlements and their contiguous city centre.

9. Recommendations

It is considerable to spatially development "formally acquired land" of the urban area, but where there is desertion of the land acquired through "customary right of occupancy", it gives serious concern to planners and other stakeholders. It is therefore recommended that the entire area indiscriminately developed by individuals without basic infrastructure should be regularised and rejuvenated by government alongside other development stakeholders, in order to bring development to the affected settlements. These recommendations are put forward to advance successful transformation of Asaba, Warri and Ughelli urban fringes and their various city centres through:

- a) Physical improvement in connection with area-based plan, water supply, sanitation, streets, public spaces, drainage panning.
- b) Functional and effective housing policy that would emphasis and intervene on the physical aspects of housing conditions. Valdez, (2012: 22) opines that these would incorporate a situation of qualitative low cost housing scheme through detailed planning, projections and designs whose emphasis would include planned expansion of rural settlements that exist around urban areas.
- c) Empowering mortgage banks and other financial institutions with adequate funds and key sectors of government to provide grants for housing schemes.
- d) The fine-tuning and integration of existing regulatory instruments to allow a period of amnesty to fair defaulter, and consider a downward review of statutory charges for sustainable regularization (Onyemenam, 2015).
- e) Integration of public participation requirements into policy frameworks that require national planning improving the neighbourhood through mobilization and participatory self help efforts and public private sector partnership to initiate a scheme (Peeters, 2015).

10. Transformation Framework

Essentially, it is upon transforming the urban fringe that ensures the realisation of City Transformation. However, there are fundamental components required for physical improvement of the fringe-area for inclusion process, it include: i. Facilities provision - School, Road Network, Park, Playground, Clinic, community centre, Security, Fire service; ii. Tenure regularisation - Registration, Demarcation, Documentation; iii. Housing improvement - Construction, Housing expansion, Technical assistance; iv. Development program - Social, Economic, Educational, Health, Cultural; and v. Community participation (UNHABITAT, 2012). Strategic planning generally occurs in a cycle which is made up of four main stages:

Planning, Resource allocation, Implementation and Monitoring and review. The integrated development planning process also follows a similar cycle and logic. There is some preparatory work that needs to be done prior to the commencement of the planning process. Preparation involves the production of a transformation process plan. The programme is necessary to ensure proper management of the planning process. Essentially, it must contain the following: Institutional structures to be established for management of the process, Approach to public participation, Structures to be established for public participation, Time schedule for the planning process, Roles and responsibilities and How the process will be monitored.

Meanwhile, as part of the preparation stage, the state government, in consultation with its local councils must adopt a framework for the integration and transformation process. The framework determines procedures for coordination, consultation and alignment between the state and the local councils and therefore connects them both. The framework guides each local council in preparing its process plan (Africa, 2010).

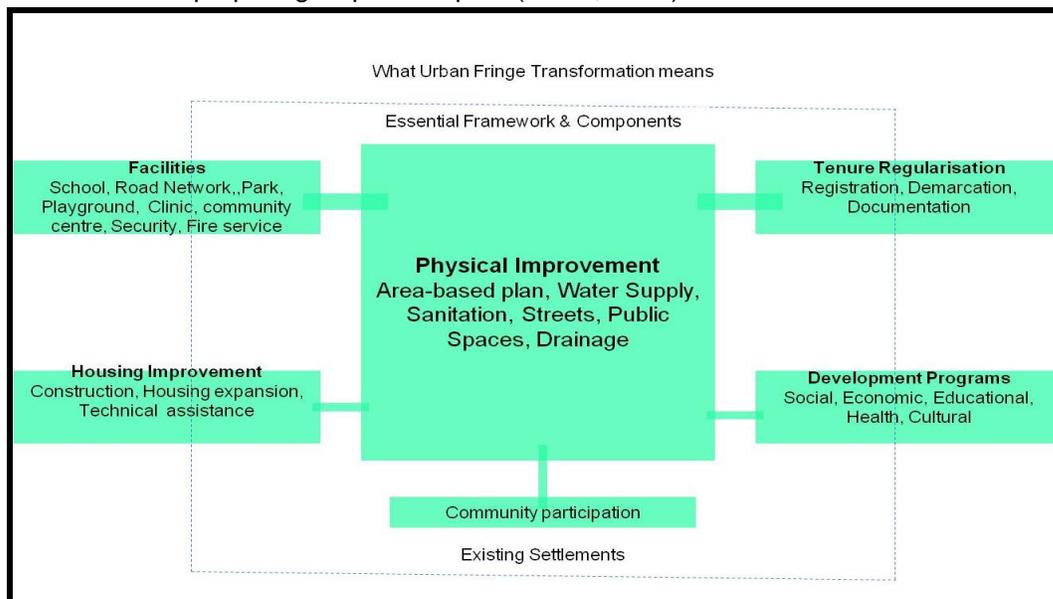


Plate 2: Participatory Urban-Fringe Transformation Model

Source: Modified from UN-HABITAT, 2012:10.

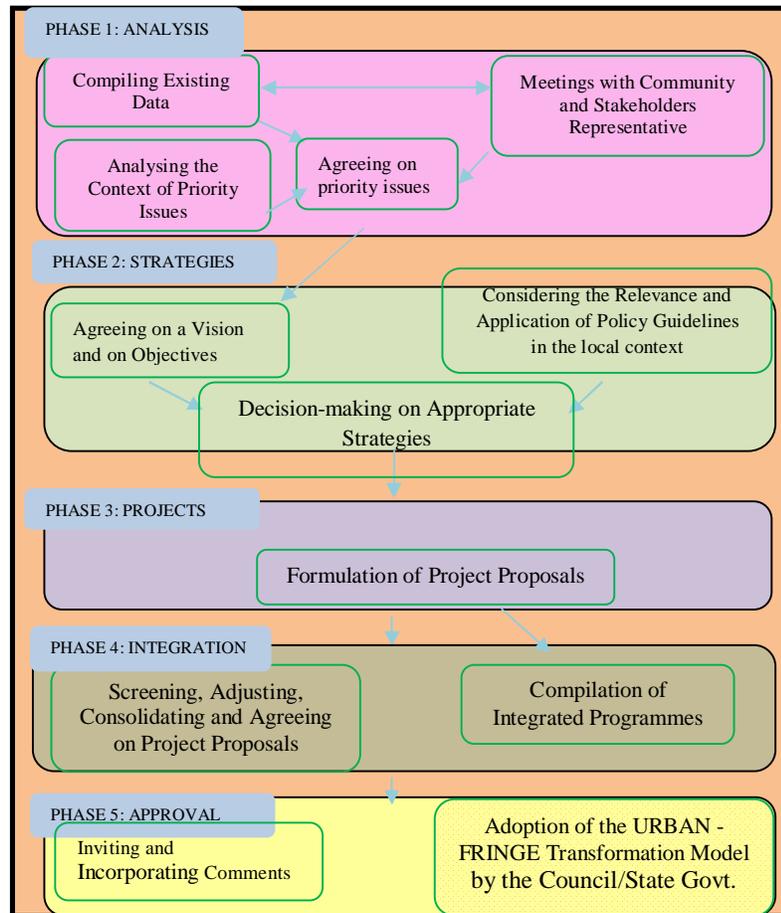


Plate 3: Overview of the Integrated and Transformation Planning Process
 Source: modified from Africa, E, et al., 2000.

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Deprived human settlements in Abidjan: from theory to action

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1. Introduction

1.1. The UIA-CIMES programme

A UIA-UNESCO initiative on medium-sized cities

The UIA-CIMES Programme was initiated by the International Union of Architects (UIA), following its 19th Congress (Barcelona, 1996), in collaboration with the Management of Social Transformation (MOST) Programme of UNESCO and funded by Lleida City Council (Spain). The main idea behind the Programme is to highlight the importance of medium-sized cities where the vast majority of the world urban population still lives: almost 60% in cities with fewer than 1 million inhabitants in 2014 (Figure 1). These cities play a vital role by structuring the territorial space and creating the bridges between rural areas and capital cities. They provide basic services for millions of people and represent great challenges in terms of local development. In a context of accelerated global urbanisation and lack of a world scale investigation into the phenomenon of medium-sized cities, the UIA-CIMES programme opened the debate on the role that should be played by architecture and urbanism in these cities with limited resources. The endeavour is more practical than academic and seeks to establish a framework for cooperation between institutions and professionals in setting technical and methodological criteria for intervention.

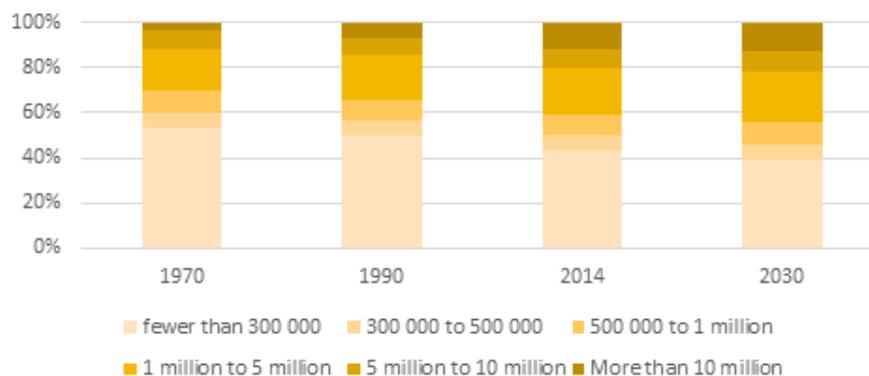


Figure 1: Distribution of the world's urban population by size class of urban settlement, 1970, 1990, 2014 and 2030. Source: United Nations, 2014.

The Base Plan Method

In order to set the stage for the intervention of institutions and professionals in medium-sized cities, the UIA-CIMES programme co-ordinators have elaborated the "Base Plan" Method. The Base Plan is a simple and flexible planning document that gathers a set of basic data for a better understanding of the study area. Directives are then provided for immediate actions and to pave the road for subsequent comprehensive planning stages.

1.2. How did CNOA get involved?

In 2012, the Council of the National Order of Architects (CNOA) of Cote d'Ivoire was reflecting on the role that should be played by architects in addressing the uncontrolled and unoriented rapid expansion of Abidjan and the resulting issues on the quality of life. The Council was willing to engage the dialogue with the authorities about these issues and fill in the perceived gap between their decisions and the actual needs of the population on the ground. With outdated and cumbersome traditional planning documents hampering action, the CNOA showed an obvious interest in the UIA-CIMES Programme: the Base Plan approach was simple and relevant with the vision of the CNOA to trigger change by small, concrete actions. So the CNOA organized a Continuing Professional Development event in Abidjan in collaboration with the UIA and gathered young architects in a workshop called *Atelier Spontané* to implement the Base Plan Method in Adjouffou.

1.3. Why Adjouffou?



Figure 2: Location of Adjouffou southeast Abidjan. Sources: author, satellite image from Google.

Adjouffou is an informal settlement that swallowed a small village of fishermen southeast of Abidjan (Figure 2), the largest city of Cote d'Ivoire. It is located at one of the fastest sprawling outskirts of the agglomeration, in the the commune of Port-Bouet, with an estimated population of 140,000 inhabitants (INS, 2014) originating from very diverse social backgrounds in Cote d'Ivoire and in West Africa. In 1980 a ministerial decree defined the site of Adjouffou as a public utility area planned to receive the extension of Abidjan's international airport and the adjoining business district (the area was expanded by another decree in 2008). Other nationally strategic infrastructure at stake in the area include the A100 highway and the development of the seaside landscape to thwart coastal erosion (Figure 2). The population has received a compensation for leaving Adjouffou but remained on the site. Ever since the eviction is due but has not yet happened partly because the huge project of the airport extension suffered the successive socio-political unrests in the country (1999, 2001 and 2011). The other main reason the eviction has been postponed until now is the authorities' fear of such an unpopular action. The situation has become more and more problematic over time though: Adjouffou lives with a constant threat of the evacuation with poor basic services because it is left over by the central government, but at the same time its population is growing, some economic activities are thriving (biggest food crops market of the city) and once in awhile, for electoral reasons, local authorities support an isolated project. Adjouffou is therefore a very sensible zone on which the CNOA wanted to draw the attention of the authorities in a fresh new way.

Besides, Adjouffou is the typical example of the functional definition of a mid-sized urban settlement (Bellet and Llop Torné, 2003) emphasizing the role of mediation (intermediate city) of human, goods and services flows between a bigger urban area and rural spaces.

2. The organisation of the workshop

2.1. *The Atelier Spontané*



Images 1 & 2: the workshop core team. Source: Atelier Spontané.

The Atelier Spontané consisted of a core team of young architects supervised by two senior architects (Images 1 & 2). The core team was assisted by local consultants (2 senior town planners and 1 sociologist) and by international visitors from the UIA including the UIA-CIMES Programme coordinator Josep Maria Llop Torné.

2.2. Objectives and expected results

The objective of the workshop was to design a simple planning document for Adjouffou relying on the Base Plan Method that would be the framework for immediate interventions on the ground. Concrete actions would then be proposed in order to improve the daily living conditions in the precarious settlement. The team was also expecting to initiate an inclusive dialogue between the authorities, the population and the professionals about a shared vision of the city.

2.3. Methodology

Preparatory sessions with consultants

The Programme coordinator introduced the Base Plan Method and gave orientation on the adaptation of the Method to the case of Adjouffou. After a quick site visit, the team organized a brainstorming session with local urbanists and sociologists in order to draw the big picture of informal settlements in Abidjan and define the scope of the specific work of the workshop.

Data collection and elaboration of the Base Plan

Maps of Abidjan and Adjouffou were collected from the National Bureau of Technical Studies and Development (BNETD) and the Ministry of Urbanism, and statistics on the population of Adjouffou were provided by the National Institute of Statistics. The team then elaborated the graphical Base Plan that synthesizes the main characteristics of the study area.

Onsite surveys

The onsite surveys consisted, on the one hand, in meetings with the authorities: the Municipality of Port-Bouët (administratively responsible for Adjouffou) and the Ministry of Urbanism. The main purpose of these meetings was to get information about planned projects in the area and their overall vision for the future. On the other hand the team met with the traditional chief and his notables and organized discussions in Focus Groups with community leaders, heads of NGOs and delegates from the food crops market. Amongst the main points that have been discussed: (1) their living conditions, (2) expectations from the authorities and (3) perspective on the future.

Analyses and proposals

The team then made proposals based on the identified issues during onsite visits, meetings with the authorities and Ministry and discussions in the focus groups.

Feedbacks on the proposals

The draft proposals were briefly presented and discussed with the population of Adjouffou and fine-tuned before the UIA's CPD event. The work was then presented during the plenary session of the CPD and discussed with colleagues from several countries.

3. The outcomes

3.1. The Base Plan and a brief overview of the survey results

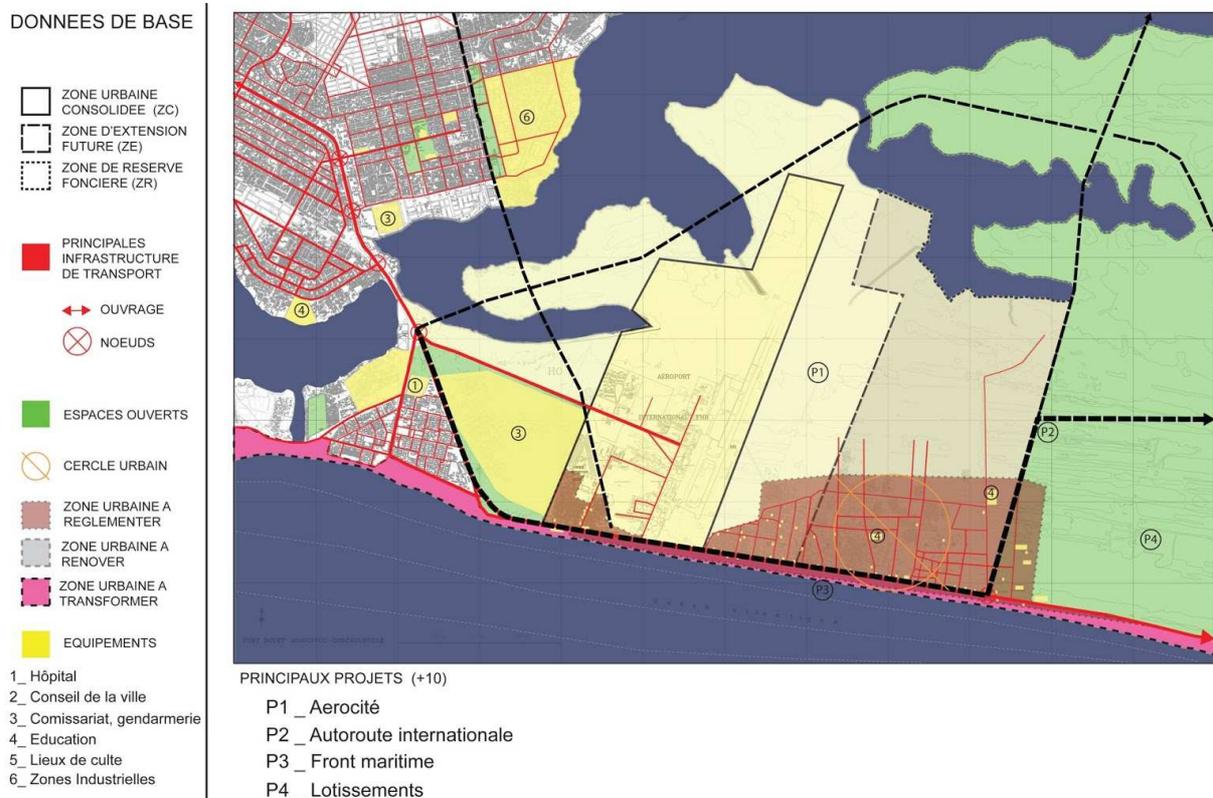


Figure 3: The Base Plan of Adjouffou. Source: Atelier Spontané.

The very first outcome of the workshop after the data collection was the Base Plan (Figure 3) giving an insight into the urban context of Adjouffou. The informal settlement is located on a piece of land that is very strategic at a national level. It is surrounded by two primary road axes: the recently upgraded national express road A100 that links Abidjan to other West African capital cities on the seaside (Accra, Lomé, Cotonou and Lagos), and the future Y4 road which is very important in improving the mobility between continental North Abidjan and seaside South Abidjan separated by lagoons.

Adjouffou is also next to the future exhibition park, a 12,000 units social housing project, and above all, the airport extension project which is the focal point of all this urban area, expected to be a unique business district in West Africa.

3.2. What we learned about Adjouffou

The following table summarizes the results of the light survey undertaken in Adjouffou.

Surface area	
972 ha	
Population	
Estimation	140,000 inhabitants
Composition	Native villagers : 5%, Ivoirians: 60%, foreigners: 35%
Immigration reason	Proximity to the airport, the port of Abidjan, the industrial zone of Vridi and the main road axis of Abidjan from south to north.
Government	
Municipality, native traditional ruler, informal (yet powerful) community leaders	
Habitat	
Type	One or two stories small buildings organized around a shared courtyard
Household sizes	1 to 10 people
Activities	
Economic	Food crops market and small proximity businesses: convenience stores, barber shops, transportation, etc.
Leisure	Football
Education	Secondary school
Mobility	
Transport modes	Pedestrian, bus, regular taxis, intercommunal taxis
Destination	To work outside Adjouffou
Perspective on the future	
Almost all the inhabitants have no long term perspective in Adjouffou. They are in transition and want to leave before a forced eviction	
Immediate actions for the improvement of the daily life	
Water supply, electricity, waste disposal, rainwater drainage, schools, hospitals	

Table 1: Quick summary of the findings of the survey

An "intermediation" settlement

The vast majority of people in Adjouffou mentioned the proximity of their workplace (the international airport, the port and the industrial zone of Vridi) as the main reason of their choice to dwell the area. Adjouffou is a transition point for flows of people coming from inside Cote d'Ivoire and from neighbouring countries. They have no long term project in the area and plan to leave as soon as they get better conditions in another location of Abidjan. So they only expect short term interventions to improve their daily living conditions via more reliable basic services: water, electricity, waste collection, etc. Adjouffou is a transition point for goods too, mainly through its market which receives food crops from the neighbouring rural areas and routes them to other selling points in the city.

Strictly organized population

The population of Adjouffou is organized in strong communities that replicate the social structure of the origin community. Under the authority of the native traditional ruler, community leaders play an important role in ensuring the harmonious cohabitation of the different social groups (lower perceived insecurity compared to other parts of the city and much cleaner habitat than one might think except from main road axes). This kind of informal organization becomes vital when people feel left over by the official authorities and realize they have to do something for themselves. The inhabitants of Adjouffou value their lifestyle in houses organized around private courtyards (Figure 4) which are their privileged place of socialization. This is one of the reasons they would rather build their houses themselves (in the case of a relocation) at their own pace, taking into account their lifestyle.

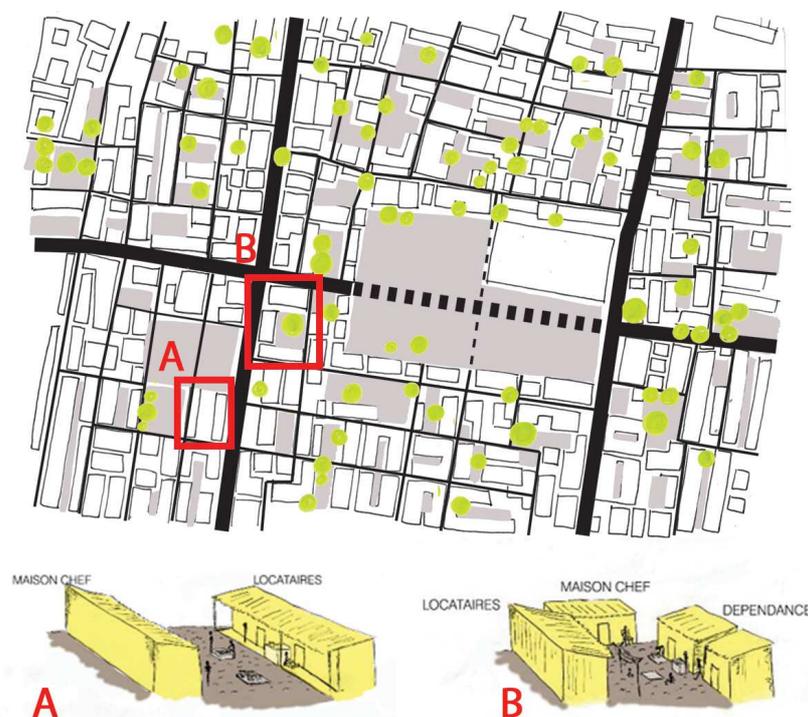


Figure 4: Typical buildings layouts on plots in Adjouffou (courtyards in grey). Source: Atelier Spontané

Unyielding authorities

The authorities, both at local and central levels, are unyielding about the future of Adjouffou. They consider the projects at stake in the area fundamental for the whole country. Upgrading the urban fabric and legalizing the settlement is not an option.

3.3. Proposed interventions

The most mentioned problems by the inhabitants of Adjouffou were:

- Rainwater drainage: during heavy rains the main roads that link inner Adjouffou to the A100 highway are flooded, leaving muddy streets after the rain (Image 3);
- Water supply: in most homes in Adjouffou women and children fetch water several times a day from wells in questionable hygiene condition (Image 4);
- Waste collection: Adjouffou is not included in the official waste collection circuit. So waste is disposed on the main streets, posing a real public health issue (Image 5).



Images 3, 4 & 5: Muddy street after the rain (3), well in poor hygiene condition (4), a street obstructed but uncollected waste. Source: Atelier Spontané.

The following are a few of the actions that could be taken in the short run to temporarily improve the living conditions in Adjouffou, pending the eviction.

Rainwater drainage

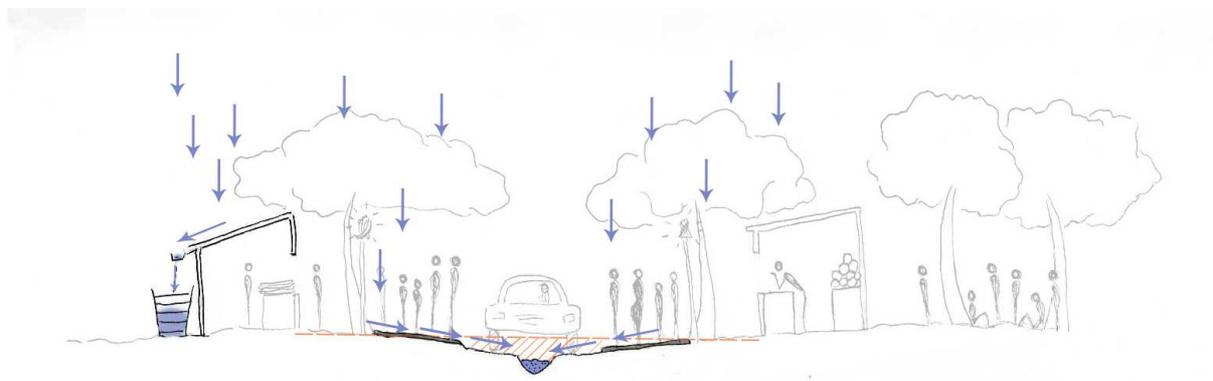


Figure 5: Single central channel on reprofiled road. Source: Atelier Spontané

For rainwater drainage, the team proposed to reprofile the roads with slopes towards the centre (Figure 5). Surface water runoff would take place in a central channel, keeping the roadsides dry for pedestrians. Soakaways would be created at certain points of the central channel for the natural infiltration of the remaining water after the runoff. Funding from authorities on the eve of election years is a possible way of realizing this intervention.

Water supply

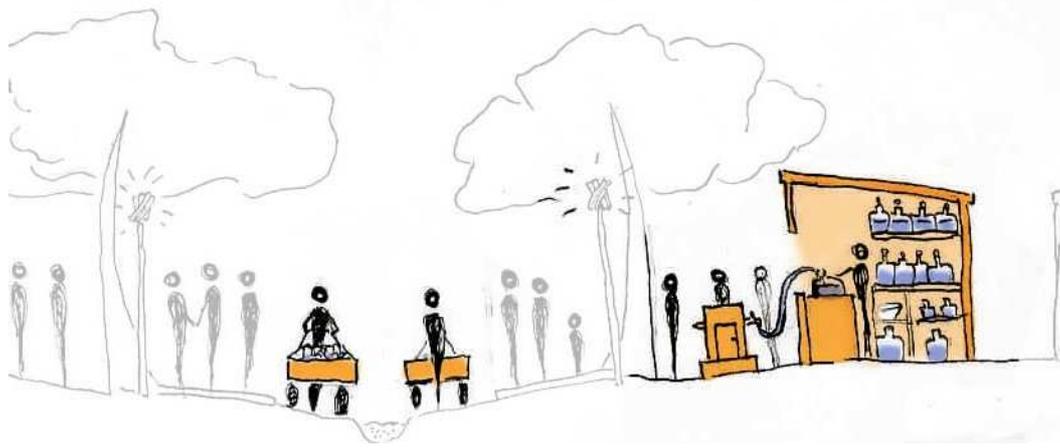


Figure 6: water selling point. Source: Atelier Spontané.

Creating more fountains which are safer water sources compared to wells could improve clean water supply in Adjouffou. The Atelier Spontané suggested the involvement of young entrepreneurs in Adjouffou to contribute to the creation of fountains and build a water selling business (Figure 6) with the possibility of home delivery. This would create a few jobs for the unemployed youth of Adjouffou.

Waste collection

Adjouffou obviously needs an internal waste collection circuit to evacuate the garbage to a gathering point on the official circuit. As for water supply, the involvement of young entrepreneurs was suggested to build a business around this internal circuit with the possibility to introduce garbage sorting and recycling.

Home lighting



Figure 7: Moser lamps for lighting during the day. Source: Atelier Spontané.

The few times team members had the opportunity to get into houses during the visits in Adjouffou (guests are received in the courtyards), although it was during the day, dark interiors were a very noticeable inconvenience. The use of Moser lamps was recommended to improve the lighting of the houses with daylight. Moser lamps are clear plastic bottles filled with water and two capfuls of bleach, inserted in a hole in the roof and secured with a waterproof sealant (Figure 7).

3.4. Guidelines for the relocation of the population

When people are evicted from an informal site without carefully considering their relocation, they just gather on another unoccupied but most likely illegal site, just moving with the same problems. It would be a nearby site because they want to be close to their jobs. This is what happened after the failure of former evictions in Abidjan in the 1990s and the 2000s. The following are actionable insights to contribute to the reflection on this delicate matter.

Phased eviction

The projects in the area are planned in several phases: the upgrade of the A100 with an expanded allowance, the first phase of the airport extension, the seaside landscape development, the other phases of the airport extension, etc. The suggestion here is to split the eviction accordingly in order to reduce the mass of population to deal with at a time. The authorities have adhered to this idea and the first wave of eviction occurred along the A100.

Taking advantage of the nearby housing projects

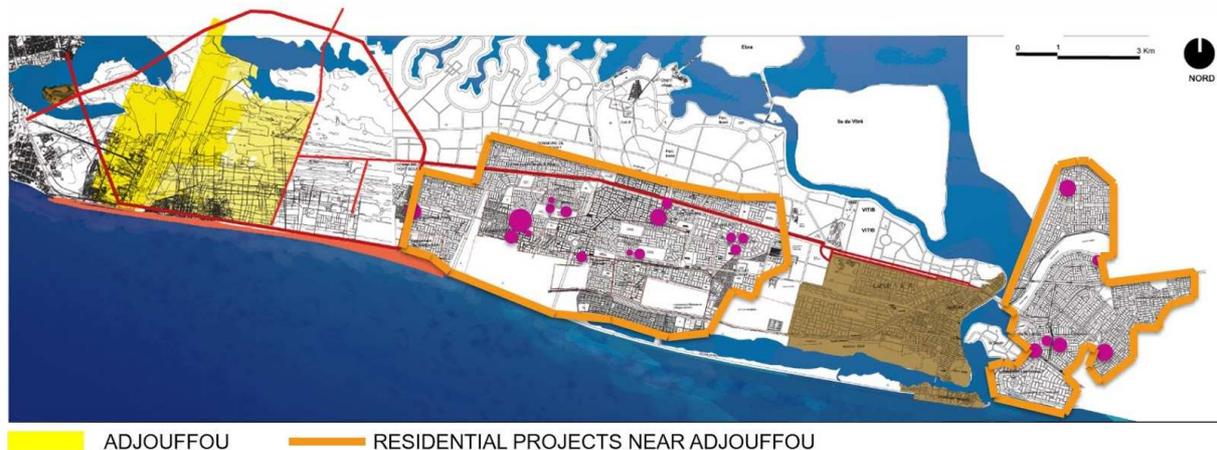


Figure 8: Planned residential developments close to Adjouffou. Source: Ministry of Urbanism.

Abidjan is sprawling to the southeast, so there is a couple of ongoing and planned housing development next to Adjouffou (Figure 8). A ministerial decision (n° 30 of 14th October 2011 MCAU/CAB/DGUF/DU) mandates the creation of land reserves (2.5% to 5% of the developed area) in every real estate project for social purposes. However people in Adjouffou are not informed of such provisions. The idea here is to draw on the strong communities and create an association of the inhabitants of Adjouffou to claim the priority on these land reserves for the initial phases of eviction. For the subsequent phases, with the assistance of the authorities, the association could negotiate its own serviced lands.

Conclusion

The next main step for the Atelier Spontané is the assessment of the above mentioned proposals. This is necessary to start thinking about the replicability of the approach to other deprived settlements in Cote d'Ivoire. Unfortunately these proposals are being implemented at a very slow pace mainly due to the disengagement of the CNOA after a change of leadership. We are still in discussions to put the Atelier Spontané at a higher priority level on the agenda of the new leaders of the CNOA or to create a completely independent entity to continue the work.

By initiating this adventure, the broad purpose of the Atelier Spontané was to prove that there is no need of extraordinarily huge means to start reflecting on the improvement of the daily living conditions in our cities. The workshop outlined the importance of reintroducing the dialogue between the general public, the authorities and professionals to design an inclusive vision of the city. The participatory approach has already been tested in urban restructuring projects in Abidjan in the early 1990s with relatively satisfactory outcomes despite some obvious weaknesses (complex and time consuming processes). It has become less common since then because of the rapid urban population growth and the resulting housing pressure on the authorities who have now prioritized new but arguably incoherent fast projects bypassing the general public opinion. As a result of this rather chaotic approach, the relationship between the city and its inhabitant has become very bad. People now have the legitimate feeling that the city does not belong to them, so they do not take care of it and just expect things to happen.

Change is coming very fast though. More and more city dwellers are connected to social media and can freely express their opinion to a broad audience. They recently forced the authorities to reconsider an unpopular increase in the price of electricity. We hope this will extend to planning matters. A new kind of participatory approach could appear: before, it was proposed to people to involve them in the process, now they may demand it.

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Four Decades of Vertical Living: An Analysis of the Architectural Development of the Vertical Social Housing Projects by the National Housing Authority in Bangkok Metropolitan Region between 1973 and 2013

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Abstract *The Urban housing shortage is one of the most critical issues facing all major cities worldwide. Unfortunately, the severity of the problem seems only to escalate at an alarming rate as fifty-four percent of the global population lived in urban areas in 2014 and nearly fifteen percent of the urban residents worldwide lived in the twenty-eight metropolises with more than 10 million inhabitants. The pressure of overpopulation resulted in a scarcity of urban housing, particularly for the low-income dwellers. To alleviate the situation, governments have frequently promoted the development of state-operated high-rise social housing.*

In Thailand, where fast-paced and often unplanned urbanization began as an aftermath of the Second World War, the challenges to provide housing to the rapidly growing number of urban inhabitants in Bangkok--the capital and sole primate city--became critical since the 1950s. The city struggled and failed to cope with the dramatic population rise, particularly in the lower-middle-income urban areas where the pace of urbanization appears to be the fastest. After a series of smaller measures had been implemented with limited success, the National Housing Authority (NHA) was established in 1973 to directly administer the residential development within the kingdom. Since its inception, NHA began experimenting with vertical housing projects in order to provide affordable housing for Bangkok's low-income residents who were heretofore often marginalized by the commercial housing market.

Using a collection of vertical housing projects built by NHA in Bangkok Metropolitan Region (BMR) as case studies, this paper provides a survey of architectural developments of NHA's high-rise social housing. The primary emphasis will be on the changes in the approach to the construction and architectural innovations, illustrating through spatial and architectural analyses how quality housing and urban outcomes can be achieved within constrained social housing scenarios.

1. Introduction

1.1 Background

The year 2007 is a milestone in global urban development. It was the first time that the number of the global urban population outgrew the global rural population. (CHIU, December 1983) (Sheng, March 2002) (Murray, August 2013)ⁱ Predominantly, this phenomenon was a direct result a worldwide process of intense and rapid urbanization beginning soon after the

end of the Second World War. In the 1950s, over seventy percent of the global population was rural inhabitants, and only thirty percent thereof were urban inhabitants. Comparatively, in 2014, fifty-four percent of the global population were living in an urban settlement. The global trend of fast-paced urbanization is anticipated to escalate continuously in the future.ⁱⁱ By 2050, the global rural population is projected subside to approximately thirty-four percent of the world's population, while their urban counterparts will rise to sixty-six percent.ⁱⁱⁱ The continuing urbanization and overall growth of the world's population has brought profound changes to the scale and spatial qualities of the world's urban environs.

In some cities, unplanned or inadequately managed urban expansion leads to rapid sprawl, pollution, and environmental degradation, and most importantly a shortage of decent human habitat. In recent years, the problem of urban housing has escalated with hundreds of millions of the world's urban poor live in sub-standard conditions. However, this has not had an effect only on the underprivileged, it has generated adverse effects on urban residents from all demographic cross sections. It has been hypothesized that the main cause behind this formidable urban phenomenon is the tremendous population growth resulting from rapid migration from rural areas.

Overpopulation consequently poses serious challenges to cities' capability to keep pace with increasing demands of its residents. Concerned by these imminent threats, many cities have attempted to implement new methodologies to alleviate the problem of housing shortage. Each was met with a varying degree of success. One of the strategies most frequently employed by the governments is promoting the development of state-operated vertical housing. High-rise condominiums appear to be an economically reasonable and practical solution for providing functional and subsistent accommodation for a large number of urban inhabitants, requiring relatively small parcels of land—a resource which is both scarce and costly within an urban setting. The vertical housing projects can also generate the desired population density, enabling the distribution of limited resources to be more efficient and geographically focused, and thus lessening embedded energy and costs which further urbanization would otherwise incur.

1.2 History of Social Housing Development in Thailand, from 1940 to 1972

The history of social housing development in Thailand can be traced back to 1940. Faced with a housing shortage for the low-income households in Bangkok as an aftermath of World War II, the Royal Thai Government established the Housing Bureau.^{iv} Through the Bureau, the government launched a nationwide initiative in support of housing improvement. In order to further promote comprehensive housing development, the government founded three additional public agencies: Department of Public Welfare in 1950, Government Housing Bank in 1953, and the Bangkok Slum Improvement Office in 1960. Part of the first of the five-year National Economic and Social Development Plan inaugurated in 1961, the three agencies aimed to resolve a shortage of residences for people, which the number had been increasing every year. As a result, nearly 1,400 dwellings were constructed under the Housing Bureau's auspices by the mid-1950s, most of them in Bangkok.^v

Even though these government agencies achieved some early successes, they were not sufficiently well-equipped to cope with the problem as deeply-rooted and as complex as housing the underprivileged urban dwellers. Eventually, it became clear to the government that neither of these public agencies were able to fulfill Thailand's urgent housing needs. The

government soon realized that not only was there a lack of decent housing, but there was also a housing shortage in urban Thailand, especially in Bangkok. In 1971 the shortage was estimated to be 100,000 units, and was expected to increase to 170,000 within a decade.^{vi}

1.3 *The National Housing Authority (NHA)*

Until 1973, the aforementioned four government agencies were responsible for housing in Thailand. The period prior to 1973 can be defined by a “laissez-faire” attitude towards social housing development. In the 1960s, the rapid urbanization of Bangkok resulted in a severe shortage of housing for the urban dwellers.^{vii} Nevertheless, their agencies' inefficient internal administrative organization prevented them from being able to satisfy the public demand thoroughly because each of these agencies belonged to different jurisdictions. As a result, housing problem for the low-income in Bangkok continued to deteriorate. This predicament eventually led to the merger in 1973 of three housing agencies and the development activities of the Government Housing Bank into the National Housing Authority of Thailand (NHA). NHA was closely modeled after the Housing and Development Board of Singapore, founded in 1960, which by the mid-1970s had provided suitable housing for about seventy percent of Singapore's population.^{viii} This represented an official commitment of the Royal Thai Government to a direct and active role in the provision of housing for its citizens through national planning under a single, national institution, and marked a significant change regarding public housing policy in Thailand. The responsibilities of NHA were to build homes for people, to conduct urban community development, to clear slums and resettle the persons affected by the clearing operations, to provide dwellings and estates for rent, sale and hire-purchase and to manage them, and to subsidize tenants and buyers. This represented an official commitment of the Royal Thai Government to a direct and active role in the provision of housing for its citizens through national planning under a single, national institution, and marked a significant change regarding public housing policy in Thailand. NHA's responsibility was to provide low-cost housing for Bangkok's growing labor force.

1.4 *Bangkok Metropolitan Region (BMR)*

The geographical focus of this study is on the Bangkok Metropolitan Region (BMR), because it is by far the densest and due to the high cost of land, has had the largest number of high-rise social housing development in the nation. BMR consists of the Bangkok Metropolitan Area (BMA) and its five neighboring provinces: Pathum Thani, Nonthaburi, Nakhon Pathom, Samut Sakhon, and Samut Prakan. Bangkok has seen rapid urbanization since its population reached two million in the 1960s. Since the 1980s, greater Bangkok's built-up areas have spilled beyond Bangkok's borders to neighboring provinces, initially to the north and south. With the combined area of 7,762 square kilometers, the population of BMR was estimated at around seven million in 1980; around nine million in 1990, it was; around 10 million in 2000, and rose to a level of 14.5 million in 2010.^{ix}

Bangkok is a primate city. Around sixty percent of the Thailand's urban populace lives in Bangkok. It is the political, monetary and budgetary, social and instructive focal point of Thailand. Employment opportunities in industrial and service sectors attract labor to Bangkok from all over the country. Moreover, the standard of living in the capital is also significantly above the national average. According to the Thailand Development Research Institute (TDRI), the 2013 Gross Provincial Product (GPP) per capita was 28,098 THB per year in BMR, about 12,766 USD for BMR versus 6,293 dollars the nation's average.^x Some migrants come to work in Bangkok for only part of the year, to return to their villages when needed on

the farm. Others come for a couple of years to earn sufficient money to make a larger investment back home. Many come to stay. Most families in Bangkok, whether they stay for short or long periods, face enormous problems finding affordable housing.^{xi}

2. Research aims and Methodology

2.1 Research Objectives

- 2.1.1 To Study the development model of social housing projects by NHA in BMR during the period of four decades, from 1973 to 2013.*
- 2.1.2 To investigate and understand surrounding factors that have influenced the development of high-rise social housing projects by NHA in BMR during the period of four decades, from 1973 to 2013.*
- 2.1.3 To analyze changes in construction approaches the development of high-rise social housing projects by NHA in BMR during the period of four decades, from 1973 to 2013.*
- 2.1.4 To highlight key innovation and analyze design innovations utilized in the architecture of high-rise social housing projects by NHA in BMR during the period of four decades, from 1973 to 2013.*
- 2.1.5 To construct a comprehensive conclusion, identify advantages and disadvantages, and finally make grounded recommendations to NHA regarding the design of high-rise social housing projects in order to benefit the future development.*

2.2 Scope of Study

This emphasis of the study is on changes in approaches to construction and design innovations of the high-rise social housing projects by NHA and as well as to gain greater comprehension of environmental factors such as economy, technology, and changes in the society that have influenced the development of high-rise social housing by NHA.

2.3 Research Hypothesis

- 2.3.1 Design innovations were products of negotiation between design intent and economic, social and technological factors.*
- 2.3.2 Technological and environmental changes affected the approaches to architectural design and construction of NHA high-rise social housing development.*

3. Case Study

3.1 Case Study Outline

This developmental research analyzes the evolution of various influencing factors as relating to physical and functional aspects from nine different developments built between 1973-2013 in Bangkok, Nonthaburi, and Samutsakhon. It is intended to understand the ideology of these high-rises, physical manifestation thereof as well as the changing function. Information from various sources such as NHA-provided, field-collected, from direct interviews of NHA's personnels, publicity, and media indicate the evolving style and design methodology of these vertical housing by cross analyzing the relationship between the environment and the resulting changes. The aim is ultimately to understand the design approach and projected tendency of the development for these vertical housing by NHA.

3.2 Case Studies



Figure 1: The case studies for this research are located throughout the Bangkok Metropolitan Area (BMA). Source: : Researcher (2015).

3.2.1 National Housing Authority Public Community at Huai Kwang

The National Housing Authority Public Community at Huai Kwang consists of thirty-eight residential buildings, was open in 1969 to house 3,360 low-income households. It is located on a 15.03 square-kilometer parcel in a high-density commercial and business core of Central Bangkok, National Housing Authority Public Community at Huai Kwang runs the length of many roads within the boundaries. Today, the complex is predominantly surrounded by row houses. Being centrally-located yields several advantages such as infrastructure and different modes of mass transit.

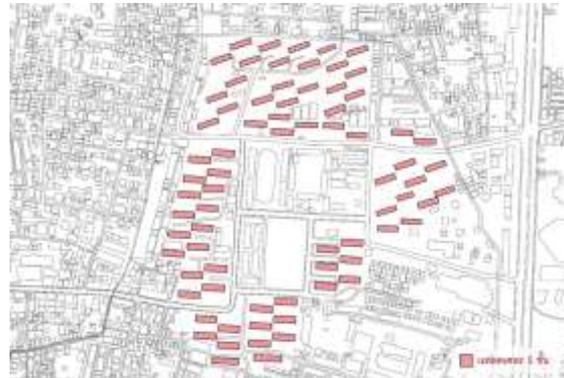


Figure 2: . The National Housing Authority Public Community at Huai Kwang master plan illustrates the orientation of residential towers and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.2 National Housing Authority Public Community at Din Daeng

The *National Housing Authority Public Community at Din Daeng*, which consists of four eight-story residential towers containing 1,020 units and sixty five-story buildings housing 8,222 additional living units, was open in 1973 . Located on an 8.4 square-kilometer parcel on Din Daeng Road in Din Daeng District in the heart of Bangkok where major mass transit lines converge (Paholyotin, Asoke-Din Daeng) with a direct route to Bangkok and Suvarnabhumi International Airports, National Housing Authority Public Community at Din Daeng runs the length of many roads within the boundaries. Today, the project features commercial, service, and high-density residential programs.

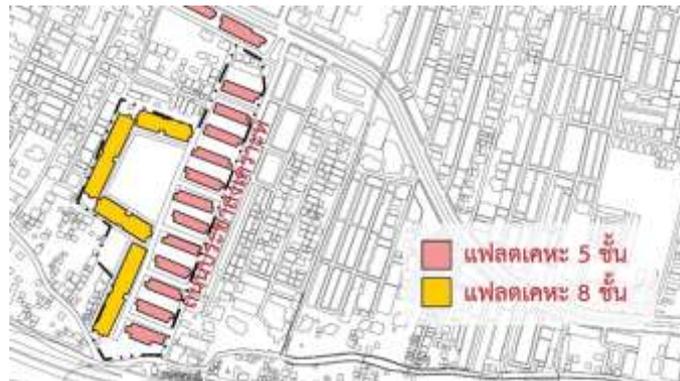


Figure 3: The National Housing Authority Public Community at Din Daeng master plan illustrates the orientation and location of the four eight-story and sixty five-story residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.3 National Housing Authority Public Community at Bon Kai

The *National Housing Authority Public Community at Bon Kai*, which contains six twelve-story residential buildings with 167 units and five eight-story buildings with 272 units, was open in 1976. Located on an 8.37 square-kilometer parcel in Lumpini, Patumwan District, National Housing Authority Public Community at Bon Kai is centrally-located and enjoys the benefits from the convergence of several lines of mass transit. A diverse collection of programs: business center, commercial and service cores, health care facility, cultural, educational, and diplomatic uses.

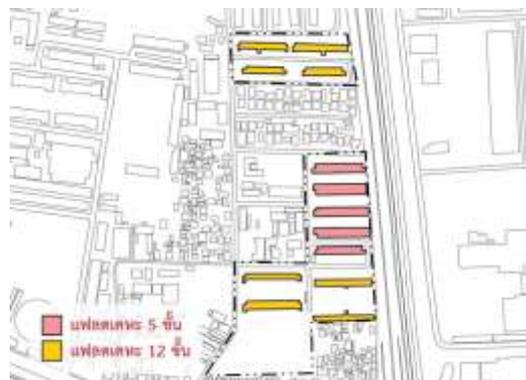


Figure 4: The National Housing Authority Public Community at Bon Kai master plan illustrates the orientation and location of the residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.4 *National Housing Authority Public Community at Lak Si*

The National Housing Authority Public Community at Lak Si, which consists of fourteen residential buildings with 2,418 units, was open in 1988. Located on a 22.841 square-kilometer parcel in Northern Bangkok, which is a satellite residential community, National Housing Authority Public Community at Lak Si is surrounded by surrounded by a collection of medium-density houses, row houses, and condominiums. Although situated in a suburban area, the project is well-served by the mass transit systems linking the city center from Bang Sue and Lak Si as well as a network of roads and expressways.



Figure 5: The National Housing Authority Public Community at Lak Si master plan illustrates the orientation and location of the residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.5 *National Housing Authority Public Housing Samut Sakhon Phase II*

The National Housing Authority Public Housing Samut Sakhon was opened in 1993 and consists of seven residential buildings with 940 units. The project is located within Amphoe Muang, Samut Sakhon province, the area also runs the length of many roads. The parcel comprises 492.04 square kilometers and is generally surrounded by of single-family houses on the banks of Ta Chin River, a mere two kilometers from the coast. The topography is mostly flat, low-lying thus the main demographic is of agricultural and fishing industries as the province is rich in marine cultures. Neighboring areas are of low-density typical of provincial, industrial areas with most occupants being temporary lodgers-mostly foreign expatriates. Therefore, the majority of surrounding plots of lands is residential in order to accommodate the rapidly-growing demand of housing for foreign workers and commercial enterprises to support modern-living standard.



Figure 6: The National Housing Authority Public Housing Samut Sakhon Phase II master plan illustrates the orientation and location of the residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.6 *National Housing Authority Public Housing Baan Nonthaburi IV*

The National Housing Authority Public Housing Baan Nonthaburi IV which consists of nine residential buildings with 540 units was open in 1996.

Located on a 77.018 square-kilometer parcel near the Pak Kret five-way intersection in Amphoe Muang Nonthaburi, Baan Nonthaburi IV is surrounded by low-density residential neighborhoods, a governmental center, schools, and markets. It also benefits from an abundance of means of transportation, namely buses and communal vans to Bangkok with the stops in front of the development.



Figure 7: The National Housing Authority Public Housing Baan Nonthaburi IV master plan illustrates the orientation and location of the residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

3.2.7 *National Housing Authority Public Romklao III Phase III*

The National Housing Authority Public Romklao III Phase III, which consists of thirty-six residential building with 2,160 units, was open in 1999. The project is located on a 123.86 square-kilometer parcel in Klong Song Ton Nune, Lad Krabang District. It runs the length of many roads, at the east end of Bangkok and is surrounded by predominantly industrial buildings. The area is low-density, and has vertical multi-unit residential (rarely any single-family residences) and has convenient stores, restaurants, parks. However, its rural location necessitates the use of automobile lines of buses which is abundant in the area to provide transportation for those who work in the city center.

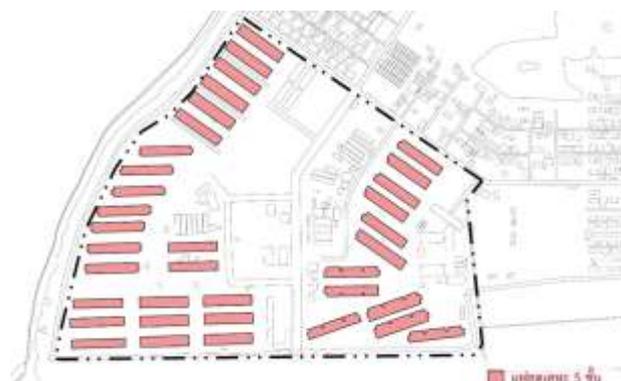


Figure 8: The National Housing Authority Public Romklao III Phase III master plan illustrates the orientation and location of the residential buildings, and open grounds for communal uses as well as its surrounding urban conditions and infrastructure. Source: Researcher (2015).

4. Analysis

In each project, NHA architect is responsible for creating homes for more than ten thousand households. In envisioning such large-scale project for a wide range of audience and clients, there are three major factors that influence the design of the architecture: politics; economy of design which comprises three sub-factors: location, and construction and building technology; and finally, design and aesthetics.

4.1 Politics

First, politics is the most important factor that dictates the architectural design and style of the social housing buildings. Since the mid-twentieth century, there were several surrounding factors such as a sharp rise in urban population, economy, social and political frameworks have had an impact on the formulation and implementation of the government's social housing development. First, Thailand underwent drastic demographic expansion following the Second World War as a result of the strategic promotion of high-fertility and population transfers.

In 1975, the population growth rate reached a level of 3.3 percent per annum. Between 1947 and 1971, Bangkok's population rose more than 300 percent, from 781,660 to 3,075,300. Thailand's economy also expanded rapidly in the 1960s partially thanks to increased demand for goods and services by the American troops stationed in Southeast Asia during the Vietnam War.^{xii} However, the world oil crisis of 1973 brought the country's economy to a near stagnation thereafter. On the macroeconomic level, economic instability provided Thai decision-makers an excuse to consider social housing development as items of welfare, rather than as a necessary infrastructural investment. On the microeconomic level, even though Thailand's GDP had been rising constantly, eighty percent of the population had incomes of US\$300 or less per month in 1978.^{xiii}

The low income level made it nearly impossible for urban dwellers to afford themselves proper housing without government assistance. Finally, Thai social and political frameworks have also played an important role in the nation's development of social housing. Thailand's social values and political culture have been very centralized, with the capital being the sole epicenter. The national government, by initiating all policies and by extending substantial financial subsidies to municipal governments, assumes control over social housing development plans and nationwide. Despite the central government's desire to provide decent, affordable, and accessible housing for low-income urban dwellers, the difficult housing development in Thailand has been compounded by inflexible centralized bureaucracy, most urban households' low income levels and the rapid population increase, in spite of the overall growth in the national economy.

Usually, the design process undergoes many levels of examination by various committees before passes a bill by the cabinet. Naturally, the design is subject to much scrutiny and constant revisions to comply with budget restrictions and changes in political climates. A

project could take years to realize with little or no out of the ordinary details other than that which has been previously approved in precedent projects.



Figure 9: Completed in 1969, National Housing Authority Public Community at Huai Kwang which was the first project under the auspice of NHA represents a design and aesthetic style that was approved by a series of committees. Source: Researcher (2015).



Figure 10: The National Housing Authority Public Romklao III Phase III, which was completed in 1999, thirty years after Huai Kwang, demonstrates an even starker and minimalist away approach to architecture by NHA. Source: Researcher (2015).

4.2 Location

The project location which determines the land price and consequently the building's height. The location of the building also regulates the mathematics of the architectural design. NHA's social housing projects all start very mathematically with the calculation of Floor Area Ratio (FAR) and Open Space Ratio (OSR) of the entire project. Then, the architects will have to optimize the number of units per building. That number is derived by dividing the net area by 28, which is the minimum square meter of a living unit. The size of a living unit is also related to the height of the building; the taller the building, the smaller the unit. Due to the fact that utilities are calculated based on unit area, the size of a living unit in recent projects has dwindled in order to make it affordable to the masses.

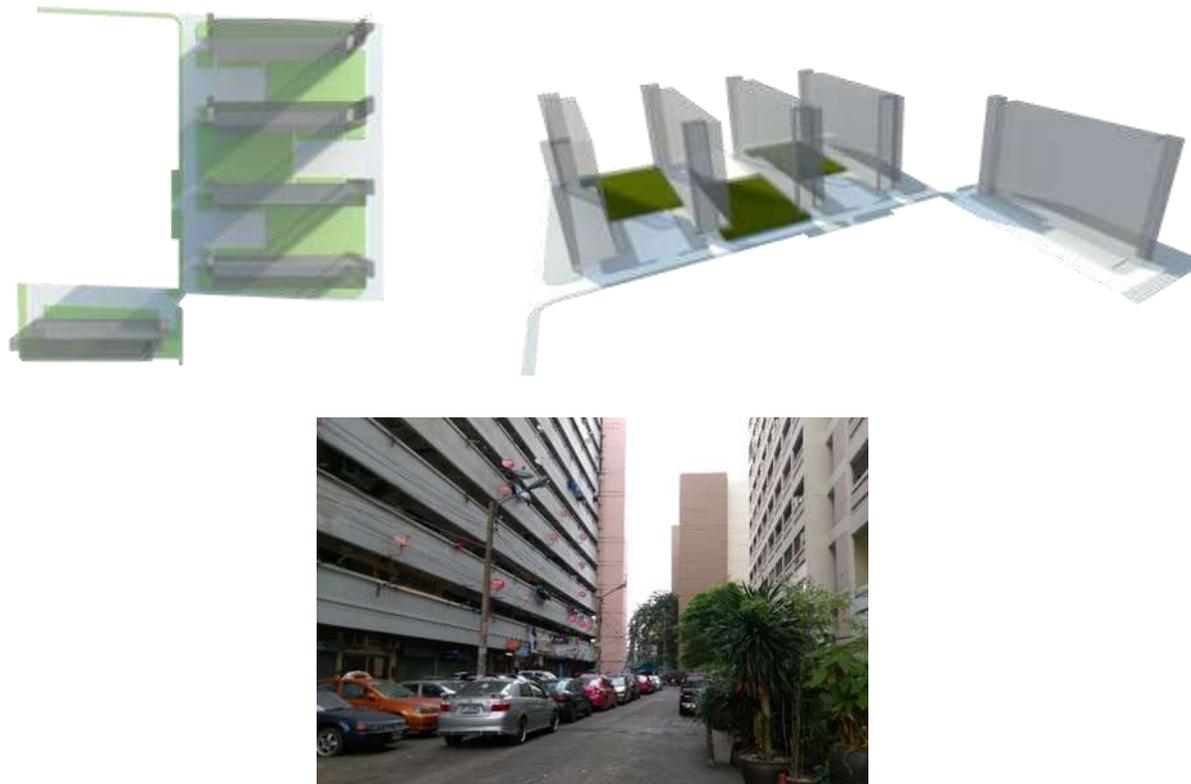


Figure 11: A site plan, an aerial perspective diagram, and a photo of the Bon Kai project suggest it was conceived to be a series of tall residential slabs in order to increase density and satisfy the high price of land in the commercial heart of the city. Source: Researcher (2015).

4.3 Design and Aesthetics

On an urban scale, NHA social housing projects to demonstrate their concerns for community in the planning of the site and the design of the community. Programmatically, NHA holds a rather holistic design approach in comparison to its private counterparts. In addition to creating livable housing units, it strives to provide other components and other amenities including a community center, a cooperative, a nursery, and an occupational training center. These programs function as fillers in the site plans as they are usually planned to occupy the open spaces between residential slabs. These smaller one-or-two-story buildings enjoy the benefits of being surrounded by a landscape and located at a strategic location which was intended to help bring people together.

There are two different treatments of ground level. First, in the urban area where land price is high, the ground level of each building has no residential units. Instead, it is allocated to limited bicycle and motorcycle parking as well as social functions a lobby and living and reading room. Second, in the suburban projects where land price is lower, the ground floor contains both a small lobby and residential units. Bicycle and motorcycle parking is located outside the building and car parking occupies the open space between two adjacent buildings and sometimes also road surface due to the increased number of vehicles needed to commute into the city.

The building's floor plan has been altered in order to increase cost efficiency. The double-loaded corridor which is a prevalent system used in almost all of the recent developments have replaced the single-loaded corridor preferred the earlier housing projects due to the

high cost of construction and less cost-efficiency. However, the new system also has its shortcomings. Although it is much more practical, the double-loaded corridor can cause hygienic problems due to lack of sunlight exposure and poor ventilation. The dark corridors with a series of front doors facing into one another are also considered less pleasant than the low eaves covering the hallway where social interactions occur in the single-loaded corridor model. Furthermore, the residents' lifestyle also contributed to the morphological transformation of the social housing projects. In the five-story buildings of earlier eras, the inhabitants complained about the difficulty of climbing five flights of stairs because an elevator is not required by law in buildings of that height. Consequently, sales of the fifth-floor unit plummeted. Thus, in the new generation of NHA social housing, there are only four floors to better suit the need of the market.



Figure 12: There are two different treatments of ground level. In some projects, it is allocated to limited bicycle and motorcycle parking as well as social functions a lobby and living and reading room while it contains both a small lobby and residential units in others. Source: Researcher (2015).

4.4 Construction/building technology.

In an attempt to reduce the construction cost and time, NHA adopted prefabrication as an alternative to the traditional reinforced concrete construction. Building envelope panels as well as living units are cast in the factory and then transported on flatbed trucks to be assembled on site. Additionally, new computer programs such as Google SketchUP, Autodesk Revit, and Ecotect help improve the master plan design and increase the building's energy efficiency. The computer programs have gained a greater role in the design phase of the housing projects. NHA architects have employed them to simulate the Sun and wind patterns in order to orient the buildings optimally to avoid unnecessary heat gain from sun exposure. This also affects the external appearance of the building because it allows the building to be more open and acquire fewer exterior louvers or brise-soleil which are very costly. As a result, the new technology also helps to reduce the cost of construction.

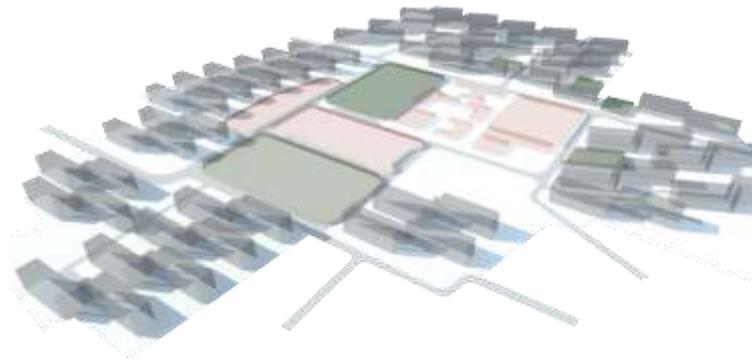


Figure 14: Since the beginning at Huai Kwang in 1969, NHA architects have resorted to their knowledge of the Sun and wind patterns in order to orient the buildings optimally to avoid unnecessary heat gain from sun exposure. Source: Researcher (2015).

Some of the technological advancements happened in-house through years of experience and experimentation, while other skills and techniques have been acquired through international cooperation. NHA has collected much experience and important information on social housing design and operation from their recurrent field trips to observe the housing systems in countries both on the Asian and Australian continents. There are so consistent collaborative long-term research, short-term workshops, mini-projects with Japan via Japan International Cooperation Agency (JICA) and its Korean equivalents on construction technology and development of architectural elements. However, the results of international collaborations have met some real-world application challenges. Although the laboratory research has yielded some interesting and potentially groundbreaking materials and construction techniques in reducing the construction costs and increasing energy-efficiency of the buildings, geographical and climatic differences prove obstructive to incorporating these discoveries into the actual construction process.

5. Conclusion

Using a collection of vertical housing projects built by NHA in the Bangkok Metropolitan Region (BMR) as case studies, this paper provides a survey of architectural developments of NHA's high-rise social housing. The primary emphasis will be on the changes in the approach to the construction and architectural innovations, illustrating through spatial and architectural analyses how quality housing and urban outcomes can be achieved within constrained social housing scenarios. The design innovations were often simple and minimal, but well executed strategies, focusing on the efficiency of internal apartment/unit planning, arrangement of tenancy mix/social diversity, interfaces of private dwellings with common areas and public spaces, parking arrangements, design of common areas, and addressing privacy and noise through landscaping and careful planning.

The paper also describes the critical role that NHA's architects played, particularly creative and non-standard solutions to planning and design, in delivering innovative design outcomes. Factors leading to innovation included constant negotiation between design intent and social, economic, and political influences, alongside the adoption of new sustainable technology, and project alignment with existing urban renewal strategy.

In the future, NHA have already announced plans to renovate the existing projects, demolish and then rebuild outdated structures, and finally develop new projects in accordance with the

development plan of the Royal Thai Government with a focus on Transit Oriented Development (TOD) along the newly constructed then metro lines in BMR to reduce dependency on personal transportation. Regarding the design, NHA architects are working on sublimating more architectural elements that relate to the context of each project in an effort to create a distinct identity, which, in turn, can create a sense of place and belonging among the habitants, and thus to reinforce a stronger sense of community. Flexibility rather than specialization, openness rather than (SHENG, 1992) segregation from the surrounding community, and Industrialization rather than handicraft are becoming three important pillars in future developments. However, the great imminent challenge facing NHA in the next coming years are the existing structures that are outdated and some becoming unfit for living. It has become a real urgent concern with regards to design, engineering, economic, and socio-political solutions to renovate obsolete structures and manage the relocation of low-income family currently living in those vertical housing.

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ⁱ (Department of Economic and Social Affairs, 2014)

ⁱⁱ Ibid.

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^{vii} (Sheng, March 2002)

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Urban Transformation: A changing phase of Minna central area

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Synopsis

Urban centres in the world are undergoing various facets of changes; these changes are also evident in developing countries. This phenomenon is not different with the central area of Minna, Nigeria. This call for the SDGs approach that emphasized participation and inclusive planning in the management of Minna central area.

Introduction

Cities in different part of the world are experiencing different forms of changes. These changes often manifest itself in term of population growth, urban gentrification, conversion of vegetal cover in other land uses and improvement of infrastructures. The transformation witness by urban centres in the world is an indication that urban centres are the focal point of economic, political and artistic activities (Spates and Macronis, 1987). Spates and Macronis (1987) were of the opinion that urban centres are the catalyst for civilizations and this proves the assertion of the UN Habitat (2008b) that state that, over half of the world's population currently lives in urban areas. This assertion is not farfetched because urban centres worldwide exerts an increasing attraction on people (Gbadegesin and Aluko, 2010).

That is to say, the changes experienced by major urban centres, especially the developing countries in the world can be attributed to rapid urbanization and population growth (UN Habitat, 2009). It is believed that between 2007 and 2025 the annual rate of change of the urban population in developing countries is expected to be 2.27 percent as against 0.49 percent of the developed countries (World Bank, 2002). More so, the rapid urbanization experienced in the developing countries will be characterized by poor urban management and the inability of the government to provide urban infrastructure (UN Habitat, 2009).

This phenomena of urban transformation of towns and cities in the world are often challenging to urban planners, particularly in the developing countries, where less planning is being carried out (Egunjobi, Jelili and Adeyeye, 2007). It is considered that the governance and the management of the urban centres in developing countries are most discouraging, because the pace of the rapid urbanization and population growth normally go beyond the control of the planners, beyond management capacities and beyond available resources (Agbola and Olurin 1998 as cited by Olujimi, 2009).

The relics of planned modernist urban cores are often displayed in urban centres of developing countries, and these urban centres are frequently surrounded by vast areas of informal settlements, the commercial hub and residential enclaves (UN Habitat, 2009). This

belief is also visible in the Core of Minna, Niger state. The informal settlements surrounding the city centre and the commercial activities located in the city centre of Minna frequently breeds challenges such as traffic congestion, on street trading, overcrowding, and indiscriminate waste disposal.

In an effort to address the problems posed by urban transformation in Minna, the Niger State Government took a decisive step in 2008 to ameliorate these problems through implementation of urban policies. New roads were constructed, other roads were rehabilitated, demolishes were done and land uses were relocated. An example was the relocation of the Minna central market from the Mobil area to the western by-pass of the state. Against this background, this paper will assess the changes that have occurred in the core area of Minna between 2008 and 2016 with its implications on human settlement.

Aim and Objectives of the Study

To achieve this assessment, the following objectives were considered:

- i. To examine the socio-economic characteristic of the residents of Minna Core;
- ii. To give a spatial analysis of Minna Core between 2008 and 2016;
- iii. Examine the factors responsible for Urban transformation in Minna Core; and
- iv. To ascertain the implication of urban transformation in Minna Core.

Study Area

Minna Core is located between latitude 9°35' 00.69"N and Longitude 6° 31'00.69"E (figure 1.). The Minna core area comprises of six neighbourhoods that is, Makera, Sabon-Gari, Nassarawa, Minna Central, Angwan Daji and Limawa. Minna Core is encapsulated by the Bosso Local Government area of Niger State (figure 1).

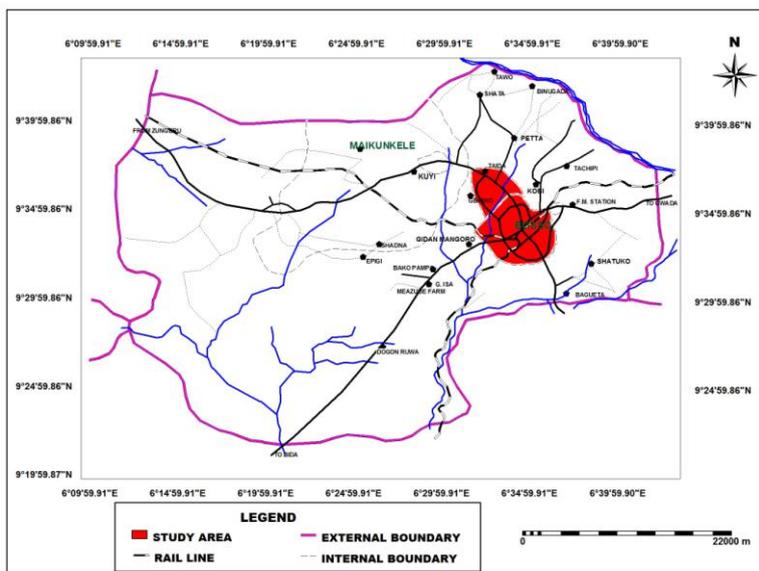


Figure 1: Minna highlighted in Bosso Local Government Area.

Source: Department of Urban and Regional Planning, FUTMinna

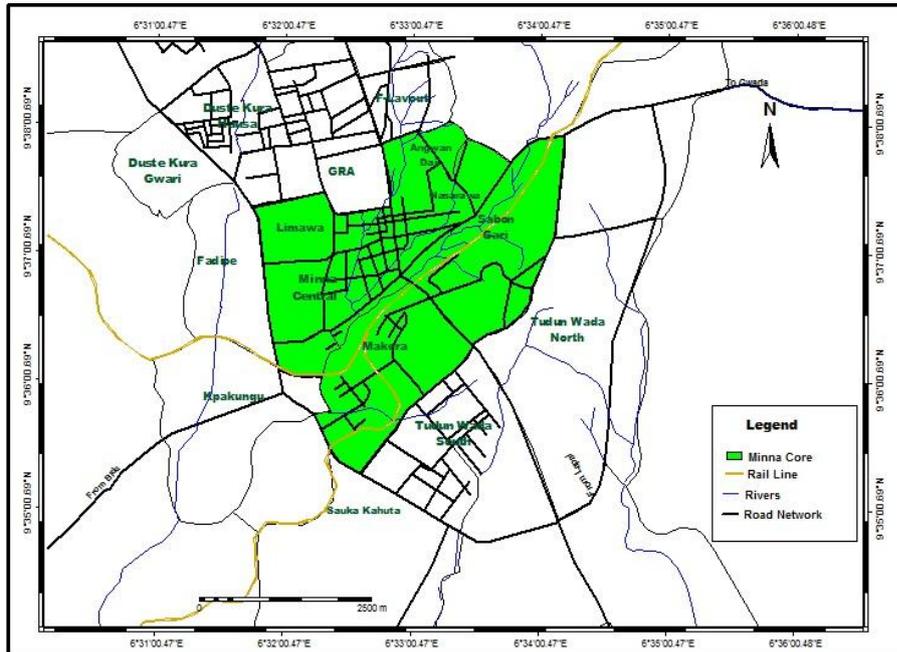


Figure 2: Street Guide Map of Minna with emphasis on Minna Core.

Source: Department of Urban and Regional Planning, FUTMinna

Methodology

Research Design

The cross-sectional design and the longitudinal research design were employed for this research. The cross-sectional design involves the administration of questionnaires and the longitudinal design for the interpretation of the Landsat images and the quick bird Images.

Sources of Data

The primary and the secondary sources of data were used for this study. The primary source of data used for this study involves the use of questionnaire administration, ground truthing, taking of photographs, and detail survey. For the secondary source of data, literatures relevant to the study were reviewed and also satellite images were acquired. All the satellite images were obtained from the National Centre for Remote Sensing and GIS, Jos, Plateau State.

Sampling Techniques and Sample size

The purposive sampling techniques was used for this study. Here the questionnaires to be administered were selected based on the judgement of the researcher. Using the Macorr sampling calculator with the confidence level of 95% and an interval of 7 a sample size of 196 was deduced for the study.

Post Processing

Two sets of satellite images were used for this study, that is, the Landsat images with 30metres resolutions and the quick bird image with 0.65cm resolution. The Landsat images used were, the enhance thematic mapper plus (ETM⁺) for 2008 and 2016 likewise the quick bird Image of 2008 and 2016 were also used. On the two sets of satellite images (both Landsat and Quick bird) the area of interest was clipped out using Arcgis 10.2 Software. Band 4,3,2 were used to form the “false colour composite” for the 2008 and 2016 landsat images. In this band combination Cyan Colour appears as Built-up area, Dark Red appears as vegetation while water bodies are shown in blue colour. Sample set (built-up area) was created on the “false colour composite” of the Landsat images of 2008 and 2016. These images were subjected to supervised maximum likelihood classification on Arcgis 10.2 software and the land area for the sample set created (Built-up area) was ascertained.

“Shape files” of features (Commercial areas, roads, Public land uses) were created on the quick bird images of 2008 and 2016. These features were digitized on the images and the land areas of the features were determined in order to carry out a spatial analysis.

Discussion of Result

Socio-Economic Characteristic of the residents of Minna Core

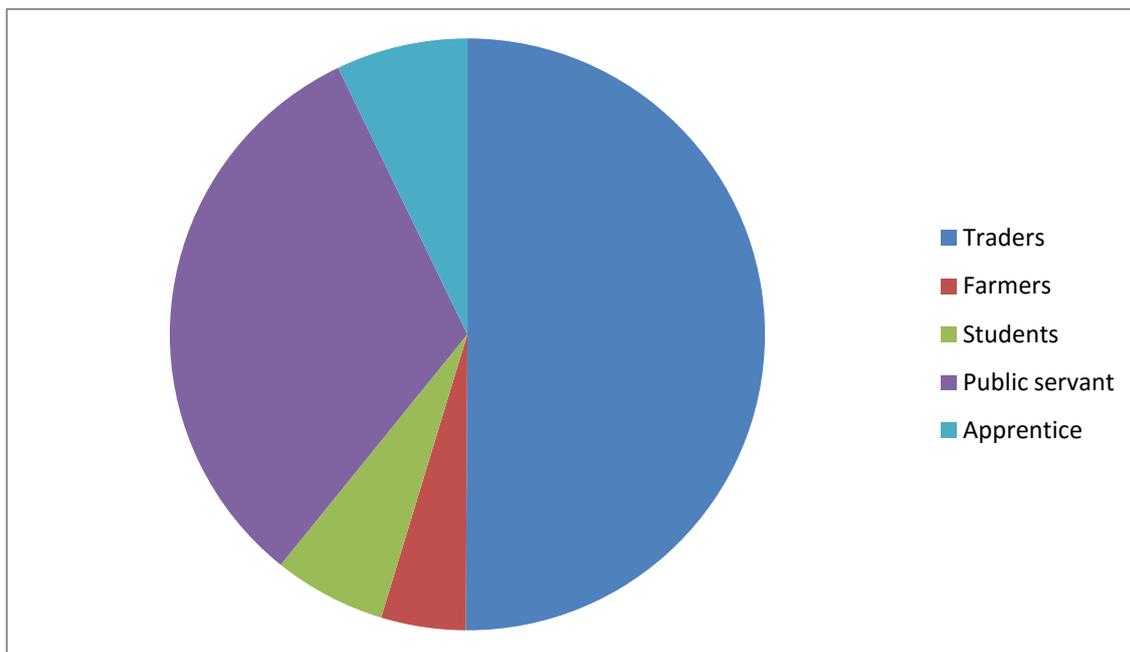


Figure 3: Socio Economic characteristics of the Core

Source: Authors, 2016

Figure 3 illustrates data relating to the Socio Economic characteristics of the respondents. The figure shows that 32% of the respondents are Public Servant in the Core of Minna. The

number of government establishments is responsible for this. The highest numbers of the respondents are Traders with 50%. The presence of Shops, Stalls in the Core of Minna can be attributed to this and this affirms the claim of Orintunsin (2009) that the core of Minna is the "heart" of Commercial activities. Apprentice and students constitute 7.14% and 6.10% of the respondents, respectively, while 4.59% of the respondents are farmers.

Spatial Analysis of Minna Core between 2008 and 2016

The trend of growth between 2008 and 2016 (table 1) is calculated by subtracting the area of the Land use for the year 2008 from 2016 that is, B-A. The annual frequency of change (D) is determined by dividing the magnitude of change of the Land use by the number of years between the periods, that is, 8 years for 2008 - 2016. The percentage of change (E) is calculated by dividing the magnitude of change C of the Land use (Built-Up Area) by the figure of the base year that is, 2008 then multiplying the result by 100.

Year	Built-up Area (km²)	Magnitude of change (C) (km²)	Annual Frequency of change (C/8)	Percentage of change (C/A)
(A) 2008	8.06			
(B) 2016	14.02	5.96	0.745	73.9

Table 1: Trend of growth between 2008 and 2016
 Source: Authors, 2016.

Table 1 shows that between the year 2008 and 2016 the change in the core of Minna was progressive. The analysis reveals a magnitude of change of 5.96 km² in the core area of Minna. This implies that additional 5.96 km² of green areas were converted into built-up areas in the core of Minna between 2008 and 2016. The analysis also reveals that, annually 0.745km² of green areas are converted into built-up areas with a percentage of change of 73.9%. The change experienced in the core of Minna can be attributed to population increase and rapid urbanization. The spatial extent of the Core area of Minna is shown in figure 4

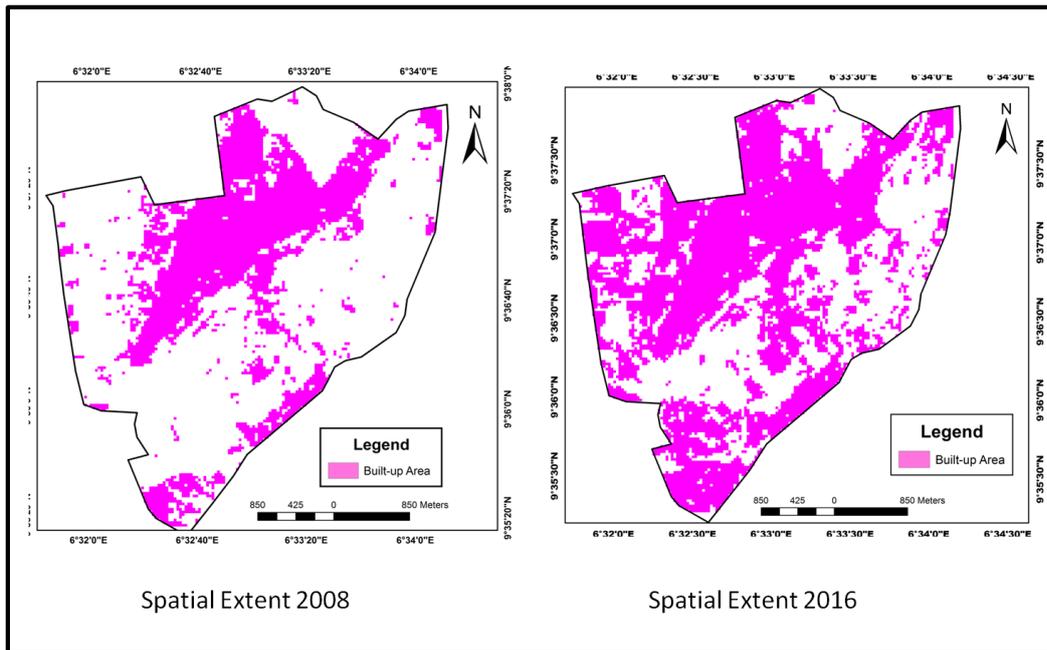


Figure 4: Spatial Extent of Minna Core in 2008 and 2016
Source: Authors, 2016.

In order to meet the challenges posed by rapid urbanization and population increase in the core of Minna, the government decided to bring some innovation via her policies and these policies brought about transformation at the core of Minna. In 2009, the Minna central market was relocated to the site earmarked for the proposed stadium because the central market of 800 stalls and shops of different sizes was believed to be grossly inadequate by the State government (Orintunsin, 2009).

Orintunsin (2009) was of the view that, the Illegal structures in the market have tripled the legal ones, more so, every available space within the Minna central market were converted to stalls, and this made the market spilling over to Mobil Roundabout which is assumed to be the heart of Minna city. It is believed that the Minna Central market was fast becoming another Oshodi (Lagos) Market in Minna, where Motorists and customers in the market have to compete and struggle for the little available space with pepper and grocery sellers because of the on street trading found around the market area (Orintunsin, 2009).

S/No	Land use	Area (Metres Square)
1	Roads	412894
2	General Hospital	41983
3	Minna Central Market (Old Market)	58821
4	Katerigwuri Market	21531
5	Mobil Garage	3750
6	Proposed Stadium	390207

Table 2: Land use Analysis of Minna Core Area in 2008
Source: Author, 2016.

Table 2 shows the land use analysis of Minna Core Area in 2008. The analysis reveals that roads in the core area of Minna were 412894 M² of the total land area in 2008. The General hospital covers a total land area of 41983 M² while the Minna Central market and the Katerigwuri market have a land area of 58821 M² and 21531 M² respectively in 2008. A total of 3750 M² was recorded in Mobil garage in 2008. The analysis (table 2) further reveals that 390207 M² was allotted for the proposed stadium (in the Minna Core) as stated by the Minna Master plan (see figure 5).

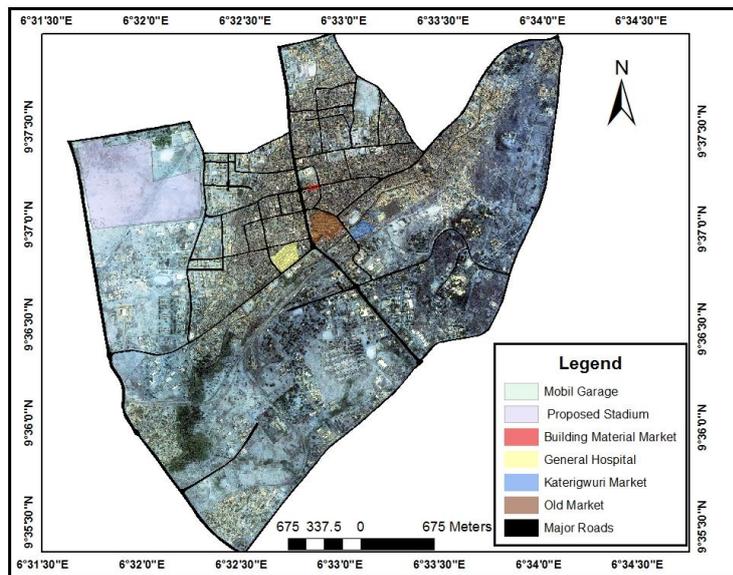


Figure 5: Spatial Analysis of Minna core in 2008

Source: Authors, 2016.

S/No	Landuse	Area (Metres Square)
1	Roads	475029
2	General Hospital	41983
3	Extension of General Hospital	22498
4	Katerigwuri Market	21531
5	Mobil Garage	3750
6	New Market (Kure Market)	390207
7	Residential Buildings converted to commercial land uses	48718
8	Relocated building material Market	6572

Table 3 Land use Analysis of Minna Core Area in 2016

Source: Author, 2016.

As a result of the increase in population and Urbanization more changes were experienced in Minna Core. Table 3 shows a significant change in the areas of the land uses. In 2016 the land area for roads increased from 412894 M² to 475029 M². Roads that were under rehabilitation constitutes 4956 M², Rehabilitated roads cover 100500 M², while the newly constructed roads and the existing roads covered 15654 M² and 353919 M² respectively. The sum total of all these roads is 475029 M². In the rehabilitation of the roads the soft landscape that allows for easy percolation of water during precipitation were replaced with hard landscape (interlocking tiles) in an attempt to beautify the Core of Minna (see plate 1 and plate 2). Roads rehabilitated were the Sabon-Gari Road, Keterin Gwari Road, 123 quarters Road, Old Airport Road while Kuta road was still under construction as at the time of the study. The only road constructed at the core of Minna during this study is the Kure Market road.



Plate 2: Road before Rehabilitation (2008)
Source: Authors, 2016.



Plate 3: Rehabilitated Road with interlocks (2016)
Source: Authors, 2016.

The new market (Kure Market) covers a total land area of 390207 M² as against the 58821 M² of the old central Market. Though the new Market (Kure Market) has over 2000 stalls and shops of different categories, banking halls, Police and fire service posts, restaurants, a clinic, Parks, administrative block, market union office, wider space for expansion, for vehicular park for traders to offload their wares as against the 800 stalls and shops of the old market (Orintunsin, 2009). One would expect that all the problems highlighted in the old market would be solved by the Kure market, but reverse is the case, as on street trading; on street parking and lack of regard for traffic laws by motorist visiting the market are gradually marring the effort of the Niger State government in achieving a sustainable planning. The

study also revealed between 2008 and 2016 the building material market was relocated from the Minna core to a new site (Mandela Area) while old market area is still left unoccupied.

The Niger State General Hospital located in the core of Minna also received a facelift; the area for the General Hospital was expanded so as to meet the need of the growing population. The land area for the General Hospital increased from 41983 M² (in 2008) to 64481M² in 2016. The analysis further (figure 6) reveals that a total land area of 48718 M² converted from Residential land uses to commercial land uses while a total of 22498 M² land area were converted for the General Hospital expansion.

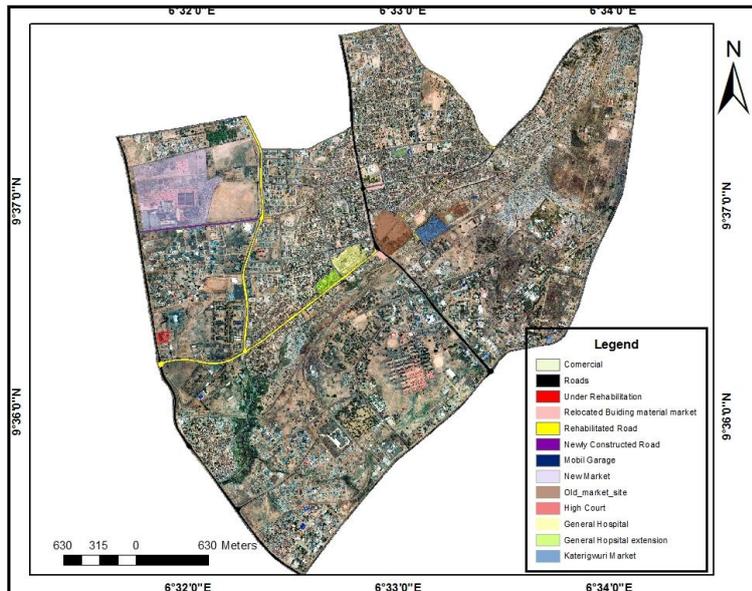


Figure 6: Spatial Analysis of Minna core in 2016

Source: Authors, 2016.

Factors Responsible for Urban transformation in Minna Core

Population increase

Using the growth rate of 3.42% as stipulated by the National population commission (2006). The 1991 population figures were projected for 2008 and 2016 using the exponential formula for population projection. The projected population obtained for 2008 and 2016 were 111,159 and 136,010 respectively. Table 4 shows a progressive increase in the population of the core Minna with a percentage of increase of 22.36. The implication of this is that as the population increases more land areas will be converted to built-up area. Thus, this will increase the area of built-up area between the study periods.

Year	Population	Percentage of increase
2008	111159	
2016	136010	22.36

Table 4: Population change between 2008 and 2016

Source: Authors, 2016.

On the factors that influences the urban transformation in the Minna core. The study reveals that 39.80% of the respondents were of the view that government policies were responsible for the transformation that has occurred over the years in the core of Minna. The respondents that had the option that government policies were responsible for the current urban transformation in Minna Core are more in number, this is an indication that the recent trend of changes in the core of Minna by government is well noticed by the general public. Despite these changes in the Core of Minna, 2.55% of the respondents do not have any idea of what must have influenced the changes. Some of the respondents (17.35%) believed that Low rental value of properties in the Core area must have influenced the changes. Land uses changes were attributed to the current urban transformation in the Core of Minna by 9.18% of the respondents.

Implications of Urban Transformation in the Core of Minna

The study reveals that urban transformation has had different implications in the Core of Minna within the period under study (2008 to 2016). The implications discovered during the course of the study ranges from high cost of stalls and shops in the new Market (Kure Market), psychological trauma on residents relocated, Remoteness of facilities and lost of livelihood. Majority of the respondents (36.73%) believed that urban transformation in Minna has had negative effects on them because they now have to "travel" within Minna in order to enjoy some facilities that were formally located centrally due to the remoteness of the new facilities, example of this facilities are the relocated Minna central market and the building material market. High cost of shops and stalls in the new market was perceived to be a major effect of urban transformation by 32.14% of the respondents, because of their inability to pay for the shops or stalls. 8.40% of the respondents are of the opinion that, relocation of residents from the core area has Psychological (trauma) effect on the people. A number of the respondents (4.40%) believed that inadequate and untimely compensation is often experienced by those relocated and this have made the general public to lose trust in the transformation agenda of the State Government. Others (18.33%) believed that the harassment by law enforcement agencies on those involved in on-street trading have made many lost their livelihoods.

Conclusion

Urban transformation is not peculiar to developing countries alone but, the manner in which planning and management is carried out is the issue. This is because less priority is often given to planning in this part of the world. To achieve sustainable planning in a region were

rapid urbanization is experienced, it is of great significant to note that urban transformation will be visible in such region. The study Urban Transformation a changing phase in Minna, Niger State, Nigeria, has effectively addressed the Implications of urban transformation, factors that influences urban transformation and the trend of Urban transformation in Minna between 2008 and 2016.

Recommendations

Base on the findings the following recommendations were made for the study:

- I. Adequate and timely compensation should be paid to those relocated in order to guide against the issue of psychological trauma or even death of the residents.
- II. Law enforcement agencies in the state should be fully equipped so as to cub the activities of traffic offenders especially those that take their turn on the median divide on the road.
- III. Planning and management of Minna Core should be done through the inclusive planning approach which is a bottom-top approach. This will help to integrate everyone's view in planning process.
- IV. On-street trading should be stopped by the government so as to ensure free flow of traffic around major facilities. This can be achieved when cheaper shops and stalls are provided in the central market.
- V. Planning education should also be encouraged in the state in order to meet the need gap of planning profession.
- VI. SDGs approached that allows community participation in planning should also be encouraged.

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The preservation and sustainable utilization research of Suitang Luoyang city based on the precise historical information re-mapping

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Suitang Luoyang City Site is the largest and best-preserved sites in China, and has great value in the aspects of history and culture. Firstly, by integrating the historical information and the archaeological information to maximize the accuracy of mapping Suitang Luoyang City Site place to the topographic map, it can provide premise condition for accurate positioning of historical spaces, and then complete the translation of historical resources and space transformation in Suitang Luoyang City. Secondly, by bonding the landscape, historical resources and present situation of site protection, to conclude the existing site suitability ratings. Lastly, with the suitability evaluation and existing situation factors, concluding the grade of conservation and development in core area, so as to propose a conservation system bears the developing characteristics to promote the reasonable protection and utilization of Suitang Luoyang City Site.

1. Research Background and Related Concept Definition

1.1. Research Background

Since the Xi'an declaration reached in 2005, the culture heritage with Chinese characteristics is concerned, and Great Site conservation under the high strength of urban modernization is imminent. In 2014, "national new urbanization planning" emphasized the historical memory and cultural context in historical area, and under the premise of conservation how to excavate and integrate the culture value from the perspective of planning, so as to inherit and reveal the cultural characteristics in future.

The site of outer Great Suitang Luoyang City wall is basically square, and can be divided into the south neighborhood of Luo River, the north neighborhood and Huangcheng District at the north bank of Luo River. The north and south Suitang Luoyang City beside Luo River differ a lot and present two different statuses of historical site: one kind of historical site surrounded by cities—the north neighborhood of Luo River and Huangcheng District, as the past strata are deeply covered by multiple reconstruction of the city and city texture has been completely changed; the other kind is the historical site located in the countryside—the south neighborhood of Luo River. As a result, the key point of the research is to enable Suitang Luoyang City to sustainably connect the development between the new and old city rather than only about how to



The location of Suitang Luoyang City
Source: made by author

protect it.

1.2. Research Scope

The range of this research is the approximately 47-square-meter area of Suitang Luoyang City at both sides of Luo River; the research covers about 1,300 years, from 605, the time when Suitang Luoyang City was built, to the end of Qing Dynasty; meanwhile, given the redevelopment of Suitang Luoyang City in the future, city development from 30s to now would also be taken into the research.

2 Historical information extraction and integration of Suitang Luoyang City

2.1 Historical information extraction

(1) Literature

The information covers with economy, city construction, policy, celebrity name, education, culture, customs, etc. Which are “Sui Shu”, “Yongle Dadian”, “Henan zhi”, “Liangjing Chengfang Kao”, “Old Tangshu”, “New Tangshu”, “Luoyang Mingyuan Ji”, “Daye zaji”, “Cefu Yuangui”, etc.

(2) Image data

The data covers with historical maps, paintings, photographs and modern Google Earth map, etc. Which are “Sui Shanglinxiyuan”, “Tang Dongduyuan”, “Sui Capital”, “Tang East-capital”, “Tangsong Henan Neighbor”, the “20-30s military map of luoyang city”, “Luoyang map in 1947”, the “present situation map in 1954”, “topographic map in the 80s”, “Google Earth map in 2002” and “luoyang CAD figure in 2010”.

(3) Archaeological data

The data covers with 5 separate heritage sites in Sui dynasty, 15 heritage sites in Sui and Tang dynasty, 6 separate heritage sites in Song dynasty, 25 heritage sites in Tang and Song dynasty, which are including 3 sites from Sui to Song dynasty and 1 site from Sui to Ming dynasty.

2.2. Integration of historical Information

Firstly the literature, image data and archaeological data are finished, and then the Suitang Luoyang city is located as far as possible accurate. The purpose is to obtain the later accurate analysis about the space transform and ensure the results of credible.

(1) The topography data acquisition

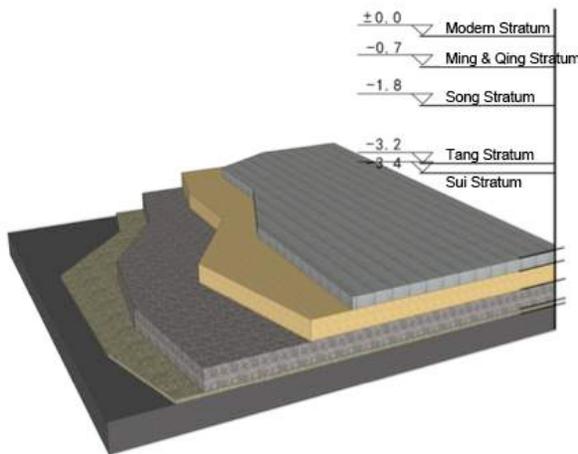
70 archaeological elevation points of Suitang Luoyang city are referred as the topography reference, and street elevation points are included to accurate the space location, to get a general ideas about the topography of Suitang Luoyang city. According to the Luoyang building history and literature, the main factors, which influence the landscape, are mountain soil and water loss and the Luoyang city flood.

Mountain soil and water loss: The mountain soil and water loss was mainly happened in the west part of Mangsha, and it was not serious in the east part. The archaeological points of Tang dynasty are generally more than 3 meters underground, as a result, increasing the height of the mountain to a certain extent can conduce to restore the capital landscape environment.

Luoyang city flood: Luohe flooding for many times in the history, and just in Tang dynasty it flooded 27 times. Each time the impact of the flood also makes the sandstone landform more low-lying. The alluvial soil strata on the formation of Tang dynasty, which is accumulated from five dynasties to Song, and The thickest place of the strata are 2.55 meters.

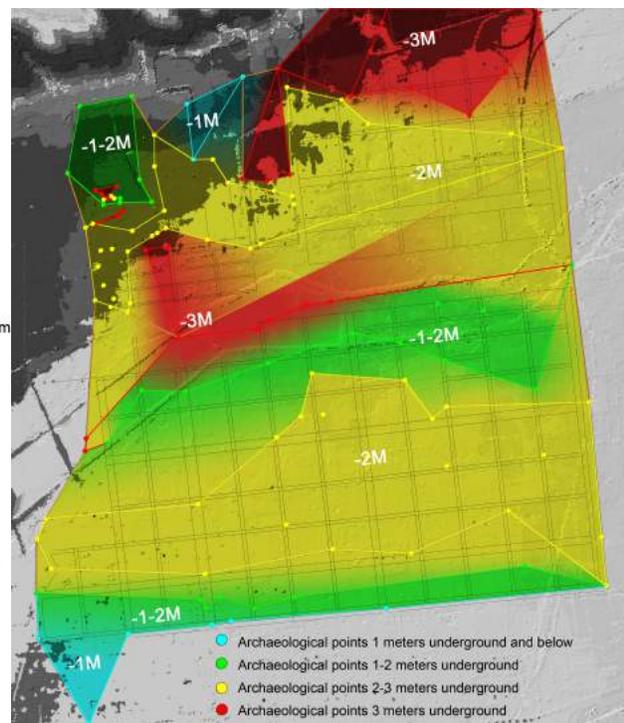
Yuanbi City, the highest place in Northwest, of current Luoyang City is located in the altitude of about 150 meters, while the lowest altitude is placed in the site shocked by Luo River in the eastern region, namely, 130 meters. According to preceding part of the text, it can be briefly predicated there are no big differences between ancient and modern landforms with relatively flat land on the whole. Based on modern stratum, the ancient one is slightly decreased. In addition,

GIS land data of Sui and Tang Dynasties got in the paper are slightly lowered at the range of 0.5-2.8 meters. Due to particularities for both sides of Luo River, within 600-meter range in North side of Luo River, the landform is moved downward by 4.5 meters, while since Imperial Palace, Huangcheng District, is located in remaining mountains of Mangshan Mountain, it is faced with severe water and soil losses with distance lowered by 1.5 meters. Since Longmen Yique can't be seen from the current Cuiyun peak, Cuiyun peak is properly increased and the east part of Mangshan Mountain is heightened for 3.5 meters in the whole, so as to correspond to Emperor Yang of Sui's intention in the history. As a result, compared with the modern contour on the surface, that of Suitang Luoyang City in the history is more obvious.



Layers of different dynasties in Luoyang

Source: made by author



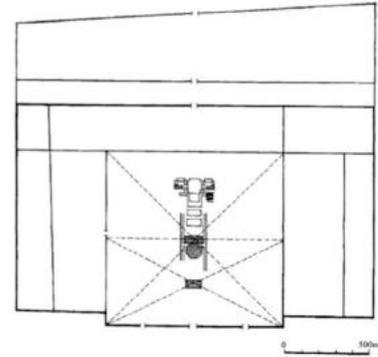
Archaeological points elevation in Suitang Luoyang

Source: made by author

(2) Collection of Urban Spatial Data

Capital: according to the archaeological reports, the measured length of east wall is 7,312 meters, the south wall is 7,290 meters, west wall is 6,776 meters and the north wall is 6,138 meters. In this paper, according to the CAD data, the actually measured length of east wall is 7,317 meters, the south wall is 7,302 meters, and the west wall is 6,766 meters (from the Houzai Gate to the northwest corner of north Yuanbi City) and the north wall is 6,138 meters, as the disparity between data from archaeological report is basically controlled within 1%.

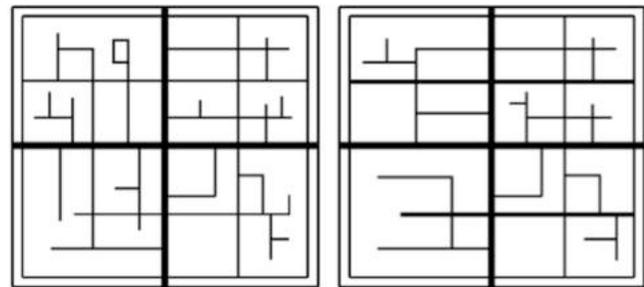
Huangcheng District in the imperial palace: the width of imperial palace is 2,100 meters from the east to the west and that from the south to the north is 1,270 meters. In the middle part of the south wall, a length of 1,030 meters is dented in towards south for 57 meters, as the total area is 2.73 square kilometers; Fu Xinian obtained "Module Theory" in 90s, such as, the square formed by the south wall of Huangcheng District, the north wall of Shuyi City and the east and west wall of Huangcheng District is four times the area of imperial palace; connect the four corners of the main body of Luoyang imperial palace and Ganyuan Palace is exactly at the central point and its gate is at the intersection point of the diagonal lines of the south part of the main body.



The modulus in Huangcheng district

Source: Fu Xinian "History of Chinese architecture"

Residential unit: there is north and south, east and west four-door system in Suitang Luoyang city residential unit, and the structure in it is double cross street formation. The size of the unit is about 410-520 meters east west, 450-520 meters north south. The cross streets are 14 meters wide and each street has a door at the end, also there are many lanes of the capillary type branch to the individual, rather than the street form of neatly equal 16 parts grid.



Form diagram of residential unit

Source: made by author

Streets: there are four levels in Luoyang city, the first level is 147 meters, which is Dingdingmen Street, and followed by 110.2 meters, 91.1 meters, 45.6 meters.

Archaeologists found only two streets at present: Dingdingmen street (121 meters) and Yongtongmen street (59 meters), and these two streets are all narrow than the oral description. Professor Fu Xinian conjectured that the two streets were damaged by the war. In Northern song dynasty Dingdingmen street changed into 74.3 meters. In Ming and Qing dynasty, the main streets are about 7 to 30 meters and the secondary lanes are 2 to 7 meters.

3. Library Building and Value Assessment for the Historical Resources of Suitang Luoyang City

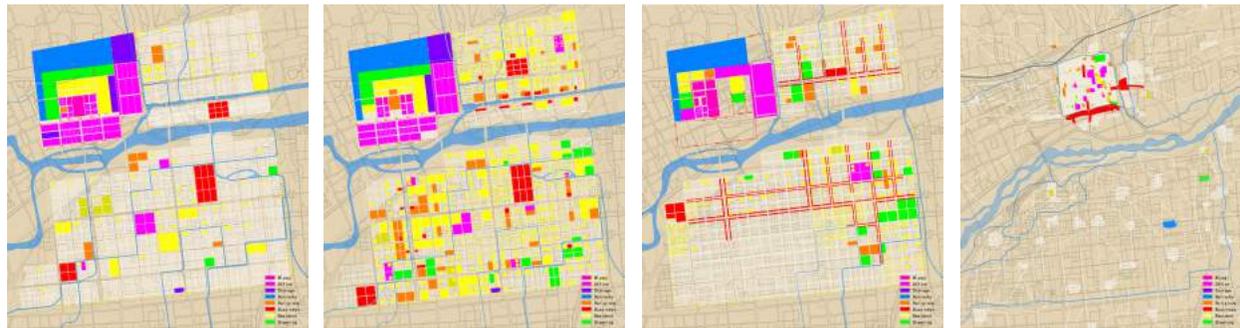
3.1. Library Building of Suitang Luoyang City's Historical Information

The spatial information can be integrated with character, picture and video information by GIS system, to support the research from space angle.

The information can be mainly classified into two kinds: the resource with supporting landform and obvious spatial form as well as the intangible information space which is attached to tangible information. Database is founded for the two kinds of information and GIS software is adopted in this paper for arrangement. Due to the particularity of Luoyang, the database is mainly for the underground sites and ruins.

Combine the locating point of urban space and dimension and then dispose it according to their layers and types, such as, urban space falls into point element, linear element and facet element. Subdivide the historical information and indicate the location and border on CAD topographic map on different layers, and then shift it into GIS system with serial number on it, which is,

finishing input of spatial information. The components of whole city are contained in the database formed by GIS, forming several ESRI SHAPE format layers and preliminarily constructing the space environment of Luoyang City.



Sui dynasty

Tang dynasty

Song dynasty

Ming & Qing dynasties

The main historical resources distribution

Source: made by author

There are mainly three aspects, which GIS system deals with: the unit of dot, line, and area. Dotted history resources are the resources, which can be closed to point size compared with the whole Luoyang city, or the size of the resources cannot be determined due to the insufficient of the history data. There are 87 dots of Sui dynasty, 906 dots of Tang dynasty, 461 dots of Song dynasty, 20 dots of Ming and Qing dynasties, a total of 1474 dotted history resources.

Linear history resources are the resources related to urban texture, or the width of the resources cannot be determined due to the insufficient of the history data. Those lines are crisscrossed in urban space and presented in the reticular mixed state. There are 266 lines of Sui dynasty, 0 line of Tang dynasty, 4 lines of Song dynasty, 56 lines of Ming and Qing dynasties, a total of 326 linear history resources.

Planar historical resources are the resources cover large areas and which can be clearly perceived and visited. Those resources are fewer but more rare than the dotted and linear history resources. There are 24 areas of Sui dynasty, 111 areas of Tang dynasty, 30 areas of Song dynasty, 31 areas of Ming and Qing dynasties, a total of 196 planar history resources.

According to the historical information of Sui dynasty, Tang dynasty, Song dynasty, Ming and Qing dynasties, these three levels are divided into different function parts.

3.2. Assessment Method Formulation for Historical Resource Factors

The assessment of Suitang Luoyang City Site's environment is conducive to obtaining exact environmental status and classification for the site, providing practical schemes and thinking for Luoyang City's development and transformation in the future. In this paper, the assessment of site environment includes contents in two aspects: the first is assessment of historical resources and the second is evaluating the impact of modern construction on historical sites.

(1) Assign values to urban information space and evaluate the historical value so as to guide design. According to the measuring standard of historical value, it falls into three indexes in this paper, as they respectively are duration, continuity and significance, and their values are as follows:

<i>Historical value evaluation</i>				<i>Source: made by author</i>
Historical value evaluation index	4	3	2	1
Duration	Sui Dynasty	Tang Dynasty	Song Dynasty	After Yuan Dynasty

Continuity	Four Dynasties	Three Dynasties	Two Dynasties	One Dynasty
Significance	Subjective, value grading in view of the urban history			
	The primary important	The secondary important	The third important	The fourth important

The computational formula: [Duration factor] ×0.35+[Continuity factor]×0.25+[Significance factor]×0.4 = value evaluation score

- (2) Confirm assessment factors. Since some assessment factors are different inside, second-level assessment factors should be subdivided, which actually are contents in the database foundation of intangible information space mentioned above.
- (3) Confirm the weighted value of assessment factors and comparatively validate the level of historical and cultural heritage; then remodify the assessment result feedback and repeatedly confirm the ultimate weight factor.
- (4) Calculate the score of historical resource assessment and multiply the level index of every information unit to corresponding index factor by their own weighted value; the aggravate score of every information's comprehensive assessment is accumulated and then the grade of urban historical information's noumenal value is confirmed according to the aggravate score so as to find out the important and valuable information resource.

The computational formula: $V(j) = \sum_{i=1}^n F_i W_i$

“The V(j) in the formula is the general score of the j-th unit, Fi and Wi are respectively the level index and weighted value of index factors in the assessment, and n is the number of factors in the assessment.

3.3 Quantization and Valuation of Historical Resources

Since Suitang Luoyang City was built a long time ago, most of it has been buried below and can't be investigated; meanwhile, Song Luoyang City and Jin-Yuan-Ming Luoyang City are built above it, those elements should all be taken into consideration in the assessment of existing historical resources.

The assessment of historical resources refers to evaluation of historical value attached in urban historical information element. As a result, when selecting assessment factors, historical information should be full considered, and assessment should be conducted in five aspects: the level of historical resources, existence time, completion degree the resource and surrounding environment, the visible part above the ground or the other part sheltered by buildings, as well as the coordination degree with surrounding townscape and functions. When questionnaire form on weighted value is compiled, the weighted value is given according to the importance of every index compared with the last index, and the sum of indexes at one level is 1.

First grade factor is the main factors for the identification of heritage value, The secondary factor is the added value of primary factor, and it can calculate the distribution of historical sites in more detail. The secondary weights assignment is divided into four levels: 40%、30% or 25%、20%、15% or 10%。

Classification of ground remains *Source: made by author*

First grade factor	Weight	Second grade factor	Secondary grade value assignment			
			40%	30%	20%	10%
Conservation level	35%	Classification of conservation level	Protected by the state	Protected by the province	Protected by the city	Protected by the county
Building age	20%	Classification of building age	Before Sui Dynasty	Song and Yuan	Ming and Qing	The republic of China

				Dynasties	Dynasties	
Integrity	15%	Integrity of the ontology	Complete	Relatively complete	Generally complete	None
		Integrity of the surroundings	Complete	Relatively complete	Generally complete	None
Visibility	12%	coverage extent	None	Part	Almost	All
		Size relative to the same site	Big	Relatively big	Generally big	Small
Accessibility	10%	Location advantage	Very close	Close	Generally	Far away
		Traffic accessibility	Convenient	Need to transfer	Need to walk	No way
Relatedness	8%	Coordinate with peripheral functions	Coordinate	Relatively coordinate	Generally coordinate	Discordant

Classification of underground burial sites and sites that have disappeared Source: made by author

First grade factor	Weight	Second grade factor	Secondary grade value assignment			
			40%	25%	20%	15%
Building age	40%	Classification of building age	Before Sui Dynasty	Song and Yuan Dynasties	Ming and Qing Dynasties	Other
Accessibility	15%	Location advantage	Very close	Close	Generally	Far away
		Traffic accessibility	Convenient	Need to transfer	Need to walk	No way
Renewability	20%	Transformation degree of the ontology	Easy	Relatively easy	Generally	None
		Transformation degree of the surroundings	Easy	Relatively easy	Generally	None
Historical value	25%	Integrity of the literature	Complete	Relatively complete	Generally complete	None

The value result of historical resources is scored and divided into four levels: the first level has a long history and important value. They need to be protected and recycled as key parts and shall be rectified and reformed in recent time; the second level is those with a long history and higher utility value, as they are worth emphasized conservation and can be recycled in recent time or later; the third level is those with a certain value for protection and utilization, and they can be partially reformed on the basis of conservation; the fourth level is those with ordinary historical value and they can be recycled after maintenance of exploitation nature.

- (1) The evaluation of urban historical resources should be assessed in two aspects, as the one is the existing sites and the other is those buried under the surface and those which have disappeared.
- (2) For the existing sites, the paramount task is to rank protection units and construction time; as for those buried under the surface and disappeared ones, the age and historical value of the site are foremost. Among the existing ones, it can be known that the national protection unit, ancient site of Suitang's east capital, possesses most historical value.
- (3) According to the recent archaeological reports on Suitang Luoyang City, sites of imperial palace, Huangcheng District, Yaoyi City, Yuanbi City, Dong City and Hanjiacang City at north side of Luo River are discovered; meanwhile, nine neighborhoods on this side are also demarcated. Due to good conversation of the south side of Luo River, fifty-five neighborhoods at the south side of Luo River are exactly located. The upgradability of this kind of sites is quite high, while the sites, which haven't been excavated or precisely discovered, are ordinary or not able to be excavated.

3.4. Value Assessment of Historical resources

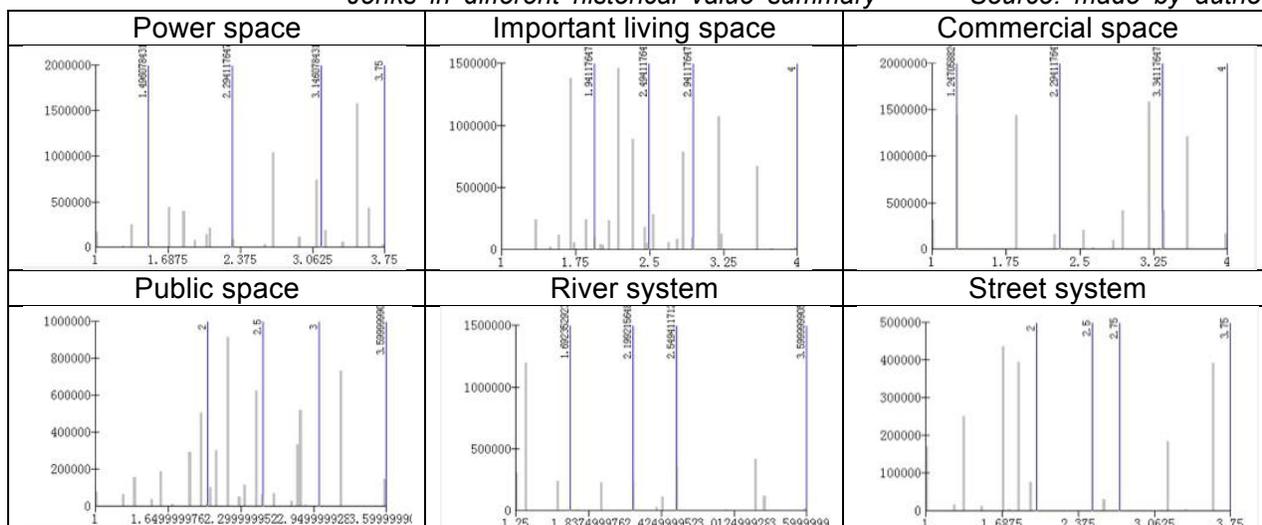
(1) Quantitative Analysis of historical Resources

In GIS, natural breakpoint classification method (Jenks) is adopted to naturally classify the scores of analyzed data for rules in it:

The score's distribution segments of historic spatial elements can be clearly seen, as the average value of power space is 2.76, that of important living space is 2.44, that of commercial space is 2.49, that of public space is 2.38, that of river system is 1.96 and that of street system is 2.16; in the first three levels, the maximum value of power space is 3.5, that is, the most valuable area and the first-level factor; the important living space is relatively disperse and within the range of 1.6~3.3, as there are relatively more three-level factors and balanced distribution of first-level and second-level factors; the differentiation for the commercial space distribution is quite large and the middle distribution is insufficient.

Jenks in different historical value summary

Source: made by author



That is, in the overall development process of Suitang Luoyang City to Ming and Qing Dynasty, the power space is the most valuable and the river system space possesses the least value, which is followed by the street space.

(2) Demarcation of Important Resource Value

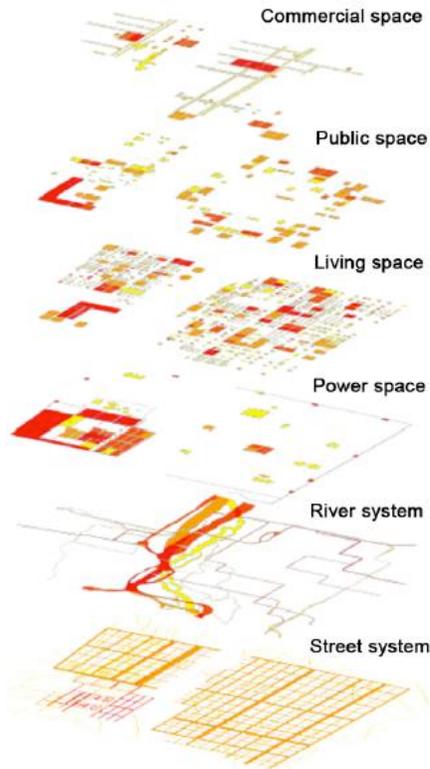
Superimpose the power space, important living space, commercial space, public space, river system network space, and street system on nonmaterial space; since there are quite many historical resources, the first two levels of resources with important historical value are selected and evaluated; the third-level factors are resources for long-term development under the circumstances of those important first-level and second-level historical resources being systematic in the near future.

Number of protection and reuse summary

Source: made by author

Level of conservation and utilization	First level of historical information		Second level of historical information		Third level of historical information	
	Conservation of the ontology	Utilization	Conservation of the ontology	Utilization	Conservation of the ontology	Utilization
Classification on principle						

of conservatio n and utilization	Reference to the "cultural relics protection law of the People's Republic of China "and so on	Nonprofit cultural infrastruct ure constructi on	Protecting the building structure and style, can look repairs for the outlook	For commerci al developm ent on the basis of protection	Conservation of architectural style	For commerci al developm ent
Power space	13		7		7	
Important living space	22		13		263	
Commercia l space	2		2		26	
Public space	14		7		43	
River system	4		1		4	
Street system	47		9		57	



Network composite of different historical resources
Source: made by author



Network composite result of important historical resources
Source: made by author

4. Database Foundation of Modern Construction Information and Assessment of Heritage Status

4.1. Assessment Method Development for Modern Construction Elements

Suitang Luoyang City benefits quite a lot from the conservation of current situation, while the conservation status of the whole city site can't be exactly known for the incomplete archaeological materials. As a result, it is expected to have the overall conservation status of Suitang Luoyang City by working backward from the influence of modern construction on Suitang Luoyang City Site.

The impact factors will be filtered according to construction's influence on the site. The destruction of Suitang Luoyang City Site is mainly in two aspects: the damage caused by flood within the research range on city construction and the influence by modern construction on Suitang Luoyang City Site, and the second factor is the first's additional value. With combination of the above data, distribution of historical sites can be calculated in detail; based on GIS database, Luoyang City's urban construction space from 1912 to now can also be rendered and superimposed on the historic special scale of Suitang Luoyang City Site with weight; finally, the evaluation result can be obtained:

Since weight of impact factor can directly be reflected in computation, its weight should be determined and analyzed by analytical hierarchy process, during which the following problems should mainly be taken into consideration:

Multi-story buildings and high-rise buildings are prime culprits menacing Suitang Luoyang City Site. The depth of multi-story and high-rise buildings foundation is mostly more than 3 meters, while Suitang Luoyang City Site is only 2-3 meters below the ground.

Road paving also destroys historical sites on a large scale. During road construction, underground pipe network's burial depth is usually 1 meter below ground, that of sewage pipe line is 2 meters below and that of DN600-DN800 pipelines is even 2-2.5 meters below.

The new-planned metro line in Luoyang crosses the old town, bringing higher risk to the site, which is crossed by the metro line. However, although the construction location in the range of Suitang Luoyang City is 15 meters below the ground and its influence on the site is decreased, the site would inevitably be destroyed.

Although urban lands like park, square and parks as well as land for non-constructive use purpose basically don't have any obvious influence on site, the impact of large-scale water and dense forests should also be considered.

Table of heritage damage evaluation

Source: made by author

First grade factor	Weight	Second grade factor	Secondary grade value assignment				
			10-8	8-6	6-3	2	1
Road	30%	The level of the road	Main road	Secondary main road	Branch	No line path	Other
Architecture	35%	Building foundation depth	Deep	Common foundation	Pile foundation	Shallow	Other
Park, plaza and non- construction land	5%	Classification	Other	Water and forest	Non- construction land	Farmland	Other
Flood	15%			10			Other
Railway	10%			10			Other
Metro line	5%			10			Other

Calculate the score of site impact assessment; multiply the impact factors by their corresponding weighted values; then the aggregate score of information's comprehensive assessment is obtained by accumulation. Finally, confirm the level of conservation value of city site according to their aggregate score, as the higher score represents larger influence of site and weaker conservation status, so as to find out the information resources, which are protected best.

The computational formula: $V(j) = \sum_{l=1}^n F_l W_l$

"In the equation, $V(j)$ is the j -th comprehensive score, F_i and W_i respectively are level index of index factors taking part in assessment and weighted values, and n indicates the number of factors in the assessment."

4.2. Quantitative Analysis on Heritage Conservation Status

The heritage conservation status falls into four levels: the first is those underground sites in good overall conservation status and shall be developed and exploited for culture and public benefit under the premise of strict protection, and prohibitions shall be set to avoid any destructions in the development; the second refers to the underground sites with local parts well protected and shall be exploited and utilized differently after being proved by archaeology; the third level means ordinary conservation status of underground sites which have been destroyed by modern constructions, thus, development and exploitation of cultural tourism can be conducted; the four level means basically destroyed underground sites and commercial tourism development can be carried out under the premise of not destroying sites.

The first level is the lower scored area, and the points defined between 0.2 and 1.5. The first level area is 976 hectares, is mainly concentrated in the east part of South Suitang Luoyang city and southeast part of North Suitang Luoyang city, which has a level of urbanization. The secondary level gets the points defined between 1.5 and 2.5, and the area is 1130 hectares, which is concentrated in the north side of Zhongzhou road, the west side of Longmen street and the southwest part of South Suitang Luoyang city. The third level gets the points defined between 2.5 and 3.5, and the area is 1837 hectares, which is concentrated in the both side of Longmen Street, the flood area of South Suitang Luoyang city and the woodland area in North Suitang Luoyang city. The fourth level gets the points defined between 3.5 and 4.3, and the area is 672 hectares.

It is mainly concentrated in the Huangcheng District at north side of Luo River and east part of Ming and Qing old city. It can be known from the above analysis that the site conservation status of the south neighborhood of Luo River is better than that of the north neighborhood. The sites is mainly destroyed by urbanization; meanwhile, the superposition of site district and flooded range in past dynasties also aggravates the destruction.

4.3. Constructional Suitability Analysis on Suitang Luoyang City Site

(1) Suitability Evaluation Elements for Suitang Luoyang City Site

The value evaluation map and site conservation status evaluation map of historical resources can be overlapped to form guidance for development and utilization of culture.

The conservation status of the site mainly brings additive effects to the conservation and development of Suitang Luoyang City Site: for the region with more value and in good conservation status, the conservation of heritage would be paid more attention to, while the region with worse conservation status would receive more commercial exploitation.

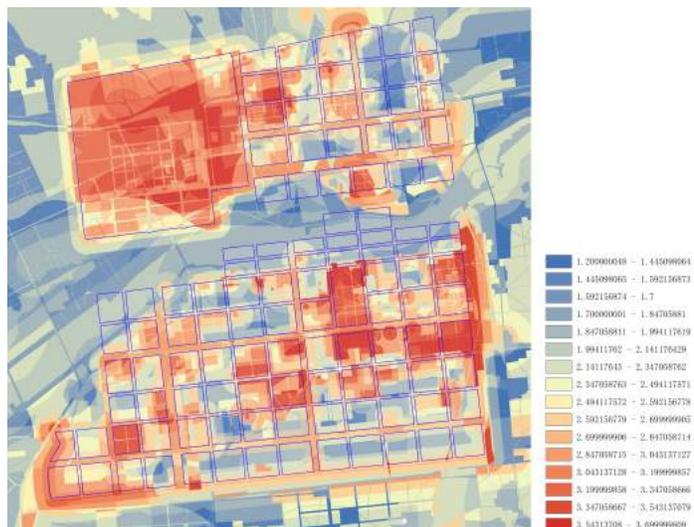
(2) Suitability Evaluation Result of Suitang Luoyang City Site

As Suitang Luoyang City covers a large area and is complicated, the suitability evaluation of the site would be maximized and classified in order to cope with different exploitation situations. According to the analysis, the deeper the red is, the better the site is protected and the higher its class is in the history; it is mainly concentrated in the Huangcheng District and northwest area at the south side of Luo River; as for the north part of Luo River, land in the east part of Huangcheng District and east district enjoys the highest value in historical sites.

The historical resources value is divided into four big levels and sixteen little grades. The first level historical resources are the resources, which have a long history, and complete underground ruins, and need to focus on the protection and reuse. The resources lay particular stress on protection and recent regulation, and the score of them can be subdivided into 1.2-1.45、1.45-1.59、1.59-1.7、1.7-1.85. The secondary level historical resources are the resources which have a long history and great usage value, can be protected and reused with short-term or medium-term, and the score of them can be subdivided into 1.85 2, 2-2.14, 2.14, 2.14, 2.35-2.49. The third level historical resources are the resources which have conservation and utilization, and the score of them can be subdivided into 2.49 2.59, 2.59, 2.7, 2.7, 2.7, 2.85, 3.04. The fourth level historical resources are the resources which have a certain degree of history value and can be developed in the long-term, and the score of them can be subdivided into 3.04 3.2, 3.2, 3.2, 3.35, 3.54, 3.54, 3.54.



preserving situation of Great Suitang Luoyang City Site
Source: made by author



Suitability Evaluation of Great Suitang Luoyang City Site
Source: made by author

5 Conclusions

The reformation of cultural heritage is always with the static and passive mode, and the environment of Great Site declines under the tide of urban development. The research of cultural heritage is limited in the conceptual phase and hard to put into practice, which has significant relationship with the derailment of site protection and the development of modern city. Only concatenate the historical heritage space and culture to urban development, can be feasible in protecting the site.

Regeneration for Traditional Residential Community of Water Towns in South of The Yangtze River Based on Cultural Planning: Case of Guangfu Town, Suzhou, China

ZHANG Xiao, DENG Xiaoxiao, NIU Yuansha, China

Abstract: By Applying the cultural planning approach to the regeneration of the traditional residential communities and combining it with the conservation planning for historic township, it establishes an culture-led regeneration framework for water towns in south of the Yangtze River and analyses its application in practice by using a case study of historical community regeneration in Guangfu town.

Keywords: Traditional Residential Community Regeneration; Water Towns in South of the Yangtze River; Cultural Planning; Conservation Planning for Historic Township

1. Introduction

Water towns in south of the Yangtze River are typical groups of traditional Chinese residential communities which are of great value of Chinese culture. However, with the process of globalization and establishment of China's socialistic market economic system, the water towns in south of the Yangtze River face enormous challenges in the course of social structure changing and rapid urbanization. On one hand, they lost traditional features in the large scale urban renewal process (Zhao Yong 2008); On the other hand, the residential communities that haven't been renewed are experiencing physical and social decay. Therefore, the research about the regeneration method of these traditional residential communities has significant meaning.

Cultural planning approach is one of the regeneration methods which have already been adopted by Western countries since the 1990s. It diagnoses and solves the problems of community development based on the cultural perspective which could provide a way of community cultural renaissance. So the hypothesis of this paper is that cultural planning approach can play an important role in the community regeneration of water towns in south of the Yangtze River. By Applying the Cultural planning approach to the regeneration of the traditional residential communities and combining cultural planning with the conservation planning for historic township¹ of water towns, this paper establishes an culture-led regeneration framework for water towns in south of the Yangtze River and analyses its application in practice by using a case study of historical community regeneration in Guangfu town which aims to support the hypothesis.

Specifically, this paper firstly establishes the cultural planning framework for traditional residential communities of water towns in south of the Yangtze River by combining it with the

conservation planning for historic township; Secondly, it analyses the cultural system and evaluates the cultural value of the historical community in Guangfu town which is taking as the studying case; Thirdly, it proposes the regeneration target, strategies from cultural perspective; It finally summarizes the views and conclusions, and discuss the cultural strategies.

2. Necessity of Introducing Cultural Planning into Residential Community Regeneration

2.1 Culture protection are important parts for residential community regeneration

Most of traditional residential communities in south of the Yangtze River are famous historic townships or villages. Culture protection is vital part for its heritage preservation and regeneration. It is of great significance to excavate culture for the residential community conservation and development. Thus it's a critical topic of discussion on residential community conservation and regeneration that how to excavate the cultural connotation of famous historical town effectively to coordinate traditional culture and modern culture as well as urban construction. As a kind of approach, cultural planning provides with a new perspective for planning of traditional residential communities in south of the Yangtze River, which helps to protect cultural connotation and increase vitality for the residential community.

2.2 Culture is an essential factor to promote residential community

As an indispensable element in daily life, culture is the inherent organizational cohesion of the residential community, which covers every aspect of social life, work and activities. The regeneration of residential community culture can improve residents' residential satisfaction and sense of belonging so as to promote the residential community vitality.

2.3 Culture helps to boost the economy and social development

Most cultural planning in the western countries started from declining urban center. In the regeneration progress, introducing cultural planning can bring in superior resources and capitals; accelerate economic and social development in an effective way by attracting investment, developing cultural industry and tourism, creating employment, etc.

2.4 Culture is a mean to improve residential community image

Culture is the core connotation of traditional residential community and Culture development is an essential way to improve residential community image. By means of culture construction and marketing, the residential community will attract more superior resources and groups of people so as to promote the whole image.

Based on the above, the author selects "cultural planning" as a perspective to study traditional residential community of water towns in south of the Yangtze, and discuss how to strengthen culture guidance in the regeneration process. By introducing methods and contents of cultural planning, cultural heritage protection of the residential community and its inherent cultural system, urban cultural space and features are connected in an organic way to realize the residential community conservation and regeneration.

3. Cultural planning Theory

3.1 The context of cultural planning

The initial literature on cultural planning studies began to emerge in 1970s in Europe, which is first used as a method of urban regeneration or building creative cities. The initial research on cultural planning is regards to the arts policy or art planning, as Munro states that cultural planning is the 'art of urban planning' (Munro 1967). The formative concept of cultural planning was first seen in the book "Using the Arts to Improve Life in the City"(Harvey 1979), which caused a lot of discussion and has been widely promoted in Western European countries. The concept was then gradually evolved broader than the "arts" which covered physical planning, urban landscape design, tourism, industrial development, cultural facilities development, financial resources, community development, education, etc., as Murray and Baeker defines it "an integrated approach to the management of a broad range of cultural resources" (Murray and Baeker 2006). It is also commonly touted as being a novel 'cultural approach' to urban policy and planning (Jason F. Kovacs 2011). In the 1990s, especially after the first Cultural Planning Conference in Sydney, Australia, 1991, cultural planning has become one of the core work of the Australia Local Government Association, which suggested that cultural planning was a cultural approach that initially involves the 'mapping' of a community's cultural assets such as cultural and heritage organizations, galleries and performance venues, and events and tourist accommodations for development and planning purposes (Jason F. Kovacs 2011). Cultural Planning was introduced into China after 2000, and is getting more and more attention in recent years. However, the existing researches are mainly reviews of western cultural planning theories, or discussions about integration of cultural planning and Chinese planning system, little research has been conducted on application of the cultural planning in community with empirical case studies. This paper aims to introduce the concept, procedures, contents and methods of cultural planning from the European countries into the regeneration process of water towns in south of The Yangtze River so as to develop a workable cultural planning approach by combining the cultural planning with the "conservation planning for historic township".

3.2 The definition of cultural planning

Cultural planning takes different definitions in different researches and has a variety of configurations. Comedia defines it as a cultural planning perspective offers for policy formulation: 'a process of monitoring and acting upon the economic, cultural, social, educational, environmental, political and symbolic implications of a city's cultural resources' (Comedia 1991). Guppy describe it as 'a purposeful, strategic approach to cultural development(Guppy 1997). Landry underscore that cultural planning is not intended as the planning of culture...but rather as a cultural approach to any type of public policy' (Landry 2000). A generally accepted definition is that Cultural planning is the wider integration of arts and cultural expression in urban society. It is also described as 'the strategic use of cultural resources for the integrated development of cities, regions and countries' (DMU 1995).

4 Integrating cultural planning with conservation planning for historic township of water towns

4.1 The need to integrate the two kinds of planning

Since most of the water towns are historic townships, or have the potential to apply for historic township, the preparation of conservation planning for historic township is required, which has legal status after approval by government. Conservation planning for historic township is the main plan for historical community in water town, and it focuses on the protection of culture and heritage, which is consistent with the cultural planning. Therefore, the two kinds of planning can be integrated so as to avoid deluge of non-statutory plan noun and concept, and makes it convenient for the administrative management and coordination.

4.2 Mechanism of integrating the two kinds of planning

Introducing cultural planning method has great significance to conservation planning for historic township. But how to introduce cultural planning into conservation planning? It is known from the comparison of characteristics of cultural planning and historical and cultural protection that there is something common between these two and that they can refer to each other, which are the basic prerequisite to introduce cultural planning into historical and cultural conservation planning. Historical and cultural conservation planning can be supplemented with cultural planning including planning idea, evaluation approach, content and framework, and working procedures; while cultural planning can support cultural planning implementation from the legal status, technique, management system and implementation operation mechanism so as to form a planning pattern which can complement each other. Therefore, the content and method of cultural planning can be integrated into conservation planning for historic township or one of its sub-items in order to further perfect its system and approach.

4.2 Integration of working framework

Through analysis a of working procedures, working framework, working contents of conservation planning for historic township as well as existing cultural planning, it can find the similar and complementary contents as well as the working procedures cohesion of the two kinds of planning. On this basis, the framework and contents of cultural planning can be integrated into conservation planning for historic township of the residential community.

According to figure 1, there is certain consistency between steps of working stage of conservation planning for historic township and of cultural planning. In planning content, they both closely focus on the core of "culture". Comparatively speaking, cultural planning pays more attention to special evaluation of culture resources, emphasizes on the planning target formulation of cultural demand. Their commonality in working step and content determines that the working steps can be integrated to construct a working framework of conservation planning for historic township from the perspective of cultural planning (table 1). This working framework strengthens the cultural resources evaluation and cultural demand analysis of residential community. Based on sufficient analysis of cultural system and overall evaluation of cultural resources, the content outline of cultural planning is established to get cultural

planning implemented in policy deployment and spatial construction of traditional residential community protection.

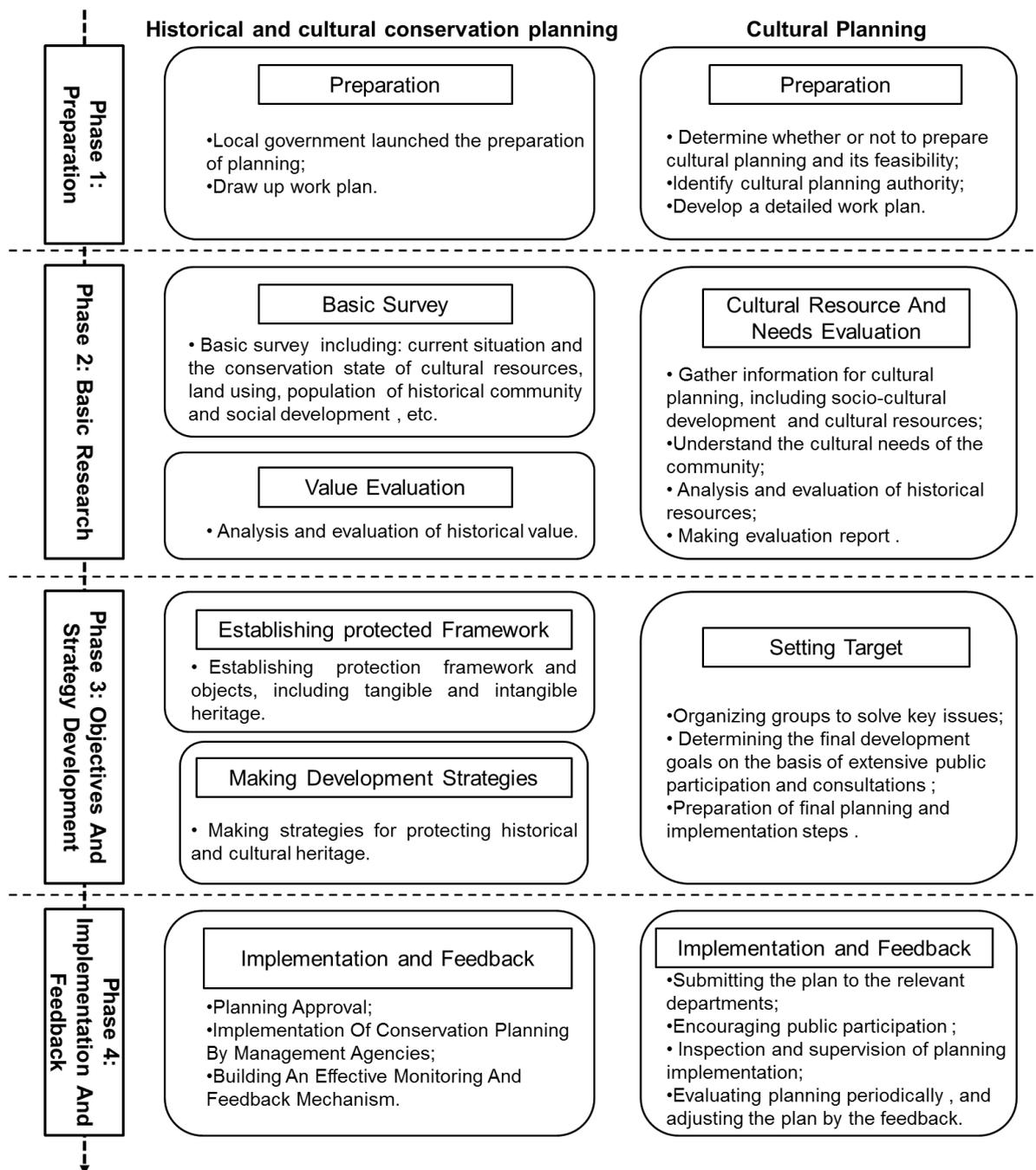


Figure 1. Comparison of working framework for conservation planning for historic township and cultural planning

(Source: concluding by the author)

Table 1. Working framework of conservation planning for historic township from the perspective of cultural planning

Working Phases	Contents
Phase 1: Preparation	<ul style="list-style-type: none"> Local government launched the preparation of Conservation planning for

Working Phases	Contents
	historic township as well as cultural planning, cultural planning can be one of the sub-items of the conservation planning; <ul style="list-style-type: none"> • Identify cultural planning authority; • Develop a detailed work plan.
Phase 2: Basic Research: cultural system analysis and Value Evaluation	<ul style="list-style-type: none"> • Establishing evaluation framework based on analysis of cultural system and cultural resources; • Evaluating cultural value, including both historical value and cultural development of the community.
Phase 3: Establishing protected Framework and objects	<ul style="list-style-type: none"> • Establishing protection framework and objects based on result from phase 2.
Phase 4: Making Development Strategies	<ul style="list-style-type: none"> • Making strategies for protecting historical and cultural heritage and promoting the community .
Phase 5: Implementation And Feedback	<ul style="list-style-type: none"> • Planning Approval; • Implementation Of Conservation Planning By Management Agencies; • Building An Effective Monitoring And Feedback Mechanism, including encouraging public participation and evaluating planning periodically .

(Source: concluding by the author)

4.3 Cultural System

Cultural system means an organic integrity constituted by several statistics and indicators that associated with each other in cultural domain (Song Jie 2014). The integration of relevant cultural features forms a cultural complex. Then the integration of some relevant cultural complexes forms a cultural system. Historical and cultural system is not only the core connotation of residential community, but also the key research content of cultural planning. Under the view of cultural planning, the cultural system type and components of residential community(including material element and non-material element) should be analyzed to lay a foundation for the planning.

4.4 Cultural Resources Evaluation

After arrangement of local cultural system, cultural resources should be evaluated correspondingly. Then framework and content of cultural planning is determined. The main working contents in this step include construction of cultural resources evaluation framework, and of cultural conservation framework.

(1) Construction of cultural resources evaluation framework

According to relevant finished research and practice in China, there are mainly two types of cultural resources evaluation in conservation planning for historic township. One is qualitative evaluation, which extracts and summarizes characteristics of cultural value by analyzing local culture; the other is indicator evaluation, which is built by combining with indicators of application formational historic township as well as historical building evaluation. These two types of evaluation mainly aim at historical and cultural resources. From the perspective of cultural planning, cultural resources evaluation contains not only historical culture evaluation,

but also the evaluation of present cultural organizations. Therefore, in the evaluation framework, the two types of evaluation should be integrated to build a comparatively comprehensive cultural resources evaluation framework. In this paper, it follows normal indicator system construction idea and the cultural resources evaluation framework is shown in table 2.

Table 2. Cultural Resources Evaluation framework

Evaluation Type		Evaluation Content	Evaluation Criteria	
Historical and Cultural Resources (Conservation Elements)	Historical Spatial Pattern and townscape	Landscape Pattern	<ul style="list-style-type: none"> • Characteristics and Conservation Status of Landscape Pattern • Integrity of spatial pattern • Characteristics of spatial pattern 	
		Urban/Town Pattern	<ul style="list-style-type: none"> • Characteristics and Conservation Status of Urban/Town Layout • Integrity of spatial pattern • Characteristics of spatial pattern • Number of Historical Street (river) 	
	Key Conservation Zone	Key conservation zone /Historical area	<ul style="list-style-type: none"> • Scenic Integrity of Key Conservation Zone / Historical area • Proportion of construction area about conservation units and candidacy listing buildings • Overall structural integrity of Key Conservation Zone 	
	Cultural Heritage	Tangible Cultural Heritages	Quantity, Level and Conservation Status of Tangible Cultural Heritage	<ul style="list-style-type: none"> • Quantity of candidacy listing units/buildings • Level , quality and Conservation Status of candidacy listing units/buildings
		Intangible Cultural Heritage	Quantity, Level and Conservation Status of Intangible Cultural Heritage	<ul style="list-style-type: none"> • Quantity and Level of registered intangible cultural heritages • type and quantity of Traditional festivals • type, characteristics, and quantity of traditional arts and crafts • Other representative traditional cultural elements: such as road names, traditional costumes, etc.
	Historic Environment Element	environmental elements with traditional characteristics	Quantity and Conservation Status of Historic Environment Elements	Quantity and Conservation Status of Historic Environment Elements: walls, gates, arches, pagodas, gardens, bridges, ancient trees, etc
Residential Community Culture Resources	Residential Community Cultural Facilities	Setting and Utility of Residential Community Cultural Facilities	<ul style="list-style-type: none"> • Quantity of Cultural Facilities • Quality of Cultural Facilities • Accessibility of Cultural Facilities 	
	Life Diversity of Residential Community Culture	Organization Condition of Residential Community Cultural Activities	<ul style="list-style-type: none"> • Type of community cultural activities • Quantity of community cultural activities 	

Evaluation Type	Evaluation Content	Evaluation Criteria
Living Quality	Living Space and Residents 'Activity Space	<ul style="list-style-type: none"> • Residential building quality • The quality of living environment • the quality and accessibility of public space
Residential Culture	Inheritance of Traditional Residential Culture	<ul style="list-style-type: none"> • Aboriginal proportion • resettlement cases

(Source: concluding by the author)

(2) Construction of cultural conservation framework

On the basis of cultural resources evaluation, the existing problems in current cultural system, types of cultural resources, culture protection and utilization are analyzed as well as the framework and content of cultural planning. And then it combines the analysis with the framework of conservation planning for historic township to realize its implementation into statutory conservation planning.

5. Case study: Historical Community in Guangfu, Suzhou, China

Situated in Taihu Lake of southwest suburb in Suzhou, Guangfu is a typical traditional residential community in south of the Yangtze River and is also historic township of Jiangsu province, with long history and cultural heritage (Figure 2 and 3). In recent years, along with the rapid development of social economy and successive issuance of relevant rules and regulations, historical and cultural heritage conservation of Guangfu faces higher requirement, and the significance and urgency of historical and cultural conservation is increasingly prominent. It is necessary to solve the vital problem about how to protect and utilize culture so as to realize residential community regeneration. For this purpose, cultural conservation planning method proposes a feasible idea.



Figure 2. Location of Guangfu



Figure 3. Image of Guangfu

Therefore, in the new round of preparation of historic township conservation planning, it carried out effective practice regarding working framework and method in previous studies, established basic frame for conservation planning according to overall review for local cultural system and comprehensive assessment of regional cultural resources. In this way, cultural planning would be realized in conservation and regeneration of traditional residential community in Guangfu and the practice was shown as follows in details.

5.1 Cultural system analysis of Guangfu

Based on the analysis on cultural context and existing heritage in Guangfu, its major cultural system was concluded, including nine cultures (table 3). Research on cultural system provides clear thought for cultural conservation of Guangfu and is beneficial for conservation and application of special cultural category.

Table 3. Cultural system of Guangfu

Culture Type	Content
Landscape of Wu Culture ²	Guangfu is located in Taihu Lake Basin of various and dense rivers and mild climate. It is land flooded with water. So it is a typical representative of landscape of Wu culture .
Fishing and Farming Culture in Taihu Lake	Guangfu is famous for its flourish nursery stock and its aquatic products are rich, including well-known anchovy, white shrimp, mandarin fish, Taihu crab, whitefish and water shield, with nearly 2000 years' history of fishing and farming culture.
War Culture	There are several great wars in history of Guangfu, like the earliest "Anshan War", New Fourth Army "rushing to mountain and breaking out" and the famous martyr's tomb of Wu County is also at the foot of Wolong. It shows war cultural origin with relevant ancient battlefields.
Industrial Culture	Guangfu has been exploited since the ancient time and is mainly equipped with two large silver ore exploration areas in Yuli Village and Tanshan; several typical industrial architectures of 1970s are of certain historical and reused value.
Botanical Wonder Culture	Guangfu with its natural beauty, rich and moist water and soil, is good for plant growing, and its plum planting history can date back to the end of Qin and the beginning of Han. Various nursery stocks are planted in valley and Snow Sea in Dengwei Mount, Schimasuperba forest and four cypresses "Qing, Qi, Gu, Guai" are the most famous.
Handicraft Culture	Guangfu residents are ingenious and are good at building sculpture, such as the well-known building construction craft of Xiangshanbang; it is also one of the origins for jade carving, fruit pit curving, annatto carving and Buddha carving, meanwhile its silk weaving, embroidery and other manual skills also get the reputation at home and abroad.
Religious Culture	As Guangfu is superior in river and mountain, it is the place which both of Buddha and Tao want to occupy: like famous Bronze Guanyin Temple and Situ Temple; besides, Christianity and Mohammedanism also take root here.
Celebrity Culture	Under the exposure of Wu culture over more than two hundred years, Guangfu has cultivated a large number of excellent cultural celebrity with good reputation and the famous celebrities.
Folk Culture	Guangfu has traditional production, life style and customs and festivals and customs related to fishermen, farmers and vendors. It involves production ceremony of fishing and farming culture represented by land of sacrifice, silkworm goodness of sacrifice.

(Source: concluding by the author)

5.2 Cultural Value Assessment

Cultural value assessment mainly includes two aspects, qualitative evaluation on cultural characteristics and evaluation on cultural resource of Guangfu by using cultural resources evaluation framework to explore problems in existing cultural resources.

5.2.1 Evaluation on Cultural Features

Six cultural characteristics were proposed by arranging and evaluating cultural characteristics of Guangfu (table 4), and extraction of cultural characteristics is to find out cultural connotation and provide evidence for shaping cultural image for Guangfu.

Table 4. Evaluation of Cultural Features

Cultural Characteristics	Major Features
Landscape with lots of westward mountains and rivers between mountains	Guangfu is situated between two lakes, equipped with rolling mountains and dense waters, all of which form the landscape environment of "town in east, mountains in west and rivers embedded in mountains".
Coherent context axis	Historical cultural attractions mainly distribute along the cross axis and show the layout of "up and down correlation and western and eastern connection".
Space layout combined with mountain and temple	Guangfu is integrated with landscape, cultural dream and religious belief. Religious architectures are dotted in mountains to form the space layout of "combination and contract of mountain and temple".
Poetics and picturesque scene	It is Wu Resort described by artists and scholars and preserves numerous poems and paintings to show poetics and picturesque scene.
Natural sightseeing with mountain and forest spreading all over, as well as island and bay lying in both sides	It is rich in natural landscape resources, with diverse types of landscape, including mountain forest, island, inlet and intertidal zones to form natural space of "mountain and forest spreading all over and island and bay lying in both sides".
Habitation sentiment that distributing along mountains and living near waters	Houses and natural villages are mostly distributed along mountain or waters to reflect the residential characteristics of Jiangnan Water towns.

(Source: concluding by the author)

5.2.2 Cultural Resources evaluation

Key steps of cultural resources evaluation: based on the cultural resource evaluation framework in Table 3, indicator is given value and is graded to analyze the results of assessment. Evaluation of cultural resources mainly includes two parts. The first one is to explicit conservation and regeneration value of cultural resources of residential community for strategic deployment of cultural resources; the second one is to explore advantages and questions of cultural resources to provide evidence for further improving conservation and use of culture.

For example, it is shown in evaluation result of cultural resources in Guangfu (table 5) that Guangfu obtains high score in inheritance of landscape pattern, culture heritage and residential culture which indicates that Guangfu has excellent landscape resources and

abundant cultural heritages and preserves traditional residential model dominated by indigenous people; in the planning, it should enhance conservation and management of core conservation space to optimize facility layout of residential community culture and add residential community cultural activities.

Table 5. Cultural Resources Evaluation Results Of Guangfu

Evaluation Type		Evaluation Content	Score (Full Mark 10)	
Historical and Cultural Resources (Conservation Elements)	Historical Spatial Pattern and townscape	Landscape Pattern	Characteristics and Conservation Status of Landscape Pattern	10
		Urban/Town Pattern	Characteristics and Conservation Status of Urban/Town Layout	8
	Key Conservation Zone	Key conservation zone /Historical area	Scenic Integrity of Key Conservation Zone / Historical area	6
	Cultural Heritage	Tangible Cultural Heritages	Quantity, Level and Conservation Status of Tangible Cultural Heritage	8
		Intangible Cultural Heritage	Quantity, Level and Conservation Status of Intangible Cultural Heritage	10
	Historic Environment Element	Environmental elements with traditional characteristics	Quantity and Conservation Status of Historic Environment Elements	8
Residential Community Culture Resources	Residential Community Cultural Facilities		Setting and Utility of Residential Community Cultural Facilities	6
	Life Diversity of Residential Community Culture and Quality		Organization Condition of Residential Community Cultural Activities	6
	Living Quality		Living Space and Residents 'Activity Space	8
	Residential Culture		Inheritance of Traditional Residential Culture	10

(Source: concluding by the author)

5.3 Culture-Oriented Conservation Strategy

Based on evaluation on cultural value, cultural strategy was proposed for Guangfu for cultural characteristics and existing problems in previous evaluation. For example, it advocates inserting cultural function, resuming to traditional commercial and residential cultural characteristics of residential community, creating special historical and cultural brands and promoting various intangible cultures. The final conservation frame and culture showed cul-

tural system and characteristics and relevant solutions (table 6) were proposed for problems in cultural resource evaluation.

Table 6. Strategy for Culture conservation of Guangfu

Strategy	Main Content
Cultural Function Embeddedness	Part of architectures with good quality and appearance should be changed into public cultural architecture for exhibition and commemoration. It should implement conservation-oriented and exhibition-supported strategy and should protect the reality of culture relic conservation site and restore its publicity
Resume to traditional commercial and residential characteristics	It should strengthen traditional commercial and leisure function and set window of displaying and selling artwork like four carvings and silk weaving and special food and carry out traditional performance in festivals in major lanes and square. Taken ancient well and trees as node of space joint, it creates a site for communication and activity of residents.
Create special historical and cultural brand	Landscape and culture resources should be combined to create special historical and cultural brand with integration of history and ecology.
Promote various intangible cultures	Spot demonstration, indicator explanation, tourist brochure, recording, video and tour description should be utilized to spread special culture and add influence and special souvenir, artware and special food should be depended to drive development of local economy and tourism.

(Source: concluding by the author)

5.4 Summary

It showed in implementation of cultural planning method in traditional residential community of Guangfuthat systematic cultural management and analysis brings significant foundation and evidence for conservation of cultural community. On this basis, conservation frame and cultural strategy can solve problems in cultural conservation and inheritance.

6. Conclusion

To sum up, the paper comes to conclusion as follows:

(1) Cultural planning introduced in traditional residential community of Jiangnan Water-town is helpful for protecting and inheriting culture, improving residential community vitality, driving economic and social development of town and raising town image and it is of great significance for conservation and regeneration of traditional residential community.

(2) Complementation of cultural planning and historic and cultural conservation planning determines that both parts should be integrated in planning method. In this premise, basic working frame and content of historic and cultural conservation were proposed to establish methodology for cultural resource evaluation and cultural planning frame.

(3) Taken Guangfu as example, it further achieves that cultural planning method is helpful for systematically sorting cultural system and resource of traditional residential community, showing cultural value and solving problems in cultural conservation and inheritance.

On this basis, it put forward that cultural planning could be technically integrated with historical and cultural planning to become guidance for cultural conservation and regeneration for residential community and effectively promote vitality for residential community and protect cultural resources.

Notes

1. Conservation planning for historic township: It is the statutory planning for historic township in China, which aims to protect the historic township and coordinate the relationship between conservation and renewal. It is the sub-plan or special plan of comprehensive planning.

2. Wu culture: Wu culture is an important part of Chinese civilization; it is represented by the traditional culture of Jiangsu and Zhejiang Province.

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An Empirical Study on Mega-city Commercial Spaces Distribution Characteristics: Exploratory Big-data Analysis on Guangzhou, China

(An Empirical Study on Mega-city Commercial Spaces Distribution Characteristics)

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Abstracts: The distribution of commercial retail networks is one of the most important factors influencing the evolution and layout of a modern mega-city. This paper, taking Guangzhou as a representative example, explores the aggregation and diffusion characteristics and general laws of the distribution of commercial retail networks, using the Kernel analysis method, based on big-data mining from half-open and open source internet. The results show that the site agglomeration degree, population agglomeration degree and the distribution of consumption level generally represented different kind of center point. Finally, we investigate the driving mechanism, including urban planning driver, policy trigger and pushing force, inner impetus and cohesion force, in order to reveal and explain the general law of distribution of a commercial retail network. This paper will also provide the reality basis for the urban planning, as well as the coordinated and healthy development of commercial retail networks.

Key words: Commercial Retail Network, Distribution Characteristics, Driving Mechanism

1 Introduction

Commercial space as an important contributor of urban development, is always studied to optimize the structure of urban land and function. The distribution of commercial retail facilities is closely related with the land use, transportation, urban expansion, service industry, etc. Thus the study of commercial retail network location is emphasized by the governments on urban planning and companies on location selection in the decision-making. And the distribution rule is one of main subjects in the fields of geography, urban planning as well as architecture (ZHANGWenzhong et al,2006; FENG Jian et al, 2007; CHAI Yanwei, et al 2010; ZHOU Suhong, et al 2008).

The idea of People-Oriented and the recent rise of techniques based on big-data in China, had an impact on the traditional studies increasing focus on space-behavior (Wang De, Guangde Li, Wei Zhu, 2013).

Guangzhou is the most famous Chinese traditional trading mega-city, and has experienced rapid development over the past decades. Since emerging economies generally represent faster urbanization than economic growth, the evolution of commercial retail space in Guangzhou typically reflect most characteristics of commercial retail network in both the old and new town area.

This study aims at conducting an urban-level quantitative spatial data analysis to explore the aggregation and diffusion characteristics of commercial retail network in a mega-city, based on both traditional planning data and big-data mining from Baidu Map, Public Comment, Open Street Map (OSM), etc. This study also aims to analyze how factors impact on the distribution, so as to provide a better understanding and suggestions of urban planning. There are three objectives in this study including: (1) observing and measuring the relationships between commercial retail network and urban morphology quantitatively; (2)

analyzing the mechanism of commercial retail network distribution; (3) providing implications and guidance for future urban planning. The outcomes can be shared within and beyond the borders of China in order to optimize the urban land use distribution and the efficiency of commercial retail network.

The remainder of this paper is organized as follows: Section 2 reviews the related literature and studies; Section 3 introduces the method and data used in this study; Section 4 presents the basic distribution characteristic information of case study area, Guangzhou, from three dimensions in urban morphology: site agglomeration degree, population agglomeration degree and the map of consumption level; Section 5 investigates the driving mechanism of commercial retail facilities distribution, including urban planning driver, policy trigger and pushing force, inner impetus, cohesion force, etc., in order to reveal and explain the general law of distribution. Section 6 draws conclusions and discusses the implications of these policies.

2 Literature review

Spatial distribution of urban commercial retail facilities is one of the main research objects in commercial geography. The methods and perspectives in the research has been progressing. Researches focus on perspectives including the interaction models between customer behavior and commercial space theoretically (Reilly, 1931; Converse, 1949; Huff, 1964; Wilson, 1970; Rushton, 1969), and distribution characteristics from a social-economics perspective (Davies, 1977; Potter, 1982). The research methods of spatial distribution and clustering of commercial networks from a perspective of customer behavior has a matter of concern in China (WANG De, 2013, 2001; HAN Huiran, et al 2011; ZHUWei, 2010). Kernel density, standard deviational ellipse and Ripley's $K(r)$ function, etc. are the usual methods to analyze the inner space structure of commercial facilities (ZHANG Xun, et al 2013). The research is mainly based on the traditional data set including national economic census and questionnaires. It cannot reflect directly the comments of customers, and the results cannot be updated in time since the investigation usually takes a long time.

Recently, the utilization of open source and half-open source data have become an possible data set to study the distribution of commercial space. Some researchers took trials to develop new data set and study methods. Based on the catering data mining from Public Comments, the distribution of the catering industry is studied through kernel density and comprehensive assessment (QING Xiao, et al. 2014). The existence of hierarchy structure of commercial districts in the center system was proved in an empirical study of Shanghai based on mobile phone signaling data (WANG De, et al. 2015). Two commercial centers in Shenzhen were recognized through floating car GPS data (ZHOU Suhong, et al. 2014). Therefore, various information can be found in multi-source data from the internet. Data mining from the internet may be the most direct way to evaluate the distribution of commercial retail networks, and this data could best reflect information relating to customers' behavior.

3 Date and methods

3.1 Data source and database construction

This study uses at least four kinds of data sets in addition to traditional data, including merchant data from Public Comment, Point of Interest (POI) data from Baidu and data from Mapbox and Baidu Heat Map.

The first data set comes from Public Comments: the most popular lifestyle information and trading platform. It supplies merchant information, consumption comments, preferential activity, and O2O trading serves. It covers many fields including catering, shopping, recreation, etc. It has been reported that the transaction volume in Public Comment ranked first in the past six months in the Market Research Report of Chinese Commercial Service

Industry. Thus the data from Public Comment could well represent the current utilization of local commercial services. Catering has the most contributors among all the categories in Public Comments, as the catering service in Public Comments is most commonly used, and it shows similar distribution with the other retailing categories (QING Xiao, et al. 2014). Therefore, we use catering data from Public Comments to explore the distribution of commercial retail network in Guangzhou.

There are 140249 pieces of Guangzhou catering data from Public Comment till 10th April, 2016. We surveyed data ranked in top of 6% in every administrative district as valid samples, since the other merchant data lack enough customers' attention, and they can be thought as very small or unstable shops. Then there are 8415 pieces of data all over the city collected via crawler technology. All the data is cleaned and then interpreted through the address coding module of Javascript API from Baidu Map, according to the business addresses in Public Comment.

The second data set is Baidu POI (Point of Interests). The Fourth Quarter Financial Report in 2016 reveals that, the amount of commercial category of POI has reached 20,000,000, making Baidu the most completed POI map data set. The POI data covers all the categories of sites, and the information of each point includes name, category, longitude and latitude.

The third data comes from Baidu Heat Map. Through the position signal of the cell-phone of Baidu Map users from the base station, the number of users in the area can be counted, and then the dynamic map can be rendered automatically every minute in Baidu map background processing. The amount of Baidu Map users in each month has reached 30 billion in China by November, 2015. Therefore the samples in the Baidu Map could reflect universal customers' behaviors. We chose the maps 17:30pm-20:30pm in working days and maps 12:00am-20:00pm from 16th May to 22nd May in weekends to observe the population distribution around Guangzhou.

An urban-wide spatial database is established based on GIS (Geographic Information System), including basic socio-economic data and map data such as road network and metro network. Socio-economic data comes from the 2015 Statistical Yearbook of Guangzhou City, and map data comes from the Open Street Map data (OSM, 2014).

3.2 Study method

Kernel, which is a method to calculate the elements density around, is generally utilized in spatial analysis as a kind of non-parametric estimation method. It focus on the location of certain point, distributed the attributes within the specified distance threshold value ($Rad=h$). The density decays from the biggest value in the center to 0 at the surrounding areas (Silverman, 1986). The decaying method depends on the Kernel function.

Assume x_1, x_2, \dots, x_n are independent samples extracted from distribution density function f , the value of f at x is $f(x)$, then

$$f_x(x) = \frac{1}{nh} \sum_{i=1}^n k\left(\frac{x-x_i}{h}\right)$$

$K(*)$ is the Kernel Function; $h>0$ is the width; $x-x_i$ is the distance from x to sample x_i .

In order to reflect the distribution of commercial facilities accurately, we choose 500m as the proper distance threshold value according to several trials, and analyze the site agglomeration degree, population agglomeration degree and the level of consumption.

4 Distribution characteristic of the retail and catering industry in Guangzhou

Guangzhou city is the third biggest city in China. The land area is 3843 square kilometers and the permanent population in 2014 is 11,390,000. There are 11 districts in Guangzhou. The central city consists of Liwan District, Yuexiu District, Haizhu District, Tianhe District, part of Baiyun District, part of Panyu District and part of Huangpu District. And the other part of districts constitute the suburb. The land area and population density in each district can be read in fig.1 and fig.2. And the construction status of commercial retail network is shown in fig.3.

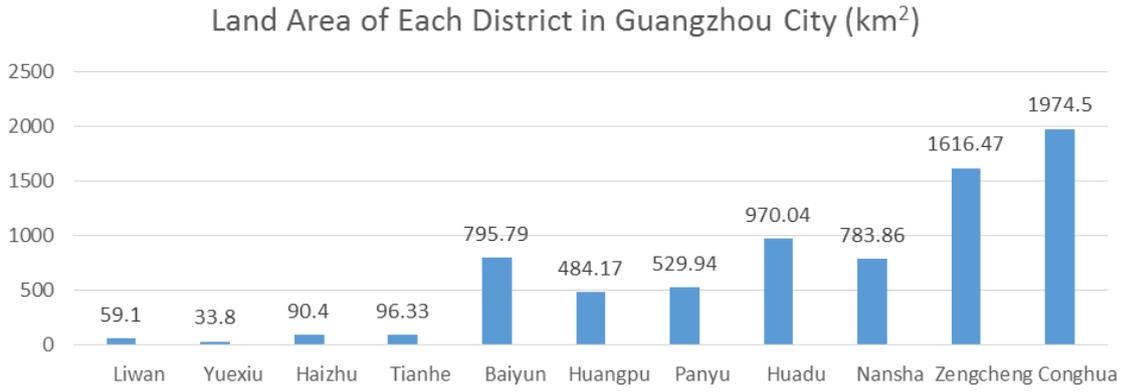


Figure 1: Land Area of Each District in Guangzhou City

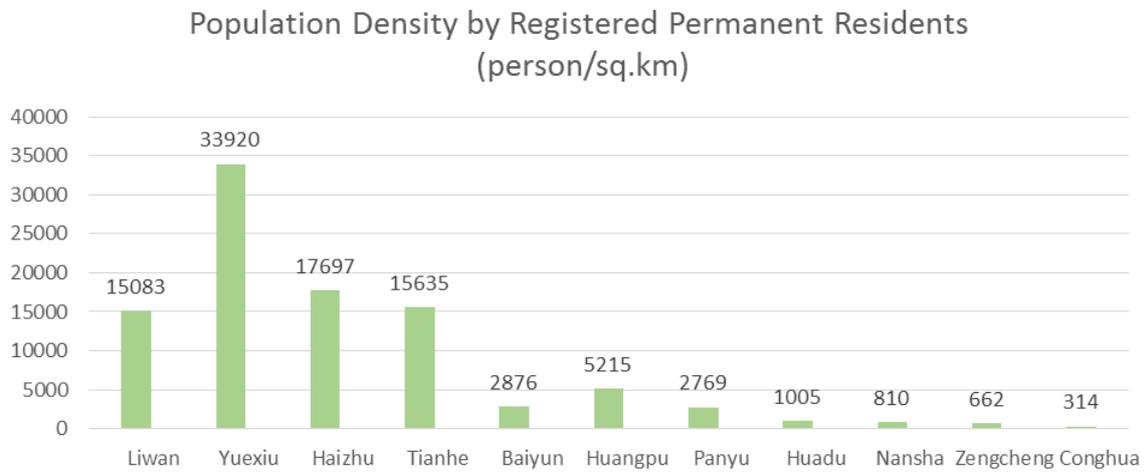


Figure 2: Population density by Registered Permanent Residents

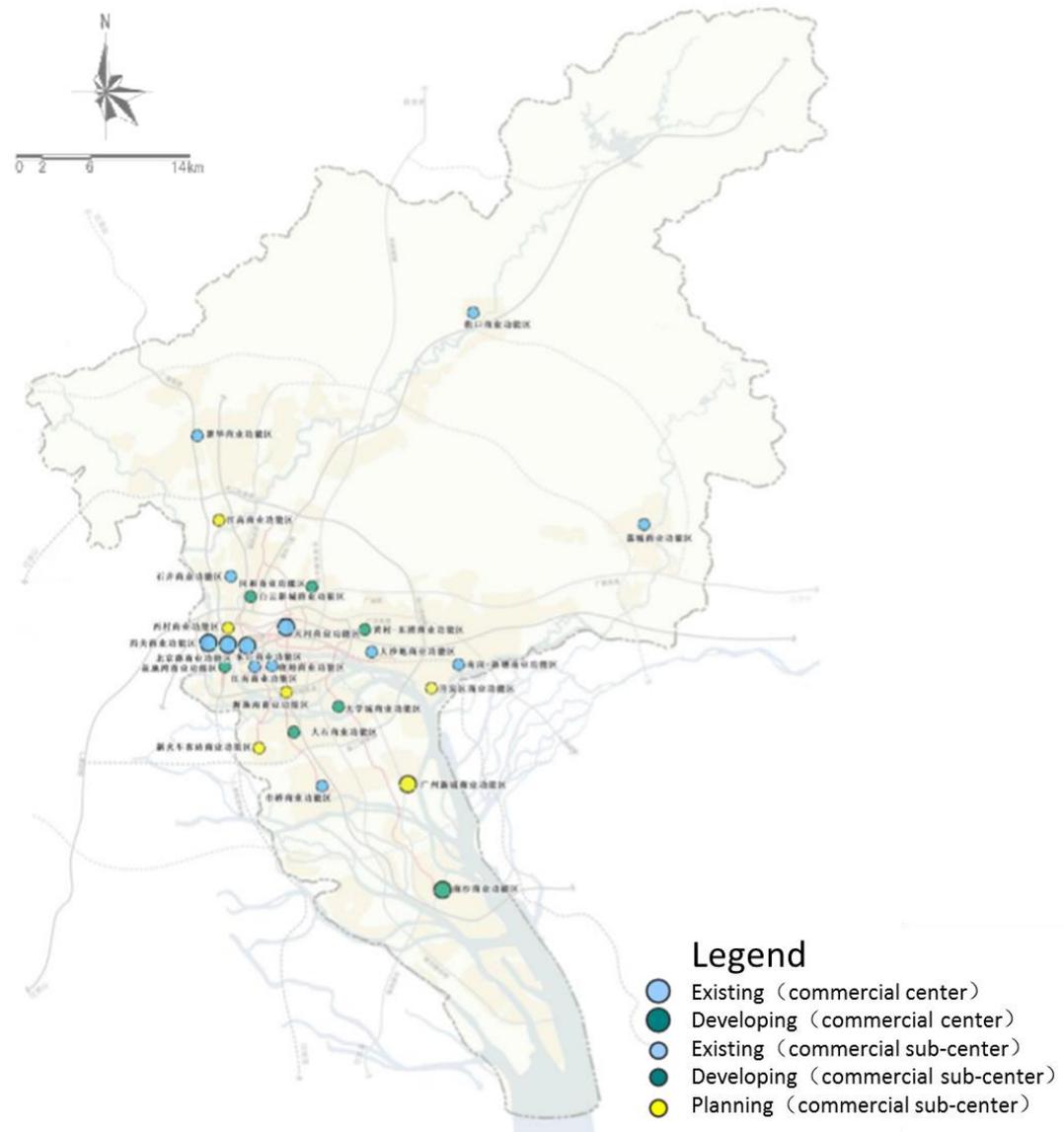


Figure 3: Construction Status of Commercial Retail Network

4.1 Site Agglomeration Degree

Based on 8415 pieces of merchant information, we analyzed the distribution of shops and canteens in Guangzhou using the Kernel method. The hierarchical organization of commercial retail network can be identified easily in the fig. 4. The strongest commercial centers are located in the central town, and secondary-class commercial centers are located in the center of each municipal district. The map shows that a multi-center hierarchical urban structure has been established. We classified these commercial retail space into three ranks according to the magnitude of Kernel value. And the strength of the commercial center generally coincides with the urban construction degree.

The commercial centrality implies the degree of urbanization. Generally speaking, equal access to commercial facilities represents high urbanization, and the higher the site agglomeration degree is, the more the urbanized this area is.

Two extremely strong-value areas in the central town, one of which matches with the traditional impression of existing new city center, can be distinguished clearly on the map. But another one, Changgang, with very strong value can be also distinguished in the west of Haizhu District. That is not perceived as a city center in urban planning nor in people's cognition. However, the agglomeration degree of old city center, which is around Gongyuanqian, is much lower than that of Sport Center and Changgang. The result is out of

expectation, as Gongyuanqian is the city center in the old town in the planning. Another extreme example is the weak commercial space illustrated on the map in Nansha District, which was one of the National Open Economic Zone with the high attention of the government. This district was intensively developed with a huge settlement more than 20 years ago. However, the area with low Site Agglomeration Degree and Population Agglomeration Degree shows that the development is much slower than the expectation, and very fewer new residents lives in this district, although plenty of properties in this district has been sold out already. These two examples demonstrate how the real intensity of commercial network could grow beyond the purpose of urban planning and people's cognition.

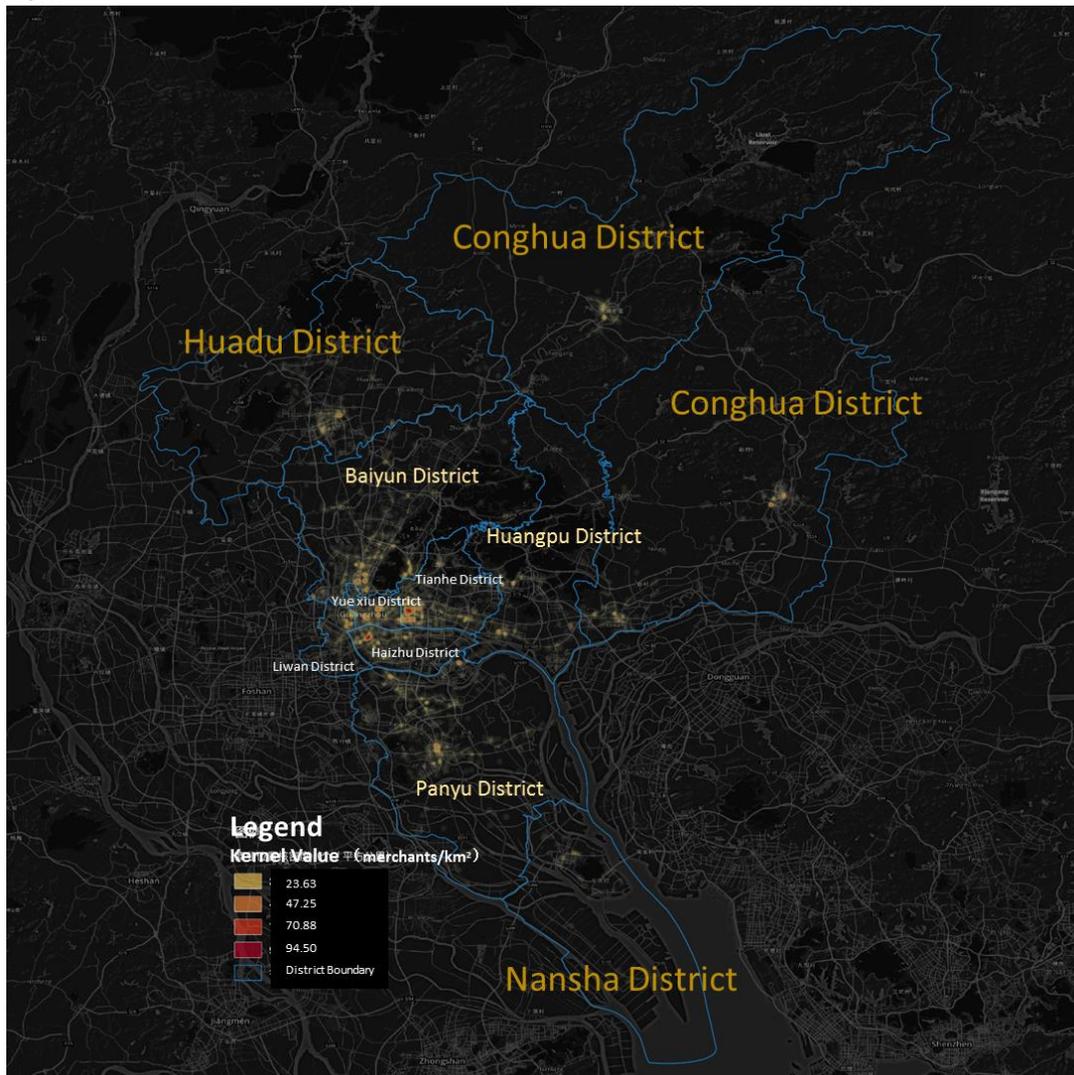


Figure 4: Site Agglomeration Degree of Commercial Retail Network in Guangzhou City

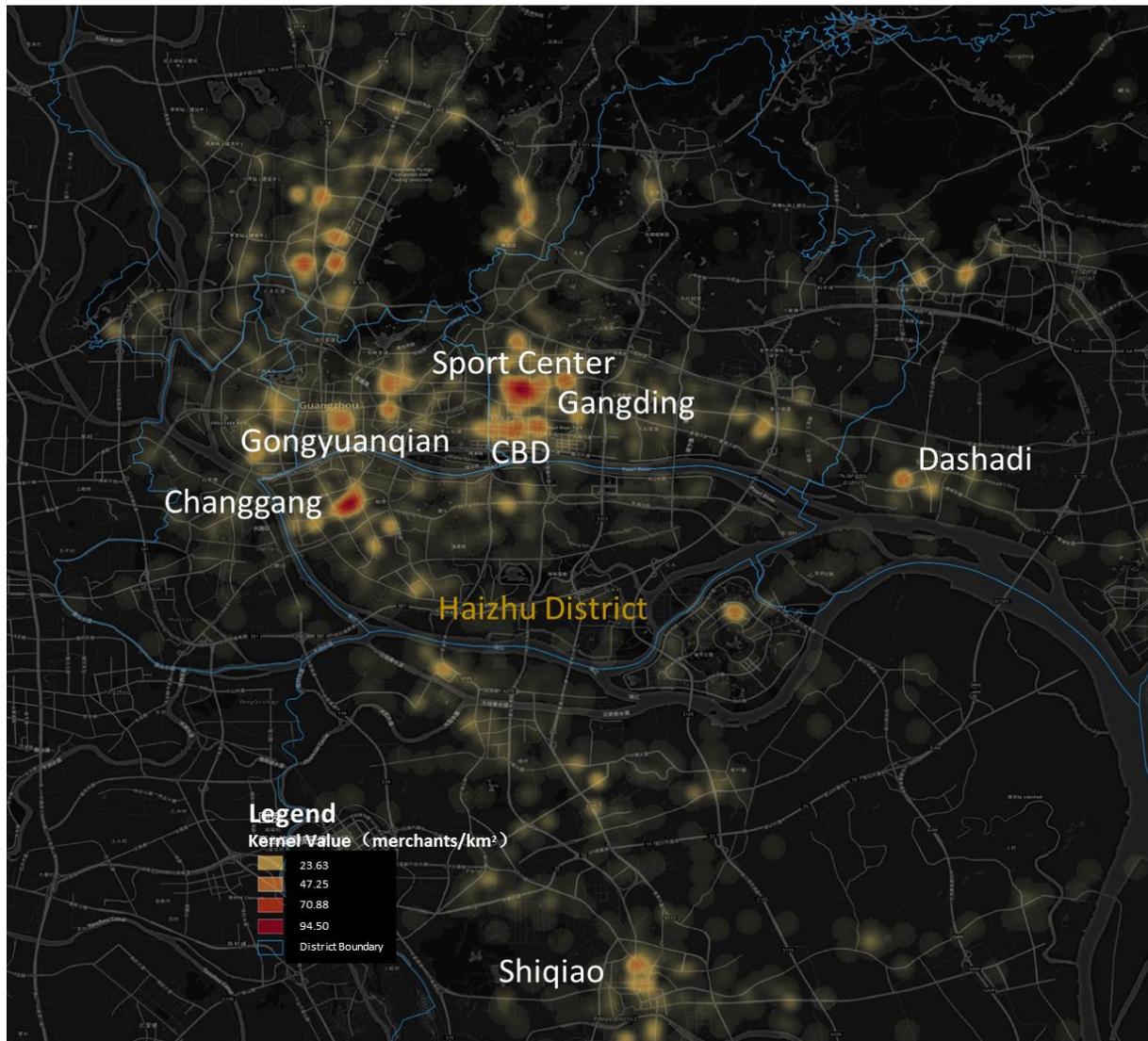


Figure : Site Agglomeration Degree of Commercial Retail Network in central city of Guangzhou

4.2 Population Agglomeration Degree

Practical attraction to the people can be assessed by the Baidu Heat Map. We got the average value of 350 Baidu Heat Maps and made it into a new map to illustrate how much people utilize the commercial facilities (fig.6). It is found that the population agglomeration degree of commercial retail network does not entirely match the site agglomeration degree. Apart from some specialized markets, the first three commercial area with highest population agglomeration degree in leisure time are Gangding, Sport Center and Gongyuanqian.

The high value of sub-centers in agglomeration degree does not present the similar intensity of population agglomeration degree. On one hand, the commercial retail space with high site agglomeration degree does not always represent high popular agglomeration degree. For instance, it exists in Shiqiao of Panyu District and Dashadi in Huangpu District, both of which have a similar value of site agglomeration degree and similar function in their own district, but the population agglomeration degree of Shiqiao is much higher than that of Dashadi. That means the efficiency of Shiqiao commercial space is much higher than Dashadi. On the other hand, the main centers shows obvious polarization phenomena, which means that the attraction and utilization of the main centers is much stronger than the other sub-centers.

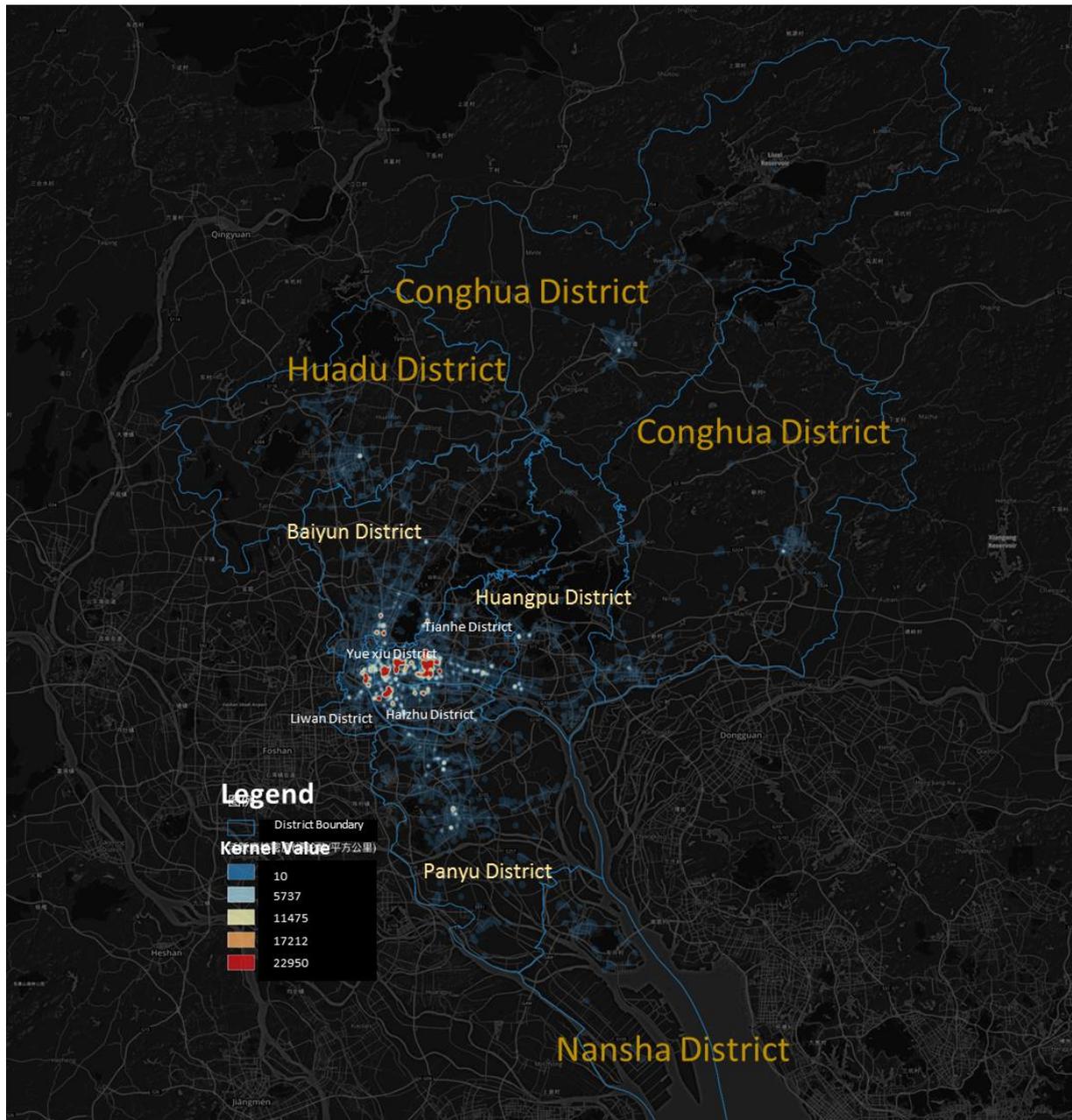


Figure 6: Population Agglomeration Degree of Commercial Retail Network in Guangzhou city

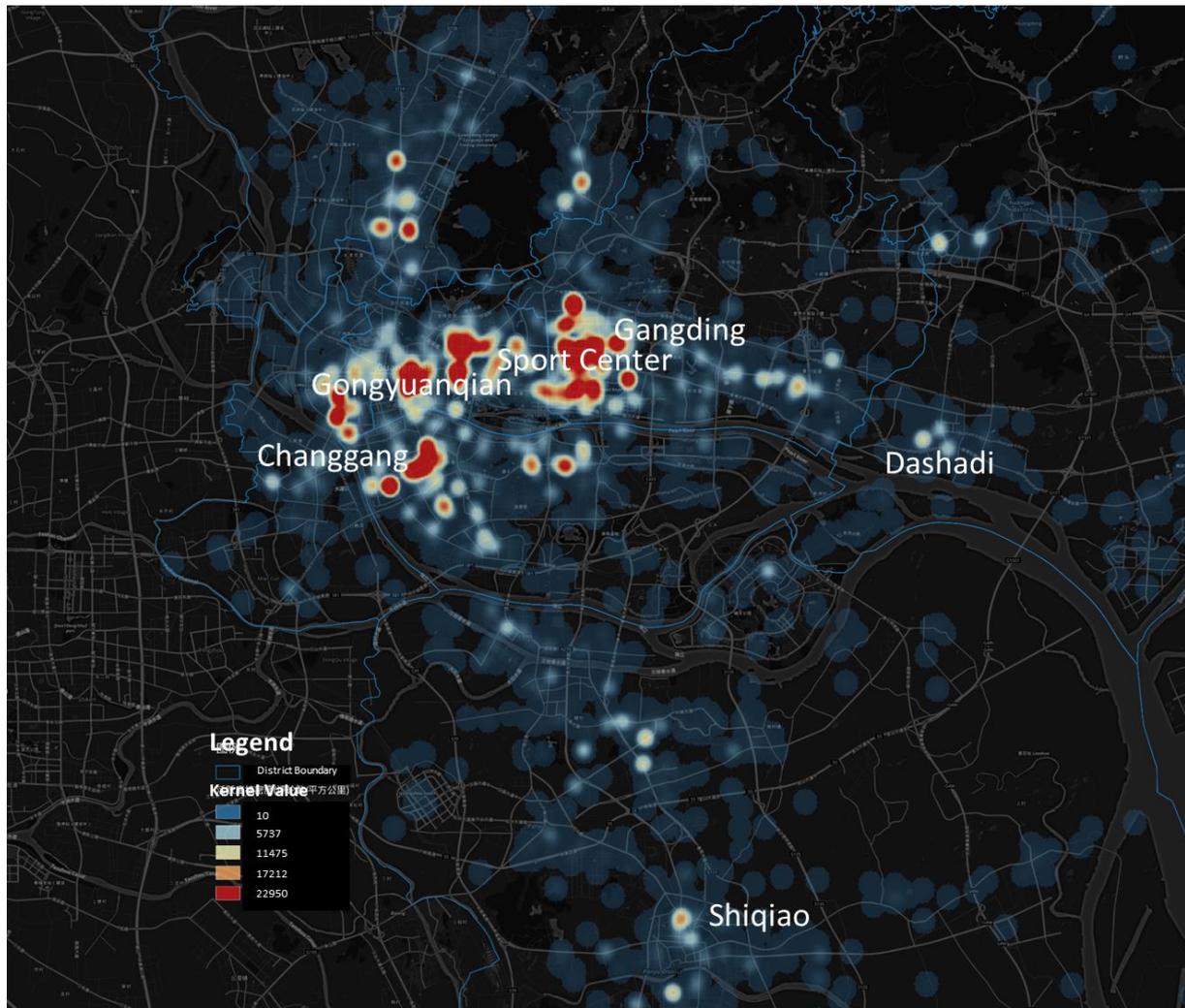


Figure : Population Agglomeration Degree of Commercial Retail Network in central city of Guangzhou

4.3 Consumption Level

The map of consumption level comes from the data of personal consumption prices in Public Comments. It reveals the consumption class of commercial areas. Service in CBD is the best and the average price of products there is the most expensive, and the secondary one is Sport Center. Both of them suggest that the new city center is the area of higher consumption. On the contrary, the consumption level of the city center in old town is much lower, although it has a high site agglomeration degree and population agglomeration degree. This reveals consumption habit differences from people in new town and old town. People around new town center prefer higher quality products and service.

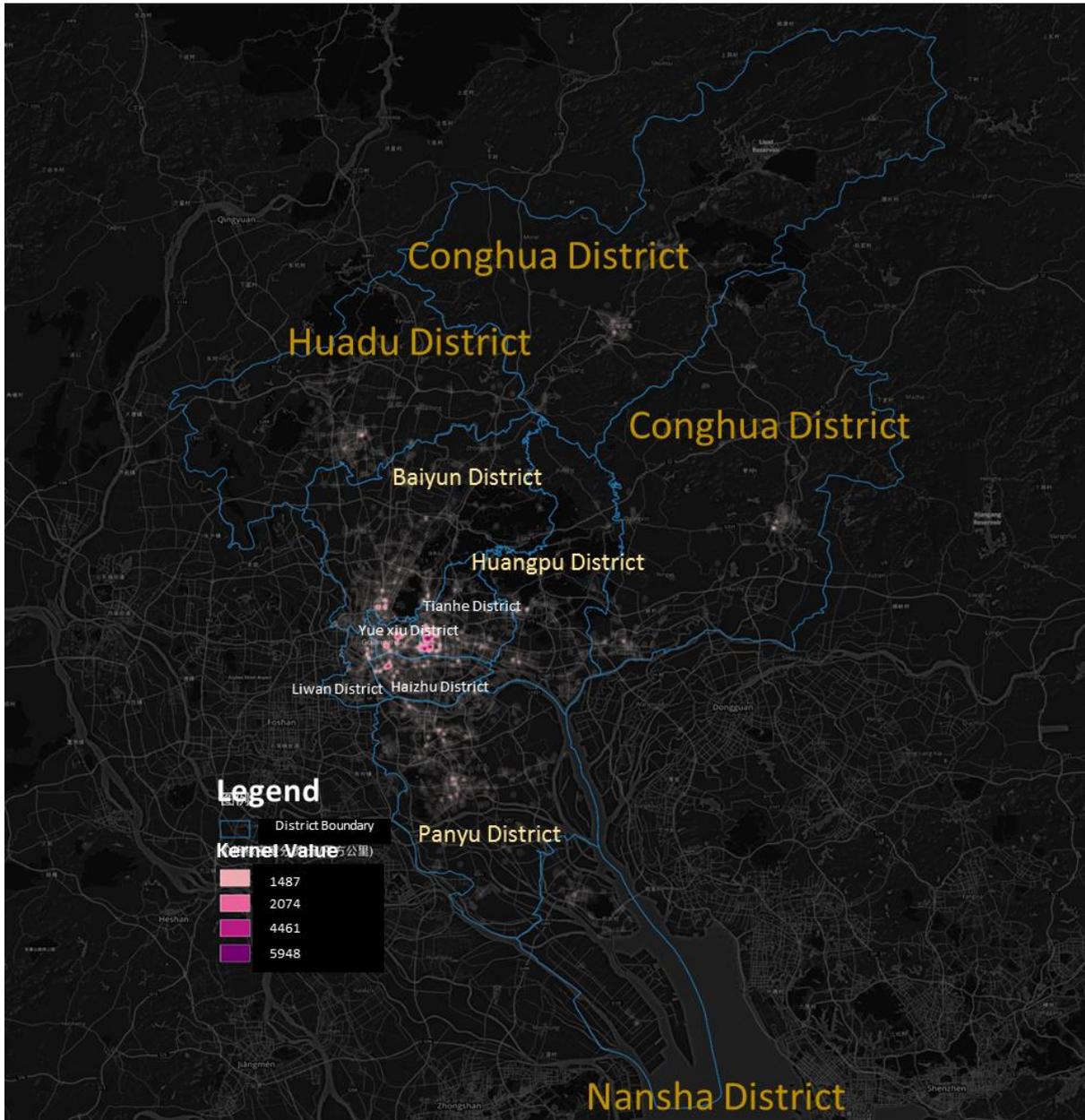


Figure 8: Consumption Level of Commercial Retail Network in Guangzhou city

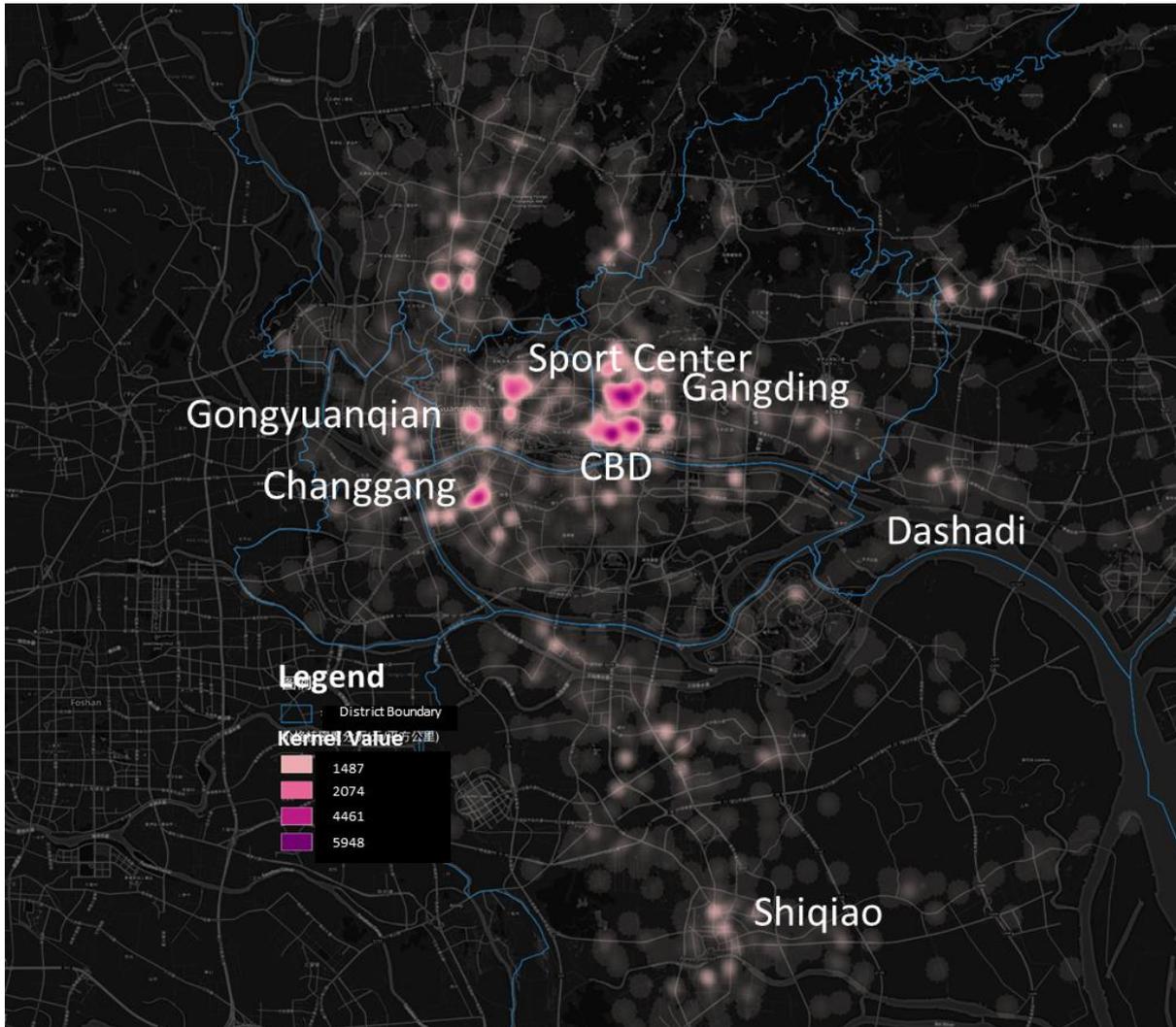


Figure : Consumption Level of Commercial Retail Network in central city of Guangzhou

5 Implications discussions

.1 Urban planning driver

Urban planning is the most important factor to reflect the form of commercial retail network. We compared master plans of Guangzhou in different periods (Fig. 10). Most of them appear highly relevant to the practical construction, especially in the period with good macro social-economic environment.



Figure 10: Master plans and stratigic plans from 1 4 to 2016



Figure 11: The 4th version of master plan in 1 4



Figure 12: The 11th version of master plan in 1 64

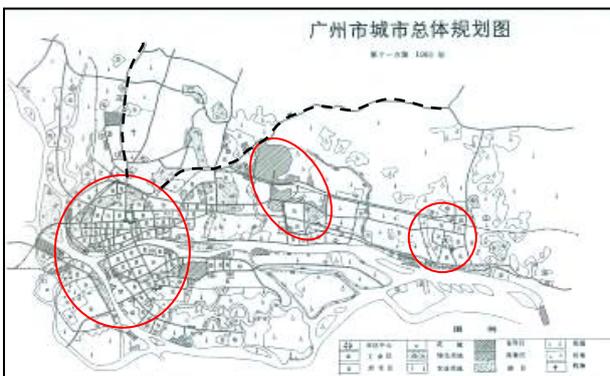


Figure 13: Master plan in 1 84

11 versions of master plans were made during 1954-1964. Lands in existing town and new town in the future had been well planned according to classical planning theory in the master plan in 1954. But the scenario has not been complemented in the end. The practical development could be divided into two phases. In phrase 1 from 1953 to 1957, the local government intends to repair the destroyed city caused by the Second World War, while the outlay of city before the war generally remained. In phrase 2 from 1958 to 1964, the macro policy promoted industry construction, so lots of industrial districts emerged in the urban periphery, but the construction of housings and commercial areas still stayed in the old town. But the version in 1964 has not been well complemented because of the political crisis in that time.

The version in 1984 planned three clusters from west to east. Three new districts, (Tianhe District, Fangcun District and Huangpu District), were established since then. The 6th National Game triggered the planning and construction to the east. The construction of housing during 80s and 90s was mainly in Tianhe District. And the initial commercial space in Sport Center appeared in this period.

Most of current commercial retail network has been established according to the version in 2006.

The recent version is the comprehensive plan in 2016 which was just approved by the State Department in February 2016. It took a long time to get the approval. But the main scenario in this version was generally realized according to this version. The site agglomeration distribution of commercial retail network in our study generally matches this version.

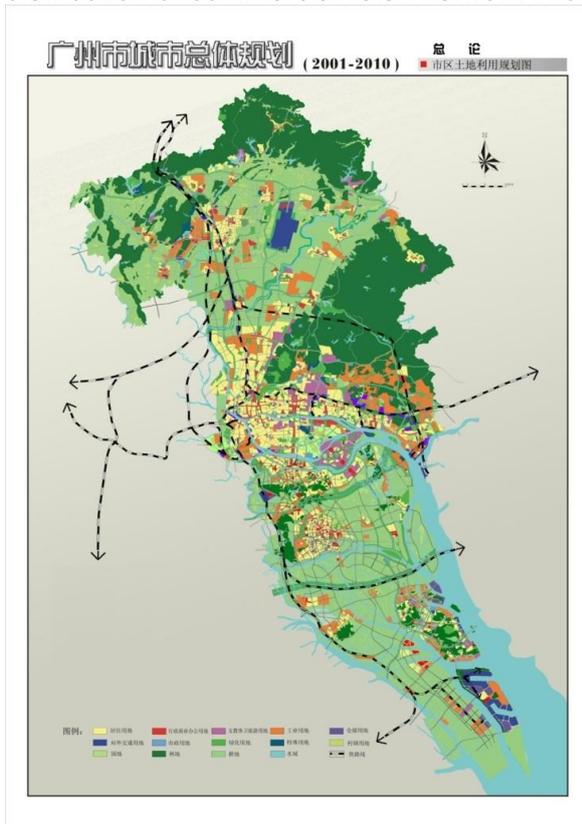


Figure 14: master plan in 2006

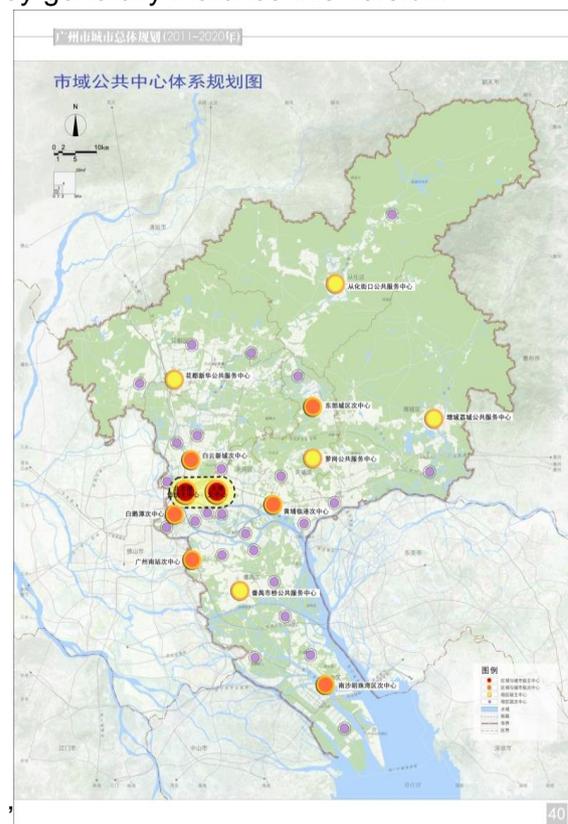


Figure 1 : master plan in 2016

.2 Policy Trigger And Pushing Force

The future of urban planning matches the scenario suggested by experts and local government, policy will be the initial factor in development and will be the main force behind investment. The planning was not always implemented until the policy trigger appears, which could be proved by the master plans during 1954-1964. Generally speaking, macro policy is the main trigger of development of new towns in China, as it creates new centers from blank spaces, and pushes new investment on these area intensively. The longer the policy continues, the better the area is developed. The 6th National Games in 1987 provided a

direct reason to develop the Sport Center from vast farm land to an urban built area. Then Sport Center area was upgraded to become the new city center over the course of two decades. Till now, the local government still insists on the development of this area. Sport Center area has been strengthened continually when the new CBD in adjacent block was built in 2010. The new city center is continually expanding because of decisions by the local government in these years. When the financial center and cluster of internet headquarters, are built in the near future, just to the east of CBD, it is uncertain what will happen.



Figure 16: Flower s uare in CBD

.3 Inner impetus

We extracted the distribution of other site data via Baidu POI, and counted relevant facilities respectively within 500 meters around each above-scale commercial district. Based on the distribution of commercial area and other relevant site categories which include the metro stations, office buildings, housings and gardens, it is possible to evaluate how well the commercial retail network is coupling with the other kinds of facilities.

Applying Linear Regression via SPSS, with the utilization of metro stations, office buildings, housings and gardens as explanatory variables respectively, the correlation of each site category on commercial retail network is evaluated and the result is listed in Table 1.

The result indicates, the correlation is decreasing from metro stations to housings. Metro stations represented an obvious positive correlation with commercial retail network. The development of commercial districts relies heavily on public transportation accessibility. Office building is a secondary factor affecting the commercial retail network. It helps to attract quality customers. And garden shows weak positive correlation with the commercial retail network. However, housing represents negative correlation with above-scale commercial districts.

We also divided these above-scale commercial districts into Central Town Commercial Districts and Suburban Commercial Districts according to their locations. This was supposed to show different correlation between these two kinds, but the result, as shown in Table 2 suggests very little difference in these variables. The factor of the metro station did represent weak correlation, as the metro network is not well formed in the suburbs. This result implies the location of above-scale commercial spaces may not always depend on the location in central town. And it could be also proved by examples in some big Chinese cities. The commercial center in the suburbs of Licang District has developed to become the third biggest commercial center in Qing Dao City.

Due to the distribution of residuals, the clustering of over and under prediction values shows that there are still other explanatory variables that were ignored in the model. In reality, there should be many location factors affecting the distribution of commercial retail network, e.g. the distribution of culture facilities, recreation facilities, medical and sports facilities. Because of this, we will check the other possible indicators in the next step.

According to the distribution of coefficient, coherence between commercial retail network and public transportation accessibility in each ring is weaker and weaker from the center to the suburbs. The central city represents high coherence with metro stations, especially in the new city center.

Table 1: Estimation results of correlation between commercial area and other factors.

Model	B	S.E.	t	Sig.
constant	44.633			.004
Housing	-.087	.554	-.157	.876
Garden	1.501	2.783	.540	.594
Metro Stations	26.342*	14.117	1.866	.073
Office Building	2.566	1.709	1.501	.145

Table 2: Estimation results of correlation between commercial area and other factors in Central Town and suburbs.

		Central Town		Suburbs	
		B	Sig.	B	Sig.
Housing		-0.25	0.783	-0.414	0.550
Garden		3.583	0.663	2.852	0.257
Metro Station		47.771	0.146	2.474	0.797
Office Building		2.926	0.326	3.586	0.098
constant		31.710	0.484	50.663	0.000

.4 Cohesion force

It is obvious that the polarization effect happens when the size of the commercial space reaches a certain level. On one hand, the area of commercial space is expanding. The new city center has continued enlarging over the past 40 years, and new shopping malls still emerge in the city center. When the area Sports Center and Gangding became one of biggest commercial area, more and more shopping malls chose to locate in this area with the development of Tianhe District. Now the Tianhe commercial district has expanded to be nearly 3 square kilometers including the Sport Center, Zhujiang New Town, Gangding and North Tianhe. And the total commercial area of shopping centers in this district has reached up to over 2,000,000 square meters. In the future, when financial center and cluster of internet headquarters will be built, the commercial space in the area will go on expanding. On the other hand, similar classes of shops and canteens accumulate. We analyze the consumption level in each commercial district, based on the data of consumption price from Public Comments. The map of consumption level implies the distribution of commercial space class. And it shows high-mid class commercial space clusters in the new city center. Actually, the high class shopping mall in the old town declined and moved to the new city center in recent years.

6 Conclusion and discussion

Guangzhou is one of the typical mega-cities of China, and the experience of commercial space development is quite meaningful for the other developing countries. This study employed exploratory spatial data analysis to identify the distribution of commercial retail network and the drivers based on multi-source data, applied agglomeration degree to measure the distribution, and finally analyzed how the factors impacted the distribution of the commercial retail network. Based on the analysis in this study, some points were recommended for urban planning, especially commercial retail network plan.

Firstly, from the study method aspect, this study tentatively utilized data captured from half-open source internet via some simple programming (e.g. Public Comments, Baidu Heat Map, Baidu POI). In the future, more and more quantitative researches on urban planning are necessary for integrating land use and its practical effects. For this sake, we try to construct a database to assess the commercial districts. The traditional method of getting the information on different sites, takes a long time to investigate and the statistical data may not

reflect sufficient or real-time situation. This pilot would be helpful to feedback the survey and collect sufficient and real-time data in a short time.

Secondly, this study analyzed the force factors to form the commercial retail network. Public transportation accessibility is the most important factor to the commercial area, especially that the metro accessibility strongly supports commercial centers in the central town. Office building is the secondary factor affecting the commercial retail network. It helps to supply steady customer flow. Garden may have more positive effects to the commercial area in central town than in suburbs, while the coloration between garden and commercial area is not very strong. However, housing is not very popular to the above-scale commercial centers.

Thirdly, this study focused on Guangzhou which is a typical mega-city in China. We can expect to be able to generalize the experience to other cities in other developing countries. The government dominates the direction of urban development, and urban planning decides the land-use in the development. While the inner impetus and cohesion force, such as location, public transportation accessibility, land-use and the cluster effect of commercial spaces, eg. strongly impact on the status of commercial retail network.

However, it is important to fit the features of cities. For instance, sustainable policy force from local government is very important to develop a fine commercial retail network, but it is only suitable to a city with a strong government. In addition, some experiences may only fit the mega cities. For the medium-sized or small cities, without railways or new town areas, some inner impetus and policy push may not exist.

Acknowledgements:

Grateful thanks to the mentor, Slawomir Ledwon, who gave lots of constructive suggestions to improve this paper. His efforts is sincerely appreciated.

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Endnote:

ⁱ We used individual pieces of data for each merchant. So every pieces of data for each restaurant in shopping malls were collected and were counted as an individual sample data.

ⁱⁱ The agglomeration degree of Sport center, Changgang and Gongyuanqian respectively is between 70.88-94.50, 70.88-94.50 and 23.63-47.25.

ⁱⁱⁱ The population agglomeration degree is re-rendered according to the mean value of 350 Baidu Maps, which were rendered 17:30pm-20:30pm in working days and 12:00am-20:00pm from 16th May to 22nd May in weekends.

^{iv} Tianhe District was established and divided from suburbs in 1985, for the preparation of the 6th National Game in 1987. Actually, most of the development of land depends on the decision of local government, as all the land-ownership belongs to the state in China, and only the land-use right during a certain period can be remised to the other stakeholders via land auction system. The local governments control the development through land auction plan and urban planning.

^v Licang District has the third biggest commercial area among 8 districts and 4 county-level city in Qingdao City. It has been thousands of years since the settlement was formed in this district, although it has been suburbs of Qingdao city due to the historical reasons.

Temporality and limits to hospitality in the ruins of a world heritage (renewal) site: Suleymaniye in Istanbul Historic Peninsula

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Abstract/Short abstract *The paper introduces Suleymaniye in Istanbul Historic Peninsula to discuss spatial and social consequences of renewal policies within the framework of temporality discourse and to question the ways in which urban politics can respond to the problematic of hospitality, while highlighting the sociality formed by undesirables.*

1. Introduction

Istanbul, today, is confronting change with an extreme destructive restructurisation through the encouraged conflict on the politics of urban space based on temporality vs. permanence, ottoman vs. republic, insiders vs. outsiders, hosts vs. guests, owners vs. invaders. The demands of creating a 'new' past for a 'new' 'glorified' future by the Justice and Development Party is utilized through the realisation of the power of space, while bringing familiar interface of empowerment in space, as the epitome of the desire to destruct what was left from the unwanted past. Urban renewal, in that sense, appears as the key instrument in the restructuring of the city, creating an illusive arena of socio-spatial segregation through the emerging spaces of decay and privilage and the emerging groups of poverty and wealth. In Suleymaniye, this means a 'world heritage (renewal) site'.

Suleymaniye fights for its right of survival against destructive state-led urban renewal interventions. The remnants of the demolished and burned residential buildings, which were once the reason for Suleymaniye's inclusion in UNESCO's World Heritage List, are housing the spatial concentrations of disadvantaged residents, as well as hidden survivors of Syria. Urban renewal controversially has given many visible and invisible impacts since 2006, after its declaration as a renewal site. The community, who are declared as invaders or undesirables by the governmental policies, have been enforced to sell their properties to municipal agencies; leaving the warscape-like Suleymaniye historic urban landscape at the frontier of another and bigger challenge: The sociality formed by the old Suleymaniye community has been disappearing, and a new urbanite class is being born. The questions covering the future of this unique world heritage site under construction covers preservation, renewal, and right to the city. Thus, the paper focuses on the spatial and social consequences of renewal policies within the framework of temporality discourse as an attempt to question the ways in which urban politics can respond to the problematic of hospitality.

2. The temporary city

While the world is mesmerized by contemporary international conflict especially since the 1990s, in former Yugoslavia and in the Middle East above others, the 'temporality' of our cities as so our heritage and heritage communities has become the golden subject throughout the news, policy agenda and scholar works. We have become the witnesses to

destruction just like in the bombings of the Mostar Bridge, Palmyra, Damascus, resulting in the destruction of heritage, the erasure of memories, the disappearance of tangible and intangible values of human existence. The loss has taken the form of the inevitable, when destruction has been subject to 'natural' disasters just like in Kathmandu Earthquake of 2015. Nevertheless, the loss has also shown its destructive path in the form of 'unnatural' just as the man-made disasters of the so-called neoliberal restructuring of the cities under the name of renewal. Some of these destructions have been valued more than others, sometimes the loss of physical remnants have fulfilled the news more than the loss of human values. But, all at once, they have become the visible marks for our urge to reclaim our permanent existence in a temporary setting continuously reshaped through everyday politics of the present. One can say that temporality is the actual reality in the formation of cities. City is in fact the historic layering of cultural, natural, social values and attributes, open to change and evolution with an eager to identify itself with continuity.

'Temporality' becomes more apparent in constructing a perspective on the 'historic' city itself. According to Harvey (2001), every society has had a relationship with its past, even those that have chosen to ignore it, and it is through understanding the meaning and nature of what people tell each other about their past; about what they forget, remember, memorialize or fake. Thus, in the long-span of history, every society eventually bridge within a temporal framework and this temporal relationship takes the form of heritage. Thus, heritage is more about the present than the past (Huyssen, 2003). In essence, it gives a feeling of continuity, this continuity also defines a permanent temporary existence in spite of changing rationales; ideologies, ethics, demands, tools, and authority. Today, heritage is subject to temporality more than ever as the demands of the present increasingly in conflict with that of the past through the renewal twist within the hands of the male figures of the authority.

Urban renewal can be defined as an attempt, an intervention to create a sudden, direct, planned, systematized 'cease' in the history of cities, and in their continuity. Evoking negative references, it is always associated with destruction, complete replacement, relocation, community dissolution and segregation. The rationales have changed in time and in due course of world regions within a broad range from the post-war or post-disaster restructuring as in the 20th century World War phenomenons to the quest for better cities during the 19th century industrial revolution through sanitation projects, park movements or to the modernist movement of the 1930s. 1940s and 1950s, though, saw the institutionalization of urban renewal as an attempt of economic revival and development of cities with a nasty twist. This was the start of a period, when renewal has gained connotations with 'unfitness', 'cancerous growth' together with 'beautification', 'valuation', 'prestige'. While planning profession has become something "where everything could be measured in terms of time and money, and against equity and intangibles" (Hall, 1989: 279), it has continued to ignore the heavy psychological cost of enforced relocations and the social cost of the destruction of communities as best described in Jacobs' *The Death and Life of Great American Cities* (1961). For Istanbul, the historic temporary city, urban renewal is the process when "the discursively constructed 'planet earth' becomes a reality" (King, 2004: 3).

3. Istanbul: The permanent temporary city

Istanbul, as a city of more than 8000 years, is in fact the ultimate temporary city, visible both in its urban fabric and urban community. The temporality of Istanbul has become a public realm through an ongoing destruction and reconstruction process before our eyes through

the everyday politics of the present. A detailed conceptualization for the evolution of urban renewal in Turkey with reference to mainstream politics can be found in Gunay et al. (2015). The heritage, the memories, the tangible and intangible values of the communities have become targets to the destructive politics under mainstream politics, either it was the modernity project of the 1950s or the global vision of 1980s or under the name of neoliberal urbanism in the 2000s. In a wider perspective, it has always been a struggle between temporality vs. permanence, ottoman vs. republic, insiders vs. outsiders, hosts vs. guests, owners vs. invaders and their implications in our everyday lives.

'Conquest' is the catchy word to define this conflict. Needless to say that Istanbul was conquered by the Ottomans in 1453, it is surely ironic that the 'conquest' is still in the agenda of the politics since then. The use of conquest is somehow shows that Istanbul as we know it will 'again' come to end, or may show the state's insecurity for its permanence. Following the first conquest of 1453, the second 'conquest' of the city took place in the 1950s, and the word first was used by Adnan Menderes, the Prime Minister at that time leading Democrat Party (DP), the party which came into power after twenty-seven years of one-party regime of Republican People's Party (CHP). While the party declared "we are going to rescue her (*Istanbul*) from the 1900s' gaze" (see Akpınar, 2010) as election propaganda, urban renewal based on destruction had become the key strategy for the conquerer. The motto of 'beautifying Istanbul' and 'glorifying Istanbul's Ottoman past' was realized through the opening of new transportation arteries or demolition of historic neighbourhoods surrounding major monuments. Menderes was even given honorary mayorship to Istanbul as the head architect of the city. The head architect's vision resulted in the demolition of nearly 7000 buildings (Akpınar, 2010). This 'temporality' came to an end with the arrest and killing of Menderes following the military coup of 1960.

The third conquest was in the 2000s, this time by the Justice and Development Party (AKP) and its former Prime Minister and present President Recep Tayyip Erdogan (who was actually also the first 'Islamist' Mayor of Istanbul in the 1990s under the governance of Welfare Party - RP). Once more, the historic city has been put in the agenda of construction to get rid of the obstacles fronting a global and modern city with familiar mottos; 'unfitness', 'unhealthy', 'cancerous cells', 'shamebag' or 'dirt'. Urban renewal has been re-introduced as the base of urbanisation politics and planning agenda via a growing tendency on neoliberal urbanisation politics based on privatization and expropriation, whereat the 21st century Istanbul has been showcased as a pioneer in increasing its competitiveness in the global market through the reproduction of marketable enclaves for upper income groups and foreign guests (see Kuyucu and Unsal, 2010; Bartu-Candan and Kulluoglu, 2008; Lovering and Turkmen, 2011). These renewal schemes, which have been employed as an evolving model in resolving the ill-functioning urbanisation problem, has eventually turned into the instruments of 'urbicide' in Istanbul as a political 'evolving' model of urban destruction (Gunay, 2013, 2015a).

Being continuously restructured through the reclamation of permanent existence of diverse ideologies, Istanbul is being put in a temporary setting continuously reshaped through everyday politics of the present. Looking at the city from the eyes of the citizens, it is not wrong to say that nothing is permanent in Istanbul, neither its urban fabric nor its communities. This is part of the enthusiasm to create a new 'glorified' identity and its associated representational space based on a 'mytical' past. The reclamation policies of the

AKP based on the so-called new Ottomanism blended with Turkic-Islamist figures are constructed, mainly by the bulldozers, upon the unconsciously use and commodification of urban space such as in the facadisation in public buildings and housing projects as part of heritageisation, the transformation of city symbols into religious figures, as so the reconstruction of destructed religious buildings (see for instance, Öncü, 2007). This is also reflected upon historic monuments as a return to glorified mythical Ottoman, in spite of being a city of multi-cultures and identities throughout its 8000 years of history. This shows that the reclaimed is not only a city setting, but a controversial and kitch lifestyle with the new urbanite in a city of continuous conflict between the permanent and the temporary. It is a controversy or an irony that both conquests, shaped by conservative instances based on paying respect to the Ottomans through the elimination of Republican traces, used the city and its monuments for visualizing their ideals; with reference to Lefebvre (1991): the creation of the representational space. However, the historic urban landscapes, the most noticeable mnemonics of the glorified past have initially become the target: 'real' Ottoman heritage is put under destruction for the construction of heritageised 'fake' environments. In this sense, it is important to remember Ekinci's (2009) words: the 'conservative' AKP accelerates a non-conservative policy on urban values. Thus, the ideal of bringing permanent end to the temporary conquest of the Republic, also highlights the temporality of the desired conquest. The following sections will discuss these struggles through Suleymaniye case by focusing on two interlinked processes of temporality, the heritage and the heritage community.

4. Suleymaniye: A renewed world heritage site

Istanbul Historic Peninsula has always been the target for the central and local authorities since the 1950s, introducing how socio-political needs and ideals of a certain period play a role in reconstruction of the past. From the 1950s' DP to the 2000's AKP, it has acted as the stage of visualizing identities on urban space, as a space of idealized big and powerful Ottoman power enclave. Suleymaniye is just one of these stages.

Suleymaniye is a reflection of the so-called outstanding heritage value in the climax of Ottoman architecture in the 16th century. The Suleymaniye Mosque, which gave its name to the locality, is among the finest examples of the Islamic Architecture built by Architect Sinan between 1550 and 1557. It was declared as an urban site with its associated neighbourhoods in 1977 (*Board of Protection Decision No. 9776/ 09.04.1977*), and inscribed in the UNESCO World Heritage List of 1985 together with other three Historic Areas of the Peninsula (the Archaeological Park of Sultanahmet, Zeyrek Mosque and its associated conservation area and the Landwalls). Whereat Historic Peninsula has been associated with distinguished phases of human history continuously for 8000 years, Suleymaniye has appeared as a unique testimony to Ottoman civilisation and exceptional evidence of the late Ottoman urban pattern (UNESCO/WHC, 1985). However, this 'distinguished evidence of human history' has continuously been subject to destructive struggle since the 1950s.

The quarter (*semt*) was a place, where the rich and elegant society of Ottoman administrative class and muslim clergy (*ulema*) was living during the 16th and 17th centuries. This is highly visible in supreme examples of ensembles of palaces and religious complexes and exceptional urban pattern with vernacular architecture, as symbols of Ottoman's golden age. There also existed wealthy Greek and Jewish communities. Coming to the 19th century, the social pattern started to change through the movement of wealthier groups in new commercial centres of Karakoy and Beyoglu or of summer resorts along the Bosphorus

strait. As shown in the research conducted in 2003 by the author (see Gulersoy-Zeren et al. 2008), it was mostly restructured spatially and socio-economically after the 1950s by the influence of immigrants from eastern regions of Turkey, mainly from Southeast Anatolia and Black Sea Regions. Regarding the ambition of industrialisation and modernity in question, manufacture and wholesale ateliers have been developed along with the traditional trading centre of Istanbul, Eminonu. The 1980s was no different. While the Historic Peninsula has become a 'transit region' since the 1950s' political conjuncture, housing intense migratory movements, with continuous immigration and emigration, Suleymaniye as well has appeared to be one of the first stations of the new migrants who seek for their piecemeal from the city, where 'land is gold' as one traditional idiom states. Thus, it has been transformed into a temporary shelter, a temporary workplace with permanent marks of decay.

The temporality has attained a new phase in 2005. 2005 was the year when the Law on the Protection and the Revitalisation of Deteriorated Historical and Cultural Immovable Assets through Renovation and Regeneration (*Law No. 5366, Official Gazette no. 25866, 05.07.2005*) was enacted by the AKP. The Law was an attempt to bypass the Law on the Protection of Cultural and Natural Assets (*No. 2863/23.07.1983*) in order to redefine the institutional responsibility areas and intervention models in historic urban landscapes in the favour of private sector and corporate power of the state ideology (see Gunay et al. 2015; Gunay, 2015a). Although the law was justified on the consolidation of urban structure for earthquake risk mitigation or regeneration of the decaying neighbourhoods of historic city centres, it eventually propounded 'renewal sites' in already nationally registered 'conservation sites'.

Following the enactment of the Law no. 5366 in 2005, urban renewal site decision for all eight neighbourhoods of Suleymaniye was taken immediately in 2006 (*Ministerial Board Decision No. 26206/22.6.2006*); and a Renewal Project covering its 4 neighbourhoods (Demirtas, Hocagiyaseddin, Hacikadin and Yavuzsinan) was made public by Fatih Municipality. The aim of the Project was stated to redefine Istanbul as a city that conserves historical and cultural values, to create a positive and attractive city, and to provide a sustainable and liveable urban settlement that is resistant to natural disasters and that conserves architectural fabric (Fatih Municipality, 2011). As in other renewal projects, the "glorification of Istanbul's ancient history along with its aesthetic preservation" has become the key propaganda (Oncu, 2007: 235). For the empowerment of AKP ideology, Suleymaniye has been providing a perfect setting through the glory of Ottoman masterpiece, the religious outpost, and vernacular architecture. However, this hasn't stopped the authorities to plan the destruction of 2800 buildings covering an area of 348.000 m². According to the Historic Peninsula Management Plan (2009), there were 960 listed structures, 466 of which were monuments in Suleymaniye at that time. The first stage even included 427 nationally listed buildings (see UNESCO/WHC, 2012). Within the ten years of the declaration of the project, Suleymaniye has just been transformed into a huge construction site. Istanbul Housing Construction Industry and Commerce Corporation (KIPTAS), an agency of the Greater Istanbul Municipality, played a major role in the implementation as the project developer as well as the property owner. KIPTAS has bought approximately 200 properties in Suleymaniye, most of which were demolished to ironically perform 'restoration projects'. The ones that have not been demolished yet were evacuated, as an attempt of waiting for their self-destruction as a continuum of Ottomanisation of Peninsula's heritage. The Project, which was halted in 2012 due to lack of financial funds and incapacities of establishing negoti-

between the property owners, has recently started again in 2015. Thus, the heritage that was promoted to symbolise the unique attractions of Istanbul as a global city with a glorified past has become subject to contested memories, dislocations and serial destructions (Oncu, 2007).

5. Suleymaniye as a temporary enclave

The remnants of the demolished and burned residential buildings, which were once the reason for Suleymaniye's inclusion in UNESCO's World Heritage List are the symbols of survival fight against destructive state-led urban renewal interventions based on gentrification, reproducing an enclave of urban poverty, polarization and segregation. They are today housing the spatial concentrations of disadvantaged residents. The community, who were declared as 'invaders' or 'undesirables' by the AKP policies, have been enforced to leave or to sell their properties to KIPTAS. KIPTAS appears to be major property owner as a consequence of speculative purchase of more than 200 properties since even before the enactment of the renewal law. The majority of these properties are left to decay or were destructed. The enforcement and encouragement of dispossession through 'urgent expropriation' (*Ministerial Decision No. 10501/24.05.2006*) is an important instrument in reclaiming power in the neighbourhood through involuntary evictions in supporting the speculative redefinition of ownership patterns. The headman (*muhtar*) of Suleymaniye Hacigiyaseddin neighbourhood, Musa Calihan, states that there was no official contact with the community. The municipality asked them either to conserve their properties or sell them. The families who first sold their properties have gained €324 per m² (Birgun, 2010), however the value of similar properties reached €950-1600 per m² in 2014 (see Revenue Administration, 2014). There have been occasional fires that are leaving families homeless. The sociality formed by the old Suleymaniye residents has been disappearing, and a new urbanite class is being born. As a result of the continuing renewal project, more than half of the properties has changed ownerships, causing the formation of 'ghetto-like' concentrated zones of poverty and exclusion.

The UNESCO Project in 2003 (of which the author conducted) give important insights to quarter's sociality before the renewal project started (see Gulersoy et al. 2008). The residents were of immigrant families from economically underdeveloped regions of Turkey, of the 100 families interviewed, only 38% of the population was born in Istanbul and 52.5% were living in the quarter for less than five years. Within a profile of extended families of more than 5 people (63%), 31.6% of mothers and 17% of fathers had no education, 19.2% of the fathers had no income, while the ones having monthly income were mostly self-employed or peddlers. Thus, the monthly income of residents were low, the ratio of fathers having a monthly income less than €225 was 33%. 73% of the residents were tenants. Having attained a long-span of history since the 15th century, 'bachelor dwellings' (see Kizilkan, 2009), where more than 7-8 men with very low incomes live together in single rooms, are the prominent visible signs of mobility and temporality.

Although living conditions were harsh, it was a place of low rents to accommodate the vulnerable communities. Suleymaniye, as other quarters which are subject to state-led gentrification has been a spatially concentrated social network; it was a place of families, neighbours, relatives. Considering this low standing of the residents, it is clear that removing people from their neighbourhoods has a risk of not only cutting their living resources, but also encouraging the economic deterioration of the whole Historic Peninsula. Since the start of

the speculative changes in the ownership pattern due to the renewal project, local residents, mainly wealthier property owners and tenants have left the neighbourhood, leaving the poorer behind. The leaving of especially families has changed the social environment drastically. The suffering has been subject to numerous scholar work, highlighting the violation of property rights, the territorialisation of exploitation and the exclusion of local residents (see Sen et al. 2012; Dincer, 2011; Lovering and Turkmen, 2011). These unfortunate implications are visible within the claims of Suleymaniye residents: "it has been once a great place to live. We had neighbours that we had knew each other for 20 years. There was trust. Now, everyone I knew has gone, we lost contact. It is sad to see our neighbourhood in ruins", "Our neighbourhood was beautiful. Everyone knew each other. They abandoned us" (interview, march 2015).

While the number of local residents are decreasing, Suleymaniye continues to accommodate new urbanites, this time mainly Syrian families and Syrian bachelors who are within the fight of survival and existence in the big city. Thus, urban poverty has continuously been reproduced in Suleymaniye. The evacuated buildings of Suleymaniye recently provide prominent shelters for Syrian refugees. Between 2011 to 2014, an estimated total of 1.350.000 Syrians fled to Turkey (Kirisci, 2014); the number of Syrians, the so-called 'urban refugees' of Istanbul have exceeded 300.000 (Mazlum-Der, 2013). The conditions in the camps managed by the Disaster and Emergency Management Presidency (AFAD) are stated to be good, but the rest, the 'urban refugees' are facing great challenges. After the demolition and abandonment of the buildings, Suleymaniye looks no different than the Syrian war-zone. The struggle of survival for them is still continuing, this time together with the undesired Istanbulites. Suleymaniye even with the destruction look like Damascus is the Little Syria. Most of them, mainly children and women, are begging on the streets. They are living under very poor housing conditions or finding themselves shelters in the abandoned properties or in the ruins by dividing the rooms with curtains and covering the windows by plastics. The increasing demand for rental property has resulted in the increased rent values especially in the neighbourhoods under Syrian demand. In some cases, three or four Syrian families have to share the same building or room. Bachelor dwellings have been continuing to be the prominent visible signs of decay, although their users are being changed. There is no access to sanitation or water; the Municipality had already cut the public service to enforce Suleymaniye residents out of their neighbourhood in the name of renewal. As declared in the interviews published in Evrensel (2014) among others, they are afraid of living in abandoned and ruined buildings, but they cannot afford any other with the rent values equivalent to approximately €190 - 220. Another tyranny is sad to being lived in Istanbul; Istanbul is stated to be part of war: "Everything was better in Syria. Everything was cheaper. If they gave us a house, we didn't need to be live within these ruins." As stated by Oncu (2007: 235): "So for the majority of the city's ten million residents, nearly half of whom are recent immigrants, the glorification of Istanbul's ancient history along with its aesthetic preservation and display in segregated tourist spaces has become the new exclusionary rhetoric of the moment".

6. The setting of hospitality in the temporary city ... the so-called temporary citizens of the temporary city

The use of power in the space of neoliberal Istanbul has different facets including the segmentation of the city into isolated clusters of construction through real-estate projects, rising archistars as the new symbols of prestige, the production of the infrastructure to

facilitate flow of capital and desired humans, resulting in the clearance of so-called devalued spaces for capital valuation, in the rising of socio-spatial segregation and the formation of 'powerless' lower and middle income groups through forced evictions and state-led gentrification (Gunay, 2015b). The genuine character of Istanbul together with its heritage is getting lost in the combat of reclaiming power in urban space. At the same time, the citizens are encapsulated within a choice of two sides, either 'hosts' or 'guests' of the city; hence, they are increasingly becoming endangered to be a spectacle of the temporality. State-led renewal leads to the separation of community according to their socio-economic classes, ethnic backgrounds and cultural choices. They transform the historic city into opportunity spaces on the remnants of erased collective memories and social capital, while resulting in the exclusion and eviction of the low-income local community, displacing and replacing new forms of poverty. They also result in the displacing and replacing of new forms of poverty (Bartu-Candan and Kulluoglu, 2008).

Then who are the owners of the city? The question becomes really ironic when thinking Istanbul as a city of mobility, migration and thus temporality. In a city of 14 million, approximately 80% of who were born outside Istanbul together with more than 300.000 Syrian refugees, who are the hosts of the city and who are the guests of the city? According to the Municipality Law (*Law no. 5393, 03.07.2005*), 'hemsehrî' (*follow-citizenship*) is defined as follows: "Everyone is a fellow-citizen of the county which he lives in. The fellow-citizens shall be entitled to participate in the decisions and services of the municipality, to acquire knowledge about the municipal activities and to benefit from the aids of the municipal administration. It is a basic principle to extend aid without hurting human feelings. The municipality shall perform necessary activities to improve the social and cultural relations between the fellow-citizens and to preserve cultural values." (Article 13). This is the 'law of hospitality' in Istanbul - with reference to Derrida (Dufourmantelle and Derrida, 2000). However, it is impossible to say that the 'law' has a reference in the reality. Istanbul has two faces of temporaries in the lack of rights; one is official, the other is unofficial. Syrian refugees are the officially defined 'temporaries' (with reference to 'temporary protection status' enacted through 2014 Regulation) (see Kirisci, 2014). The already residents of the city, though, are the ultimate unofficial temporaries.

According to Bartu (2000), what is being done in Istanbul shows how history, past and its excavations is used as a symbolic capital in today's political fights. Through the ongoing destruction and reconstruction process in the everyday politics of the present, the 'conquest' of Istanbul fragments the urban space as well as its communities with identities: pro-ottomans vs. republicans, insiders vs. outsiders, hosts vs. guests, owners vs. invaders. The state, as the 'temporary host' of the country as well as the city, captures the locality as hostage, while ignoring the heavy psychological and social costs of enforced displacements and destruction. Whereat the conquest becomes a cruel demand of hosting through the "hegemonic power relationships" (Turkun, 2011), locking the Syrian guests up in container cities is no different than evicting undesired guests of Suleymaniye in edge cities. Because as Derrida (2000) states, although hospitality works with the marking limits, powers, rights and duties in offering unconditional welcome to the new arrival, it is also an ethical problem concerning one's dwelling place, one's identity, one's space, and one's limits (p.77 and p.149).

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Spatial order and its perception - the transformation of former Jewish structures in the towns of central Poland

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1. Introduction

The culture of everyday life influences the creation and evaluation of urban fabrics and the built form considered an artefact of the cultures and societies that created them. In our globalising world, the role of the cultural framework in urban design requires more research, its lack leading to misunderstandings. The moments of change of the cultural framework usually result in transformations of the urban fabric. The concerted efforts of several disciplines, namely: urban design, urban morphology, anthropology and cultural studies, should become involved to explain the nature of this phenomenon.

Starting from the seminal research by Umberto Eco (1997) on the communicative aspects of architectural form, a more elaborated theory has been developed which approaches the general notion of spatial order (Hanzl 2016). As defined in the structuralism approach by Levis Strauss (2009), spatial order provides an explicit expression of the holistic structure in material urban settings. In anthropology, several authors have read these features as revealing the meaning of urban environments. This concerns, first of all, functional markers attributed to defined sites by given cultural groups. Further, it comprises the following specific elements: (1) the situation and its settings (Goffman 1959), (2) social organisation, sociometric layout and proxemics (Hall 1967, Marshall 2009), (3) aesthetics, atmosphere (Rappoport 1990, Strzemiński 1974).

The current paper comprises a brief presentation of the methodology with a special focus on an explanation of what should be understood as spatial order. A case study of Jewish pre-war neighbourhoods in central Poland is followed by an attempt at a typology of the transformations which these neighbourhoods went through after World War II, with the possible reasons for these changes. The summary and future research avenues conclude the paper.

2. Method – spatial order and its elements

The semiological system of Eco (1997) explained architecture and, more largely, the built environment through the meaning attributed to physical structures. In his theory, he gave some initial insights on the mechanisms of how culture influences the shapes of built forms. Taking into account the multitude of dispersed theoretical work, both on the ground of anthropology and in the remaining disciplines listed above, a more comprehensive and explicit theoretical apparatus is called for to properly evaluate the existing structures. I believe that embedding the notion of spatial order, which remains a well-known and accepted term in urban design, into the considerations on the culture-related meaning of urban space is key to understanding the impact of culture on the built environment.

Eco (1997) interprets the meaning delivered by built structures with the concept of the sign which a cultural context assigns to a given marker. Architectural signs contain a marker, the detonator of which is the function which an object may perform. The cultural context determines markers carried by a single object as well as various meanings assigned to the object over time (Eco, 1997). Eco (1997) follows Levi Strauss (2009) in referring urban settings to a more general anthropological system, which rules all human behaviour.

Another issue he puts forward is the proxemics theory by Hall, with kinetics and proxemics as elements extending communication with behavioural components. In my interpretation of the meaning of the urban environment (Hanzl, 2013), I hypothesised on a parallel

communication through the urban environment and spoken communication. Beside the articulated message, which should be understood by the means of function and its manifestations in the physical forms of urban settings, there is also an unconscious part, conveyed in a nonverbal way. The atmosphere which is created this way depends on such parameters of urban spaces as their scale, rhythm, wall corrugation, etc., all of which are behind the creation of a certain sensation, which may also be considered from the point of view of aesthetics.

2.1 Definition of situation

The semantics of urban contexts provides an addition to communication, enhancing human encounters (Hall 1989). The information is conveyed through the territorial distribution and exchange of nonverbal cues, in a way parallel to the internal organisation of a human group which is reflected in its behaviour (Goffman 1959). Rapoport (1990, pp.106-107) lists the following set of identifiable, spatially related cues, referring to them as culture-specific features: "quality, size, shape, enclosing elements, paving, barriers, and links, etc." Perinbanayagam (1974) in his definition of situation approaches it as a concept which comprises both human behaviour and the environment where it takes place, challenging the form of urban settings, understood as a theatre of human activities. The anthropological theory explains the ways in which a site is converted into a meaningful 'place', by inscribing human activities into the surroundings. The settings' contribution to the information processes confirms the validity of the assumed norm, which is particularly explicit in high context cultures (Hall 1989).

2.2 Social organisation and sociometric layout. Proxemics

We may classify the factors which affect group behaviour as describing: 1) the relations among people entering a situation, or 2) the character of situation itself. Hillier and Hanson (1984: 223-224) see encounters and interactions of people as a system which acquires specific properties with different manifestations in space, and should be understood as an evident spatial component of culture. The rules of group behaviour, explicit both in static situations and during the coordinated movements of the group, include spatial distribution and the established network of paths which result from the hierarchy of group members and from their recognised habits. The same set of relatively stable behavioural patterns, especially in high context cultures, serves as a set of rules for construction, thus they become reflected in the distribution of sites and structures and in their sociometric layout. Marshall (2009) presents a similar approach to this phenomena, explaining the arrangement of pieces of urban structure on the backdrop of the social structure of a given community. Hall (1967) meanwhile interprets differences in personal distances as influencing both the perception of space and its production. The cultural conditions of a given community affect the interpersonal distances between crowd members, the subject of proxemics, which, constituting a part of the anthropological approach, relates the human environment to the behavioural patterns appropriate for distinguishable cultures.

2.3 Aesthetics

Artworks reflect the unconscious aspects of culture (Adorno 2011, p.5), which when referred to urban settings means satisfying the aesthetic criteria of a community. The adjustment of visual patterns, e.g., repeating rhythms in built environments, to patterns ruling group behaviour followed as a consequence of changes of the socio-cultural settings (Strzemiński 1974). Visual awareness, understood as the "cooperation of seeing and thinking", stems from the cognitive absorption of the perceived visual stimuli. The evolution of visual awareness followed civilisational development, including economic and technical factors, and the transformations of the social structure of a given community in a defined historical context.

2.4 Spatial order

The above conceptual framework relates the physical structures to the customary ways they are used and produced. Both Levi-Strauss and Eco speak about the anthropological order which manifests itself in the physical form of any built environment. The spatial order which is an inherent part of a given culture, shall be understood and accepted against the backdrop of the basic set of assumptions, culture related practices and ways of thought and judgement. The two distinct epistemological perspectives, respectively anthropology and social science, or urban design, rely on different premises, thus terminological clarity is necessary. While in the case of spatial behavioural practices the non-verbal communication component may convey the general notion of situational meaning (Hanzl 2013), for the spatial distribution and form of physical settings, the concept of spatial order applies.

3. Case study

The current paper explores an empirical case study of the urban settings formerly inhabited, and largely constructed, by Jews in central Poland, mostly in the 19th and early 20th centuries. Initially, it draws on some elements of the traditional, or, as it was called from the turn of the nineteenth century, orthodox Jewish culture which was once present in central Poland to illustrate how different cultures interpreted the same space in different ways, with the notion of spatial order. The changes which took place in the Jewish culture as a result of acculturation and modernisation brought it much closer to the Polish one. At a certain point, the two groups lived together so closely that it would be no longer possible to discuss their customs separately were it not for the sphere of religion. The heritage left behind by this Polish-Jewish modern culture was more likely to be used in the changed post-war situation, which was not always the case for all neighbourhoods.

The analyses of people's behaviour in the outdoor space, the careful study of their everyday practices and habits, as well as a detailed examination of the underlying norms, allowed me to pinpoint features both with regard to urban structures as well as specific spatial practices and behaviours and their mutual relations. Moreover, the examination of the norms of this group as well as the study of the acculturation processes in its diachronic aspects led to the analyses of their impact on the shape of urban forms. In the current paper, due to its limited volume, I briefly introduce the explanation of a few of the most representative culture related features of the traditional, orthodox Jewish neighbourhoods in central Poland.

4. Aspects of spatial order

The perception of places inhabited by Jews differed. While for Jews they were organised in a way which satisfied their needs, in Polish documents they were often called unordered and chaotic, and described as requiring beautification. As early as the second half of the eighteenth century one reason to consider the transformation of Jewish districts was their assumed disorder, which for the government of that time, distinguished itself from the surroundings (Bogucka, Samsonowicz, 1986). This opinion, so strong that even now when discussing the urban structures of Jewish districts most authors continue using features attributed to these settings, including: overcrowding, chaotic distribution, fragmentation, unplanned parcellation changes, etc. (Piechotka and Piechotka, 2004: 63). The dense, non-geometric spatial layout of the Jewish districts in small towns of the eighteenth century may be attributed to the incremental growth and restrictions placed upon the Jewish community through legal regulations (Hubka 2005). Another reason could have been the problems which persisted as a consequence of poverty.

Not questioning the above problems, which were, for all that, also present in prevalently Polish neighbourhoods of a similar social status, a part of this apparent chaos may have resulted from a different perception of spatial order. The difference in perception was clear for Jews living in pre-war Poland, some places appearing homely, others inimical or even

hostile. For Jews, the neighbourhoods they lived in catered to their needs in terms of daily life, with the semiotic code attributed to their elements in a way which was not only rich and complex but also resulted directly from the expectations and written rules and remained deeply engraved in the tradition which had formed through the centuries.

The quantitative study of the physical form of several streets and squares with the use of Grasshopper scripting (Hanzl 2015), showed much greater irregularity of facades in Jewish neighbourhoods, both in the vertical dimension and corrugation of facades. While, along with Classicism and geometrisation of plans the corrugation became less apparent, the variations of the rhythms of facades continued. I believe that this apparent disorder had as its origin a different notion of spatial order suited to Jewish culture. This had raised concerns ever since Polish government's elaborations on the ways of improving city life, which, starting from the second half of the eighteenth century, emphasised the necessity to order the "extremely messy Jewish quarters". Hubka (2005) attributes this feature to the unplanned, more vernacular way they were built. The lack of care for the external manifestation of prosperity, which resulted from the insecurity of the Jewish situation, served to avoid provoking hostility, and may have been another reason for the layout.

4.1 Functions

The ways neighbourhoods inhabited by Jews and Polish or German citizens functioned differed. While the two latter cultures distinguished very clearly between public and private spaces: the public areas comprising only streets and squares, in the case of Jews, a very strong category of semi-private/ semi-public spaces of internal circulation emerged.

The two fundamental spheres Jewish life consisted of were: sacrum and profanum. In the first, the focus was initially on the synagogue, which later expanded to several additional structures, at first *beit midrash*, then *yeshivas* and *shtibl*. Hall (1969) distinguishes cultures which are of a more concentric or more linear nature. I believe this used to be one of the key differences between traditional Polish and Jewish organisation of space in pre-war times. The concentric nature of Jewish spaces is particularly apparent when looking at synagogues' courtyards, which, setback inside a block's interior, gathered around it all the necessary community institutions. With time, their location dispersed, but the main rules of spatial organisation remained. In the profanum sphere, the focal point was the market place. Jews tended to settle in the proximity of a main square, which attracted them by catering to their economic needs. The third focal point was interior streets, courtyards and in later times the backyards where daily life took place. This was the domain of women, who had their separate role in traditional Jewish life.

4.2 Social organisation and sociometric layout

The territorial constraints on the land where Jews could settle as a result of the privilege *de non tolerandis judeorum* or zones for Jews in many towns, along with the huge lure of prospering urban centres and the high population growth, resulted in very high densities in Jewish neighbourhoods. This led to extensions, usually illegal, of the former structures. This vernacular development followed patterns suited to the Jewish organisation of space, regardless of the Polish cultural environment, but still using local materials and construction solutions.

At the turn of the eighteenth and in the nineteenth century Jews often settled in old, and still Medieval parts of towns. The network of public streets was enriched with additional small scale passages, nooks, etc. which served communication without having this function assigned as a primary one, being just parts of courtyards. The transformation of the former parcellation, followed a different social organisation. The community – *kehilla*, both very strong and practically independent from the town's regulations, functioned separately from the surrounding town, even if well integrated into its structure, catering to the needs of towns' citizens and visitors. This position had its reflection in the urban structure, with interior space within Jewish quarters, seemingly unordered and uninviting to visitors, serving as extensions

of residents' domicile and space of interior circulation, the last observation is confirmed with the tradition of eruvim - temporary cords distinguishing private space during Sabbath.

4.3 Proxemics

As a rule, a traditional Jewish neighbourhood had streets which were narrower than elsewhere, which is the proxemic feature of Jewish culture, where interpersonal distances are smaller than in the case of Polish culture. Physical contact with other members of the community in Jewish Ashkenazi culture is something natural, we find many descriptions of lively disputes between Jews during which they touched each other. Efron, in his comparative study, analysed in detail Jewish and Italian migrants' kinetics behaviour with regard to acculturation processes (Efron, 1941). This feature had its reflection in the preferred scale of physical outdoor space created by Jews.

5. Transformations

When discussing the culture related understanding of urban structures, the situation of a changing population is particularly vulnerable to alteration, with newcomers usually transforming the former settings. Many of sites which were, in pre-war times, inhabited by Jews, later went through a period of intensive transformations. We may distinguish at least three situations (Table 1):

1. sites which were left abandoned and unchanged, degraded with time, with difficulties in reuse stemming from unsolved property ownership issues,
2. sites which were left empty and unchanged, remained without redevelopment, this lack of investment resulting from the low economic prosperity of a town or district/neighbourhood,
3. sites changed and redeveloped significantly, this process of demolition started during World War II by the Germans, was continued later by the Polish government.

The first two cases were usually connected with the lack of proper maintenance, which finally led to significant degradation. The third group, which comprised sites which were adapted, often disregarding property law, which was possible in the Socialist period, covered the two most common situations:

- adaptation to similar functions, without significant alterations - very often the case with schools, hospitals, etc.,
- demolition and reuse of empty lots.

	Type of transformation	Class definition
1	Demolition	Valuable land in the centre reused for various purposes
2	Abandoned without redevelopment	Development left unchanged, usually due to difficulties in determining the property's owner
3	Partly redeveloped	Some properties adapted during conversion, etc
4	Adapted in the former form	Some changes introduced, general character retained
5	Continuation	Former development initiated by Jews continued with the use of modern forms

Table 1: Classification of transformations of sites formerly used by Jews – framework proposal.

At first, Nazis demolished the synagogues, which were considered the most explicit visual symbols of Jewish culture. Then, certain parts of towns were adjusted to the needs of the ghettos being successively created in various towns, with whole blocks demolished in order to separate these zones from the surrounding urban areas. German planners started elaborations on further redevelopment of many former Jewish districts, which were in fact

large scale regulations, leading to enlargement of streets and redesign of the former, still medieval layouts, the plan of the Litzmannstadt ghetto redevelopment may act as a representative example. German transformations and plans were not the end to the changes, the dangerous technical state of many former ghetto structures after World War II led to further demolitions.

When analysing the changes which took place in neighbourhoods formerly considered Jewish, the shift of functioning and meaning is essential. On the one hand it is sometimes astonishing to notice that in certain places the former tradition of functioning still continues, for instance the presence of stalls and more generally outdoor commerce in the exact same locations they existed in the pre-war period. The continuation remains clear, even when the conditions changed, yet the intensity of current uses has diminished significantly. In most cases however, the former meaning has been lost, and once lively neighbourhoods now function as dormitories, deprived of their former outdoor life.

The enormous number of places inhabited by Jews before World War II and the rich variety of lifestyles within this group make the exact systematisation of post-war transformations of these structures impossible. Among the neighbourhoods they picked to live in, there were linear structures, more concentrated ones, and even those which adopted much more contemporary models of dispersed urbanisation. In certain settlements, differing models developed one next to another, representing different cultures of the usage of space.

Nevertheless, based on a few analysed examples, some preliminary observations may be made. First, the former meaning, as described above, has been lost, which first of all refers to the traditional orthodox neighbourhoods. Many sites, rebuilt from scratch, do not resemble their pre-war form at all. Even in the case of more acculturated neighbourhoods, the former places of meetings, cultural events and recreation disappeared, for instance in summer resorts like Otwock. While a large number of institutional facilities, such as schools and hospitals, were adapted and the function continued, with small adjustments only, many were left behind and abandoned. Although a large part of this change stemmed from more general cultural and civilisation changes, some alterations may be attributed to the cultural gap which remained after Jews had gone. Many settings left behind tell stories which nobody understands anymore. Probably the most significant change is the transformation of the former sociometric layout, with circulation closed and reserved for public zones only. Despite this, in some locations the vestiges of the earlier layouts function, preserved thanks to adaptation of former Jewish quarters for the needs of social housing, for instance in Góra Kalwaria.

6. Conclusions and future research avenues

The current paper provides a basic outline of the main features specific to the Jewish traditional urbanscapes of pre-war central Poland. The case study illustrates the methodology of analyses of formal aspects of urban space derived from several disparate, yet seminal theoretical works in social anthropology, namely those by Eco, Hall, Goffman and Hillier. The social structure and its reflection in sociometric layout has also been analysed against the backdrop of the theoretical explanation given by Marshall (2009). The presented analyses prove the existence of a separate spatial order, specific for the distinguishable Jewish traditional culture which once developed in Poland. In the situation of two different cultures using the same spaces, their perception and evaluation of spatial order differs in several ways.

As discussed above, spatial order may be defined with the use of such detailed elements as:

1. perception of disorder, aesthetics,
2. functions of various sites and edifices, their roles and place in the broadly understood spheres of life: sacrum, profanum, everyday,

3. social organisation and sociometric layout,
4. proxemics.

The presented text summarises the discoveries of a larger study, which approaches Jewish-Polish physical spaces and culture of central Poland in a diachronic way. Becoming part of larger transformation processes affecting heritage sites as a result of modernism planning, former Jewish neighbourhoods, afterwards inhabited by Poles, changed their former character, at least partly. Ease of transformation of urban structures as a result of the neglected property structure often led to the situation that former Jewish districts were prone to becoming the location of experimental modernist projects. Their natural defenders gone, they became an easily available resource of centrally located and often empty lots for new development.

The urban structures of orthodox neighbourhoods, often deprived of their sacrum and former meaning, carried messages which could no longer be read. This is one of the reasons why these sites so often declined. Among those which were left unchanged, many preserved their former commercial character, and apparent “unordered” image. In some places, it is still possible to read the traces of a life vanished long ago.

The transformation processes which started at the beginning of World War II, often begun by Germans, also point at the difference of perception of spatial order, e.g., the preserved plans of the redevelopment of Jewish districts which were then made. Another element which should be considered is the utterly different approach towards the sociometric layout in blocks with a prevailing Jewish population and their post-war transformations.

7. Acknowledgements

The current study is a part of the research project financed by The National Science Centre of Poland UMO-2011/03/D/HS3/01630, entitled: *“Morphological analysis of urban structures – the cultural approach. Case studies of Jewish communities in the chosen settlements of Lodz and Masovian voivodeships”*.

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Urban design factors associated with perceived assessment in elderly's walking activities: Case study of central Shanghai, China

(Urban Design Factors and Walking Environmental Perception among the Elderly)

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Abstract: Walking is one of the most environmental-friendly and healthy means of transportation. With the influence of motorization, the walkability of urban area has been declining in recent years. China has the largest population of the elderly in the world. Issues on making neighborhoods walkable for the elderly has drawn wider attention in the process of aging. Considering the physical and mental characteristics of the elderly, walking activities are sensitively influenced by environmental perception, like the satisfaction of walking environment and necessity of walking activities, while few emphasis were placed on the relationship between physical environmental factors and perceived assessment for walking among the elderly. The aim of this research is to find out the key environment factors which influence the perceived assessment in the elderly's walking.

Based on 21 neighborhoods cases in central Shanghai, method of questionnaire survey (n=1365) was employed to get the elderly's assessment of walking environment. The measures of physical environment factors, including the aspects of urban fabric, land utilization, interface form and walking facilities, were collected by site observation and GIS database. Correlation and multinomial logistic regression analysis were taken to find out the key variables which are associated with perceived assessment. It was found that environmental factors such as width of sidewalks, density of commercials, population density and presence of transparent boundaries have influences on the elderly's environmental satisfaction assessment. While the scale of the neighborhoods, density of commercials, presence of education facilities, width of sidewalks are related to the necessity evaluation of the elderly's walking activities. In addition, socio-demographic attributes like age, gender and income also have effects on the elderly's perception of walking environment.

In conclusion, the elderly's perceived assessment of walking environment and their awareness toward walking activities are associated with urban design factors, especially with those of urban fabric and land utilization aspects. Identifying these factors can call for intervention strategies from policy makers and designers to make the neighborhoods walkable for the elderly.

ey words: Urban design, walking, the elderly, assessment, Shanghai

1 Introduction

Issues on aging society have drawn wider attention than ever before in the world. China has been an aging society and it is predicted that the population of those older than 60 years old will reach to 430~450 million by the year of 2050, accounting for one third of the whole (National Bureau of Statistics, 2010). Walking is one of the most popular physical activities among the elderly. While the environment for the elderly's daily walking activity has been

affected by the increasing number of vehicles and other factors and walking space has been squeezing. It is a vital agenda to build up an inclusive society when taking the elderly's walking environment into account.

Shanghai has the highest level of aging in China. Old people (older than 60 years old) has taken up to 15.26% of the whole population by 2010(National Bureau of Statistics, 2010). Considering the physical and mental condition of the elderly, their activities are mostly taken place in the site-level and neighborhood level (Wang & Lee, 2010). The attitude toward walking and the content level of neighborhood surroundings will play significant roles in the elderly's walking behavior, while urban design factors contribute a lot when the older people make these perceived assessments of environment. Therefore, to make a more walkable neighborhood for the elderly, it is meaningful to find out the factors which are related to environmental satisfaction assessment and walking attitude among the elderly

2 Literature Review

2.1 Physical activity and health among the elderly

Walking is the most popular physical activity. The relationship between physical activity and health was widely concerned by researchers from public health and preventive medicine fields (Pate et al., 1995; Haskell et al., 2007). Studies pointed out that moderate dose of green exercises has great benefits on individual's mental health (Barton & Pretty, 2010). Environment stimulates the physical activity and a higher level of self-reported health status was found from those who lived in a more qualified community (Sugiyama & Ward Thompson, 2007). With the rapid development of economy in China, an increasing number of older people pay attention to health issues as well as physical activity. A research on older people's activity in several communities in Shanghai showed that the proportion of those who participated in physical activity has reached to 49.4%, much higher than the average rate in whole nation, 28.2% indeed (Tang et al., 2009). Besides, the elderly's walking activity has taken up to 51.6% of all the means of transportation, based on a recent study on four communities in Shanghai (Huang & Wu, 2015).

2.2 Environmental perception and attitude toward walking

Perception may have potential effect on individual's behavior, especially among the elderly. The Theory of Planned Behavior (Ajzen, 1985) pointed out that the appearance of behavior was indirectly affected by behavioral intention, which was associated with three factors, namely attitude, subjective norm and perceived behavioral control (PBC). The attitude and the PBC in elderly's walking activity mainly indicate what kind of attitude do the elderly hold toward walking, and what kind of perception do they make when they are in certain circumstances. Social cognition and perceived environment, as well as other factors like self-efficacy, social support, facility access and neighborhood safety, affected the older people's walking activity (Booth et al., 2000). Perceived environment attributes, like residential density, land-use mix and street connectivity, were positively associated with a high-walkable neighborhood (Leslie et al., 2005). Recent research found that the degree of perceived access to shops, crowdedness, presence of sitting facilities and easy access of residential entrance were positively related to elderly's

walking activity (Cerin et al., 2014)

2.3 Objective-measured characteristic of walkable neighborhood

An increasing number of researchers turned to pay more attention on the characteristics of walkable neighborhood from the perspective of built environment. Emphasis were placed on the objective-measured urban form elements of neighborhood and they intended to find out the key elements, which were associated with elderly's walking activity, at a more micro-level. Li's research indicated a positive relation between built environment factors (density of places of employment, household density, green and open spaces for recreation, number of street intersections) and the elderly's walking activity at the neighborhood level (Li, 2005). Besides, smaller street-blocks around home, and shorter distances to food and daily retail facilities from home, are the key indicators of walkable neighborhoods (Moudon et al., 2006). Other studies found that the amount of commercials and traffic volume (Nagel et al., 2008) and the layout of public transportation facilities (Huang & Wu, 2015) also had influences on the elderly's walking activity.

Previous studies paid much attention on public health, perceived walking environment and few objectively measured urban design factors, less emphasis were placed on which kind of urban design elements were associated with the perception of walking environment. Besides, quantitative analysis are also obliged to find out what kind of degree have the urban design factors influenced on the elderly's perception. The aim of this research is to identify the urban design elements which contribute to a higher level of environmental perception and a more positive attitude toward walking among the elderly.

3 Research method

3.1 Selected cases

This study selected 21 neighborhoods in central Shanghai as cases. These neighborhoods were catalogued into 5 groups based on their times of construction and their spatial morphology. Five categories consists of 1) Historical neighborhood, 2) Workers' village, 3) Old neighborhood, 4) New neighborhood, and 5) International neighborhood. (see Figure 1) All these selected neighborhoods must be equipped with explicit boundaries like main roads or rivers, so residents could inhabit and take walking activities in a certain area. What is more, the function of these neighborhoods must be initialed by dwelling with well functionally infrastructures like accessible public transits, convenient commercial facilities along the road instead of commercial complex and landmarks of the city.

3.2 Data and measurement

During December 2011 to June 2012, questionnaires were distributed to the dwellers from all ages by the community workers of these 21 neighborhoods, and sent back within 2 weeks for a certain neighborhood. The amount of questionnaires for each neighborhood was guaranteed

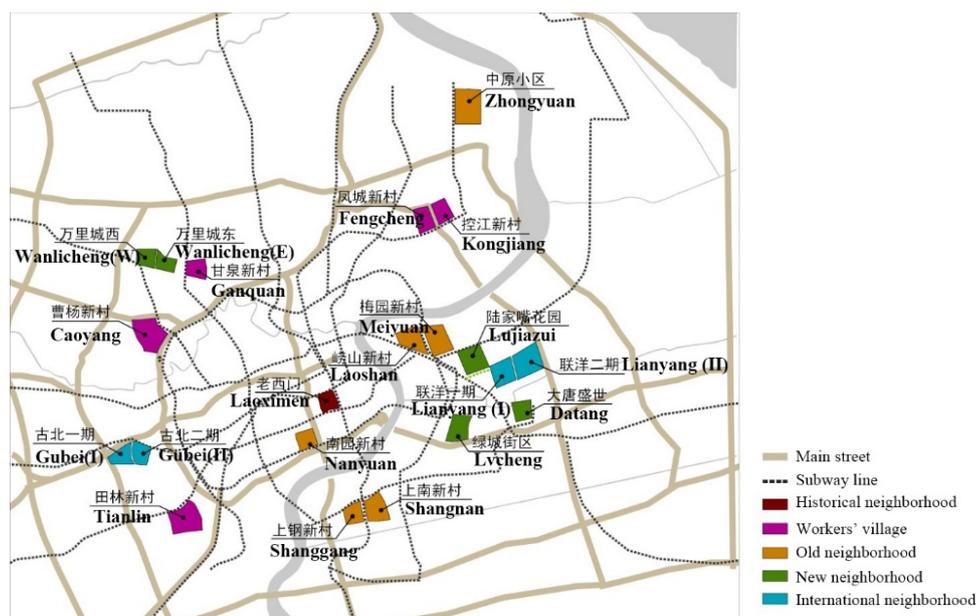


Figure 1 Study areas

about 200 and the total amount was 3820. At last 2863 questionnaires were selected as valid from 2940 taken-back questionnaires. In this research, 1365 questionnaires whose respondents' age were older than 50 years old were filtered.

This questionnaire mainly includes three parts: 1) Social-demographic attributes, like age, gender, monthly income, etc. 2) Attitude toward walking, responses were made on a five-point Likert scale ranged from “extremely unnecessary” to “extremely necessary”. To get this assessment, interviewees were asked “What is the degree of necessity of walking in your daily life?” 3) Satisfaction assessment on walking environment, which included an overall perception of the walking environment measured by a five-point Likert scale which was ranged from “extremely dissatisfied” to “extremely satisfied” and four sub-factor assessments on the walking environment by a three-point Likert scale including “dissatisfied”, “so-so” and “satisfied”. The sub-factor assessments contained the evaluation of a) the convenience of access to the public transit, b) the accessibility level of commercial, c) satisfaction level of security, d) comfort level of walking.

The objective-measured urban design variables, in four aspects like spatial texture, land use, morphological interface and walking facility, were gained from the Geographic Information System Database provided by Shanghai Urban Planning and Design Research Institute. All perceived and objective-measured variables are listed in Table 1.

Social-demographic Attributes	Perception of walking environment and Attitude
Age Gender Monthly Income	Overall Satisfaction of Walking Environment · Convenience of Public Trans · Accessibility of Commercial · Satisfaction of Security · Comfort of Walking Attitude toward Walking

Objective Measured Urban design Variables			
Spatial Te ture	Land Utili ation	Morphological Interface	alking Facility
Population Density(ST1)	Density of Centralized-Commercial (LU1)	Density of Entrance to Residential(MI1)	Density of Walkable Area(F1)
Average Block Length(ST2)	Density of Commercial Interface(LU2)	Density of Entrance to Parks(MI2)	Average Width of Sidewalks(F2)
Section-Node Ratio(ST3)	Density of School(LU3)	Proportion of Commercial Interface(MI3)	Proportion of Sidewalks<3m width(F3)
	Density of Office Building(LU4)	Proportion of Penetrable Interface(MI4)	Proportion of Sidewalks≥10m width(F4)
	Density of Green Space(LU5)	Proportion of Closed Interface(MI5)	
	Density of Public Trans Station(LU6)		
	Density of Public Trans Route(LU7)		
	Density of Subway(LU8)		
	Proportion of Commercial Interfaces ≥15 Stores (Per 100m) (LU9)		

Table 1 Perceived environment and urban design variables

4 Analysis

4.1 Descriptive Analysis

Statistics show that a total proportion of 61.86% in all aged respondents reported a positive assessment on the walking environment, including 13.81% of the respondents marked “extremely satisfied” and 48.05% reported “satisfied”. This means that the walking environment in these 21 neighborhood are in a relatively good condition. However, nearly two fifth of the interviewees made a negative assessment on the environment, demonstrating that it is necessary to optimize the built environment for providing a better circumstance for the elderly's walking activity. When it turned to attitude, a total proportion of 85.56% interviewees responded “extremely necessary” or “necessary”. The result posed a reality that walking activity had been accepted by most of the aging people.

As for the other four sub-factors matters, the assessment on convenience of access to the public transit declined with the growing age of the respondents. The proportion of “dissatisfied” in the oldest old group (>80 years old) was much higher than those of other age groups. It can be illustrated that the barrier-free facilities and the service radius of public transit facilities could not meet the elderly's need. The survey on satisfaction level of security and comfort level of walking revealed that these two sub-factor assessments were associated with the interviewee's economic status. On the whole, the more monthly income an individual had, the higher evaluation he/she made. This result could be illustrated that the elderly occupying a higher salary usually lived in a superior community where the security was guaranteed and surroundings were well managed. The above descriptive analysis revealed a basic status-quo

of the perception of the walking environment and the attitude toward walking among the elderly. However, the key morphological variables affecting the environmental perception are still left to be found and a series of correlation test in the next are worthy to be done.

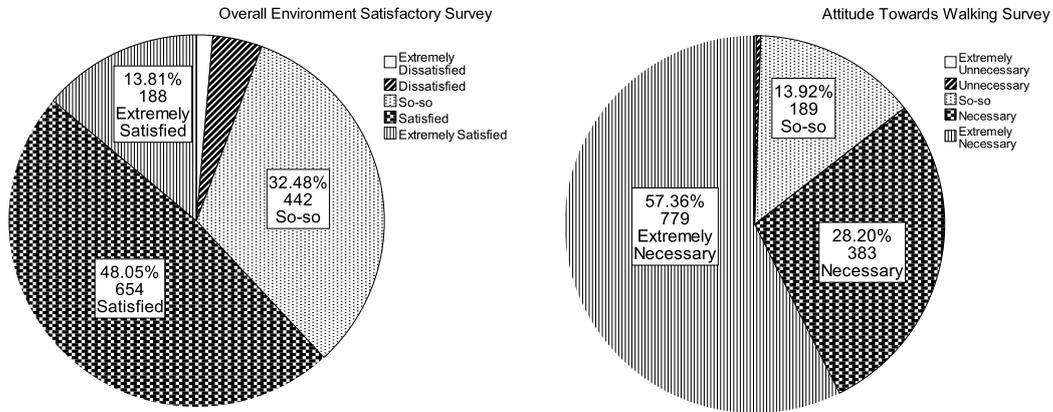


Figure 2 Surveys on overall environment assessment and attitude toward walking

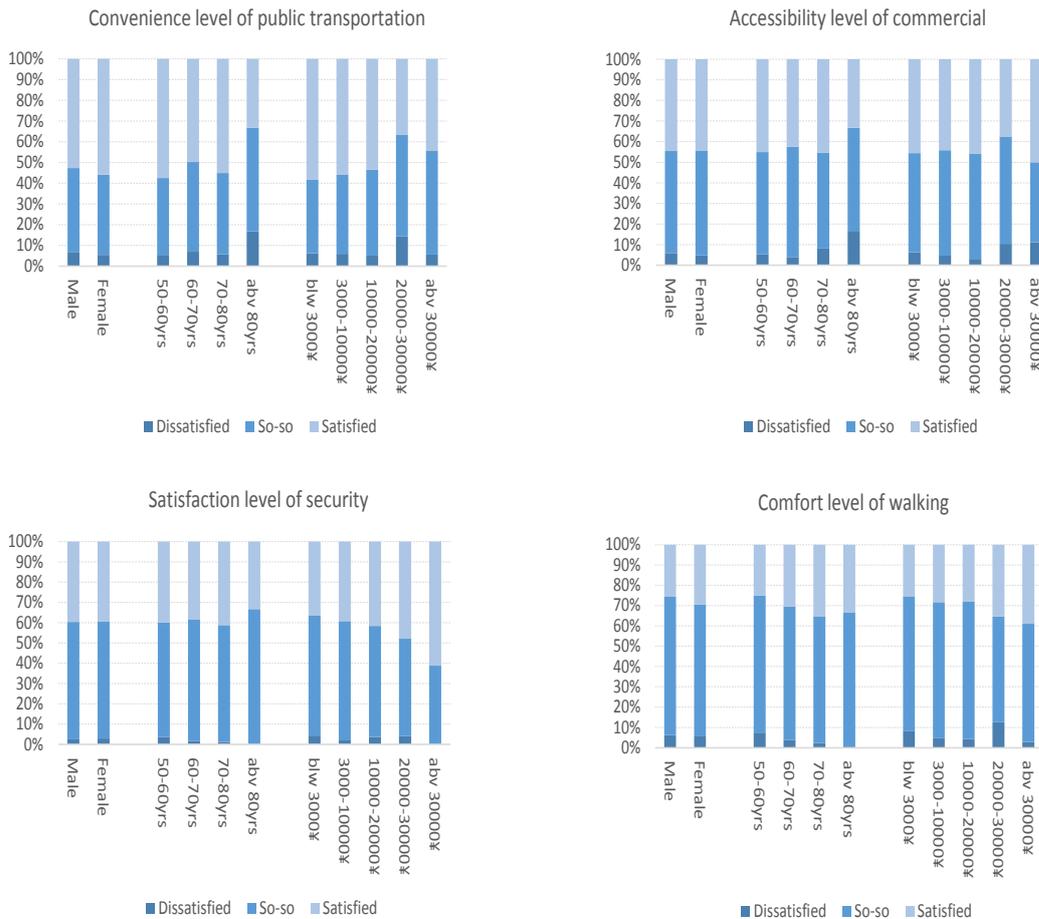


Figure 3 Surveys on the assessments four sub-factors of walking environment

4.2 Correlation Analysis

Correlation test was employed to find out the association between and the elderly's environment perception and urban design variables, which were obtained from GIS Database. All collected data were imported to Statistical Product and Service Solutions (SPSS, Version 19, IBM Inc. 2010) and all significant results of Pearson correlation test(p Value<0.01)are listed in Table 2.

The result showed that elements from spatial texture aspect had few significant relations with the elderly's walking attitude, while some of those from land use aspect, like the density of education facilities (0.173), proportion of commercial interfaces ≥15 stores per 100m (0.106), density of commercial interface (0.074) and density of office building (0.079), were associated with the attitude toward walking among the elderly. Variable from morphological interface, like proportion of commercial interface (0.104), was positively correlated to walking attitude, while proportion of penetrable interface (-0.093) showed negative. What is more, the proportion of sidewalks≥10m width (-0.216) was negatively correlated to walking attitude.

As for the perceived assessment of the walking environment, the density of population (-0.084) and section-node ratio (-0.084) showed negative correlation with the overall perception. A pair of variables from land use aspect showed an inverse correlation with overall perception of walking environment, they were density of centralized-commercial (0.100) and density of commercial interface (-0.078). Besides, the proportion of commercial interface (-0.116) showed negative while proportion of penetrable interface (0.131) positive. The proportion of sidewalks<3m width (0.111) contributed to a positive evaluation of the overall walking environment. A number of urban design variables were found correlated with the sub-factor assessment. Those variables influencing the evaluation on convenience to the public transit were proportion of commercial interface (0.235), density of public trans route(0.234), density of education facilities (0.220), density of subway (0.210)and proportion of penetrable interface (-0.189). On evaluating the accessibility level of commercial, density of office buildings (0.164), density of education facilities (0.134), density of public trans routes(0.129), density of entrance to parks(0.118) showed positive correlation with assessment while proportion of penetrable interface(-0.077) showed negative. The density of population (-0.146) and the proportion of commercial interfaces≥15 stores per 100m(-0.129) showed negative correlation with the satisfaction level of security, and other variables like density of subway (0.097), density of office building (0.095) and proportion of sidewalks<3m width (0.093), were positively associated with the perception of environmental security. At last, variables negatively correlated with comfort level of walking environment were also found, they were density of population (-0.144), the proportion of commercial interfaces ≥15 stores per 100m (-0.135), the proportion of commercial interface (-0.131) and section-node ratio (-0.084), while the proportion of penetrable interface (0.126) and the proportion of sidewalks<3m width (0.100) showed positive.

Urban design Variables	alking Attitude	Overall Satisfaction	Public Trans Stsf.	Commercial Facility Stsf.	Securi ty Stsf.	Comfort Stsf.
ST1		-0.150**	.112**		-.146**	-.144**
Spatial Te ture ST2				.073**		
ST3		-0.084**				-.084**

	LU1		.100**	.108**	.077**	.076**	.078**
	LU2	.074**	-.078**	.155**			
	LU3	.173**		.220**	.134**		
	LU4	.079**		.149**	.164**	.095**	
Land Use	LU5						.074**
	LU6				.088**		
	LU7			.234**	.129**		
	LU8		.075**	.210**	.089**	.097**	
	LU9	.106**	-.130**	.093**		-.129**	-.135**
	MI1			.095**			
	MI2			.152**	.118**		
Morphological Interface	MI3	.104**	-.116**	.235**	.088**		-.131**
	MI4	-.093**	.131**	-.189**	-.077**	.079**	.126**
	MI5						
	WF1			.136**			
walking Facility	WF2			.157**	.102**		
	WF3		.111**			.093**	.100**
	WF4	-.216**					

** . *p* Value < 0.01

Table 2 Pearson correlation test between environment perception and urban design variables

4.3 Regression Analysis

Compared to the correlation test, Multinomial Logistic Regression integrated more factors, especially those of social demographic attributes in the regression model and it contributed to find out the key factors that influenced the perception of walking environment. Respondents who rated “Extremely dissatisfied” and “Dissatisfied” were integrated to one level. And three logistic regression sub-models were made referred to this level. The dependent variable was the satisfaction of walking environment and the independent were all factors from social demographic attributes and urban design aspects.

In the basic model, only three social demographic factors were selected (Table 3). Then, factors from urban design perspective were put into the model one by one and its contribution on pseudo R square was observed to evaluate the influence of the model. Meanwhile, the factors' parameter value (B) and significant value (Sig.) were got to find out their effects on each sub-model. The result was listed in Table 4.

Social-demographical attributes	Change of Pseudo R Square	Sig. Value of Likelihood Ratio Test	Value (When the Significance Level of Sig < 0.1)		
			Model 1	Model 2	Model 3
Age	0.024	0.000	0.562**	0.958**	1.029**
Gender	0.009	0.042	--	--	--
Monthly Income	0.006	0.142	--	--	--

** Sig < 0.05, * 0.05 < Sig < 0.1

Table 3 Selection of Personal Attribute Variables

Urban Design Factors	Change of Pseudo R Square	Sig. Value of Likelihood Ratio Test	Value (When the Significance Level of Sig<0.1)		
			Model 1	Model 2	Model 3
Spatial Texture	D. ^a Population	0.026	0.000		0.000*
	Average Block Length	0.005	0.075		
	Section-Node Ratio	0.011	0.001		
Land Use	D. Centralized Commercial	0.010	0.002		
	D. Commercial Interface	0.007	0.014		
	D. School	0.001	0.651	-0.082*	
	D. Office Building	0.001	0.239		
	D. Green Space	0.009	0.005	0.000**	
	D. Public Trans Station	0.007	0.008		
	D. Public Trans Route	0.001	0.609		-0.029**
	D. Subway	0.007	0.016		0.224*
Interface	P. ^b Commercial Interfaces ≥15 Stores	0.013	0.000		-0.029**
	D. Entrance to Residential	0.001	0.526		0.007**
	D. Entrance to Parks	0.007	0.017	-0.108**	
	P. Commercial Interface	0.014	0.000		
	P. Penetrable Interface	0.016	0.000		0.032*
walking Facility	P. Closed Interface	0.002	0.318		0.053**
	D. Walkable Area	0.001	0.670		
	Average Width of Sidewalks	0.004	0.124	-0.474**	
	P. Sidewalks <3m width	0.013	0.000		0.000**
	P. Sidewalks ≥10m width	0.001	0.653		

** Sig<0.05, * 0.05<Sig<0.1

Table 4 Selection of Urban Design Variables in Neighborhoods

5 Result and Conclusion

5.1 Factors associated with attitude toward walking

Based on the correlation test, this research found that one of the variables which was most negatively associated with elderly's walking attitude was the width of sidewalks. It can be illustrated that 1) Wider sidewalks were usually along with the road with high traffic volume,

which provided an alternative for the elderly when they intended to go out. 2) Wider sidewalks were usually mix-used and other functions like the parking lot for bicycle may have influences on elderly's walking activity, which led to a lower attitude toward walking as a whole. 3) The ratio of width and height of wider sidewalks may affect the space perception which would change the elderly's attitude on walking.

Positively correlated elements were the density of commercial and school. Shopping has been one of the most frequent behaviors that the elderly adopted in their daily life. It also verified the previous study (Huang & Wu, 2015) which concentrated on the elderly's travel behavior in Shanghai. What is more, the outcome that the density of education facilities played a significant role on the elderly's walking attitude can be demonstrated that a large number of the elderly, instead of their adult offspring, picked up the kids from school. As a consequence, a higher attitude toward walking was observed.

5.2 Factors associated with perceived assessment on environment

Population density, commercial density, transportation facilities and the morphology interface are the key elements which influence the perceived assessment on environment. Specifically, the density of population showed negative correlation with the overall perceived assessment, the satisfaction level of security and comfort level of walking environment, while it showed positive correlation with the evaluation on convenience to the public transit. It can be inferred that 1) Higher density of population was a challenge to the walking environment capacity and the secure of environment. 2) The amount of public transportation was stimulated by the increasing number of residents. Public transit was one of destinations in the elderly's instrumental walking activity. The evaluation on convenience to the public transit had few association with secure and comfort issues.

The form of commercials was also an important factor which was associated with the assessment of walking environment. The proportion of commercial interface was negatively correlated to overall environmental perception, while the centralized commercial was positive. And the latter one also contributed to a higher level of assessment on security and comfort perception of the environment. Obviously, the centralized commercials were usually well managed and the surroundings were better than those of small retailers. Another key element is related to the public transportation. It is the density of bus route instead of the density of bus station that matters the assessment on convenience to the public transit. Meanwhile, the penetrable interface and sidewalks in smaller scale (the density of sidewalks < 3m width) were key elements of urban design that influenced the evaluation of the overall walking environment, security and comfort issues as well.

Multinomial logistic regression were taking various factors into consideration. Social demographical variable "monthly income" was eliminated from the basic model as it was not statistically significant. The basic model revealed that age was a significant variable from personal attribute. And the significance of age presented a raising effect with increasing level of satisfaction. Then, the urban design factors were put into the basic model and the changes of the pseudo R square, which indicated the fitting degree of the model, were calculated. The result showed that those variables which have the most significantly effects on assessment of walking environment were, density of population (0.026), proportion of penetrable interface (0.016), density of commercials (0.014), the proportion of commercial interfaces ≥ 15 stores per

100m (0.013), section-node ratio (0.013), and density of centralized commercial (0.011). This research also found that, from three sub-models, the density of bus routes showed a higher negative effect on the satisfaction choice, compared to the lowest assessment of walking environment. It was a contradiction with the previous correlation test on the assessment on convenience to the public transit and it can be illustrated that the satisfaction level of walking environment were affected by both urban design factor (the density of bus routes) and personal attribute (age). Other factors, like the proportion of penetrable interface and the density of entrance to residential also showed the similar consequences.

6 Discussion

Various urban design elements, especially those from urban texture and land use aspects, had influences on the elderly's perception of the environment, which as a result led to changes in walking activity. Raising the density of population has drawn wider consensus because it brings about many benefits like improving the vitality of community, while it also has negative effect on the perception of walking environment among the elderly. It is same to the commercial issue, which is regarded as a double-edged sword. Commercial density, to some degrees, can contribute to a higher attitude toward walking and may decrease the perception of the walking environment. The result of regression analysis also spotlighted the importance of age factor in our routine walking environment and called for all to concentrate on the inclusive issues about the elderly. Admittedly, many issues like making changes on the population density or commercials have been far beyond the urban designer's control, while making a good design from urban design perspective, optimizing the built environment of neighborhoods as well as calling for interventions from the authorities are much worthy to be done.

This research also has a number of limitations. As the questionnaires were designed for all age group, less special attentions were paid to the elderly. Besides, the survey excluded the different types of walking activity, like recreational walking or instrumental walking. So the result of analysis may be disturbed by other unknown factors. Statistically, the method of analyzing may be improved with other analysis. Though with limitations, future studies are encouraged to take empirical studies to testify the existing urban design elements from this research.

Acknowledgement

This research was founded by National Natural Science Foundation of China (No.51278339). Special appreciations to Jie Mao and Minghao Liu for their efforts on collecting the data.

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An assessment of infrastructure provision and services for persons with disabilities at the University of Venda and its surroundings

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Abstract

The built environment is inhabited by large populations of diverse groups of people. Persons with disabilities are among these diversified populations. The provision of a universal design to satisfy the different needs of these diversified residents is fundamental. The Social Model of disability views disability as a result of the way society is organised, McGettrick (2015:14). It stipulates that disability is caused by the barriers that exist within society which discriminates against people with impairments and excludes them from involvement and participation. The concept of Universal Design was coined by Conell et al., (2008; 23), as a design of an environment to be usable by all people to the greatest possible extent without the need for adaptation. The paper focuses on assessing the infrastructure and service provisions for persons with disabilities (PWDs) using a tertiary institution as a case study (i.e. Venda University in South Africa). In terms of the methodology, a total of 40 people with different impairments filled the questionnaires and also diaries that were prepared. Focus group discussions and interviews were held with different stakeholders responsible for planning for PWDs. Field visits were undertaken with the aid of cameras and Ground Positioning Systems (GPS) to capture data. The major hurdle that PWDs experience in their everyday lives was found to be lack of accessible arrangements on buildings and lack of appropriate street environment. The major impediment on the day-to-day lives of the blind was found to be lack of information about access and mobility. The study revealed that there is a general lack of awareness regarding disability issues in areas of buildings design and street environment. Recommendations were suggested on how to incorporate the concerns of PWDs in the built environment.

1. Introduction

Physical disability has gained recognition as a development issue at international level (Voluntary Service Overseas, 2006:2). The United Nations Convention on the Rights of Persons with Disabilities report (UNCRPD 2006: 17) presents vast opportunities to increase awareness of disability around the world. People with disabilities are among the most vulnerable group in the society (Rust and Metts, 2007:52). Social and economic discrimination, architectural, transportation, institutional and policy barriers continue to prevent disabled people from accessing any opportunities. (Shehu, 2011:18) argues that poverty and disability are linked in a vicious downward spiral because poverty causes disabling conditions and disability makes families vulnerable to economic, social and environmental shocks. This study focuses on the environmental discrimination, where a person with a disability is unable to participate due to a physical barrier, such as inaccessible pavement or inappropriately designed buildings" (DFID, 2000:8 in the context of persons with disabilities at University of Venda and its surrounding environment.

It is estimated that about 7.5 % of the South African population constitutes persons with disabilities (Statistics South Africa, 2011:7). The World Bank estimates that approximately

600 million people, or 10% of the world's population, have a disability and that 80% of these people live in developing nations (World Bank Design for All report, 2008:18). The World Health Organisation also estimates that 10% of any population is disabled. However (Metts 2011:12) describes "published estimates of national, regional and global PWDs' populations as little more than speculation and educated guesswork." Apparently UNIVEN has the highest per capita enrolment of disabled students in the whole country (UNIVEN, 2012:1).

1.1 General Objective

The general objective of this paper was to assess the current infrastructure provisions and services for PWDs at UNIVEN and its surrounding environment with a view to generate solutions.

1.2 Specific Objectives

1. To describe the major existing infrastructure provision and services at UNIVEN and its surrounding environment.
2. To assess the adequacy of such infrastructure to meet the needs of PWDs, and
3. To generate strategies and recommendations to meet PWDs' infrastructure and service needs.

The University of Venda is a South African Comprehensive rural based university, located in Thohoyandou in Limpopo province. It was established in 1982 under the then Republic of Venda government. The University has a total enrolment of approximately 11 000 students (2012). The estimated current student population in 2016 is 15 000.

2. Methodology

Making use of a mixed methodology, the study draw its findings from both qualitative and quantitative data obtained from primary and secondary data sources. Qualitative data is analysed making use of a thematic approach, while quantitative data was analysed making use of descriptive statistics. Consequently, the study adopted an empirical approach revolving around the need to fulfill the three specific research objectives of the study. For these research objectives to be met, different methodologies and tools were adopted. Figure 1 presents a summary of the research methodology matched by techniques.

Research Objective No.	Research Method/Technique	Comment/Observation
Objective 1: To describe the existing infrastructure provision and services at UNIVEN and its surrounding environment.	Desktop literature review specific to services and infrastructure suitable for PWDs Site Visits Field observation Community questionnaire Stakeholder consultation and engagements	The development of these instruments enabled the researcher to be able to recognise, plot and map PWDs infrastructure and services issues, identify major PWDs barriers etc.
Objective 2: To assess the adequacy of such infrastructure to meet the needs of PWDs.	PWDs Checklist/Observation Research Template SWOT Analysis Gap analysis Targeted PWDs Questionnaire distribution	Data obtained from objective 1, was used to formulate a spatial observation checklist whereby areas were grouped as low, medium and high depending on the level of adequacy of infrastructure and services for PWDs This enabled the review of legislation, regulations and standards for compliance or lack of compliance, adequacy or inadequacy responding to PWDs needs and requirements etc. A profile of the PWDs, challenges and constraints faced in the UNIVEN built environment etc.

Research Objective No.	Research Method/Technique	Comment/Observation
Objective 3: To generate strategies and recommendations to meet PWDs' infrastructure and service needs.	Secondary Data Analysis Review and critique of existing models, approaches and concepts Synthesis analysis	The conclusive judgement passed in objective 2 determined the strategies and recommendations that were generated to achieve the third objective. This enabled a full cycle analysis to be conducted.

Figure 1: Summary of research objective, method technique and justification

Source: Authors own conceptualisation, 2016

In overall, 33 Questionnaires and 7 diaries were distributed. A focus group discussion with PWDs was conducted as well as a number of interviews with different stakeholders involved in planning for PWDs around University of Venda.

3. Literature review

Historically, persons born with disabilities were not accepted in their communities. Communities associated them with the incarnation of the devil and their disability was also regarded as a sign of God's punishment for the sins that a family had committed. As a result most of them were hidden in houses and others were even thrown into the bushes or rocks and left in the open to die. In developed countries women even terminated their pregnancies once they had undergone an ultra sound scan and discovered that they were expecting a disabled child. Various efforts have been made to change the perception of persons with disabilities in society (Gudafelsky and Madduma, 2000:57). It shows how the legislations for PWDs were reviewed together with the theoretical framework. The figure is also indicating the input and output of the study. The conceptual framework is an attempt to summarise the data flow of the study.

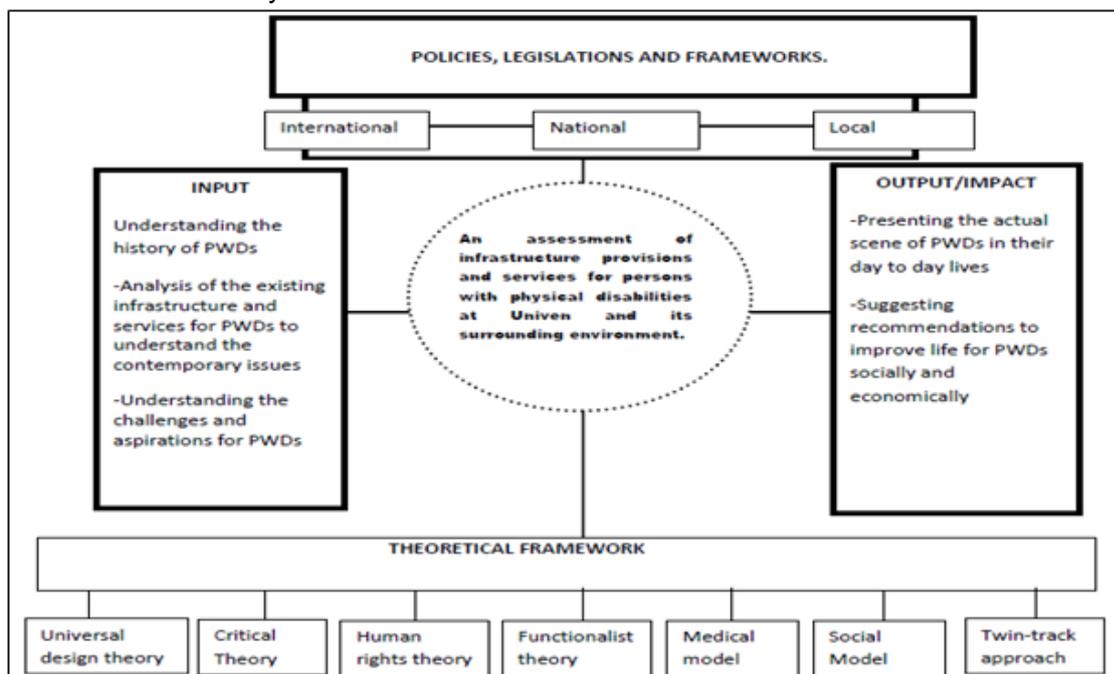


Figure 2 Conceptual framework

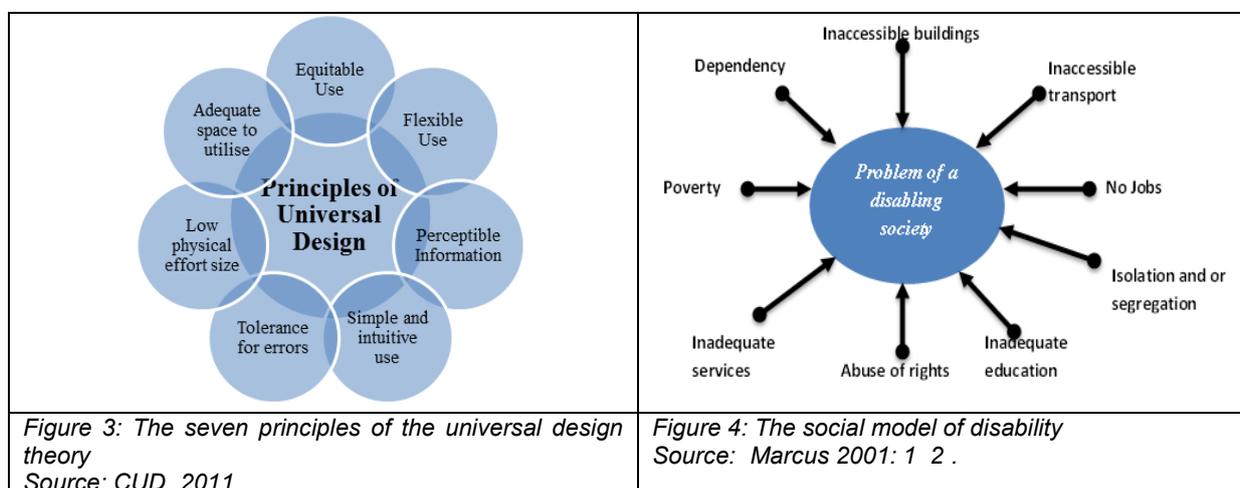
Source: Authors own conceptualisation 2016

3.1: Major theories guiding the study

The universal design theory and the social model of disability acted as the guidelines of the researcher throughout the study.

3.1.1 The universal design theory and social model of disability

The term *universal design* was coined by (Conell and Mace, 2008:58) to describe the concept of designing all products to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life. Universal design has been defined as a strategy that is aimed at ensuring accessibility and use of services, information technology, communication, products and environments by all people to the maximum, with a greater emphasis on the people with disabilities. At the same time, unlike the medical model of disability which blames persons with disabilities, the social model of disability outlines that disability is socially constructed, Hughes, (2009:309). In their view disability is caused by the barriers that exist within society and the way society is organised rather than by a person's impairment or difference. According to Shakespeare (2006:36), society discriminates against people with impairments and excludes them from involvement and participation. Figure 3 presents the seven principles of the universal design theory, while figure 4 presents the social model of disability.



From figure 3, we can deduce that the universal design approach is aimed at ensuring maximum use of the above by all people with ease. This is made possible through the application of the seven principles of universal design which are equitable use, flexible use, perceptible information, simple and intuitive use, tolerance for errors, low physical effort size and space for approach and use. These principles are meant to guide the design process and educate both designers and consumers about the characteristics of more usable product and environment CUD (2011) (Refer to Figure 3). In contrast and complimentary to the universal design approach, the social disability model (refer to Figure 4) brings disability in perspective, seeking to identify the underlying structural causes. The social disability model identifies the design of the built environment and our society as fundamental to the challenges of integrating PWDs in the society and by extension the built environment. From figure 4, it can be argued that if the society did not discriminate people environmentally and socially, then disability would not exist. Overall, the social model explores ways of removing barriers that limit the choices of persons with disabilities.

4. Discussion of results and findings

4.1 Existing policies, frameworks and legislations for persons with disabilities

Policies, frameworks and legislation at all scales exist all aimed at tackling PWDs issues. Table 1 presents a high level summary of International, continental and national policies, frameworks and legislations that are relevant to PWDs matters. From Figure 5 we can deduce that the general political and legal framework on disability was given by the UN Convention on the Rights of Persons with Disabilities (UNCRPD).

International	Continental	National (South Africa)
UN Convention on the Rights of Persons with Disabilities (UNCRPD) The United Nations (UN) standard rules on the Equalization of Opportunities for people with Disabilities	Declaration of the African Decade of Persons with disabilities (1999- 2009) Continental Plan of Action for the Africa Decade of Persons with disabilities: 1999-2009. February 2002, Proclamation number 4	Constitution of the Republic of South Africa The Bill of Rights (Chapter 2 of the Constitution) Disability Rights Charter of South Africa The Disability Policy Guideline (2009) White Paper on an Integrated National Disability Strategy (INDS) 1997

Figure : Review of PWDs major policies, frameworks and legislations
Sources: UNCRPD (UN, 2006); UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities: 1992:13; Mohapatra, 2012:17; Janet et al., 2010:23.

From Figure 5 we can deduce that the :United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) recognises the importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, to enable persons with disabilities to fully enjoy all human rights and fundamental freedoms. The UNCRPD, (UN, 2006) provides vast opportunities to increase awareness of disability around the world. The convention was based on the social model of disability, which focuses upon equal access; social opportunities; health; education; employment; political, economic and social development; and elimination of legal and social barriers (McClain-N, (2010:23). Mohapatra (2012:17) states that following the UNCRPD coming into force, development institutions and professionals have recognised disability as a key issue inevitably linked to poverty, in the recognition of human rights and citizenship. The Declaration of the African Decade of Persons with disabilities (1999- 2009) regarding access and mobility the declaration states, it explains that the built environment throughout Africa has been designed without due consideration for the special needs of persons with disabilities. Physical obstacles and social barriers prevent citizens with disabilities from participating in community and national life. According to Article 16 of the continental plan of action for the African Decade of Persons with Disabilities, the goal of the decade is the full participation, equality and empowerment of people with disabilities in Africa. In South Africa, the Preamble to the Constitution records South Africa’s commitment to the attainment of social justice and the improvement of the quality of life for everyone. The Disability Policy Guideline of 2009 in South Africa does not only focus on the commitment to improve public buildings to be more user-friendly, but also strives to economically empower persons with disabilities. The primary objective of this Policy Guideline is to move from policy to practice, through a set of commitments to disability policy including ramps, parking, and public buildings. Overall, the White Paper on an Integrated National Disability Strategy (INDS) of 1997 emphasizes the need for an accessible environment and acknowledges that barriers in the built environment prevent people with disabilities from participating in society. It represents a paradigm shift in the conceptualization of disability from the medical or welfare model (which views persons with disabilities as unable to be productive and in need of care) to a social model that recognises the rights and the fact that disability is a human rights-and developmental issues.

However, despite these guidelines and efforts at international level, disabled people have limited access to most livelihood opportunities. Nevertheless, a process of establishing Disability Desks and Units in local municipality offices is still on-going. The responsibility of the office, from national to municipal level, is to coordinate, facilitate and monitor the Mainstreaming/Inclusion of Disability issues into all sectors within the Government. Apparently the Integrated Development Plans of the local municipalities contain a small section which caters for persons with disabilities although they are classified in same group with women, youths and the elderly under the umbrella name of people who need special considerations.

4.2 Organisations that represent PWDs in South Africa and the rest of the world

There are many different types of organisations of PWDs, ranging from 'impairment specific' to cross-disability from grass roots to global. Here are some examples, to demonstrate the diversity of the community of organisations for PWDs. Figure 6 presents some of the organisations for PWDs in South Africa and the rest of the World.

PWDs Focus Area	Name
Impairment specific-national level	DEAFSA, Deaf Federation of South Africa or Malaysian Spinal Injuries Association
Impairment specific –global level	World Federation of the Deaf or World Blind Union
Cross disability-national level	Albanian Disability Rights Foundation
Cross-disability, regional level	Southern African Federation of the Disabled
Cross disability , global/international	Disabled Peoples International
Grass roots/self-help groups	Clarendon Group for the Disabled, local group working at community level in Jamaica
Parent organisations	RBU, the Swedish Association for Children and Young People with Mobility Impairments
Women with disabilities	AWWD Association for Women with Disabilities, India.

Figure 6: Some of the organizations for PWDs in South Africa and the rest of the world.

Source: SO 2006:38

From Figure 6 we can deduce that PWDs organisations exist at all levels from municipal, district, regional, continental to national. Key to the success of PWDs initiatives and interventions is partnership and collaboration so that increased success can be achieved.

4.1: Sociodemographic variables Age, gender, language, marital status, occupation and source of income

The data shows that the majority of the PWDs studied lies between 15 to 25 years. The 26 to 35 age group also occupied 38 percent of the study. The age group of 36 to 50 years was 2 percent which was the same percentage as the age group of 51 years and above. The results suggest that it is a middle aged dominated survey with most of them being students. A lower percentage of those from 36 years and above might be possibly explained by the fact that historically persons with disabilities were denied completely their access to services like education, hence a lower literacy level. The majority (52%) of the respondents are females while males constituted 48 % of the study. Females exceeded males by a margin of 4 percent. This may possibly indicate that gender inequality in educational institutions is gradually being eradicated. 52% of the sample respondents are Venda, 32% are Swati, 10% are Sepedi, and 2% are Zulu whilst other ethnic groups are 4%. The largest proportion of the

Venda is rooted in the history of the study area which once was the capital of the Venda speaking people.

The results indicate that the largest proportion (90%) of persons with disabilities are single with only 1% of being married. The results can be possibly explained by the concerns which were raised by the respondents that the so called normal people tend to ignore PWDs when it comes to relationships. Some able bodied people only turn to PWDs in times of need just because they earn some income from the disability grants. The 2% of divorced people might be due to the fact that some people dump their spouses when they become disabled after incidents like car accidents. The results indicated that the study was mainly composed of students (95%), 4% of the respondents are employed by the institution.

4.2: Level and source of income

The collected data revealed that all respondents earned an income of more than 5 000 rands per month. The results maybe possibly explained by the fact that persons with disabilities in South Africa earn a disability grant of 5 000 rands. Since some of them are employed by the institution and some are also supported by their families and well-wishers it is possible that all of them can earn an income like that. Data collection revealed that 95% of the respondents earn the disability grant. 5 % of the respondents are employees of the institution

4.3: Determination of the type and cause of disability

Out of the 60% of people with single disabilities, people who are lame constituted the highest proportion. 40% are having a combination of disabilities. Data revealed that the largest proportion of persons with disabilities were born like that. A very significant population also indicated that their disabilities were caused by car accidents. This can also be possibly explained by the high rate of road accidents in South Africa. Some were caused by workplace injuries. However a very small population were disabled due to lack of immunization.

4.4: Response towards the overall rank of the level of infrastructure and service provision for PWDs around the institution

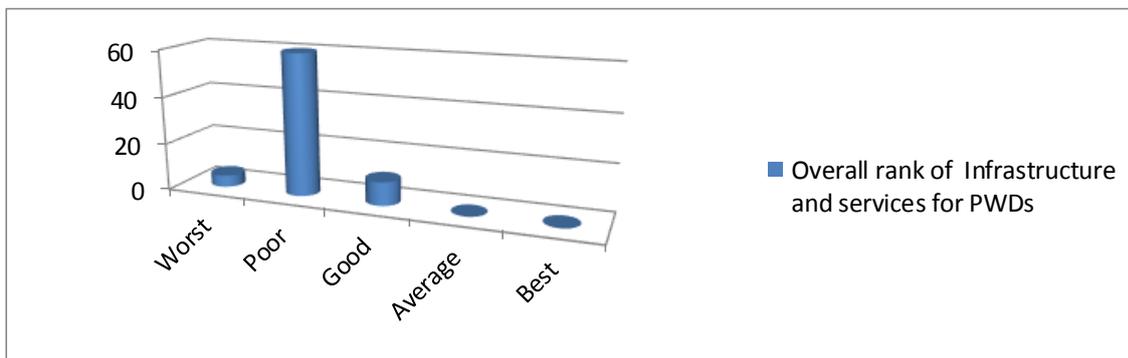


Figure overall rank of the level of infrastructure.
Source: Fieldwork 201

The majority of the respondents as shown above indicated that Univen is generally poor in terms of provisions of services for PWDs. This can be explained by the following challenges as indicated by the respondents.

4.4: Challenges being faced by PWDs

A number of challenges were raised by the respondents in terms of the availability and accessibility of the existing infrastructure and services. The following challenges were reported:

Challenge	of respondents
Steep gradients of pavements, paths and some of the ramps.	100
The entrances of some buildings like the school of Management Sciences contains stairs only.	100
Student hostels limited to only two ground floor residences for PWDs.	100
The only stadium at the institution contains stairs only, which means PWDs are only accommodated on the very first store, which makes it difficult for them to watch any activities in the stadium at a closer view, other than as an overview.	75
Alternative ways during road construction/renovations are unfriendly to PWDs	100
Outside the Disability Unit Block, services for the blind are not there.	55
Lack of sporting facilities.	100
Buildings accessible either inside or out, instead of both	100
The mindset of viewing infrastructure for persons with disabilities as expensive.	80
Limited participation in the infrastructure and service provision planning	98
Timeframe taken to respond to complaints too long eg faulty lifts	100

Figure 8: Summary of major challenges

Source: Fieldwork 201

4. : Discussion of challenges

Sporting facilities like the university's stadium is lacking a podium for PWDs. It is full of stairs and they can only use the very last stair to watch any activities in the stadium of which it is very difficult to watch at a close view. The soccer pitch is completely inaccessible to PWDs. There are no terraces at all. There are no lifts to access other floors of the students' residents. It is only accessible on the ground floor only. The department of urban planning and school of management is inaccessible because there are no lifts. The library lifts are very old and risky to the extent that they now have a tendency of locking people inside, yet the complaints have not yet been addressed. The street environment lacks, resting places, and ramps. There is inadequate lighting along pavements and it becomes hard for PWDs to use it during the night. PWDs are sharing the same main road with motorists and if it is raining stagnant water is splashed onto them. The ATM machines lack braille services for the blind.

5. Recommendations

This section presents the proposed strategies/ways, procedures and initiatives that the researcher deems necessary in order to address issues associated with planning for infrastructure and services for persons with disabilities. The analysis also shows that Univen and its surroundings do not have adequate infrastructure and services for persons with disabilities. From the summary of the main findings, it evidenced that the major challenge is that PWDs are not being involved in all the steps of the planning process.

.1: Buildings

The needs of PWDs are not implemented adequately in the designs of infrastructure.

Hence persons with disabilities tend to be dependent on others, whenever they need to utilize the different services rendered in different buildings. There is a need to introduce regulation at the issuance of permit for the construction of buildings. The regulations should entail that the design of entrances, door openings, and corridors should cater for PWDs. The design of buildings with stairs and stories discourage PWDs if there is no consideration to the mobility issues of persons with disabilities. Elevators with braille buttons should be introduced.

.2: The Street Environment

The study discovered that the street or pedestrian environment is posing a very big threat especially to the blind and wheelchair users. Univen does not have a system to warn and inform the blind. As a result of some irresponsibly left street works, falling into potholes become the everyday experiences of the blind. In order to minimize the problems that people with disability face in the street environment the following points should be considered. There should be addition of more arrangements in the streets such as curb ramps to help wheel chair users use the foot way and the visually impaired cross the road. Street works should be fenced and watched over or covered immediately. Foot paths should be free of barriers such as electric poles, and other barriers. There should be differentiation between paths for people and cars. Barriers like ditches and potholes should be covered in pavements and paths. There should be provision of audible traffic signals to inform the blind.

5.3: Institutional Settings

The study found out that there is general lack of concern from the side of some of the planners and responsible people to disability issues. Data revealed that some of the responsible stakeholders do not seek the participation of PWDs fully whenever they plan for the study area. Instead they wait for persons with disabilities to complain first then they respond. Lack of coordination among different stakeholders is one other thing that was raised by the respondents. Therefore persons with disabilities should be consulted and mix with the rest of the society to access education, employment and other social life activities.

.4: Introduction of Access advisors

A number of local voluntary organisations representing persons with disabilities, as well as some public and private organisations have advisors who can carry out access audits for constructions. There are also individual consultants working in this area. In other parts of the world like Northern Ireland there are accredited access auditors who are always consulted in each and every development in the built environment. This can also be implemented as well in all the built environments of South Africa. There should be introduction of access advisors, who specifically represent PWDs.

. : Suggestions on policy implications

Policies like the African Decade of Persons with Disabilities (1999-2009) cannot achieve goals without considering the mobility and accessibility of persons with disabilities. Hence, some fundamental points should be set. Here are some suggestions that the researcher thinks can create a built environment that is accessible and suitable for mobility.

- Univen Physical planning department should formulate a policy specifically for persons with disabilities.

- Involving PWDs even during the plan preparation stage for the institution.
- Initiating awareness programs concerning disability issues to everyone.
- Responsible authorities can start a temporary program of action to make the existing built environment accessible, whilst they construct universally designed new buildings.
- Revising the currently drafted Univen operational plan in a manner that caters for PWDs.
- Engaging architects, construction engineers and all others who are involved in design and construction of the built environment regarding the special needs of PWDs.

STRATEGY	PROJECT	TIMEFRAME	RESPONSIBILITY
Disability awareness	Initiating voluntary disability awareness/alert programs to everyone through posters, emails, mass education programs	Short term	UNIVEN community.
Including disability issues in the relevant policy-making issues	Initiating public participation programs and meetings to involve PWDs. Start a temporary program of action to make the existing built environment accessible, whilst they construct universally designed new buildings.	Short term	-The department of strategic planning at UNIVEN -The committee for persons with disabilities at Univen
Formulating access audits	Auditing: Analysis of the whole study area to come up with lacking areas	Short term	Staff members
Introduction of professionals and offices specifically to cater for PWDs services.	Introducing access advisors	Medium term	The department of Human resource management at Univen
Strategic planning	Creating a master plan for universal design at Univen & implementing demonstration projects	Long term	The department of physical planning at Univen

Figure : Summary of Proposed Strategies

Source fieldwork 201

Suggesting detailed technical guidelines and standards was beyond the scope of this study, however the researcher is going to mention general features that could be incorporated in buildings design.

- Ramps should be built at the entrances of all entrances around the area
- Doors and corridors should be wide enough to allow accessibility and mobility with people who will be using crutches and wheelchairs
- Whenever there is no provision for lifts in buildings alternative services should be offered on the ground floor.
- Special toilets should be constructed at convenient places to cater for PWDs
- All elevators, conveyor belts and lifts should have braille buttons to accommodate the needs of the blind

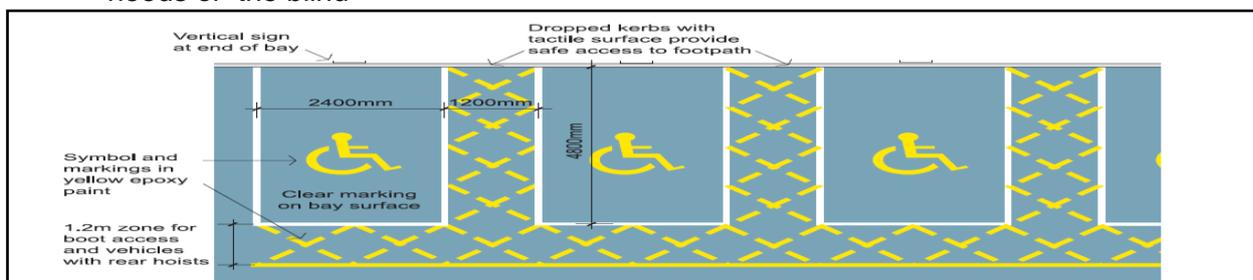


Figure 10: Accessible car parking bays

Source: AS NZS 200

Parking Bays must be located as close as possible to the main entrance of the building. If the pathway to the entrance is uncovered the distance to the entrance must be no more than 50m; this can be increased to a maximum of 100m if the pathway is covered. The car park

surface must be smooth and even. Unbound surfaces such as gravel are not acceptable. Kerbs must have dropped sections at all points where wheelchair users may want to cross. Tactile indicator paving should be provided at these points to show visually impaired people where they may conveniently cross.

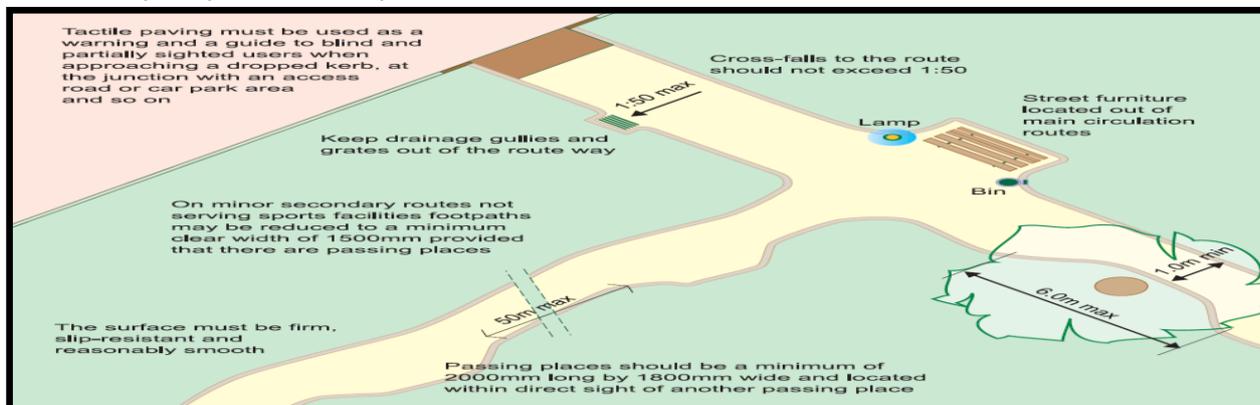


Figure 11: Designing access routes and the pedestrian environment

Source: AS NZS 200

Street furniture such as lamps, bins and soon must be out of the route way. All surfaces must be slip-resistant in all weather conditions. Signs should be part of a carefully considered, comprehensive signage system to ensure that they are carefully located, clear, simple, logical and non-reflective. The maximum gradient for footpaths is 1 in 21 anything steeper than this is defined as a ramp and must comply with specific requirements. Careful design of planting schemes will aid location by providing scent and colour clues and in some instances can provide key landmarks for the visually impaired user. Ensure plants do not overhang route ways. On access routes on level ground provide resting places not more than 50m apart for people with impaired mobility.

6. Conclusions

In a nutshell the study concluded that any programs aimed at promoting rural development through women, should include all aspects of literacy including e-skills development. The contribution of women is limited by lack of access to resources and persistent traditional beliefs which need to be addressed to allow the realization of their full potential in rural areas. According to Prakash (2003:31), poverty cannot be defined simply in terms of lacking access to sufficient food. It is also closely associated with a person's lack of access to productive assets, services and markets. Without access to these, it is unlikely that production and income earning capacities can be improved on a sustainable basis. The study stressed the point that rural development strategies can only be successful if there is integration of e-skills and resources of all residents to meet their different needs according to their levels of potential.

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Transformation of public space in terms of politics and power: the case of Beyazit Square

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Abstract: *The purpose of this paper is to understand transformation of the role of public space in the case of Beyazit Square, İstanbul. Historical background of public space, which is one of the main elements that creates urban symbol, will be examined in this context. Following part of paper will try to propose some decisions or politics to get some clues from the history for the existence of public space by being supported with the theoretical framework of critical urban intellectuals whose studies focus on space, power and time.*

1. Introduction

Public spaces are intersection and integration points in which almost all levels of society come together, meet at a common node and try to tell themselves sometimes with supportive discourses or by protesting. Public spaces are not only design-minded areas but also be formed as a result of collective memory process of society. They also represent as ideological icons which impose different ideas and ideals based on politics or policies for particular levels of society. Especially for this reason, it is critical to understand the role of public spaces in time and give solutions by preserving some clues from the past (or history). However we can see not only in Turkey but almost all over the world, each government want to create their own power images by using the public spaces and as a consequence of that process, significant public spaces with historical background and collective memory lose their power related to politics in time.

Here is the problem that, not only losing power of public spaces but also lose of cumulative collective memory. Common points are demolished in which all levels of society meet and therefore as a result of these applications it gets harder to integrate to the society for all and segregation problem rises by that way.

The purpose of this paper is to understand transformation of the role of public space in the case of Beyazit Square, İstanbul. Historical background of public space, which is one of the main elements that creates urban symbol, will be examined in this context. Following part of paper will try to propose some decisions or politics to get some clues from the history for the existence of public space by being supported with the theoretical framework of critical urban intellectuals whose studies focus on space, power and time.

1.1. About research

1.1.1. Problem

The problem is not only about the pressure of politics/power or public space's losing its power; it is about the public concept's breaking down, not serving to the society any more. With this demolition, the public spaces which are common / interaction / integration / intersection points in which all levels of society come together, are transformed into completely different concepts. Therefore as a result of these processes it is getting harder to integrate to the society for all and segregation problem is rising with that tool.

1.1.2. Purpose

The purpose of this paper is trying to understand the process of how public spaces lose their power. Historical background of public space, which is one of main elements creates urban symbol, will be examined in that regard. Following part of paper will try to propose some decisions or politics to gain power again for the existence of public space.

1.1.3. Theoretical framework and the relationship with the problem

At the beginning of the research, for theoretical framework an urban intellectual Doreen Massey's perspective was surveyed and investigated. Her main fields of study are globalisation, regional uneven development, cities, and the reconceptualisation of place. She has many academically studies on gender in economic and social processes, theorization of 'place' and the concept 'space-time'. Even though she has also many studies on public space and its relationship with many other fields, for the problem which will be examined in this paper, it is needed more theoretical, more precisely and sharp borders to make some interpretations and discussions. That's why, for the theoretical framework, firstly Jürgen Habermas's public sphere theory was examined to understand better the concept of the "public" and its transformation through time periods. And for the transformation of space in terms of power, Henri Lefebvre's theory about the production of space regarding to the power issue was examined by associating the theories with the case study.

2. Jürgen Habermas's public sphere theory

It will be appropriate with starting the notion of "public". And it will be conformable to ask that question. If something is "public", what is the meaning of that "public"? In this section, some answers will be looked for to understand the notion of "public". In this regard, Jürgen Habermas, who was born in 1929, is a German professor of philosophy, sociologist and political scientist, and his theory related to the public sphere can lead us although Habermas' public sphere opinion is criticized by some important academicians such as sociology professor John Thompson from University of Cambridge or Michael Schudson from San Diego University of California. Habermas says "*We call events and occasions 'public' when they are open to all, in contrast to closed or exclusive affairs. And the notion of the public is related to the notion of the common.*" According to the Habermas, "*Public sphere is a product of democracy. The concept of public opinion is the control and criticism of organized political authority. The public sphere was coextensive with public authority. Society engaged in critical public debate*".

Jürgen Habermas says that there are some conditions of public sphere. Firstly it is essential of the formation of public opinion and all citizens without making any segregation should have access to the public sphere. The rest two conditions of the public sphere form of "*conference in unrestricted fashion*" which emphasizes the significance of the notion of "freedom" and final condition is the debate issue which is able to discuss the general rules moderating relations.

The notion of "public sphere" consists of variable elements which are mainly divided to 4 categories as voluntary associations (citizen action organizations, nonprofits, civic organizations or political parties etc), public media infrastructure (internet, open source technology etc.), expression tools (newspapers, journals, books, lectures, debates, forums, music, art etc.) and public spaces (coffee houses, taverns, town squares, parks, etc.) which

will be examined that kind of public sphere in the paper (URL-1).

2.1. Transformation of public sphere

Referencing from the work of Habermas' "*Structural Transformation of Public Sphere*", this section will try to show how the notion of public sphere has changed through time.

This transformation period can be started with the Antique Age. In Antique Greek, for example, *agora* was the major public space which people come together and debate about some issues. But there were still some rules of this participation. Participation was based on free male citizens in *agora* in Ancient Greek and slaves, foreigners or barbarians and women were not included in this public sphere.

In Medieval Age, cities which focus on non-agricultural economic activities and where power is manifested emerged as privileged places. It is really hard to mention the presence of public sphere, because of the indisputable sovereignty of power and the presence of church. As an example of public sphere, just the presence of some merchant guilds where relatively wealthy people which deal with trade, commercial things come together.

And then representative public sphere comes. Here the public is in the position as spectator which means a passive position, just watching and respecting to the events such as ceremonies, invitations, religious ceremonies etc. While public take part as spectator, power is in the position of performing which is an active role.

After the representative public sphere, literary public sphere comes which consists of public press, coffeehouses, salons etc. as reflection to space.

Bourgeois public sphere follows the literary one. The power issue is critical in bourgeois public sphere and is felt itself as much as possible.

And then a very familiar period reveals as capitalism. The consumer society hits the mark to this period. And there are no more public activities any more. Instead of public activities, "group events" are popular and consumed by society at that time. This period is called "the fall of public sphere".

And finally the point the society has reached consists of the elements of mass culture, religion and social movements.

3. Henri Lefebvre's the social production of space

In this part of the paper will examine the relationship between public sphere and power issue. In this regard, Henri Lefebvre who was born in 1901 is a French Marxist sociologist, intellectual and philosopher.

He introduces social space which is the space of social life of social and spatial practice to bridging the gap between "mental space" and "real space". According to Lefebvre social space is a social product. And every society and mode of production produces its own space. The production of space has a central role in Lefebvre's thinking. Lefebvre says "*space as a social and political product, space as a product that one buys and sells.*" As a result of productive system of capitalism, commodification extended to space as built environment, physical environment etc. Organization of environment and society, layout of town and regions are all dependent on production of space and its role in reproduction of socio-

economic formation.

According to Lefebvire, space is a production of social relations and struggles.

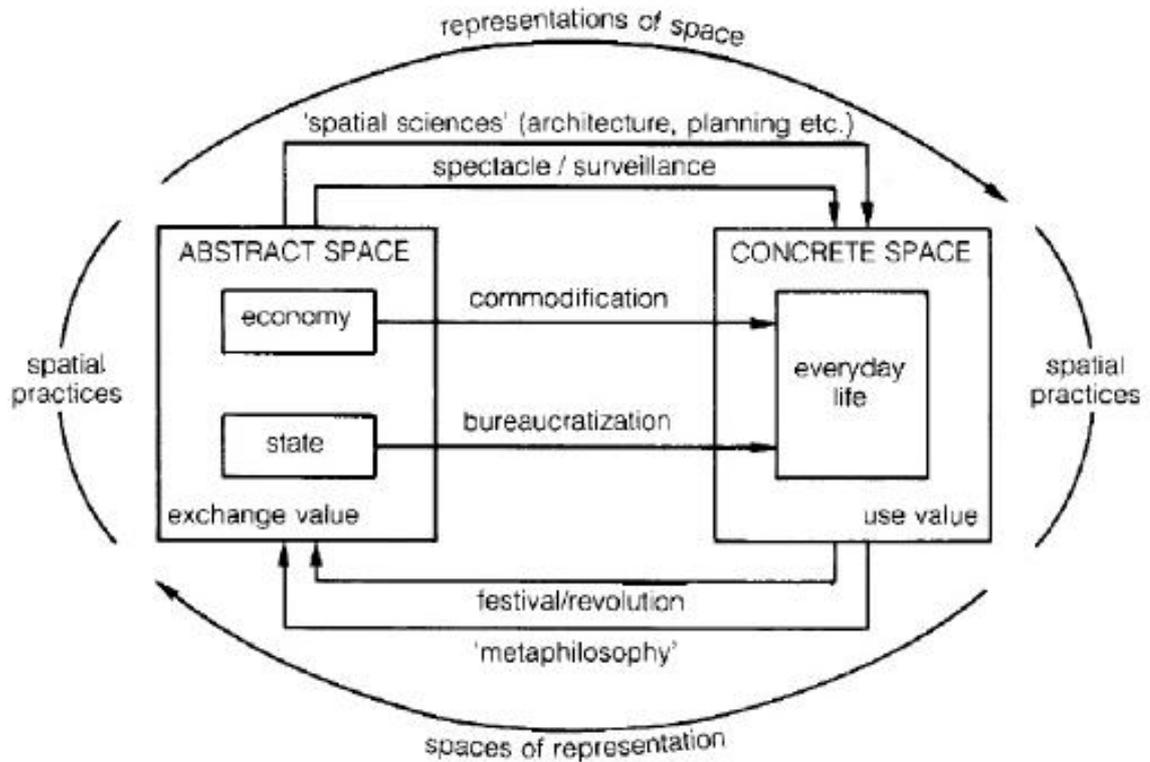


Figure 1: Production of Space 2: The colonization of concrete space (Gregory, 2011).

There are some definitions related to the absolute (concrete) space. To Aristotle, absolute space is the space as a container of all objects. Newton saw space and time as real things and again "containers of infinite extension and duration". Absolute space (contextual space) is "clearly distinct, real and objective space". It is a dimension which focuses on the characteristic of things in terms of their concentration or dispersion.

According to Lefebvre, reproduction of capitalism in 20th century is materialized in a way. He describes this way as commodifying the space. By commodifying the space; concrete space (absolute space) which belongs to the public such as urban spaces, squares, parks, streets etc. turns into the abstract space which belongs to state and is interconnected with the term of capital, control, pressure, power etc. And from now, space is a strategic commodity.

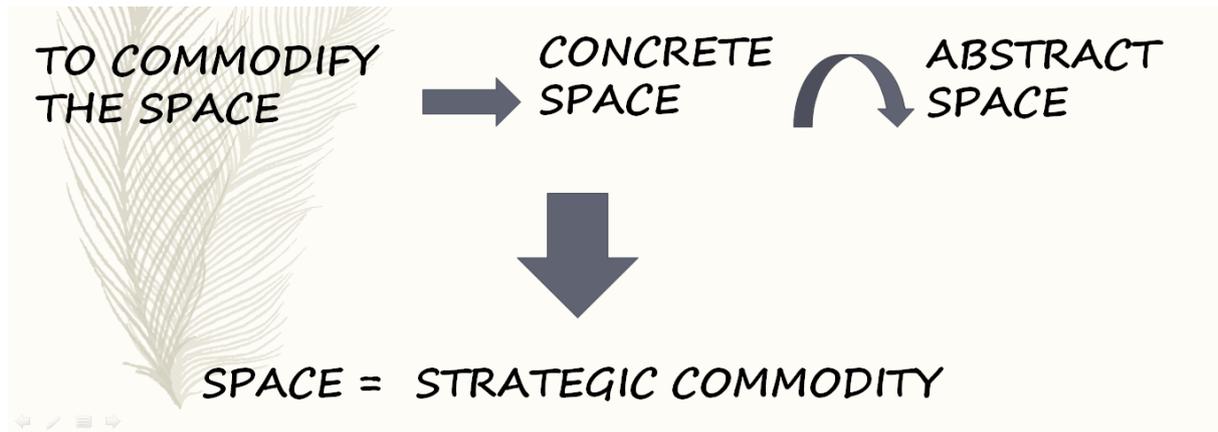


Figure 2: Conceptualizing transformation of space related to Lefebvre's theory.

4. Methodology and the data

To structure the research design, firstly appropriate theories which belong to urban intellectuals were researched. To relate the space and power issue, Jürgen Habermas' public sphere theory and Henri Lefebvre's social production of space theory were examined briefly by investigating the scope of theories. In the case study part, Beyazit Square was studied. The reason to choose this public space is that there are many studies about other relatively more popular public area and public spaces such as Gezi Park, İstiklal Street or Taksim etc. But about Beyazit Square, there are more design-minded, design-oriented studies. The number of studies related to the significance and transformation of this space are really limited. Because of that reason, I wanted to just expand the perspective and change the direction of attention. Since, Beyazit Square which has critical historical background is a unique case area. In the case study part, firstly the current location was given and then historical process of the space was examined based on critical years and some photographs to understand the transformation of physical space. And finally actual, on agenda processes, projects about the space were investigated. In final part, these processes and the actual point reached will be tried to associate the theories.

5. The case of Beyazit Square

5.1. General information regarding to beyazit square

Beyazit Square is situated in the European part of İstanbul in the Historical Peninsula. It is officially named *Freedom Square* but known as Beyazit Square after the Beyazit Mosque.



Figure 3: Location of Beyazit in historical peninsula.

As seen in the map, the square is surrounded by historical structures which are Beyazit Mosque, the main entrance gate of İstanbul University and university's other faculties, Beyazit Bath, İstanbul University Library etc. And there are two main roads around the square, they are Ordu Street which has also tram way in and Vezneciler Street.

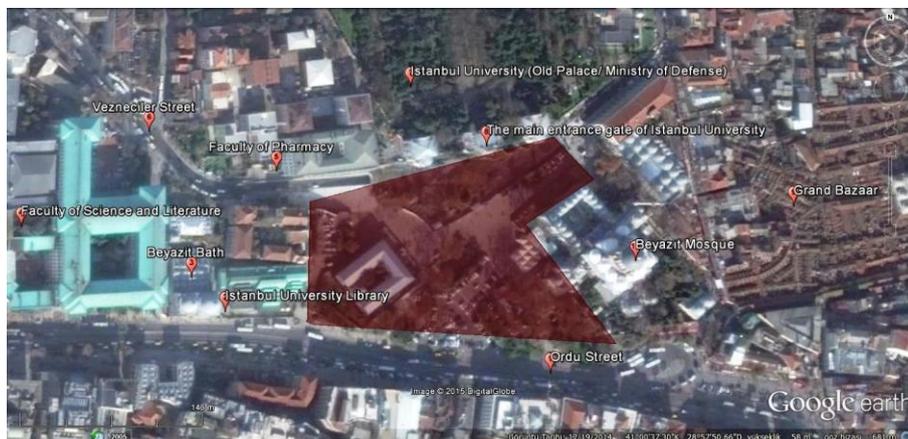


Figure 4: Location of Beyazit square.

5.2. Historical development of Beyazıt Square

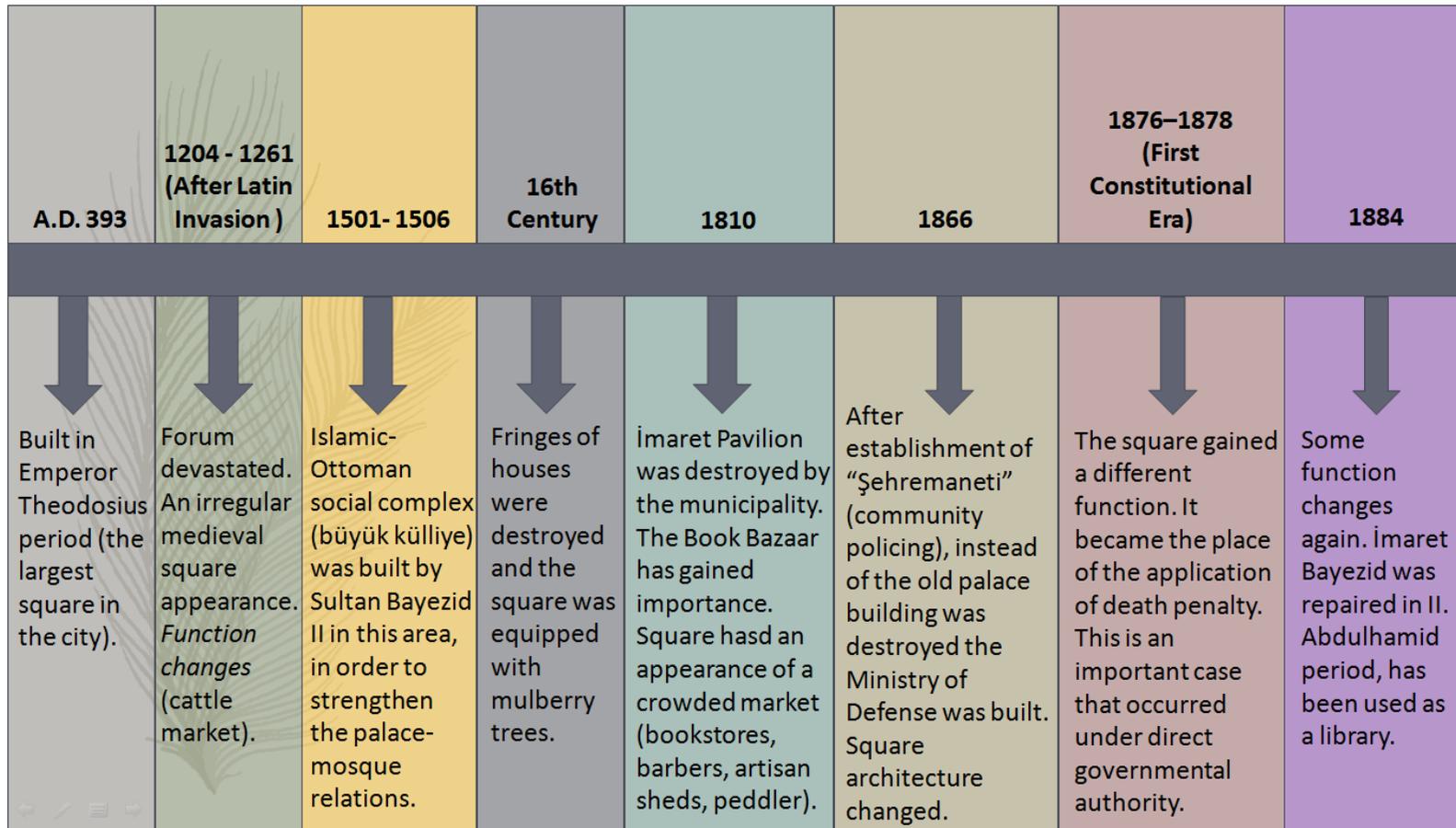


Figure 5: Historical development of Beyazıt square.

Square has become an important place in the cultural sense in 20th century. Rearranged by architect Kömürcüoğlu in 1923-24 (with the Republic). During this period, Beyazıt-Taksim Metro project was planned.

In 1933, the building of Ministry of Defense has been given to the building of Istanbul University (Dökmeci, and Dülgeroğlu-Yüksel, 1996).

In same year, contract with H. Prost for Istanbul Master Plan. Dilapidated buildings in surrounding historic env. were demolished . Square identity came to the fore (Hatipoğlu, 1994). In 1939, Beyazıt Madrasa was repaired and arranged as Municipal Museum and Library. Since 1945, it is being used as a municipal library. As the buildings of University of Istanbul developed in 1942-43, dimensional characteristic of the environment changed. Between the years 1955-57 new innes and businesses were made across the square under 'Istanbul Development'. During this period, expansion of road and related arrangements affected the square and historical structures(bath and madrasa) negatively (Increasing of commercialization) (Yıldız, 2007).

In 1961, Istanbul Municipality decided to practice the project made by Cansever to create a pedestrian-oriented ceremonial square (Dökmeci, ve Dülgeroğlu-Yüksel, 1996).

Apart from the some planning arrangement, Beyazıt Square has also witnessed to some politic protests. In 1915, 20 Armenian activists were hanged in the square (power demonstration of government). The square has beed the site of Bloody Sunday in 1969 and Beyazıt Massacre in 1978.

6. Conclusion

Beyazıt Square is a substantial public space which has significance historical accumulated background, in the heart of historical peninsula, is used by students, university staff, tourists, artisans. This space is used by many people who live, work or goes around there as public space or just a transition area. Not only today, in past, the square witnessed many important political/non-political events. But today, we see that state or power see public spaces in which all levels of society come together, spend time and express them as a threat. And every state, every power try to create their own power area as imagery space and demolish other powerful public spaces to delete the society's collective memory. While materializing this process, public spaces are being commodified by commercialization, power of the state, pressure on people, limiting and interfering to people in these public spaces. As consequences of these different desires (perspectives/interests/expectations) on public space, our public spaces are being transformed. As conclusion, transformation and conflicts lived in political and economic aspects in continuing process shape urban spaces. At the same time, these conflicts are visible in the space and experienced spatial transformations change format according to size and speed of these conflicts.

6.1. Referring to the theory

The social struggle processes reflected to the space brings radical transformations. These radical transformations can be called as "winning one" or "losing one". We can read/see this process in terms of spatial processes. Especially referring to Lefebvre'e theory; winning a space, -to be transformed into concrete space- doesn't mean that it will not return again to the abstract space.

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URL-1: <http://main.nc.us/>

Delivering sustainable urban infrastructure – a feasibility study of two Western Cape municipalities

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1. Abstract

This paper presents the investigation into the feasibility of an infrastructure paradigm shift for municipal services, away from the traditional models of delivery and towards a sustainability-centric response as an alternative. The study, commissioned by the Provincial Government of the Western Cape (Environmental Affairs and Development Planning) and undertaken by Aurecon South Africa, considers applying such responses to urban infrastructure within the municipal context of South Africa, by investigating the actual design of such settlements in two local municipalities, namely Swartland and Mossel Bay. This has ensured that the principles of sustainability have been grounded in real infrastructure responses that can be measured, quantified and costed.

At the core of the paper is a feasibility study of the impact of carefully selected, site-specific sustainable infrastructure interventions for the two sites, versus a Business As Usual approach to delivering urban infrastructure and housing. Through the development of a conceptual land use plan, the impact of various site-specific infrastructure options pertaining to water supply, waste water, energy, transport and solid waste management were assessed and quantified. Based on these findings, a financial and economic model has been generated to establish the various cost streams associated with the two sites, in terms of capital investment, maintenance, repair and refurbishment of assets and operations.

The outcome of the model demonstrates a direct comparison between a 'sustainable' infrastructure solution versus a Business As Usual approach, in terms of each cost stream. The findings demonstrate that tangible financial gains can be attained through alternative forms of infrastructure, while also highlighting the cash flow and capital requirements as well as the maturity of management systems that are essential to achieve a successful alternative infrastructure roll out.

2. Project Overview

The overarching purpose of this project is to undertake a technical feasibility study to investigate the options for sustainable infrastructure provision in the Western Cape and the sustainability of the application thereof across the lifecycle of a predominantly residential development. The potential of this innovative, resource efficient and sustainable solution is to be assessed through the development of two "Integrated Sustainable Settlements" in the Western Cape. Two municipalities, Mossel Bay and Swartland, volunteered to participate in the project as pilot areas. Two prime greenfield sites close to the Central Business Districts of Malmesbury and Mossel Bay were chosen, in consultation with the municipalities, for the feasibility study.

Our approach acknowledges that this study is not only about sustainable and alternative infrastructure or human settlements, but about the creation of the balance between all the factors which work together to produce sustainable and resilient urban environments. The need is therefore to foster an approach to human settlements and service delivery which realises human settlement sustainability through innovation and integration.

The overall approach considers each component of human settlements as part of the overall urban fabric, with the notion that sustainability and resilience can only be achieved if it is viewed across a range of spatial scales. Infrastructure, the housing unit, precincts and the city-regional scale are to be treated as interrelated and interdependent systems which will together give rise to a sustainable human settlement, and thereby the facilitation of sustainable and resilient environments and specifically incorporating the need for mixed use and mixed income settlement patterns.

This project had six phases, Phase 1 - Project Inception; Phase 2 - Establishment of Principles for Sustainable Human Settlements (SHS) and Site Selection; Phase 3 – Sustainable Infrastructure and Alternative Technology Review for Two Sites; Phase 4 – Integration, Optimisation & Concept Design; Phase 5 – Cost Benefit analysis and Financial Analysis and Phase 6 – Project Consolidation and Close-Out.

3. Key Project Outcomes – Principles for the Development of Sustainable Human Settlements (Phase 2)

The review of principles, policies and approaches provided significant evidence of key themes in the sustainable development space. The role of these principles is to guide what sustainable human settlements should strive toward achieving or what strategic considerations settlements should contribute to.

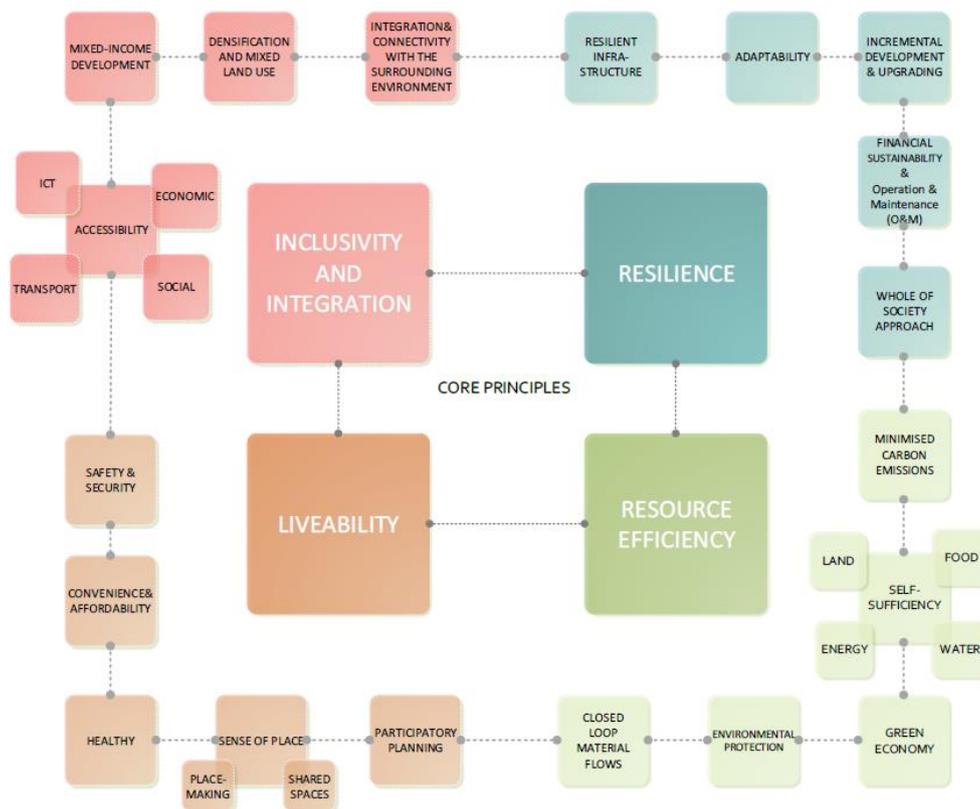


Figure 1: The identified principles for the Development of Sustainable Human Settlements

4. The use of Multi Criteria Analysis for site selection (Phase 2)

A multi-criteria analysis (MCA) was developed to provide an objective tool for the selection of sites appropriate for human settlement development. The site selection criteria focussed on land, legal and physical informants. These criteria/considerations were guided by and in line with the Sustainable Human Settlements core and secondary principles, insofar as was practical.

As a result of the outputs of the multi-criteria analysis, two sites were identified (one per municipality) as the most suited to testing the design concepts of a future sustainable human settlement. Focusing the study on two real sites, located within an existing urban context and fabric, helped to ensure that the concept designs and resultant infrastructure responses would reflect a study embedded in a real future human settlement.

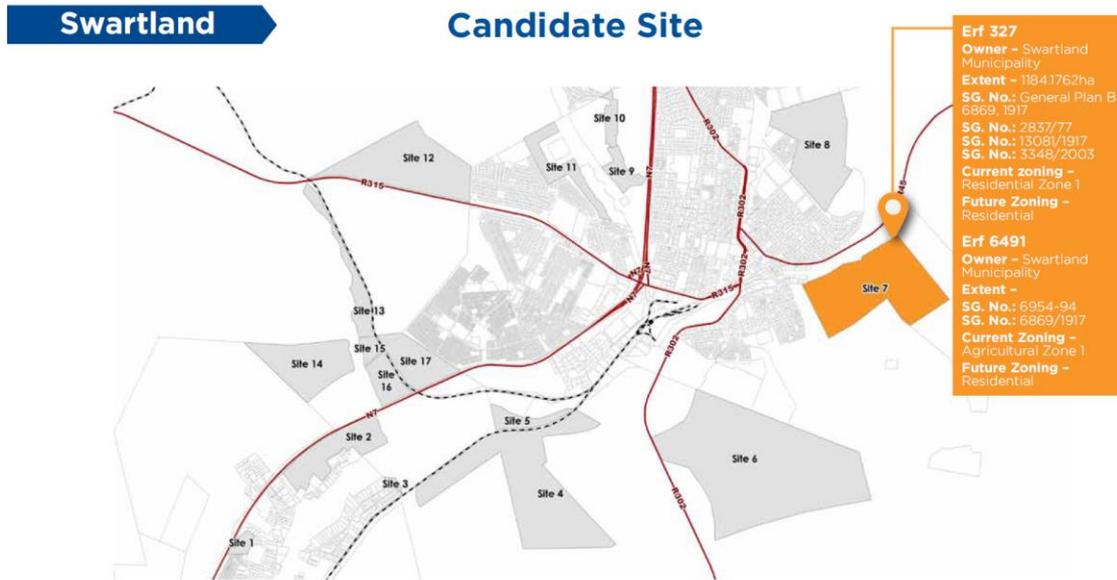


Figure 2: The selected Swartland candidate site

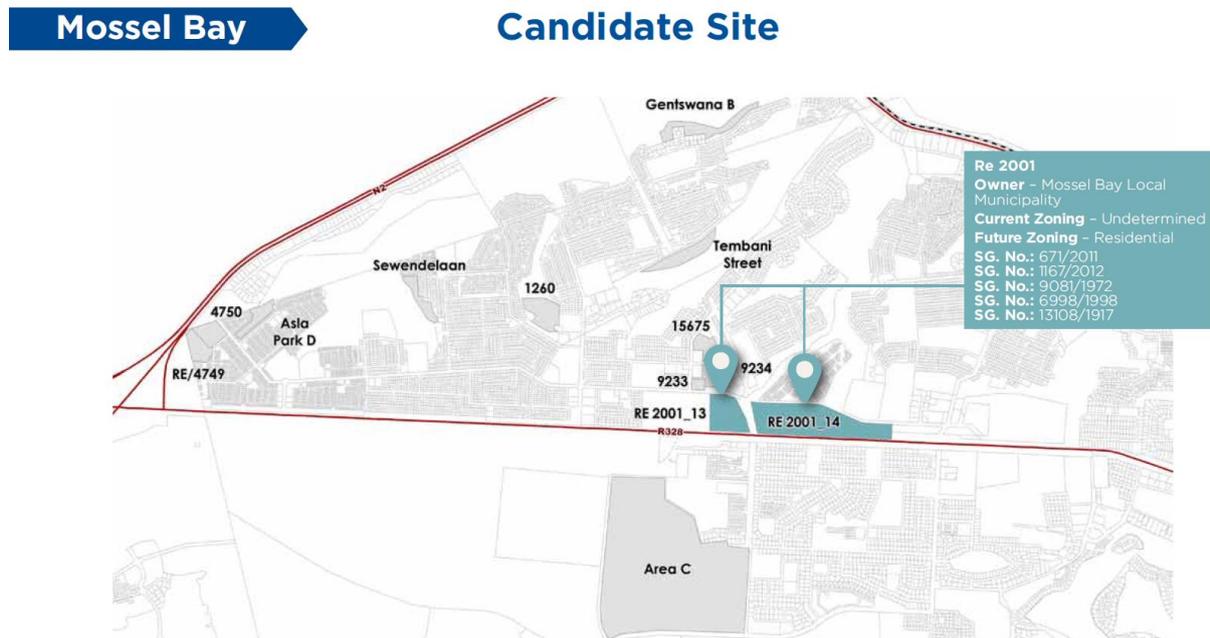


Figure 3: The selected Mossel Bay candidate site

5. Sustainable Infrastructure and Alternative Technology Review (Phase 3)

The purpose of this review was to challenge the 'Business-as-usual' approach to service delivery by providing sound technical alternatives to current approaches, norms and standards. Cognisance is taken that technical solutions, whether old or new do not exist in isolation. Rather, they are impacted on and impact upon social, legal, institutional and

financial considerations. The aim was therefore to explore the opportunities and constraints related to the delivery of municipal infrastructure in relation to these considerations, and more specifically the opportunities and constraints of creating an enabling environment for the delivery of more resource efficient, resilient infrastructure systems which will form part of integrated and liveable sustainable human settlements.

Five streams of infrastructure were investigated in terms of options and possibilities for implementation at a municipal scale. These streams included: water, energy, transport and roads, solid waste management and buildings or “top structures”.

A multi-criteria analysis table was used to provide a systematic approach to understanding the various opportunities and constraints associated with each intervention investigated. The findings of the infrastructure and technology review were used to inform possible interventions for each service type (water, energy, transport, waste) and for each site – Mossel Bay and Swartland.

Recommended sustainable technologies that were taken forward into the concept design and financial analysis phases were:

 Water	 Energy	 Transport	 Waste
Low flow appliances Low flush toilets Greywater system Rainwater harvesting	Solar PV Wind Localised biogas	Public transport viability Non-motorised streetscape design Permeable paving	Public drop off locations Localised organic separation for biogas

Much of the challenge of embracing alternative and sustainability-focused infrastructure in the real world is finding the balance between ‘innovation’ and ‘reliability’ through tried and tested forms of technology. This ensures that the study remains realistic in terms of real infrastructure that can be rolled out, at scale, with the requisite asset maturity to ensure functionality and fulfilling the service delivery imperative and responsibility of municipalities. The technologies that were selected represent this balance.

6. Fundamental Design Concept (Phase 4)

Two distinct, locally relevant and acceptable designs that are future ready were developed and used as a basis to calculate infrastructure solutions and costs.

Mossel Bay

Development Concept

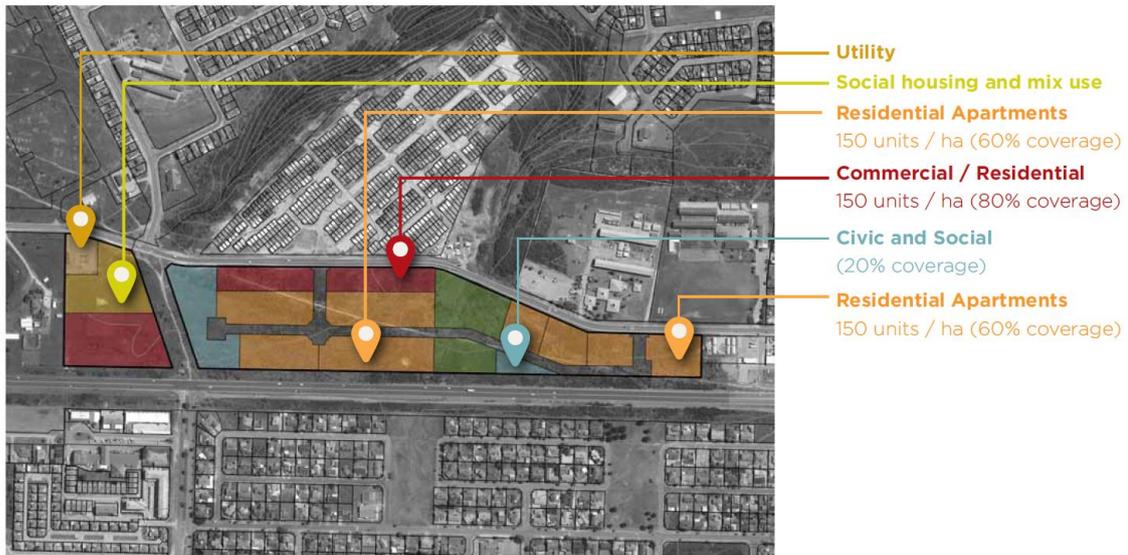


Figure 4: The Mossel Bay Concept Design for applying a sustainable infrastructure layout

Swartland

Development Concept



Figure : The Swartland Concept Design for applying a sustainable infrastructure layout

Each of the five streams of infrastructure were applied to both sites and the difference in consumption between the provision of “Business-as-usual” infrastructure services versus the selected sustainable technologies was identified. The figure below illustrates how each of the recommended interventions were assessed in terms of their contribution to either reducing demand or augmenting the supply of the specific utility. This illustration highlights Potable Water and Energy, for the Swartland site, during the winter demand months.

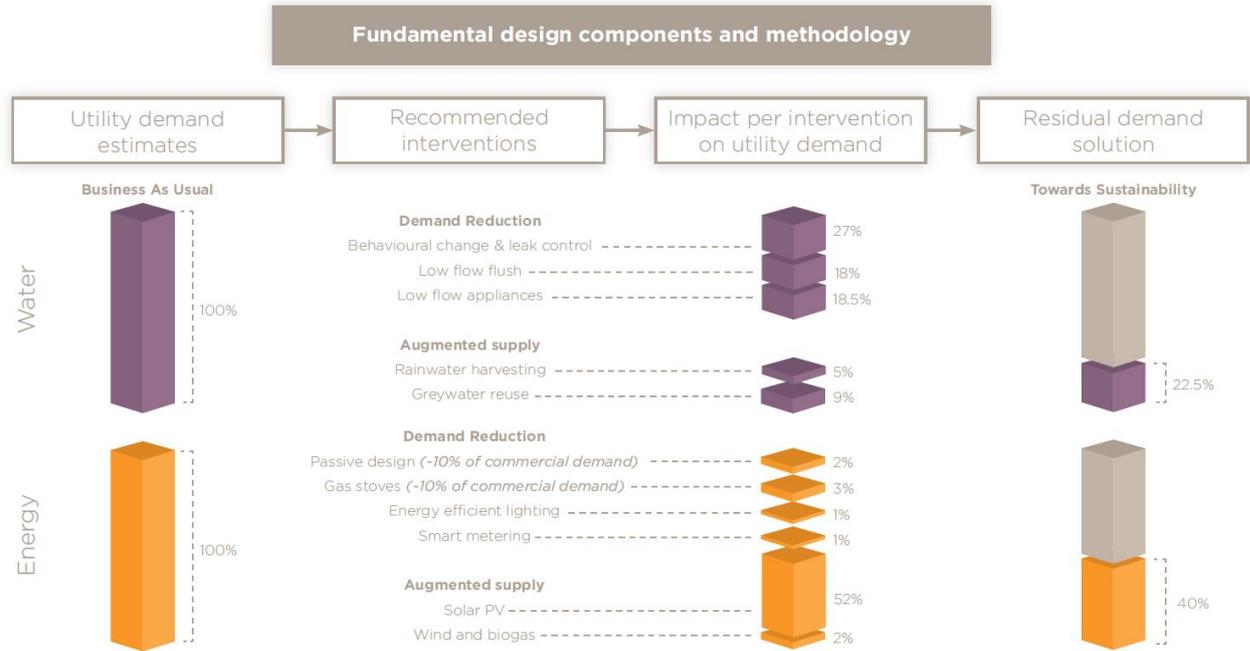


Figure 6: Contribution of technologies to utility demand reduction or supply augmentation

The recommended intervention's relative contribution to demand reduction / augmentation of supply for all of water, energy and waste are documented in the figures 7-9, highlighting the significant utility savings that can be achieved through investment in these interventions. For the sake of brevity, only figures for Mossel Bay are illustrated. However the Swartland figures are comparable.

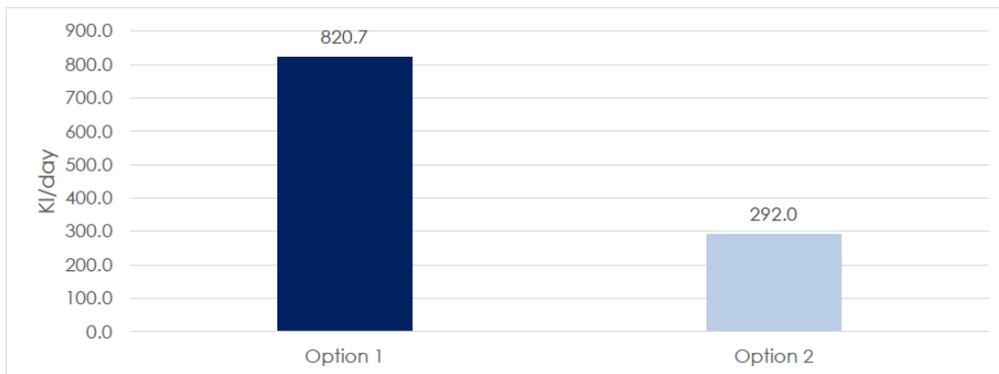


Figure 7: Water consumption for the Mossel Bay site Option 1: Business-as-usual infrastructure, Option 2: Sustainable infrastructure

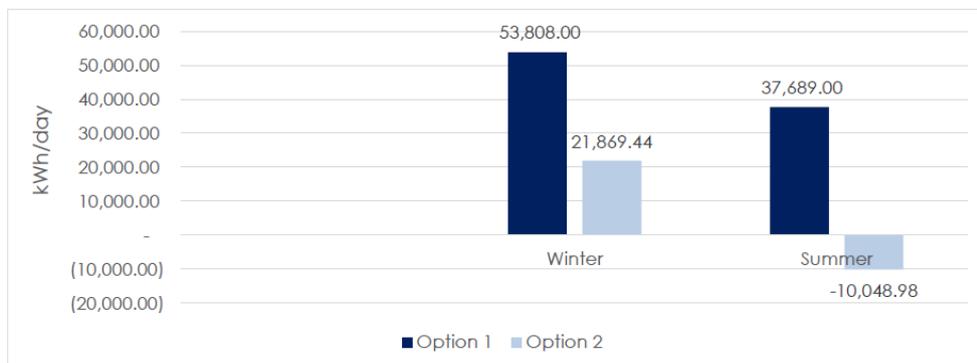


Figure 8: Electricity consumption for the Mossel Bay site Option 1: Business-as-usual infrastructure, Option 2: Sustainable infrastructure

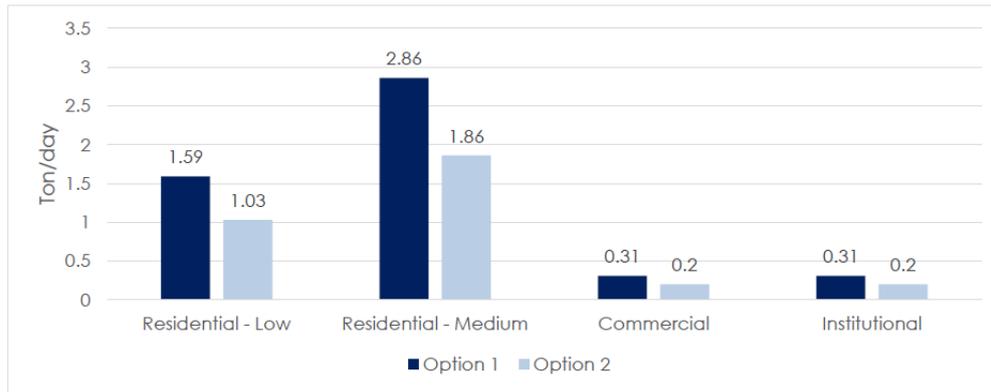


Figure : Waste generation for the Mossel Bay site Option 1: Business-as-usual infrastructure, Option 2: Sustainable infrastructure

7. CAP , OP and Cost enefit (Phase 5)

The technologies selected were then assessed in the infrastructure lifecycle and financial analysis, in which current capital procurement costs, as well as operational and maintenance costs, were used to test the feasibility of the current Business-as-usual scenario (referred to as Option 1 in the figures below) against the sustainable solution (referred to as Option 2 in the figures below). This direct comparison was used to test the potential feasibility of the sustainable solution set. This was conducted in parallel with the socio-economic assessment of the effects of implementing the sustainable infrastructure option within settlements in the Western Cape.

Economic Impact Assessment studies are undertaken to determine, evaluate, and where possible, quantify the effects of an intervention. Both Business-as-Usual and the sustainable infrastructure options within both municipalities were identified as interventions, and were both modelled to comparatively identify the differing impacts. A Cost-Benefit Analysis (CBA) tool is used to evaluate the merits of the investment in terms of its total costs and benefits that are to be expected from the project. Overall, a CBA is useful in evaluating the attractiveness of different potential options, and will thus assist in the comparative analysis of both infrastructure development options.

A lifecycle cost model was developed to determine the total cost of the settlement infrastructure provision and operation into the future, feeding directly into the economic impact analysis.

Parameter	Comment
Analysis period	An analysis period of 40 years was selected due to the long lived nature of infrastructure assets. The start year is 2016.
Escalation	To keep the model simple, all costs are assumed to escalate at inflation rate. There is one exception: energy operations costs are assumed to escalate at 5% above inflation for the next 10 years and then at inflation beyond that.
Future value	All modelling values are shown in 2016 Rand value at the real rate of inflation i.e. only the rate in excess of normal inflation. Using the uninflated values is useful for showing lifecycle costs over a long analysis period.
Revenue	The model represents the total cost and no revenue is included for the trading between agents.
Salvage value	The salvage value is the carrying value (book value) of the asset portfolio at the end of the analysis period after accounting for capitalisation and depreciation. The salvage value is used in the net present value analysis to account for the timing of investment and the selection of the analysis period.
CAPEX	
Construction period	The construction period over which the full infrastructure is developed is assumed to be 6 years.
Initial capital costs	Initial CAPEX costs are estimated from the design undertaken by the engineering team using present day technology at present day costs. The model excludes the acquisition cost of the land and the cost to develop the top structures.
Subsequent capital costs (asset renewal)	Subsequent CAPEX costs are based on the renewal of the assets at the end of their expected useful lives.
OPEX	
Operations cost	Operations costs are the costs associated with service consumption e.g. energy and water purchases at the current retail rate
Maintenance cost	Maintenance costs include both preventative and reactive maintenance activities.

Table 1: Key assumptions and parameters for the life cycle cost analysis

The number of jobs created by the developments is higher for the sustainable infrastructure option during construction, but lower during operation (see table 2 below). The large majority of long term employment generated by the Business-as-usual scenario will occur during the operational period as indirect and induced impacts. This is due to the significant capital spent on operations when compared to the sustainable infrastructure option. Therefore, the social and income losses as a consequence of this expenditure should be considered alongside the generation of employment.

TOTAL socio-economic impacts	Option 1	Option 2
Mossel Bay Municipality Construction		
Impact on Production	R207 M	R1 307 M
Impact on GDP	R67 M	R402 M
Impact on Employment	757	1 872
Impact on Income	R31 M	R189 M
Mossel Bay Municipality Operations & Maintenance		
Impact on Production	R3 469 M	R734 M
Impact on GDP	R1 552 M	R263 M
Impact on Employment	3 192	777
Impact on Income	R604 M	R115 M
Swartland Municipality Construction		
Impact on Production	R826 M	R2 959 M
Impact on GDP	R258 M	R903 M
Impact on Employment	1 436	3 468
Impact on Income	R123 M	R430 M
Swartland Municipality Operations & Maintenance		
Impact on Production	R5 660 M	R1 070 M
Impact on GDP	R2 513 M	R363 M
Impact on Employment	5 281	1 318
Impact on Income	R982 M	R164 M

Table 2: Summary of total socio-economic impacts of the development options at both sites

The figure below demonstrate the high percentage of total cost that is attributed to electricity provision. This is owing to the significant investment in solar PV generation, for both sites, at current market related prices.

Cost Breakdown of Utilities (R'mil)

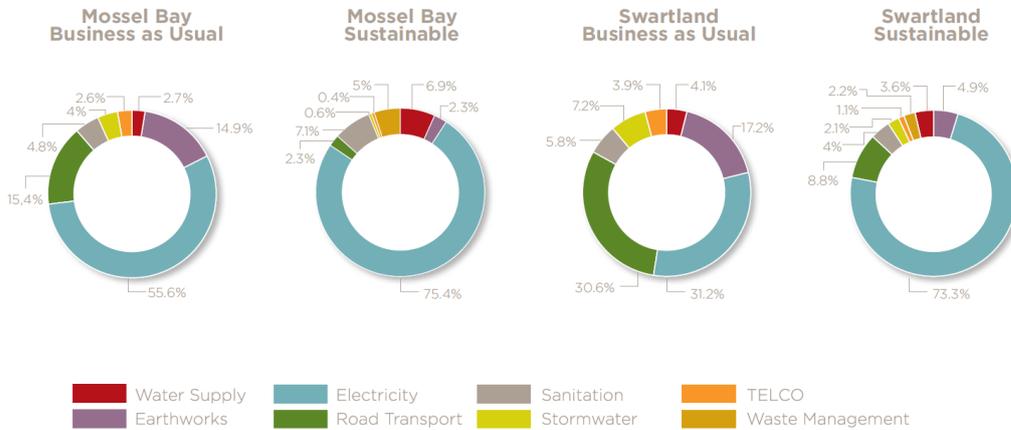


Figure 10: Capital expenditure breakdown per asset type for BAU and Sustainable scenarios

The total costs (including electricity) for all the major cost streams (Total construction CAPEX, operating costs, maintenance costs and refurbishments) are provided below, for Mossel Bay (the figures for Swartland follow a similar trend). These adequately demonstrate the overall lifecycle saving for the sustainable infrastructure option for both sites, that despite a high initial CAPEX cost for the sustainable option, the long term operational cost is much lower.

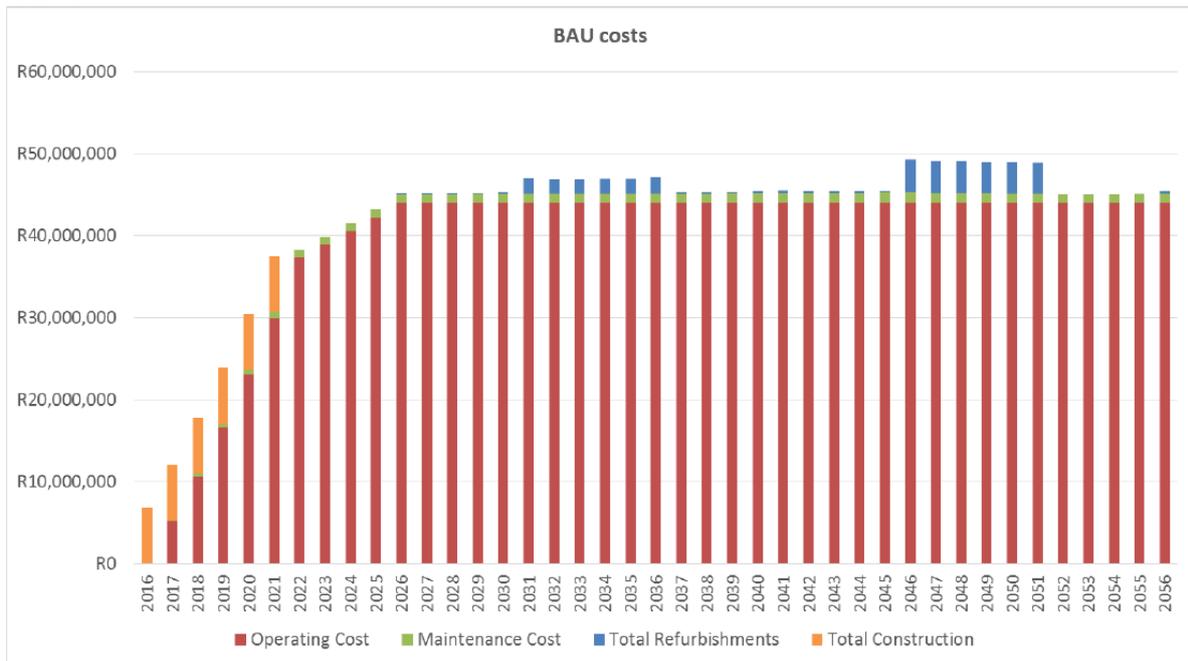


Figure 11: Total Costs for the Mossel Bay site Option 1 – Business-as-usual

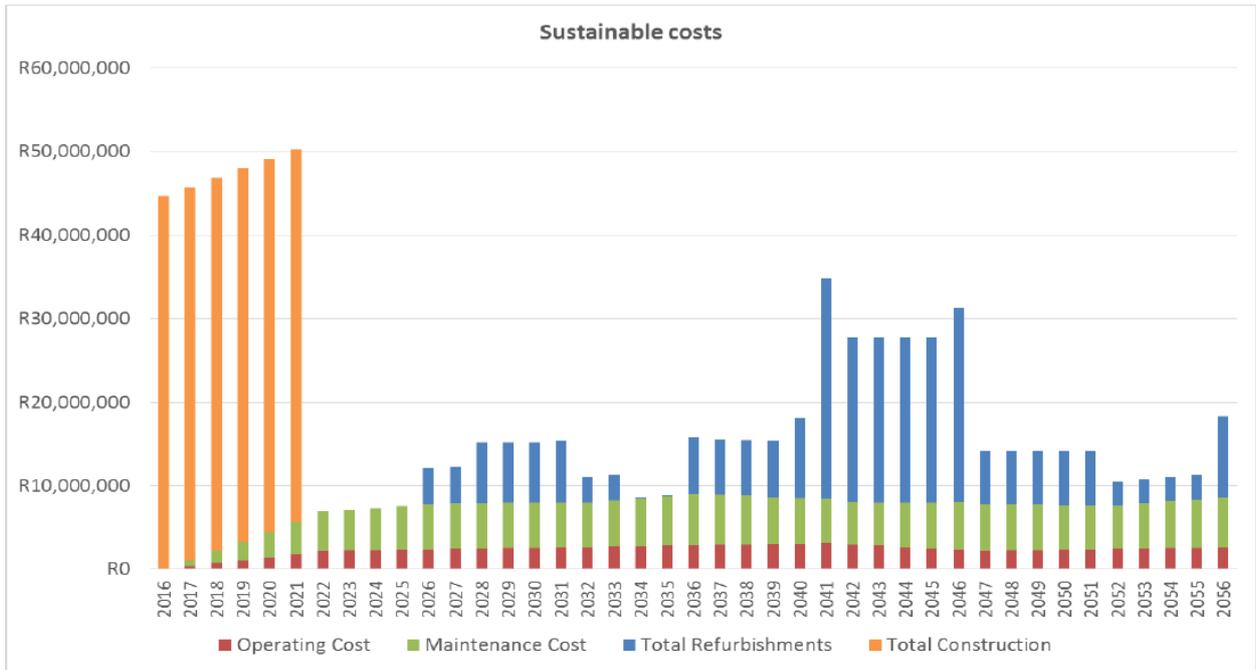


Figure 12: Total Costs for the Mossel Bay site Option 2 – sustainable infrastructure

By reflecting the CAPEX in the form of annual depreciation over the expected life of the infrastructure assets, an annualized cost of ownership is illustrated for the two scenarios. The annualized financial savings generated by the sustainable option are clearly demonstrated in the following figure.

Mossel Bay Annual Depreciation and OPEX

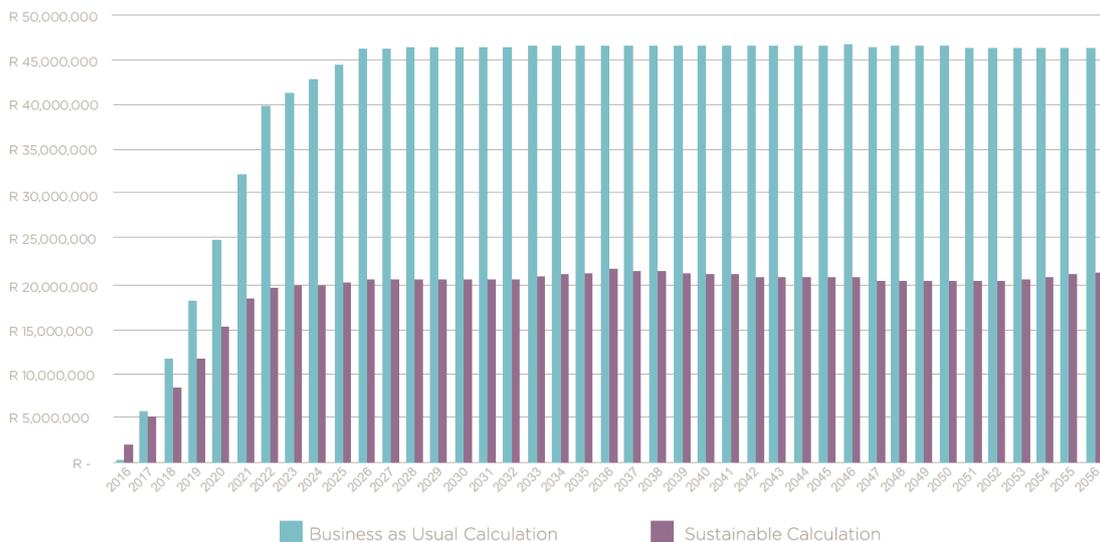


Figure 13: Savings gap of approximately 2 Million ZAR per annum for the sustainable option, based on NP figures

Such a savings gap illustrates the potential for a feasible exploitation via various forms of financing and structuring of the operations and management of the settlement, particularly the generation and sales of energy.

8. Focus on energy

Regarding operational cost, the different services were not separated out, but due to the significantly higher cost of electricity CAPEX, OPEX and maintenance in general, the trend of the amounts in the accumulated costs analysis below can be seen to be applicable to energy.

For both sites, the sustainable infrastructure option is less costly to residents than the business-as-usual scenario from an operational perspective. Although the capital outlay for the municipality is significant for Option 2 (the sustainable infrastructure option), a large proportion of the costs are associated with energy costs. Thus, were a private owner/management company to invest this value, total costs accrued to the municipality by the development of Option 2 will equate to lower than the costs for Option 1.

OPTION	CAPEX		OPEX		Maintenance		TOTAL
BAU: Option 1							
% Payable by Municipality	100%	R108 M	18%	R285 M	100%	R41 M	R434 M
% Payable by Future Residents	0%	R0	82%	R1,3 B	0%	R0	R1,3 B
Integrated sustainable development: Option 2							
% Payable by Municipality	100%	R533 M	5%	R5 M	78%	R157 M	R695 M
% Payable by Future Residents	0%	R0	95%	R90 M	22%	R45 M	R135 M

Table 3: Accumulated costs for Mossel Bay

OPTION	CAPEX		OPEX		Maintenance		TOTAL
BAU: Option 1							
% Payable by Municipality	100%	R288 M	52%	R1,3 B	100%	R107 M	R1,7 B
% Payable by Future Residents	0%	R0	48%	R1,2 B	0%	R0	R1,2 B
Integrated sustainable development: Option 2							
% Payable by Municipality	100%	R1,1 B	28%	R26 M	82%	R258 M	R1,3 B
% Payable by Future Residents	0%	R0	72%	R70 M	18%	R58 M	R128 M

Table 4: Accumulated costs for Swartland

The sustainable utilities – specifically the solar technologies – make up a significant portion of the total CAPEX outlay for both sites. Essentially, the operational and maintenance costs accrued by users of the sites is significantly lower in Option 2 when compared to Option 1, making Option 2 the preferred development – both economically and financially for the user. CAPEX costs are extensive and although additional sources of revenue may be accessed to reduce these costs, the current high technology costs remain a barrier for development.

It is important to note that the model does not consider increasing electricity rates over the 40 year period, however considering historical increases and the continued challenges experienced within South Africa through power generation, it is unlikely that electricity rates will decrease during the project timeline. Furthermore, one must also consider that the cost of sustainable technologies is continuously decreasing and this will further improve the outlook for the sustainable infrastructure option.

The report finds, as a key recommendation, that different contractual or ownership arrangements are necessary to ensure that the development is financially viable for both the users and municipalities. These arrangements are specifically with regard to the management and/or ownership of the structures, as well as the utilities. Essentially, upon the capital investment into renewable technologies, the management/ownership consortium will generate “free” energy and make a profit on this energy by sales to users. The consortium may set a tariff which ensures the financial feasibility (although lower than Eskom tariffs) which will benefit the users as well as their bottom line. The scalability of energy production should also be considered.

9. Financing

Importantly, the sustainable infrastructure option (Option 2) is the preferred option from a social, economic and environmental perspective, as well as from the Cost Benefit Analysis findings. Not only is it aligned with national and provincial government development goals, but with the increasing global and national recognition of the need for smart and integrated urban nodes. Considering the housing demand by a large portion of low income South African households; the housing redress system (BNG¹ housing) has increasingly been highlighted as flawed, for both housing beneficiaries and the public sector. This is specifically within the context of changing social, economic and environmental circumstances. Furthermore, increasing utilities costs and a constrained national grid highlights a necessary adjustment to the approach adopted in the built environment and the provision of housing.

Therefore, within this context, although the sustainable approach is identified as effecting higher positive social and economic implications, to enable the adoption and roll-out of sustainable developments, further analysis with regard to the financial feasibility is required. The high capital costs required for Option 2 present a significant investment challenge to municipalities due to current financial management requirements and existing human settlement and infrastructure grant systems, despite user costs being considerably lower for Option 2. Therefore, because this assessment is geared towards changing the approach to settlements to benefit the public sector, beneficiaries and potential private investors, identifying applicable and effective financial solutions is fundamental.

The project report contains an extensive discussion on financing options and the findings indicate that the financial feasibility of development Option 2 is potentially viable. This is specifically with regard to the private ownership/management of the energy generation technology component of the development which will serve to reduce the capital costs significantly. Additional grants and income derived from the sales and rental of property will additionally contribute towards the feasibility of the development.

10. Conclusion

While further studies are required into contractual and ownership arrangements for the infrastructure in order to balance the high initial CAPEX costs with significant OPEX savings, the potential has been identified for a paradigm shift in terms of the types and focus of traditional urban infrastructure, towards a more carbon-smart, resource efficient and self-sustaining solution. This shift can be motivated in terms of specific benefits:

- OPEX savings: reduced operating costs, particularly in terms of energy generation costs;
- Environmental considerations, with significantly reduced potable water consumption, as well as low carbon energy generation;
- Social benefits in the form of localised labour, upskilling of artisans and supply chain demand for sustainable technologies;

It is essential that, as a key recommendation, different contractual or ownership arrangements be established to ensure that provision and maintenance of alternative infrastructure is financially viable for the end user, the municipality and the utility service provider. The alternative infrastructure proposed in this study operates most efficiently at a precinct-wide scale, thus discarding individual household ownership models, with the focus on community-wide integration.

¹ Breaking New Ground

Transit oriented development approaches for developing world cities: Some insights based on the South African contextⁱ

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Abstract Developing cities around the world are under immense pressure from urbanisation, often resulting in the urban expansion of informality and poverty. On the other end of the spectrum is the growing uptake in private vehicle usage in developing world cities which threatens society socially, ecologically and financially. Transit Oriented Development (TOD) seems to have taken the planning fraternity by storm over the past two decade as a way to manage urban growth in a more sustainable way. However, it remains a concept rooted in formal planning and development approaches. When juxtaposed against the informality of urbanisation the developing world is facing it is unclear how TOD will be produce the urban dividends at the scale required in the developing world. This paper explores approaches to realising TOD outcomes in the formal and informal urban contexts presented in the developing world by drawing on South African experience. Arguing that a multi-pronged approach to TOD in the developing world is required if the concept is to have the intended widespread impact on more sustainable urban growth. Self-built housing approaches should be married with TOD thinking as poorer communities are often those which rely on public transport for travel. Furthermore investment in social infrastructure in informal communities (exhibiting some of the characteristics of TOD) could be argued to be a form of TOD suited to improving the experience of frequent public transport users. While the mainstream, formal development lessons on offer from TOD implementation experience could be drawn on to inform state and market based, formal TOD development approaches.

1. Introduction

Developing cities around the world are under immense pressure from urbanisation, often resulting in the urban expansion of informality and poverty. On the other end of the spectrum is the growing uptake in private vehicle usage in developing world cities which threatens society socially, ecologically and financially. Transit Oriented Development (TOD) seems to have taken the planning fraternity by storm over the past two decade as a way to manage urban growth in a more sustainable way. TOD is essentially urban growth which is structured in such a way as to both support and depend on public transport for accessibility and mobility requirements. TOD was a term coined in the 1980s by an American urban practitioner named Peter Calthorpe (Carlton, 2007). There was growing concern around the impact urban growth based on the automobile was having socially, environmentally and financially. In response urban practitioners begun to advocate for a more sustainable growth based on principles of city building in the pre-automobile era, such ideas were termed smart growth, new urbanism or sustainable growth (Carlton, 2007). TOD is strongly associated with this set of emergent urban growth concepts (Essam and Khalil, 2010; Carlton, 2007; Wilkinson, 2006). The thinking was born in a context of major car dependency in North American cities which led to the proliferation of sprawling, mono-functional spatial patterns. Moving around such cities expends large amounts of fossil fuel based energy and leads to high levels of polluting emissions. Coupled with the increasingly documented negative social impacts this approach to city building was having. Calthorpe introduced TOD as a way of moving back towards city building practices which predated the automobile. From this perspective he

argued that the concepts and ideas were not new but rather had been lost over time and needed to be reintroduced (Carlton, 2007).

The South African context is somewhat unique when assessed relative to North America however. While South African transport policy for the last half century has focused primarily on providing infrastructure for the car, the vast majority of people are public transport users. The spatial challenges faced in South Africa are in part due to a growing dependence on the private car, but arguably the more pressing challenge is due to persistent apartheid spatial patterns where public transport captive communities live in detached single-unit housing on the fringes of cities. It is this dualistic nature of South African cities, whereby wealthier people rely on private cars and poorer peripheral communities rely on public transport, that TOD will need to be adapted.

TOD has increasingly been drawn upon in South African urban policy and strategy, perhaps best highlighted by the explicit inclusion of the concept in the National Development Plan (NDP). The National Planning Commission (NPC, 2011:285) drew on TOD explicitly as an element of the spatial vision to achieve socio-spatial transformation stating “new urban development and infrastructure investments should be focused around corridors of mass transit and around existing and emergent economic nodes, applying internationally accepted principles of transit-oriented development”. However, the NDP does not go further to explain what this might mean, nor does it provide any sense of the need to adapt TOD to local contexts, as suggested by Wilkinson (2006). International experience highlights that many complex challenges surround the implementation of TOD.

This paper seeks to interrogate the efficacy of mainstream TOD approaches to growth and development in the dualistic context of many developing world cities. The principles of TOD will be briefly introduced and outlined. This will be followed by a review of the international literature dealing with TOD in developing world contexts. An analysis of the TOD understanding in South Africa provides an opportunity to critically discuss a more effective approach to TOD across developing world cities.

2. The principles of TOD

There is a relatively extensive literature on TOD internationally. The outcomes of a review of this literature are discussed in this section. ‘Internationally accepted TOD principles’ will be discussed, and implementation experiences will then be discussed in more detail.

Cervero (2006) argues that ‘TOD is a straight forward concept: concentrate a mix of moderately dense and pedestrian friendly development around transit stations to promote transit riding, increase walk and bicycle travel, and other alternatives to the use of private cars’. While there is no set definition for TOD (Renne, 2005, Transport Research Board, 2004; Queensland Government, 2010), analysis of the available literature suggests that there are certain elements which have become relatively common. The literature highlights that the following have become recognised characteristics of TOD:

- an efficient, integrated and reliable public transport system;
- a high quality public realm which prioritises pedestrians and cyclists over vehicles and ensures high accessibility of the public transport station;
- a mix of residential, retail, commercial and community uses;

- medium- to high-density development within comfortable walking distance of the transit station (i.e. the TOD precinct); and
- reduced rates of private car parking.

Drawing on Wilkinson's (2006) analysis, highlighting that the principles underpinning TOD are aligned to South African urban policy objectives, it is argued that all of the above mentioned characteristics are critically important to the South African context. However, adaptation is required to ensure that TOD will be effective in achieving broader urban policy objectives. Part of this adaptation might require thinking through the inclusion of affordable housing options, as socio-spatial transformation is high on the policy agenda and income diversity is a prominent policy directive. There is evidence of income diversity becoming an increasingly important component of TOD internationally, but it does not seem to be a widely accepted characteristic. It is clear that there is much work to be done in thinking through how TOD could be adapted to best suit the South African context.

The international literature highlights that understanding the physical design principles of TOD, and their benefits, is relatively straight forward. What has emerged as arguably more important is understanding the many challenges which surround efforts to implement TOD. It is clear that outcomes have been disappointing when implementation issues have not been thought through and addressed. Land development issues, in the form of political, institutional, financial and stakeholder dynamics, are often argued to be the most significant barriers to TOD development (Suzuki et al, 2013; Sussman and Gilat, 2002, Ditmar and Ohland, 2004, Hook et al, 2013, Belzer and Autler, 2002). These issues are often the defining aspects of TOD projects, but surprisingly are seldom included in attempts at defining TOD principles. Thus it is advocated that these issues become more prominently incorporated into TOD understandings in South Africa and throughout the developing world. Sussman and Gilat (2002) as well as Suzuki et al (2013), in their analysis of TOD application in the developing world, highlight that these issues present potentially greater barriers in developing world contexts.

3. The diffusion of TOD concepts into the developing world

The growth of urban areas in the developing world is projected to rapidly increase over the next half century. According to the United Nations (2014) 'Projections show that urbanization combined with the overall growth of the world's population could add another 2.5 billion people to urban populations by 2050, with close to 90 percent of the increase concentrated in Asia and Africa'. The need to think about urban growth in the research is to contemplate the opportunity which exists to accommodate such new growth. The challenge faced in the developed world is largely one of retrofitting, in that urbanization levels are fairly high and they are now forced to think about how to reconfigure their urban environments to ensure more sustainable transport-land use relationships. While the retrofitting argument still holds relevance in developing world contexts where urban growth has already led to spatial outcomes, United Nations' (UN) projections suggest there is significant growth to come. The opportunity lies in pro-actively managing and accommodating growth in a far more sustainable manner. The preceding challenge however is that according to many the majority of urban growth in the developing world is projected to be associated with poverty and informality (Freire, Lall and Leipziger, 2014; Pieterse, 2011; Roy, 2005, Lombard, 2014; UN-Habitat, 2010). The UCT research report 13-14 (UCT, 2013) estimates that the middle-class

population of South Africa is expected to double by 2050 and the population of informal dwellers to treble. According to UCT (2013: 100):

Urban population growth in Africa is taking place at such a rate that – if there is not an adequate understanding of the situation, and if solutions are not developed quickly – the continent is heading towards a crisis of poverty, inequality and lack of resources for its city people.

Only three percent of urban dwellers are eligible for a mortgage and only 28% have stable jobs (including minimum wage employees) (UCT, 2013). This rapid growth of informality is what Pieterse (2011) refers to as 'informal urbanism' and research suggests will become an ever growing reality in South African as well as many developing world cities. While research indicates that it is the smaller secondary cities across Africa where most growth will concentrate most informal growth is occurring within South African large urban centres (South African Cities Network, 2011). This arguably highlights the dualistic nature of South African cities which Wilkinson (2006) identified as important to consider in TOD approaches, but signs are that the dualistic nature of South African cities will be exacerbated How does TOD, which is attempting to achieve socio-spatial transformation, deal with inevitable and ever growing poverty and informality?

Of the limited literature that exists on TOD in the developing world the majority is based in Asia and South and Central America. It indicates that there are strong proponents for TOD growth as a strategic development option. The reading of the literature however indicates that TOD is being conceptualised in the developing world largely as a way to curb the rapidly rising uptake of private vehicle travel (Sussman and Gilat, 2002, Suzuki et al, 2013 and Delhi Development Authority, 2012). It is argued in the literature that it holds much opportunity to prevent the widespread uptake of the private vehicle and in many ways avoid the urban growth path experienced by North American cities. However it seems that not enough has been asked about the limited outcomes of TOD in North America despite relatively extensive efforts, and furthermore the literature fails to interrogate the application of TOD in contexts where poverty and informality are prevalent. While it might hold certain applicability in areas where private and public investment is spent in formal development channels, in the face of the urbanisation context presented one might argue that engaging with the poverty and informality of growth will be an important aspect of managing urban growth. This notion perhaps moves beyond the more conventional understanding of TOD but the strong emphasis placed on context specific TOD solutions by prominent commentators perhaps presents an opportunity to think about TOD in a more nuanced manner.

The list of challenges that both Suzuki et al (2013) and Sussman and Gilat (2002) indicate are fairly similar. They point to mostly political, institutional and funding issues. It would seem however that Curitiba and many of the Asian countries profiled in best practice TOD in the developing world would have faced challenges in these areas of a vastly different nature given their particular political and institutional contexts. In reality it is quite challenging then to draw real lessons from such examples given the importance that has been placed on these critical enabling issues in the literature reflecting on implementation efforts.

Suzuki et al's (2013) and Sussman and Gilat's (2002) recommendations for TOD in developing world cities remain largely formal in their approach and arguably seek to provide a level of inspiration or hope that international conceptualisations of TOD are possible in other developing world contexts. While these examples are perhaps useful to showcase what is possible they seem to underplay the importance of the particular political and institutional underpinnings. Perhaps more importantly these highly formal insights neglect in certain instances the growing understanding that a large proportion of urban growth in the developing world will take place in informal settlements. Does this suggest that TOD can only ever be a highly formalised response? The next section explores literature which is emerging around potentially context specific approaches to TOD in contexts of informality and poverty. There are some emergent experiences in developing world contexts where investment in and around public transport systems has less to do with curbing the uptake of the private vehicle per se and more with improving the experience of the already public transport dependant. Such investment is grappling less with parking and reduced vehicle kilometres travelled and more with enhancing public space and surrounding facilities for existing public transport users. Increasingly this social capital emphasis with strong links to transit infrastructure is being reported as a form of TODⁱⁱ.

3.1 Emergent adaptive TOD approaches?

The reality is that many developing world cities have expanded rapidly over the past decade. This expansion however has arguably resulted in higher densities than those associated with North American outward urban expansion. Informal settlements house the vast majority of urban residents in much of the developing world (UN-Habitat, 2010). While these are not desirable environments to live in, it does seem that such environments often exhibit principled characteristics of TOD. They are relatively dense, mixed in land use (most often through informal trading activities), pedestrian prioritised (as few people can afford to own vehicles and housing units are tightly packed together) and inextricably linked to transit services (more often than not para-transit). Would such developments be classified as TOD? Perhaps not in the strict conventional sense but identifying the support required to elevate the living experience in such areas already developed and constantly densifying where people are largely reliant on public transport presents an opportunity. Two issues seem important to explore, the quality of the public realm in such areas as well as the living conditions generated by densification practices.

In South Africa where people have been provided with formal state based subsidised housing, more often than not households have densified housing stands informally through the development of backyard units (Gilbert et al., 1997; Crankshaw et al., 2000). This has arguably assisted the individual households economically who were able to densify often renting out units to tenants allowing them to derive an income as well as local transport services which benefit from a greater concentration of passengers (Charlton, 2004).

In some South American cities such as Bogota and Medellin, favelas (informal settlements) have become the key targets for some innovative transit investments and broader public realm improvements (Blanco and Kobayashi, 2009; Reed, 2014). There has been a sustained effort over the past decade in some cities to re-think they way informal settlements are understood, attempting to shift thinking away from informal settlements as temporary and problematic phenomenon towards seeing them as inevitable, dynamic and vibrant places.

In Medellin there has been high levels of state based co-ordinated transport and social infrastructure investment in favelas. The investment has been of the highest quality and given rise to the highest quality libraries, parks and community facilities. Together with high quality transport investment in cable car metro systems, escalators and pedestrian bridges (all tailored to suit the context) these areas have been dramatically transformed through targeted spatial investment (Blanco and Kobayashi, 2009; Reed, 2014). Furthermore the private sector has subsequently 'crowded in' on the back of such high quality public investment. The result is that once dangerous, violent areas have become vibrant and attractive for all Medellin residents. These strategic transit oriented investment have created land use mixes which provide destinations (work and play) in previously origin (residential) based areas of the city. This is perhaps an example of an alternative TOD strategy suited to poorer informal areas found in the developing world context highlighting the power of co-ordinated public infrastructure investment in previously marginalised areas, but explicitly linked to transit investment. The Neighbourhood Development Programme initiated by the National Treasury in South Africa seems to be attempting to drive such co-ordinated public development, however with many city governments focusing on selected public transport corridors outside of these informal areas impacts have been limited.

Beyond this social capital investment by the state I am curious about the possibility to support households and individuals in such a way as to encourage and facilitate the safe 'self-densification'ⁱⁱⁱ of poorer and informal areas?

A report published by the *Urban Land Institute* and *Centre for Liveable Cities* (2013) exploring principles for dense and liveable cities in the developing world draws on Singapore's experience in becoming a globally touted example of sustainable development. The content of the report shares close links to mainstream TOD thinking and is not in this sense a new contribution to approaching TOD. However, in response to the report Richard Florida wrote in an online article that the report 'is especially timely and useful given the massive urbanization that will occur over the next several decades. Hopefully the recommendations in the report can help these rapidly developing cities, especially those in the emerging economies and the "global south" develop more effective approaches to increasing density in ways that can simultaneously spur higher rates of economic development, while improving liveability for their rapidly growing populations^{iv}'. The idea of thinking through more effective approaches to increase density is central to the potential of exploring how the State can support the energies and investment strategies of poorer communities in building shelter options to develop more liveable environments.

In the Indian context Echanove (2013) provides insight and perspective on rethinking the understanding of 'informality' and self-built housing where he provides examples of more dense self-built housing that exhibited higher densities and a mix of land uses. There are many cases from around the world where communities supported by philanthropic organisations and in some cases the State are approaching the idea of self-built housing differently. I argue that it is worth exploring whether such an understanding could be applied to TOD thinking where the collective energies of communities looking to build their own housing can be supported and shaped to exhibit a form of TOD which responds more effectively to contextual realities in these areas.

In line with Suzuki et al's (2013) argument for the importance of articulated density it seems there would be much value in exploring support for 'self-densification' in and around public transport stations across South African cities such as those surrounding existing rail (Metrorail^v) and BRT stations which are sometimes surrounded by subsidized housing (where investment in backyard units takes place) or informal settlements.

While this section is far from conclusive it does begin to highlight the important role of emerging global practices which think about development and investment oriented towards public transport in relation to the poverty and informality associated with developing world urban growth. I also argue however, that the mainstream approach to TOD will play an important role in developing world cities where there is large formal sector property investment, be it state or private based. In this regard there is a clear benefit of drawing on the lessons on offer from TOD implementation efforts in the developed world. The caution in this regard is to be aware of the immense challenges experienced in wealthier nations of achieving effective TOD outcomes let alone inclusive TOD, where inclusive growth is argued to be core to the development in the developing world.

4. Approaches and understanding of TOD in South Africa^{vi}

A review of South African literature has highlighted that there is a growing awareness of the topic across urban practitioners, academics and policy documents in South Africa. The term is increasingly being included in research studies from a range of different fields (transport, urban planning, engineering and property studies). However, while there is evidence of an increase in the literature on the concept the amount of TOD explicit research and analysis remains limited. If one looks at the depth of the writing then the limitation is exacerbated as there are very few studies and policies which provide detailed investigations and understandings of how TOD is being interpreted in a South African context.

The encouraging signs are that within the existing writing the research and investigations around the concept are dealing with TOD in different ways and I argue that the diversity in research and writing is positive. There is clear literature which makes the case for TOD and calls for adaptive thinking, some early reflections of the impacts of transit investment and TOD efforts as well as more detailed investigations of density and improved land market understandings.

In cases where TOD is explicitly referred to in public policy and strategy the concept is understood to be a strategic way to achieve challenging objectives. However, for the most part the understanding of the concepts is limited to physical principles or in some cases a simple listing of the term without any detailed investigation of what implementation might begin to mean relative to international experience.

There is some promise that some of the more detailed issues are beginning to be at least recognised at a municipal level. City governments are arguably leading the way in TOD policy and strategy thinking in South Africa and most prominently drawing on the concept. It does seem that the concept has been understood in most cases as a way to achieve socio-spatial restructuring objectives and ensure the financial viability of newly developed BRT systems. This arguably represents an ambitious and adapted conceptual understanding of TOD when compared to the vehicle reducing focus associated with the initial conceptualisation and will require careful consideration in light of the lessons provided from

international experience. The significance of this shift in TOD focus is not clearly acknowledged in any of the literature, the importance of which is to understand the implication relevant to what this might mean for carrying out a TOD agenda with a slightly nuanced set of intended outcomes.

Currently it appears that there is poor alignment of the various TOD agendas across the three spheres of government. This is a worrying sign when one considers the lessons surrounding the difficulties experienced internationally in implementing the concept. To have three disparate TOD agendas focusing on different modes in an individual manner is certainly alarming. Based on international experience it is clear that the energies of the three spheres will need to be aligned to ensure that there are focused efforts and more co-ordinated messages of intent. This becomes particularly important when engaging with other stakeholders as a differentiated message to the market and civil society can be confusing and complicated to enter a collaboration based approach.

Furthermore the review highlights that inclusive growth is at the forefront of policy objectives across all levels in South African. There is major emphasis placed on the development of dense affordable or low cost housing in central locations and around public transport. This intervention is seen as critical to socio-spatial transformation and is often intertwined with TOD understandings. However, experience internationally illustrates that achieving well located affordable housing in TOD has been exceptionally challenging. Acknowledging that South Africa does have a subsidised housing programme which sees the state play a role as a key property investor and holds promise that affordable housing can be funded by the state in TOD areas. The misalignment of human settlements policy and thinking relative to this object is a major concern. Given the high cost, longer time and greater complexity of driving TOD such misalignment will not aid the goal of achieving effective TOD. Regardless of this the understanding that affordable or subsidised housing can occur at scale required to achieve wide-spread socio-spatial transformation in South African needs to be revisited. The majority of households in South Africa fall within or below the affordable housing income bracket (Statistics South Africa, 2011).

A significant gap in South African literature currently is the lack of engagement with the major challenges associated with achieving TOD which have been outlined so clearly in international experience. I argue that the outcomes of promoting limited physical TOD principles without acknowledging, grappling and strategizing around how to overcome the real issues which obstruct achieving the principles in the South African context will lead to limited outcomes as experience has shown internationally. There are some encouraging signs that these are beginning to be grappled with more thoroughly both academically and from a policy perspective. However, there is arguably much more work and research required. Fortunately there are clear lessons and insights available on many of the most major issues which could aid South African practitioners in pre-identifying potential areas to target and more effectively drive a TOD agenda.

There are also limited signs in policy or strategy that the adapted understanding of TOD reflected in South Africa is translating into context specific application of innovative solutions across the varying contexts existing across South African cities. While the mainstream TOD application might be appropriate for wealthier areas with more established property markets facing similar car dominant issues this is perhaps not the case in areas of poverty and

informality. Acknowledging that TOD will not manifest as a homogenous property product everywhere it is applied is important. Currently, it seems there is no clear indication that South African literature has been able to think about how TOD might be applied in different areas displaying different contextual realities in South African cities.

Although not explicitly acknowledged in South Africa, I argue that there are some encouraging initial signs from the NTNDP that important differentiated approaches to TOD are being thought about in South Africa. Cities should arguably work more closely with the programme and bring additional departments and investors into the discussion on how to drive innovative investment around improving the land use transport integration in areas where the land market operates in such a way that it makes it exceptionally difficult to drive conventional formal TOD.

4.1 City governments taking the lead

At the local municipal level Johannesburg and Cape Town are the forefront of developing understandings of the TOD concept. However, the two cities have located the concept differently in their respective strategic thinking. The City of Cape Town seems to have provided a relatively detailed outline around the implementation of the concept in the Cape Town context in their ITP. However this does not go further to discuss the details around a TOD strategy nor does this focus seem to carry through to their IDP^{vii}. The City of Johannesburg however has arguably demonstrated the most focused effort and commitment to TOD. It seems that there has been a significant effort to institutionalise the concept with explicit inclusion of the concept in their budgeting process and the TOD based 'corridors of freedom' forming the title of their most recent IDP as well as a strategic focus of the ITP draft.

By basing the entire Integrated Development Plan^{viii} on the TOD based 'corridors of freedom' vision and aligning key departments budgeting around investment in the corridors the City is prominently linking TOD as the strategic development tool to achieve broader objectives of socio-spatial transformation. This is a bold and unprecedented approach and signals the extent to which Johannesburg is taking TOD seriously. However, despite the strong TOD focus within the municipality there remains limited interrogation of how TOD will cut across the various 'transit-rich'^{ix} neighbourhood contexts in the city and there is seems to be limited private sector and civil society awareness of the strategy and what it entails.

5. Towards a multi-pronged approach to TOD in the developing world

Even where efforts to realise TOD internationally have been significant it seems that effective TOD remains the exception as opposed to the norm. Often requiring exceptional amounts of divergence from traditional developmental practices and dependant on specialised financial, institutional and political arrangements. It is thus somewhat alarming that South Africa has placed so much of their socio-spatial transformation agenda on the principles which underpin TOD, which have been so incredibly difficult to achieve in other contexts as well as over the past 20 years in South Africa. This arguably demonstrates a misunderstanding of the ability TOD in the short-medium term.

There are inherent differences in the manner in which political systems and institutional arrangements operate as well as the way in which land and property markets function across the country relative to other countries. Furthermore given the historical spatial context, the

dualistic nature of South African cities (and many other developing world cities) arguably calls for a differentiated TOD response in areas displaying different contextual elements. While TOD has largely been used as a tool to combat the adverse effects of the predominant use of the private vehicle in North America, South African cities are also envisioning the concept as a way in which to overcome the deeply entrenched and widespread socio-spatial inequality of apartheid spatial planning. Based on this understanding I argue that there exists the opportunity to experiment with other types of TOD which might begin to expand the TOD thinking beyond the conventional international approach to incorporate TOD in poorer areas of the city. These too will require a set of strategically targeted station areas.

There is no doubt that if TOD is to be the prominent socio-spatial restructuring tool which it is being touted as then a carefully considered adaptation is required. Exploring how TOD principles can be achieved in ever growing urban areas of poverty and informality will be critical in this regard. Lessons are on offer from Medellin in Columbia where targeted spatial investment around public transport in high quality social facilities and public realm infrastructure. This has gained much praise in developmental communities globally and interestingly been touted in some circles as a form of TOD.

It is recommended that South African cities take a multi-pronged approach to TOD strategy which seeks primarily to drive socio-spatial transformation, including:

- Driving more conventional TOD in areas where land markets provide the demand and private sector interest for TOD potential- this will require identifying a specific set of stations to focus efforts for outcomes. Importantly this might not be around a single mode or modal corridor but might be best placed around stations of multiple modes even if these are not operated by the municipality. Importantly efforts to drive social investment as a condition of these investments must be stronger than is currently exhibited around new development surrounding public transport stations in established and well-functioning land market areas.
- Aligning more closely the efforts of affordable and subsidised housing provision by the state to the principles of TOD to be targeted in areas in close proximity to public transport. Building on Marks and Wilkinson(2007) call for the gap housing market as a strategic car curbing potential, the alignment of other affordable and subsidized housing holds the potential to provide existing public transport users with an improved quality of life. To this end a critical investment focus which needs to accompany such housing investment is a stronger TOD shaping of the private sectors 'township shopping centre' retail investment approach as well as large emphasis placed on investment in the public realm and public facilities such as parks, libraries and recreation centres.
- In areas of informality some of the principles of TOD are already present. A spatially targeted investment strategy which focuses social capital investment in around public transport stations and improves the public realm can lead to an adapted approach to TOD. By investing in the highest quality public facilities these areas begin to become both origins and destinations and can have a major impact on the quality of people's lives. This approach holds much promise for shaping the kind of investment strategies which poorer communities employ to build their own houses and the potential of self-built state supported densification strategies which exhibit stronger TOD principles is worth considering.

I acknowledge that this will require immense amounts of political and financial support and alignment across the multiple stakeholders who will need to be involved in the many different facets of such a strategy. However, if TOD in South Africa is set to become a key driver of socio-spatial transformation then I argue that this is the extent of what might be required and would be a useful point of further debate. Each of these strategies will entail their own respective breaks with current practice. This will require a range of experimentation and demonstration efforts which Bertolini (2012) and Bernstein (2004) call for to advance more sustainable land use transport integration and urban growth in their respective contexts. More research is required in each of these areas to understand in more detail what each of these strategic areas will begin to mean. Furthermore implementation efforts are essential, but need to be focused and carefully consider the land development dynamics which are critical enablers to TOD. At the base of this success is argued to be drawing on and engaging the multiple stakeholders who will be responsible for driving initial implementation efforts, much more intensely, collaboratively and strategically than is currently evident in South Africa and arguably throughout other cities of the developing world. Experience shows that these implementation efforts will require greater costs, might take longer and will produce less units initially than current approaches to development, however if done properly they hold the potential to exhibit benefits and value. Demonstrating the benefits is important in steering general development practices and availability of resources towards more TOD based products and approaches. It is acknowledged that further research and exploration around such an expanded understanding of TOD is required.

6. Conclusion

This paper has set out to interrogate the notion that TOD can serve as the driver of sustainable growth and development across the developing world. The paper distils TOD approaches from international literature to indicate that the concept remains a highly formal property development approach and questions the extent to which this approach can serve developing world contexts containing significant levels of poverty and informality. Given the explicit emphasis that South African urban policy has placed on TOD as an approach to overcome socio-spatial inequality the paper has presented an analysis of how TOD understandings are unfolding in South Africa relative to the international experience. This analysis highlights that TOD understandings in South Africa remain fairly high level with a limited appreciation of the dynamics which ultimately determine outcomes. Furthermore, and in line with international trends, much of the intended approach to TOD in South Africa remains highly formal in nature, neglecting informal and poorer areas. In exploring how TOD principles could more effectively be realised in dualistic contexts with informal and formal development dynamics, the paper introduces the idea of a multi-pronged approach. Arguing that a TOD agenda in South Africa and in other parts of the developing world need to consider: 1) self-built housing approaches to be married with TOD thinking as poorer communities are often those which rely on public transport for travel; 2) Investment in social infrastructure in informal communities (exhibiting some of the characteristics of TOD) is a form of TOD suited to improving the experience of frequent public transport users; 3) Continue to channel private and public sector investment through formal development channels into TOD by drawing on well documented lessons on offer from international TOD implementation experience. Taking these ideas further will require further research, exploration and experimentation.

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ⁱ This paper is based on a dissertation submitted by the author in obtaining a Master of Philosophy specialising in transport studies at the University of Cape Town.

ⁱⁱ <http://thecityfix.com/blog/medellin-metrocable-improves-mobility-informal-settlements-low-income-accessibility-equity-development-coby-joseph/>

ⁱⁱⁱ Self-densification is a term introduced by the author to indicate the process whereby individual households build additional units on a stand to accommodate more people than previously lived on the land.

^{iv} CityLab (2013) Density vs. Livability in the World's Biggest Cities, an online article by Richard Florida retrieved March 10, 2015, from: <http://www.citylab.com/work/2013/02/density-vs-livability-worlds-biggest-cities/4511/>

^v Metrorail is PRASAs urban regional brand which is operated across all South African cities

^{vi} More on the detailed analysis of TOD understandings in the South African context can be found in the full dissertation

^{vii} The city have subsequently published a TOD strategy in May 2016

^{viii} The Integrated Development Plan is a statutory plan that each municipality is required to produce on a five year basis and update annually.

^{ix} 'Transit rich' is a term introduced by the author to indicate areas in the city which are well located relative to public transport service access.

Transforming human settlements to support viable public transport in developing cities: Results of a public transport corridor operating cost model

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SYNOPSIS

Some rapidly growing cities in developing countries are struggling to implement large-scale public transport systems due to unsustainable subsidy levels, despite conventional measures purporting the conduciveness of their urban environments. This study analyses the effects that the changing human settlement characteristics can have on the viability of public transport in this context.

1. Introduction

Developing countries, and particularly those in Sub-Saharan Africa, are urbanizing rapidly. In response, many city authorities are embarking upon large scale public transport improvement programmes, and many more are needed. However, funding the capital investments and the operating subsidies can be difficult for developing economies. A supportive human settlement pattern is key to achieving viable public transport systems, or at least systems that can operate with limited subsidy. The transformation of these cities through rapid urbanization, and resultant densification, is believed to improve public transport viability. In the past few decades, the density of human settlements has dominated the literature on the relationship between urban form and public transport viability. As will be demonstrated later in this paper, many studies have posited minimum population density thresholds required for viability, based on empirical analysis or simulation. These thresholds, and the related research, support a widely held notion that a city's population density has strong causal links to the economic success of its public transport services: as it puts the 'mass' in mass transit (UN-Habitat, 2013). By this logic, cities with sufficiently dense urban forms should offer conducive environments for viable public transport. However, rapid urbanization is also changing the population and employment distribution pattern of these cities, which has its own effects on the viability of public transport services.

This paper seeks to investigate what the potential impact of densification and other changing human settlement characteristics could be on public transport viability in rapidly growing developing city contexts. It is divided into six sections. The following section explores the meaning of viability and how it pertains to the operation of public transport services. Section 3 reviews relevant literature. Section 4 describes the development of the public transport corridor operating cost model and the associated study method. Section 5 tests how population density, density distribution, land use mix and corridor catchment size could support public transport service viability in rapidly growing developing cities. Section 6 concludes with reflections on the implications of the study's findings for the formulation of integrated land use-transport strategies, and for further research. This paper is based upon a similar paper presented at the 14th World Conference on Transport Research.

2. Viability

A public transport service is deemed to be viable, according to UN-Habitat (2013), if it minimizes operating subsidies to within sustainable limits, while remaining financially accessible to the majority of the population.

There are multiple justifications for why a certain quantity of public transport operating subsidies are acceptable, or even beneficial. Chief among these is the ability of subsidies to offset the underpriced, negative externality costs of private transport to society, such as pollution, congestion, air pollution and road safety risks (Vickrey, 1963). Another motivation is the access to public services and economic opportunities that public transport subsidies can grant for the poorest and most vulnerable members of a society (Serebrisky et al., 2009). The affordable fares and income redistribution effects that can result from public transport subsidies make them especially important for rapidly developing cities that tend to have higher proportions of poor captive users.

In developed cities, public transport subsidies are ubiquitous as they ensure that services are both financially and socially sustainable. However, the dominance of paratransit services in developing cities makes subsidization less common (Del Mistro & Behrens, 2014). Furthermore, the constrained financial liquidity of their local transport authorities can preclude the provision of operating subsidies (Mees, 2010). As these transport authorities attempt to scale up their formal public transport systems, restricting the growth of operating subsidies becomes key to their success. Therefore, viable public transport hinges upon the compromise between the quantity of subsidy that the society requires to maximize benefits and the quantity that the government can afford to give. Despite a much higher level of subsidy being warranted in developing cities, there is poverty of funding that can be allocated to its provision. Consequently, minimizing the level of subsidization is equally, if not more, important in developing cities in order to create viable public transport.

3. Rapidly developing human settlements

The rapid growth of some developing cities has significantly altered their spatial structure; and continued growth will further this transformation in the coming decades. The key question in the realm of public transport finance is whether this transformation is deteriorating or ameliorating the viability of the public transport network. This section will examine the two primary facets of human settlements that are most likely to affect public transport viability and how they are changing in rapidly growing developing cities. A review of pertinent literature will also describe how these changes could impact the financial health of the resultant public transport services.

3.1. Human settlement density

Many cities in developing countries are seeing their rapid growth manifest as equally rapid densification (Suzuki, Cervero & Iuchi, 2013). The density of human settlements, through population and employment densities, has dominated the conversation around the responsibility of urban form in sustaining viable public transport services. The argument is based in the theory of 'economies of scale'—in which the patronage of a service is increased until viability is achieved—leading to the oft-stated idiom that population density puts the 'mass in mass transit' (Guerra & Cervero, 2012). Further along this line of argument, it has been purported that each public transport service has a minimum level of patronage that is required to achieve financial viability, known as the 'threshold ridership' (Wang, 2008). As a public transport network theoretically has a defined catchment area, the potential to meet a certain threshold ridership level is dependent upon the number of people within that catchment area and their likelihood of utilising the service. The magnitude of people within a defined area is solely reliant on the population density of that area; meaning that every 'threshold ridership' has a corresponding 'threshold density', when the likelihood of public transport use in

accounted for (Renne & Ewing, 2013). Furthermore, that likelihood has been strongly and positively linked to the level of population density at the local scale ((UN-Habitat, 2013). Various authors have posited density thresholds that assure service viability, specific to public transport modes, levels of service and urban contexts (Guerra & Cervero, 2011). Consequently, less dense developing cities, such as those in South Africa, have set gross population density targets to improve the viability of their public transport systems (Jones, 2014).

Despite the immense support for densification as the primary mechanism to create public transport supportive urban environments, the validity of density thresholds and density targets has started to be questioned in recent years (Eidlin, 2010). Many of the posited thresholds were derived from the empirical analysis of existing public transport systems in developed cities and their respective urban contexts. A dearth of relevant data has limited empirical studies around urban form and public transport relationships in rapidly growing developing cities. In one of these few studies, Zegras (2010) found that, in Santiago de Chile, residential dwelling unit density had no apparent direct relationship with car use and a relatively small impact on car ownership. Whereas, Guerra (2013) observed a much stronger connection that car ownership in Mexico City has with population and employment densities, despite a similar lack of effect on car use. Overall, the results of the few studies in the context of a developing city seem to be inconclusive. However, these studies were focused on car usage and ownership patterns which are often ineffective indicators of public transport viability. With so few studies analysing the relationship between density and public transport finance in the context of a developing city, it is surprising that so many of these cities have set densification targets with subsidy minimisation in mind.

3.2. Human settlement distribution

Population and employment distribution has had far less consideration in rapidly developing cities when analysing the viability of public transport services. There are three characteristics, related to spatial distribution, that are believed to have a significant effect on the viability of public transport systems. The first, density articulation, is the distribution of people and jobs in relation to the location of the public transport trunk services. The second, land use mix, is the distribution of residential and other land uses in relation to each other. The final characteristic, catchment area, is the result of the distribution of people in relation to the nearest major economic node.

3.2.1. Density articulation

Population and employment distribution in relation to the location of the public transport trunk services is a relatively new indicator of public transport viability. It has grown out of the argument in favor of Transit Oriented Development (TOD). TOD promotes higher population and employment densities within walking distance of public transport trunk stations in order to shorten transport trips and improve the economies of scale along the trunk routes (Suzuki et al., 2015). However, metrics of TOD inherently neglect one of the key effects it can have on public transport viability, decreasing the reliance on less efficient feeder services. These metrics only measure development that is proximal to major public transport routes; they do not measure the magnitude of peripheral development that can undermine the viability of public transport services in many developing cities.

This is evident in the only study that could be found which analyses the effect of the density distribution on public transport viability in relation to the trunk service stations. Sivakumaran et al. (2014) set a constant gross trip density for the entire catchment area of the public transport service. The study then incrementally raises the density in the TOD zone while simultaneously decreasing the density outside of the TOD zone, in order to maintain the original trip density across the whole catchment area. The ratio between the TOD density and non-TOD density, was found to have no significant effect on the viability of the public transport service. However,

feeder services were not included in this model, therefore, it can only be concluded that a TOD density ratio had no substantive effect on the finances of a public transport trunk service in this case. The potential for density distribution to affect the viability of feeder services has yet to be effectively measured.

When population or employment is strategically distributed, with regard to public transport, it is referred to as 'articulated density' (Suzuki, Cervero & Iuchi, 2013). The level of articulated density in developing cities varies greatly. Curitiba is purported to be an exemplar of high articulated density, having strictly followed an urban development plan since 1965 (Rabinovitch, 1996). However, in developing cities that are growing rapidly, or have grown rapidly, urban development plans are not strictly adhered to, and this has resulted in the majority poor occupying cheap land at relatively higher densities on the periphery of the city (Maunganidze & Del Mistro, 2012). This is especially true in South African cities, where Apartheid spatial planning has exacerbated the peripheral densification and reliance on feeder or paratransit services. This continuous peripheral development could significantly deteriorate the likelihood of rapidly developing cities achieving viable public transport despite their large captive user base and high average densities.

3.2.2. Land use mix

The distribution pattern of residential and other land uses in relation to each other is more commonly referred to as 'land use mix', and specifically refers to the spread of land uses and their level of interaction within a given area. Monocentricity and low land use mix exacerbates the rise in peak passenger volume due to overlapping trip paths, creating points of congestion (Haque et al., 2013). As the capacity of a public transport system is designed to meet the peak passenger volume, the congestion of trip paths that a low land use mix creates, inflates the level of infrastructure required and the associated costs. Additionally, the more fine-grained the mix of land use types, the closer an average resident is to the nearest place of employment, retail and other amenities, which leads to a higher percentage of trips that do not require motorised transport (Manaugh & Kreider, 2013).

Apart from the positive effects on passenger trip congestion, land use mix also influences public transport viability through the degree of seat renovation achieved by a vehicle during a completed trip (Cooke & Behrens, 2014). In many rapidly growing developing cities the aforementioned higher density peripheral development is coupled with an aggregation of employment opportunities in more central, historic economic nodes. The result is that one passenger will utilise a seat for the duration of the vehicle trip (Maunganidze & Del Mistro, 2012). If the land use mix was higher, passengers would board and alight the vehicle more often and one seat could serve multiple passengers, increasing the productivity of the vehicle. Similarly, higher land use mix would increase the polycentric nature of a corridor, leading to a more bi-directional flow of passenger trips and further increase seat productivity, known as seat renovation.

The final financial effect of land use mix relates to the different peak demand periods for different land uses throughout the day, and week. Higher land use mix creates a more even temporal profile for passenger demand, i.e. the difference between the peak demand and base demand is lower. A high peak-to-base ratio due, in part, to low land use mix has been posited as a fundamental reason why the creation of viable public transport in South African cities has been so difficult (van Ryneveld, 2010). Many developing cities suffer from low land use mix due to the reasons mentioned above and no study could be found that quantitatively analyses the impact of land use mix on public transport viability in this context.

3.2.3. Catchment size

The final characteristic is the size of a public transport trunk service's catchment area. A large catchment area for a public transport corridor means that a lower threshold population density is required to generate the necessary threshold ridership. However, in a low land use mix

context, it can also mean that infrastructure dependent peak passenger demand limits are surpassed at lower densities and passenger congestion becomes problematic. As the less efficient feeder services are often restricted in their length, the catchment area of a public transport service often correlates strongly with the length of the corridor and the average trip length of passengers utilizing the service. In a radial network, public transport corridor length can also indicate the average distance from residences to the CBD. From a meta-analysis of past empirical studies, distance to the CBD is suggested to have one of the strongest influences on travel behaviour and private vehicle use (Ewing & Cervero, 2010). Similarly, in the study by Zegras (2010), distance to the CBD was found to have a considerably larger estimated impact on automobile ownership in Santiago de Chile than both population density and land use mix.

Unfortunately, the aforementioned intense densification occurring on cheaper land at the periphery of rapidly growing developing cities and the significance of the centrally located historic economic centres has created exceptionally long public transport corridors. An example is the 35km BRT trunk corridor in Cape Town, South Africa which commenced construction in 2015 (Myciti, 2015). Similarly, in Indonesian cities, the average BRT route is about 30 km in length and the demand pattern is radial, terminating at the CBD (Ernst & Sutomo, 2010). Again, no study could be found that links public transport corridor length to its level of subsidization in this context, but the ever-lengthening corridors in some developing cities could be having substantial negative effects on their viability.

Due to the scarcity of relevant studies, and empirical data, on human settlement characteristics and public transport viability in the context of a rapidly developing city, simulation research was required to investigate the potential effects of these urban development changes.

4. Research method

To simulate the effects of human settlement characteristics on the viability of public transport systems, a public transport corridor operating cost model was developed. This model utilizes empirical data from the South African urban context to approximate some of the characteristics that can be found in rapidly growing developing cities, and expands on an earlier version developed by Del Mistro & Bruun (2012).

4.1. Network development

Given the radial nature of many public transport networks in developing cities, the model represents a triangular transport corridor terminating at a Central Business District (CBD), see Figure 1. The catchment area of the corridor is divided into 42 Traffic Analysis Zones (TAZs), each with specific land use types and characteristics. In Figure 1 the green TAZs represent areas that are within walking proximity of the trunk service (i.e. a maximum TAZ centroid distance from the trunk service of 2 km) to negate the need for an additional feeder service. Outside of these TAZs, the maximum allowable walking distance to feeder services is 1 km. The blue TAZs are serviced by feeder routes and the beige TAZs represent the parts of the corridor catchment area that are not serviced by feeder routes. The latter zones improve the realism of the model as the coverage of a public transport system is often less than 100%. The walking distances and level of coverage are based upon South African guidelines and travel surveys (DoT, 2007).

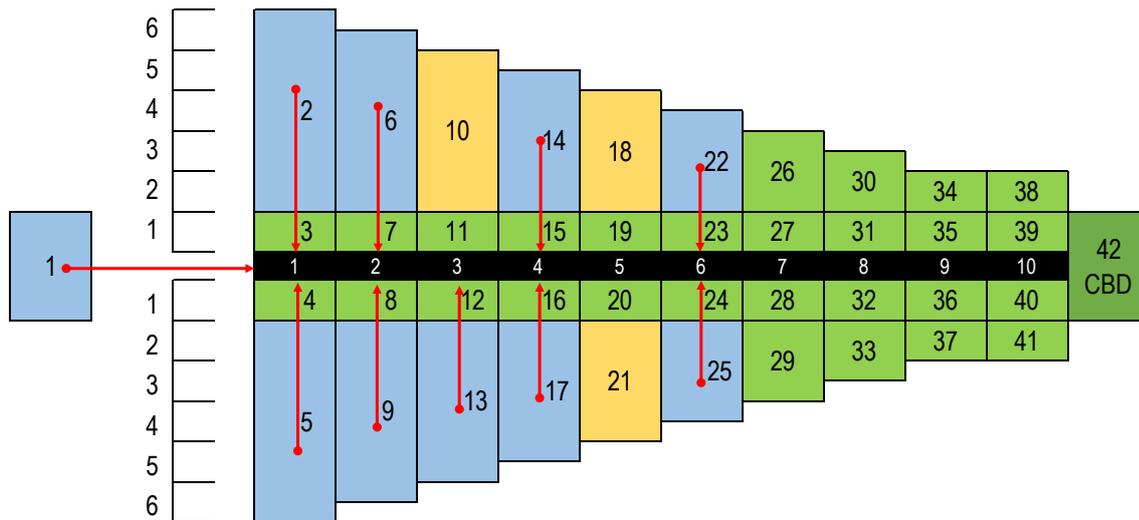


Figure 1: TAZ layout of the simulated transport corridor

The model is comprised of one trunk service route (thick black line) and ten feeder service routes (thin red lines). The trunk route consists of 10 links, and the link with the highest passenger volume dictates its required capacity. The length of the trunk route is 20 km, which is comparable to many new public transport corridors in rapidly growing developing cities (www.brtdata.org, 2015).

4.2. Land use input

Land use data is added to each TAZ individually. The distribution of passengers is manipulated by altering the population density of the residential land uses. Across the public transport corridor, the total area of non-residential land uses is set to maintain an approximate balance between trip productions and attractions. The four land use categories include: residential; business; industrial; and retail. South African trip generation rates were utilised to calculate the trip productions and attractions for each TAZ, based on the areas of the land use types and their respective population and employment densities (COTO, 2012). Within each scenario, the distribution and magnitude of the land use variables that are not being tested maintain set values. The intensity of the land uses, and therefore the costs associated with the system, are ramped up and averaged over a period of 20 years in order to include the repayment costs of the capital investments.

4.3. Trip distribution

A gravity model was chosen to distribute the trips throughout the network, using a conventional distance decay friction factor and a beta value of 0.25. The distances between the TAZs are calculated as route length, rather than direct distance, and the TAZs within close proximity to the trunk service are assumed to have no feeder distance penalty. The model undergoes nine iterations of the Furness method and cumulates the origin-destination pairs onto the nearest routes. The gravity model is run for the morning peak hour and the total number of passenger trips is then extrapolated for the entire day, for input into the costing model.

4.4. Operating costs

Operational performance and costing data for the six public transport modes used in Del Mistro & Bruun's (2012) study were updated and supplemented with new data sourced from South African government and parastatal agency publications. An array of costs was generated for each mode per route. Additionally, the costs for travel to and from the unserved TAZs were added to the total, assuming that all potential public transport trips to the trunk route would have to be completed by private vehicle park-and-ride.

4.5. Output analysis

From the output of the model, four indicators were chosen for analysis: total cost (i.e. the direct cost of providing services, excluding externality costs); authority cost (i.e. the portion of total cost borne by the city authority, in the form of operating cost subsidies and capital loan repayments); average trip length; and peak passenger volume.

The primary component of public transport viability is the total cost of the system, including the authority cost and the cost to the user. The relative share of authority and user costs is determined by the extent of operating cost subsidization. As discussed in Section 3, the need for public transport subsidies and their availability often do not align. A poorer developing city minimises fare cost to maintain affordability, which increases the subsidies required, but the equally poor transport authority may not have the financial liquidity to fund the subsidies. As a result, the magnitude of subsidies given to public transport services and the fare revenue collected can have a weak relationship with the cost of the most appropriate public transport system. Therefore, the transport mode or modes generating the lowest total cost to operate the trunk and feeder routes, respectively, are chosen as the most appropriate simulation of a transport system under each set of human settlement characteristic values. The model uses the gross cost contracting arrangement, whereby the operators are guaranteed a certain amount of profit over and above their expenses, and the financial risk of the system rests with the authority. The shortfall between the operators' costs, including predetermined profit, and the fare revenue is then met by the authority through a subsidy.

Average passenger trip length can have a strong contribution to the viability of a public transport service. The common fare collection systems, including the distance-based system used by the model, penalize shorter trips through a base fare. Therefore, shorter trips are more economically sustainable to operate while also incurring a lower, more affordable fare.

The trunk service's peak passenger volume represents the capacity that needs to be supplied, which has significant effects on the capital and operating costs of the service. Additionally, it is often the determinant for the choice of mode technology; hence, the chosen public transport mode for the trunk and feeder services respectively is also dependent upon the peak passenger volume being within its operating capacity capability.

5. Results and discussion

5.1. Human settlement density

To test the effect of human settlement density on public transport viability, the population of the corridor was distributed evenly throughout the catchment area. Conversely, 50% of the trip destinations were allocated to the CBD to represent a monocentric developing city, with the remainder distributed evenly along the trunk corridor. Gross population and employment density was increased incrementally from two to 400 persons per hectare (p/ha). The cost components are represented as monetary values per passenger trip served as they generally increase with increasing ridership.

Figure 2 and Figure 3 illustrate some of the results from the density simulation, which have been capped at a density of 200 p/ha due to the associated peak passenger volume of 182 291 persons per hour per direction (p/h/d) being beyond the capacity of almost all public transport services. This exceptionally high passenger volume is due to the dimensions of the corridor and the bottle-necking effect of a monocentric human settlement pattern.

The effect of gross population density on the total and authority cost components of the public transport service in Figure 2 is observed to be slight. The total cost per passenger trip is actually higher after a density of 70 p/ha due to the higher peak passenger volume requiring the higher capacity and more expensive suburban rail mode. In this case, the posited causal effects related to the economies of scale are not seen.

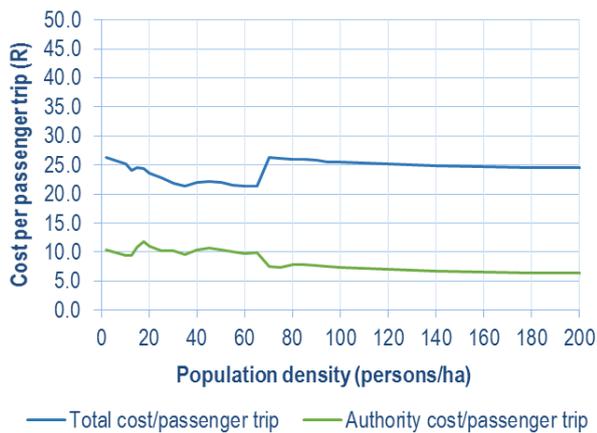


Figure 2: Total and authority cost of a 20km public transport service for varying levels of population density

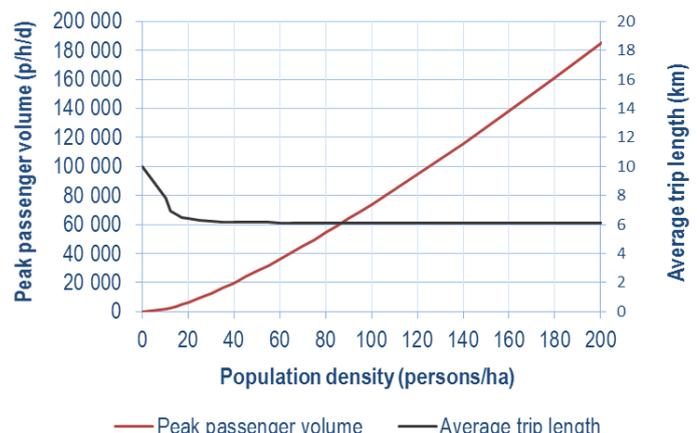


Figure 3: Peak passenger volume and average trip length of a 20km public transport service for varying levels of population density

Figure 3 illustrates that the average trip length is unaffected by the increase in population density, apart from an initial decrease due to partial trips being rounded up to whole trips. This is inconsistent with the results of many empirical studies on the effects of population density on travel behavior (e.g. Ewing & Cervero, 2010). The fundamental difference between this simulation and the empirical studies is that density, in this case, is being analysed in isolation from the other characteristics of human settlements. When density thresholds are set using empirical data, especially from developed cities, the financial effects of the generally more supportive human settlement pattern associated with compact cities are attributed to higher population density. However, high population density is not correlating with a public transport supportive human settlement pattern in many rapidly developing cities, such as in this case, possibly due to the speed and unplanned nature of their development. This is known as 'dysfunctional density' (UN-Habitat, 2013).

Dysfunctional density can be seen in many developing cities, due to rapid population growth and ineffective or non-existent growth management policies. Even in Bogota, Colombia—which has been touted as having one of the most viable public transport systems in the developing world—most of the recent urban development has occurred on the urban periphery, far from TransMilenio's trunk services. The moderate densification has led to the disproportionately higher peak passenger volumes described in Figure 3. Consequently, the quality of service has reduced to the point that some choice users are reverting back to private transport options and Bogota is considering supplementing the Bus Rapid Transit (BRT) with a potentially less viable metro system (Suzuki, Cervero & Iuchi, 2013).

Thus, the density of human settlements—the indicator that underpins the plans of many developing cities to create viable public transport systems—may only be an effective indicator of public transport viability in the developed cities due to its correlation with a supportive human settlement pattern. Therefore, rapidly growing developing cities whose higher densities do not correlate with public transport supportiveness should be far more focused on the spatial distribution of their settlements.

5.2. Human settlement distribution

5.2.1. Density articulation

'Density articulation' is a metric that was created in this study to describe how strategically the population in a city is distributed with regard to public transport proximity. The metric measures the proportion of the population in a public transport corridor catchment area that is within walking distance of a trunk service. Therefore, the metric can describe the rapidly growing

developing cities with high peripheral densities and a resultant high reliance on less viable public transport feeder or paratransit services (Cooke & Behrens, 2015).

The density articulation simulation varies the spatial distribution of the corridor population while maintaining the gross corridor population density constant. The gross population density was set at 50 p/ha as it corresponded with a peak passenger volume of around 35 000 p/h/d in the previous simulation, which is within the capacity limit of most mass public transport modes. The distribution of employment opportunities maintains the same pattern as the previous scenario, and the balance between trip origins and destinations remains intact.

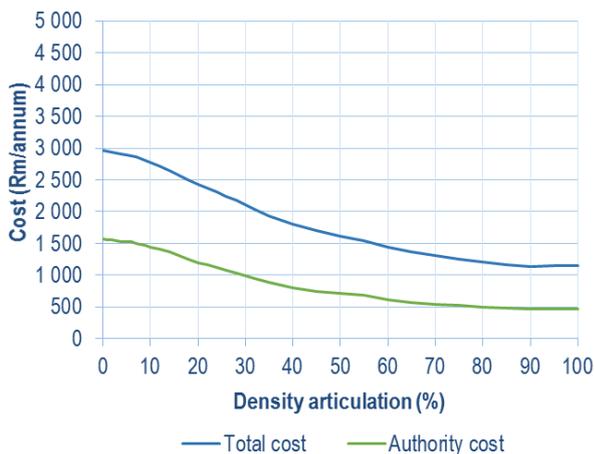


Figure 4: Total and authority cost of a 20km public transport service for varying levels of density articulation

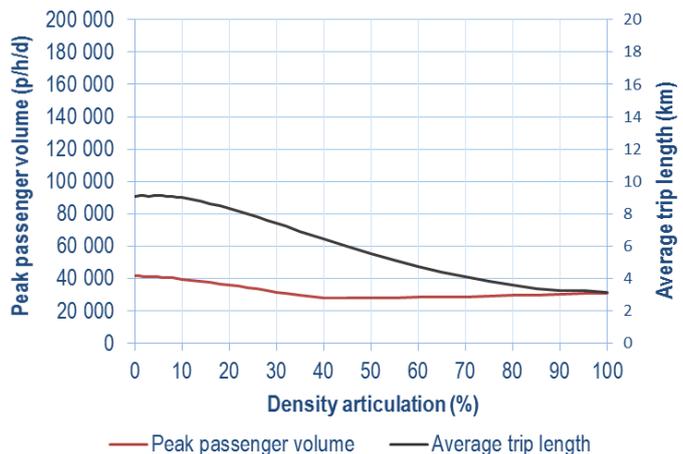


Figure 5: Peak passenger volume and average trip length on a 20km public transport service for varying levels of density articulation

Figure 4 illustrates the annual total and authority cost of the public transport services for the full test range of density articulation. Between a density articulation of 0%, representing full feeder service reliance, and 100%, representing a system with the minimum allowable feeder services, the total cost decreases 61% and the authority cost decreases 70%. The results suggest that density articulation has a significantly stronger impact on public transport viability than human settlement density in this context. Density articulation also has a considerable influence on the length of the average passenger trip, which decreases from 9.1 km to 3.1 km over the extent of the test range. So, increasing density articulation increases the population density of the TOD zones, which leads to a host of benefits associated with TOD. The low levels of density articulation in many developing cities—due to the high density, peripheral development—is potentially having significant, negative effects on the subsidization levels of their public transport systems. Increasing density articulation levels in these cities to much higher, target levels could have a substantial impact on the viability of their feeder services.

However, changing the density articulation does not inherently affect the overall population density of the corridor, which is still limited by the disproportionately high peak passenger volumes that are generated in these conditions. Density articulation has very little effect on peak passenger volumes, so another characteristic of human settlement distribution would be required to overcome this limitation in order to increase the density in the TOD zones above 100 p/ha.

5.2.2. Land use mix

To explore the impact of land use mix on travel patterns, trip lengths and other suggested viability influencers, a simplified version of the ‘entropy’ metric was utilised. Entropy is the most common metric, (see Bordoloi et al., 2013), and calculates land use mix based on the proportion of a developed area that is held by each land use type. In the simplified metric, a land use mix of 0% denotes that all of the non-residential land uses are situated in the CBD, representing a monocentric developing city with high land use segregation. At a land use mix of 100%, each zone has a proportion of the non-residential land uses that is equal to its relative area, including the CBD. The corridor population density of the land use mix simulation was also set at 50 p/ha to retain comparability and sufficient mode capacity.

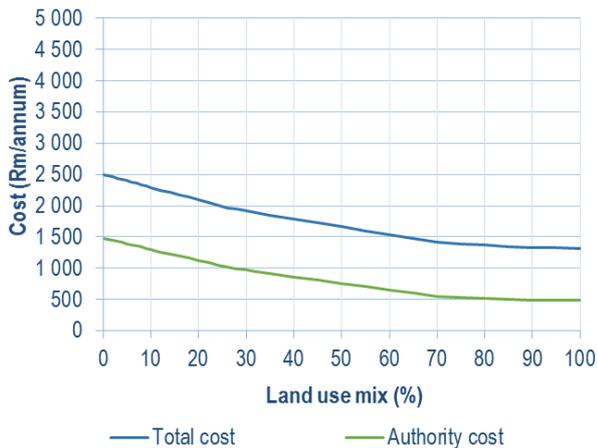


Figure 6: Total and authority cost of a 20km public transport service for varying levels of land use mix

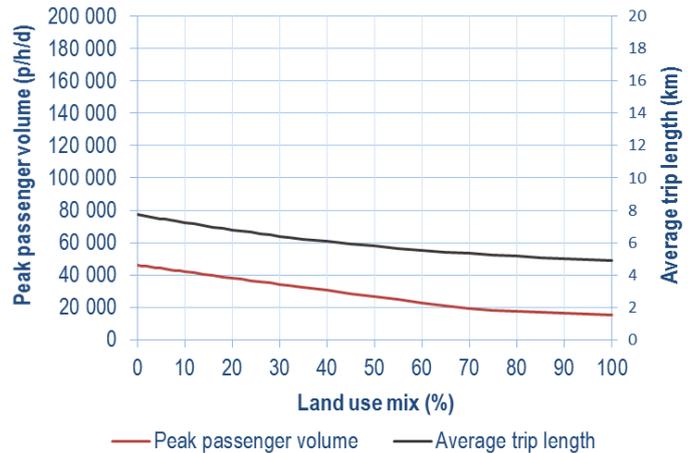


Figure 7: Peak passenger volume and average trip length on a 20km public transport service for varying levels of land use mix

The results of the simulation show a marked decrease in total and authority cost in Figure 6, of 48% and 67% respectively across the test range. The posited effect on average trip length, associated with seat renovation, is demonstrated through a 37% decrease between the unmixed and fully mixed land use scenarios. While significant, the decrease is not as substantial as the density articulation simulation. In contrast, the effect of land use mix on peak passenger volume, shown in Figure 7, is much more significant, decreasing by 67% across the test range. It is observed that this decrease is indeed due to the increased bi-directional flow of trips and seat renovation. Furthermore, as trip destinations are increasingly available within the same zone as the origin, fewer trips along the trunk route are required.

The significant effect of land use mix on peak passenger volume, by diversifying the trip destinations and reducing the congestion points on the network, is likely masking the negative effects of population density in empirical studies. It is a complementary human settlement characteristic that appears vital for rapidly developing cities to attain workable high population densities. Yet, few developing cities have declared land use mix targets or comprehensive policies. In this case, land use mix has had a significant effect on the peak passenger volume but the root cause of its magnitude, the relatively large corridor catchment area, remains a barrier to sustainable higher population densities.

5.2.3. Catchment size

For this simulation, the dimensions of the corridor were halved to determine to what extent a smaller catchment area can dampen the rise in peak passenger volume with increasing settlement density and the ensuing effects on the transport service’s viability. The trunk corridor length is reduced to 10 km and the resulting catchment area is one third of the original. The distribution of land uses, including residential, is identical to the 20 km population density simulation.

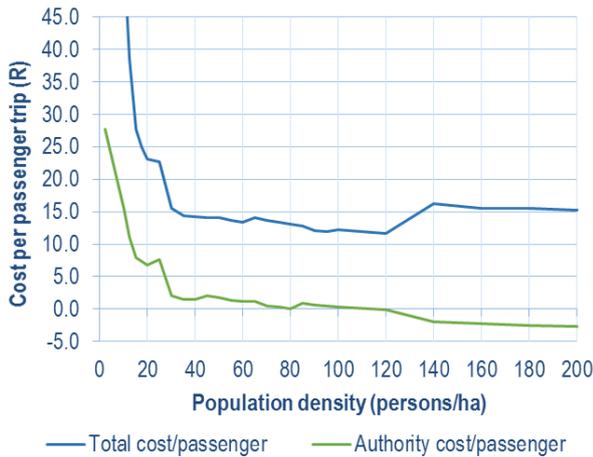


Figure 8: Cost components of a 10km public transport service for varying levels of population density

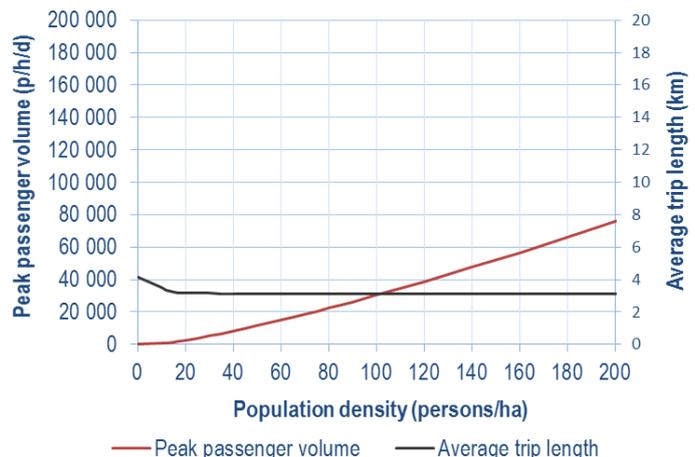


Figure 9: Peak passenger volume and average trip length on a 10km public transport service for varying levels of population density

As expected, the peak passenger volume in Figure 9 is much smaller than that of the 20 km corridor at corresponding values of population density, despite the same relatively unresponsive level of land use mix. However, as the width of the corridor was reduced in proportion to the decrease in its length, a higher percentage of the total area is now within walking distance of the trunk route. This means that the even distribution of population density throughout the corridor has a corresponding density articulation level of 77%, compared to a level of 44% in the 20km simulation.

As a result of the substantially reduced feeder service reliance and the halved average trip length, the total cost per passenger trip is significantly lower in Figure 8. The resultant positive effects on the viability of the public transport service are illustrated by the consistently generated profit at densities above 120 p/ha. The smaller corridor allows higher population density levels to leverage the effects of the higher density articulation to attain service viability. This simulation illustrates the negative effects on the finances of the public transport services that the ever-lengthening transport corridors are having. The human settlement pattern could be further improved by maximizing the density articulation and land use mix, as well as other human settlement characteristics.

6. Concluding remarks

This study aimed to explore how the change in human settlement characteristics of a rapidly growing developing city may be affecting the viability of its public transport services. An analysis of previous land use-transport studies show that the relationship densification has with public transport service viability is far less conclusive in the context of a developing city. However, rapidly growing developing cities are still following the example of their developed counterparts in equating densification with more financially successful public transport. Due to a human settlement pattern that is generally unresponsive of public transport, increases in density lead to considerable increases in passenger congestion and insubstantial decreases in the cost per passenger trip served. It highlights the necessity for population density to correlate with a supportive human settlement pattern in order to have a significant causal effect on public transport viability. It is suggested that the lack of this correlation is the reason for the inconclusive causal relationship that density has in developing cities. When densification occurs in isolation of improvements to the human settlement pattern, a disproportionate rise in peak passenger volume and the absence of effect on the average passenger trip length become the primary limitations to densification improving public transport viability. Overcoming these limitations requires focus to be placed on the human settlement distribution characteristics whose related effects are often empirically attributed to population density.

Improving the distribution pattern of the population can significantly decrease the length of the average trip, which increases the affordability of the public transport services. Additionally, by increasing density articulation, a city can drastically decrease its reliance on less feasible feeder services, leading to a more efficient and more viable public transport system. This human settlement characteristic is especially important for the growing number of developing cities that are encountering rapid densification of cheap land on the periphery of the city, far from the CBD and the major trunk service corridors.

When this inefficient population distribution pattern is paired with the concentration of employment opportunities in historic economic centres, low levels of land use mix are the result. It has been posited that this spatial pattern has led to unproductive public transport corridors with unidirectional demand profiles and high peak-to-base ratios in some developing cities in which it has been identified. Improving land use mix in this situation decreases the peak passenger volume and the average trip length, the two major barriers to the positive effects of population density.

Finally, the inefficient spatial pattern found in these rapidly growing developing cities has necessitated exceptionally long public transport trunk service corridors, upwards of 30km in some cases. The ensuing size of the corridor catchment area exacerbates the resultant passenger congestion due to increasing population density. Decreasing the length of the public transport trunk corridor allows higher population densities to be achieved before infrastructural capacity limits are met. Additionally, in radial public transport systems, decreasing the corridor length increases the level of density articulation in the corridor, and decreases the feeder service reliance. Significant decreases in the cost per passenger trip are observed in the simulations, making the service more affordable and economically sustainable.

Despite a number of limitations relating to the simplified nature of the model and the assumptions regarding the generic South African operating conditions, this study has illustrated that the densification of rapidly growing developing cities is a poor indicator of resultant changes to public transport service viability. Whether due to the speed of development, the lack of sufficient urban planning or a host of other factors, high levels of population density are not strongly correlated with public transport supportive human settlements in many developing cities. In these cities, utilising density thresholds and densification policies could actually have detrimental effects on public transport viability if not complemented by land use mix and density articulation targets or the restriction of corridor lengths.

Further research is required to resolve some of the limitations mentioned above. Firstly, the study should be replicated on a metropolitan-wide network that tests the impact of polycentricism on these relationships in the context of a rapidly developing city. Secondly, the effect that the tested human settlement characteristics have on the temporal demand profile of the public transport service in this urban context needs to be investigated; and specifically the suggested positive effects that land use mix has on peak-to-base ratios. Thirdly, more refined analysis on the effect that the size of the TOD zones have under different human settlement conditions is necessary. Finally, an investigation into how the density articulation metric can include employment distribution should be conducted, as well as an analysis of the current levels of the metric in different international urban environments.

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Transit Oriented Development as a Tool for Transforming Negative Urban Spaces around Railway Stations in South African Townships

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Synopsis

Transit Oriented Development (TOD) is a tool that could be utilised to transform human settlements. This paper focuses on collaboration as a non-negotiable prerequisite for the successful implementation of TOD to transform South African townships from negative urban spaces to great human settlements.

1. Introduction

The transformation of negative spatial patterns in South African townships has been on the government's agenda for a number of years. This paper focusses on how this transformation could be achieved. The conceptualisation of the paper has been shaped by the need to improve the environments around railway stations. The paper contends that the ideal urban space cannot be created by aligning the plans of various disciplines, but rather through the integration of those plans and that authentic integration is only achievable through collaboration. It focusses on Transit Oriented Development (TOD) as a vehicle through which urban spaces could be shaped and reshaped. It is being presented from the perspective of long-term passenger rail planning as it relates to land use planning, as well railway property development in relation to the development of adjacent privately-owned properties.

The environments around railway stations are sterile spaces that fail to attract desirable land uses and associated private investment. This has been widely as a result of bad design. There is a need redesign and redevelop these spaces, thus re-defining their role within the urban space, particularly within human settlements. This can be achieved through the collaborative efforts of various stakeholders. These collaborative efforts also require further definition.

The paper will draw from international experience and theory to demonstrate the possibilities for creating urban spaces through collaborative efforts, with reference to failed as well as successful efforts. The review of related literature will focus on TOD as a subject and look briefly at how collaboration has been addressed in theory and practice. The research analysis will draw from international experience and assess South African case studies where the collaborative efforts are necessary and have been attempted. Some lessons will be extracted from both literature and case studies to inform the proposed collaborative alliances for the effective conceptualisation, planning and implementation of TOD.

2. Literature Review

In order to establish a theoretical basis for Transit-Oriented Development (TOD), selected related literature has been reviewed. The main focus of the literature review has been the theoretical frameworks and discourses that led to the conceptualisation of TOD and how these have evolved over time. It is not intended that this section will be as comprehensive as one prepared for an academic thesis; the intention is to create a theoretical background to the concept and its application. The secondary focus will be collaboration and the collaborative alliances that are necessary for the successful implementation of TOD projects.

2.1 *The Conceptualisation of TOD*

The concept of TOD was codified in the late 1980's and defined as a mixed-use development that encourages people to live near transit services and to decrease their dependence on driving (Calthorpe, 2002). Burke and Brown (n.d.) define TOD as a development form that seeks to use the location of future development to influence regional travel behaviour. Wilkinson (2006) interprets TOD as having the following features: moderate to higher density human-scaled development with an open-grid road network, centred on a rail or bus transit station and extends to an easy walking distance of 400-800m. Although there are varying definitions of TOD, Cervero, et al (2002) outline the following common elements: Mixed-use development, Development that is close to and well-served by transit, Development that is conducive to transit riding, Compactness, Pedestrian- and cycle-friendly environs, Public and civic spaces near stations, as well as Stations as community hubs.

While the concept was much older than the branding, its branding highlighted the interdependence of transport and the built environment. Some may argue that TOD is primarily "real estate" and secondarily "transport". This view may well be correct, depending on the ideological, theoretical and discourse-specific perspective. From the perspective of a public transport operator, the point of departure is making sure that there is sufficient support for the public transport service being provided. This has an element of proactively influencing travel behaviour in favour of public transportation. This point of departure places transport before real estate. This paper moves from this perspective; it places transit at the centre of "orienting" real estate development. TOD neighbourhood residents are more likely to use public transport services easily accessible to them, increasing ridership levels and improving levels of operating cost recovery through fare collection. Now that this has been established, the historical development of TOD can be tackled.

While TOD is an urban planning tool, it would be erroneous to divorce it from transport planning. Arguably, TOD is a (public) transport planning tool as well, and should, in fact, be used as a tool for promoting public transport usage rather than merely meeting urban design ideals. According to Burke and Brown (n.d.), TODs are one land use planning intervention that creates the potential for populations to make shorter journeys and to make mode shifts away from the private motor car and towards walking, cycling and public transport. TOD, as a planning tool does not solely belong to one discipline; it "represents an integrated approach to transportation and land use planning" Schlossberg and Brown (2004: 34). It is evident that travel patterns are influenced by the location and design (including density, land

use mixing and connectivity) of developments. In the context of rail planning, especially where the implementation priorities of proposed corridors is unknown, influencing land use for the benefit of rail development and usage becomes all the more critical.

Throughout the history of transit, real estate development has been a key component of its planning (Carlton, 2007). According to Ditmarr and Ohland (2004) transit related development was characterised as “development-oriented transit” in the early twentieth century, placing transit first as an enabler for real estate development. In fact, the urban planning concept of the early 1900’s focussed primarily on real estate development with rail as the primary conduit between developed areas. The development of the rail network increased the development potential of new areas and made connectivity possible.

Discussions on and aspirations about TOD often focus on increased residential densities around transit stations. There is, however, evidence that the kind of real estate development around transit stations is largely influenced by the inclination of local governments and their fiscal objectives (Boarnet and Crane, 1995). Some local governments prefer developments that result in a significant increase in their tax base, such as commercial development. Residential development might not be the preferred kind of development. Empirical studies of zoning trends have found that “municipalities appear to favour commercial development near rail stations over high density residential development” (Boarnet and Crane, 1995: 23). While this might be true for many cases, it is important to note that the locational dynamics of areas surrounding transit stations should determine the appropriate TOD initiative. The destination or origin nature of an existing transit station is an important informant to the decision of whether a TOD should focus on commercial or residential land uses. Other informants such as the need to influence travel behaviour should also be considered. For instance, if the intention is to encourage passenger, rather than commuter usage of the transit system, appropriate land uses will be identified to encourage travel patterns throughout the day, instead of during morning and afternoon peak periods.

The increase in private vehicle usage affected transit ridership to the point where transit agencies required large operating subsidies. This opened the way for a new form of transit oriented development. According to Carlton (2007), transit agencies created leasing departments and partnered with developers in leveraging their property portfolio. During the 1970’s and 1980’s, lease revenues were meant to cover transit operational costs. It was during this period that the relationship between transit ridership and the intensity of development near transit stations was fully recognised. New York was a case in point where the densities were higher and were producing positive synergies around transit stations.

The real catalyst for bringing TOD to maturity was a research done in Portland Oregon (Carlton, 2007), which intended to find a solution that promoted development patterns that reduce land consumption, vehicle trips and air pollution. The “green agenda” sets the stage for the revival of transit-oriented development and the related increase of densities around public transport systems. Throughout Transport Policy, statements are made about the increase in the gaseous emissions and the increase in the usage of public transportation as a solution.

Despite the assertion that TOD increases public transport usage, this has not been realised in all places where TODs have been implemented. This has meant that public transport operators have not based their implementation decisions entirely on TODs. This shortcoming can be addressed by using analytic models that combine land use data with

household travel survey data, employ complex modelling techniques including travel demand modelling and modal assignment modelling, and provide detailed outputs (Burke and Brown (n.d.). Cervero, et al (2002) highlight the following reasons for the failure of some TOD initiatives: (i) Unrealistic market expectations; (ii) a downturn in the real estate market; as well as (iii) stagnant growth in rail-served corridors.

In outlining the pre-requisites for the success of TOD, Cervero, et al (2002) highlight the need for the public sector to lead and champion TODs. Some of the TOD successes referred to, combine mixed-use, residential and retail uses with pedestrian circulation. According to Schlossberg and Brown (2002) a pedestrian focus is one of the key criteria for TOD success. Knight and Trygg, cited in Cervero, et al (2002: 10) bring to the fore one of the most important pre-requisites for TOD success, “carefully crafted collaboration between the many individuals, organisations, and institutions with vested interests in outcomes, including developers, lenders, transit agencies, local and regional planning organisations, and public interest groups”.

It is necessary to pay more attention to the vehicles through which TOD is delivered. One of these vehicles is collaboration and associated collaborative alliances as observed by Knight and Trygg, cited in Cervero (2002).

2.2 Collaboration and Collaborative Alliances

Over the years much has been written about various theories of collaboration as they relate to various disciplines. The purpose of this section is not to provide a critique or comprehensive analysis of these perspectives. It is rather to provide a basis for shaping the process and form of collaborative efforts in the transformation of urban spaces in South African townships.

In analysing the implementation of TOD in South Africa, Bickford and Behrens (2015) highlight the different interpretations of TOD as well as the different and sometimes conflicting objectives and interests of different stakeholders. As a result of this, many attempts at implementing TOD end in failure. It is impossible to implement TOD unilaterally and thus any efforts to implement TOD require an element of working together across various organisations. Therefore, some of the fundamentals of “working together” need to be explored. Gray (1985: 5) defines collaboration as “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible”. The structure or structures through which this process unfolds are called “collaborative alliances” (Gray and Wood, 1991) or “partnerships” (Carnwell and Carson, 2008).

The three main questions that need to be answered in exploring collaboration are: 1. What creates the need for collaboration? 2. How does this collaboration take place? 3. What are the expected outcomes of collaboration? Gray and Wood (1991), in their analysis of theoretical contributions, conclude the following in answer to the above questions:

One of the motivating factors for initiating collaboration involves high stakes and high interdependence for all parties concerned. It is understandable that each party may come to the table with their own agendas. For instance, a government department may seek collaboration for the sake of achieving social goals, whilst a private developer may seek the

benefits of having derived demand for their end product. However, it must be noted that those individual agendas constitute their motivation for being part of a collaborative alliance, particularly where there is a cognisance of the dependence of their plans on the other party's plans. Kožuch (2009) refers to collaboration where goals can differ and the only common elements are the conditions in which these goals are achieved. This is particularly true for engagements that seek to realise the goals of TOD and use the concept of TOD as a common agenda and an enabling environment within which their own individual financial, socio-economic or other goals can be achieved. Rallying behind the concept becomes the object of their pursuit of individual goals with the hope of interdependent and mutual benefits. One important point to make is that there must be a shared purpose to achieve a common end and this begins with a shared understanding of a problem and the need for collective responses to it.

According to Gray and Wood (1991) the necessary elements for the process of collaboration are: the configuration of membership, the organisation of decision-making, the type of interaction and the duration of the interaction. Carnwell and Carson (2008) and Kožuch (2009) emphasise the importance of a horizontal relationship between partners where shared power is based on knowledge and expertise rather than title.

It is possible that at the end of the collaboration process, not all individual goals are attained even when the common problem has been partially solved. Does this constitute failure? If the collaborative alliance survived the collaboration process and the main problems were solved, this can be counted as success. Thomson et al. (2007) provide some useful insights into measuring collaboration with a focus on governance, mutuality, norms and administration. They conclude that the "mutuality dimension (of collaboration) is manifest in partner organisations that (1) combine and use each other's resources so all benefit, (2) share information to strengthen each other's operations and programmes, (3) feel respected by each other, (4) achieve their goals better working with each other than alone, and (5) work through differences to arrive at win-win solutions" (Thomson et al. 2007:20).

2.3 Conclusions

Literature records the failure to implement TOD as envisaged or intended. Some of the reasons for the failure are quite clear. Experienced failure presents an opportunity for exploring new avenues in order to find solutions. The context of the Passenger Rail Agency of South Africa (PRASA) alone creates fertile ground for advancing the TOD agenda. However, as indicated in the above section, PRASA cannot act alone in achieving sustainable results of transforming railway station precincts through TOD implementation. One of the activities of PRASA is the constant interaction with Local Authorities. An important aspect of this interaction is the engagement on future rail corridors that link developed areas across vast areas of undeveloped land. Clearly, there is scope for decisions about what land uses and densities must precede the implementation of these future rail proposals. It is at this point that the discussion on the protection of proposed railway reserves meets the discussion on TOD.

The second important aspect of this interaction is the upgrade of existing stations on the existing network. The railway station is at the centre of a station node or precinct and its development to meet passenger comfort requirements is ideal. However, the railway station is located within a context that PRASA does not have control over and reciprocal development around the station itself needs to be realised to further enhance the passenger

experience. It must be noted though, that the priorities and intentions of PRASA might be at odds with the priorities of the land owners around the station. Determining a common end and creating a vehicle to achieve that common end is critical. From this premise, it is concluded that the success of TOD as envisaged by PRASA and Local Authorities depends on the formation of collaborative alliances that seek to achieve a common goal, and includes multiple stakeholders.

3. Objectives / Research Questions

TOD is regarded as an important structuring mechanism that has the potential of transforming railway station precincts into positive urban spaces within the urban fabric, instead of being unproductive and sterile environments. The investigation starts from the premise that TOD as defined in theory and applied in practice, has not been fully explored within the context of South Africa, even though policy statements have been made in support of TOD. There are challenges that must be specified and addressed in order to make TOD work. The paper will demonstrate, through case studies, how the TOD approach is being adopted in South Africa and how attempts are being made to exploit it as an urban structuring mechanism. Lastly, the paper makes proposals regarding how TOD could be made effective as a vehicle for urban structuring and transformation. The paper suggests a collaborative approach that has a basis in South African Transport legislation.

4. Approach and Methodology

The investigation will be approached as follows:

- Using *secondary literature sources* and drawing conclusions about the process of TOD implementation.
- Reviewing *examples of TOD implementation* and focussing on policy and physical enablers and hindrances. Both success and failure stories will be considered.
- Using the case study methodology to assess TOD implementation around PRASA's priority stations with a focus on the following central questions: What gave rise to the need for collaboration? How does this collaboration take place? What are the outcomes of the collaboration? The questionnaire survey method was used to collect information about inter-organisational interactions in the creation of urban space. A questionnaire was prepared with sub-questions addressing the above main questions. This questionnaire was distributed to various stakeholders that are affected by the development of PRASA's 28 priority stations in Gauteng (18), KwaZulu Natal (3) and the Western Cape (7). Land owners within a 500m radius of these stations were contacted for responses, since their properties are located within the primary TOD zone. Municipal officials from the following departments were contacted: Spatial Planning, Land Use Management, Transport Planning and Economic Development.
- Focussing on *PRASA and its collaborative partners* and their role in influencing policy shifts and spatial applications of government policy.

5. Research Analysis and Findings

The case study analysis was conducted at two levels: one being the a questionnaire survey directed at stakeholders affected by PRASA's station developments, and the other being an investigation of some international TOD examples. The latter was based on readings with the aim of drawing assumptions for TOD implementation based on the process and outcomes of TOD projects.

5.1 PRASA's Station Developments

A list of 28 stations that PRASA intends to re-develop was sourced. Eighteen (18) of these stations are located in Gauteng, three (3) in KwaZulu Natal and seven (7) in the Western Cape. They are distributed across the following local authorities: City of Tshwane, Ekurhuleni Metropolitan Municipality, City of Johannesburg, Sedibeng District Municipality, EThekweni Municipality, and the City of Cape Town. Seven (7) of these stations are located in Central Business Districts (CBD's), six (6) are located in suburban areas and fifteen (15) are located in the townships. Eleven (11) of these stations are located within what the Spatial Development Frameworks have identified as TOD zones. These stations were mapped and 500m and 1000m radii were drawn around them. The following information was obtained for properties within the primary (500m) TOD zone: Land ownership, current zoning and associated parameters, current land use, and future land use patterns. The questions in the questionnaire were framed to elicit information related to awareness of all parties' plans, existence of and rationale for collaborations, type of expected and realised collaboration, as well as expected and realised outcomes of collaboration. For the sake of reporting, the next paragraphs will focus on the Reasons for Collaboration, Type of Collaboration, and Collaboration Outcomes.

Given that this paper is concerned with the transformation of environments around railway stations in townships, it is befitting that some attention, albeit brief, is given to that context. The 15 stations located in townships share similar characteristics which can be summarised as follows:

- Stations are located along vacant stretches of land that are present the opportunity informal developments with no formal municipal services and infrastructure;
- The stations are often surrounded by low density residential developments despite spatial visions that advocate for higher densities;
- The land uses around these stations do not offer opportunities for vibrant urban activity;
- The stations are located adjacent to informal taxi facilities which are disconnected from the railway station;
- The stations are located within areas that do not have proper pedestrian and safety features;
- The areas around railway stations are not well maintained and often become dump sites.

The question that this paper seeks to answer relative to the above is: how can these spaces around railway stations be transformed for the better? The answer seems to lie in implementing TOD through effective collaborative alliances.

5.2 Reasons for Collaboration

PRASA's responses are summarised as follows:

- PRASA's legislative secondary mandate in terms of the Legal Succession to the Transport Services Amendment Act, 2008 (No 22 of 2008) is to maximise the value of the real estate assets. This value cannot be maximised if the areas around PRASA's stations are not given attention. There is therefore a need to form partnerships with the local authority and surrounding land owners to facilitate the delivery on this mandate.
- Increasing revenue requires an increase in ridership. Within PRASA there is a focus shift from providing stations that are a conduit for passengers, to stations that are destinations. It is believed that through this can be achieved through appropriate real estate investment at the stations, as well as the attraction of tenants such as retail shops, travel agencies, banks and government departments. Attracting these tenants would require attractive surroundings beyond PRASA's area of control. Therefore, it is beneficial for PRASA to engage with surrounding land owners.
- Since railway properties were incorporated into the land use management systems of local authorities, it has become mandatory for railway authorities to apply for land use change approvals. With PRASA's drive to commercialise stations, this has become more of a requirement. However, the approval processes are lengthy and PRASA hopes that through forming partnerships with the local authorities, some of the processes could be shortened.

The responses of Local Authorities were as follows:

- Government's policy requires that 85% of residents should live within 1km of a transit stations. In order for this to happen, some station nodes have to support the development of housing.
- TOD has become central to the spatial transformation agenda as a means to reverse the impacts of apartheid planning.
- The National Land Transport Act, 2009 (No 5 of 2009) requires local authorities with significant rail services to establish Intermodal Planning Committees, with prescribed stakeholders.
- One of the requirements of National Treasury, on the basis of the Division of Revenue Act, is for local authorities to develop Built Environment Performance Plans. These plans should indicate how government funds are spent at identified locations called integration zones. PRASA, as a state owned agency should also invest at these integration zones. In compliance with this requirement, local authorities are compelled to engage with PRASA.

Land owners responded as follows:

The relaxation of bulk services contribution requirements, as well as the shortening of approval processes, constitute their motivation for interacting with municipalities. Cleanliness of the streets and the general environment is also an issue that the municipalities need to urgently address.

5.3 Type of Collaboration

It was observed that the constitution of collaborative structures is based on compliance with legislation. The membership of the structures is therefore limited to transport and spatial planning experts. The terms of reference of these structures also reflect a bias towards transport. Land owners of properties within a defined TOD zone are not included and discussions are mainly about public transport and not much attention is given to land use management issues. Where land use is discussed, it is PRASA officials attempting to influence decisions and local authority officials defending approval processes. The fact that the IPC's are used as structures for collaboration presents the problem that they are the local authority's structure and are therefore controlled by the local authority. The local authority sets the agenda and the tone of the meetings; it is hardly a horizontal structure where expertise and knowledge has more weight than position. There is no sharing of resources to make TOD a reality. Although agreements have been signed between parties for certain projects, progress has been slow. Where a decision to co-fund initiatives at station precincts are taken, the financial commitment is often lacking and the governance of related structures is weak. The development of TOD policies happens within the local authority and other stakeholders are merely consulted once the policies have been finalised. This creates a situation where there is no common understanding of the meaning of TOD and how it should be implemented. On the other hand, PRASA prepares designs for their stations without proper engagement with other stakeholders. In some instances, this results in a mismatch between PRASA's priorities and those of the local authorities. For instance, one of PRASA's priority stations was outside the local authority's focus area. So, while the municipality was facilitating the development of a mixed use node through various mechanisms, PRASA's focus was elsewhere. There was no engagement on the identification of focus areas, their conceptualisation, their design and their development. This highlights a serious shortcoming in the composition and functioning of the collaborative structures that are currently in place.

5.4 Outcomes of Collaboration

The expectations are that the redevelopment of PRASA's station will increase the ridership on the railway system and improve the quality of passenger experience at stations. Given that all 28 PRASA station developments are still at design phase, the outcomes cannot as yet be measured. The expectations from local authorities are limited to the development and functioning of intermodal facilities. While modal integration is an element of TOD, it is not TOD. Local authorities also expect the population and land use densities to increase around stations as indicated in some of their spatial plans, in line with government policy. However, this expectation is limited by the fact that appropriate and effective collaborative structures are not in place and the local authority does not own properties in the identified nodes. Government spending is expected to be focused on identified nodes. However, this has not yet happened because plans of various stakeholders are not integrated from conceptualisation to the phasing of implementation and budget capital allocation.

5.5 International TOD Case Studies

In an attempt to move from conceptualisation to practical application, and link theory with practice, examples where the concept of TOD has been consciously and deliberately

applied, are described below. These examples are explored and described in terms of the principles applied, the challenges faced, as well as the successes and shortcomings of TOD projects. TOD cases are recorded in various areas including Canada, Australia, the United Kingdom and the United States. Most of these cases, however, focus on a single development around a particular transit station. The cases focussed on in this paper were selected for their intended impact on various transit nodes along a given transit corridor in a manner that structures and transforms the urban area, thus giving it a unique identity and character. The case of Village de la Gare in Quebec could not, however, be ignored even though its focus is on one commuter rail station. Its inclusion in this paper is specifically for the collaborative approach taken in its conception, design and development, as this approach presents a useful example for South Africa.

5.5.1 City of Seattle Station Area Planning

5.5.1.1 Description

This case has been selected as an example of how Local Authorities, together with public transport agencies are able to drive planning processes that make TOD possible.

The City of Seattle, together with the rail authority, Sound Transit, worked on creating an environment conducive to the success of transit oriented development and the associated benefits of increased transit ridership. In 1998, the City of Seattle articulated a vision for future development around selected light rail stations. Policy choices were identified to guide the direction of future land use decisions in station areas, leading to the adoption of Station Area Concept-Level Recommendation packages in 2000. The Station Area Overlay legislation, which allowed for appropriate zones in station areas and the establishment of Station Area Overlay Districts, was passed in 2001. Market analyses for each area laid the basis for the development of scenarios, which included desirable station designs.

The following enabling pieces of legislation were passed during the process:

- Inter-local Agreement between the City and Sound Transit, Ordinance No. 118927 (3/98)
- Framework Goals and Objectives for Station Area Planning, Resolution No. 29867 (12/98)
- Interim Station Overlay, Ordinance No. 119394 (3/99)
- Concept-level Recommendations for each station area, Resolution No. 30165 (9/00)
- Station Area Overlay and Rezones, Ordinance No. 1204530120460 (7/01)

5.5.1.2 Lessons Learned

Collaboration led to the development and promulgation of enabling legislation. Therefore, through practiced collaboration in South Africa, policy shifts and enabling legislative measures are possible.

5.5.2 Virginia, USA: Rosslyn-Ballston Metro Corridor

The Rosslyn-Ballston Metro Corridor indicates successful integration of land use and transport planning along a railway corridor. It is located in Arlington, Virginia in the USA. The

corridor contains five metro stations and five corresponding metro station areas located within a defined radius of the stations.

The corridor indicates a “bull’s eye” pattern of development with more development intensity immediately surrounding the stations. The railway corridor enjoys optimal ridership due to the strategic location of appropriate land uses around railway stations.

5.5.2.1 Background and History

Planning commenced in 1972 with the aim of revitalising the existing retail corridors without jeopardising the character of the surrounding single residential neighbourhoods. The plan, as implemented was approved in 1977, where after sector plans for each station were compiled.

5.5.2.2 Characteristics of the Corridor

- The railway line and stations form the main axis of the corridor.
- Up to 10-storey high buildings have been constructed within the corridor.
- Strict urban design guidelines were developed as part of each sector plan to cover building heights, street design, streetscape and frontages, building materials, and landscaping features.
- Mixed-use developments accommodating retail, offices, residential apartments and parking.
- Floor area ratio of 3.5 for the immediate station area.
- Relatively low private car ownership.

5.5.2.3 Impact of the TOD initiative

- The population within a quarter-mile of the corridor increased by 107% between 1990 and 2011.
- Transit ridership has increased. 45% of the people living around Clarendon Station, for instance, take transit or walk to work.
- Properties in the corridor account for 47% of the assessed land valuation in the county. Commercial property accounts for 43% of the tax base.

5.5.3 Village de la Gare, Quebec

5.5.3.1 Background

Village de la Gare is a development that is within 750 metres from the railway station. It comprises 1000 residential units, 2300 square metres of commercial space, a school, public open space, bicycle routes and pedestrian pathways. The development was a deliberate measure to curb traffic congestion in the metropolitan region. It began with the establishment of the Metropolitan Transportation Agency in 1995, which was meant to promote public transport use. The agency introduced a commuter rail line and service in 2000 as a phase in shaping development around transit nodes. In 2001, the agency and the municipality negotiated with a private land owner for the acquisition of land for the purposes of building a railway station along the new line. This led to a joint planning and development venture for the transit node between the agency, the municipality and the private land owner / developer.

5.5.3.2 Characteristics of the Development

The following characteristics of the development are worth noting for their relevance in applying the principles of Transit-Oriented Development:

- The design made provision for the location of highest residential densities closest to the station. Although the lower densities are located at the periphery, these buildings are still within walking distance of the station to encourage pedestrian movement.
- Multi-use / Mixed-use buildings are located closest to the station.
- Pedestrian walkways traverse the development, minimizing the need for motorised transport.
- Lower parking standards, as well as parking spaces for bicycles.

5.5.3.3 Impact of the Development

The following impacts have been identified:

- 44% of people living in the development use public transport for work trips.
- Most of the commuters walk to the train station.
- The average trip to work takes 39 minutes.

5.5.3.4 Lessons from the Development

The following lessons can be learned:

- Collaboration between authorities and land owners is an important aspect of creating vibrant urban spaces around transit nodes.
- The transport agency led the development of a concept plan for the node in collaboration with the land use department and the developer. This promoted integration rather than alignment of plans in a deliberate effort to create a functional transit space.
- The costs of various aspects of the development were shared between the municipality and the developer.

6. RESEARCH CONTRIBUTION TO PRACTICE

The results of questionnaire survey indicated that there are serious shortcomings in the approach to TOD and these shortcomings are likely to lead to the failure of any efforts to implement TOD. Firstly, there is no common understanding of TOD. Secondly, there are no appropriate structures in place. Thirdly, the expected outcomes are too individualistic for them to contribute to the effective implementation of TOD initiatives. This section proposes the following:

6.1 Establishing a Common Purpose

Government has put in place some legislative measures that create a space for collaborative alliances to be formed. Shaping a common purpose around how transit nodes should develop should not therefore be difficult. Statutory processes ensure that the public is consulted when spatial plans are prepared. This may well be acceptable when broad spatial plans are being prepared. However, when precinct plans are prepared, this approach of merely consulting is not acceptable. Rallying stakeholders around TOD requires “working

together” on developing the vision for the precinct within the broader spatial plan. This facilitates the sharing of the spatial vision before. While various stakeholders may have individual goals for their properties, the fact that their properties are located within a node whose spatial development vision is shared, is sufficient to steer the vision forward. The vision should indicate the interdependencies between the goals of different stakeholders, so that achieving one goal is not regarded as success within the context of the shared vision. Questions such as what is TOD and how would it benefit various stakeholders should be explored.

As part of establishing a common purpose that is presented in the form of a precinct plan, a multi-criteria analysis (MCA) of the precinct could be conducted. This approach could use the following criteria:

- Existing and proposed land use character within a 500-1000m radius around a railway station, including parking parameters;
- Demographics of the transit supportive area (500-1000m radius);
- Station potential in terms of accessibility and spatial positioning within the urban fabric;
- Intermodal connectivity, including the function of the transit system;
- Development value within the 500-1000m radius around a railway station;
- Position of the station within the railway network.

The benefits of utilising Multi-Criteria Analysis are as follows:

- Multi-criteria analysis is a transparent and robust decision-making methodology which is able to take into account both quantitative and qualitative factors within a consistent methodology.
- MCA breaks down the decision-making process into groups and sub-groups of criteria; each station is given a score for each criterion.
- Scores are derived from underlying data or interpreted subjectively as indicators of the strength of various preferences.
- Criteria within the same group are weighted relative to each other until a final score for each station is achieved.
- MCA is suited to complex decision-making processes with multiple criteria.
- MCA provides the ability to compare quantitative and qualitative criteria.
- MCA simplifies the decision-making process into individual criteria, while still covering all issues.
- Through MCA, it is possible to test implications of assumptions and weights on the outcome; it leads to more robust decision-making.

6.2 Establishing a Collaborative Alliance or Partnership

Public Private Partnerships may well be the answer in some cases, but their focus might not suit the present discussion. The establishment of TOD collaborative alliances requires an acceptance of shared responsibility, respect for each stakeholder and a horizontal arrangement that allows for the sharing of expertise and inclusive decision-making. Careful attention must be paid to the selection of representatives of various stakeholders in the

alliance. This is important as each member must function as a partner, not a subordinate and their contributions must carry the weight of the organisation represented. Proper representation is critical and can never be over-emphasized. The following could be considered in establishing collaborative alliances:

- Establishing a non-hierarchical relationship where knowledge and expertise are more important than title;
- The potential of sharing expertise where intellectual and cooperative aspirations are at the centre;
- The willingness to work together towards an agreed purpose;
- Establishment of trust and respect amongst members of the alliance;
- Confirming the inter-dependency of the individual goals;
- Creating a foundation for consistency and connectedness; as well as
- Creating an environment that promotes participation in planning and decision-making.

Signed agreements can only go so far when structures are not properly constituted and are based on unrealistic expectations.

6.3 Agreeing on Outcomes

The survival of the collaborative alliance is critical to the achievement of the overall purpose of the collaboration process. The joint preparation of a precinct plan for the area within 500m of the railway station is of utmost importance as it creates a sense of ownership, which in turn, creates a responsibility towards the achievement of the set goals. This sets the scene for commitment to the plan, despite the phasing of the implementation of various projects within that plan. Each participating member of the collaborative alliance may see their goals achieved sooner than the goals of others, but this as an outcome, does not measure success. Changing markets have been identified as a hindrance to TOD implementation as it has a direct impact on expected outcomes. The difficulty of funding real estate developments is another. How these can be countered is a subject of another, more focussed investigation.

7. CONCLUSION

The paper advocates for collaboration between transport planners and land use planners in the creation of vibrant and functional urban spaces. The case of Village de la Gare in Quebec adds another dimension to the collaboration, that of the private land owner or developer. The collaboration between these parties from the conceptualisation of a development ensures that plans are integrated or combined into one integral whole instead of being aligned into a segregated whole. The paper proposes some steps that could be helpful in the establishment of collaborative alliances that are able to transform negative urban areas.

8. RESEARCH LIMITATIONS

- This paper was produced mainly from readings about cases where TOD has been consciously and deliberately applied. Little time was spent on evaluating successes and failures in order to identify lessons and propose improvements.
- The research input component, although based on references to cases, was largely based on the writer's deliberate effort to foster integration between land use planning and transport planning, using TOD as a starting point. The limitation presented by this is that the direction that TOD implementation is taking, especially in Ekurhuleni, might be biased towards the writer's own drive to deliver on his mandate, thus compromising objectivity. The real lessons will be learned when TOD initiatives are implemented, including lessons related to financial implications, investor responses, etc.
- The legislative framework has not been appropriately interrogated in order to place TOD implementation squarely within the requirements of South African legislation.
- The paper does not address "mixed use" in detail as this is dependent on locational dynamics and market research, etc.

9. FURTHER RESEARCH

The following notes are made for further research:

- It is important to note that while South African transport and land use legislation points towards integrated planning, it needs to go further into creating an enabling environment for Transit Oriented Development. More work must be done in order to influence the shift in legislation to ensure that TOD is firmly grounded in spatial and transport policy and legislation, thus ensuring compliance with collaboration directives.
- Collaboration must be unpacked with due consideration of the dynamics and complexities of stakeholder participation and buy-in.
- The application of TOD in the South African context must be analysed using acceptable analytical methods; and lessons learned must be drawn upon to develop a context-specific TOD approach.
- There is a need to conduct more detailed studies on the locational dynamics for specific types of land use mixes.

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Industrial land redevelopment in rapid urbanization area under “Stock development background: An empirical analysis of a city in the Yangtze River Delta, China

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Abstract *The paper talks about the industrial land redevelopment in rapid urbanization area under a new urban development background called “Stock development” in China. It adopts empirical study on Kunshan Economic & Technical Development Zone(KETD) and analyzes its industrial land from four aspects: scale and intensity, land-use efficiency, jobs-housing imbalance and landscape structure. Based on the former analysis, the paper proposes five specific industrial land redevelopment strategies towards three principles of land-use efficiency, city-industry integration and ecological restoration. The paper applies multiple data analysis with softwares like GIS and Fragstats. It also introduces flexible planning concept and scenario planning methods to enhance the planning adaptability.*

1. Introduction

1.1 background

After a thirty-year high speed urbanization development, the economic, urbanization and fixed asset investment growth all entered the slow lane. At the same time, the restraints of resource and environment gradually strengthened. Under the new background, the former large-scale expansion development mode in rapid urbanization area cannot continue. On the one hand, those urban areas need to improve the incremental land-use efficiency and control the expansion. On the other hand, they can properly reclaim inefficient land and exploit the potential of stock land redevelopment. Large proportion, low price and relatively inefficiency make industrial land one of the primary target of stock redevelopment.

1.2 General situation about industrial land development in KETD

KETD is a typical urban area for this paper, situated in the Yangtze River Delta area, with the metropolitan city Shanghai to the east and the economic first-rank city Suzhou in Jiangsu Province to the west. It's a booming industrial urban zone through more than twenty years' high speed development. The tide of industrial land redevelopment brings an opportunity to solve its current problems in development intensity, land-use efficiency, city-industry integration and ecological restoration. Firstly, the industrial land development intensity is too low so that the urban development land resources is wasted. On the one hand, due to industrial production processes and cost control, most industrial plants only have 1-2 floors, that causes low plot ratio and building density of industrial land. On the other hand, the initial industrial land costs are pretty low so that many industrial enterprises enclosure too much land and leave much land unused. Secondly, high-speed urbanization applies massive expansion mode, and the current urban development land scale in KETD is approaching the largest environmental carrying capacity. Thirdly, the industrial district and other urban function area are separated, that causes too much commuting traffic and deficiency of urban service in industrial districts. Fourthly, industrial production causes severe damage to the urban ecological environment. The environment needs to be restored to a higher level via ecological restoration to fulfill other urban functions such as inhabiting. In the following part,

the paper examines the industrial land in KETD from four aspects in view of the above problems.

2. Land-use scale and intensity analysis

2.1 High proportion of land

In 2015, the industrial land in KETD is 34.36 square kilometers, 51 percent of the urban development land, and 30 percent of the total land. The industrial land spatial distribution refers to figure 2, it covers a large contiguous area of the city and separate the other urban areas into several independent districts. Those amount of industrial land contributes about 69 percent of the whole gross domestic product(GDP). Compared with industrial land in Suzhou industry park(SIP), which produces 62 percent of GDP with a 20 percent industrial land proportion of total land in 2015. As figure 1 shows, KETD consumes 50 percent more industrial land to produce relatively the same ratio of GDP. It illustrates that the industrial land in KETD can be reduced into a lower proportion with higher outputs.

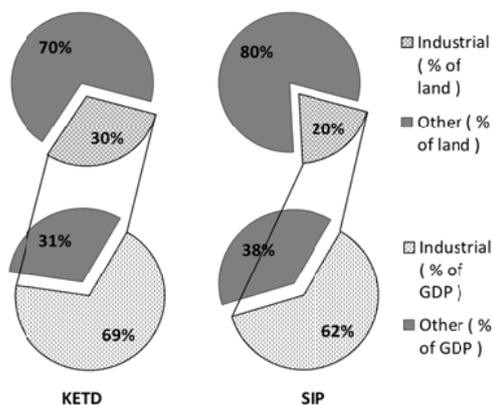


Figure 1: Comparison of industrial land scale and output. Source: made by author.



Figure 2: KETD industrial land layout (2015). Source: made by author.

2.2 Low development intensity

The development intensity of industrial land is too low. Firstly, comparing the development intensity of industrial, residential and commercial land in KETD, the average plot ratio respectively are 0.51, 2.1 and 3.8. The plot ratio of industrial land is significantly lower than residential and commercial land. As figure 3 shows, most of the industrial land has plot ratio lower than 0.5, only dozens of industrial plots has plot ratio higher than 1.0. Secondly, the current plot ratio is lower than the intensity standard in r plan. According to the standard plot ratio (1.0), the current industrial land in KETD has a construction potential space of $10.13 \times 10^6 m^3$, which is equal to about 400 hectares residential land or 250 hectares commercial land based on their standard plot ratio in regulatory plan (refers to figure 4). The current development intensity of industrial land is too low and has a huge development potential. It's an opportunity to release the potential by improve the industrial land development intensity and transfer the surplus industrial land into other urban development land such as residential or commercial to make up for the shortage.

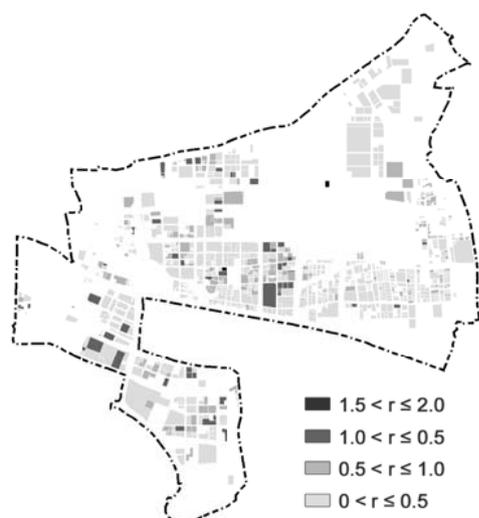


Figure 3: KETD Industrial land intensity layout. Source: made by author.

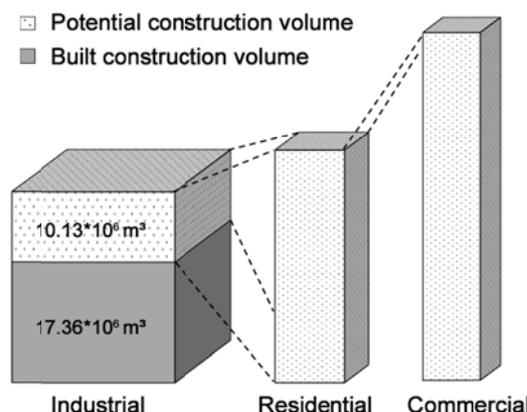


Figure 4: Built and potential construction volume. Source: made by author.

3. Land-use efficiency assessment based on flexible planning scenarios

3.1 Indicators and respective assessment

The paper assesses the industrial land from four aspects: economic, social, ecological and innovation. First, it selects assessment indexes for each aspects, 9 indexes in total. Table 1 shows the detailed description of all indexes. For economic assessment, C1 describes the overall contribution of industrial land, C2 and C3 shows the economic output efficiency in terms of per capita and per land dimensions. For social assessment, C4 and C5 indicate the employment volume and wages level. For ecological assessment, C6 and C7 describe the resource consumption and waste emission per unit output. For innovation assessment, C7 and C8 indicate the number of patent and utility to describe the technical innovation level. Each of the indexes has its respective weight which can be used for assessment respectively to get land-use efficiency assessment results in every aspect independently.

Table 1: Respective assessment index

Type	Inde code	Inde name	Unit	Respective weight
economic	C1	Industrial output value	10 ⁴ Yuan	0.4
	C2	Output per unit of land	10 ⁴ Yuan/hectare	0.3
	C3	Output per capita	10 ⁴ Yuan per capita	0.3
Social	C4	Quantity of employment	None	0.5
	C5	Annual salary per capita	10 ⁴ Yuan per capita	0.5
ecological	C6	Water consumption per output value	Ton/10 ⁴ Yuan	0.5
	C7	Waste per output value	Ton/10 ⁴ Yuan	0.5
Innovation	C7	Number of patent	None	0.5
	C8	Number of utility	None	0.5

3.2 Assessment synthesis based on flexible planning scenarios

To get the comprehensive assessment of industrial land use, the paper needs to synthesize the respective assessment results. According to the complex development environment and diverse possibilities, the paper applies flexible planning methods and sets three different developing scenarios: economy-leading development, ecology-leading development and innovation-leading development. As table 2 indicates, the weights of all aspects have a floating band, from

Table 2: Flexible synthesis weight

Type	weight range
economic	0.3~0.5
Social	0.15~0.3
ecological	0.15~0.3
Innovation	0.1~0.3

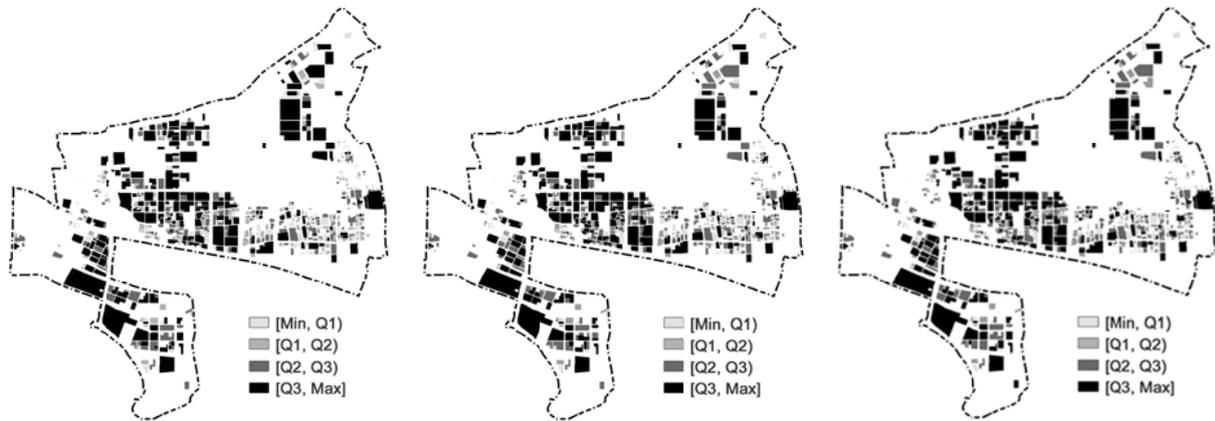


Figure 5-7: Industrial Land-use efficiency synthesis layout (Economic- Ecological- Innovation). Source: made by author.

where the paper can choose different weights for each assessment type and synthesizes them to get suitable results for different development scenarios. The paper uses ArcGIS to overlay the respective assessment data based on three different weights composition and the synthesis assessment layout of three scenarios are listed as figure 5 to figure 7. The industrial land is divided into four classes based on the synthesis assessment scores, using the quartiles as the principle of division. There are many obvious difference between the three schemes. Firstly, the land area of each class is various in different scenarios, refers to figure 8, the differences between three scenatios are mostly in the first class and second class. It means generally high-class industrial land has more significant diversity in land-use efficiency advantages. What's more, the precise spatial layout is very helpful for detailed land adjustment, especially helpful for city decision makers who have to consider much more influential factors. For instance, they can exactly adjust any block of industrial land based on specific development needs based on any of the above three general development directions.

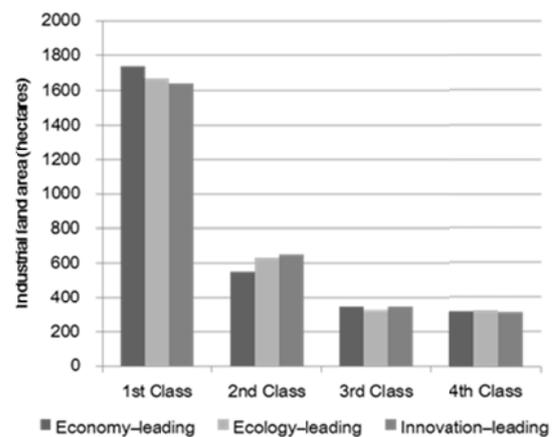


Figure 8: Differences between the synthesis assessment results in three scenarios.

Source: made by author.

4. City-industry integration analysis base on single indicator evaluation

4.1 City-industry integration concept

The concept of city-industry integration means “integration of people, industrial districts and living service districts in city” (Liu, 2012). It was proposed towards the industrial district development problems such as traffic congestion caused by “pendulum-like” commuting, public service shortage in industrial districts and so on. Those city problems are strongly linked to single land-use and industrial district separation. To solve those problems, city-industry integration becomes a hot research topic to promote the connection and integration of industrial areas and urban living areas. As a typical industrial district with similar problems, KETD has a aggregated distribution of industrial land and several single-functional districts,

which leads to heavy traffic between industrial areas and residential areas in rush hours, low level public services in industrial areas and shortage of jobs in residential areas. In order to improve the situation via industrial land redevelopment, specific analysis of city-industrial integration situation in KETD is needed. In the next section, the paper applies single factor analysis to describe the general picture of city-industry integration and specific details of each community unit in KETD.

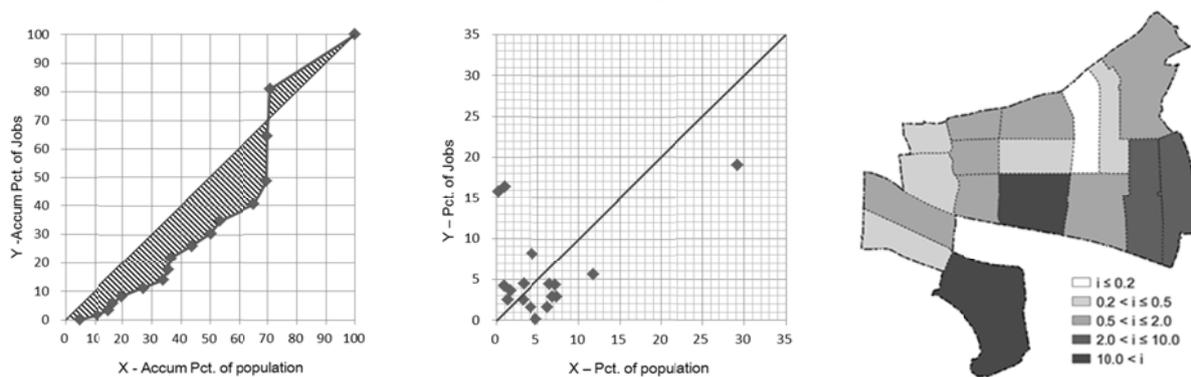
4.2 Jobs-housing imbalance analysis

Jobs-housing imbalance index describes the imbalance spatial distribution degree of jobs and residents in a geographical area. It has a strong connection with industrial and residential areas from the perspective of people. The paper takes it as the single indicator to analyze the city-integration degree in KETD. Similar to Gini coefficient, jobs-housing imbalance index is designed to describe one of those uneven distribution problems. So refers to the definition and description of Gini coefficient, the paper defines jobs-housing imbalance index as below:

$$G = \sum_{i=1}^n P_i J_i + 2 \sum_{i=1}^n P_i (1 - J'_i) - 1$$

(P_i = percentage of community population to total population, J_i = percentage of community jobs to total jobs, J'_i = accumulative percentage of community jobs to total jobs)

The analysis method is based on community data. Firstly, summarize the residential population and jobs of each community based on local demographic and occupation data. Secondly, sort the data sets from minimum to maximum based on jobs per community. Then plot accumulative jobs (Y-axis) against accumulative residential population (X-axis) to get the Lorenz curve. The paper summarizes 17 community statistical units, and the Lorenz curve refers to figure 9. The curve shows clearly that the jobs are much more than residential population in general. In particular, the jobs-housing Lorenz curve is different from the traditional Gini coefficient Lorenz curve, the data of jobs contains some workers from outside the district, so we can find some part of the curve goes about the 45-degree line.



(From left to right) Figure 9: Lorenz curve of jobs-housing imbalance situation in KETD.

Figure 10: jobs-housing imbalance scatter diagram for each community in KETD.

Figure 11: jobs-housing imbalance spatial distribution layout for each community in KETD.

Source: made by author.

The paper also analyzes the jobs-housing imbalance for each community. For each community, the paper simply uses the jobs-housing ratio (pct. of jobs/pct. of population) to describe community's jobs-housing imbalance situation. As figure 9 shows, the 45-degree line means jobs-housing ratio equals to 1, which means jobs-housing relatively even. Ten of

seventeen communities have ratios lower than 1, left seven have ratios higher than 1. Furthermore, the paper draws the layout picture of jobs-housing ratio of all communities. As figure 11 shows, all communities can be divided into five classes. Class one and two with ratio lower than 0.5 can be seen as jobs-lack communities, class four and five with ratio higher than 2.0 can be seen as housing-lack communities, and class three with ratio between 0.5 to 2.0 can be seen as balanced communities. Compared with figure 2, most communities in industrial areas have higher ratio, and balanced communities are located in the core development urban areas.

5. Landscape pattern and structure analysis

5.1 Metrics and method

The paper applies landscape structure metrics to analyze the landscape ecological conditions and features. Six metrics are selected for the analysis. The explanation and description of metrics are shown in table 3. CA means class area, equals the sum of all industrial land area. NP means number of patches, equals the number of industrial land blocks. PD means patch density, equals the NP of industrial land divided by total industrial land area. MPS means mean patch size, equals the sum of all industrial land area divided by the number of industrial land blocks. SHDI means Shannon's diversity index, describes industrial landscape diversity and fragmentation, the bigger it is, the more diversity and fragmentation the industrial land is. SHEI means Shannon's evenness index, describes industrial land diversity and dominance, its value is between 0 to 1, the bigger it is, the less dominance the industrial land is. The paper applies ArcGIS and FRAGSTATS 4.2 to analyze the industrial land in the year of 2009 and 2015 in KETD. The analysis results are also listed in table 3 as below:

Table 3: Metrics description and results of industrial land in the year of 2009 and 2015.

Metric	Description	Units	2009 Result	2015 Result
CA	$\sum_{j=1}^n a_{ij}$	Hectares	2764	3436
NP	n_i	None	661	949
PD	n_i/A	Number per 100 hectares	23.9	27.6
MPS	$\sum_{j=1}^n a_{ij} / n_i$	Hectares	4.18	3.62
SHDI	$-\sum_{i=1}^n (P_i \cdot \ln P_i)$	None	5.89	6.03
SHEI	$-\sum_{i=1}^n (P_i \cdot \ln P_i) / \ln n$	None	0.91	0.88

5.2 Result and analysis

The results of six metrics in 2009 and 2015 indicate the industrial landscape features in three aspects. Firstly, the increase of CA and NP from 2009 to 2015 shows that the land area and plot number grows a lot. The expansion trend of industrial land continues from 2009 to 2015. Secondly, metric PD indicates that industrial plots density has increased, that means the industrial land was separated by more industrial corporations independently. Metric MPS shows the average land area, it means the industrial land blocks are getting smaller. Thirdly, SHDI and SHEI describe the change of industrial landscape features as diversity and evenness. From 2009 to 2015, the industrial land fragmentation is getting worse and land

evenness decreases as dominance increases. That means industrial land landscape and ecological condition is getting worse from 2009 to 2015.

6. Industrial land redevelopment classification and strategies

6.1 Principle and objective

Based on the former analysis, the condition of industrial land in KETD can be concisely summarized as four features: over-expansion and low density, Land-use inefficiency, city-industry separation and landscape ecological deterioration. In addressing those questions of industrial land, the paper puts forward three principles and corresponding objectives. Intension & efficiency principle addresses the first and second conditions and it advocates objective to properly increase land development intensity and improve industrial land efficiency. City-industry integration principle addresses the third condition and it corresponds to the objective to promote city-industrial integration. Ecology & sustainability principle addresses condition four and support the objective to restore the landscape ecology. Then the paper proposes five specific industrial land redevelopment strategies, including two strategies related to the first objective, two strategies towards the second objective and one strategy for the third objective. The whole redevelopment strategy scheme refers to figure 12 as below:

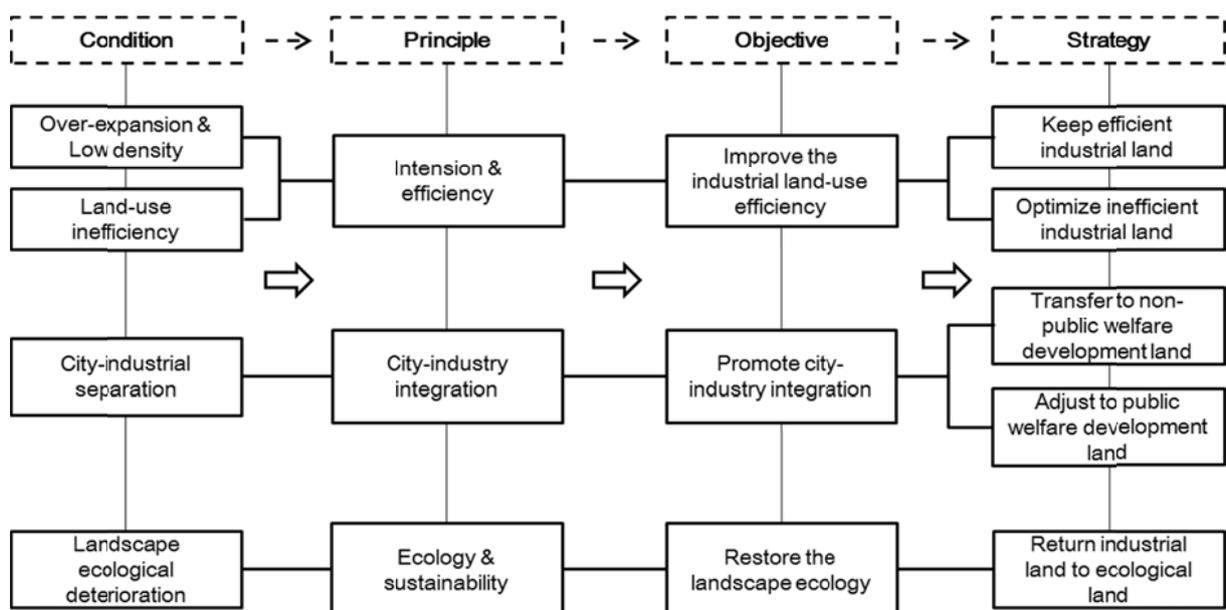


Figure 12: Industrial land redevelopment planning strategy scheme. Source: made by author.

6.2 Redevelopment strategies

Strategies in this section are further implementations of above principles and objectives, mainly focus on industrial land redevelopment. The paper proposes five different strategies, which can be classified into three types according to the correspondence with the objectives. The first one is “keep strategy”, which applies to industrial land with relatively high development intensity and synthesis evaluation scores. This type of industrial land will be kept and given an open and free development environment and necessary government support. The second one is “optimize strategy”, which applied to industrial land with relatively low intensity and synthesis evaluation scores. The strategy will properly increase the development intensity and optimize the industrial production efficiency. The third one is “transfer strategy” towards city-industrial integration objective. It applies to industrial land in

urban core development area and transfer the land into commercial or residential land. This strategy applies a land-use mode which can get more revenue from land finance and fulfill people's demand for business services and housing. The fourth one is "adjust strategy". To improve the urban public service function and meet people's growing demand of public service, it adjusts industrial land to public service facilities. Unlike the third strategy, it won't directly create financial revenue and it needs large amount of public finance input. But it's important for promoting city-industry integration and improving urban public service ability. The last one is "return strategy", which mainly applies to industrial land in bad condition or abandoned. It applies land management and ecological restoration to return the industrial land to ecological land such as green field, forest, and wetland. The detailed content and types of all strategies refers to table 4 as below:

Table 4: explanation of industrial land redevelopment strategies

Type	Strategy Name	Content of strategies
Land-use efficiency	Keep strategy	Keep the intensive developed and efficient industrial land. Offer a beneficial development environment & enough support.
	Optimize strategy	Increase the development density and optimize industrial production efficiency
City- Industry Integration	Transfer strategy	Transfer industrial land to commercial or residential land
	Adjust strategy	Adjust industrial land to public service land
Ecological restoration	Return strategy	Return industrial land to ecological land after land ecological restoration

7. Summary

Industrial land redevelopment is a complicated process and needs detailed analysis. Generally in rapid urbanization areas, there are four key issues: land scale and development intensity, land-use efficiency, city-industry integration and ecological protection. The paper applies critical analysis from the above four aspects on industrial land in KETD. Considering about the complexity and uncertainty of urban development, it introduces flexible planning concept and scenario planning methods. In terms of planning strategies, the paper proposes five targeted redevelopment strategies for specific types of industrial land aiming at development objectives. In addition, industrial land redevelopment relates to many other economic and social issues such as urban investment mode and social justice, that will also have effects on the final redevelopment policies and implementation. It is also the future research direction of this paper.

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Transforming Mumbai city: removing the bottlenecks to achieve future sustainability

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Abstract: *Growth of Mumbai city (population 12.4 million, 2011) has almost saturated and problems such as housing shortage, infrastructure deterioration, environmental degradation, transportation, and scarcity of land resources have attracted good deal of attention among policy makers. Further, declining growth rate, low floor area ratio, income inequalities, geographical constraints (three sides bounded by sea) etc. prevalent in the city call for redefining the ways of future urban development to achieve sustainability. This paper provides a clue for policymakers to take careful decision for removing bottlenecks and plan for a sustainable city.*

1. Research Background

Urban India accommodated 377 million people (31.2% of total population), the second largest urban population in the world (Census of India, 2011a). According to United Nation's estimate by the year 2050, half of India's populations are expected to live in urban areas (United Nations, 2014). Many Indian large cities specially the large metropolises and metropolitan regions are facing problems with respect to their growth, composition, spatial spread, congestion, environmental factors, housing aspects, infrastructure availability as well as accessibility. New challenges such as globalization, demographic change and shortage of future developable land make it necessary to tackle metropolitan growth in a rational manner particularly in Indian context. Mumbai (administered by Municipal Corporation of Greater Mumbai) is no longer an exception. Mehta (2012) in his research termed Mumbai as 'Maximum city' through highlighting everyday problems of people who inhabit the stunning metropolis. Mumbai continues to see population increases although its carrying capacity already exceeded (Mumbai HDR, 2009). The over-concentration of population and over-development beyond carrying capacity has created adverse impact on sustainability for Mumbai and Mumbai Metropolitan Region (MMR) as a whole.

This paper proceeds in six sections. Following introduction, Section 2 presents theoretical aspects and past research related with sustainability and economic forecasting models. Section 3 specifies the methodological framework and how it was applied. Section 4 presents current state of metropolitan growth, population overconcentration, lack of future developable land, rapidly decreasing natural areas, low FAR (Floor Area Ratio) etc. in Mumbai. Section 5 focuses on assessing the urban carrying capacity of Mumbai city through worker based 'Relative Employment Potential (REP) model' and carrying capacity based 'Sustainable Accommodation through Feedback Evaluation (SAFE)' model. After validation of REP model, scenarios for two forwarding decades have been forecasted. Further, SAFE model has been tested with various FAR options (with existing FAR and with increased FAR) to find out future FAR requirements for Mumbai. Finally, Section 6 synthesizes the findings and presents policy implications.

2. Literature Review

Initial regional development and growth model includes stages of economic growth by Rostow (1960), circular and cumulative causation by Myrdal (1966), relative income potential by Isard (1962), modified neoclassical growth model for the regional context by Borts and Stein (1964), change in market potential by Difioglio (1968). Richardson (1974) discusses that income potential and gravity models are members of the same family and its application includes regional economic projections (Isard and Freutel, Isard and Bramhall, and Difioglio), the measurement of market accessibility in the analysis of location of industry or agriculture (Harris, Dunn, Clark, Wilson and Bradely), spatial price theory (Warntz), income potential contour mapping (Stewart and Warntz), as a determinant of migration (Vanderkamp) and as the main component of investment in a regional growth model (Olsen and Peaker). More recent empirical studies on the regional economic growth includes geographic clustering for national industrial competitiveness by Porter (1990), relationship between public investment and regional economic growth by Button (1998) and interregional convergence by Barro and Sala-i-Martin (1999). Population forecasting empirical studies on model includes cohort analysis by Wunsch and Termote (1978), an econometric model using cross-sectional data of 131 Dutch cities and villages by Bierens and Hoever (1985), expert-based stochastic population forecasting method by Billari, M., et al. (2012), the Bayesian paradigm by Guimarães (2014). There is always scope to revisit the existing economy based population forecasting models and suggesting new or modified models applicable for developing world.

The concept of carrying capacity originated from ecology and mainly focused of environmental and man-made physical factors over a long period of time (Rees (1992); Abernethy (2001); Schneider et al (1978); Liu (2012) Oh et al. (2005)). Researchers worked on other non-environmental factors determining carrying capacity particularly last four decades and accordingly many factors included in carrying capacity assessment. It includes technical, socio-economic and cultural components by Schroll (2012), human attitudes, values, and behaviour by Godschalk DR, Axler N (1977), economic, social, environmental, and institutional (Liu (2012); Downs et al. (2008)). Several evaluation methods and tools evolve for assessing carrying capacity such as infrastructure and land use based by Oh et al. (2005), Visual threshold carrying capacity by Oh (1998), relative carrying capacity based on grey relevant degree by Xu et al. (2010), environmental carrying capacity theory and ubiquitous technology by Lee and Oh (2012). According to Wei (2015), carrying capacity is an evolving tool for monitoring sustainable development.

3. Methodology

REP Model developed based on principles of Walter Isard's Relative Income Potential (RIP) model (1962). Since estimation of income potential at regional level, especially at metropolitan level, is quite difficult and unreliable due to information gaps on income, it is considered, in this study, that employment of urban sector can serve the role of a good surrogate for urban income. In current study the model is assumed to remain same structurally as RIP model presents, but the principal variable is replaced by employment variable and the modified model is designated in this study as REP model. Thus REP model estimates growth by two relevant components namely;

- i. Proportionality Effect (A)
- ii. Effect of Region's Change in Interregional Position (B)

Hence, the model to be developed consists of two elements or two terms. The first express the proportionality effect on market sensitive activities (as the nation grows). In this case as MMR grows, all of its satellite towns will also grow due to proportionally effect. Proportionality effect (A) equation is as follows;

$$A = \sum f * \left(\frac{E_i^{t+\theta}}{E_i^t} \times E_i^t \right) \quad [\text{Eqn.-1}]$$

Where:

E = number of workers

f = factors which converts number of employment into number of population or dependency ratio

t+θ = forecasting year

t = base year

i = city i (urban units of MMR) r = specific region (here MMR)

The second element or term of the model refers to a region's change in interregional position, that is, to an improvement or deterioration in a region's total access to the employment market. The second set covers the forces that generate improvement or deterioration in a region's (here any urban component of MMR) interregional position, such position being relative. Proportionality effect not expected as it overstates or understates growth, hence urban components change in interregional position modifies the REP when composed with Proportionality effect. Thus any urban component's change in interregional position (B) can be derived by the reconstituted model as follows;

$$B = b * \left(\frac{t+\theta V_i}{\rho E_i^t} - 1 \right) p_r^t \quad [\text{Eqn.-2}]$$

Where:

b = positive constant

ρ = ratio (dependency ratio)

t+θ = forecast period

t = base year

i = city i (urban units of MMR) r = specific region (here MMR)

ρ = Population

$$\text{Where:} \quad t+\theta V_i = \frac{t+\theta E_1}{d_{i1}} + \frac{t+\theta E_2}{d_{i2}} + \dots + \frac{t+\theta E_n}{d_{in}} \quad [\text{Eqn.-3}]$$

$$t V_i = \frac{t E_1}{d_{i1}} + \frac{t E_2}{d_{i2}} + \dots + \frac{t E_n}{d_{in}} \quad [\text{Eqn.-4}]$$

Where

interacting urban units are designated as (1,2,...n) and E₁= Employment of urban unit₁, E_n= Employment of urban unit_n, d_{i1}= distance through public transport (bus) of urban unit₁, d_{in}= distance through public transport (bus) of urban unit_n and so on.

It is clear that we must eliminate from this ratio of employment potentials the general effect of regional growth or decline of employment. Such a task is easily done by multiplying the denominator of the ratio by a factor called dependency ratio.

Finally,

$$P_{t+\epsilon} = A + B \quad [\text{Eqn.-5}]$$

Where,

$P_{t+\epsilon}$ = Forecasted Population

A = Proportionality Effect,

B = Urban Components change in inter-regional position.

In the above model the proportionality effect and the factor of urban components change in interregional position are considered as additive. Since the two terms are additive, each is expressed in the same units, namely population numbers. This model is used here for future population allocation of all urban units of MMR. Applying this model for 2001 census data, the population of 2011 has been validated. After validation and necessary modification scenarios for two forwarding decades 2021 and 2031 could be forecasted.

Further SAFE model can be used in any urban area for assessing the carrying capacity (Sharma et al, 2012) and the same applied for Mumbai to estimate future land and FAR requirements. The carrying capacity of the area can be calculated using the following equation:

$$CC = AU - (AND + AIF) \times FAR/S \quad [\text{Eqn.-6}]$$

where, CC = Carrying Capacity, AU = total urban area, AND = net non-developable area, AIF = area for infrastructure development, FAR = Floor Area Ratio and S = Floor area requirement per head.

Due to non-availability of more recent data, land use survey conducted in 2008 by Mumbai Metropolitan Regional Development Authority (MMRDA) is considered as base period source of information for present study. Municipal boundary expansion in future is not considered as scope of present study because Mumbai has geographical constraints for expansion. This paper describes the method by which future population can be forecasted for Mumbai city through REP and carrying capacity based SAFE model.

4. Mumbai : the case study

Mumbai has not only become the biggest city in India, population-wise, but it is also the core of the biggest urban agglomeration in the country and is poised to be the world's third largest agglomeration after Tokyo and Mexico city (Mumbai HDR, 2009). It is seen from Table-1 that since 1901 there is a continuous growth of population in Mumbai in absolute number till 2011. On the contrary the annual average growth rate has drastically been reduced from that of 2.37% during 1901-11 to 0.44% during 2001-2011. It is clear that a significant rise in growth rate (4.28%) had taken place only during 1961-1971 but after that the growth rate has indicated a steady falling trend over the last four decades. It is presumed that the same trend may possibly continue for the coming decades also.

Year	Population (in Million)	Annual Average Growth Rate (in %)	Year	Population (in Million)	Annual Average Growth Rate (in %)
1901	0.92	-	1961	4.15	3.87
1911	1.14	2.37	1971	5.93	4.28
1921	1.38	2.03	1981	8.24	3.90
1931	1.39	0.12	1991	9.92	2.04
1941	1.80	2.89	2001	11.91	2.00
1951	2.99	6.62	2011	12.44	0.44

Table No 1– Population Growth and Growth rate of Mumbai (1901-2011). Source: Census of India, 1901-2011b

It is obvious that the population influx in Mumbai is an obvious result of continuous flow of migrants to Mumbai from surrounding areas and other regions. Nearly half (43.7 per cent) of the population had been categorised as migrants in the 2001 Census (HDR,2009). Mumbai covers a space of 10% geographical area and has a population share of almost 60% of MMR. Over 1971-2011 period, the gross density of Mumbai increased from 13,391 persons per sq.km. to 28,420 persons per sq.km. This puts a tremendous pressure on existing land use, environment and infrastructure. Built-up land has more than doubled from being 25% of total area in 1971(MMRDA, 2008) to 60.59% in 0212 (Draft DP, 2014-2034). Natural areas and open spaces (forest, water body, coastal wetlands etc.) have been rapidly decreasing from 61% of total land in 1971(MMRDA, 2008) to 31.5% of the same in 2012 (Draft DP, 2014-2034) (See Fig. 1). Considering the very high population density prevalent in Mumbai, the low per capita open space availability (1.24 sqm. per person) is an expected outcome.

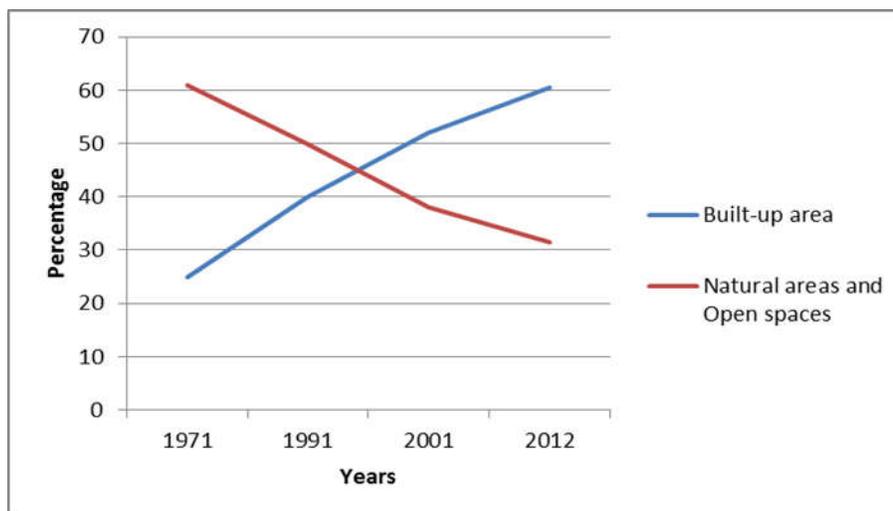


Figure 1: Temporal Change of Built up area, Natural areas and Open Spaces at Mumbai (1971-2012). Source: Transform Study, MMRDA, Draft DP (2014-2034).

An analysis of urbanizable land potential at Mumbai shows that only 9.47 sq.km. of land is available for future development (MMRDA, 2008). According to Bertaud (2008), Mumbai FAR

values are low, uniform over very large areas. In planning for majority of Metropolitan cities the maximum residential FAR values considered is 3.5 [Sridhar, (2010)] whereas cities like Mumbai, the permitted FSI is uniform and in 1991 was fixed at 1.33 for the Island City and 1.00 for the suburbs, although some higher FAR has been allowed in some isolated lots outside the Island City area through the program called Tradable Development Rights (TDR) (Fig 2) (Bertaud (2011)).

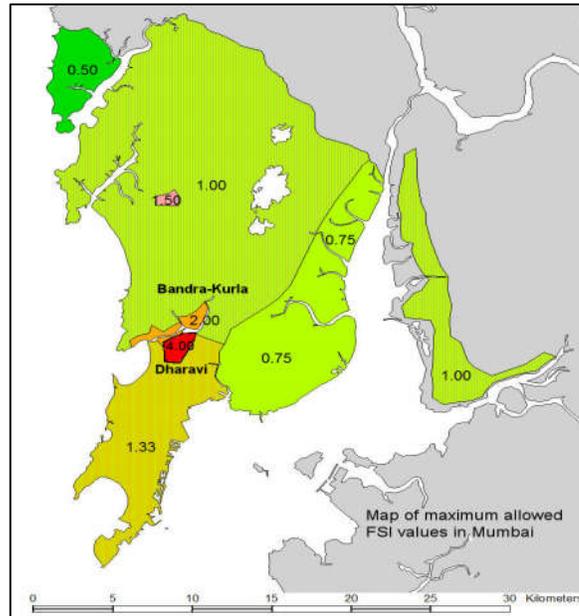


Figure 2: Distribution of FSI values in Mumbai. Souce: Bertaud, 2011.

City like Mumbai where geographical constraints exists for horizontal expansion (three side bounded by sea and northern side limited expansion possible because of hills and reserve forest), the following strategy can be adopted for areas where future developable land is insufficient;

- Re-densification of space depending upon maximum permissible FAR
- Increase FAR for accommodating future population
- Channelizing the excess population to satellite towns of Mumbai

5. Results and discussion

5.1 Application of REP and SAFE model for rationality of existing population distribution

Based on past population trend and REP model developed above, 2011 population has been validated to find out whether the model works in real situation or not. In this, forecasting exercise (REP) t and $t+\theta$ are taken as 2001 and 2011 and based on MMR data source, dependency ratio (f) is considered as 2.51. Distance matrix has been prepared through primary survey based on road distance through public transport routes. Constant value ($b=0.37$) could be derived through regression analysis (by least square method) of available existing census (2011) information. Mean Standard Error calculated for the model value is 9.56 and population variation for MMR is 12.60%.

For applying the SAFE model required land and other infrastructure details have been taken from 'Transform' study conducted by MMRDA. Floor area required per head has been calculated from 2011 census. Population estimates (validation) and carrying capacity has

been calculated with with existing FAR for Mumbai and the same are represented in Table no-2. For Mumbai with FAR 1, the maximum carrying capacity has been estimated to be 8.27 million. In Mumbai, particularly in island city the maximum FAR has been found to be 1.33 and with 1.33 FAR, the carrying capacity has been to be estimated 11.10 million.

Population Allocation based on REP Model- 2011 (in million)	Census Population- 2011 (in million)+	Variation with respect to Census population and REP Model (in million)	Carrying Capacity (in million) with existing FAR	Carrying Capacity (in million) with increased FAR 1.5
15.82	12.44	3.38	8.27*	12.42

*Table No 2– Population estimates based on REP model and carrying capacity based SAFE model for Mumbai. Note: *with FAR 1.33 carrying capacity 11.10 million. Source: + Census of India, 2011b.*

Mumbai has already crossed its carrying capacity and the same requires immediate attention for policy makers. Mumbai, as per 2011 census, had 12.44 million population and accordingly suggested FAR should be 1.5. With 1.5 FAR the carrying capacity has been worked out to be 12.42 million and naturally the prime target remains as to decentralize additional population from Mumbai.

5.2 Population forecasting through REP model and sustainability through SAFE model

After validation of REP model the same method has been applied for projecting population for the years 2021 and 2031. According to REP model, the population predicted for Mumbai is seen to be 17.35 million and 17.86 million for 2021 and 2031 census years, respectively. Population allocation for future decades has been based on space and floor area requirements for Mumbai. For the same, various FAR options (with increased FAR) are tested to find out the optimum FAR requirements for Mumbai city. Table-3 depicts population allocation for the census year 2021 and 2031 and accordingly spatial sustenance has been worked out with various FAR combinations (FAR 2.0 and FAR 2.5) for Mumbai.

Population Allocation through REP Model- 2021 (in million)	Population Allocation through REP Model-2031 (in million)	Carrying Capacity (in million) with increased FAR 2.0	Carrying Capacity (in million) with increased FAR 2.5
17.35	17.86	16.55	20.69

Table No 3– Population allocation through REP model and sustainability through SAFE model for Mumbai

It may also be noted that the increase in FAR will directly call for immediate improvement of infrastructural conditions of Mumbai. FAR increase with supporting infrastructural augmentation remains as the sole but immediate solution for already saturated Mumbai. The increase of FAR depends on and affect both the physical form of Mumbai and its functioning and present research is just one of many inputs which could justify the actual changes in policy making. Accordingly for 2031, FAR 2.0 is suggested for Mumbai. With 2.0 FAR, the carrying capacity has been worked out to be 16.55 million and naturally the prime focus remains as to decentralize 1.30 million populations from Mumbai. This calls for channelizing this excess population to satellite towns of MMR. For Mumbai, since scope of urban boundary expansion is limited, accordingly channelizing the excess population to satellite towns of MMR is the ultimate long term solution. Additional population of Mumbai can be distributed to Kalyan-Dombivali, Navi Mumbai, Vasai-Virar City and Bhiwandi-Nizampur

where more space will be available after meeting their own population demand. Some industries should be reallocated outward Mumbai through stimulatory subsidies under a decentralization policy. Regional linkages through public transport (bus and rail based) need to be improved for better interaction not only for Mumbai with other satellite towns but also among satellite towns each other.

6. Conclusion

To overcome urbanization challenges in Mumbai, the emphasis should be on compact sustainable urban form (shape, density and land use) that reduce over exploitation of natural resources, accelerate economic viability, assure livability, promote environmental quality and confirm social equality. Urban compaction aims to increase built-up area and residential population densities, to intensify urban economic social and cultural activities and to achieve sustainable benefits. Linkage of spatial aspects of urban development with economic, social and environmental components, in particular to achieve mixed use call for both vertical and horizontal integration. The rapid influx of urban population is the immediate cause for the over development of Mumbai. From this research, it appears that carrying capacity of Mumbai is already saturated and only 9.4 sq.km of future developable land will not be able to take care of the urban load of Mumbai in future. As FAR value of Mumbai is very low, the same can be increased from 1.0 (island city 1.33) to 1.5 to accommodate existing residential demand and to 2.0 to accommodating future population demand. Satellite towns like Navi Mumbai, Thane, Vasai-Virar city etc. did not fulfill their expected role in sharing Mumbai's over concentrated population and activities. It is also necessary to frame a policy aiming at decentralization of metropolitan growth, particularly from Mumbai, and allocation of surplus population to the capable satellite towns for balanced development of entire MMR. Present research provides a clue for policymakers which could justify actual changes of policy making with regards to the extent to which the urban population should be decentralized. This paper can play a pivotal role of examining the problem of metropolitan growth and developing a systematic model encompassing economic growth applicable for metropolitan cities in developing world.

Acknowledgements

We gratefully acknowledge valuable comments and suggestions received from Malgorzata Hanzl, Technical University of Lodz, Poland for paper revision.

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Transforming the Urban Chaos with Environmental Recovery: Pedra Branca Forest Case – Brazil.

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Abstract

The study proposes a transformation of urban chaos observed in the region of the Pedra Branca Forest, RJ, with the development of a new mechanism for planning and management involving multi-use planning and integration between social, environmental and urban spheres, in view of the balanced development of the suburban area of Rio de Janeiro City, Brazil.

The region has the highest rates of urban expansion of the city due to a disorderly process of occupation, and the urban transformation of these spaces involves substantial processes that go beyond current practices of land regularization and slum upgrading (GROSTEIN, 2001).

In this sense, it is necessary to review the current planning model, in search of a new form of land use and occupation, in a context of integrating urbanism suited to a highly complex environment (ASCHER, 2004). Therefore, we performed a detailed diagnosis of the study area, with site visits, photographic surveys, plans and maps to identify the main factors of degradation in the region. In view of the study focus the region near Catarino River was selected as it presents all the environmental and evaluated urban problems, and is considered the main area of urban expansion in the region.

As a result, lines of action have been defined for the revitalization of the Catarino River area, with the development of integrated proposals that promote the improvement of environmental standards, and reducing social and economic inequality, with the action of crosscutting intervention that could be extended to the entire region of AP5, and to other urban areas that present strong environmental pressure caused by inflexibility in traditional models of planning and management.

1. The planning pattern as the origin of Urban Chaos

Over almost the entire twentieth century, the practice of urban planning was based on a series of technical premises, which were seen as scientifically supported principles in the functionalism (PEREIRA, 2010). The knowledge domain of these assumptions led to the individual strengthening of hard planning process, excluding the involvement of civil society and disregarding the environmental conditions of the region. It was clear in the planning model used in the late urbanization of neighbourhoods that grew linearly to the Central of Brazil Railroad, RJ during the twentieth century.

At the traditional urban planning, the first major spatial resolution proposed to the cities is what defines the countryside and the urban zone from a functional zoning plan used as an organizing tool of the area (LE CORBUSIER, 1989).

As a result of this model districts on the west region of Rio de Janeiro city were planned following the guiding principles of rural zone, and the functionalist model of spatial compartmentalization. Thus, areas solely for residential use were planned, where other uses,

such as trade and services were not allowed, and large areas were left empty for rural occupation. These factors contributed to breaking off the ecological corridors indispensable to preserve the ecosystem. These factors prevented the socioeconomic development of the region and increased the pressure on the forest area.

This inflexible pattern resulted in urban chaos, where the vast semi-urbanized areas devoid of infrastructure are the main cause of urban unsustainability observed in almost all the region bordering the Pedra Branca Forest (figure 1).

In this context one can see variables such as the significant concentration of poverty, poor infrastructure, and urban lawlessness which grow exacerbating environmental differences and contributing to the formation of urban spaces without attributes of urbanity (GROSTEIN, 2001). The evolution of this process resulted in the aggravation of predatory environmental practices, causing soil erosion, floods, landslides, deforestation and pollution of water and air, which affect the urban area and in particular the areas occupied by low-income population, which causes losses and significant "diseconomies" for the proper functioning of cities.



Figure: 1 Padre Miguel District
Fonte: Google Earth authors edition

In this sense, it is necessary to review the current planning model in search of a new form of land use and occupation for the context of an integrating urbanism suitable for a highly complex environment. Therefore, a detailed diagnosis of the study area was carried out with site visits, photographic surveys, plans and maps that identified the main degradation factors in the region.

As the study focus the region near the Catarino River was selected for intervention because this area boasts all the environmental and urban problems evaluated, and can be considered the main area of urban expansion in the region.

As a result, action lines were drawn for the revitalization of Catarino River surrounding areas, with the development of integrated proposals that promote the improvement of environmental standards and reduce socioeconomic inequality. These actions of urban intervention could be extended to the border region to the Pedra Branca Forest, and to other urban areas that have strong environmental pressure caused by splinting on the traditional model of planning and management observed in many Brazilian cities.

2. The Pedra Branca Forest Region: From Environmental to Urban Chaos

The City of Rio de Janeiro is the second largest metropolis in Brazil with an area of 1,224.56 km² divided into five planning areas according to physical, spatial and socio-economic

characteristics (figure 2).

The Pedra Branca Forest is located in the Planning Area 5 (AP5) at the city's western region. The AP5 has an area of 592.23 km² corresponding to 48.4% of the municipal area.

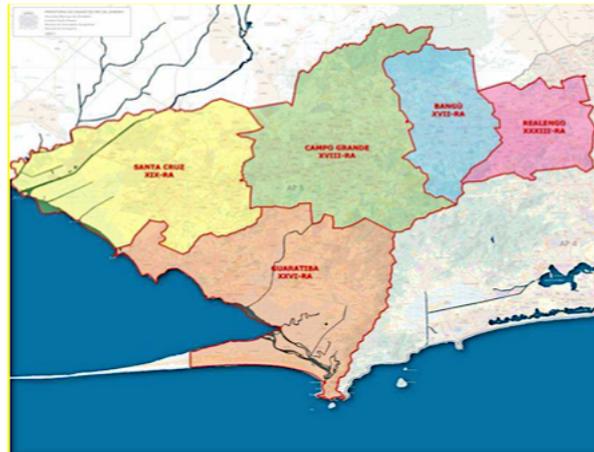


Figure 2 – A AP5 and administration regions
Fonte: IPP, 2010

The AP5 consists of a set of 21 (twenty-one) districts, including Bangu, Gericinó, Padre Miguel and Senador Camara, all bordering the Pedra Branca Forest (figure 2).

The area has 41 (%) p.c. of environmental preservation areas on the city including two Environmental Protection Areas (APA), being the focus of study on the Pedra Branca Forest APA. The Environmental Preservation Area of Pedra Branca was transformed into a Forest Reserve on the year 1974 and on 1990 the Pedra Branca Biological Reserve was created.

In Pedra Branca Forest APA lies the eponymous State Park, and the Pedra Branca Peak, the highest point in Rio de Janeiro city, with 1.024 meters above sea level. The park has many caves and grottoes of granite blocks, waterfalls and landscapes framed by the Atlantic Forest. The Pedra Branca Forest influences the microclimate of its surroundings, either by the relief, which acts as a barrier to the passage of winds and moist masses, or by the presence of forests, which contribute to the absorption of heat and increased humidity.

On the other hand, the mountain soils are very susceptible to erosion, and the removal of vegetation aggravates their fragility with a risk of landslides due to steep slopes (figure 3).



Figura 3 – O Relevo da AP5
Fonte: IPP, 2010

The Pedra Branca Forest has approximately 12,500 hectares of land covered by vegetation typical of the Atlantic, such as cedars, jacaranda, jequitibás and ipe, plus a varied fauna composed by ocelots, maned sloths, southern tamandua and others. However, the Pedra Branca Massif northern slopes facing Realengo, Bangu and Campo Grande are very degraded, due to the replacement of the original vegetation of grasses with the crop areas until the twentieth century, and more recently by irregular human occupation.

The Pedra Branca Massif has an important hydrographic system, which contributes to the water supply of the region. In this area there are the main dividers of the great watersheds of Rio de Janeiro city, with eight major river basins and 53 small watersheds. The Pedra Branca Lowland has a network of rivers and channels, but due to wrong planning model, most were channelled and / or are silted, with irregular occupation of marginal areas, pollution, and the constant flooding during heavy summer rains.

Currently, a large part of the green areas of the slopes is occupied by poor and irregular housing considered subnormal, intended for low-income population and characterized by the absence of urban infrastructure and basic sanitation. These factors have caused the rupture of the forest system and the consequent damage to environmental services, with a significant increase in temperature of the region and the reduction of flora and fauna, especially birds, forming a backdrop of green fragments amid a dense grey landscape.

With the uncontrolled occupation of forest areas, the green "islands" are becoming increasingly scarce, which causes the disruption of environmental connections, damaging the entire macro-region of the Rio de Janeiro city, preventing wildlife displacement, and seed dispersal, as well as providing the ultimate fragmentation of natural ecosystems.

2.1 Chaos Origins: Land Use and Occupation

The occupation of the region began with the colonization through the sugarcane crop, which was replaced by coffee planted on the slopes during the eighteenth century, and later by the introduction of fruit trees. The occupation remained largely rural until the mid-twentieth century, when there were still orange groves, banana plantations and dairy cattle on the plains and hillsides of the region.

The touchstone in the urbanization process of the region was the installation of Brazil's Central Railroad in the mid-nineteenth century. Initially, the urbanization occurred slowly and alongside the railroad, establishing small urban areas around the stations. Currently about 75% of the large territory of AP5 presents changes in their natural characteristics due to anthropogenic activities.

The region has the highest urban growth rates in Rio de Janeiro City, with a worrying process of discontinuous and disorderly urbanization (figure 4). There is frequent occupation at irregular areas (*non ardificandi*), such as slopes and river banks, causing deforestation, in addition to problems of infrastructure and security, and compromising local environmental quality.

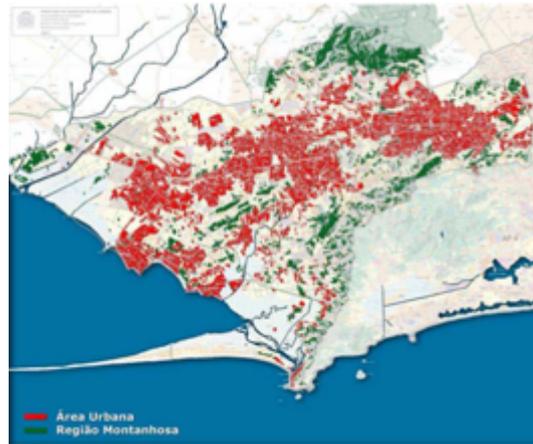


Figura 4 – A Urbanização da AP5

Fonte: IPP, Armazém dos Dados

2.2 The social chaos

The AP5 is the second most populated area of the city with more than 1.5 million people (26.6% of the population). Nevertheless, due to the large territorial area, the density is only 26.3 inhabitants per hectare (IBGE, 2010), although it has the highest number of people per household: 3.54 residents per household, and a high birth rate, characteristic of the poorest population.

Despite the low density, the region presents a great irregularity in the distribution and use of land, with about 140,000 inhabitants living on risk areas or irregular situation, devoid of infrastructure, or in areas that should be preserved (fountains, green areas, unsuitable soils). These problems result from the sporadic and disjointed planning model implemented in the region.

2.3 Chaos Scenario: Padre Miguel district

Padre Miguel is one of the districts belonging to AP5 and is located in RA XVII. The neighbourhood has the prevalent physical, environmental and socioeconomic characteristics of the region.

The neighbourhood is predominantly residential, with shy economic activity restricted to trade and services. With a predominantly low-income population, the district occupies the 86th position in the HDI ranking in Rio de Janeiro (IBGE, 2010) and an age range between 15 and 64 years.

Like most of the districts of the region, Padre Miguel has urban problems exacerbated by the ineffectiveness of the zoning system and land use, such as the lack of areas for trade and services, and the high cost of land compared to average earnings of the resident population, which favours irregular occupation of *non aedificandi areas* and environmental protection for residential and commercial use. In this scenario, practically all the bank of Catarino River, which rises in the Pedra Branca Forest and covers 4.5 km of the district was occupied by poor commercial buildings without basic sanitation or security against inundations and flooding (figure 5). At an area close to Travessa Maravilha one can see the biggest irregular concentration, perhaps because it is the main access to Bangu neighbourhood and where bus lines of the neighbourhood operate.



Figure 5 – Irregular construction
Source: author's collection

3. The intervention area: Catarino River

The region selected for the study comprises the marginal area to Rio Catarino, which rises in the Pedra Branca Forest, and crosses both districts of Padre Miguel and Realengo, crossing streets, avenues and railway lines, up to the location known as "longhouse".

In the last 20 years there has been a considerable increase in population in the surrounding area, especially with the irregular occupation of the hillsides of the Pedra Branca Massif. The irregular occupations do not have urban infrastructure services such as garbage collection and sanitation, which makes the river a waste and sewage dump, turning the place into a degradation scenario, with the proliferation of etiologic agents and the intensification of inundations and flooding (figure 6).



Figure 6 – Catarino River and garbage collection.
Source: author's collection

Based on the abovementioned the intervention project provides the link between the urban and environmental system in the study area, and considering that Catarino River is a strong connection between the forest area and the urban area, a 1.2 km long part of the river was selected, forming a polygon of approximately 45,000 m² with its surroundings, where a linear park was planned with diverse social and environmental functions.

4. Lines of Action for a new planning model

Currently the selected area is degraded and occupied irregularly with residential and commercial construction. The intervention project foresees the implementation of a linear park that promotes the environmental recovery of the region with the incentive for new use of land, the reorganization of traffic to allow for passers-by and cyclists, installation of spaces intended for sports and leisure activities, areas of seedling nurseries, areas for cultural courses and activities, and the reorganization of the commercial area, which at present irregularly occupies the river banks, and the de-pollution of Catarino River with the installation of an ecological treatment center formed by water gardens.

5. The proposal

The urban and environmental recovery plan proposed is innovative for the Brazilian reality, being mainly based on public-private partnerships with low public investment, and should transform the study area into other ecological restoration initiatives of degraded areas (figure 7).



Figure 7 – Map of Padre Miguel Linear Park
Source: author's project

Map Legend:

1	Mocidade Grove		Pedra Branca State Park		Preservation areas
2	Plácido Gutierrez Square		Catarino River		Reflorataion
3	Children's Square		Margins recovery		Guadua bamboo planting
4	Sports Square		Sidewalk		Nursery of native seeds
5	Mountain Bike-Skate Park		Bike Lane		Biological pool
			Bearing "Woonerf"		
	 Manacá-da-Serra		Living Waves		Living space
	 Quaresmeira		Strar's walk		



Figure 8 – Catarino River margin
 Source: author's collection

The main proposal for the process of urban and environmental defragmentati on in the area of the Pedra Branca Forest is the rehabilitation of ecological corridors, which aims at ecosystem recovery and improvement of environmental quality. To do so the de-pollution of Catarino River (figure 8) will be carried out with the implementation of a phytoremediation system that consists of aquatic vegetation filtering the pollutants, without using chemicals. Phytoremediation allows the installation of biological pools which do not require chloro or any other chemical element for treating the water, and in addition to the areas of natural treatment other bathing areas will be constructed for leisure.



Figure 9 – Catarino River project

Source: author's project

Additionally, floating islands or edges will be installed to prevent waste disposal, as well as the installation of an aeration reactor capable of adding air to water and introducing microorganisms which feed the pollutants. It is expected that compact sewage treatment plants linked to households will be installed.

The redevelopment of the River Catarino banks will be made with the installation of a Linear Park. The Linear Park will feature a lively sidewalk composed of diverse street furniture, tree-lined with various natural species of the Atlantic (figure 9).

The second environmental measure for the recovery of the region is the creation of a natural grove with areas for leisure, sports and commerce. A seedling nursery with Atlantic Forest species will be installed in the park, that will be used in the reforestation of degraded areas of the Pedra Branca Forest. The nursery will be implemented in a *non aedificandi* area that currently is occupied with irregular buildings.

The project also includes auxiliary measures for the recovery of the region such as the relocation of irregular buildings (figure 10) that currently occupy the slopes and the river banks to planned areas provided with adequate infrastructure for residential and commercial use.

The buildings will be equipped with new aesthetics in tune with the natural processes of wind, sunlight and water, and the introduction of productive areas(arable) between the built environment and the road system.



*Figure 10 – Irregular occupation on Catarino River margin
Source: author's collection*

Another measure will assist the implementation of the "traffic calming" in marginal routes to Rio Catarino. Its main objective is to create an environment conducive to safe driving and reduced speed, using both physical speed bumps, speed control cameras, narrowing the track at certain points, deflections on the ground, proper signalling and above all, the re-education of drivers. In this process the speed is suitable for human step and there are no barriers between streets and sidewalks. Meeting points will be set up in strategic locations such as leisure and contemplation environments (figure 11).



*Figure 11– Catarino River margin project
Source: author's project*

Finally, the project proposes the integration of the natural environment and the social environment of the region, promoting the recovery of degraded areas and urban reordering guided by the concept of integrative and ecological urbanism.

6. Conclusions

Urban environmental problems in Brazilian cities are not new. However, what is changing is the social awareness of how to avoid them, and the importance that the solution of these problems takes to society.

Planning the city is a complex social task that requires public and private investments, projects and intervention programs, and justice in the distribution of urban benefits. Therefore, it is necessary to introduce environmental quality in the informal city, adding value to the urban environment with the recovery of the natural environment.

Rio de Janeiro city has large areas of urban forests coexisting directly with the urbanized environment, where precarious infrastructure and the strong pressure on environmental assets prevails. The hard planning mode and the disarticulation between the natural environment and the social environment result in impacts that reflect the urban chaos scenario diagnosed in this study.

Given the need for a change in the current planning mode, a new one has been proposed, which focuses primarily on the environmental recovery of the region studied. The project was developed based on the concept of integrating ecological and urban planning, which considers the equality that should exist between all citizens and between society and the natural environment.

Therefore, the recognition of natural, geological and water processes as being fundamental to deal with urban issues in an ecological way was necessary. The expected results point to greater integration of social and environmental factors considering that cities must have an ecological infrastructure to guarantee the permanency of future generations.

As a final legacy the project shows that it is possible to overcome the challenge of transforming the urban chaos through environmental recovery seeking the Yu Kongjian (2009) message "to have new aesthetics based on nature and environmental ethics, turning disorder and rusticity into aesthetics".

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Residential Differentiation And Socioeconomic Reorganization After An Other Space Reconstruction Of 512 Sichuan Earthquake

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Abstract *This paper analyzed the residential differentiation and socioeconomic reorganization between the old tenants and the newcomers in the after-earthquake other space reconstruction of New Beichuan, pointed out that the design and implementation of the reconstruction plan and settlement policies contributed a lot to the spatial and social differentiation during the reallocation, and discussed about the concrete influences of those factors.*

1. Introduction

Catastrophic disasters like earthquake, tsunami, hurricane and global climate change disrupt not only the physical stock and infrastructure systems of cities, but also the economic and social systems referring to the lives of residents. This kind of disruptions and interruptions caused by unexpected events may extend over time and require a long time to await compensation, infrastructure repair and the recombination of neighborhoods, as well as recover from the economy stagnates, social networks weaken and support services decline after the initial destruction. (Blanco, Hilda, et al. 2009)

As part of the results of social system disruption, the reconstitution of communities may contribute to new problems such as residential segregation that "sorts population groups into various neighborhood contexts and shapes the living environment at the neighborhood level"(Kawachi, Ichiro and Lisa 2003), or housing segregation caused by factors such as socioeconomic status, spatial assimilation, and immigration (Iceland and John 2009; Briggs and Wilson 2005; Momeni 1986; Boal 2000) and leads to effects of reallocation, unequal living standards, and poverty. (Massey and Denton 1993; Walker, Keane and Burke 2010; Eisenhauer 2001; Cutler and Glaeser 1995; Henry 2004; Danziger and Haveman 2001; Sharkey 2013)

The 2008 Sichuan Earthquake with a magnitude of 8.0 Ms caused enormous and destructive spatial, economic and social damages. Thereinto, Beichuan, as one of the most severely hit disaster regions was deemed too vulnerable for reconstruction on the original location. Therefore, after the 5.12 Wenchuan Earthquake in 2008, by 95.29% agreement from the public, a brand new town called the New Beichuan was designed and built on the fringe farmland of another town (Huangtu Town) as the settlement for the victims of Old Beichuan which suffered worst and was almost ruined during the catastrophic disaster. This was the first and only other place relocation and reconstruction after the 2008 earthquake.

Now two kinds of people are living here, citizens from the old town living on the north (Erma and Yulong Community), and the local farmers who have been changed to urban residents living on the south (Xinchuan and Muxi Community).

2. Observed Problems

The particular aspects of the after-earthquake reconstruction in Beichuan is that there are two different kinds of reconstitutions on social relationships and formations during the reallocation. One is the farmers having lost their farmland for the other space reconstruction and the other is the victims who had lost their homeland for the catastrophic disaster. The two groups of people had gone through distinct social reconstruction conditions under the similar physical circumstances.

The differentiation also embodied on space through the subjective decisions from the public. 2 years after the earthquake when the new town was built, most of the two kinds of people agreed with the plan of settling them apart in different neighborhoods Under the situation of different settlement policies, different economic conditions and different social groups with different living habits and divergent values, the differences of backgrounds and identities made them clearly aware and firmly believed that living apart is better for both sides.

3. Research question

How did the design and implementation of the reconstruction plan and settlement policies interfere with this residential differentiation and socioeconomic reorganization?

4. Analysis

Apart from the different identities of social groups on living habits, identities, customs, ethnic groups and urban-rural differentiation, the main relevant causal aspects discussed below can be ascribed to spatial allocation and settlement policies.

4.1 Spatial Reallocation

There are 4 main residential neighborhoods located pairwise apart on the north and south sides of the main public space axis (New Beichuan Comprehensive Plan) which consists of an commercial street, central park and administration center.

In the new town plan, New Beichuan is defined as the political, economic and cultural centre of Beichuan County, tourism service base, industrial base, modern Qiang ethnic minority cultural city and ecological garden city. The plan also paid attentions to some social problems such as the balance between the construction efficiency and social justice, the transformation of living patterns, provision of employment opportunity, the inherit of original social relationships, the residential settlement of earthquake victims and land-lost farmers, and the arrangement of the employment of residents changed from “agricultural to non-agricultural” status. For instance, it puts forward a solution of setting an industrial development zone supported by Shandong Province to encourage the migrant workers return home and promote local economic development.

Although related social problems had been considered in the plan, the implementation of the new town plan were still more focused on the settlement with little consideration on the assimilation and integration between the local farmers and newcomers. Meanwhile, the outward public space axis meant to aggregate public functions in the plan became a barrier which separated them to different communities spatially on the contrary.

Under a strong politic intension to allocate the residents suffering from the earthquake as soon as possible, there were some inevitable challenges such as time limitation of

construction. cross-administrative construction and maintaining of cultural variety. The time limitation of reconstruction led to the uneven qualities of different communities that the later-built northern communities were equipped with worse quality, and caused some discontent. Also, the industrial development zone occupied by Shandong Province as a compensation for their assistance in reconstruction wasn't operated well and had stopped production for a long time, which wasted the industrial land, stagnated the economic development and reduces the employment opportunity of the city.

4.2 Settlement Policies

4.2.1 Settlement Policies for Newcomers

According to the "Rehousing arrangement of residents from the built up area of Old Beichuan to New Town" enacted by the county government of Beichuan, there are 3 kinds of housing types with the area of 90 sqm, 105 sqm and 120 sqm and 2 kinds of situations for the victims with or without proprietary residence:

1. For the victims with proprietary residence:

The victims who have self-owned proprietary residence and census registered identity in the built up area of Old Beichuan can apply to settling house with preferential price of 600 RMB, while those who have self-owned proprietary residence, but no census registered identity in the built up area of Old Beichuan can apply to settling house with preferential price of 800 RMB.

2. For the victims without proprietary residence:

The victims with self-owned proprietary residence, but no census registered identity, can apply for the manufacturing house on the price of 2400 RMB, while those who with no census registered identity nor self-owned proprietary residence can buy a new house on the price of 3200 RMB.

Families with less than 3 people can apply for the houses of 90 sqm, while the families with 4 people and more can apply for new houses with 30 sqm per capita. If the applying area is more or less than requirement, they will pay or be refunded of the margin area by 1601RMB per sqm. Residents who have no money for new housing can apply for affordable housing for 2 years or monetary indemnity/subsidies. The location, floor and housing type are chosen randomly except for the disabled people who were prior to chooses the house on the ground and first floor.

4.2.2 Settlement Policies for Original Tenants

However, the settlement policies for the local farmers are quite different.

The local farmers can transfer from agricultural residence registration/"Hukou" to urban residence registration/"Hukou", enjoy the city-dwellers subsidies, with at least 35 sqm settlement area per person. Single-child family can get 35 extra sqm, 15 sqm of which need to be paid extra, and Solitary elderly can get 50 sqm per person. The area within the requirement is free of charge while the area exceeding the prescribed quota should be paid by 1600 RMB.

here are also architectural and land reparation. The reparation of farming land is 25200 RMB per unit of area while others are 23700RMB. The reparations of architectures differed by construction materials that the concrete construction got 460 RMB per sqm, the brick and concrete got 360RMB, and the traditional earth house got 280RMB per sqm.

4.2.3 Influences Analysis

Different settlement policies between the original tenants and the newcomers contributes to psychological imbalance and economic status redistribution.

Psychological Imbalance

According to the interview with the residents, the newcomers showed some discontent that the local farmers got the settling housing not merely with no payment but also with allowance while the old Beichuaners had to pay for the new housing as the victims of the earthquake. They were even suspicious that the officers in the governments had embezzled the public funds and donations from worldwide.

Economic Status Redistribution

The after-earthquake reallocation to New Beichuan not only promoted the living conditions of most residents but also redistributed their economic conditions.

According to the questionnaire survey and interviews among the 4 communities, 40% of the Old Beichuaners living on the north thought that their economic conditions declined compared with the original conditions before the earthquake, while more than half of the local Huangtuers thought their economic conditions improved through this reconstruction and transformation.

The sudden natural disaster vanished the physical properties of the Old Beichuaners in that the Old Beichuan was discarded as an earthquake heritage and the residents were not allowed to go back home and get their belongings on account of safety. Meanwhile, the average allocation of the settling housing equalized their housing conditions and reduced the disparity of their economic conditions. What's more, the settlement policies made most of the Old Beichuaners took on the housing debt of loans. According to the survey, more than 80% of the Old Beichuaners spent more than 50,000 RMB for the housing reallocation, meanwhile most local farmers spent less than 30,000RMB.

Although the prices of the settling houses were already reduced, the average cost of the settlement of a 3-person family was still more than 100,000RMB. The bigger the families are, the larger houses and more money were required. Although the settlement policies provided interest-free loans for 5 years, the average 10,000RMB reimbursement per year was still a big pressure when the average annual income in New Beichuan was just around 10,000 RMB. So when the survey was conveyed in 2015, 5 years after the reconstruction, most Old Beichuaners were still in debt while the original villagers went through a much better economic conditions.

5. Conclusions

Other place settlement contributed to the social and spatial differentiation of the local villagers and newcomers, which was considered but not well solved by the new town plan. What's more, the separated community plan even encouraged the housing segregation between the two different social groups.

Meanwhile, the divergent settlement polices between the original tenants and the newcomers resulted in a kind of psychological imbalance and economic status redistribution, which contributed to the deeper differentiation between them.

6. Discussion

However, there seemed to be some changes 5 years after the reallocation that some families moved from the south to north and some north to south. It indicated that the two groups of people started to accept each other, which means the original borders between them were changing and the housing segregation might evolve to another residential integration.

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The American Dream: Urban Densities in South African Cities

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Abstract

South African cities are some of the least dense in the world, more similar to their North American, Western European and Australian counterparts, than cities in Asia, South America and other regions in Africa. This paper investigates the root causes of this phenomenon its implications for urban inhabitants and argues that in order for the issue to be addressed South African cities must adopt a culture of densification to achieve the qualities of the good city.

Introduction

At the dawn of democracy in 1994, South African cities were characterised by highly inequitable patterns of land distribution, unequal access to social and economic opportunities, poorly located lower income settlements, and under-developed public transport infrastructure (Du Plessis and Boonzaaier, 2015). Added to this, were the problems of urban sprawl, unworkably low densities and relatively high carbon emissions in comparison with international cities of similar sizes (Financial and Fiscal Commission, 2011). Given the complications of these interwoven and deeply entrenched problems, it was clear that the new government would need to review the country's existing planning laws, and promulgate new legislation specifically aimed at ameliorating their impacts.

To that end, the early years of the democratic era were marked by the introduction of a number of policies and national acts, each with an emphasis on addressing the effects of apartheid spatial planning. The most notable of these were the Reconstruction and Development Programme policy framework (Republic of South Africa, 1994) and the Development Facilitation Act, No. 67 of 1995. The Reconstruction and Development Programme focused on investment in basic services and infrastructure, and introduced a number of prominent spatial planning concepts such as 'more compact cities' and 'densification and unification of the urban fabric' (Du Plessis and Boonzaaier, 2015:92). Through the Development Facilitation Act, "the state formally committed itself to compaction policies" (Dewar, 2000:213). Chapter One of the act contains a set of eight General Principles for Land Development, one of which states that "policy, administrative practice and laws should promote efficient and integrated land development in that they...discourage the phenomenon of 'urban sprawl' in urban areas and contribute to the development of more compact towns and cities" (Republic of South Africa, 1995:8).

Policies and acts such as these show that the new government made a concerted effort to tackle the impacts of apartheid spatial planning and associated low density urban sprawl. They have been successful to the extent that since their adoption, the concepts of 'compaction' and 'densification' of urban form have been inextricably linked with the South African spatial planning doctrine (Du Plessis and Boonzaaier, 2015). At its birth, this new planning paradigm sought to radically transform the structure of South African cities, by

rejecting “the low density, sprawling, fragmented and largely monofunctional forms of development that characterised the apartheid city” (Schoonraad, 2000:219).

Unfortunately, as bold as these policy and legislative intentions were, the apartheid city is still very much alive, and the country’s various urban areas are “as segregated and fragmented as they were at the dawn of the democratic era” (Du Plessis and Boonzaaier, 2015:88). In fact, in many ways, urban development subsequent to 1994 has aggravated the spatial legacy of apartheid. As a result, the transformative effects of post-apartheid policy and legislation in restructuring South African cities are increasingly being questioned. Sadly, even when translated into legislation, the will to deconstruct the apartheid city along with its low-density sprawling patterns, has brought about very little change. It is now accepted that policy and legislative measures to change the inefficient patterns of South Africa’s urban environments have failed (Financial and Fiscal Commission, 2011). What is also clear, is that top-down approaches do not have the vigour to bring about much needed transformation in the county’s cities, especially when considering urban densities.

This paper begins with the understanding that what needs to be investigated is the root cause of urban sprawl which plagues South African cities. It is clear that planning frameworks and laws alone are wholly insufficient to densify and compact South Africa’s urban areas, and steer urban growth towards a sustainable paradigm. This paper seeks to understand the powerful market forces driving urban growth in South Africa, and argues that these forces have been shaped by the cultural desires and aspirations of everyday people. The idea-gram below maps out the journey the paper takes, with each step being unpacked, focusing on understanding the cultural factors driving low density urban growth in South African cities. The paper is structured into four sections. Section 1 frames the problem of low density urban sprawl. Sections 2 and 3 identify the causes and implications of the problem. Section 4 outlines the cultural factors that contribute to the problem, while Section 5 directs the way forward.

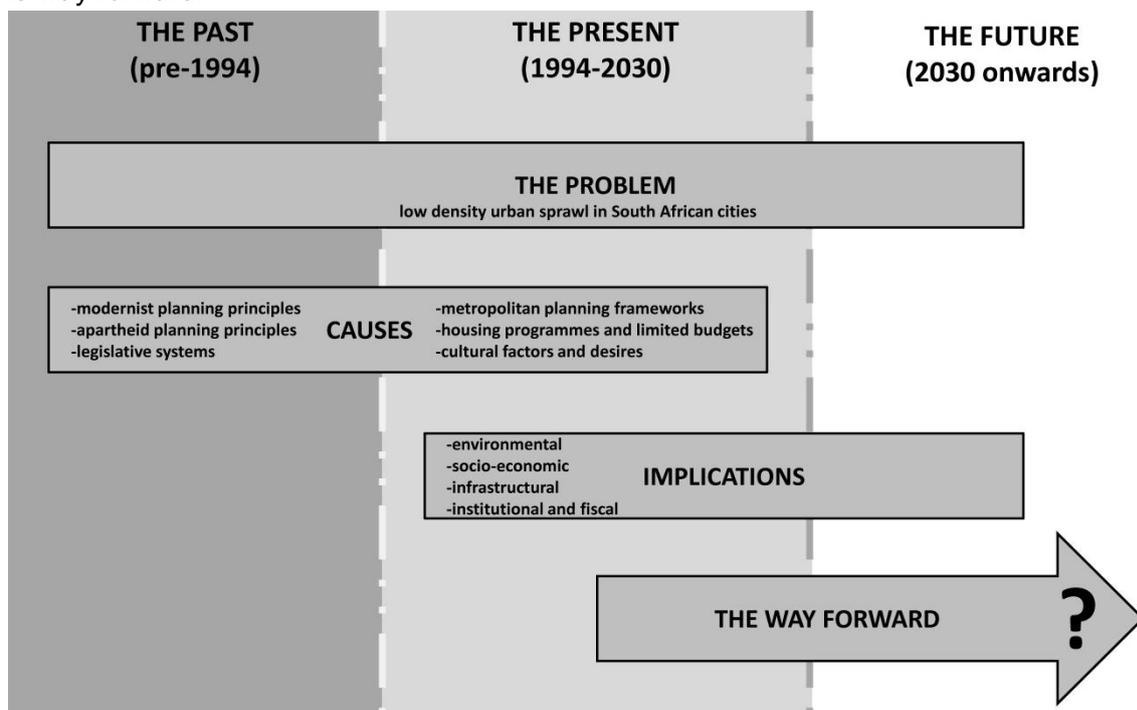


Figure 1: Idea-gram mapping the problem under review. The year 2030 refers to South Africa’s current principal planning framework, namely the National Development Plan 2030.

Section 1: Framing the Problem of Low Density Urban Sprawl in the Global Context

Before embarking on the journey to understand the causes of low density urban sprawl in South Africa's urban environments and the implications thereof, it is important to contextualise these cities in the international context. This is critical to gauge just how sprawling South African cities are, and to position them in relation to their global counterparts. The method used is quantitative, and draws on information from the American-based Demographia, which publishes an annual report using data from the United Nations as well as national statistics authorities (Demographia, 2016). The report surveys the 1022 global cities with populations greater or equal to 500,000 and provides population size, land area and density levels for each of these cities. Densities are measured in terms of the number of people per square kilometer, and are gross, not net. While this is by no means the best indicator of density levels, the report provides comparable information for cities across the globe, which otherwise may not have credible data readily available. In spite of the limitation, the report provides useful information to gauge density levels in global cities at a high level, and is sufficient to enable one to pick up on overall trends.

The Demographia data is interpreted in this paper using two forms of United Nations categorizations. The first divides the world's countries into 22 geographic regions, as defined in the *World Urbanization Prospects: The 2014 Revision*. For the purposes of this paper, some of the 22 regions have been clustered together, resulting in 14 regions which are shown in Figure 2. This has been done to categorize global cities into as few homogenous clusters as possible, such that they are both geographically as well as culturally defined (see Section 4). The second categorization used in this section of the paper, divides the world's cities into 4 classes based on population size, as defined in the same United Nations report. These classes are shown in Table 1, together with the number of each class of city there are in South Africa and across the globe. The table also indicates the average densities of each class for South Africa's cities and their global counterparts. The figures in this broad brush investigation reveal that South African cities across the four classes are significantly less dense than their global counterparts.

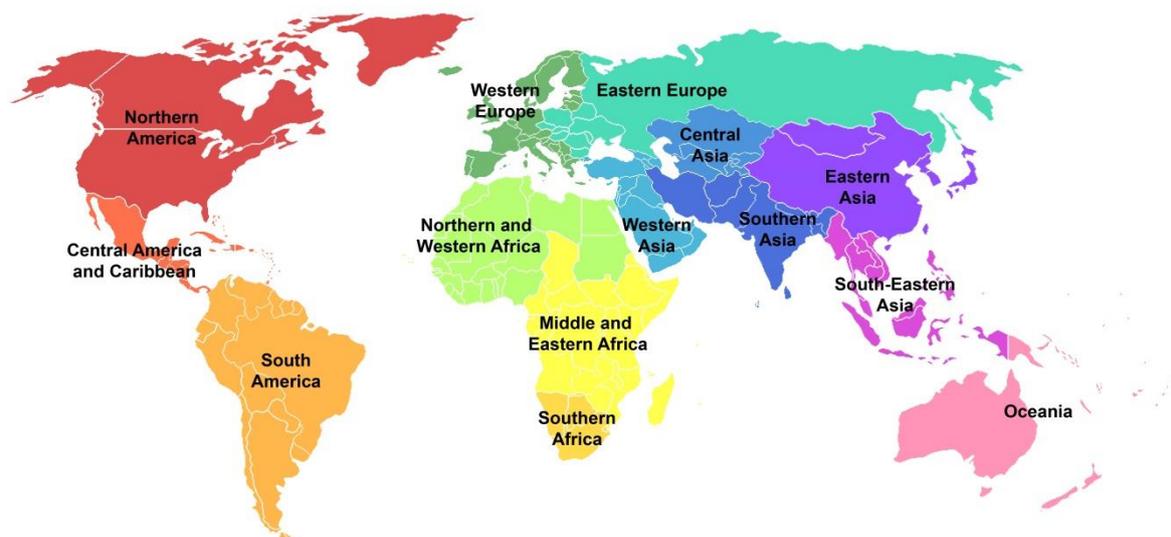


Figure 2: Demarcation of global regions. Authors' drawing generated from information in United Nations 2014 .

City Class	Population	Number in world	Average Density	Number in RSA	Average Density
Megacities	10 million or more	36	9,600	0	-
Large Cities	5 - 10 million	43	6,800	1	3,300
Medium-Sized Cities	1 - 5 million	430	7,500	4	3,400
Cities	500,000 - 1 million	513	6,800	2	2,500

Table 1: City class and average densities people per km², rounded to the nearest 100. Authors' table generated from information in Demographia 2016 and United Nations 2014.

A further investigation was undertaken, with a view to understand how South African cities measure up when compared with cities located in each of the 14 global regions. For the purposes of simplification, megacities and large cities were clustered together, given that some of the 14 global regions do not have cities with populations greater than 10 million. The results of this investigation are shown in Table 2, and indicate that densities in Southern African cities are more similar to density levels in cities in Northern America, Western Europe and Oceania than cities in Asia, South America and other regions in Africa. This statement has two caveats. The first, is that of the 7 cities which are categorised under Southern Africa, all are located in South Africa. The second is that of the 7 cities which are categorised under Oceania, 6 are located in Australia. Thus, it can be deduced that densities in *South African* cities are more similar to density levels in Northern America, Western Europe and *Australia* than cities in *the global South*. Figure 3 indicates the average densities of cities per global region, and includes all 4 classes of cities. From Figure 3, one can get a sense of levels of urban density per global region across the various city classes. It is clear that irrespective of city class, South African urban areas are more or less as equally (not) dense as cities in the western world. Cities in Central and South America; the Caribbean; Eastern Europe; and Central and Eastern Asia tend to be denser. African cities outside of Southern Africa; and Western and South-Eastern Asian cities are denser still, with those in Southern Asia being on average the densest in the world. What is clear is that South African cities do not follow the global South norm of being denser than their western counterparts.

	Megacities and Large Cities		Medium-Sized Cities		Cities	
	Number	Average Density	Number	Average Density	Number	Average Density
Northern America	10	1,600	39	1,100	37	900
Central America and Caribbean	1	9,800	22	5,300	21	4,200
South America	6	9,000	35	6,400	35	6,300
Southern Africa	1	3,300	4	3,400	2	2,500
Middle and Eastern Africa	2	13,300	19	11,400	24	9,100
Northern and Eastern Africa	4	6,800	30	9,300	34	7,900
Western Europe	5	3,900	32	3,300	51	3,400
Eastern Europe	2	3,500	21	3,800	36	4,300
Western Asia	3	7,800	31	8,300	30	9,600
Central Asia	0	-	3	2,500	7	4,200
Southern Asia	13	17,000	68	14,300	67	12,500
Eastern Asia	23	6,400	99	7,300	146	6,700
South-Eastern Asia	9	9,000	21	9,400	22	9,600
Oceania	0	-	6	1,500	1	900

Table 2: Average densities people per km², rounded to the nearest 100 for each of the 14 global regions. Authors' table generated from information in Demographia 2016 and United Nations 2014.



Figure 3: Average urban density by global region across city class, measured in people per km². Authors' drawing generated from information in Demographia 2016 and United Nations 2014 .

In comparing average density per city class at the global level (as shown in Table 1) and at the regional level (as shown in Table 2), it is evident that the population size of a city does not always impact on density levels. At the global level, megacities represent the densest type of urban area, but medium-sized cities are on average denser than large cities. In six of the global regions, namely Northern America; Central America and the Caribbean; South America; Middle and Eastern Africa; Southern Asia; and Oceania, there is a positive correlation between the population size of a city and its population density, with the largest cities having the highest densities on average. In four of the global regions, namely Eastern Europe; Western Asia; Central Asia; and South-Eastern Asia, these variables are negatively correlated, with the smallest cities having the highest densities on average. In the case of the remaining four global regions, namely Southern Africa; Northern and Western Africa; Western Europe; and Eastern Asia, there is no discernible pattern between the population size of a city and its population density. These relationships (or lack of relationships) are important to note, as they indicate that for high densities to occur, cities do not necessarily need large populations. Conversely, lower population numbers are not a justification for cities having low densities. In reviewing South African cities in Demographia's list of 1022 cities in detail, it is clear that in spite of having reasonably large populations, densities are exceptionally low. Table 3 lists the seven largest South African cities, and shows a significant drop in global ranking for six of the cities, when comparing population size and density.

City	Class	Population	orld Rank	Density	orld Rank
Johannesburg- East Rand	Large City	8,655,000	40	3,300	790
Cape Town	Medium-Sized City	3,865,000	107	4,700	620
Durban	Medium-Sized City	3,450,000	132	3,200	794
Pretoria	Medium-Sized City	3,030,000	154	2,500	865
Port Elizabeth	Medium-Sized City	1,225,000	404	3,200	805
Vereeniging	City	715,000	697	2,100	903
Polokwane	City	510,000	999	2,900	830

Table 3: Population and density data for South Africa's largest cities. Authors' table generated from information in Demographia 2016 and United Nations 2014 .

Section 2: Causes of the Problem of Low Density Urban Sprawl

The purpose of this section of the paper is to outline the myriad of factors which have driven and continue to drive low density sprawling urban development in South Africa. It is critical to note these factors, given that they have over time created the construct in the South African psyche of what cities and urban growth *are*, as opposed to how they *could be*. In other words, because these factors have had such longevity, low density sprawling development is seen as the norm, and in some ways, higher densities are considered to be somewhat of a foreign notion. The factors touched on in this section include modernist and apartheid planning systems, legislative systems, metropolitan planning frameworks, housing programmes and limited budgets. Although some of these factors had their heyday some decades in the past, their impacts still resound across South African cities today.

Dewar et al. (2012) argue that given that the vast majority of urban growth in South Africa has occurred subsequent to the 1940s, the bulk of development in the country has been based on modernist planning principles. Although having been conceived in the Western world, this ideology took hold in South Africa with tremendous vigour. The spatial implications of modernist planning principles in South African cities are manifold, and include the separation of land uses into mono-functional areas; the significant reliance on technology in the form of private motor cars, which have allowed for seemingly never-ending lateral urban expansion; and the decentralisation of employment and commercial services, strung together by freeways and roadways, such that they are only easily accessible for those with private motor cars. Moreover, the modernist ideology was based on the idea of the 'good urban life', and the single free-standing house on its own plot has become entrenched in the South African psyche as the pinnacle of success, and something which all people should aspire to. This is even in the case of the lowest income communities (Dewar, 2000). Given this phenomenon, the most dangerous principle of the modernist ideology in the long run, was arguably the creation of suburbia. In fact, low density suburban areas, often strung together by highway infrastructure, form the backbone of urban sprawl in South African cities.

Subsequent to the 1940s, and simultaneous with the implementation of modernist planning principles in South Africa, came the firm establishment of the apartheid state. This ideology of separate development, which was founded on spatial segregation propagated during the colonial era, was given potency by a host of national legislation. The principles of modernism worked exceedingly well with the construction of the apartheid city, with the national government of the time taking on the modernist model, which became "grotesquely distorted on a number of counts" (Dewar et al., 2012:4). For instance, the separation of land uses propagated by the modernist ideology was extended to include race-based separation, and very convenient for creating the apartheid city. The scale of this separation became magnified to a preposterous scale in the South African context, with non-white communities being moved long distances from places of employment and social opportunities. These people, who for the most part were poor, now had the furthest to travel, using large proportions of their household budgets on commutes (ibid, 2012).

Considering that South Africa's predominant town planning systems and policies have been almost entirely replicated based on urban management systems conceived in the Western world, it is unsurprising that the country's urban development has followed a similar low density and sprawling trajectory as cities in Northern America, Western Europe and Australia. Urban growth in South Africa has not only occurred against the backdrop of the

country having been colonised by European powers between the 17th and 20th centuries, but has also been greatly influenced by the American system of zoning. Jacobs (1961) critiques the American Euclidian zoning system which in terms of the 1926 case law, upheld and entrenched the right to permit the separation of land uses through a legal system of land zonation. Of course, this system fitted perfectly with the idea of separation on the basis of race and class, and was aided by apartheid land laws, such as the Group Areas Act, No. 41 of 1950. It was this law which gave teeth to apartheid policies spatially, and enabled the separation of citizens into racially defined 'group areas'. Thus, South African cities started to experience the circumstance of separation and suburbanisation.

In addition to the historical factors which have driven low density urban sprawl in South Africa, there are several factors which continue to drive urban growth at the peripheries. Arguably, the most prominent of these is the cost of land. For instance, the bulk of low-cost residences in the country is provided by government, and largely located on the fringes of cities (Urban LandMark, 2011). A clear example of this is Durban's planned 5-year housing projects (eThekweni Municipality, 2014), the sheer volume of which are located alongside and even beyond the developed extremities of the city. In all South African cities, many parcels of urban land are in high demand, and are thus sought after by the more powerful sectors of the economy such as the retail and commercial markets. "Given the 'logic' of the market, poorer communities, and states acting on their behalf, are often unable to bid competitively on valuable land" (Napier, 2008:1). In addition to the high costs of centrally located land, building costs are also a daunting barrier when considering the development of high density neighbourhoods. This is especially the case for low-cost government subsidised residential accommodation. For instance, at a meeting held in July 2015 regarding the development of a low-income area in Cape Town, it was noted that the cost of building a single two-bedroom apartment in a four floor walk-up, is equivalent to the construction costs of three subsidised free-standing houses. As such, the development of higher density living environments is not a financially feasible option for the public sector.

Additional factors to consider are population growth and rapid urbanisation. As identified in South Africa's most recent national census, the country's population grew from 40.6 million to 51.8 million in the fifteen year period between 1996 and 2011, a difference of 11.2 million people (Statistics South Africa, 2012). The latest general household survey estimates that there are now 54.4 million in the country, indicating that the country's population has grown by 2.6 million people in just 4 years (Statistics South Africa, 2015). The United Nations projects that South Africa's population will grow to 60 million people by 2030, and to 65.5 million by 2050 (United Nations, 2015). The sheer bulk of this growth will occur in urban areas. For instance, in 1990, 52% of the country's population lived in urban areas, increasing to 64% in 2014. This figure is projected to rise to 77% by 2050 (United Nations, 2014). As South African cities developed in response to rapid urbanisation (especially after the lifting of apartheid laws, which restricted the movement of non-white persons), the country's urban environments became increasingly sprawling and fragmented (Turok and Watson, 2001). Low density suburban housing is quicker and cheaper to develop, and if the current urban growth trends persist, South African cities are sure to become even more sprawling into the future. It is therefore critical that in the planning, building, development and management of South African cities, new ways of approaching the problem of low urban densities are considered, given that these spatial patterns exacerbate the impacts of social and economic inequality.

Section 3: Implications of the Problem of Low Density Urban Sprawl

This section of the paper briefly frames the consequences of low density sprawl in South African cities. Most of the standard implications of low density sprawl in cities elsewhere in the world hold in the case of South African urban areas, and include environmental; socioeconomic; infrastructural; and institutional and fiscal consequences. It is clear that modernist and apartheid planning principles worked hand-in hand to create low density urban sprawl and far-flung suburban areas on the peripheries of South African cities, which are effectively the homes of the vast majority of black urban inhabitants. However, in the post-apartheid era, the low density and sprawling apartheid city form has been perpetuated (Schoonraad, 2000). Du Plessis and Boonzaaier (2015) show that between 1994 and 2009, the most rapid physical growth in South Africa's four largest metropolitan areas (Johannesburg, Cape Town, Durban and Pretoria) has occurred at distances between 20km and 30km from the city centre. Growth at the periphery is overwhelmingly driven by short-term capital constraints, in spite of the fact that long-term financial costs are much greater in low density environments than more in compact ones (Financial and Fiscal Commission, 2011).

South Africa's low density and sprawling form of development "has driven roughshod over agricultural and wilderness landscapes, destroying potentially productive land and land of high amenity at an alarming rate" (Dewar et al., 2012:5). However, the severe ecological consequences of urban development are not limited to initial land conversion alone, and also extend to long term environmental implications. For instance, the Financial and Fiscal Commission (2011) uses development scenarios for a hypothetical South African city, and shows that the volume of carbon emissions is 22% higher in an 'urban sprawl' scenario, than in a 'compact city' scenario. In promoting urban efficiency, sustainability and resilience, it is clear that a more compact city structure, as opposed to the existing sprawling city structure, can greatly assist to not only bring people closer to urban opportunities but also integrate the South African city better and use urban land more efficiently. The study undertaken by the Financial and Fiscal Commission referred to above, concludes that the compact city has far more benefits than its inefficient sprawling counterpart. This is in respect of, among others, reduced capital expenditure on infrastructure; reduced travel distances; improved qualitative social and environmental benefits; and opportunities of increasing densities and supporting public transport investment in this way (Financial and Fiscal Commission, 2011). Table 4 uses information extracted from the study, and shows that South Africa's sprawling cities perform quite poorly in relation to their global counterparts.

	Population Density (persons per hectare)	Average Commuting Time (minutes per capita per commuter trip)	Average Trip Length (kilometres per person trip)	Carbon Footprint (tons of CO ₂ per capita per annum)
Johannesburg	20.9	52		7 tons
Cape Town	12	50	15.9km	8 tons
Durban	14	45		6 tons
Pretoria	9.5	60		9 tons
Curitiba	57		7.5km	4.2 tons per light vehicle
Ahmedabad	134	20	5.5km	0.05 tons
Bangalore	207		9km	0.12 tons
Addis Ababa	560.8	62	10km	

Table 4: Efficiency comparisons of South African cities with their global counterparts. Authors' table regenerated from information in Financial and Fiscal Commission 2011 .

Clearly, South African urban areas are largely inefficient when compared to international cities. These inefficiencies are the combined result of low density sprawl and highly unequal land distribution patterns. Angel et al. (2011) argues that the sprawling city has a number of manifestations, all of which are applicable to South African cities. These manifestations include “endless cities, low densities, fuzzy boundaries between city and countryside, a polycentric urban structure, decentralised employment, single-use rather than mixed use urban expanses, ribbons and commercial strips, scattered development, and the fragmentation of open space” (Angel et al., 2011:6). Furthermore, the sprawling nature of South African cities make the large distances from the fringes to central areas wholly unworkable. An example of this is the costly, difficult and inefficient connection of dwellings on the periphery to municipal infrastructural systems, a problem compounded by the impacts of South Africa’s historically low investment in infrastructure (Financial and Fiscal Commission, 2011).

The low density and sprawling patterns of South Africa’s cities are dependent on an oil-based economy, generating gargantuan amounts of movement, with densities too low to support an efficient and well-connected public transportation system. As a result, many South African cities are not well-connected in terms of public transportation; rail and taxi services are often infrequent, late or no shows; and 20 years after democracy, Bus Rapid Transit systems are only now getting off the ground. However, for those for whom private vehicles are too costly to purchase and operate, taking public transportation is the only option. Where public transportation is present, it is at such a high cost, that the poorest of the city must spend one of the largest proportions of their money on transportation commutes. More than 50% of poor urban residents spend more than 20% of their declared household income on transport (Kane, 2006). As a result, many of the urban poor remain trapped on the edge of the city, far removed from the opportunities of urban life, public facilities and services, and economic prospects.

For the growing middle-income group, poor public transportation services (as a direct result of low urban densities) have given rise to high levels of private motor vehicle ownership. As at 31 May 2016, there were 9,957,012 registered private vehicles in South Africa (excluding heavy logistics vehicles), compared to only 60,298 busses and 302,604 minibus taxis (ENATIS, 2016). This means that for every bus or minibus taxi in the country, there are 27 private motor vehicles. This situation has been aided by the fact that South Africa has one of the cheapest gasoline prices in the world, falling into the first tertile (Global Petrol Prices, 2016). The large numbers of private vehicles in South Africa contribute not only to immense amounts of greenhouse gas emissions, but also heavy traffic congestion. In order to tackle such challenges, South African cities must work towards becoming public-transport orientated, which is only a possibility if higher densities are pursued (Dewar et al., 2012).

The implications of low density urban environments for the inhabitants of South African cities are manifold, and certainly do not impact on all individuals equally. However, it is our assertion that the biggest consequence of low density urban sprawl is that it has changed South African culture and fundamentally altered perceptions of what cities should be. The culture of living in the suburbs (whether they be high or low income areas) and travelling long distances to work is an everyday reality. In the following section, we argue that this paradigm of living in sprawl is an automatic response for many South Africans, regardless of income.

Section 4: Cultural Factors Compounding the Problem of Low Density Urban Sprawl

As discussed in this paper, the bulk of development in South African cities since 1994 has contributed to urban sprawl. This has been in spite of the fact that since the transition of South Africa to a democratic state, the country's planning doctrine has been geared to address this significant issue. Regardless of their good intentions, no policy framework or law has proven to be stronger than the will of the market. South Africa's current principal planning framework, the National Development Plan 2030, recognizes the need to increase urban densities in order to support public transport and reduce sprawl (Republic of South Africa, 2012). However, given the failures of planning policy in bringing about meaningful change to South African cities since 1994, it is highly unlikely that even the country's principal planning framework will have the teeth to steer the market towards increasing urban densities. A large factor in this is that the market is not driven by built environment professionals, but rather by private developers and property purchasers who influence the form of urban growth.

Because of the country's great social, linguistic, economic, racial and religious diversity, among others, the types of cultural factors which impact on the urban form of South African cities are wide and varied. The common denominator, however, is that these cultural factors tend to influence development towards the peripheries of cities in a low-density sprawling manner, rather than inwards in a more compact fashion. This section of the paper uses the terms 'cultural desires' and 'cultural aspirations'. Cultural desires refer to what urban inhabitants *need* today, in order to facilitate a comfortable living environment, in a manner which suits the lifestyles required to support their families both economically as well as culturally. Cultural aspirations refer to what people *want* to have in the future, in a manner which suits their cultural goals, and is often influenced by life stage.

An example of people with cultural desires which influence the form of cities, is low-income migrants who move from rural areas to the peripheries of cities. At the urban periphery, they are close enough to the CBD or other nodes to enjoy some of the benefits of urbanity, while at the same time far enough removed from central parts of the city, to enable them to enjoy some aspects of rurality. These peri-urban environments enable these migrants to continue to lead the type of lifestyle they are more familiar with, and thus facilitate a comfortable living environment. At the edge of the city, where land is cheap, they are able to have some access to space for subsistence farming in the form of crops and livestock. Examples are Khayelitsha and Mfuleni along the N2 highway in Cape Town, where it is not unusual for vehicles on the highway to stop and wait for cattle to cross over. Similar occurrences are common in Umgababa along the N2 highway in Durban, but perhaps more frequently. Schoonraad (2000) shows that the urban poor cannot afford to live in more dense environments, and thus often choose to live at the periphery out of necessity. This is in spite of the fact that living at the edge of the city results in increased traveling costs. As a survival mechanism, many families prefer to live in peri-urban areas, sending one family member into town to work, while the rest undertake informal work at home. "Through the reduction in daily living costs, made possible by living in a semi-rural area, they could survive on one formal sector salary" (Schoonraad, 2000:224). Had they lived closer to the city centre in a denser environment, this would not have been possible.

A further example of people with cultural desires which influence the form of cities, is middle-income small-business owners, who run their enterprises out of their homes. These people

undertake a range of jobs, ranging from services to retail and light-scale manufacturing, often without official approval for such activities. Because these people operate their businesses from home, space is needed for both living, as well as for the business itself. In some cases, this takes the form of converting a bedroom, lounge or garage to meet the needs of the business. In other cases, this takes the form of using an entire floor of the house, building a new structure on the plot, or using the full extent of the front or backyard. Durban's Indian suburbs serve as rich examples of these activities. Within a single neighbourhood, it is not unusual to find home-operated businesses including, among others, convenience shops and greengrocers; enterprises specialising in Indian food items, spice production and tailoring; retailers selling traditional clothing; and motorcar mechanics. Clearly, this would not be possible in more dense environments, due to both space and cost constraints.

Cultural desires are in some ways more tangible than cultural aspirations. This is due to temporal reasons, with the former happening in 'the now', while the latter happens in the future, and is a state which is aspired to. Although influenced by varying factors, cultural aspirations in the South African context generally amount to the vast majority of urban inhabitants wanting to own large houses on their own plots of land. This state is very much embedded in the South African psyche, and differs from cultural desires, which are partially based on the socioeconomic benefits enabled through living on larger plots of land. Many South Africans have historically had a tense relationship with areas of higher densities. For instance, when displacements of black people from the inner city into far flung suburbs occurred in terms of the Group Areas Act in the 1960s, a large number of people were moved into public housing estates. While these planned estates comprised a mix of housing types, many of them took the form of three to four storey walk-ups arranged in apartment blocks. These blocks were designed in such a manner, that their surrounding environments were undesirable to the inhabitants, and often referred to as slums. Thus, the perception of apartments among the majority of public housing beneficiaries was not only tainted by their form, but also their location in monofunctional residential suburbs far away from access to urban opportunities.

Schoonraad (2000) argues that a reason behind the aversion to higher densities in the country is the lack of medium to high density mixed-use developments that can serve as exemplars of what it means to live in a compact city. In fact, in all South African cities, the densest areas are informal settlements and lower-income black townships. As such, there is a binary in the country, in which wealth is associated with large houses and plots of land, and poverty is associated with dense urban environments and smaller living quarters. Thus, for many individuals, higher density urban areas are considered to be less desirable than the single freestanding house on its own plot. Napier (1998) documents the outcomes of a housing survey, which shows that the vast majority of residents consulted, chose a larger house and plot with inferior services over a smaller plot with a better quality house. Schoonraad (2000:227), states that "in a survey of squatters on the outskirts of Pretoria, 95% chose detached houses and 5% high-rise flats as the preferred type". NM & Associates et al. (2006) document the outcomes of stakeholder engagement processes with families who were evicted from the District 6 area of Cape Town under the Group Areas Act. In discussions around the restitution of land and the construction of new homes, these claimants made it clear that three-storey walk-ups were not desirable to them. Again, the term 'slum' was used to refer to the development of higher density areas, which the claimants felt would result in high levels of crime. A resident survey undertaken by the City of

Cape Town (2005) shows that there is the common perception that higher density environments are of a low quality, poorly maintained, and riddled with crime and anti-social behaviour. From these studies, it is clear that the number of people who choose to live in freestanding houses far outweighs the number of people who prefer to live in higher density environments. South Africa's latest general household survey shows that there are 10,177,000 freestanding houses in the country, compared with just 640,000 apartments; 83,000 cluster houses in complexes; 245,000 semi-detached houses; and 259,000 semi-detached townhouses in complexes (Statistics South Africa, 2015). This means that for every higher density dwelling in the country, there are 8.3 free standing houses on their own plots.

In the South African context, individuals in the emerging and realised middle income groups, tend to buy increasingly larger residential properties as soon as they have the income to afford a larger mortgage bond. This is done instantly, automatically, without much forethought regarding the implications, to the extent that it has over time become a part of South African culture. In many ways, the American dream has been adopted by many South Africans, intent on pursuing their aspirations to live in large free standing houses on their own land parcels, rather than in denser, more convenient, and more compact environments. The dream is reminiscent of a 1950s American advertisement for Hoover or Cadillac, and centres on the nuclear family: 1 man, 1 woman, 2 children, 1 dog, 1 cat and 2.5 bathrooms. This residential typology multiplied many times over, has given rise to vast landscapes of repetitive, monotonous, freestanding single-storey residential units - ~~American~~ South African Suburbia. As discussed earlier in the paper, this low density sprawling form of development has resulted in the take up of well-located land across the city, to the extent that urban land to accommodate South African city growth, is scarce.

For the middle income and affluent groups, a part of this paradigm appears to be influenced by 'keeping up with the Joneses' mentality, a situation in which owning a large house and property gives one certain bragging rights. Clearly, large houses are a status symbol, especially when they have more rooms than one actually needs. The seas of cookie-cutter McMansions in the wealthier areas of South African cities show no signs of turning the tide, with Tuscan villas in Johannesburg and Balinese styled mansions in Durban's northern suburbs, increasingly on the rise. Arbury (2005) argues that one of the benefits of urban sprawl is that one is able to live in a large house on a large plot of land, and as such suburbanization is a powerful celebration of individual freedom and wealth. He notes that living in this manner are signs of success in Northern America and Australia. In the research for this paper, a number of online articles were sourced, in order to flesh out Arbury's position, and specifically to answer the question of why some people in the Western world aspire to live in large houses. While the articles themselves were not particularly useful, the user comments at the end provided some useful insight into why individuals in the West support the low density sprawling urban form that goes along with large residential properties in the suburbs. What makes this information useful, is that these comments were not written by planners, academics or built environment specialists, but rather by the typical home buyer. Three of these user comments are shared below, with the acceptance that they hold true for a number of South Africans. James Geddes (2013) argues that "it is a learned cultural thing...if it is a custom in a society, tied into socio-economic status then people will aspire for the best status, with greatest area". In another post, a user identified only by the name 'DDD' (2013) states that "Australia has a fascination with bigger. Big country, big cars, big houses and ever increasing waistlines - quite like America I guess". 'Ray' (2010) states

that “Americans think small homes are low status and I don’t see that changing anytime soon no matter how good it is for the planet”. While these perceived cultural trends may have been written with parts of the Western world in mind, we argue that they have applicability in the South African context.

An investigation into the average house size across the globe has the potential to quantitatively show that South Africans, like their western counterparts, are afflicted by the aspiration to live in large houses. Statistics South Africa (2016) shows that 39,764 building plans were approved by local authorities in 2015. The total building area approved was 5,710,616 square meters, resulting in an average house size of 144m² for newly approved residential plans. This number is compared to the average size of new houses in 24 countries, as shown in Figure 4. The graph indicates that the figure of 144m² is the fifth highest in the study, after the United States, Australia, New Zealand and Canada.

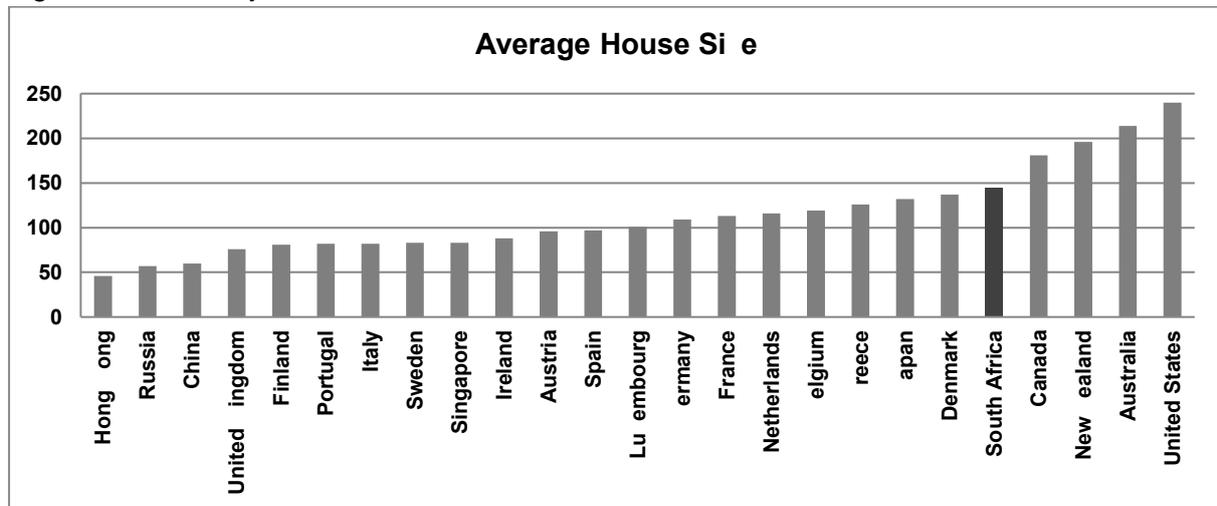


Figure 4: Investigation into the average size of new houses. Authors’ chart generated from information in Demographia 200 Demographia 2014 Statistics South Africa 2016 and Wilson 2013 .

As a result of cultural influences, South African cities have relatively low urban densities. Cape Town, for example, has a gross base density, measured against urban built area alone, of 10 to 13 dwelling units per hectare (City of Cape Town, 2012). This equates to approximately 4,000 to 5,200 people per km². To achieve the good city, Cape Town requires at the very least a gross base density of 25 dwelling units per hectare (City of Cape Town, 2012) or 10,000 people per km². Against this background, it can be argued that densification can play a major role to improve Cape Town’s sustainability in terms of urban form, spatial patterns and the quality of life of the majority of its citizens.

The similarity in South African house sizes with those of their developed western counterparts, together with the similarity in urban densities in these regions discussed earlier in this paper, bring to mind a recent interview with Moeletsi Mbeki (2015). In the interview, he stated that “We always forget that South Africa was created by the British... You should never forget that we were colonised by one of the most powerful countries and economies in the world at the time. So South Africa, like the United States by the way, was shaped by the United Kingdom” (Mbeki, 2015). It is clear that western culture has fundamentally shaped the urban form of South African cities. The following section of the paper makes the argument that in order for South Africa’s urban areas to transform, inspiration must be drawn from the global South.

Section 5: The Way Forward

Given the problem of low density urban sprawl in South African cities as a result of western influences, the questions that arise are to what extent should South African cities take their inspiration from cities of the global South, and which cities are the best examples to follow? Twenty two years into our democracy, we have still not created what Friedmann (2000) refers to as the 'good city' for all. In his explorations of the good city and assets-based approach, Friedmann (1992; 2000; and 2006) recognizes the need to create human wealth, both spiritually and culturally, and to capture positive tangible assets, the basic fundamental needs towards building sustainable and socially just cities, where people and their livelihoods are the central focus. Primary components focus on appropriate housing with secure tenure (including access to land opportunities) and essential services; educational institutions; access to good health; safe, efficient and reliable public transportation; and employment opportunities (both formal and informal). "The satisfaction of these tangible, material needs constitutes the foundation for our most fundamental right, the right to life" (Friedmann, 2006:4). The spatial expression of the good city is often supported in the compact city form (Irurah and Boshoff, 2003), where densities play a key role.

South African cities are never going to be as dense as Mumbai or Tokyo, for example, nor should they be, as drawing inspiration from cities in the global South is not about density for density's sake. Rather, it is about urban densities to enable the good and sustainable city over time; institutional and public willingness to embrace densification as a tool for achieving the good city; and not holding on to the American dream of the culture of suburbanisation. Examples that South African cities may therefore want to follow include Singapore and Curitiba, given their city investment programmes and interventions that had to do with both quantitative densities and qualitative measures to achieve elements of the good city. For instance, both cities arrested their unemployment conditions through investment in public transport integrated with land use planning measures and densification (Mammon and Ewing, 2006).

Conclusion

This paper has shown that cultural aspirations have an enormous impact on how South African urban areas grow, and the form that this growth takes. The implications of low density urban sprawl will continue to persist into the future and have detrimental outcomes for future generations if the root causes of this problem are not addressed. In order for South African cities to change course, the negative perceptions that urban inhabitants have of higher density environments need to change. Clearly, this is an enormous feat, and such deeply embedded perceptions will not change overnight. Good quality higher density urban environments need to be developed as an alternative living model which shows urban inhabitants that the South African dream can be about living well, in a manner that allows the city to thrive.

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AN EXPLORATORY STUDY INTO THE SUB-NATIONAL ECONOMIC AND SPATIAL DEVELOPMENT IMPACTS OF AGOA IN LESOTHO

Kelebone Lekunya¹ and Mark Oranje²

ABSTRACT

Achieving and sustaining (1) rapid economic growth and (2) progressive social and spatial development through industrialisation has been a persistent challenge for the Sub-Saharan Africa (SSA) region. A commonly held 'solution' to this challenge has been to provide access of manufactured goods from the SSA-region to the dynamic markets of the affluent North. This perceived wisdom led to the passing of the African Growth and Opportunity Act (AGOA) in 2000, by the 200th Congress of the United States of America. In this exploratory study, the experience of Lesotho with AGOA, with specific reference to the sub-national economic and spatial development outcomes of the Act in the country, is explored. The findings of the study reveal that the larger settlements where the AGOA-factories are located have experienced some positive, but predominantly negative economic and spatial impacts. While AGOA *did* result in the creation of tens of thousands of job opportunities for unskilled and semi-skilled Basotho youth, it did not provide them with portable skills for use once they had left the factory floor. AGOA was also not found to have motivated the youth or local entrepreneurs to tap into the manufacturing sector. On the *spatial development* side, the AGOA factories were found to have led to infrastructure investment, essentially to serve these factories, but in the process also benefiting the surrounding territories. In many of the settlements, rental units, unplanned and without building permits, have also been constructed in response to the huge demand for affordable housing by the thousands of migrant workers. These units have filled a gap, but also have led to the development of monotonous 'sleeper towns', over-burdening of already strained municipal services, haphazard land development and a feeling of 'anything goes'. In summary, the research findings suggest that, while 'trade and development boosting tools', like AGOA, may be useful in providing term-based job opportunities for unskilled workforce, they will most likely not have as significant a positive impact on (1) the local economy, (2) the creation of an indigenous industrial class, or (3) the building of sustainable human settlements. For this to happen, the tools themselves will need to (1) have a far greater focus on the long-term, holistic development of beneficiary countries, and (2) include tailor-made series of requirements to develop responsive, adaptive and multi-level sub-national indigenous value-chains in support of this objective. In conjunction with the introduction of such a reformulated, new series of international trade tools, a set of locally-focused supporting instruments to foster, nurture and further the development of such value-chains will need to be co-produced and introduced *with* and *in* beneficiary countries.

KEYWORDS: spatial development; economic development; co-production; AGOA; Lesotho.

INTRODUCTION

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The achievement of rapid, inclusive and sustainable economic growth that is enabled by, and contributes to the development of dynamic, responsive, inclusive and resilient human settlement development, has both been (1) a long-standing objective and (2) challenge for the countries of Sub-Saharan Africa (SSA). A commonly held 'solution' to this challenge has been to emulate the Chinese manufacturing-and-trade-led success story and provide access of manufactured goods from the SSA-region to the dynamic markets of the affluent North (Poplak, 2012; Wroblewska, 2015). In accordance with this wisdom, the United States of America (USA) Congress enacted the African Growth and Opportunity Act (AGOA) in 2000. The main objectives of the Act were to (1) facilitate duty and quota-free trade in designated goods between the USA and the SSA region, (2) ensure poverty reduction, and (3) assist countries in the SSA region with integration into the global economy (US Congress, 2000; Zappile, 2011). Towards the end of its fifteen year' lifespan, opinions were divided as to whether it should be terminated or given a further lease of life (Schneidman, 2013; Daily Monitor, 2013; IRIN, 2012; Williams, 2014). It was eventually extended for another ten years on the 29th of June 2015 with the signing into law by President Obama of the *AGOA Extension and Enhancement Act of 2015* (Francavilla, 2015).

Over the course of the (first) fifteen years of its existence, there has been a strong flow of exports from the SSA region to the USA, significantly increasing trade between the USA and the region (Asafu-Adjaye, 2011). Hundreds of thousands of jobs were also created as a result of the establishment of 'AGOA factories' in the region (Kushner, 2015; Wroblewska, 2015). What was, however, not clear was whether the rapid establishment of these factories had assisted in the creation of a sustainable manufacturing economic base in the region, one that could survive, flourish, transform and rejuvenate itself once AGOA was terminated. A key component of this question is whether 'the AGOA-phase' had assisted in (1) suitable, affordable and robust infrastructure investment, and (2) liveable, viable and resilient settlement development in support of this pursuit. It is with these fundamental questions, with a specific focus on the Kingdom of Lesotho, that this paper is concerned.

The *structure* of the paper is as follows: The next section provides a brief overview of the impacts of AGOA on the SSA region. This is followed by the very short introduction to Lesotho, a brief description of the specific areas in the country where the research was conducted, and the research methodology. In the following section the findings are presented, followed by a discussion based on the key research questions and finally the conclusion.

OVERVIEW OF AGOA AND IMPACTS IN THE SUB-SAHARAN AFRICA REGION

By its nature, AGOA can be classified as falling under "preferential trade agreements and arrangements" (PTAs) (Karingi, Páez and Degefa, 2012: 1; Poplak, 2012). Generally, these are described as mechanisms or arrangements to remove certain specific or all barriers between countries or large blocks in order to enable them to trade (more) effectively with each other. In the case of AGOA, this arrangement relates to the US and the SSA region.

Though it has generally been hailed by both USA and SSA government officials as a highly effective tool for strengthening trade and development, there are mixed feelings about its benefit in other quarters (Poplak, 2012; Lenaghan, 2006; Rotunno et al, 2012; Jason, 2016). Lenaghan (2006) for instance argues that its enactment has been beneficial only to the US and not the SSA. This he attributes to the fact that both (1) the eligibility factors and (2) the processes of assessment of eligibility and termination of membership of a country, are done by the USA, and with its interests at heart (Lenaghan, 2006). This view is supported by

Davis (2011), Mushita (2001) and McCormick (2006), who argue that AGOA gives the USA the upper hand, and that the SSA countries are not treated as equal partners, but as subordinates.

AGOA is also seen as an interference in the internal affairs of SAA countries, which, according to Brooks and Shin (2006), stands in marked contrast to the Chinese development model, which generally comes without conditions regarding human rights and the nature of the domestic economy (i.e. free market or not). Hafner-Burton (2005) on the other hand, argues that AGOA can for this exact reason be 'a force for good', contributing to ending abuse and gross violations of human rights in recipient countries by forcing prospective AGOA participants to attend to such matters in decisive and enduring ways. The respect for human rights and the freedoms the economic system supported by AGOA creates, in turn, also enables and encourages participation in the economy (Hafner-Burton, 2005).

Irrespective of the various opinions on benefits of the Act, there is conclusive evidence that AGOA has, in addition to boosting exports of raw products (notably oil and minerals) from Africa, led to the construction of factories and the creation of huge numbers of jobs in these facilities (Keletso, 2015; Kushner, 2015; Rantaoleng, 2014; Guest, 2010; Fosu, 2011; Condon and Stern, 2011)³. It is especially in the generally labour-intensive textile sector where AGOA has been a huge success, and where tens of thousands of unskilled and semi-skilled jobs have been created (Keletso, 2015; Morris and Sedowski, 2006). It has, however, been argued that the wages and salaries tied to these jobs have been far below the living wage, and as such only 'kept the workers going' from one day to the next, and do not really enable them to live decent and meaningful lives (Rotunno et al, 2012; Wax, 2003; Hickel, 2011). In addition to this, it has been argued that most of the factories in the SSA region were set up by Chinese and Taiwanese companies who had little interest in developing the local population or imparting skills to them (Rotunno et al, 2012; Lall, 2005; Fosu, 2011). At the same time, this has meant that a large part of the benefit to be derived from AGOA by the non-USA trading partners has gone to the non-SSA companies and their home countries (Lall, 2005; Rotunno et al, 2012; Hickel, 2011). It has also been argued that the main interests of the Chinese companies in 'the AGOA project' have been to (1) use the financial incentives offered by AGOA, and (2) sidestep trade and tariff walls erected by the USA against imports from China, especially in the area of textiles (Rotunno et al, 2012; Fosu, 2011; Poplak, 2012).

Most studies on AGOA, maybe given its country-to-country focus, have focused *on the macro, country level*. Research into the impact of AGOA on the development of sub-national localities, the establishment of regional and local value-chains, the beneficiation of primary products before export, and the development of indigenous industries on the back of AGOA, is as far as we could establish, non-existent. It is in this regard that this study seeks to make a contribution by initiating *a tentative, exploratory body of research into the regional and local benefits of AGOA*, with in this case the Kingdom of Lesotho as the country in which the study was undertaken.

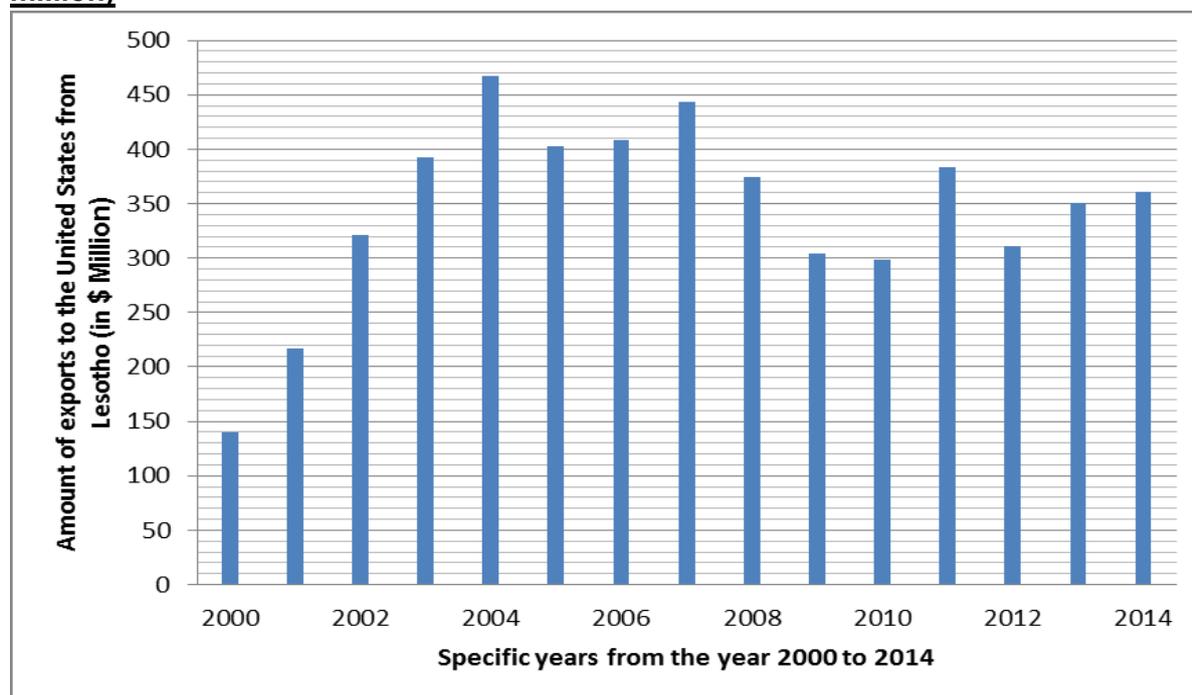
THE STUDY AREA

³ Kushner (2015) for instance observes that AGOA has created 350 000 direct jobs and increased annual USA-Africa trade from \$7billion to \$25billion, while Wroblewska (2015) puts the total number of new jobs created in Africa at 1.3 million and Green (2013) reports that AGOA has "indirectly supported" a further 10million jobs on the continent.

Why Lesotho?

Lesotho was designated as eligible for trade benefits under AGOA in October 2000, and satisfied the AGOA requirements in April 2001 (Central Bank of Lesotho, 2011). Soon after that date it started exporting “designated goods” as per the Act in the form of textiles and apparels to the USA, which has seen (1) the contribution of the sector to the country’s GDP grow to around 20%, and (2) around 40 000 Basotho now working in AGOA-related clothing factories in the five industrial areas in the country (see **Figures 1** and **2** below) (Keletso, 2015; England, 2014). As such, it has become one of the largest exporters of textiles to the USA in terms of AGOA, and the single largest employer in the manufacturing sector in the country by far (Bureau of Statistics, 2015; Jason, 2016; England, 2014)⁴. Given the size, significance and rapid growth of these AGOA-related operations in the country (Condon and Stern, 2010; Lall, 2005; Manoeli, 2012; Payne, 2011), it presents an ideal case to (1) study the impact of the factories, established in response to the Act, on sub-national (regional and local) spatial and economic development in a beneficiary country, and (2) generate a better understanding of the contribution that PTAs like AGOA can make to the development of sub-national spaces and economies.

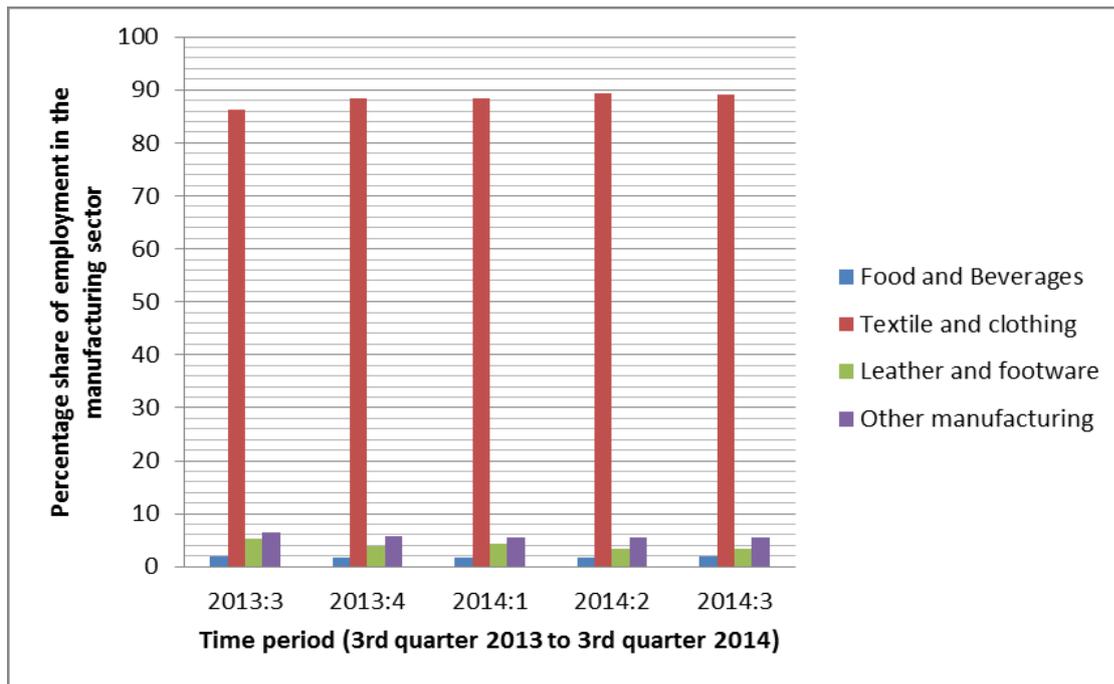
Figure 1: Aggregate exports to the US from Lesotho for the period 2000 to 2014 (in \$ million)



Source: USITC/Department of Commerce (2015)

Figure 2: Percentage share of the manufacturing sector industries in Lesotho to total employment in the manufacturing sector (2013:3 to 2014:3)

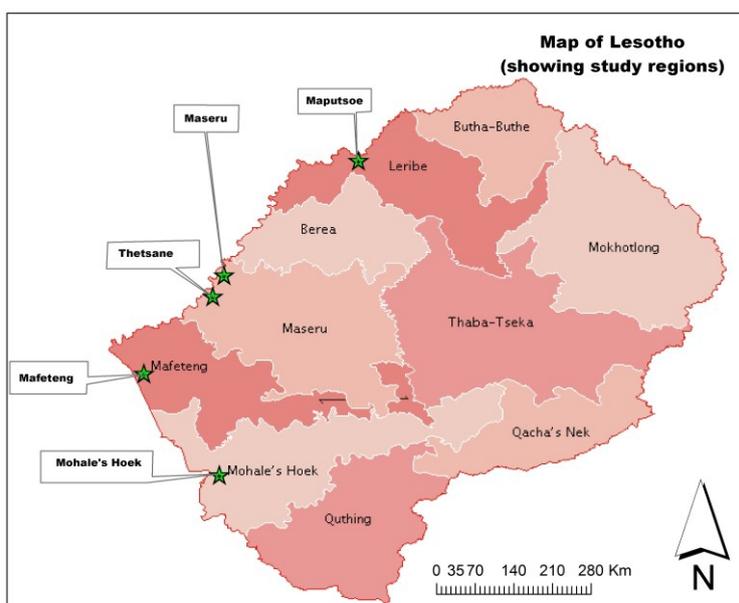
⁴ Clothing brands that are manufactured in the country include Gap, Levi-Strauss and Walmart (Keletso, 2015).



Source: Bureau of Statistics, 2015: 3

This study was undertaken in the five industrial estates of Lesotho in which textile plants and clothing manufacturers have been established to capitalise on the AGOA provisions, namely Maputsoe, Maseru, Thetsane, Mafeteng and Mohale’s Hoek (see Figure 3 below). All of these areas are located in the “lowlands” ecological zone where such industrial development is possible.

Figure 3: The location of the five industrial areas included in the study



Source: Google Earth (2015)

METHODOLOGY

The study was qualitative in nature, with the two major sources of data being (1) primary sources, consisting of semi-structured interviews; and (2) secondary sources, consisting of published material in the form of government policies regarding industrialisation, government strategies towards AGOA, research reports and journal articles. The latter were sourced from databases like Scopus and Google Scholar. In addition to this, information on the activities of the textile manufacturing firms was also sourced from local and international newspapers and reports available online and in the country. The 'period of study' was taken as from the initiation of AGOA in April 2001 (when Lesotho first qualified for AGOA) up and until June 2014.

Maps of the areas where the textile manufacturing firms are located were sourced from the Lesotho Physical Planning Department and from Google Earth. These were used to determine and analyse the extent of spatial development in the settlements since the enactment of AGOA. The semi-structured in-depth interviews (24 in total) were conducted between December 2014 and June 2015, in all five the industrial areas. The interviewees consisted of (1) two senior officials of the Department of Trade and Industry, (2) eight development planners (five spatial development planners and three economic development planners) working in the local authorities where the manufacturing firms are located, (3) five youth representatives, (4) two business people, (5) five community leaders, and (6) the Head of Investment Promotion of the Lesotho National Development Corporation (LNDC)⁵. These interviews were conducted using semi-structured interview schedules, which were administered on a one-on-one basis. In most cases a voice recorder was used after soliciting written permission from the respondents. In others, field notes were made using a pen and notebook, as the voice recordings made a number of those interviewed uncomfortable in sharing their experiences.

Purposive sampling was used to select the research informants (see Babbie and Mouton, 2010: 166, Leedy and Ormrod, 2013: 215; Neuman, 2012: 149). Village and town chiefs, as well as the LNDC and the Department of Trade and Industry were asked to assist with the identification of individuals who would be able to provide relevant data as per the research questions. In accordance with this approach and method adopted, the Head of Investment Promotion of the LNDC was approached for information about the impact of AGOA on (1) creating and (2) sustaining a manufacturing economy in the country. The local development planners were primarily interviewed on (1) the contribution of the AGOA factories to the creation of regional and local value chains, and (2) the spatial impacts of these factories, while the senior officials of the Department of Trade and Industry shed light on whether AGOA-induced industrial development had contributed to economic and spatial development in the country. Local youth representatives and business people were asked to reflect on the extent that AGOA had (1) inspired local entrepreneurship, (2) established and/or strengthened regional and local value-chains, and (3) established a culture of manufacturing in the country.

⁵ LNDC is a statutory national corporation in Lesotho that is responsible for attracting and supporting industrial investors to the country. Generally, it is responsible for industrial development. It is the equivalent of South Africa's Industrial Development Corporation (IDC).

The reports, maps, interviews and field notes complemented each other, with the emphasis throughout the data-gathering and analysis stages on exploring the sub-national spatial and economic impacts of the AGOA-factories in Lesotho.

FINDINGS

The findings are structured under nine themes: (1) direct job creation and poverty reduction; (2) local economic spin-offs; (3) local spatial spin-offs; (4) infrastructure provision, upgrading and maintenance; (5) composition of the factory workers; (6) migratory impacts; (7) foreign company impacts, skills development and regional and local value chains; (8) local social and environmental impacts; and (9) integration of Lesotho's economy into the global economy.

(1) Direct job creation and poverty reduction

All the interviewees were in agreement that AGOA has brought positive developments to Lesotho in terms of the creation of tens of thousands of non-skilled and semi-skilled jobs and the alleviation of poverty as a result of this. In a number of interviews, references were made to the impact of the factory workers on the local economy at month-end, when they "flock to the local general dealers for their groceries and other needs in their thousands". The national economic growth and taxation that AGOA had brought, was also seen as having enabled the government of Lesotho to absorb a sizeable number of people in the country's civil service.

There was broad agreement that even though the salaries paid for the factory jobs were meagre (between 1 071 and 1 260 Maloti⁶/month in 2014 (Kingdom of Lesotho, 2015: 118)), it was argued that it (1) had enabled factory workers to take care of their families, (2) was "better than what they had had before", and (3) had raised their standard of living, albeit only slightly. In many cases, parents were now able to send their children to school and buy them clothes, which they were not able to do in the past. Having a regular monthly income was also a new addition to the lives of many households, and made it possible for them to plan for their futures. In a number of cases, it was highlighted that workers were not only from the local area, but also from surrounding areas, and that the factories had, as such, had a wider beneficial outcome (see also **paragraph 6** below).

The smallness of the salaries paid to the factory workers was a point of serious contention. Being below the national taxable level, it means that the factory workers do not pay taxes. On the other hand, many of those interviewed expressed the view that while these wages were making a dent in the levels of poverty of the beneficiary households, it was not doing enough to contribute to regional and overall national poverty eradication.

Several of the respondents indicated that they had heard of factory workers complaining of being mistreated by their foreign employers, even though no one pointed to a specific case that they knew of, or that had actually been reported, in which a factory worker was mistreated.

(2) Local economic spin-offs

Many of the interviewees touched on the local economic spin-offs of AGOA. They indicated that several Basotho men and women were informally selling wares near to where the factories are located, with the factory workers and security guards employed at the factories, as their primary clients. Items that are sold in these informal stalls include snacks, fruits, vegetables, cooked food (breakfast and lunch), airtime, and at months' end, also clothing. However, it was pointed out, "most of these traders sell almost the same thing. They are

⁶ One Maloti is equal in value to one South African Rand, which at the time of writing this paper, was about equal to 7 USA cents.

focused on survival, not on getting rich". For some households, it was noted, these shops have made a huge difference. It was now, as in the case of the factory workers, also possible for these households to send their children to school, build themselves houses, and even buy cars.

A number of interviewees indicated that they knew of street vendors who had started as very small businesses, initially selling from pavements and road reserves, and gradually moving up the ladder to become medium-sized vendors with their own storerooms where they keep their wares. While the shops themselves were small, these were often high-turnover businesses fuelled by high volumes of passers-by.

It was also noted that arrival of the factories had seen a rapid expansion in the provision of public transport in the form of mini-bus taxis services by local operators. Very few local people had, however, ventured into delivery truck businesses. In addition to this, large retailers, especially in the Maseru and Maputsoe industrial areas, had benefitted substantially from purchases by factory workers, especially at pay days. A number of filling stations and larger grocery chain stores in some settlements that had been constructed over the last ten to fifteen years, were also attributed to AGOA.

With regards to local agricultural production, it was observed that there were instances of local people establishing and operating small-scale agricultural projects, producing primarily vegetables (notably tomatoes, green peppers, carrots and cabbages), chicken and eggs. The produce of these operations was not only sold to the factory workers, but also to street vendors and mini-bus taxi drivers serving the factory workers. These small farming operations also provided work opportunities for inhabitants of the settlements where the factories were located as farm labourers, and for people from further afield in Lesotho.

(3) Local spatial spin-offs

There was general agreement amongst the interviewees that AGOA (1) had led to physical/spatial growth in the settlements where the factories are located, but (2) that this growth was not planned for, and generally haphazard in nature. A number of people who own land in these settlements, it was observed, "saw land ownership as a business opportunity", and had built small units for rent to the factory workers. These units, of which there are many, are (1) in most cases developed as loose-standing lines of one and two-roomed rectangular houses, and are called "*malaene*" in the local language, (2) are informally constructed "everywhere", and (3) often "eat into prime agricultural land in and around the settlements".

The spatial development planners that were interviewed indicated that they had looked at what they regarded as "innovative ways of managing the haphazard development of the settlements" after the AGOA factories had been built. They had amongst others, looked at alternative sites for settlement expansion and construction of factories, and also, ways in which they could upgrade existing settlements where the factories had been built. The latter, they pointed out, turned out to be the most likely option, due to inadequate funds and the general lack of political will for planning in local authorities. The result of this, they argued, has been that the illegal use and development of land had continued unabated, and that the already huge backlogs in service provision just keep on growing and getting worse in areas where there are services, but where these are severely stretched. In some cases, they added, houses had been illegally built in road reserves. This, they argued, not only makes pedestrian movement difficult and poses health and safety risks, but also creates a sense of lawlessness and unmanageability, and further diminishes the status of spatial planning and spatial planners in local authorities.

(4) Infrastructural provision, upgrading and maintenance

There was general agreement that while infrastructure connections had been made to the factories, there had not been significant infrastructure provision, upgrading and maintenance *in the settlements* where the factories are located as a *whole*. Infrastructure provision mainly consisted of the LNDC (1) building factory shells that are connected to bulk water supply, sewage lines, telecommunications, electricity, and (2) adding a few connecting/access roads⁷. Despite their misgivings about the highly targeted and exclusionary nature of the infrastructure provision, it was observed that at least inhabitants living in close proximity to the factories were able to connect themselves to these services, and to do so cheaply.

A number of interviewees pointed to a major challenge with regards to the roads that had been built to serve the factories. While roads in settlements in Lesotho are the responsibility of local authorities, they were in most cases constructed by the LNDC due to the high profile of AGOA and the perceived importance of the factories for the country. However, once constructed, the maintenance and upgrading of the roads become the responsibility of the local authorities. Despite the local authorities generally doing their best, the result was a mixed bag, with in a number of cases, these roads not being in a good shape.

Interviewees also pointed out that in some cases, local authorities had provided (1) street-lighting on the access roads to the factories, primarily for the benefit of the workers, but also for the inhabitants of the settlements, and (2) security guards at the informal market stalls. In general, however, there was a shared view that local authorities had not capitalised enough on or benefitted enough from the presence of the AGOA factories, and had not used this platform to extend and upgrade services to the rest of their areas of jurisdiction. In defence of the local authorities, a number of the interviewees indicated that because AGOA had not led to broad-based economic growth, the continuing high poverty levels meant that there were many households who still could not afford to pay for municipal services. This they argued, was the reason for the gaps and backlogs in service provision by the local authorities. As noted by one of the interviewees who held this view, where communities were able to pay for services, local authorities had provided and maintained adequate infrastructure and street lighting.

In general, there was a view that (1) there should have been more infrastructure development and upgrading as a result of AGOA and (2) factory owners should have ploughed back some of their profits into the settlements in which they were located in terms of service provision and the construction of schools and health facilities. As it stands, there are, however, no requirements on the AGOA factory owners to do so, or to initiate or undertake any form of corporate social responsibility.

(5) Composition of the factory workers

Interviewees observed that the bulk of the factory workers are women in their early 20s up to their late 40s, who work as machine operators, sewers, knitters and ironers. The men who do work at the factories, are either employed as security guards or as chauffeurs to the factory managers. Legislation prohibiting child labour is strictly observed, with no interviewee indicating that they had seen or heard of any case of the law being broken at the factories.

While most of the factory workers are young women who have just completed their high school studies, there is an increasing tendency for university graduates to also work in the factories. This latter phenomenon was ascribed to the generally high levels of unemployment in the country and the huge and growing lack of jobs for graduates. Despite many of the graduates working in these factories having the necessary qualifications, they are seldom given jobs in administration, finance or human resources management.

⁷ See Shakya (2011) for a detailed discussion of this process of construction and support by the LNDC.

(6) Migratory impacts

Interviewees were in agreement that AGOA had caused significant migration of labour in the country. Migrants not only came from rural areas to the five settlements for work in the AGOA factories, but also for work in the formal retail sector. In some cases, they did not find a job or lost their jobs in the formal sector, and ended up starting their own informal businesses, or working for other informal business operators. Given the high levels of in-migration, many of the inhabitants of the five settlements living in close proximity to where the factories are located are migrants, with “the churches and the streets in these areas generally empty and also far less congested than usual during the Christmas and Easter holidays”.

(7) Foreign company impacts, skills development and regional and local value chains

Most of the interviewees made the point that the majority of the factories were foreign-owned by primarily Chinese and Taiwanese nationals, followed by South Africans⁸, who have capitalised on the initial tax breaks and a corporate tax rate of 10%, which is very low when compared to the 28% rate in South Africa⁹. In addition to this, it was highlighted that (1) the Lesotho government also provides skills development training to the factory workers at zero cost to the investors, and (2) foreign investors are free to repatriate all of their profits to their countries of origin without any additional taxes. This lopsided structure, some interviewees noted, leaves not only tens of thousands of workers and their dependents, but also the settlements in which the factories are located and the country as a whole, extremely vulnerable to events and decisions taken far away from the country, as actually happened after the global financial crash in 2008.

The interviewees were in agreement that primarily a lack of (1) capital and (2) skills prevented Basotho from setting up and running their own factories. They also added that this is not something that was going to change soon, as skills transfer was not taking place. A key constraint in this regard was seen to be the language barrier, with the foreign investors often not proficient in English. Another reason for this was that the foreign companies brought in not only their own management teams, but also interns from their countries of origin.

A number of interviewees expressed the view that the foreigners deliberately did not transfer skills, nor offered training to Basotho factory workers to prevent them from starting their own businesses¹⁰. There were, however, interviewees who argued that AGOA had introduced the Basotho to industrial work and management, and had developed a strong work ethic in especially the younger segment of the local population. It was also observed that in some factories “workers were being taught how to spend their money wisely”.

As for the small number of local start-up companies making use of AGOA, one of the officials interviewed expressed the view that this was due to (1) there being a lack of information amongst local Basotho as to how AGOA functions, (2) an incorrect perception that AGOA is only for use by foreigners, (3) established networks in the textile industry being very strong and very difficult to break into by newcomers, and (4) local banks generally being reluctant to offer capital loans to the local industrialists, with meagre family savings for many the only source of start-up finance. One of the other interviewees argued that the reason for local entrepreneurs not exploiting AGOA benefits was that many lacked the confidence.

⁸ A number of interviewees indicated that most of these delivery trucks used by the foreign companies are owned and operated by South African companies.

⁹ In 2014, 65% of foreign investors in the textiles and garment sector from China and Taiwan, 13% from Hong Kong and 5% from South Africa (Government of Lesotho, Ministry of Trade and Industry, 2016: 19).

¹⁰ England (2013) notes that there were 38 textile producers in the country in 2013, of which 21 were from Taiwan and two from China, but none from Lesotho.

Another suggested that “locals had misplaced negative views about the Basotho work ethic vis-à-vis that of the Chinese and the Taiwanese”, and “are waiting for a success story from a local textile company” to convince them that it can be done¹¹.

The insular nature of the foreign companies was a general point of discussion and concern. The factory owners were said to not only use their own raw materials (primarily from China and South Africa) in their production processes, but also to cook their own food, which “they either brought with them, or sourced from local retailers that were from their home countries”. There were hence no regional or local value chains of any significance feeding into the AGOA factories as yet, with “even basic things like broken machines still being repaired by the expatriates or being sent to their countries of origin for repairs or maintenance”.

(8) Local social and environmental impacts

A number of the interviewees expressed the view that the AGOA factories had caused social and environmental problems. A strongly held view amongst these interviewees was that youth dropped out of school or university either to take up a job in a factory, or to start their own small businesses close to the factories. In a few cases, harsh normative opinions were expressed about the migrants, such as that (1) some of the factory workers “were drunkards” who “came to the settlements with strange values”; (2) some of the female factory workers “were adulterous and were destroying local residents’ families”; and (3) HIV and AIDS-prevalence rates were high in the AGOA settlements, as a result of the behaviour associated with the behaviour of the migrants¹². The practice amongst factory workers of sharing the small informal rental units to save on expenses was seen as a further contributor to social decay, and also as creating health hazards through over-use of municipal services. With regards to environmental impacts, a number of interviews argued that the factories posed a fire risk, polluted the air, and contaminated streams and rivers. It was also stated by one of the interviewees that the toilets at the factories are often not clean and as such pose a health risk to both the workers at the factories and the inhabitants of the settlements.

(9) Integration of Lesotho’s economy into the global economy

Many of the interviewees expressed the view that AGOA had assisted in integrating Lesotho into the global economy, often citing as evidence of this the way in which the country had also been adversely affected by the 2008 global financial crisis¹³. They went on to indicate that the strict AGOA eligibility requirements had contributed to the promotion of “free market principles” in Lesotho, and also led to the establishment of a commercial court in the country. Interviewees also pointed to the improvement in Lesotho’s balance of payments after enactment of AGOA, and her exports having increased significantly since then, not only to the USA.

¹¹ The best way to do so, it was observed by the two business people interviewed, was by approaching a foreign firm with the request to become a sub-contractor to the firm.

¹² Whatever the cause, Lesotho has one of the world’s highest-positive rates, with 23.1% of the adult population being HIV-positive (Keletso, 2015), and HIV and AIDS are serious concerns in the settlements where the AGOA factories are located. In response to this, initiatives like the Apparel Lesotho Alliance have been established to fight the disease with the aim being the prevention and holistic treatment of workers living with HIV/AIDS on the factory floor (see LENA, 2008; CBL, 2011; Kotelo, 2014; LNDC, 2014; Harding, 2015 and Keletso, 2015).

¹³ In 2008, just prior to the crash, exports of textile and garment products by Lesotho peaked at \$340 million (Keletso, 2015).

DISCUSSION

The exploratory study sought to explore the sub-national spatial and economic impacts of AGOA in Lesotho. This main research question is engaged in a discursive and summary way in this section by making use of the findings of the study in terms of the following two sub-questions:

- Has AGOA contributed to sub-national economic development in Lesotho through the creation and/or strengthening of local and regional value chains; and
- What has the impact of AGOA been on sub-national spatial development and state of infrastructure provision, maintenance and upgrading of the areas where the factories are located?

Impacts of AGOA on sub-national economic development

The findings painted a mixed picture. On the one hand, around 40 factories¹⁴ have been established and tens of thousands of factory floor and security job have been created. In a decade and a half, a massive textile sector has been established in the country, and it has become the largest private sector employer in the country employing some 40 000 odd workers and adding around 20% to the country's GDP (Bureau of Statistics, 2015; Keletso, 2015). In addition to this, an informal rental market has arisen, and (1) mini-bus taxi operators, (2) small-scale informal traders and take-away food sellers, and (3) fresh produce farmers have capitalised on the market created by the factories.

On the other hand, the wages earned in the factories are very small, and their impact on the economy has primarily been in the form of survivalist household spending. Workers also do not pay personal taxes due to the smallness of the salaries, which is saving grace for them, but means that there is no direct benefit for the State coffer, and which limits the ability of the State to provide services and re-invest AGOA earnings in indigenous economic development. The same applies in the case of local authorities who struggle to give effect to their mandates due to the limited spending power of households in the AGOA settlements. The factories, in turn, are almost exclusively owned and operated by foreigners (primarily Chinese and Taiwanese companies) and there has not been much expansion of the local economy in terms of domestic companies feeding into the supply chains of the foreign-owned factories (see Fosu, 2011, Mokoatsi, 2011 and Rantaoleng, 2014 for a similar set of findings). As it stands, there are not more than a handful indigenously owned textile companies or sub-contractors, and a resilient manufacturing industry has yet to be established in Lesotho. Even those operating take-away shops in most cases buy their maize meal, meat and vegetables from Chinese-owned shops. Raw materials for the factories are sourced mainly from China, and transport services and maintenance and repair services are almost exclusively performed by foreign contractors. Management and senior positions in the factories are filled by foreigners, and the building of local skills is more in line with *what is good for the factory*, than it is for the workers in the sense of gaining skills that can be used elsewhere, or to start one's own company producing goods or selling services (see Lall, 2005 and Asafu-Adjaye, 2011 for a similar set of findings).

While a textile and garment manufacturing sector has been established in the country, it relies solely on AGOA, and should the sector or AGOA go, there will be no indigenous value

¹⁴ The exact number quoted by the LNDC in 2016 is 42 (Government of Lesotho, Ministry of Trade and Industry, 2016: 19). Morris and Sedowski (2006) specified this total as 39, and Shakya (2011) as 60 factories. According to Payne (2011) each of these factories employs between 400 and 1 500 workers.

chains or generic service companies that would be left behind, and on which a new or another industrial economy could be built.

Impacts of AGOA on sub-national spatial development

In contrast to what often is the case with mining-related investments by large mining companies, the construction of the AGOA factories was not accompanied by an injection by the factory owners of infrastructure investment or development spending in the settlements where they are located. Nor was there, beyond the targeted infrastructure investment in and around the factories – and with the primary aim that of getting the factories connected to the grid and up and running – any additional or supporting investment by the local authorities in the five settlements where the factories are located. It was a case of the parachuting in from the sky of a series of factories, with the foreign owners and managers of the factories also not living in and becoming part of the settlements, but staying in compound-style accommodation on site, next to their factories, behind security walls.

The study found that large in-migration from rural areas to the factories had resulted in the construction of rental housing units, built without a plan or building permit, and generally without adequate provision of basic municipal services, notably potable water. These rental units, built solely with functionality and profit in mind, are small, generally not well-maintained, and add monotonous rows upon rows of hostel-type units and little else to the urban fabric and the aesthetic quality of the surrounding areas. The units are also leading to the capacity of municipal services being exceeded, with unhealthy sanitary conditions as result. In essence, the settlements in close proximity to the factories have essentially become 'sleeper towns' for the AGOA factories with little in the sense of diversity and a mix of land uses. With the absence of local spending by the factory owners and managers in these factories, there are no multiplier effects in the surrounding settlements from the wages paid to their better paid senior foreign workers. Residential land (primarily rental units) uses are increasingly also eating into prime agricultural land, which has implications for local fresh food production and consumption.

While the construction of the AGOA factories was accompanied by the provision of connecting roads and infrastructure to the factories by the LNDC, little else was done in the rest of the settlements, and no investment in infrastructure was made by the factory owners themselves. While those residents living in close proximity to the industrial estates benefitted from these roads and could connect to the municipal services through payment of a small fee, it still required a payment, which not everybody could afford. At the same, large segments of the settlements remained without services. Due to local authorities having limited funding available they cannot maintain or expand the service network. Likewise, due to there being little appetite or political will for planning in the local authorities, they do not prepare plans for the development of human settlements with a wider set of objectives in mind and that are not just focused on the AGOA factories as economic hubs. As it stands, the local authorities are not planning for, nor are they able to control the spatial development of the areas around the factories. At the same time, the state is, given its limited regulatory powers, also not able to attend to the pollution of the air and water streams from the factories.

CONCLUSION

While it was anticipated that AGOA would have brought considerable benefits in terms of establishment of an industrial economy in Lesotho, the study indicated that even though an

industrial economy was created, it has largely benefitted Chinese and Taiwanese, and not indigenous companies. Regional and local value chains feeding into the AGOA factories are largely non-existent. In addition to this, the continuation of the benefits brought by AGOA are directly tied to AGOA and the political decisions made in the USA. The research findings suggest that, while “trade and development boosting tools”, like AGOA, may be useful in providing term-based job opportunities for unskilled workforce, they will most likely not have as significant a positive impact on (1) the local economy, (2) the creation of an indigenous industrial class, or (3) the building of sustainable human settlements. For this to happen, tools like AGOA will need to (1) have a far greater focus on the long-term, holistic development of beneficiary countries, and (2) include tailor-made series of requirements to develop responsive, adaptive and multi-level sub-national indigenous value-chains in support of this objective. In conjunction with the introduction of such a reformulated, new series of international trade tools, a set of regionally and locally-focused supporting instruments to foster, nurture and further the development of such sub-national value-chains will need to be co-produced and introduced *with* and *in* beneficiary countries.

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A new framework for Spatial Planning and Land Use Management Legislation in South Africa

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Abstract

South Africa still operates under a fragmented and incoherent spatial planning and land use management regulatory environment which often stifles land and economic development and the transformation of apartheid-based settlement patterns. The continued operation of these multiple pieces of planning laws renders the entire planning system inefficient, costly and confusing, and thus unsupportive of a number of noble objectives of Government. The introduction of the Spatial Planning and Land Use Management Act, Act No. 16 of 2013 (SPLUMA) has heralded in a new dispensation for planning in South Africa. It is the first single national and integrated planning law that clearly sets out a framework for a planning system in South Africa. The new Act seeks to create an environment to assist in the bridging of the racial divide in spatial terms and to transform the settlement patterns of this country in a manner that gives effect to key constitutional provisions. The Act has introduced new responsibilities for each sphere of government to execute; to ensure effective, efficient and sustainable spatial planning and land use management. The process of implementation has yielded key lessons towards addressing some of the challenges that exist. The efforts being undertaken in the implementation of the SPLUMA continues to enrich the discourse of work towards the promotion of a legislative environment that facilitates development.

Key Words: Spatial Planning and Land Use Management, Framework legislation, Planning Law

1. Introduction

The reform of a complex legislative environment for Spatial Planning and Land Use Management (SPLUM) in South Africa remains a challenge. The current complexity is attributed to the legacy of a regulatory framework and its inherited systems and practices that were used as instruments to implement the policies of the previous government. Planning was used by the previous regime to reinforce segregation (Berrisford, 2011), the complexity and inefficiency of this regulatory framework was confirmed in the White Paper on Spatial Planning and Land Use Management (White Paper on SPLUM, 2011).

In order to address these challenges the first positive step towards the reform of a complex legislative environment is being led by framework legislation developed by National Government. This paper seeks to explore the approach and process undertaken in the development of framework legislation for SPLUM. The lessons learnt in addressing complex institutional, legal and technical challenges that have been encountered during the finalization and implementation of the legislation will also be briefly discussed. The enactment of framework legislation has been seen as a positive step forward to ensure that South Africa is on the path towards creating an environment that facilitates rather than hinders development.

1.1 Problem Statement

The impact of apartheid on the development of South Africa is evident in a spatial pattern that is discriminatory, inefficient, unequal, costly and this problem is deeply entrenched (NDP 2011). Apartheid planning was focused on achieving the objective of separate development which resulted in a distorted, disjointed, dysfunctional and an inequitable space-economy. The apartheid spatial and socio-economic legacy has proven difficult to unravel in all types of settlements. South Africa's cities, towns and settlements still require restructuring to reflect the priorities and principles of a democratic government.

The challenges highlighted above remain unresolved despite various initiatives by Government and one of the key challenges inhibiting efforts is that the legislative environment for spatial planning and land use management remains unreformed. The legislative environment is characterised by fragmentation with the existence of multiple laws and often the duplication of functions caused by parallel and conflicting legislation (NDP 2011). Land use management decisions are still predominantly made in terms of legislation that were developed in the apartheid era and compounded by long approval procedures involving inputs from other sectors with inadequate mechanisms to deal with objections expediently. There is an evident need for a robust legislative framework to give effect a system of SPLUM that will form the basis for transformative government and private sector investment in the space economy.

2. A Historical Perspective of Legislation Impacting on Spatial Planning and Land Use Management

In order to understand the challenges in addressing the rationalisation of the legislative environment for SPLUM in South Africa it is important to understand the historic development of policy and legislative instruments. This section provides a summary of key instruments developed at National and a Provincial level that have influenced the current environment and expands on the issues raised in the problem statement. Figure 1 below represents a timeline of policy and legislation that has influenced the SPLUM legislative environment in South Africa. A summary of only the key instruments is contained in this section. It should be further noted that the timeline whilst not completely exhaustive, focuses on initiatives that played a greater role in contributing to the complexity.

2.1 Provincial Ordinances

National government played a limited role in the development of planning law in the late 19th century (Roos 2012). During this period the then Republic of South Africa was divided into four provinces namely the Transvaal, Orange Free State, Cape and Natal. During this period only the urban spaces and spaces administered by these provinces and were regulated through the following instruments the Transvaal Planning Ordinance, Cape Planning Ordinance and Natal Planning Ordinance (Berrisford 2011; Roos 2012). These three provinces developed their ordinances between 1931 and 1934 whilst the Orange Free State Ordinance was passed in

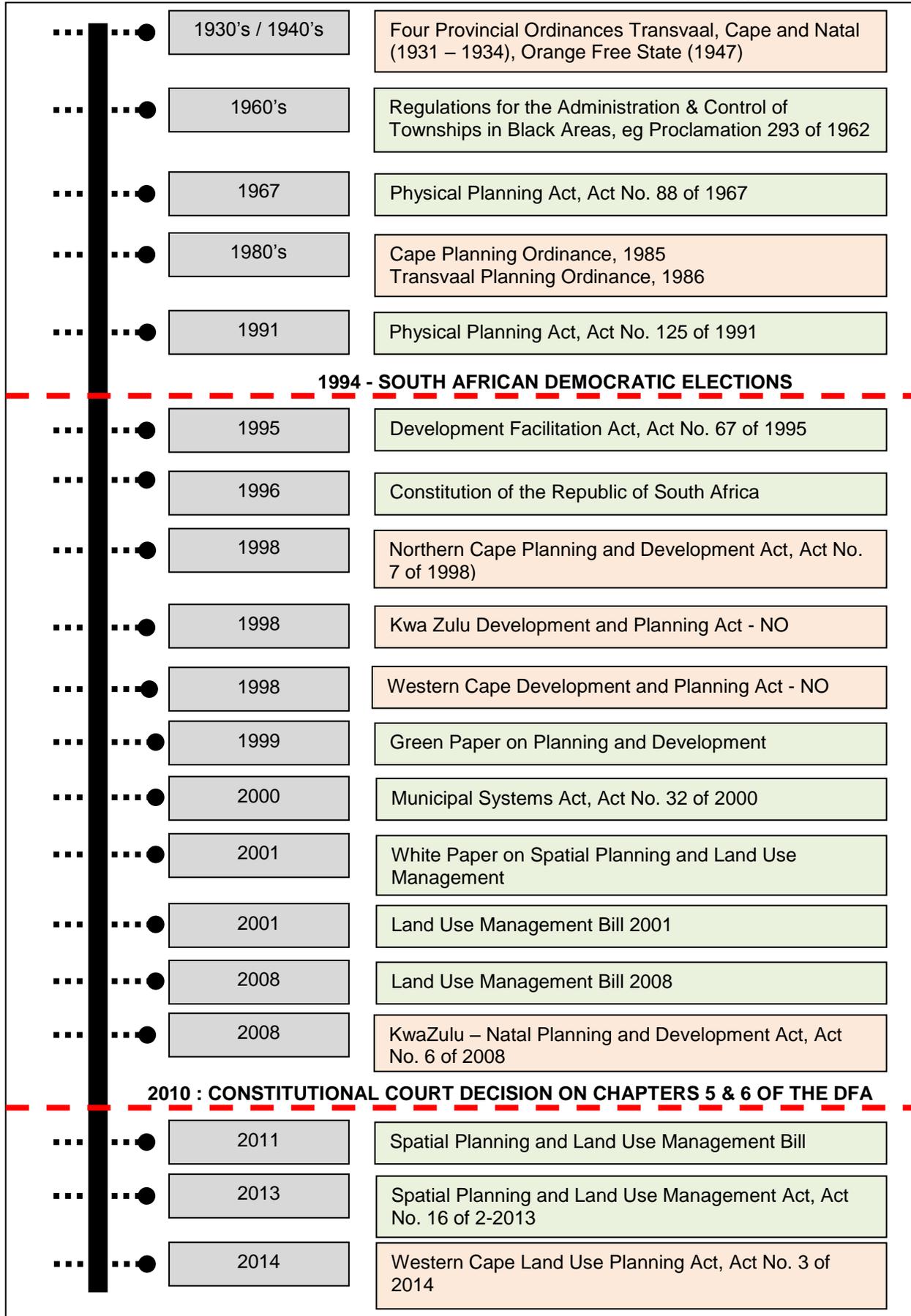


Figure 1: Timeline of Policy & Legislation

1947. These instruments were further replaced as follows in their respective provinces the Cape in 1985, the Transvaal in 1965 & 1986, the Natal in 1949 and the Orange Free State in 1969 (Roos 2012). The legal legacy of these instruments still exist today as these laws still remain in operation within the boundaries of the previous provinces despite the new provincial demarcations (9 provinces) which came into effect after the 1994 democratic elections.

2.2 Regulation Of Land Outside Previous Provincial Boundaries – The Homelands

In terms of different legislative instruments 5 homelands were declared within the boundaries of the Republic of South Africa. These areas were called Lebowa, Gazankulu, Qwaqwa, KwaZulu, KwaNdebele and KaNgwane and were predominantly populated by the South African black population (Wessels et al 2004). These areas were established in terms of various proclamations. Land Use Management in these areas were undertaken in terms of these proclamations and are still utilised in certain parts of the country even today. The ordinances did not apply to areas that fell within the former homelands (Roos 2012; SA Cities Network 2012).

2.3 Constitution Of The Republic Of South Africa Act No. 108 Of 1996

The Constitution of the Republic of South Africa replaced the tiered system of government with a system of spheres of government. In relation to planning specific powers and functions are allocated to the different spheres in terms of Schedules 4 and 5 to the Constitution. It is argued that this has also led to some uncertainty on the boundaries between National, Provincial and Municipal powers with regard to planning (Berrisford 2011).

2.4 The Development Facilitation Act, Act No. 67 of 1995

The Development Facilitation Act was a national statute and was assented to on 28 September 1995 and commenced on 22 December 1995. Its key object relevant to this paper was to provide for uniform procedures at a national level for the subdivision and development of land in urban and rural areas so as to promote the speedy provision and development of land for residential, small-scale farming or other needs and uses..." (DFA 1995).

The Development Facilitation Act was promulgated as an interim measure to bridge the gap between the old apartheid era planning laws and a new planning system reflecting the needs and priorities of a democratic South Africa. The Act, however, did not address the rationalisation of the legislative framework and as a result national and provincial laws relating to planning promulgated before 1994 remained in existence. The DFA was also not applied uniformly across the country.

2.5 The Green Paper on Development Planning (1998)

In 1997 Government appointed the National Planning Commission to, amongst others issues, advise on how best to streamline the various policy, legislative and regulatory frameworks. This commission led the development of the Green Paper on Planning and Development, which for

the first time formally identified key spatial planning and use management policy concerns, and recommended policy approaches to address these concerns. The key policy imperatives relevant to the subject of this paper included amongst others the following:

- The recognition that the spatial planning function is of national importance
- The recognition of the need for a strong, standardized planning system, which would be flexible enough to allow for local variation
- The rationalisation of the legal framework based on a revised DFA would need to be supported by provincial and local legal instruments; and obsolete/obstructive provincial legislation would need to be removed by national government

2.6 The White Paper on Spatial Planning and Land Use Management (2001)

The White Paper on Spatial Planning and Land Use Management was approved by cabinet in June 2001. The White Paper interestingly provided for the rationalisation of the existing planning laws into one national system. The key objective of the White Paper was to deliver a legislative and policy framework that would enable government to address the spatial, economic, social and environmental challenges. The White Paper further built on the experience of the DFA and the Green paper, and consolidated important concepts and policy recommendations including amongst others the following:

- Principles, norms and standards,
- Local spatial planning, land use management and development, with local government as the most important sphere for decision making,
- The Land Use Regulator at local, provincial and national levels, with applicable powers to decide on planning matters of local, provincial or national interest,
- National planning frameworks, that would provide spatial planning guidance to provinces, and in turn to municipalities

Until the advent of the White Paper on Spatial Planning and Land Use Management, there was no common vision on the form and function of spatial planning and land use management in South Africa.

2.7 Municipal Systems Act, Act No. 32 of 2000

The Municipal Systems Act enjoins a municipality to undertake “*developmentally-orientated planning*”. The Municipal Systems Act establishes the Integrated Development Plan as the principal planning instrument of local government and further provision was made for Spatial Development Frameworks, and policy guidelines for LUMS within the context of the municipal SDF.

2.8 Judgment Of The Constitutional Court On The Validity [Unconstitutionality] Of Chapter 5 And Chapter 6 Of The Dfa [June 2010]

The judgement of the Constitutional Court on Chapters 5 and 6 of the DFA was a land mark ruling for the SPLUM sector in South Africa. The DFA provided for a development tribunal to be

established in each province. Chapter 3 of the DFA empowered these tribunals to deal with any matters brought before them in terms of Chapter 5 and Chapter 6. Section 33 of the DFA was of particular significance, it allowed the development tribunals to make decisions on land development applications, and to override the application of municipal laws and instruments. It is this disputed authority to make decisions on rezoning and township establishment applications that led to the various legal interventions, culminating in the Constitutional Court judgment of 18 June 2010 that Chapter 5 and Chapter 6 of the DFA were constitutionally invalid. This watershed Constitutional Court judgment provided critical impetus for the development of framework legislation for SPLUM.

3. The Journey from the Land Use Management Bill to the Spatial Planning and Land Use Management Bill

The following section provides an overview of the various versions of the Bill for SPLUM from the period 2001 as the Land Use Management Bill until its introduction to parliamentary process in 2012 as the Spatial Planning and Land Use Management Bill. It also provides a brief overview of the content of the various attempts as the journey unfolded over a period of almost 11 years. During this period there was also a restructuring of government departments which took place after the National elections in 2009, this is important as the Department of Land Affairs (DLA) which was responsible for land related matters including land planning was renamed the Department of Rural Development and Land Reform (DRDLR).

3.1 Land Use Management Bill 2001 (first version drafted with the White Paper)

The first attempt at National legislation dealing with SPLUM after DFA was the Land Use Management Bill in 2001. The first version of the Bill was developed together with the White Paper on Spatial Planning and Land Use Management. The Bill was published on the 20 July 2011 in Government Gazette 22473 together with the White Paper on Spatial Planning and Land Use Management. The major area to note was the conception of having a mechanism to appeal municipal decisions to a body established by provinces.

During the period between 2001 – 2007 there was significant debate about the ability of the then DLA to finalise a satisfactory and acceptable version of a Bill to inform the regulation of the SPLUM mandate for the country and interests in national government including the National Treasury and the Presidency were expressing dissatisfaction with the inability of the DLA to make progress. Amongst the challenges as highlighted above was also an unspoken debate about the location of the SPLUM mandate however no formal process was set in place to address the matter within government.

3.2 Land Use Management Bill 2008

In 2007 the then DLA redrafted a version of the LUMB which was introduced to Cabinet and subsequently to the National Assembly in May 2008. Public hearings were held and the Bill was thereafter approved by the Portfolio Committee. The Bill was to be introduced to the National

Assembly in early 2009, but was not considered. The Bill lapsed because a new executive was appointed after the National elections in 2009.

3.3 Spatial Planning and Land Use Management Bill 2010

Subsequently and in the first quarter of 2010, the Department of Rural Development and Land Reform (DRDLR) began further work on the Bill call the Spatial Planning and Land Use Management Bill (SPLUMB), with the intention of introducing the Bill to Cabinet and subsequent parliamentary processes. The urgency to fast track this process was exacerbated by the Constitutional Court decision that was taken on the 18 June 2010, in the matter between the City of Johannesburg Metropolitan Municipality and the Gauteng Development Tribunal. This version of the Bill was not published in the Government Gazette.

A draft Bill was presented for consideration to Cabinet Committee in August 2010 and it was requested at this meeting by the Minister of Rural Development and Land Reform that the Bill be held in abeyance pending further consultation with the National Planning Commission (NPC) in the light of work undertaken by the Presidency / NPC in this regard. An interdepartmental task was established to jointly prepare draft Land Use Legislation that would be submitted to Cabinet. The process however did not result in an acceptable version of a Bill and the process was abandoned.

3.4 Spatial Planning and Land Use Management Bill 2011 /2012

After this failed effort in the drafting of a Bill and with the pressure of the pending two year timeframe, the DRDLR undertook a process to redraft the Bill taking into cognizance the implication of the Constitutional Court judgement. The draft SPLUMB was again published in Government Gazette 34270 of 6 May 2011. This version was a response to the judgment of the Constitutional Court.

In the finalisation of this version of the SPLUMB extensive consultation was undertaken. Public consultation took place from 6 May 2011 to 6 June 2011. In response, more than 100 written submissions were received. In addition to the public consultation, the department engaged in an intensive consultation process with key stakeholders. Bilateral meetings and workshops were held with key public and private sector stakeholders. A revised draft Bill was presented for discussion at a Full Ministers' Cluster meeting on 29 February 2012, and further at the meeting of the Cabinet Committee on the 14 March 2012. Public hearings were also held by Parliament which also enriched the process through public discourse. The Cabinet approved the SPLUMB on the 20 March 2012 for introduction to Parliament.

3.5 Summary of Differences in the versions of the LUMB / SPLUMB

The table below provides an overview of the areas covered / not covered in the different versions of the Bill.

Content	Provisions	LUMB 2001	LUMB 2008	SPLUMB 2010	SPLUMB 2011/2
Development Principles		√	√	√	√
Norms & Standards		x	x	√	√
Intergovernmental Support	National	√	√	√	√
	Provincial	√	√	√	√
Spatial Development Frameworks	National	√	x	√	√
	Provincial	x	x	√	√
	Municipal	√	x	√	√
	Regional	x	x	√	√
Land Use Management	Land Use Schemes	√	√	√	√
	Alignment of Authorisations	x	x	x	√
Land Use Regulators (Decision Making)	Land Use Tribunals	x	√	x	x
	Provincial Land Use Tribunals	x	x	√	x
	Municipal Planning Tribunals	x	x	√	√
	Authorised Official	x	x	x	√
Support / Advisory Committees	Land Use Committees	√	x	x	x
	Advisory Committees	√	x	x	x
	Technical Advisors	x	x	√	√
Land Use Regulators (Appeals)	Land Use Appeal Tribunals (Provincial)	√	√	x	x
	Internal Appeals	x	x	x	√
	Body or Institution in terms of Provincial Legislation	x	x	x	x
Land Under Traditional Authority	Decision Making Powers	√	x	x	x
	Participation	√	x	x	√
National Interest Applications	Minister	√	x	x	√
Exemptions	Minister	x	x	√	√

Table 1: Summary of Contents of Different Versions of Bills

From the summary above it is clear that whilst there were different versions of the Bill. The nuances between the versions were not radical.

4. New Framework for Spatial Planning and Land Use Management in South Africa

The following section of the paper provides an overview of the Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA), which is the first approved National Framework legislation for SPLUM in South Africa. The section will provide a brief overview of the content, the planning system created by SPLUMA and some of the challenges encountered during the first 12 months of implementation.

4.1 The Spatial Planning and Land Use Management Act, Act No. 16 of 2013

The introduction of the SPLUMA has heralded in a new dispensation for planning in South Africa. It is the first single national and integrated planning law that clearly sets out the planning system in South Africa. The Act has now introduced new responsibilities for each sphere of government to execute; to ensure effective, efficient and sustainable spatial planning and land use management in the municipal space.

The SPLUMA also creates a coherent allocation of powers and functions between the political and administrative components of a municipality and further introduces a new regime of land use regulators, who are responsible for making decisions on land development applications and disposing of appeals against land development application decisions. One of the key objectives of the Act is to provide for a uniform, effective and comprehensive system of spatial planning and land use management. The enactment of SPLUMA has about brought about several fundamental changes in spatial planning and land use management. Some of the most important of these include:

- The reiteration of the sole mandate of municipalities where municipal planning (land development, land use management) is concerned, placing municipalities as authorities of first instance invalidating inconsistent parallel mechanisms and systems
- Establishment and composition of Municipal Planning Tribunals and Appeals structures by municipalities to determine and decide on land development applications with options for Tribunals and appeals structures to be created based on capacity;
- Development of a single and inclusive land use scheme (LUS) for the entire municipality with special emphasis on municipal differentiated approach and the development of respective Spatial Development Frameworks (SDFs) by all three spheres of government, norms and standards guided by development principles. (DRDLR 2013)

The change from current disjointed approaches to spatial planning and land use management to the integrated system as espoused in the SPLUMA is a watershed in the history of spatial planning and land development in South Africa. The SPLUMA was brought into operation on 01 July 2015 through a notice on the 27 May 2015 in Government Gazette No 38828.

4.1.1 Summary Of The Content Of The Act

The White Paper on Spatial Planning and Land Use Management recognised that the key to successful SPLUM and land development was the establishment of an effective link between forward planning (spatial planning) and development control (now interpreted more broadly as land use management) (White Paper, 2001) and is given expression in SPLUMA. The SPLUMA is divided into seven chapters as follows:

Chapter	Content
One	(clauses 1-5) provides for definitions, the Application of the Act, Objects of the Act, an outline of the System of Planning in South Africa, and the categories of spatial planning
Two	(clauses 6-8) provides an outline of key principles that are applicable to the Spatial Planning System and will also guide land development in general. The chapter also provides for the Minister to set out compulsory norms and standards for land use management.
Three	(clauses 9-11) deals with national support and monitoring, provincial support and monitoring, and with municipal differentiation.
Four	(clauses 12-22) provides for the preparation and contents of National, Provincial, Regional and Municipal Spatial Development Frameworks, as well as the status of Spatial Development Frameworks

Five	(clauses 23-32) provides for the adoption of municipal land use schemes, including their purpose, content, status and relationship with existing land use schemes. The section also provides for the amendment of land use schemes and the alignment of authorizations in terms of other applicable legislation.
Six	(clauses 33-52) provides for municipal land use planning; the establishment, composition, powers and functions of Municipal Planning Tribunals, processes of Municipal Planning Tribunals, as well as appeals against the decisions of Municipal Planning Tribunals. The section also provides for the treatment of development applications that affect the national interest.
Seven	CHAPTER 7: (clauses 53-61) contains general provisions on commencement of registration of ownership, regulations, powers of the Minister to grant exemptions from provisions of the Act, delegations by the Minister, Premier and MECs to officials, non-impediment of function, offences and penalties, Repeal of legislation, Transitional provisions, and Short title

Table 2: Summary of the Contents of the Spatial Planning and Land Use Management Act

4.1.2 Regulations to the SPLUMA

In order to prepare for the implementation of the Act the DRDLR developed a set of regulations in terms of Sec 54 of the Act. A first set of comprehensive draft regulations for the SPLUMA were published twice to ensure an inclusive process. A number of consultative workshops were held across the country to ensure that all stakeholders were adequately consulted. Post the consultation it was decided to focus on the regulation of Chapters 5 and 6 of the SPLUMA. A task team composed of members from provinces, municipalities, sector departments and the department were involved in its finalisation. The regulations were brought into operation on the 13 November 2015.

4.1.3 Issues And Challenges

Although the SPLUMA is in operation there still remain a few issues and challenges with the content and application of the Act, these are summarised below:

a. The Role of the Institution of Traditional Leaders and Conflicts with Customary Land allocation processes.

The SPLUMA in Section 23 (2) allows for the participation of the Institution of Traditional Leaders to participate in Land Use Management matters. This includes input into the development of SDFs and LUSs in areas under their custodianship. However the institution is of the view that the SPLUMA has not adequately catered for their role as custodians of land. Despite various initiatives to discuss this matter with the institution they remain unsatisfied. This matter requires resolving as it is hindering the implementation of the Act in certain provinces.

b. Overlapping / Conflicting Legislation managed by other Sectors at National Level

Whilst there is indeed a number of existing legislative instruments at National Level that may be in conflict with the SPLUMA, the key that poses an immediate challenge is the Subdivision of Agricultural Land Act, Act No. 70 of 1970 (SALA). The SPLUMA provides powers to the Minister

of Rural Development and Land Reform to determine procedures for certain spatial planning and land use management matters (including township establishment, subdivision, consolidation, change of land use and land use scheme amendment). The Administration of SALA already confers such powers on the Minister of Agriculture, Forestry and Fisheries to make such determinations on agricultural land. In addition to above legislation on Heritage, Environment and Transport are some of the other areas where alignment is required.

c. Key Court Judgements

The SPLUM sector in South Africa continues to be influenced by the outcomes of court judgments. These judgements are important as they may impact on the current content and the planning system espoused in the SPLUMA. Below is a summary of some of the key judgments that have contributed in this process:

Name of Case	Outcome
Wary Holdings (Pty) Ltd vs Stalwo (Pty) Ltd (2009)	The court in this matter was asked to decide whether or not the National Minister still had jurisdiction over the sub division of agricultural land after the establishment of wall to wall municipalities. The majority of the Constitutional found that the Minister indeed still had a say.
Johannesburg MM vs Gauteng Development Tribunal (2010)	Chapters V and VI of the DFA was found to be invalid. The court also found that planning in the municipal context included the zoning of land and the establishment of townships.
Lagoon Bay Lifestyle Estate (Pty) Ltd v The Minister of LG, Environmental Affairs and Development Planning of WC (2011)	The court was requested to overturn a refusal by the MEC for planning in the WC to rezone and subdivide land for the Lagoon Bay development. The argument of the applicant was that rezoning and subdivision of land fell under the exclusive competence of municipalities. The court dismissed the matter and reference was made to the power of provincial government to directly intervene when a municipality cannot fulfill its executive powers.
Mac Sand (Pty) Ltd vs City of Cape Town (2012)	Mining is an exclusive National Competence and the mining right or permit provided through the Minerals and Petroleum Resources Development Act, 2000 does not satisfy the requirements for municipal planning and hence a land use right (rezoning) through LUPO is required to permit the mining activity to take place.
Tronnox (Pty) Ltd vs KZN Planning and Development Tribunal (2016)	Sec 45 of the Kwa Zulu Natal Planning and Development Act was found to be constitutionally invalid as it provided for the appeal of a municipal appeal to a provincial appeal body. Reference was also made to Sec 51 (6) of the SPLUMA and that it could also be constitutionally challenged.

Table 3: Summary of Key Court Judgements

Sourced from: Van Wyk, 2012

d. Defining Municipal Planning?

The uncertainty around the legislative competence with regard to ‘municipal planning’ remains a key challenges faced by both the National and Provincial Spheres of government. Within the existing regulatory environment both National and Provincial government have legislative competence over ‘municipal planning’ (Van wyk, 2012). Whilst the SPLUMA in Sec 5 (1) attempts to provide a frame for the powers of Municipalities in terms of the Act, it is still unclear

as to the extent to which municipal planning overlaps with areas of national and provincial competence.

e. National Interest/Planning and Provincial Interest/Planning [Concurrent functions]

Sec 52 of the SPLUMA provides for matters of National Interest and requires the Minister responsible for the Act to publish criteria for matters that could be deemed as National interest. It is unclear whether the National sphere of government can interfere in certain circumstances and on matters of National interest without interfering with the powers of municipalities in terms of regulating land use / municipal planning.

The SPLUMA also outlines the scope for provincial legislation in Schedule 1 and for provincial planning in Sec 5 (2), however there has been much discussion and disagreements on how concurrent functions as provided for in the Constitution can be applied without interfering with local government powers over 'municipal planning'.

f. Appeals

The fundamental question is "Who has the constitutional power to determine appeals on spatial planning and land use matters determined in the first instance by municipalities?" The SPLUMA makes provisions for 3 types of Appeals including the following: Internal Appeals in terms of Sec 51 (1), authorization of an outside body by a municipality or in terms of provincial legislation as per Sec 52 (6). The recent judgement by the Constitutional Court in the Tronox matter on the powers of province in terms of appeal powers brings into question whether Sec 51 (6) of the SPLUMA is constitutional.

h. Repeal of Old Order Legislation

The Constitutional model of concurrent legislative powers does not allow National government to repeal provincial legislation or national legislation assigned to provinces. This has led to a situation where National Government is unable to repeal obstructive and obsolete legislation. Although attempts were made through Sec 2 (2) of the SPLUMA to suppress the provisions of old order legislation arguments have been postulated about the unconstitutionality of the provision.

4.2 The First 12 Months – A National Perspective

The following section of the paper briefly looks at the support provided and some of the initial challenges experienced in the first 12 months of implementation. Prior to the SPLUMA being brought into operation, the DRDLR undertook intensive consultation processes together with its key stakeholders in making municipalities aware of their responsibilities in terms of the SPLUMA. The focus for readiness for the implementation of the SPLUMA was on the development of Municipal By Laws and the appointment of Municipal Planning Tribunals(MPTs).

4.2.1 Support Provided

The National DRDLR in ensuring that municipalities were ready for the implementation of the SPLUMA undertook the following initiatives:

Type of Support Provided	Details
Development of Model By Laws	The DRDLR supported the development of Model By laws in six provinces which included, KwaZulu Natal, Eastern Cape, Limpopo, Mpumalanga, Gauteng and North West. In most instances support was also provided to customize these bylaws on behalf of municipalities. This process was however delayed in some areas because of a lack of legal capacity within those municipalities.
Development of Generic Council notices	THE DRDLR where the need was identified also provided generic notices / council resolutions to ensure that processes were not delayed.
Funding for the Gazetting of Municipal Bylaws	Many municipalities did not have sufficient budget to Gazette their final Bylaws, the DRDLR made an amount of R20 million available for this purpose. However only about 45% of this budget was utilized due to delays by municipalities in the finalization of their bylaws
Development of Guidelines, Tools and Systems	In order to ensure that Municipalities are able to undertake their functions in accordance with the requirements of the Act the department has developed Guidelines for the Development of SDFs and Corridor Development Guidelines. The department is in the process of developing Guidelines for the development of Land Use Schemes. Further to this a portal has been developed to facilitate information sharing.
Training Programme	The DRDLR in conjunction with the South African Local Government Association and provincial departments of Cooperative Government have undertaken a joint training programme to prepare municipalities for the implementation of SPLUMA. Approximately 2700 officials have been trained in the first 12 months. The training will be provided on a continuous basis and will also be focused on members of MPTs.

Table 4: Summary of Support Provided

4.2.2 Challenges

Despite the support initiatives as highlighted above and the continuous engagements with municipalities the first year has not been without its challenges, some of these include the following:

a. Municipalities not prioritizing SPLUMA Readiness

There has been slow progress in the implementation of the SPLUMA in some provinces. Whilst the contributing factors are not standard across the provinces, the major delaying factor is the pace at which some municipalities are putting in systems in place to enable them to implement the Act. These include delays in tabling matters for consideration and approval by municipal councils, inability to finalise municipal bylaws, unavailability of the necessary skills for the MPT, non-availability of budget and the new demarcations of municipalities.

b. Lack of Capacity and resources across the 3 spheres of government

The lack of skilled human resources across all 3 spheres of government has hindered the efficient implementation of the Act. Many municipalities do not have town planners or legal

support to enable them to finalise the tools required and put the relevant systems in place to enable them to implement the Act. This problem is not only evident in the local government sphere but also in the National and provincial spheres of government. To compound this problem limited budgets are available at National and Provincial government levels to develop further tools and systems and to provide the requisite support to the local government.

c. Lack of Uniformity in the development of Municipal Bylaws

Whilst the White Paper for SPLUM envisaged a single piece of National Legislation for the SPLUM sector (White Paper on SPLUM, 2001), the current system includes National Framework Legislation, Provincial Legislation and municipal Bylaws. This has been as a result of the diverse challenges that exist across the country and the vision of a single national legislation as espoused in the White paper is not a feasible solution for the country. The development of municipal bylaws has created another level of complexity and an argument has been postulated that this is currently creating further fragmentation (Roos, 2012). This argument is based on the premise that there is no standard approach to the content and structuring of the bylaws across the country. The DRDLR is in the process of reviewing a sample of bylaws across the country to determine the extent of the problem that may exist.

5. Lessons Learnt / Issues for Consideration

The process towards the finalization of the SPLUMB and its passage to the SPLUMA and its subsequent implementation has led to some emerging lessons towards improving the procedural as well as the content issues. This section provides a brief summary of key lessons and some issues for consideration.

5.1 Intergovernmental Cooperation and Coordination

Whilst the Intergovernmental Relations Framework Act, Act No 13 of 2005, provides for a framework for intergovernmental relations and cooperation, the realisation of the objective of the Act is indeed difficult to achieve given the different interests and pressures that each sector faces. The importance of intergovernmental cooperation cannot be understated; this is one of the key lessons learnt during this process. During the early parts of the process and between 2001 and 2009 there was indeed limited intergovernmental discussion on the LUMB and SPLUMB respectively.

During the early 2010 an initiative was undertaken by the DRDLR to consult and engage across the 3 spheres of government on matters around the development of the SPLUMB. This relationship building exercise led to a more conducive and productive platform to discuss and debate key issues. The DRDLR in 2012 established a forum called the National Coordinating forum which was composed of representatives from provincial departments and municipalities. This forum was used to debate issues relating to the SPLUMB and although consensus was not always found, it led to an acceptable version of a Bill that was finally enacted into the SPLUMA. The forum also played a key role in preparing for the implementation of the SPLUMA.

5.2 Clarification on powers and functions of the 3 spheres of government wrt SPLUM

Whilst this matter has been discussed in sections of this paper, it remains one of the key issues that must be addressed. Whilst Schedules 4 and 5 of the Constitution of South Africa, provides some guidance, it is not explicit enough as to the exact role of each sphere of government. This has led to a situation where the courts are now refining these with regard to planning and this situation is not ideal. The key question is whether the Constitution needs to be amended and more explicit?

5.3 Addressing Capacity issues at all 3 spheres of government

The lack of capacity across the 3 spheres of government and most especially at the local government level presents its unique challenges in the implementation of the SPLUMA. Whilst attempts have been to understand the problem through a skills audit, the process did not achieve the objective that was envisaged. At the local level the non-availability of technical skills required to implement the requirements of the SPLUMA has a direct impact on the ability of the municipality to address key developmental issues. The concept of shared services has not been adequately explored and it will require a concerted effort across all 3 spheres of government to implement. The shared services model will look at providing the requisite skills including town planners, engineers, environmentalist etc at a central point, and these skills would be available to a group of municipalities on a shared basis.

5.4 Training and Capacity Building

Whilst initial training for the implementation of the SPLUMA has been undertaken, the training should be provided on a sustained and ongoing basis. Although the training undertaken to date has been welcomed, a longer term capacity building programme is required. This programme should be aimed at increasing the number of planners and will require a sustainable partnership with education institutions and the South African Council for Planners over a long term.

5.5 Rationalization of Land Use Legislation

The current fragmented legislative environment in the sector as discussed in this paper is a major impediment that needs urgent addressing. The plethora of old order legislation that exists at provincial level must be addressed through provincial processes. It is clear that there is not a uniform understanding of what legislation still remains in force. The problem also exists at a National level wherein conflicts / duplication exist between sectorial legislation.

5.6 Finalisation of Provincial Legislation

Since the enactment of SPLUMA only 1 province has enacted provincial legislation (WC) that complements the national framework legislation. Whilst some provinces have made attempted to draft legislation and in some cases enacted legislation (KZN) these efforts need to be

stepped up. The provincial legislative processes will also assist in the repeal of old order legislation that were assigned to provinces.

5.7 Transitional Arrangements

The SPLUMA did not adequately address the transitional measures required to guide municipalities in what is required to transit from the old order system to the new system. This is an area that could have been approached differently. Whilst there are certain constraints in trying to address this from a national level because of the different scenarios that exist in each province, more detailed guidance should have been provided. The department is in the process of working closely with individual problems where the problems exist.

5.7 The location of the SPLUM function

The Spatial Planning and Land Use Management function in South Africa has been traditionally linked to the function of land and located in the Department of Land Affairs. However in 2009 a new Department was formed which took over the functions of the previous and was renamed the Department of Rural Development and Land Reform. The functions that were previously performed by the former were retained and the function for spatial planning and land use management is currently undertaken by the DRDLR. There have been various concerns raised on the location of the function within a department responsible for rural development and land reform (Berrisford, 2011). Whilst the fragmentation of the SPLUM function is also raised in the NDP, a decision on the ideal location of the function within government needs to be taken.

6. Conclusion

This paper elucidates a brief overview of the process in the development of framework legislation for SPLUM in South Africa. The process unfolded over a period of almost 11 years with many obstacles and challenges, these have also been briefly discussed. The different versions of the Bill showed a shift in focus relevant to the time period within which it was drafted. The final Bill in the form of the SPLUMB 2012 took into consideration the implications of various court judgements and was the only version of the Bill where some consensus was reached with stakeholders.

The SPLUMA is the first national framework legislation for South Africa, its implementation in the first year has had its challenges and some of these have been discussed in the paper. Whilst this paper has not taken a purely legalistic view it has attempted to provide an overview of both the technical and legal challenges. The implementation process is also being used to understand if the planning system as espoused in the SPLUMA works and what needs to be changed and addressed. It is envisaged that the SPLUMA will be amended to deal with any gaps that were unforeseen. Whilst it is agreed that the SPLUMA is not the panacea that will address all the challenges created by a system that is deeply entrenched, it is a first step that has worked because of improved intergovernmental coordination and cooperation. The lessons learnt and issues for consideration will be used as a platform of issues to stimulate further

debate and discussion. The role for planners in South Africa in implementing the planning system as espoused in the SPLUMA cannot be understated.

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MIXED INCOME HOUSING DEVELOPMENT MODEL FOR SOUTH AFRICA: A CASE OF COSMO CITY, JOHANNESBURG AND CORNUBIA, ETHEKWINI.

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ABSTRACT

Attempt by the low-income families to reside close to centers of economic opportunities has reinforced the proliferation of informal settlements that is established without legal right or tenure. Support for the development of informal settlement as human settlement falls into a gap in South African housing policy and implementation. Informal settlements are not simply 'dormitories for employed households (as are most formal neighbourhood) which need to be improved as mere shelter. Rather they are places of residence and socio-economic activities, in which the inhabitants pursue a variety of livelihood strategies. This paper looks at an attempt by the City of Johannesburg and eThekweni to copt residents of informal settlement into formal neighbourhood through mixed income residential development strategy. Although the term 'mixed-income housing development (inclusionary housing)' is becoming widely used, there remains certain gap and many open questions about how best to implement it, what are the expected outcomes and can it improve the quality of life and prospects of low-income families? Despite the importance and popularity of the concept of mixed-income housing in national housing policy circles, it is noted that very few studies have attempted to evaluate the conditions under which programs have succeeded or failed and the implication for future programs. This calls for an investigation.

Keywords: Mixed-income housing, low-income, Private Public Partnership, Social integration.

INTRODUCTION AND BACKGROUND

Various studies have been conducted on mixed-income housing development in the past (Department of Housing South Africa, 2005; Duda, 2005; Hoek-Smit, 2002; Huchzermeyer, 2005; Marshall, 2005; Milligan, et. al, 2004; Smit et.al, 2006;). These studies points out that mixed-income housing development is an innovative approach to housing delivery that provides a mixture of housing products to suit low income earners, middle income earners as well as high income earners. Proponents of mixed-income housing at another angle posit that economic diversity within a neighbourhood would automatically enhance community interaction and improve neighborhood characteristics (Cole & Goodchild, 2001; Joseph, 2006; Kleinhans, 2004). Joseph, Chaskin, and Webber, (2007:2) further describe mixed-income housing development as an urban redevelopment strategy. They noted that as far back as 1990s, mixed-income housing development has gained increasing attention from policymakers and local developers, particularly as a tool for the transformation of failed public housing developments. DeFilippis and Fraser (2008:2) in reaction to these findings question the premises on which mixed-income housing and neighbourhood (MIHN) policy were always based on the above stated reasons as they found themselves attracted to the "ideal", in theory, but frustrated by its reality in "practice". According to their research, these policies tend to 'leave poor people in places without the social networks and informal social support of prior neighbourhood' (ibid: 10). Poor urban neighbourhood is noted to have dense networks of social support that have been created out of necessities because services that are commodities in wealthy neighbourhood (childcare, for instance) must be negotiated as non-commodified when the participants do not have money. They noted that mixed-income policies have failed to create social mixing, networks, interaction as well as institutional services and capacities. Being in close proximity need not engender interaction, and when it does, that interaction may mean conflict as much as anything else. It is unclear whether or not the physical proximity of the rich and poor will lead to the rich even acknowledging, let alone understanding or trying to understand the poor (De Filippis & Fraser, 2008:10). In proposing the need and objectivity of Inclusionary housing in South Africa Smit (2007:11) recommends that it should be meant for the following objectives:

- To make a contribution towards achieving a better balance of race and class in new residential developments

- To provide accommodation opportunities for low income and lower middle income households in areas from which they might otherwise be excluded because of the dynamics of the land market
- To boost the supply of affordable housing (both for purchase and rental)
- To mobilize private sector delivery capacity to provide affordable housing
- To leverage new housing opportunities off existing stock at the same as contributing to the densification of South African cities
- To make better use of existing sustainable human settlements infrastructure

Smit (2007) also emphasize the need for local circumstances to be taken into consideration as it relates to existing development use rights as protected by law and the factoring in social infrastructures as used by low income individuals. This paper will appraise the development of mixed income housing in the light of the above objectives and unpack hidden challenges and gap in the approach in relation to South African context comparing Cosmo City and Cornubia..

METHODOLOGY

This investigation will be based on literature review and secondary data. The study is descriptive and case study in nature and explores the relationship between housing policy and practice. These findings will be contextualise in Johannesburg and Ethekewini as a case study because this happens to be two of the provinces with high rate of migration and attendant housing shortage. Yin (2006) described case study research as investigation into contemporary phenomenon. The reason for using case study is because the phenomenon under discussion is a real life context and will shed light to the need for appropriate mechanism and policy solution to the development of mixed-income housing development to address housing shortage and urban segregation and marginalization with attendant social exclusion in other parts of the country.

BACKGROUND TO SOUTH AFRICAN HOUSING POLICY

In 1994, South African's housing sector was in crisis. A severe housing backlog characterized by rapid growth in informal settlement had been exacerbated by decades of apartheid city restructuring that had created social and economic divisions in our urban space (Gardner, 2003). Housing policies and legislative frameworks, institutions and administration were divided on the basis of race and geography, leading to a plethora of institutions undertaking the same functions in parallel. A multitude of subsidy systems further confused the landscape, leading to inequalities in the allocation of state support for housing, and an inability to sustain long-term housing subsidy programmes

(Gardener, 2003:6). As a result, private sector involvement in low-income housing delivery was minimal. A very limited financial sector provided finance only to high-income people in the form of bonds. In the absence of any other credit alternatives except personal and revolving credit mechanisms, a majority of households were effectively unable to access credit for housing beyond their own savings and the taking from revolving credit mechanisms. Combined with low incomes, this meant that many households could not afford even basic housing, civil unrest, as well as inexperienced housing consumers, further complicated the housing environment and pointed to the need for a normalized housing market.

Negotiating a new housing future

The White Paper on Housing has the following vision for South Africa:

.....the establishment and maintenance of habitable, stable and sustainable public and private residential environments to ensure viable households and communities in areas allowing convenient access to economic opportunities and to health, educational and social amenities in which all citizens and permanent residents of the Republic will, on a progressive basis, have access to permanent residential structure with secure tenure, ensuring internal and external privacy and providing adequate protection against the elements and portable water, adequate sanitary facilities, and domestic energy supply (Department of Housing, 1994).

Housing Strategy

South Africa's housing policy is based on seven key strategies through which the housing vision will be realized. These remain the foundation for South Africa's housing strategy and it is entrenched in the Housing Code, 2000. These include:

1. *Stabilizing the housing environment in order to ensure maximum benefit of state housing expenditure and facilitate the mobilization of private sector investment.*
2. *Mobilizing housing credit and private savings (whether by individuals or collectively) at scale, on a sustainable basis and simultaneously ensuring adequate protection for consumers.*
3. *Providing subsidy assistance to disadvantaged households to assist them to gain access to housing.*

4. *Supporting the peoples housing process entailing a support programme to assist people who wish to build or organize the building of their homes themselves.*
5. *Rationalizing institutional capacities in the housing sector within a sustainable long term institutional framework.*
6. *Facilitating speedy release and service of land.*
7. *Co-ordinating and integrating public sector investment and intervention on a multi-functional basis.*

(Department of Housing, 2000:17)

BREAKING NEW GROUND (BNG) AND SUSTAINABLE HUMAN SETTLEMENTS 2004-2014.

This is a comprehensive housing plan for the development of integrated sustainable human settlement introduced by the government in September 2004 in view of oversight by the government in promoting the residential property market. The introduction of the Breaking New Ground (BNG) in South African housing policy represent the most important shift in the mandate of the Department of Housing to the delivery of “human settlements and reinforces the notion of spatial transformation and integration (SACN, 2014:6). Slow delivery on new government-subsidized low-cost housing is often put forward as the cause of the continuous persistence of informal settlement. It is an approved government housing programme in the next five years that includes the development of low-cost housing, medium-density accommodation and rental housing as well as stronger partnership with the private sector; social infrastructure and amenities. Building multicultural communities in a non-racial society also aim the plan at changing the spatial settlement pattern. This national policy on informal settlement upgrading developed in response to international campaigns and out of government commitment to international agenda (Huchzermeyer, et.al, 2004). BNG defines Sustainable Human Settlements as “well managed entities which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence and results in sustainable development, wealth creation, poverty alleviation, and equity (SERI, 2012).

Key strategic priorities are:

1. *Accelerating housing delivery*
2. *Improve the quality of housing products and environment to ensure asset creation*
3. *Ensure a single, efficient formal housing market*
4. *Restructure and integrate human settlements.*

While the above comprehensive housing programme notes the continued relevance of the state housing programme introduced in 1994, it flags the need to redirect and enhance various aspects of policy, and commits the Department of Housing to meeting a range of specific objectives which is basically the creation of sustainable human settlement (DoH, 2005: 4).

CASE 1: MIXED INCOME HOUSING DEVELOPMENT: IN COSMO CITY, JOHANNESBURG

The development of mixed income housing in South Africa is characterized with special circumstance as compared to other international experiences. In the first place the level of income inequality are among the highest in the world in such a context it follows that steep ‘income cliffs’ can be expected between the rich and poor and these cliffs are likely to be much steeper in the average inclusionary housing project than in USA or UK (Smit, et.al 2007: 7). Secondly, the processes of built environment creation in South Africa are still extremely segregated based on race and class terms. Government builds homogeneous RDP housing for the poor (almost exclusively Black) and private sector developers build gated villages for the rich (largely but not exclusively White) (Smit, et.al, 2007). Based on this premises mixed income housing development is considered to have the potential tools to address our current highly segregated processes of built environment creation as has been used in other parts of the world with these peculiar characteristics.

Cosmo City emerged out of an urgent need to provide accommodation for the informal settlers of Zevenfontein and Riverbend who had been illegally occupying privately owned land 25km North West of the Johannesburg CBD. These informal settlements were characterized by substandard living conditions with limited access to basic services (Cowden, 2006). The socio-economic profile of both communities is based on low income levels, high unemployment rates and low educational levels amongst other breadline issues (Christiana, 2009). The idea was that Cosmo City would create jobs and stimulate local economic activity for these people. Cosmo City is a Greenfields development commissioned by the City of Johannesburg in conjunction with the Gauteng Provincial Housing Department (Cowden, 2006: 1). The project was conceptualized to stand out as a mixed-income residential development where people of different income groups live in the same area utilizing similar amenities. The project have been driven with so many difficulties, especially from surrounding neighbours who waged series of legal battle that the development will devalue their properties. The

project was announced in 1997 but only commenced in 2006. Cosmo City tends to demonstrate that the supply led approach to housing delivery can be as slow as compared to demand-led approach.

The objectives of the development are:

- To be the first green-field developments that will endeavour to comply with integration and sustainability principles as per government policies and legislation
- To assist in meeting the pressing demand for housing in the north-western part of the City of Johannesburg resolving the conflict between environmental consideration, economic consideration and social responsibility
- To make a statement towards integration along racial and social grounds and negative perceptions that exists around such integration
- To make a political inroad in the access of the poor to formal urban system

Private Public Partnership

The project is a private public partnership between the City of Johannesburg (the land owner), the provincial government (the subsidy providers) and Codevco (a private entity formed between Basil Reed and Kopano Kematla. CODEVCO (Pty) Ltd was the appointed main developer for the project. The developers' vision of the Cosmo City is not only to provide affordable housing but to provide the community that lives there with socially conducive environment including facilities such as commercial precinct, city square, open spaces and sense of belonging.

Project Description and Planning

The project is located on 1100 hectares of land with vast wetland and Zandspruit river cutting through the site. Work started on-site on January 2005 and due to the vast size the project was divided into phases. It comprises of:

- 5000 – low income houses (income group R0-R3,500.00) with 1504 completed and each unit is 36m² of floor space and consists of 2 separate bedrooms, bathroom space with a flush toilet and a living area.
- 3000 – Financed credit linked houses (income group R3,501 –R9, 670) 702 completed. Subsidies are provided for people earning up to R7000.00. FNB is a partner to this section of the project providing 'step up' loans and the Department of Housing will provide the subsidy. According to Luc Limacher (2009) "banking

institution never wanted to touch the idea at the initial stage but now they are lining up wanting to get involved". The house type ranges from 45m², 50m², 60m² and 65m² with price range from R184,000.00 – R244, 000.00. Beneficiaries are expected to make some deposit and subsequently pay monthly installment. They comprises of two bedrooms, a bathroom, kitchen, lounge and a patio.

- 1000 – social housing rental units (income group R1, 500 – R9, 670) still under construction
- 3, 300 – bonded houses (open market)
- 12 – Schools
- 40- sites for churches, clinics and crèches
- 43 – parks and recreational sites
- 30- commercial and retail centre
- 40ha – industrial park
- 300ha – environmental areas

Amenities

All the development has ample space for parking on site. 5% of the subsidies allocated to this project is reserved for disabled and 5% for right sizing (Zack et al, 2005). 3 schools have been completed; two primary school and one high school and both have been handed over to the Department of Education. Three parks were funded by the Johannesburg City Parks and are equipped with various amenities, such as basketball court and cricket net. An informal trading area is provided in the vicinity of the low-income areas to allow them to continue with income generating activities. There is site for the establishment of churches and a catholic church is already up and functioning in Extension 0. It does not have a functional police station but presently uses the service of nearby Honeydew Police Station.

Management

The City of Johannesburg is the owner of the project and has appointed Codevco for the overall management of the project. It is anticipated that as soon as the entire project is completed there will be numerous management structures, especially the bonded houses and social housing units. There are 23 municipal entities on site to see to utilities services and maintenance. To oversee the concern of the communities a Resident Association is being established in each extension with a

leader. A monthly newsletter, Cosmo City News was initiated by Codevco to keep people informed about what is happening around them. This is distributed around the community. It include news about crime, public meetings, the latest development in the area and entertainment. Complementing the newsletter is a website where residents can post their concern and comments on any issue.

CASE 2: CONUBIA, ETHEKWINI

The new integrated human settlement site is on one of the few large vacant tracts of land strategically located in the rapidly developing northern part of eThekweni. The 1 300 ha Greenfield site will provide mixed use, mixed income, development incorporating industrial, commercial and residential (Housing in South Africa, 2014). The joint project is collaboration between the National and Provincial Department of Human Settlements, eThekweni Municipality and Tongaat Hulett Developments. The project will create a new town centre and 100 000 job opportunities and government will contribute R20 billion with the private sector adding R5 billion. The development will roll out over 20 years and householders will be exposed to a range of better quality housing typologies, including Gap, social, fully bonded, free standing, walks-ups and high density units for householders with combined earnings of up to R16 000 per month. According to MEC for Human Settlements and Public Works of KwaZulu-Natal provincial government, Ravi Pillay, "Cornubia is about creating sustainable human settlements and improved quality of household life (Personal Communication, 2012).

Economic Potentials and Job creation

The planned public transport system will create 48 000 permanent jobs, 15 000 during the construction period for the Bus Rapid Transport system, which will link Cornubia to Umhlanga, Phoenix and Dube Trade-Port in the North. The development will improve the rates for the city over time bringing in millions in rates revenue per annum for eThekweni Municipality. Targets and time frames have been allocated for serviced sites, 2 187 sites by July 2015; 3 745 by January 2016, 4 208 sites by October 2016; and the 1 625 by July 2018 (Pillay Personal Communication, 2014 cited in HAS, 2014: 8). The initial Phase will create a walkable residential precinct structured around courtyards and well defined streets as basis for building a sense of community. The development is based on a new approach focused on social facility clusters. The frameworks has provided for school facilities within a five minute walk of the residential areas. It has been estimated that R237 million will be collected in

rates revenue, R1, 5 billion in VAT, income tax in the region of R1, 43 billion per annum (Housing South Africa, 2014).

The close proximity to King Shaka International Airport and Dube Trade-Port will increase work opportunities for housing beneficiaries. According to Pillay this will ensure that housing is used for as a strategy for employment creation. To date, 39 750 people have been employed, of these 57 % are youths and 20% women. Apart from these formidable investment and employment benefits, the most significant benefit of Cornubia is that it offers us a rare opportunity to build a future city premised on: Providing for an equitable city; enabling social integration across communities; providing newer forms of integrated human settlements with good public space and changing the lives and fortunes of the people of eThekwini (Kamalen, Personal Communication, 2012). The surrounding community have come to accept that this is a concept that has to be welcomed. Priority will be given to beneficiaries with special needs, senior citizens, the disabled, child headed households, relocation from Transit Camps, informal settlements in close proximity to Cornubia and demographic representation (Housing in South Africa, 2014). Development cost contributions include the national and provincial government and eThekwini R10, 4 billion, Tongaat-Hulett R14, 3 billion, the South African Sugar Association (SASA) R1, 1 billion bringing the total to R25, 8 billion. For the development costs in Phase 1-659 ha of land was acquired with over half a billions of rands ring fenced-R669, 4 million was approved by Province and R511, 6m was paid from the province to eThekwini Municipality. So far, the private sector has invested R350 million.

Challenges faced by the Project

One of the challenges is a memorandum of Understanding between the Department of Transport and the City which determines the cost sharing percentages is still under discussion and not yet finalized. Also the agreement between for funding and cost sharing to build the bridge over the N2 which is a key linkage and forms part of the Integrated Rapid Public Transport Network, has still to be finalized (Housing in South Africa, 2014). The eThekwini Transport Authority has indicated that there is an opportunity to include this into the M41/N2 contract with SANRAL. The design has been finalised and will provide a significant link to Cornubia via Gateway opening up this portion of the site for housing development. Poor geotechnical ground conditions, which could not be determined prior to the implementation stage, increased the costs. The wetland drainage line occupies 28% of the site and added

an additional R46 million with the accommodation of imported fill material and spoiled materials. It also meant a three month delay in construction.

To comply with municipal bylaws and storm water management, a further R17, 5 million was required to provide 2 187 units with gutters and downpipes (Housing in South Africa, 2014). Another challenge was the Noise Contour Restriction on use of land for residential development as a large portion of the land falls within eThekweni and was zoned for general business and light industrial use. To qualify for the Densification Subsidy developers will need to maximize their investment on the Bus Rapid Transport routes, which will make the transport node more viable with the higher densities. The private sector will develop 10 000 units, bulk will be provided for an affordable housing catering for households earning less than R18 000 per month. There is an opportunity says Pillay to pilot an Employee assisted Housing (EAH) scheme within the next few years using various subsidy programmes such as FLISP. There will be various social facilities and 20 primary schools, 10 highs and a number of related pre-primary and crèche facilities. The Social Sustainability and Innovation Programme (SSIP) is aimed at facilitating economic opportunities for residents in the greater Umhlanga area. According to Kamalen (2012) there is the problem of convincing the Social Housing Institutions to take up the project. The problem of none viability of the rental stock is because some of the households feel “how can we pay rent while others do not pay”. The development has not yet been completed, but people have moved in. Kamalen described this as a typical indication of the housing challenge that South Africa faces as well as the new view that “people now buy the idea of bigger picture as all the completed units are taken up”.

COMPARING COSMO AND CONUBIA MIXED-INCOME HOUSING

The Cosmo City Project is managed by Codevo, whereas the Cornubia is managed by Tongaat Hulett. Conubia is to facilitate the development of 1 300 ha and for Cosmo City the development is on a site that measures 1 100 ha. Cosmo City is the first mixed-income housing development in South Africa, whereas Cornubia is more recent and attempt to address mistakes made at Cosmo city. One of the challenges the project at Cosmo City is contending with is the availability of sufficient land for commercial purpose and to accommodate big chain stores. When the project was designed they had not anticipated so much demand to require big chain stores. There is also the problem of informal trading, spaza shops and illegal land uses. These businesses do not comply with Town Planning Scheme and related by-laws. This poses a lot of challenge to the City council as the proliferation of this if not

controlled might result to slum and impact on the sustainability of the project. The series of budgetary cut witnessed by the project is also of major concern to the project team. There is high visibility of road widening observed in most part of the area around the project site meant to address the increase in volume of vehicles as a result of this project. Whereas Conubia the challenge was the Noise Contour Restriction on use of land for residential development as a large portion of the land falls within eThekweni and was zoned for general business and light industrial use. Both projects suffer from high developmental cost due to delays in approval, especially compliance with municipal by-laws and poor geotechnical conditions of the site for development. Wetland and fountains form a critical environmental hazard that militates against the development and impact greatly on the life cycle of both mixed-income housing. Mixed-income housing development strategies as seen in this research portrays a housing development approach to better balance the problems of race and class segregation in new residential development as shown in the two case study.

CONCLUSION AND RECOMMENDATION

This paper concludes by noting that mixed income as a strategy for housing development can foster the notion of inclusive city and integrated community where the low income and high income can live and enjoy the same facilities mutually. Private sector participation in housing development is key factor and to be encouraged as most local authorities are struggling in terms of finance to address socio-economic issue and service delivery. A multidimensional approach should be employed by all stakeholders to address the plethora of urban poverty, social exclusion and marginalization that characterize living condition in a typical informal settlement in South Africa and developing countries as a whole. The Not in my back yard syndrome with concern over property value and crime can be overcome if the mixed income housing strategy is well managed and through shared responsibility and effective communication. Integrated community and human settlement can be created and fostered through mixed income strategy. There is need to strengthen the inclusion of mixed income (inclusionary housing) as a policy to form part of the Housing code chapter. Mixed income housing has the ability to deal with South African highly segregated built environment as access to land is a very big issue and to acquire prime land for the location of the RDP houses is very difficult. The success of Cosmo City and Cornubia is due to the appropriation of land by the City of Johannesburg and eThekweni from private developer and this brought down the development cost. This paper also raises issue with regard to whether our housing projects and developments take into consideration issues of biodiversity,

beneficiary participation and economic viability to ensure sustainability? More research is needed on the following: What are the critical challenges of financing mixed-income housing development in South Africa? The effects of racial and ethnic demographics have on the viability of mixed-income housing. Can a comparative analysis of existing mixed-income housing development be carried out in three metropolitan areas of South Africa? What is the impact of mixed-use development on middle – and upper class households' property values?

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22 years of Post-Apartheid Urban Change in South Africa. Done enough Analysis of the development of the South African township of Mdantsane.

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1. Introduction

South Africa's population was strictly segregated due to the political enforcement of the system of apartheid. Thus Urban Planning was embedded in the system of apartheid. The apartheid system was abolished more than 22 years ago and the question arises whether the theoretical approaches and initiatives initiated by the state are effective to reverse the effects on cities. Most of these measures changing the physical environment aim at providing equal living conditions for all citizens. They have been implemented into the planning system, but no evaluation of current tools has been carried out.

The system of apartheid has left South Africa with an inheritance of a widely divided urban layout. The cities of the country have been built with the intention of separating the different racial groups from each other. Due to various laws in the apartheid era between the years 1948-1994, racial groups were compelled to live in a certain part of town. Also the strict application of separate development had already begun to be reduced before 1994 it was not before the end of apartheid that the development of freedom of residence accelerated (Encyclopædia Britannica 2015).

The Urban planning within the Apartheid system was put in place to prevent the different races from living together or even mingling. Strict separation of the greater part of everyday life was to be achieved through this type of development.

The apartheid government forcibly resettled the urban population of non-whites to newly established townships for Indians, Coloured or Black¹. Flats and houses were assigned to the

¹ Terms such as Black, White, Asian, Indian or Coloured are used to describe ethnic groups in South Africa. They are not meant to be of discriminatory meaning in this work and are used because of cultural and historical reasons to explain the system of apartheid and the resulting situation. Until 1991 the population of South Africa was categorized in four races. Although this classification since then is

themes and take different measures or goals into consideration. Here are a few of the most known programs:

- The RDP (Reconstruction and Development Program) aims to achieve social integration while focusing on economic development in former disadvantaged areas and to connect those to urban areas through housing and infrastructural projects (ArchDaily 2013, World Bank Group 2015)
- The NSDP (National Spatial Development Perspective) analyses the country as a whole and develops coordinated spatial approaches for governments to implement projects that meet the problems best (South African Cities Network 2009, 11-12).
- The URP (Urban Renewal Program) aims at developing the eight biggest townships of the country in every way. Topics such as public transport and low educational levels are targeted as well as informal settlements or public infrastructure (South African Cities Network 2009, 13).

There have also been many non-governmental organizations, initiatives and projects run by churches, private and social organizations in order to counteract this historic urban planning failure. For townships being not as developed as the city centers, their inhabitants are highly stigmatized by the city's suburban inhabitants and usually not considered as equal (Republic of South Africa 2012-13, 342).

Despite the approaches and programs mentioned above (since around 2005), living conditions in the old townships have been deteriorating further. For this reason, the government was forced to put more effort into urban development. This has been a pressing issue due to the lack of infrastructure, public services, local jobs, the soaring crime rate from the late 1990s and structural health problems such as the spread of HIV/AIDS or drug trafficking. These problems need to be targeted by two measures.

Firstly, a speed-up urbanization process that aims at community building should be started, as townships were often built in low density with a focus on solely residential uses. This includes the goal of providing self-sufficiency services and everyday goods for all residents which is meant to be an upgrading for those areas to become more regular towns.

Secondly, an attempt should be made to remove the "architectural barriers" or so called buffer zones by which the townships were separated from residential areas for people of different color. There have been a few attempts but this has not been addressed on broad scale. One option is to connect the cities with the suburbs by so-called "Melting Corridors" at all levels. The integration must be speedup. The existing barriers are not just of a geographical nature but present themselves as an industrial belt, wastelands or green areas and can therefore (if not built-up) be converted rather easily into places of future development (South African Cities Network 2009, 5-6, 9-13).

Nevertheless, the current situation shows that the former disadvantaged townships are nowadays still largely underdeveloped in comparison with the city centres or other urban areas and do not meet today's standards of the average South African resident.

Consequently, a number of questions arise:

- Are the implemented strategies and programs (since 1994) aiming at the right goals?
- How related projects are implemented, and to what extent are they successful?
- In what way are local conditions of society and place taken into account?
- How are citizens able to participate in local planning processes?

This paper aims at providing an overview of the current situation on township planning approaches, and displays the results of a SWOT-Analysis. The target of the SWOT-Analysis is to get an impression and efficiency of the different tools used to change townships. It targets the strength, weaknesses, opportunities and threats of the different approaches of those tools.

Mdantsane Township in the BCMM (Buffalo City Metro Municipality) was selected as a case study for the following reasons:

- It is area wise the second largest township in South Africa.
- The history, status and development of townships in South Africa is unique.
- With today's challenges to urban planning, the township of Mdantsane is an example for all of South Africa.
- It displays all characteristics of a "standard" township.

The analysis comprises a review of documents and literature, interviews with practitioners as well as inhabitants of this township and university scholars.

2. The township of Mdantsane as a case study of post-apartheid urban planning

2.1. Urban context

Mdantsane is a part of the BCMM in the Eastern Cape Province of South Africa. Located between the Indian Ocean and the Amathole Mountains, it is well connected to the country's highway network and through East London's infrastructure that includes a regional airport and an international harbour. The Buffalo Metropolitan area's economy is broadly diverse and growing. The biggest township of the BCMM is "Mdantsane" which has been built far outside of the Metro's (another term for BCMM) biggest urban centre "East London" in the old homeland of Ciskei. With Mdantsane Buffalo Metropolitan area, home to 755.200 citizens, houses the country's second biggest township by area size and is in many ways representative for the urban challenges of today's South Africa. The majority of the Metro's population consists of Xhosa people as almost all people of Mdantsane are Xhosa (Statistics South Africa 2012, Yes Media CC 2015).

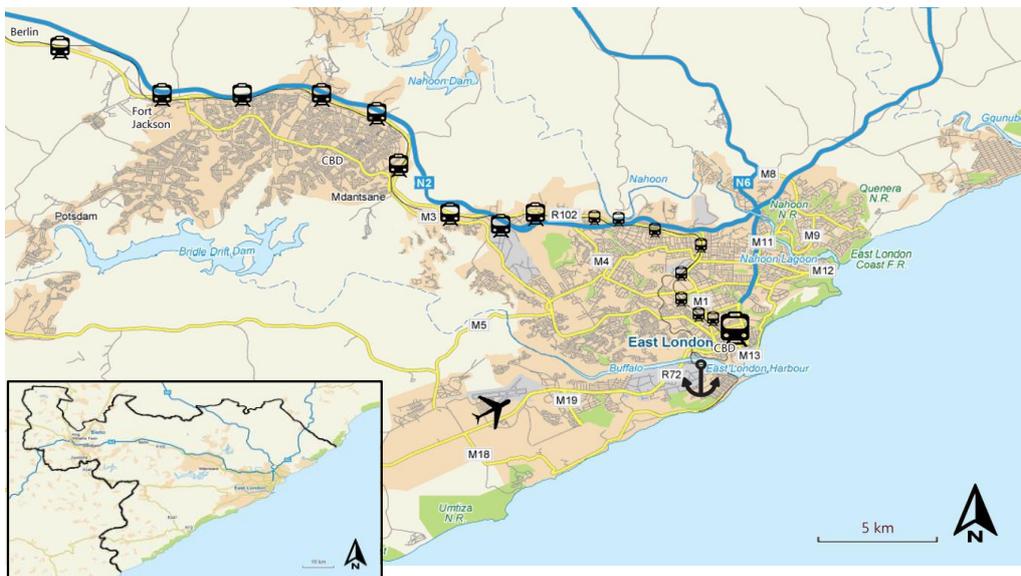


Figure 2: BCMM and Location of Mdantsane and East London
Source: compiled based on Google Maps

2.2. Specific Planning Challenges and Problems

The current strategies for the township of Mdantsane mainly focus on establishing modern infrastructure and central nodes of public and economic activity. This aims at urbanising the settlement and transforming it into a self-sustaining city that provides services for the citizens' daily life. By this means dependencies on the old city centre would be minimized (Küsel 2009).

Townships are artificial settlements constructed on mostly deprived land far outside of cities. For this reason, it is not easy to transform those settlements into fully functioning cities (South

African Cities Network 2009, 4-7). In order to provide the quality of life in line with residents' needs, the residents should be actively involved in all planning processes in order to address suggestions for further development. Upgrading should be focused on initiatives prioritised and managed by local neighbourhoods and communities. More efficient and cost-effective ways of development processes should be found (South African Cities Network 2009).

A core issue is the location of Mdantsane in relation to East London and the geographical features of the area. Since Mdantsane was built as far as possible outside of the old city area of East London, today city planners face the challenge of connecting these two large settlements. The old and new N2, the old Mdantsane Access Road, and the Metrorail train line form only a small and insufficient connection of both settlements. A public bus transportation system does not exist. The transport most frequently used is the minibus taxis that are privately operated. Another alternative is private cars, however, many people who live there are not able to afford cars. Moreover, it is very time consuming and expensive to take the minibus taxi system from one point to another (personal observation from August 2010 to August 2011).

In particular, the commute to most workplaces located in East London's CBD or in the two larger commercial areas around the port, airport and other places of employment like Wilsonia is difficult and costly. The road network to the industrial area between the port and airport is not well developed. Since Wilsonia is roughly between East London and Mdantsane, it can be reached even without large expenditure of time and money from Mdantsane. The area around Mdantsane is still characterized by many wastelands, distancing Mdantsane from East London under apartheid, offering an untapped potential for targeted redevelopment. Those areas are suitable for future growth (personal observation from August 2010 to August 2011).

Another key problem for the integration is the structure and building of Mdantsane which was not carried out according to the original construction plan. This plan from the 1940th and 50th was inspired by the British Garden Cities and Le Corbusier. The original plan displayed up to 50 small town centers within Mdantsane that were not build leaving the township without a sufficient infrastructure. The only center that was built was the Central Business District (CBD) which cannot meet the demand of the population for goods, local supply and services so that the inhabitants have to rely on the supply in East London. The road system has been reduced and has left the township with roadways that are often very long and inefficient (Interview with planning official of the Mdantsane Urban Renewal Program).

Mdantsane is not a self-sufficient satellite city. The township should be able to recognize the demand of its population and to produce a sufficient supply to satisfy the direct needs of its citizens (Interview with planning official of the Mdantsane Urban Renewal Program).

Many structures are not adapted to the current requirements and the needs of the population. Firstly, this is so because of the legacy of Ciskei in relation to structural works, social infrastructure and still poor access to East London and secondly, due to the poor construction during apartheid and inadequate maintenance work during the last 25 years (Interview with planning official of the Mdantsane Urban Renewal Program).

Today Mdantsane faces major challenges to provide its population with enough goods and services. Here are the main problems of the current situation:

- Clean drinking water and adequate sewage removal and subsequent treatment
- Good public transport
- An efficient road and sidewalk network
- Modern healthcare facilities

- Goods and services not only for daily needs
- Safety in public spaces for day and especially night hours

To ensure that the situation improves and the population is not forced to satisfy their everyday needs only in East London anymore, several new goals must be set. Inexpensive and quick connection to the city and other places of opportunity as well as reachable targets in urban planning and priorities must be provided. Furthermore, the function of the city center within Mdantsane should be improved, as well as the integration into East London's settlements.

3. Key solutions regarding the revitalisation of townships, particularly Mdantsane

There are different strategies for the integration and encouragement of the disadvantaged townships. By combining those different approaches and strategies, it is possible to set the conditions and terms adjusted to priorities, thus tackling the respective problems more efficiently.

This paper presents two focal points for Mdantsane: "Center Building" and "Melting Corridors". Both emphasize various projects and programs that are bundled with the aim "...to fight poverty and underdevelopment through job creation, infrastructure development and the stimulation of growth" (The Mdantsane Way Magazine 2015).

3.1. Center Building as a strategy

An important approach to promote and change the disadvantaged townships is Center Building. Through the almost exclusive layout of the townships for residential use only, it is not possible to meet the demand for everyday goods or any city-like infrastructure. All citizens are dependent on the supply in the old city centers.

An urban center is also important for the identification of the residents with their community. A settlement area without a center, local shopping opportunities, meeting points, or cultural amenities does not create a sense of belonging.

This center formation can be driven by general and comprehensive planning on the part of local government as a special focus of development through specific large individual projects. This can trigger a certain development and follow-up investment (Interview with planning official of the Mdantsane Urban Renewal Program).

The goal is building a self-sustaining city, which can provide its citizens with all the goods and services of daily and non-daily necessities. Other aims are improving mobility, private and public structures, creating jobs through business and industry, coordinating private and public projects better as well as developing suitable water and energy infrastructure (The Mdantsane Way Magazine 2015, Department of National Treasury 2011).

A key issue is the establishment of special economic zones and centralization of trade, commerce and services. The latter can be achieved through the establishment of central supply nodes that carry out a new urban function and support the core city and the CBD of East London.

A general support of all central supply nodes in the BCMM is desired. Citizens will thus be able to provide themselves with goods on-site in Mdantsane. Although the layout of Mdantsane is a hilly landscape, which does not offer much space for big urban developments, a few possible sites have been developed (see Figure 3).



Figure 3: Map of the Center Building ongoing projects. Source: own depiction.

One of the most successful projects is the construction of the shopping center Mdantsane City Mall, which is aimed at economic development in retail and local supply. Also important are the extension and complete modernization of the local hospital Cecilia Makiwane as a project of health infrastructure, building and extension of the industrial area Fort Jackson as a workplace, and the reconstruction of the CBD of Mdantsane called "Hi-Way" in which all the major utilities, services and transport goods or means are merged. All projects are financed by public economic development schemes and private protagonists that work closely with the Cities' officials (The Mdantsane Way Magazine 2015, Department of National Treasury, 2011).

These measures are supposed to push forward the urbanisation in Mdantsane and create a momentum of development. By means of the SDF³ the BCMM explained its long-term goal of promoting the urban area particularly within Mdantsane to do more for urbanization, for example by expanding the CBD in Mdantsane (SDF Spatial Development Framework 2011).

3.2. S OT regarding Center uilding in Mdantsane

SWOT literally means strengths, weaknesses, opportunities and threats. It is a tool to analyze the implied measures mentioned above. It examines whether the measures and means taken are the right tools to achieve the defined goals.

The focus is to urbanize Mdantsane. Because this settlement was built as a dormitory city, center qualities are missing entirely and are being currently developed. One of the strengths of the implemented measures is that they have a large so called magnetic effect. That effect could attract follow-up investments in the immediate vicinity.

The projects of health care have long been required solely on the basis of the population and the country's high rate of infection with the HIV virus, especially in Mdantsane. A modern and extensive hospital care with an affiliated teaching hospital is a big win for the residents of Mdantsane and the region.

³ SDF: Local government has a Spatial Development Framework (SDF) that basically regulates where and how residential and business development should take place and how the environment should be protected (SDF Spatial Development Framework 2011).

Through the modernization and expansion projects, the CBD is able to fulfill its role as a central place of business and commerce. Creating the environment for the self-sufficiency of all goods and services for everyday use, a positive investment climate and the promotion of commercial space are the prerequisites for pushing development further. The expansion of the local range will benefit all citizens.

The Mdantsane City Mall completes the range of the CBD with new shops and services that did not exist in Mdantsane before. Although located 4 km from the CBD, it can provide an opportunity to serve as a smaller second center. Even with the new construction projects, an urban upgrading of the former monotonously built townships would be achieved.

The weaknesses of this new development include mainly the initial prerequisites. The high rate of unemployment and the low educational level are taken into account. Furthermore, these projects are not large and numerous enough to realize the urbanization goals quickly. The developments in the CBD have to be implemented much more quickly and efficiently in order to initiate sustainable development. The administrative processes need to be streamlined and accelerated to become more attractive. This includes the often unknown private land ownership rights or the complicated reclassification of urban land. The BCMM needs to take action more seriously, otherwise it will not be able to reach its own goals.

The hospital Cecilia Maikwane should have been opened long ago but is still under construction. As estimated, the 2,000 new beds are not enough: much more investment is needed to meet the demand of a township of Mdantsane's size and the direct hinterland to make healthcare accessible and to secure it.

The so-called "lighthouse effects" of large projects, based on the follow-up investments in the direct vicinity, is hard to predict and cannot be planned. But there is potential that could always be explored (Interview with planning official of the Mdantsane Urban Renewal Program).

There are still dynamics despite the weaknesses, which is also a great opportunity for Mdantsane. The high unemployment rate (according to the South African Statistics Office, the unemployment rate in the BCMM reached 35.1% in 2011) does not allow direct conclusions about any lack of skills, but gives a hint about a potentially large labor market. If necessary, missing qualifications can be resolved by training. Also, the economic growth potential is huge. By limitations of goods and services for township residents in the past, there is a great need to compensate for this deficiency by additional consumption nowadays.

A variety of new jobs would be created by the new construction and future developments. All ongoing projects provide a great opportunity, whether it is the new big hospital, the large shopping center, the industrial area Fort Jackson or the revitalization of the CBD. In these projects, the opportunities outweigh any weaknesses or risks. The positive aspect is to generate certain developments that have been defined as development priorities.

The newly created possible cash cycle within Mdantsane could lead to prosperity. The less money is flowing out of the township and is issued on the spot, the higher the chance that residents would benefit directly and a strong local market may form. This would be the biggest chance for Mdantsane to trigger small local investments by its citizens and generate development from within.

A serious risk is due to the lack of precedents by which a possible development of the planned projects could be predicted. This lack of experience in similar settings and conditions makes it difficult to establish a reliable prognosis for investment.

There are still many theoretical approaches, which, however, cannot all be realized at the same time. Changes take time and do not always work as planned. The local structures create major risks as Sandeep Mahajan brought to the point:

"What is missing [...] in [...] large urban townships, is a viable middle ground: a dynamic middle-income economic structure on a large scale did hosts a range of robust businesses, both labor-intensive and small enterprises, which are suited to absorbing the limited skill levels available among the townships' unemployed masses". (Sandeep Mahajan, World Bank Group lead economist)

But the approach of the Center Building is not the only focus of development. The concept of Melting Corridors could support the development of the Center Building positively and lead to a sustainable development.

3.3. Melting Corridors as a new strategy for Mdantsane

Based on the author's investigations, central nodes are not the only answer to the current state of spatial inequalities. The so-called 'Melting Corridors' between the townships and old city borders are introduced in this paper as a possibility to channel development into vacant land and literally sew the city and the settlement together.

In South African planning there is officially no funding or a clearly defined target plan that meets the concept of a Melting Corridor in this context or comes close to it. Although the aim is defined to remove the barriers of the old township planning, no approach goes as far as to make all larger settlement bodies merge structurally (in this case, East London and Mdantsane) to become one settlement, one city.

The Melting Corridor as depicted now is a new innovative and yet conceptual approach. The Melting Corridor between East London and Mdantsane is a corridor or an area between the two municipal bodies (see Figure 4). It is not clearly defined by boundaries and includes only an approximate area yet. It is characteristic that the area subjected is of hardly urban or semi-urban use and has a more rural nature.

In Mdantsane, the focus is mainly on bridging the distance to East London. This connection is poor because the highway and two additional roads are the only connection with East London. Furthermore, public transport is not sufficient. There is only the Metrorail commuter train line and the private minibus taxis. The area between the official municipal boundaries of Mdantsane and East London is poorly developed and has retained its character of a distance and brownfield between the two. The aim of the Melting Corridor is to transform it into an urban opportunity (Own observation from August 2010 to August 2011, April 2016).

The Melting Corridor concept is also based on nodes (see Figure 4). A node is an area of intense and mixed-use urban development located along a main transport route. At each node, different kinds of development should be promoted in order to provide opportunities for citizens who live nearby. In addition to development and expansion of transport routes, these nodes are to spark an effect and create the basis of new urban growth. Follow-up investments will likely boost this development. The node project enables certain private or public services along these transport routes. The benefit in the creation of nodes along transport routes is that it brings people together and the urban services to which they rely closer. In theory, citizens should live near urban services and their workplaces. An environment has to be created in which the poor have access to better education, jobs and prosperity (Küsel 2009).

Being not an official planning tool, the Melting Corridors could be financed by various programs that can be relocated to serve the new purpose as well as to one it was designed to achieve. The RDP Program (as mentioned in Chapter 1.3.) could serve as an example tool. The RDP was launched as the first program of public social housing in South Africa. The public housing plays a key role in the establishment of the Melting Corridors, since attracting urban life can only take place where people live. It mostly requires a public investment before inviting private investors to a new area or a district.

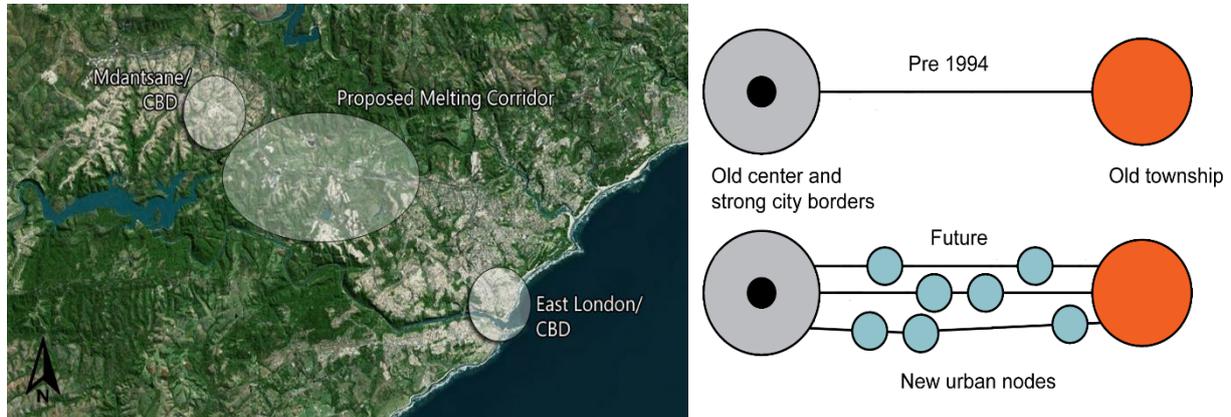


Figure 4: Proposed Melting Corridor and Nodes Concept. Source: own depiction.

The RDP is an important tool for a functioning new node to be inhabited and animated quickly. The RDP program aims to promote social inclusion and economic growth. However, that objective could only be achieved with the low-cost acquisition of land. Since suitable land only exists far outside the districts or centers, the desired development of townships and centers through social housing has not been reached.

In the BCMM there is currently a shortage or backlog of about 75,000 social housing units. As a result of its geographical location and the initial situation, most of the easy-to-develop construction land has been used. The area between East London and Mdantsane is now taken more into focus and housing projects along new corridors are being promoted (Interview with planning official of the Mdantsane Urban Renewal Program).

3.4. S OT regarding Melting Corridor in Mdantsane

Even though the Melting Corridor tool itself has not been used and still remains a concept, it is still possible to conduct a SWOT analysis. The connection of the townships to the historic city centers in all areas of infrastructure, utilities and social aspects can be seen as the focal point of Melting Corridors. The merge with "the city" by new construction and conversion of brownfields in these corridors with commercial and residential use form an urban node. Improvement and construction of new connecting infrastructure such as roads or public transport by bus and tram should be carried out. All potentials should be explored.

Among the strengths of the Melting Corridor initiative in particular is the promising location and feasibility. This informal instrument works with the existing urban structures. Not only because of the involvement of existing settlement boundaries but also due to specific development might this be a possible healthy urban design. Moreover, the new approach of cooperation between public and private developers would trigger large-scale follow-up investments and have the entire region benefit economically.

As a great weakness, the railway infrastructure should be mentioned. The track is not electrified and is based on an inefficient diesel locomotive system, which would have to be extensively modernized. Furthermore, the extension of the line up to King Williams Town in the north of BCMM would profoundly increase efficiency. This is necessary since the Metrorail commuter train line only connects to Berlin (South Africa). An alternative to the Metrorail is the Johannesburg model Metro bus (BRT: Bus Rapid Transport). A few years ago BCMM had plans for such a system to be developed on the existing road network but failed due to massive resistance of the minibus-taxi-lobby. Those private operating minibus-taxis are the main transport system.

Another weakness is the financing of the Melting Corridor projects in general. This functions only indirectly through subsidy funds from national, provincial, district-dependent and municipal finances. It could still be feasible by cooperation, since many project or funding priorities overlap with the goals of the Melting Corridor or the approaches are compatible with the urban nodes.

The plans of Melting Corridor include that urbanization can be boosted quickly through the construction of nodes. South Africa's population is growing fast and the informal settlements still increase, so city expansion to create living space is inevitable. Another opportunity are the many potential brownfields in the area of the Melting Corridor which are not at all occupied or if only by interim uses. The use of these areas can be easily changed. A forced large-scale city expansion would also benefit the economy of the entire region. Moreover, social housing with a deficit of 75,000 housing units currently in the BCMM area pressures development. This can only be targeted by large project areas. In addition, the unique opportunity would arise to build a South African model city of freedom and equality. A flagship development to try new ways of social and cultural models can be used as a rough model for the country.

However, the project is also carrying some risks. The extent of the project is facing a non-calculable financial risk. Also the project area, since it is not yet clearly defined, is unmanageable in its dimension. The scale of the actions to take would have yet to be determined. In addition, the unresolved question of how much new building is really needed and what kinds of needs are to be met are not answered.

4. Conclusions

"There is no shortage of ideas about what needs to be done to improve the [...] townships, the challenge is to incentivize and mobilize local communities to urgently implement appropriate solutions." (Asad Alam, 2014)

A quote of World Bank Director of South Africa Asad Alam fits to sum up the subject presented in this paper. As demonstrated, South Africa has no single approach or strategy on how to deal with the legacy of townships, nor how they could be developed in an appropriate way. There is a very diverse sectoral approach which is based on a range of tools and on developing democratic visions. These sectors are housing, health, education etc. Today it is a consensus that areas planned in a segregating and discriminatory way during apartheid, which were thus under-developed, should be upgraded. The goal has been that further positive developments would be triggered by those actions. The result of the expert interviews carried out by the author in 2015 was that these expectations were disappointed in many cases, and the initiatives did not go far and deep enough.

It is not easy to transform artificially planned residential areas into functioning, efficient and modern cities or centers that meet today's visions and expectations. Many projects do focus

on well-identified problem areas, but it will take a long time for them to develop processes and own dynamics that are no longer dependent on public investments. It is a challenge to give local residents the feeling of being proud of their residential area and to display a certain pride outside the townships to help change the mostly negative image. This would contribute to positive promotion of local development and attracting more investors.

The approach of the Center Building and Melting Corridors concentrates different tools, projects and objectives in a certain area. That would most likely trigger a more inclusive and successful development. In the author's opinion, it would be also advisable to further encourage the possibility of "development from within". This could be achieved by supporting the accumulation of local capital, by mobilizing local investors, and by creating an investor-friendly climate based on the community in order to counteract the outflow of capital from the townships.

The fact that there are no attempts to adjust urban planning to the local context or to reflect cultural realities is not helpful in establishing a local identity, and it is hindering problem solving. Urban planning is not very innovative in finding new solutions to old problems that could not be solved by current tools. Up until now, the only model and ideas that are used and reproduced are the "European city" and in particular the British (colonial) City or the US-American version. Important for the future is to find a South African solution that is able to achieve more acceptance among the local residents by actually solving the problems created by Urban Planning under South African Apartheid. It is certainly not solved by copying ill-fitting models of urban development. Creating a new model that matches the ideas and ways of living by the local residents, and ethnic groups living in the township would make a great difference.

In the case of Mdantsane, the culture of the Xhosa people should be involved in planning processes in order to raise their ideas and define for themselves what "city" means to them and how they would like to live or how they would like their city to evolve. A different urban typology may need to be developed because the indigenous people are used to live in small villages, or followed a nomadic lifestyle. Their way of living changed dramatically when they were forced to live in cities created under the apartheid regime. Developing a local model for the urban structure would in turn have positive effects on township development.

The quote of Asad Alam makes it clear that it is not enough to provide standardized planning solutions, but it is necessary to adapt them to the local situation. Furthermore, it is important to be more active because there are still many problems or difficult starting points for urban development in South Africa. It is crucial to get to the point of implementing projects that are more effective, that allow the local residents to participate better in the processes of planning and in particular to learn from the mistakes of the past and not to repeat them.

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Interviews:

Interviews were conducted with practitioners as well as inhabitants of Mdantsane and university scholars. Names are not revealed for reasons of anonymity.

- Interview with planning official of the Mdantsane Urban Renewal Program
- Interview with researcher at the Department of Urban Renewal and Urban Redevelopment of the University of Kassel. Former consultant for democracy promotion at the German Development Service (DED) South Africa
- Interview with Professor of the School of Architecture and Planning of the University of the Witwatersrand, Johannesburg
- Interview with local resident of Mdantsane and scholar of Walter Sisulu University, East London
- Interview with local resident of Mdantsane, teaching at local Inkwenkwezi High School, n.u.6



Track 2

Planning activism and social justice



**PAPER MAIN TITLE:
A NEW DAWN FOR THE SOUTH AFRICAN PLANNING SYSTEM**

52nd ISOCARP Congress 2016

MAIN THEME:
CITIES WE HAVE VS CITIES WE NEED

SUB-THEME:
PLANNING ACTIVISM AND SOCIAL JUSTICE

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Synopsis:

Apartheid legislative and policy framework led to spatial imbalances in many cities in South Africa. Many poor people were moved to the peripheries, far from socio-economic centres. Since spatial segregation is a result of apartheid policies, the solution to address these imbalances heavily rely on the integrated planning policies and legislative framework

Abstract

The paper explores the policy and legislative transition of the planning system in South Africa from what we had, to what we need to create viable communities. We have transitioned from the apartheid system which effectively racially segregated the populace and misguided policies that worsened the spatially distorted configuration of our space, to a legal position wherein all communities have equal rights to access of amenities and protection thereof. It therefore stands to reason why South African planners, as agents of change, are at an opportune period to use the enhance tools available to create the communities they want to live in, and hence fulfil the narrative of democracy this country prides itself in. It will also provide the mechanism on how best the planning policies and legislative framework can be amended to address the current socio-economic challenges and the imbalances of the past.

1. BACKGROUND

Gone are the days when the planning profession served the interests of a few, dispossessed the masses to advance the minority, and when planning was a tool for the unjust government to perpetuate the political discourse. The new political democratic dispensation ushered a new prototype of planning thinkers who had to be amassed, not just with the science of practice, but with adequate conviction to make a difference within the prescripts of the law. Such conviction is rooted on the barometer of change one wishes to bring about, the willingness to challenge the status quo and the lengths one is prepared to go to give life and meaning to policies. In the South African context where the planning system is, for the first time, aligned to the Constitution and is uniform countrywide i.e. in Spatial Planning and Land Use Management Act, the timing has never been as appropriate as the present.

2. PROBLEM STATEMENT

The apartheid planning policy, legislative framework and system created racial segregation and inequality in the whole country, the poor were pushed to the periphery and rural areas with limited or non-existence of social-economic facilities. Since 1994, the democratic government introduced a number of development programmes, policies and legislative frameworks with an intention to build a united and non-racial South Africa. Guided by the parameters of the planning framework and giving effect to the development principles, the response to the many challenges our communities face can now be targeted. Development principle offers us ammunition to advocate for a position that will advance poor communities, lobby for improved resource allocation and the incremental inclusion of previously disadvantaged communities into orderly developed neighbourhoods. This refers to development principles, such as (i) Spatial Justice; (ii) Spatial Sustainability; (iii) Spatial Efficiency; (iv) Spatial Resilience; and (v) Principle of Good governance.

3. THE HISTORY OF PLANNING IN SOUTH AFRICA: PRE-1994

Difficult as it is to define, planning can be broadly understood to relate with a myriad of activities all of which are undertaken by different professions. In essence, planning is a process of integrating thoughts and ideas that ensue from multidisciplinary engagements. Planning is applied to achieve defined socio-economic objectives, to manage the sensitivity of the environment, to inform public transport facilities and installation of infrastructure services, and design of human settlements. It involves making informed decisions about the

future use and development of land and striving to create a better and sustainable living environment for people. For example, the grid pattern planning approach has been exercised in most towns throughout South Africa and is still popular today for its simplicity and cost effectiveness. This approach emanates from the early Cape Dutch settlements that followed the European grid pattern with residential areas laid out in blocks around gardens and public land such as the town square. During the 1930s and 1940s, Town Planning Ordinances were introduced in different Provinces to manage the development in urban areas and new settlements. Municipalities were required to prepare Town Planning Schemes for formal urban areas in line with Town Planning Ordinances. Town planning schemes were used primarily to allocate zonings in different areas to make a clear division of land uses and residential types. Legislative backing is therefore critical to effect the change much needed.

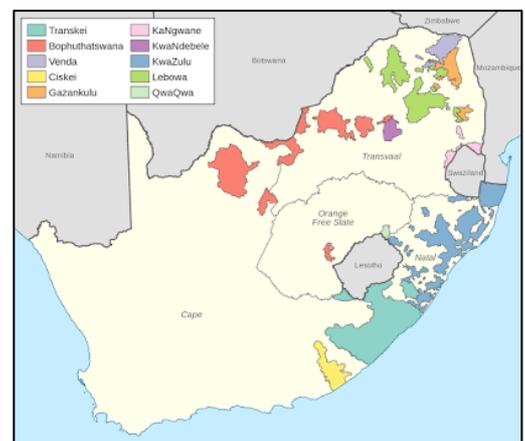
3.1 The Early Planning Legislations: Pre - 1994

1910 is the year in which South Africa was forged, as a Union. Not coincidentally, that was also the year in which the Department of Native Affairs was created. Three years later, the Union's parliament passed the Land Act (Act of 1913), which formally ushered in segregation as the fundamental national policy. During the 19th century, the apartheid government used its legal authority to set up distinct juristic boundaries, operating in parallel, such as the establishment of concentration camps and the establishment of South Africa's Bantustans/homelands. The decade of macro-segregation and separation division of Bantustans/homeland from white South Africa from the early 1970s resulted in the creation of a complicated legal framework in the country. Four provinces (Transvaal, Orange Free State, Natal and Cape of Good Hope) were created in 1910 and ten Bantustans/homelands (Bophuthatswana, Ciskei, Gazankulu, KaNgwane, KwaNdebele, KwaZulu, Lebowa, Qwaqwa, Transkei and Venda). (Oranje and Berrisford, 2015: Online).

Map 1: Four Provinces created in 1910



Map 2: Ten Bantustans created in 1910



Source: sahistory, online

3.2 The 1913 Natives Land Act (Act No. 27 of 1913)

The 1913 Natives Land Act was one of the first pieces of legislation that limited the property rights of Africans in South Africa. Africans were only allowed to buy land in the selected areas, which were known as bantustans/homelands (Bophuthatswana, Ciskei, Gazankulu, KaNgwane, KwaNdebele, KwaZulu, Lebowa, Qwaqwa, Transkei and Venda). (Pepeteka, 2013: 1)

Through the 1913 Native Land Act a vast proportion of the total land mass was reserved for use by people classified as 'White', and those classified as 'Black' were located in the urban outskirts and rural areas, areas with limited public transport system, economic opportunities, job opportunities etc. Under the apartheid government, black residents were forced to live in "sprawling, squalid dormitory townships of undifferentiated 'matchbox' houses. These were relatively poorly serviced with infrastructure and urban amenities, and were virtually devoid of work opportunities or shopping and entertainment facilities".

3.3 The Natives Urban Areas Act (Act No. 21 of 1923)

The Natives Urban Areas Act regulated the presence of Africans in the urban areas. Local authorities were given powers to demarcate and establish African locations on the outskirts of the urban industrial areas. Africans who were living in the so-called white areas were forcefully moved to the locations. Segregation, pass law control and housing were used as a strategy to define 'Black Africans' urban residential (Hendler and Wolfson, 2013: 3).

3.4 Provincial Town Planning Ordinances (Various: 1930 – 1940)

The main focus of this Act was to control development in urban areas of each province. It did not provide guidelines for development in rural areas. It also had less focus in the locations since its main focus was urban-biased.

3.5 The Population Registration Act (Act No. 30 of 1950)

In 1948 the National Party (Former Apartheid Ruling Party) implemented its vision of a segregated racial ideal. After passing the Population Registration Act of 1950, it sought to segregate the officially identified races. The Act provided for compulsory racial classification

on a national register. Documents were issued to people based on designated racial groups in terms of the Act. Groups were classified as Europeans, Coloured, and Black Africans.

3.6 The Group Areas Act (Act No. 41 of 1950)

The Group Areas Act orchestrated segregation in the control of transfer of land and immovable property as well as occupation rights. The main objectives of the Act were used to control the life and the movement of urban Black Africans, Indians and Coloured people. The primary objective of the Act was residential separation, to curb the movement of the non-whites from rural areas into big cities and so-called whites only areas. The apartheid government set up semi-urban townships for Black, Indian and Coloured population groups. (sahistory, Online)

The apartheid government justified Group Areas removals in many different ways. It claimed that racial mixing bred conflict. It alleged that the Act was designed to eliminate friction between the races. Removals were seen as necessary for halting urban decay and were construed as generous. Segregation, rather than better policing, was promoted as the solution to crime.

3.7 Less Formal Township Establishment Act (Act No. 113 of 1991)

The Act provided a short procedure for township establishment for less formal forms of residential settlements and regulated the use of land by traditional communities for communal forms of residential settlement. From a traditional communities perspective, the Act, however did not achieve its objectives since it was manipulated to fast track development in the urban areas.

4. RELEVANT PLANNING LEGISLATIVE AND POLICY FRAMEWORK: POST 1994

On 27 April 1994, South Africans participated in the first democratic government elections where about 19.7 million voted including Black, Indian and Coloured population groups who were previously not allowed to vote in terms of the regulations set out by the apartheid government Electoral Laws Amendment Act of 1940. 27 April 1994 marked the end of over three hundred years of colonialism, segregation and white minority rule. The late Dr. Nelson Mandela was elected as the first President of democratic South Africa. The former

Bantustans/homelands were reintegrated and four provinces were divided into nine. The main objective of dividing provinces into nine was to decentralised government services and brings services closer to the people.

Map 3: Nine South African Provinces created after 1994



Source: southafrica.info

The victory over the apartheid state in 1994, set policy makers in all spheres of government a massive task of overhauling the social, political, economic and cultural institutions of South Africa to bring them in line with the imperatives of a new democratic order. (Donalson, 2001: 1 cited in Asmal, 2001).

South African cities and towns entered the 1990s with an apartheid urban planning and development legacy. Town planners and politicians responsible for town planning and development were faced with a huge task of reconstructing the impression of a spatially segregated, highly fragmented and dispersed urban society, and had to achieve urban-rural integration. Restructuring, transforming, reconstructing and integrating separate and divided cities posed pertinent spatial planning challenges. Since 1994, much has changed around urban development in terms of the legislation, institutional frameworks, policies and strategies. Numerous pieces of national legislation, policy and strategy have been developed since 1994 to transform the stubborn residue of apartheid. National legislative tools that have sought to redress past imbalances include, *inter alia*, the RDP (1994), the Housing White Paper (1994), the Development Facilitation Act (1995), the Urban Development Strategy (1995) and the White Paper on Urban Development (1997), the draft Green Paper on Development Planning, the White Paper on Local Government (1998), the White Paper on

Spatial Policy, the Demarcation Act (1998), and the Municipal Systems Act (2000), Housing Act (1997); Municipal Structures Acts (1998); Environmental Management Act (1998); Social Housing Act (2008); and the recent Spatial Planning and Land Use Management Act (2013). These were introduced by the democratic government with an objective to address segregation and promote spatial justice, spatial equity and integration of communities.

The apartheid policies led to a number of settlement patterns and types in South Africa. The 1998 White Paper on Local Government, recorded nine (9) different settlement types categories, which are Urban core; Urban fringe; Small towns; Dense rural settlements; Betterment settlements; Informal settlements; Villages; Agri-villages; and Dispersed or scattered settlements. (Donalson, 2001: 2 cited in Asmal, 2001).

Government has tried to address the imbalances of past orchestrated apartheid planning. The wide range of development planning challenges which government, has been faced with are transportation planning; environmental planning; infrastructure planning; housing; land reform; socio-economic planning and land use planning. These challenges are more pronounced in local government.

4.1 The 1994 Reconstruction and Development Programme

In 1994, the democratic government led by the African National Congress introduced the Reconstruction and Development Programme (RDP) as the country's socio-economic policy framework. The main objective of the RDP was to alleviate poverty, and address the massive shortfalls in social and economic services.

4.2 Restitution of Land Rights Act (Act No. 22 of 1994)

The Restitution Programme seeks to return land or compensate people who have been dispossessed of their land through discriminatory laws since 1913. The Restitution of Land Rights Act was one of the first pieces of legislation passed immediately after the democratic dispensation came into being. The Act fulfils the requirement of section 25(7) of the Constitution as it entitles a person or community dispossessed of rights in land after 19 June 1913, as a result of racially discriminatory laws or practice, to claim restoration of those rights or equitable relief in the form of alternative land or compensation. (Pepeteka, 2013: 3).

4.3 *Local Government Transition Act as Amended (Act No. 97 of 1996)*

Local Government Transition Act was first enacted prior to 1994 and later revised... It was introduced as a government interim attempt to reorganise local government affairs and introduced Integrated Development Plans as a planning tool for local government.

4.4 *Constitution of the Republic of South Africa (Act No. 108 of 1996)*

The Constitution is the supreme law of the country. It provides the direction in terms of roles and responsibilities for national, provincial and local government in relation to development planning. Chapter 2 of the Constitution outlines the Bill of Rights for the people of South Africa, section 24 outlines the right to environment that is not harmful, section 25, outlines the right to property; and section 26, the right to adequate housing. Housing, property and environmental elements are the factors in spatial justice.

4.5 *The 1996 Growth, Employment and Redistribution (GEAR)*

Government introduced Growth, Employment and Redistribution as its macroeconomic policy framework to stimulate faster economic growth with an intention to provide resources to meet social investment needs. Growth, Employment and Redistribution (GEAR) encompassed most of the Reconstruction and Development Programme (RDP) social objectives but it also aimed at fiscal deficits reduction, lowering inflation, maintaining stability in exchange rate, and decreasing trade barriers. In 1999, Growth, Employment and Redistribution (GEAR) was replaced by Accelerated and Shared Growth Initiative for South Africa (ASGISA). ASGISA was introduced as the engine for growth and development; Black Economic Empowerment (BEE) begins to reshape the economic landscape and financial markets.

4.6 *The Development and Facilitation Act (Act No. 67 of 1995)*

The Development and Facilitation Act of 1995 (DFA) intended to guide all physical planning and development, premised on the ideal of a compact and integrated city. The main aim of the DFA was to fast track land release for development in particular Reconstruction Development Programme initiatives. It was seen as being a tool to assist local governments in providing a short-term (five year) solution to urban and rural development restructuring. The principles of the Development Facilitation Act included restructuring of the spatial

environment aimed at correcting the racial settlement pattern, general city-building principles that encourage compact cities and prevent further urban sprawl, along with mixed land use and integrated development, promoting the creation of sustainable cities and a transparent process of public participation, and associated capacity building.

4.7 Housing Act (Act No. 107 of 1997)

The key objective of the Housing Act (1997) is to provide for the facilitation of a sustainable housing development process and development in line with the National 2009 Housing Code. The Act makes provision for policies and processes involved in housing development i.e. urban and rural housing development.

4.8 Environmental Management Act (Act No. 107 of 1998)

The main objective of the National Environmental Management Act is to promote sustainable development, which is to ensure balance and integration between social, economic, and environmental factors into planning, implementation, and decision making to ensure that the environment serves both present and future generations.

4.9 Municipal Demarcation Act (Act No. 27 of 1998)

The Act provides for criteria and procedures for the determination of municipal boundaries by an independent authority. The aim of municipal restructuring is to assist in redressing the imbalances of the past and the inequalities in public service. The Act also assists to address the rural-urban divide and integrate economic and social development.

4.10 Municipal Systems Act (Act NO. 32 of 2000)

This Act outlines the way Municipalities operate and brought about modern day Integrated Development Planning.

4.11 *Social Housing Act (Act No. 16 of 2008)*

The provide guidelines for the establishment and promotion of sustainable social housing environment. It defines the functions of national, provincial and local governments in respect of social housing. It is as an instrument used to pursue restructuring of South African cities, this is essentially about integration: economic, racial and social. Restructuring is largely about moving away from housing interventions that entrench or in any way maintain the spatial status quo, which reinforces certain social and economic disparities.

4.12 *National Development Plan 2011 (Vision 2030)*

The National Development Plan is a plan for the country to eliminate poverty and reduce inequality by 2030 through uniting South Africans, unleashing the energies of its citizens, growing an inclusive economy, building capabilities, enhancing the capability of the state and leaders working together to solve complex problems. The plan has the following high-level objectives to be achieved by 2030 **(i)** reduce the number of people who live in households with a monthly income below R419 per person (in 2009 prices) from 39% to zero and **(ii)** reduce inequality, as measured by the Gini coefficient, from 0.69 to 0.6.

The plan also have a high level objective of new spatial norms and standards – densifying cities, improving transport, locating jobs where people live, upgrading informal settlements and fixing housing market gaps. (National Development Plan, 2011)

4.13 *Spatial Planning and Land Use Management Act (Act No. 16 of 2013)*

The Spatial Planning and Land Use Management Act (SPLUMA) was passed by Parliament in August 2013 and it came into effect on 1 July 2015. It is a single planning legislation for the country which repealed the Development Facilitation Act (Act No. 67 Of 1997), amongst others. The Act aims to develop a new framework to govern planning permissions, approvals, set parameters for new developments and provides for different lawful land uses in the country. It is also to provide a framework for policies, principles, norms and standards for spatial development planning and land use management to address the spatial and regulatory imbalances, to promote greater consistency, and uniformity in the application procedures. The Act sets out five development principles which intends to address the spatial development planning imbalances of the past which are (i) Spatial Justice; (ii) Spatial

Sustainability; (iii) Spatial Efficiency; (iv) Spatial Resilience; and (v) Principle of Good governance. The emphasis is more on spatial transformation and spatial equity. The Act gives powers to local authorities to perform and make informed decision on spatial planning and land use planning matters.

5. PLANNING LEGISLATIVE GAPS AND PROPOSED AMENDMENTS

Since 1994 government has introduced and enacted many different planning related policy and legislative frameworks. The most recent one is the Spatial Planning and Land Use Management Act (SPLUMA), (Act No. 16 of 2013). Government has tried to introduce new legislative framework for planning, however, there is a gap in terms of different policy requirements in relation to spatial and land use planning. This gap requires urgent attention in terms of amendment of certain legislations and policies to address the National Development Plan (NDP), Spatial Planning and Land Use Management Act (SPLUMA) and Provincial Governments Growth and Development Strategies (PGDS). Below is the list of legislative and policy frameworks that requires urgent amendments. Below is the list of legislative and policy framework that requires urgent amendments:

- **The Constitution Act (Act NO. 108 of 1996):** To address spatial justice in line with Section 26 (1) and revisit the words 'rights'; "access"; and "adequate". Address principle of good governance.
- **Housing Act (Act No. 107 of 1997 as amended in 2001):** To address spatial justice and human settlements objectives (Part 1). Since 2009 housing departments and programmes were changed to human settlements but the act itself is still called "Housing Act". Address principle of good governance.
- **National Environmental Management Act (Act No. 107 of 1998):** To address spatial transformation and flexible development procedures and processes. Chapter 1 (Section 2). Address principle of good governance.
- **Municipal Demarcation Act (Act No. 27 of 1998):** To address, accordingly spatial elements in relation to municipal boundary delimitation every five years. Chapter 2 (section 21). Address principle of good governance.

- **Municipal Systems Act (Act No. 32 of 2000):** To address spatial transformation in the planning processes. Chapter 5 (Section 26). Address principle of good governance.
- **Social Housing Act (Act No. 16 of 2008):** To address spatial justice in line with restructuring zones objectives. Chapter 1 (Section 2). Address principle of good governance.

The most common objective of the current government planning policy and legislative framework is spatial justice, spatial transformation, spatial equity, urban rural integration, and densification. In a nutshell, sustainable development, takes into consideration the four development cornerstones i.e. social, economic, environmental, political aspects. There has to be further explicit legislative backing to achieve the ideals of a democratic South Africa, and as such the Constitution, the Housing Act, Municipal Systems Act, Municipal Demarcation Act, National Environmental Management Act, Social Housing Act, needs to be amended.

6. CONCLUSION

Spatial transformation can only be realised through amendments of certain planning laws to address the inequalities and the imbalances of the past. Amendment of South African planning policy and legislative framework is urgently needed in order to address spatial challenges and imbalances of the past as a result of the apartheid planning processes. Spatial integration can only be addressed through the review of legislative and policy framework and the alignment of national, provincial and local spheres of government roles and responsibilities.

The focus should fall sharply on spatial justice (access to land by disadvantaged communities; flexible management of disadvantage areas, Informal settlements, former homelands; access to secure tenure, incremental upgrading of informal areas) and spatial equity which are the focal points in the National Development Plan and the Spatial Planning and Land Use Management Act (Act No. 16 of 2013). As planners, we remain hopeful that it is a new dawn for the South African planning systems and the opportunities to be change agents have been activated.

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**Transportation Challenges in Cities in Developing Countries:
Case Study of Nairobi, Kenya.**

ACHWOKA Francisco , Kenya.

Abstract

This paper aims to critically analyse the urban transportation problems in Nairobi, Kenya, as a case in point of transportation challenges in cities in developing countries. Identifying and resolving transportation problems is a key issue challenging governments in most developing economies like Kenya. Despite increased expenditures on urban transport systems, the current transportation problems continue to worsen due to poor execution of transportation planning models and ideas, lack of supportive governance structures and ultimately corruption within the overall transport sector. This puts developing countries at a significant disadvantage with the lack of efficient and safe transportation being a major crisis Klopp, 2012 .

In Kenya, urban transportation problems have been dealt with by the construction of larger roads, by-passes and broader dual carriage ways. However, these road projects have not been a solution as they have proven to be unable to achieve the broader plan of traffic management. Road projects need to be part of an overall transportation plan that includes traffic management and transit systems that majorly support public transportation. Similarly, this needs to fit into a broader metropolitan urban plan. This paper will seek to highlight this as a core planning problem leading to the failure of the city's transportation policy. It will offer direction towards the development and management of the public transportation system that will provide a higher level of mobility, equity and environmental sustainability.

ey words Developing countries, transportation problems, transportation policy

INTRODUCTION

Increased poverty levels in the rural areas and rapid urbanization of Sub-Saharan African towns in the last decade has caused migration to cities. As such cities, which are already struggling with provision of vital social amenities such as housing and infrastructures, are further tasked with ensuring affordable public transportation for the growing populations. The high cost of private transportation leads to the dependence on public transportation by the populations for accessibility and mobility to work places, markets and residential areas. Public transportation, hence does not only become just a social amenity, or an alternative to private car travel, but remains as an only means to a motorized mode of transport available to the vast majority of the urban population in many African cities (Koster, 1999).

Transportation policies and projects have taken shape in various forms within the continent through substantial financial and infrastructural investments involving foreign development partners in the form of road building, rail and provision of various incentives on transportation-related infrastructure to both the government and private sector. However, these projects have caused significant public debt as they have been majorly financed by foreign loans and encountered corrupt systems within government institutions (Klopp, 2012).

Transportation policies have a long term impact on how cities grow into the future, with practices that further impact land use, environmental and economic aspects and overall quality of life in cities. If done well, transportation policies and projects can have a beneficial impact on improving equity, efficiency and overall quality of urban life. However, if done poorly, they can intensify struggles over urban land and space, contributing to the lowering of the city's liveability and further escalating the poverty levels (Pieterse, 2010).

The Nairobi Metropolitan region constitutes Eastern Africa's largest metropolis and has rapidly grown and expanded into the surrounding towns, a wildlife corridor and the agricultural lands that form part of its periphery (UNEP, 2009). Having its own unique historical development and dynamics, the region stands out as an urban space requiring critical analysis when theorizing its transportation issues. Historically, there have been endemic factors interrelated to the decision making on transport policies and projects in Nairobi. Klopp (2012) lists some of these factors that include:

- a) The large and distorting role of the external actors, e.g., donor agencies and development partners.
- b) The fragmentation in institutions, policymaking and projects.
- c) The closed and top-down planning processes.
- d) The absence of mobilization of projects and policies that serve the majority of the residents, especially in the poorer segments, have tended to favour the richer, well-to-do minority.

Currently, Nairobi faces problematic dynamics of poverty and social segregation with a high rate of urbanization of 4% per year. This means that like many other African cities, Nairobi has higher population growth rates than cities in Europe at an average rate of 3 % (Burdett et al, 2015) (Arku, 2009:254). Statistics suggest resident populations of 3.2 million with up to a daytime population of 4.2 million (Kenya National Bureau of Statistics, 2010). Increased environmental pollution due to oil dependency, industrialization, deforestation, inefficient waste management, encroachment and contamination of agricultural lands have led to reduced air quality in the city and further exacerbated environmental impacts in its environs (Odhiambo *et al.*, 2010). In addition to a rapid urban population growth due to rural-urban migration, the number of cars owned and level of automobile use within the city is growing due to liberalization of car imports among other factors. According to the WHO *Global Status Report in Road Safety 2010* , nearly one third of the 3,000 to 13,000 lives lost in Kenyan roads are commuters; many of them killed in unsafe forms of public transportation.¹

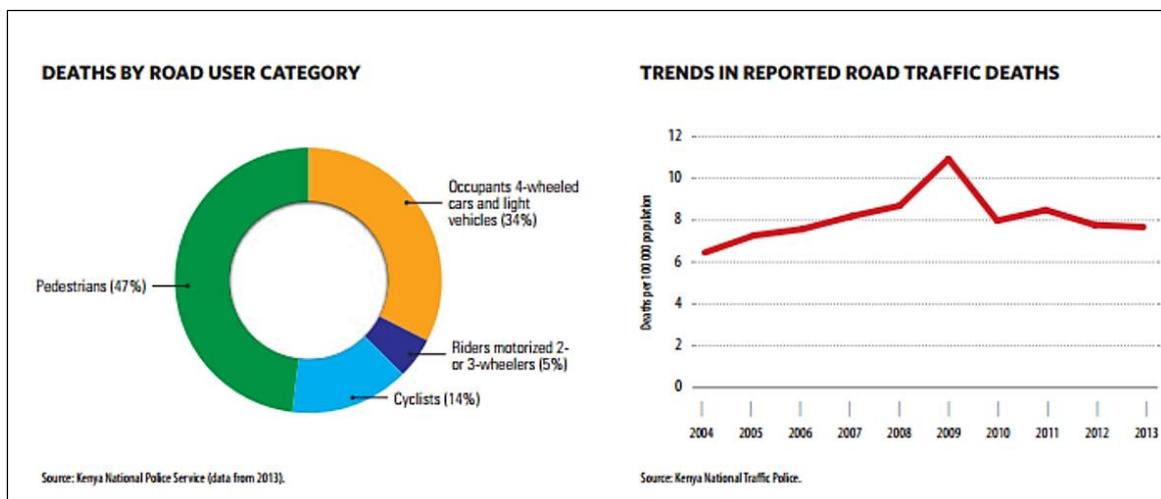


Fig 1 Deaths on Kenyan Roads. Source WHO Global Status Report on Road Safety, 201

¹ According to the National Transport and Safety Authority, Kenya, there were nearly 3,000 recorded deaths due to traffic accidents in 2014, the majority of which were pedestrian fatalities, estimated at 59% of these deaths

Thus cities in developing countries like Kenya in the Global South remain at a significant disadvantage with the lack of efficient and safe transportation being a major crisis leading ultimately to an increase in the number of traffic-related fatalities (Klopp, 2012).²

The plethora of inter-related urban challenges in Nairobi and possibly, in cities in other developing countries calls for a change in existing policies and practices around public transportation and land use. The lack of adequate information, efficient planning frameworks and forecasting to guide decision making has led to the application of inappropriate systems, that are based on those seen to work in the developed countries in the hope of local success. This has not always been the case, and their continued failure has led to the profit-driven private sector dominating public transportation. This comes at a significant disadvantage to the countries' poor, generating social exclusion as the increase in transportation costs leads to decrease in uptake of transportation services by the poor.³

Thus, it is imperative that a government meets its responsibility of ensuring that public transportation meets the needs of all the citizens. Governments in developing countries need to use precise and relevant performance indicators that will give a clear overview of the public transportation systems of the cities and help in monitoring the benefits of implementing efficient transportation policies and projects to improve transport systems. There is therefore a need for decision makers to assess, evaluate and improve public transportation systems in African cities for further planning and mitigation of growing inequalities.

Identifying and resolving transportation problems is a key issue challenging governments in most developing economies like Kenya. Despite increased expenditures on improving urban transport systems, the current transportation problems continue to worsen due to poor execution of transportation planning models and ideas, lack of supportive governance structures and ultimately corruption within the overall transport sector. The main aim of the paper is to describe, discuss and assess the challenges facing public transportation systems in developing countries and propose overarching solutions. It will critically analyse the urban transportation problems in Nairobi, Kenya, as a case in point for transportation problems in cities in developing countries.

The methodology will be based on the observation of a set of performance indicators such as the income per capita, population density, area and car ownership and related benchmarks used in the evaluation of the transport system of a city, against goals such as sustainable development, environmental sustainability, efficiency, accessibility and mobility, which are components of successful transportation policies. Eventually, it will theorise a framework of public transport being used to reduce social exclusion

The literature review aims to identify specific aspects of public transportation, and develop a forecast based on the methodology used to describe, discuss and evaluate the public transport system. It will also include also a review on transport plans and interventions made for the city of Nairobi by the various stakeholders. This will lead to a conclusion on how developing countries can achieve sustainable systems.

² 'Global South' is generally used in reference to the low-and middle-income countries that are largely located in the Southern hemisphere. It is distinguished from the Global North, which refers to the economically advanced high-income countries of the world that are by and large located in the northern hemisphere. For more on terminology of classifying countries of the world, see Harris et al. (2009).

³ Social Exclusion, as a theoretical concept, acknowledges that the causes of the undesired alienation of certain individuals from their society, can lie within the individual, the society or in this case, the State (Duffy, 1995).

This paper targets two main audiences: (a) urban transport sustainability researchers, who are seeking a review of academic literature and state-of-the-art practice; and (b) policy-makers (and politicians) in developing countries, seeking an overview of practice that can be used to inform the development of new urban transport strategies

Transport Issues in Developing Countries

A useful distinction has to be made within the role of public transport and its operations in developing and developed countries. In developed countries, absolute levels of public transport use peaked during or after World War II, particularly bus transport and over the years, the mass transit systems like the bus and light rail transit systems (Preston, 2009). However, current trends reflected a decline in the importance of public transport due to increase in private car ownership.

The reduced market share of public transport is visible in most developed countries' passenger markets though there are still large variations within mobility levels and modal shares as seen below in Table 1. Transport infrastructure that was planned for mass transit models has led to concerted efforts to increase demand for public transportation so as to keep the investments viable and increase sustainable transport. This is through promotion of public transport through increasing frequency of transportation, pulling back on incentives to private motoring like fuel subsidies that favour motorists among others.

	Car (%)	Bus and coach (%)	Rail (%)	Passenger kms per capita
Great Britain	88.1	6.4	5.5	12 430
France	86.7	4.7	8.6	14 283
Germany	82.7	8.9	8.4	10 276
Japan ^a	61.5	7.0	31.5	9 592
USA ^a	96.2	3.5	0.3	23 388

^a 2001 data.

Table 1 Passenger transport shares in selected countries 2002

Source: UK Department for Transport. DfT 200 . Transport Statistics. London: DfT. Tables 10.1 and 10.6

Whereas the problems of public transport in developed countries are associated with insufficient and declining demand, in developing countries problems tend to be associated with growing demand and insufficient supply. Public transport use is often high, rail provision is limited, and conventional bus services are overcrowded, unreliable, and slow. Bus fleets are often characterized by high failure rates, due to inadequate investment in vehicles and maintenance facilities and a shortage of spare parts (which often have to be imported). Paratransit services of various types and various degrees of legality have often emerged to satisfy unmet demand. Examples include *jeepneys* in the Philippines, *dolmus* in Turkey, *kombivans* in South Africa, and *matatus* in Kenya.⁴

These modes are sometimes referred to as informal or unconventional public transport. With respect to long-distance passenger transport, rail plays an important role in countries such as China and India, however, it has a less important role in Latin America and Africa. Cervero and Golub (2007) suggest that in much of Africa and in smaller Asian cities where municipal budgets are stretched thin and where technical capacities for planning, administration and

⁴ These are 14- seater mini-vans that take passengers from the suburbs of the city to the central business district. They have two individuals running them as a driver and a conductor charging fares and run within specific routes.

regulation are insufficient, informal transport is almost by default the only dependable available service. An earlier study by Golub (2005) confirmed that, in many cities, regular public transportation systems do not meet all of the demands of the marketplace and thus small-scale operators, legally or illegally, enter the market to fill these gaps. They tend to complement regular transit services or serve areas or populations not traditionally serviced by regular services, and they can be extremely efficient and responsive to market demands and changes

Transportation in developing countries can be analysed from various disciplinary and theoretical standpoints. Academic work on public transport in developing countries has mainly been dominated by transport economists, whose quantitative measures tend to downplay the spatial nature of the issues. The key contribution by spatial planners however, has been to highlight the spatial aspects of some economic concepts such as public transport demand, supply prices, investment, regulation and ownership.

Some of these spatial aspects are seen in the consequences of unplanned developments in transportation infrastructure resulting from the lack of or a misunderstanding of the planning concepts. The others are developments against spatial plans already under operation. The lack of a planning tradition in many developing countries causes resistance towards the workable planning concepts and reduces the effects of the efforts made in favour of planned development. Whereas planning approaches are also criticised in developed countries, where there are planning traditions and where planned developments are under operation, most of the criticism centres on methodology and instruments (Genton, 1971; Wachs, 1985).

Additionally, most of the criticism focuses on demand predictions, which lie in the centre of the classical planning processes. Talvitie (1997), who approaches the subject from a philosophical direction and bases his ideas on economical and psychoanalytic theories, believes that transportation and societal planning is extensive far beyond the individuals' economical behaviour. He proposes that the utility function should be expanded beyond the limits of economical behaviour. He stresses that the following three questions should be positively answered because of the important role of demand prediction in planning:

1. Can socio-demography, land use and travel demands be forecast as a function of observable variables?
2. Can stable goals and plans be formulated, satisfying both the goals and predictions?
3. Has a tractable process been devised for implementing the plan?

Planning problems are deeper in the developing countries. Without the necessary tradition and the past experiences, the planning efforts cannot yield the best results in a short period of time. First of all, the planning concept should be adopted and assimilated. The question is not "why planning?" This stage is over. The questions of "what kind of plan" and what kind of application" are the ones that need answers

Conceptual Framework Transport Disadvantage and Social Exclusion

The study of transport as a cause of social exclusion (Duffy, 1995) highlights that individual's accessibility, mobility and activity participation are often constrained by a number of shortcomings in land use or transport systems, other than just their ability to pay for motorized mobility (Hine and Mitchell, 2003). Social and transport disadvantages combine to create transport poverty (Lucas, 2012) and this leads to the inaccessibility of essential services, potentially leading to exclusion. In cities of developing countries, urban transport needs of all

social groups are rarely met leading to social exclusion. The cause may be in the lack of understanding of such needs, a lack of awareness of the transport trends or simply, lack of action from key stakeholders in providing a solution for the social groups at a significant disadvantage. Hence, the negative effects of the unsustainable transport systems affect the poor disproportionately (Badami, 2007).

The travel patterns of different groups in society reveal that most trips taken are by individuals with higher income than by those with lower income. This is mostly due to the fact that most

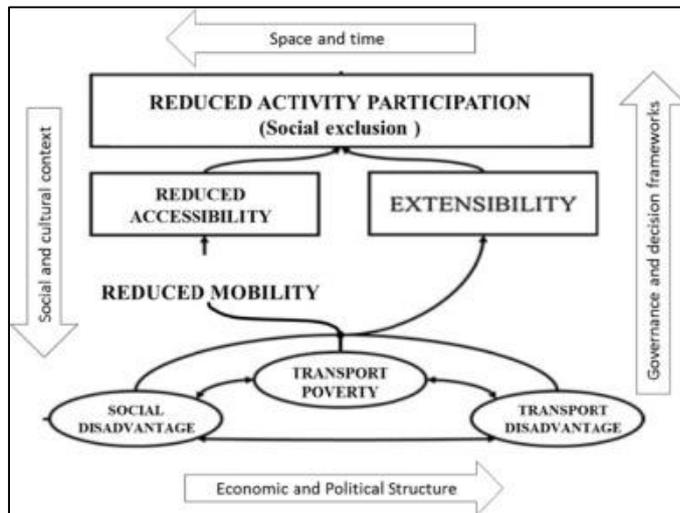


Fig.2: An activity based perspective on the relationship between transport disadvantage and social exclusion: Based on Paez and Farber 2012 for variables in rectangles and overall flows and Lucas 2012 for broad contexts given in arrows and variables in oval variables showing reduced mobility. Source Adeel, 201

individuals in low income groups do not have capacity in money or time to travel more. This further weighs heavily on their capacity to access jobs, education, health and all other services that a city can provide, reducing their participation in society as a whole (Thynell, 2009). Similarly, there's less accessibility for lower income groups due to high/unequitable transport fares, lack of public transport provision to areas of lower income populations, and lack of safe infrastructure including facilities for Non-Motorized Transport (NMT) and pedestrians. Similarly, the patterns of low income women vary from those of the men. Men are able to take pendular trips (one trip in the morning, and one in the evening) while

women are mostly taking trip chains (various short trips chained to one another) and using non-motorised modes of transport (walking, cycling). Overly, one can hence see that social disadvantage, which is described by personal and household socioeconomic status, and transport disadvantage, which is explained by access to land use and public transport resources, interact with each other to create transport poverty. All three elements lead to reduced spatial mobility and thus reduced accessibility and limited activity participation, resulting in generating new or exacerbating the existing level of exclusion. This study builds from the conceptual relationship between transport disadvantage and social exclusion, studied by Paez and Farber (2012) and Lucas (2012). Additionally, limited material welfare and poor infrastructure further intensify exclusion.

Case Study: Nairobi.

Nairobi is the capital city of Kenya, in East Africa, the second fastest growing regional economy in Africa (IMF, 2013). It's the country's commercial hub accounting for about two-thirds of Kenya's \$ 41 billion annual economic output projected to grow by 5.8 percent (GoK, 2013). According to the United Nations, the country's annual urbanization rate stands at 4.3 percent from 2010 to 2015, which is more than double the global average of 2 % and above the African average of 3.6%. It joins the growing number of cities across Africa, Asia and South America facing challenges in transportation amidst rapid urbanization.

Until recently, Nairobi lacked strong innovative strategies for addressing the rising challenges in transportation. Nairobi's ratio of 11 percent of land dedicated to roads is below the 30 percent

yardstick referenced globally. The city faces a challenge of congested roads due to its limited road capacity for a third of its current population, 3.2 million set to balloon to 15 million in 2050 (WEF, 2015)⁵. The more than doubling of the number of vehicles on Nairobi's roads since 2012 to 700,000, hasn't been matched by infrastructure and traffic management. The city isn't ready for as many as the predicted 9 million car users by 2050 (GoK, 2014).

As earlier highlighted, public-transit in Nairobi is mainly through a fleet of 20,000 privately owned minibuses known as '*matatus*' that are notorious for not being roadworthy and disregarding highway laws. This leaves the lower-income residents with a public transportation system that is both inadequate and unsafe. Walking has become the only affordable option for many, leading to 59% of road fatalities being pedestrians (Ongedi *et al*, 2013)⁶. Similarly, the nearing completion of by-passes designed to divert traffic from the city centre is favouring the increase in demand for cars as opposed to promoting NMT.

With rapid urbanisation and economic growth, motorization has been accelerating with many of the middle and upper class residents acquiring cars. Owning a car has moved from being an aspiration to being a need. However, by most indications, drivers and pedestrians are still testing the bounds of road innovations. Traffic jams that cost 50 million shillings (\$578,000) a day in lost productivity, are endemic during both peak and off-peak periods (Kiarie, 2015)⁷. The traffic police, a corruption prone institution according to the 2013 Transparency International survey, benefit financially from the existing situation of transportation.

According to a 2009 report by the Ministry of Transport (MoT), the Kenyan public transport sector faces challenges like poor quality of transport services; inappropriate modal split; an unexploited regional role of the transport system; isn't fully integrated; causes urban environmental pollution; lacks an urban/rural transport policy; has institutional deficiencies, inadequate human resource capacity and lack of a vision for the transport sector. Additionally, challenges like inadequate infrastructure, high costs, poor safety and inefficiency not only hinder the performance of the transport sector but also jeopardize efforts to attract investors into the public transport sector.

On a spatial-economic front, Nairobi's physical street structure has contributed to its congestion. There is an exclusive focus on access to the Central Business District (CBD) for socio-economic activities by most of residents from 5 a.m. to 8 p.m. The streets consist primarily of paved roads emanating radially from the centre of the city to the surrounding suburbs. The few streets cannot serve traffic demand relative to cities of similar size of Nairobi's motorised traffic. There are only a handful of roads linking the radial arterials outside of the CBD as shown in figures 3.0 and 3.1 below.

Major intersections are managed by traffic circles (roundabouts) and there are no signalised intersection outside of the CBD. This leads to concentration of vehicles on limited infrastructure and the lack of street connections that create the redundancy needed to ease traffic congestion (Gonzales *et al*, 2013).

⁵ The World Economic Forum (WEF) Global Risks Perception Survey 2014 calculated a fivefold increase in World Urbanization Prospects data

⁶ The World Bank Road and Highways Safety Report estimates 60% of road fatalities are pedestrian cases in developing countries

⁷ Report of Traffic Decongestion Committee, Nairobi County 2014

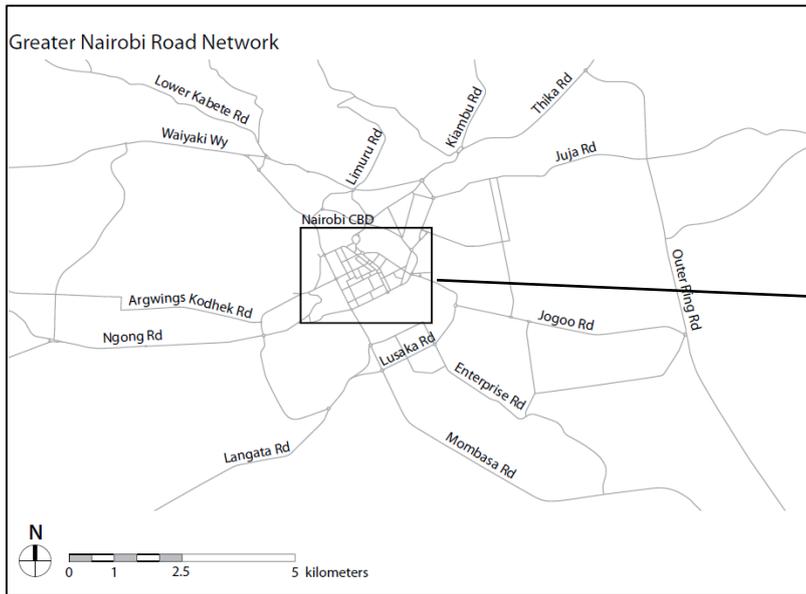


Fig 3.0 The road network in Nairobi is primarily composed of radial routes connecting surrounding regions to the CBD. The lack of circumferential roads forces many peripheral trips through the center.
Source Gonzales et al, 2013

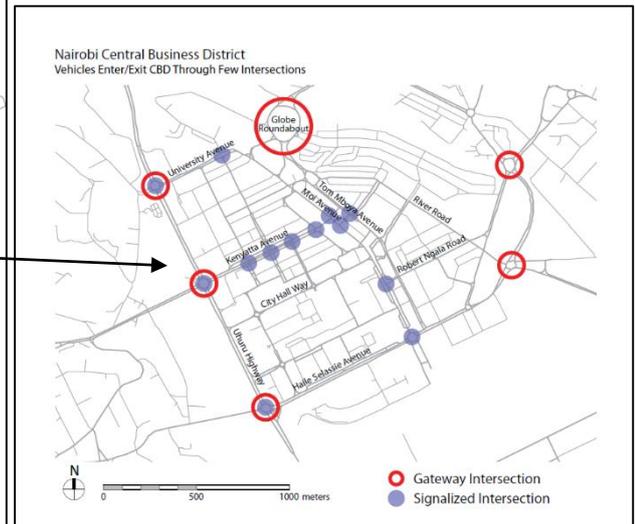


Fig 3.1 The street network of central Nairobi is restricted by intersections through which all traffic entering and exiting the CBD must pass. Only 13 of the intersections in the city center are controlled with traffic signals.
Source Gonzales et al, 2013

Literature Review

Despite inclusion of sustainable transport development in national plans and policies and efforts made so far, the progress on the ground in most developing countries is far from satisfactory. Political commitments and the current level of efforts may not be sufficient for persistent sustainable transport development. A review of relevant documents on current practices, administrative arrangements and institutional issues in selected developing countries reveals that so far institutional issues in sustainable transport development have drawn much less attention. These issues are related to the institutional environment, comprising overall transport sector governance including planning, policy formulation, resource allocation, and coordination among multiple actors involved in transport development. A keen inspection of the various policy documents on Nairobi's transport policy reveals numerous substantive interventions which are not matched by a corresponding drive towards implementation. These observations are outlined below.

A Report on Integrated National Transport Policy: Moving a Working Nation

This national transport strategy defines the policy and covers many fields beyond infrastructure. All person and cargo modes are included and environmental effects, road safety, education and health issues are dealt with in separate chapters (Ministry of Transport, 2009). To call the plan 'integrated' is fully justified. The policy openly addresses problems, emphasizes the role of all modes, proposes modern economic measures like the user-pays-principle and values the economic benefits and potential of NMT.

Due to the diverse conditions in rural and urban areas of Kenya, its use for Nairobi is limited. However, it demands a separate urban transport policy for Nairobi and other Kenyan towns, which should aim at developing an integrated, balanced and environmentally sound urban

transport system (Ministry of Transport, 2009: 29). The national plan could act as a good model for any other region in Kenya as a plan.

Road Sector Investment Programme Strategy 2010 – 2024

This is the newest document on transportation planning in Kenya and it lists precisely the future road investments on a nationwide basis. It justifies the reasons for investments in the road sector, describes ways of financing them (including the 'user pays' principle), proposes an institutional framework and allocates funding to organizations, road types and specific projects (Ministry of Roads, 2010). The traffic growth forecast for 2030 does not include NMT at all as an urban mode (Ministry of Roads 2010: 32). Although regular road projects can be expected to include financial resources for NMT, the share of the budget for separate NMT-facilities of 0.13 % of the total budget till 2024 is rather low (Ministry of Roads 2010: 47).

Nairobi Metro 2030

The policy document, published by the erstwhile Ministry of Nairobi Metropolitan Development, is a general strategy for different types of politics and planning. Transport is addressed on six pages, making general statements about road infrastructure, mass rapid transit, logistics and land use. NMT barely plays a role in this general plan. In the transport section, it simply notes "*...a critical concern is to ensure adequate provision for metropolitan wide non-motorized transport, mobility network.*" While proposing a mass rapid transit program, the statement is made "*...Rail transport increases penetration of the city centre, and is particularly effective in reducing walking distances*" (Ministry of Nairobi Metropolitan Development 2008: 63). Usually, rail transport, compared to other forms of public transportation, is associated with large catchment areas and therefore long walking distances. However, Nairobi's distance of only 30 km lengthwise does not suffice the threshold for commuter rail transport as referenced above

The Study on Master Plan for Urban Transport in the Nairobi Metropolitan Area in the Republic of Kenya

The majority of all current investments in the road infrastructure of Nairobi are summarised on a comprehensive study on transport planning that was funded by the Japan International Co-operation Agency in 2006. Japanese development assistance provided funds for feasibility studies on various infrastructural projects and the study similarly comes as a broad analysis of the present condition of transportation in Nairobi region, covering fields like national and economic development, inventories of the supply side, which involves organizations, financial aspects and traffic surveys and counts. Based on an economic growth rate of 4.6 % and population growth rate of 2.1 %, a macroscopic model is employed for a forecast till 2025. A wide variety of measurements are examined and specific alternatives are demonstrated. It includes the investments on infrastructure of 43.4 Billion Kenyan Shilling (\$ 460, 000, 000) from 2006 till 2025 (JICA, 2006). NMT is mentioned in the report, with the dependency of the urban poor on NMT being pointed out and the large role it plays in terms of modal split emphasized. However, the appraisal of NMT in the plan does not correspond to its importance. It is stated as a component of many measures, but always as among 'other aspects to consider'. Neither are the different needs of cycling and walking populations taken into consideration. Similarly, quality standards besides the width of NMT lanes are not defined. With those general conditions, it is surprising that the modal share of NMT is forecasted to decrease from 49 % to 44 % by 2025. This should not be the case; it should increase.

Overall, the plan can be rated as a supply-oriented approach, which is two to three decades behind modern planning principles like the Sustainable Urban Mobility Plans (Bührmann et al. 2011) in the European Union.

In conclusion, institutional issues concerning sustainable transport development need greater attention. Many barriers to sustainable urban transport development in developing countries are mainly institutional in nature. Deficiencies present in transportation institutions, particularly laws, regulations, rules, and institutional governance outlining how formal and informal transport operations should function, interact with consumers and involve stakeholders are huge barriers to sustainable development in transportation.

Discussion.

The eradication of traffic congestion for the purpose of solely enhancing public transport is not affordable especially in economically dynamic urban areas such as Nairobi. The expansion road infrastructure has been costly having wide ranging economic, social and environmental effects. Hence proposed solutions to transport related problems should be based on a careful selection of a strategic mix of measures that would have been rigorously tested. Contextually, in terms of cost and time, some measures may not be effective, hence if considered, they require joint application. Within Nairobi, it is necessary to consider;

- **What is the best mix of road traffic mitigation measures for Nairobi**
- **Which traffic congestion mitigation measures used reduce traffic congestion and by how much**
- **Are the mitigation measures sustainable and cost effective now and into the future**

Research done by the Kenya Institute for Public Policy Research and Analysis (KIPPRA) in 2011 on mitigating road traffic congestion in the Nairobi metropolitan region highlights the following findings;

- Increasing the road capacity would reduce overall traffic congestion in the interim, however this increase may not be economically feasible.
- Strategies to promote a modal shift from private car to public transport and increasing the vehicle carrying capacity would reduce the overall congestion in the city by 41%
- Building the bypass roads would reduce traffic congestion by 11% while decentralising the CBD would have the least effect in reducing traffic congestion (10.7%)
- However, if all the mitigation measures were implemented in a combined strategy addressing the demand and supply side, overall traffic congestion would be reduced by 76%.

The results also indicate that time-oriented mitigation measures such as flexible working schedules (flexi-time) have the potential to reduce traffic congestion because of the temporal behaviour of peak traffic. Utilising this concept of flexi-time is based on the assumption that in many work situations, rigid arrival and departure times are not necessary and could be adapted into a more flexible system. For instance, a business may be open from 7:00 a.m. to 6:00 p.m., with all employees present from 9:00 a.m. to 3:00 p.m. arriving between 7:00 am and 9:00 a.m. and departing between 3:00 p.m. and 6:00 p.m. (Gachanja, 2011)

However, as is with most policy and plans for sustainable urban transport, the findings lead to the same conclusion of the need to establish the potential role and impact of nine commonly

considered options for provision of sustainable urban transport in rapidly urbanizing cities located in developing countries: (1) increasing road infrastructure; (2) introducing rail-based public transport; (3) regulating road-based public transport; (4) support for non-motorized travel modes; (5) technological solutions; (6) awareness-raising campaigns; (7) pricing mechanisms; (8) imposing vehicle access restrictions; and (9) control of land uses.

These options for action are overlapping and interconnected. They cover both the demand and the supply side of urban transport with a focus on the latter. However, most developing countries lack the necessary GDP and expenditure budgets to facilitate the adequate mixes as recommended by the study, and rely on development loans. Coupled with the widespread corruption within the responsible actors, complete implementation is still an ongoing challenge. Hence the institutional environment for sustainable transport development should be conditioned to ensure consistent coordination of actions for the desired results.

Furthermore, given that transport demand is a derived demand, complementary interventions in related sectors may be required in order to make transport development more inclusive and to realize its full potential to support the development process. These tasks can be rather challenging for various reasons, especially owing to deficiencies in the institutional environment comprising laws, regulations, rules, and governance institutions outlining how organizations function and conduct dealings with other organizations and stakeholders. Considering the importance of the institutional environment to sustainable transport development, this paper also proposes an understanding of institutional issues that may stand as barriers seriously limiting the progress on sustainable transport development by planners.

In the absence of an institutional mechanism, typically transport development decisions, planning and policy formulation, and coordination of actions between responsible agencies are undertaken within a setting which is deficient to address the consistency of policies, plans and programmes and coordination of action by multiple actors. The success of transport planning and policies depend greatly on the institutional environment within which they are prepared and implemented.

There are three main elements that comprise the institutional environment. These include:

- a) Governance institutions that define the distribution of power and authority between levels of governments, organizations, and other actors. They also specify rules of business for organizations including how they conduct dealings with other organizations and actors
- b) The legal institutions that refer to statutes, constitutional provisions, laws, regulations and rules, and high level administrative orders governing the sector
- c) Social and organizational culture within which the organizations and other stakeholders play their role. It also includes personal and group dynamic relationship between the organizations and the private sector, and various pressure groups that influence the decision environment and the allocation of resources.

However, according to Williamson (1994), there is need for inclusion of another type of institution; the informal ones, especially in the case of developing countries. A participatory framework that includes paratransit stakeholders is crucial in the formation of sustainable transport development initiatives.

Recommendations

Transit Oriented Development (TOD) can be an effective strategy for guiding cities in developing countries towards sustainable urban transport development. However, TOD is rarely adopted in urban planning and transportation planning practices in cities of developing countries effectively as most cities were planned with central zones with limited capacity for decentralisation (Qulum, 2014). Effective TOD requires an appropriate type of development control along the transit corridors and other complementary measures, which are generally administered by a land use control authority. TOD and development control together with measures for land value capture along the transit corridor can support the development of an effective high-capacity transit system and also provide for its funding, at least in part.

It is debatable whether rail-based public transport should be emphasized in developing countries' cities. Mobility patterns are influenced by both population size and population density, especially the latter. Urban sprawl has a significant effect on travel distances and hinders public transport supply. In urban areas with dispersed populations, the provision of either rail-based over road-based public transport might not be economically viable (Haghenas H, 2012). In particular, rail should have a definite advantage over road-based systems to justify implementation in cities with small and/or dispersed suburbs, since new rail systems are very expensive to construct and operate. A full cost-benefit analysis of both options should guide decision-making. Investments in new LRT systems in medium-sized developing cities may have limited economic and practical value. Due their high costs, developing countries often can only construct such systems over a few kilometers in a few limited corridors, which do not meet the broader transport needs of the population. Nevertheless, the public sector may end up with a long-term debt that can affect investment in more pressing policy areas (Wright, 2007).

Informal paratransit services, while providing benefits including on-demand mobility for the transit-dependent, jobs for low-skilled workers, and service coverage in areas devoid of formal transit supply, carry major costs, such as increased traffic congestion, air and noise pollution, traffic accidents, and even violence among route cartels (Cervero, 2007). In addition to regulating paratransit systems through measures in between the extremes of acceptance and outright prohibition, several options are available to medium-size developing cities that wish to improve the quality of formal bus services.

A more effective intervention in favor of public transport is the construction of busways that are physically segregated from other traffic by means of barriers, cones, or other well defined physical features. Located on the curb or in the median of a roadway, they are permanently and exclusively for the use of public transport vehicles-although emergency vehicles are often allowed to use the lane (Wright, 2007).

Bus Rapid Transit (BRT) is a recently developed bus-based mass transit which emulates the performance and amenities of rail transit. If fully implemented, it is often more appropriate for large cities as it can transport up to 45,000 passengers per hour per direction, surpassing the capacity of many rail systems. To date, full BRT has been developed only in a few large cities (including Bogotá, Curitiba, and Guangzhou) with very high levels of political commitment and charismatic political leadership in support of quality public transport (Wright, 2007).

More standard forms of BRT include segregated busways over the majority of the length of the system's trunk/city center corridors and at least two of the full BRT characteristics. These serve

up to around 13,000 passengers per hour per direction, and may be more suitable for cities in developing countries (Wright, 2007).

In 2014, the Ministry of Transport and Infrastructure in Nairobi Kenya, together with their consultants from Germany, Gauff Consultants, completed the MRTS (Mass Rapid Transit System) Harmonisation Study of Nairobi. The aim of the study was “to bring together all previous studies and plans and to develop an integrated public transportation network for Nairobi and the Nairobi Metropolitan Region (NMR). The MRTS Harmonisation Study recommended five MRTS lines with a focus on BRT (ITDP, 2015).

In May 2015, INGEROP, a French engineering firm, as leader of a consortium, was awarded by the European Union on behalf of the Government of Kenya, the feasibility study and detailed design of the Bus Rapid Transit system in terms of technical, economic, environmental, social, legal, institutional and operational issues on two corridors:

- Line 3 Chui West: a 10 km long key west-east arterial road located in the western part of Nairobi.
- Line 4 Kifaru East: a 7 km long road, serving the Central Business District and East Nairobi.

INGEROP, has already been involved in Kenya in water and waste projects in Nairobi, and is now embarking on the major transportation project, which will highly contribute to the development of the city's public transportation by 2030. (INGEROP, 2015).

This step has been widely received by residents as a potential solution to Nairobi's transport challenges but until its completion, the residents remain captive to the endemic congestion and unsustainable transportation situation prevailing currently.

Conclusion

When considering investments in public transportation within cities in developing countries, a key priority should be to improve existing transport systems. BRT is more affordable and cost-effective in these cities than many other types of public transportation systems, including LRT. The high capital and operation cost of metros makes them less economically viable in medium-sized developing cities than in megacities. Promoting more sustainable patterns of urban development is also crucial for reducing the environmental impacts of cities but the appropriateness of different forms of development is context-dependent. Uncontrolled low-density sprawl is, however, rarely appropriate. Technological improvements can help to address urban environmental problems but they cannot address all transport-related problems. Moreover, the benefits of technological advances may be offset by rapid transport growth in developing cities. However, inexpensive technologies such as new mobility services via cell phones (*i.e.*, on-demand transport e.g. *Uber*⁸, or *Digital Matatus*, a paratransit route map) already exist in developing countries and could be utilized more extensively to promote new innovative forms of urban transport services.

There is increasing recognition that combinations (or packages) of measures are necessary (Gilbert, 2012). Certain combinations of policies can work together and give rise to synergies,

⁸ An American international mobile ride request company which allows consumers with smartphones to submit a trip request which is then routed to nearby Uber drivers who use their own cars as taxis a form of public transport.

⁹ The map is being used to guide the UNEP sponsored BRT project: <http://www.digitalmatatus.com/about.html>

leading to impacts greater than the sum of their individual parts. The identification of policy packages is a crucial issue for promoting more sustainable urban transport: packages should maximize potential synergies. It is crucial to consider local factors such as costs, feasibility, and barriers. Finally, caution is advised both in terms of the appropriateness and effectiveness of policy solutions being transferred to cities in developing countries from larger cities and/or from more developed countries.

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ⁱ In May 2016, the Kenyan Transport Cabinet Secretary, James Macharia, said that the implementation of the proposed bus transport system has proved difficult due to lack of provisions in the existing road infrastructure to cater for special lanes to be used by the new buses.

<http://www.theeastafrican.co.ke/business/Kenya-retreats-on-rapid-bus-transit-plan/-/2560/3221604/-/10gm01i/-/index.html>

The Desire of Settling in Cities of the New Generation of Chinese Migrant Workers

(The Desire and Its Influencing factors of Settling in Cities of the New Generation of Chinese
Migrant Workers)

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Abstract

With the rapid progress of urbanization in China, new generation of migrant workers have played the main role in the migration-dominated urban development in recent years. Some of them settled in cities while others keep flowing or returning to rural areas. We want cities of inclusivity, diversity and enough opportunity for future residents, however the cities we have now still have barriers like unaffordable housing and discrimination to newcomers from rural areas, which influence the decision about whether to stay in their dream cities. From “2014 Comprehensive Survey of Living Conditions of Chinese Rural Residents, Renmin University of China”, we find that the desire of new generation of migrant workers to live permanently in cities is not that strong. Why does this happen and what factors influence their settling desire? Exploring some factors and their effect on this desire of new generation of migrant workers, this study may give a possible answer to that question and put up with constructive suggestions. Firstly, for new generation of migrant workers, the desire of settling in cities is not strong enough but better than that of the old generation. Secondly, relying on binary logistic model, this study shows that education level, monthly income, housing, social communication, family economic conditions, outflow area, flow span and family flowing significantly influence their desire to settle in cities. And this study concludes them into “personal factors”, “factors of inflow area”, “factors of outflow area” and “factors of flowing”. Eventually, this study suggests that government should pay more attention to the settling desire of new generation of migrant workers in cities. Policies should be made to promote their settling desire on the basis of respecting their own rational choices.

Key words: new generation of migrant workers desire of settling in cities effecting factors
binary logistic model

1 background

In recent years, urban-rural population flow has rose great concern in China. In microcosm, China’s population urbanization is the resultant of rural-urban migrating together with urban-rural returning of migrant workers who have already made up of the most important part of floating population in China. According to “Bulletin of human resources and social security development 2011 of China”, the number of migrant workers is 15863, among whom new generation of migrant workers become the main force.

What are “new generation of migrant workers”? In this study, they are migrant workers who were born in and after 1980, and they work in urban areas but still hold rural household registration. Compared with the old generation of migrant workers, the new generation grow up against the background that China’s economic and society has entered an accelerate period when links between rural and urban areas are more closely, nationwide compulsory education is established and rural couture and lifestyle modernizes gradually. Different from the old generation, the new generation of migrant workers lack interest in agricultural producing and are more willing to live a city life. Having higher education level than the old generation, they are more rational and more sense of rights, and they can adapt to new things quicker. Nevertheless, they also encountered great difficulties in urbanization, which raised widespread concern. More importantly, Chinese central government decided to make effort on solving those problems in its NO.1Document of 2010.

As is shown in the previous studies, Non-resident immigrants and non-lifetime migration was the main characteristic of China’s population urbanization (Ren Yuan, 2012). Some of new

generation of migrant workers settled gradually in destination city, some returned to rural areas eventually (as the data from this study shows, 16.7% of the selected samples have already returned rural home), and others continued to flow in urban areas. Disappointedly, there still exist problems remaining to be solved for new generation of migrant workers to live and work in destination city, especially living problems, for their living decisions are the important basis of policies pertaining to population and public housing. From city government's point of view, studying the settling desire of new generation of migrant workers and knowing the living expectations of those possible residents will be of great benefit to managing and serving them.

2 literature Review

2.1 Theories of Migration

Before WW II ,there are classic migration theories like E-G-Ravenstein's migration theory. From WW II to 1980s, there are theories like E-S Lee's migration theory, Lewis(1954)-Fei and Ranis(1968) theory, Todaro model and Sjaastad(1962) and Becker(1975)'s theory of human capital. After 1980s, theories like New Economics of Labor Migration and Cumulative Causation gave people new perspectives. In all, After WW II , theories of migration developed gradually against the complicated background that human society was experiencing huge changes. Their concerns changed from individual to family, from economic to culture and from microcosm to macroscopy, showing a tendency of diversification and specification. Take China's realistic into consideration, all theories above can partly explain rural-urban population flow in China, especially, *New Economics of Labor Migration* lead people to rethink the flowing of new generation of migrant workers.

2.2 Chinese Literature Review

Researches about factors influencing the settling desire of new generation of migrant workers have never been diminished during the past ten years. Even though the settling desire of migrant workers are not that strong, just as Huang Qian's study shows that most of them do not head to living permanently in their destination city.

This study concludes previous studies from aspects of "research results" and "research methods". In terms of research results, this study summarizes how previous studies classified the factors and how those factors influenced settling desire. In terms of research methods, this study summarizes specific approaches and analysis tools. Summary is as follows.

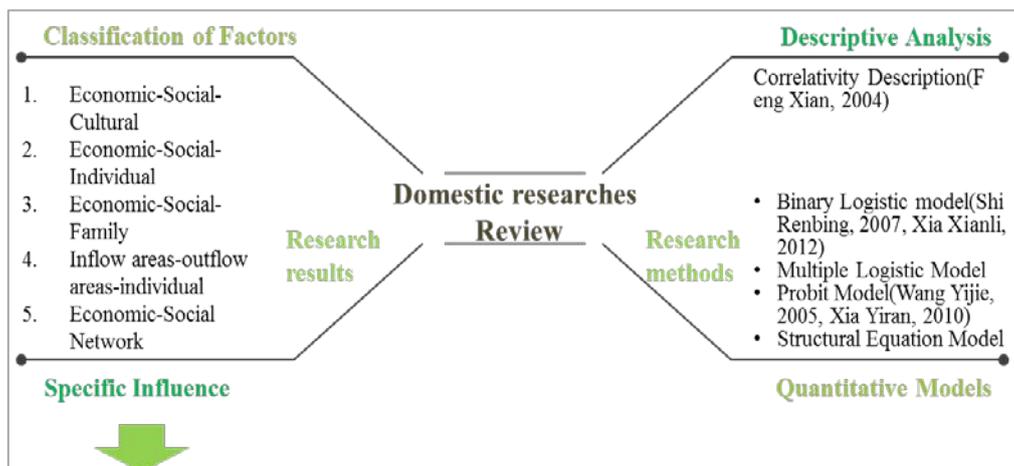


Figure 1 Domestic researches review①

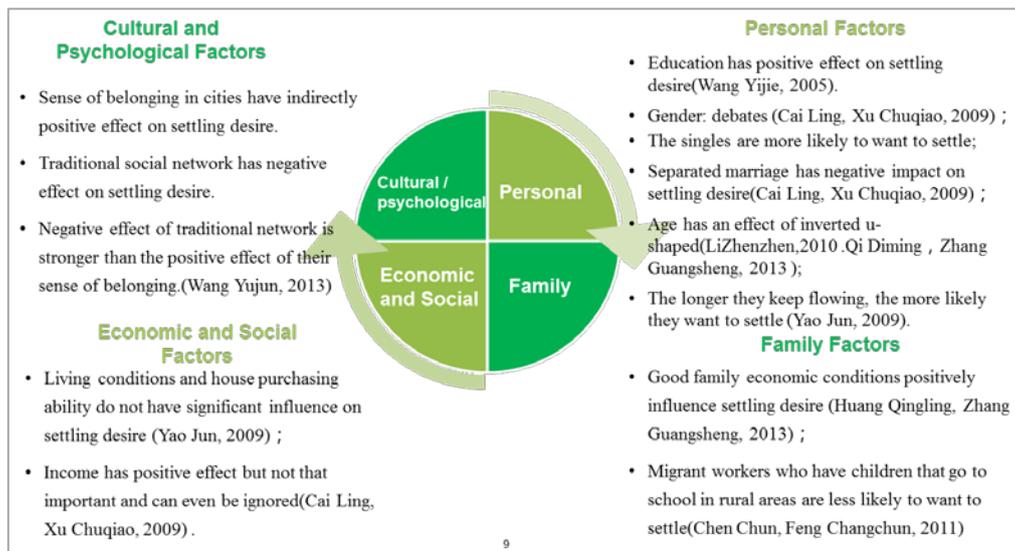


Figure 2 Domestic researches review

In conclusion, domestic researches mainly focus on the whole of migrant workers and do not focus on the new generation. Besides, they rarely consider how factors of flowing like “flowing span” influence their settling desire. Therefore, this study will try to describe the current situation of the settling desire of new generation of migrant workers as well as researching the factors influencing it, for the purpose of giving suggestions to Chinese government to make policies aiming at population urbanization.

3 Methodology and Data

3.1 Methodology

For gathering data, this study use questionnaires and interviews, and for analyzing data, this study choose binary logistic model. On the basis of describing the living situations of new generation of Chinese migrant workers, this study shows its internal differences and the factors which influence their settling desire.

3.2 Data and Description

Data came from “2014 Comprehensive Survey of Living Conditions of Chinese Rural Residents, Renmin University of China”, concentrating on living and social life, rural economics, income and consumption, labor and employment, housing and public security, and social adaptation of migrant workers. The 9778 samples came from 474 counties, in 244 cities, covering 31 provinces all over China, from which we filtrated 2470 target samples—new generation of Chinese migrant workers. The author luckily took part in the whole process of the survey.

As the data shows, 29% of new generation of migrant workers are females, 71% are males. The oldest is 34 years old and the youngest is only 16, with their average age 25.8 years old. Their education level is low to some degree, with middle school and high school (38.9%, 30.5%) being the main body, and there are 5.1% of them failed to go further than primary school. College graduates are of 10.6%, and postgraduates are even rare.

Chart 1 Sample Description

	variable value	Sample size	percentage
Gender	female	716	29.0

Education level	male	1754	71.0
	Primary school and below	125	5.1
	Middle school	962	38.9
	High school and vocational high school	754	30.5
	Junior college	352	14.3
	undergraduate	262	10.6
	postgraduate	15	0.6

(Data source: 2014 Comprehensive Survey of Living Conditions of Chinese Rural Residents, Renmin University of China. The same below.)

This study concludes the migrating characteristic of new generation of migrant workers, including their “working time” (work as a migrant worker), “the level of destination”, “their flowing span”, “family migration” and their “destination region”. As is shown in the chart below, their average working time reaches 67.8 months (equal to 5.65 years). During their migrant experience, they averagely change two (1.89) destinations, two (1.63) jobs, and three (2.8) employers. Most of them do not migrate with their families.

Chart 2 Flowing Characteristics

Migrating characteristics	Sample size	Percentage (%)
Working time		
1-3 years (short term)	955	38.7
3-5 years (middle term)	510	20.7
5years and more (long term)	1000	40.6
Level of destination		
Small town	30	1.2
County-level city	247	10.0
Prefecture-level city	1141	46.2
Vice-provincial city	710	28.7
Municipality	342	13.8
Destination region		
Eastern China	1509	62.7
Middle China	511	21.2
Western China	385	16.0
Flowing span		
Within county level cities	101	4.2
between county level cities but within the prefecture-level city	395	16.4
Between prefecture-level cities but within the province	733	30.4
Between provinces	1181	49.0
Family migration(entire-family flowing)		
yes	251	10.2
no	2219	89.8

4 The Desire of Settling in Cities of the New generation of Chinese Migrant workers and its influencing factors

4.1 Current Situation

There is a long way to improve the living conditions of new generation of migrant workers. By describing their living conditions from five aspects: housing acquisition and expenditure,

housing type, community type, living area, living environment and equipment, this study finds that:

- (1) In terms of housing acquisition, it shows that their housing mainly comes from renting and employers. As the data shows below, 40.2% of them rent houses and 37.7% get their house from employers free of charge or at a very low rent. As for their living costs, 50.3% of them spend less than 200RMB on housing every month, 34.8% spend nothing.
- (2) In terms of housing type, living in buildings is their favorite.
- (3) In terms of community type, they centralize in old communities and urban villages^② as well as urban-rural fringe area.
- (4) In terms of living space, it is very small. As the data shows, their average living area is 21.5 square meters, and among them, 60.9% have a space less than 20 square meters and 33.0% less than 10 square meters. As for living pattern, they prefer joint tenancy of 2-4 people (63.9%).
- (5) In terms of living environment and equipment, both are dissatisfactory. Their living communities and houses are lack of management and maintenance. Only half of them have independent kitchen, shower facilities and independent water supply, not to mention computer, air-conditioners and microwaves. Besides, the percentage of houses which enjoy good sunlight, wind and are away from noise does not reach 50%.

Would new generation of migrant workers like to live permanently in their destination city? This study shows that their settling desire is not that strong but still increased compared with the old generation, making it more important to study their desire of settling in cities.

Further analysis tells us that there are internal differences of this desire among new generation of migrant workers. First, women tend to have stronger desire for settling in cities than men (53.9% of women want to settle and only 43.1% of men have the same thought). Second, along with the improving of education level, their settling desire is rising (22.8% of those who graduated from primary school want to settle in cities while 66.7% of those who are postgraduates have the same thoughts). More importantly, there are many factors that are influencing the settling desire of new generation of migrant workers, which the study explored as follows.

4.2 Hypothesis of factors

On the basis of literature review and relevant studies, this study put up with some factors and put them into chi-square test. According to the test results, factors which are not significantly relevant to the dependent variable (settling desire of new generation of migrant workers) have been removed. Here are factors passing the test, bringing such hypothesis just as the chart 3 shows, about what factors significantly influence the settling desire of new generation of migrant workers. Factors are concluded as follows.

(1) personal factors

Personal factors contain gender, age, marriage, education level and monthly income. The hypothesis of personal factors is that women are more likely to settle in cities than men, the elder are more likely to settle in cities than the younger, those who have higher monthly income are more likely to settle and those who have higher education level are more likely to settle in cities.

(2) factors of inflow area

Factors of inflow area contain occupation, housing and social communication. Occupation factors mean occupation types, labor contract. Housing factors mean

housing type. And social communication factors mean frequency and depth of communication with local people in destination city, perception of discrimination and the number of their local resident friends. The hypothesis is that the more stable their occupation and living conditions are, and the more frequently and deeper they communicate with local residents, the stronger the settling desire is.

(3) factors of outflow area

Factors of outflow area contain home region, family economic condition. The hypothesis is that good economic conditions of home region and family can enhance settling desire.

(4) factors of flowing^③

Factors of flowing contain flowing span and family flowing. The hypothesis is that the shorter flowing span they have, the stronger their settling desire is. Migrating family are more likely to settle in cities.

Chart3 Hypothesis of the factors that significantly influence settling desire of new generation of migrant workers

Factors		Variables	Variable Value
Personal Factors		Gender	0=Female, 1=Male
		Education Level	1=Primary school and below 2=Middle school 3=High school and vocational high school 4=Junior college 5=Undergraduate 6=Postgraduate
		Monthly Income (Grouping)	1=Less than 2000RMB(reference group);2=2000-4000RMB; 3=4000-6000RMB;4=more than 6000RMB
Factors of Inflow Area	Occupation	Occupation Type	1=Intelligent;2=Skill-oriented;3=Physical strength-oriented(reference group) ^④
	Housing	Labor Contract	0=No; 1=Yes
		Housing Type	1=Renting, 2=Employer Offer, 3=Purchase, 4=Self-building, 5=Lodge(reference group)
		Frequency of Communication With Local Residents	1=Rarely(reference group);2=Occasionally;3=Often
	Social Community	Degree of Communication With Local Residents	1=General but not business(reference group);2=Business;3=Profound interaction
	Perception of Discrimination	1=Often, 2=Occasionally, 3=Rarely, 4=Never, 5=Never think about that	
Factors of Outflow Area		Number of Local Resident Friends	
		Home Region	1=Eastern China;2=Middle;3=Western

Factors of Flowing	Family Economic Condition	n China(reference group) 1=Not good;2=Just so so;3=Good
	Flowing Span	1=Within county level city;2=Within the prefecture-level city but between county level cities;3=Within the province and between prefecture-level cities ;4=Between provinces
	Family Flowing	0=No;1=Yes

4.3 Binary Logistic Analysis

How those factors influence the settling desire of new generation of migrant workers? This study define “whether one want to live permanently in destination city(yes or no)” as the dependent variable, and those “Personal factors” “Factors of inflow area” “Factors of outflow area” “Factors of flowing” as the independent variables. The results of binary logistic regression are as follows.

Chart4 Binary Logistic Regression of Settling Desire of New Generation of Migrant Workers

Factors	Variable Value	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)	Model 4 Exp(B)	
Personal Factors	Gender	0.636***	0.721 **	0.712**		
	Education Level	1.406***	1.177**	1.183**		
	Monthly Income	2000-4000RMB	1.161	1.094	1.144	
		4000-6000RMB	1.527**	1.334*	1.462*	
		More than 6000RMB	2.044***	1.299	1.630*	
Factors of Inflow Area	Occupation Type					
	Intelligent		1.101	1.096		
	Skill-oriented		0.846	0.823		
	Labor Contract		1.186**	1.231***		
	Housing Type					
	Renting		2.260***	2.310***		
	Employer Offer		1.264	1.337		
	Purchasing		8.800***	6.081***		
	Self-building		3.057*	1.925		
	Frequency of Communication		1.410 **	1.379**		
With Local Residents						
Degree of Communication With		2.239***	2.169***			

	Local Residents			
	Perception of Discrimination	0.775*	0.855	
	Number of Local Resident Friends	1.008	1.005	
Factors of Outflow Area	Home Region			
	Eastern China	1.565**	1.423*	
	middle	1.240	1.341*	
	Family Economic Condition	1.009	0.990	
Factors of Flowing	Family flowing		1.762**	2.801***
	Flowing span			
	Within the prefecture-level city but between county level cities		0.364**	0.406**
	Within the province and between prefecture-level cities		0.328***	0.317***
	Between provinces		0.208***	0.180***
	constant	0.369***	0.154***	0.514
			0.874***	

Note:*P<0.1, **P<0.01, ***P<0.001. Hosmer-Lemeshow shows the fitting degree of the regression models, with the significant level of 0.05 which means when Hosmer-Lemeshow's chi-square test has a significant level lower than 0.05, models pass the test with a reliable degree. The significant levels of those four models are 0.115, 0.076, 0.496 and 0.074, which means that they all pass the test thus proving the results convincing.

4.4 Results and Discussion

- (1) Model 1 only enters personal factors. As the results show that, gender, education level and monthly income all significantly influence settling desire. Firstly, Compared with women migrant workers, men migrant workers are less likely to settle in their destination city with the possibility declining by 36.4%. Secondly along with the growth of education level, the settling desire is growing too. Thirdly, compared those who earn “less than 2000RMB” monthly, those who earn “2000-4000RMB” has 52.7%’s possibility higher to settle. Results above prove the first hypothesis tenable.
- (2) Model 2 enters “personal factors” “factors of inflow area” and “factors of outflow area”. As is shown by the results, joint effect of those three factors is also significant. Firstly, in terms of personal factors’ effect, monthly income has no significant effect on the dependent variable under our pre-set confidence coefficient because of the entering of “factors of inflow area” and “factors of outflow area”. Secondly, in terms of “occupation” in “factors of inflow area”, despite that “occupation type” does not have significant effect on the dependent variable, those who have signed labor contract with employers are more likely to settle. In terms of housing, those who have purchased a house in their destination city are much more likely to settle than those who rent, lodge, self-built, or live in the houses offered by employers^⑤. In terms of social communication, possibility of settling desire of those who frequently communicate with local residents is 41% higher than that of those who rarely do. What is more, profound interaction dose promote settling desire. Besides, those who feel the discrimination in destination city has a 22.5%’s possibility of settling desire less than those who do not feel it. Thirdly, in terms of “factors of outflow area”, there is

no enough evidence showing that it has significant effect on dependent variable. Therefore, the second hypothesis is partly tenable.

- (3) Model 3 enters “factors of flowing” on the basis of Model 2. As the results show, among the four independent variables, “factors of inflow area” and “factors of flowing” have the strongest effect on dependent variable. Firstly, new generation of migrant workers who migrate with entire family are more likely to settle in destination city, and the possibility increased 76.2%. Secondly, compared to those migrating “within county-level city”, those migrating “within the prefecture-level city but between county level cities”, “within the province and between prefecture-level cities” and “Between provinces” have less willingness to settle, with the possibility declining by 63.6%, 67.2% and 79.2%. So, the results, to a certain degree, give evidence to the third and fourth hypothesis.
- (4) Model 4 only enters “factors of flowing”. As the chart shows, “factors of flowing” has a strong effect on the dependent variable, giving rise to further policy meaning and reality inspiration. When compared, model 2 and model 3 show that all the four independent variables have significant effect on the dependent variable but “factors of flowing” reduces the effect of “factors of outflow area” to some degree. Furthermore, according to the last three models, this study concludes that “flowing span” and “family flowing” of new generation of migrant workers should be paid close attention to in further studies.

To summarize, firstly, the effect of “personal factors” mainly embodies on the positive influence of “education level” and “monthly income”. Women are more likely to settle in destination city than men. Secondly, the effect of “factors of inflow area” is mainly reflected by “housing type” and “social communication”, because the more stably one lives in destination city, the more likely he want to settle. Meanwhile, the more profound his interaction with local residents, the more likely he desire to settle there. Thirdly, the effect of “factors of outflow area” is mainly showed by “home region” and “family economic condition” and those who come from a more developed region or a richer family seem more likely to settle in destination city. Finally, in terms of “factors of flowing”, those who have a shorter flowing span and migrate with their entire family are more likely to settle in destination city.

5 Policy Suggestions

Based on the previous results, this study confidently draws some conclusions about new generation of migrant workers who desire to settle in cities and summarizes their characteristics:

- Mainly female workers.
- Purchasing economic goals in destination city.
- Tending to have stable housing.
- Localized social communication.
- Short or medium-short flowing span.
- Migrating with their entire family mostly.

Compared to previous studies, this study finds that economic factors are still in an important status, which is different from one of the previous conclusions. Adding that social communication, flowing span and family flowing all significantly influence this settling desire, this study thinks that, different from that of the old generation of migrant workers, factors influencing the settling desire in destination city of new generation are more centralized on attraction of cities’ economic ability, social communication in cities as well

as the direction and pattern of population urbanization. Hence, policies makers should put more emphasis on policies aiming at bettering their hukou^⑥, income, public service and social communication etcetera.

When it comes to suggestions for policy, from this study's perspective, cities should pay close attention to the settling desire of new generation of migrant workers and how it may change, thus guiding them to settle in cities on the premise of respecting their own rational choices. Policy suggestions are as follows.

(1) Improve education in rural areas and guarantee education equality.

Firstly, policies should be made to improve education in rural areas, which will increase human capital of migrant workers originally. Secondly, education equality should be guaranteed, especially that children of new generation of migrant workers should have equal rights and access to education in destination city. For instance, in the year 2012, Chinese central government and local government introduced relevant nationwide policies to make it possible for students to take the college entrance examination outside their hometowns.

(2) Give preference to migrant workers in renting and ameliorating their living conditions.

Policies should take migrant workers' living expectation, consumption ability and the cities' reality into consideration and concentrate on the following points. Firstly, improve the quality and stability of their housing. Under the encouragement and supervising of government, employers should build clean and healthy dormitories for migrant workers. Meanwhile, government should strengthen planning, building and management of communities where migrant workers live mostly, not forgetting to guarantee safety, convenience and basic public service. What's more, migrant workers should be included in current Chinese Public Housing Fund System, which will offer them opportunities to get subsidies to buy or rent houses, or have access to public-rental housing in cities.

(3) Promote social communication between new generation of migrant workers and local residents.

Social capital in destination city will benefit new migrants and help them adapt more quickly to new life (Zhou&Baskston, 1994). Social communication is of great importance for social inclusion of new generation of migrant workers, which will not only encourage them to settle but also benefit further development. Unfortunately, policies aiming at promoting social communication have not been cared in recent years. Here are some advices. Firstly, communities should give birth to specialized organizations serving migrant workers who live there thus encouraging their sense of participation. Secondly, multi-agent activities should be carried out to enhance the understanding of both sides, especially to help migrant workers get used to urban customs and cultivate their sense of responsibility for common good.

(4) Encourage family flowing. As is known to all, family flowing relies on the "push" of rural areas together with the "pull" of urban areas, which means rural areas should let go and urban areas should open arms. Firstly, given the fact that in rural China, ownership of land is held by village collective, system should be established and laws should be improved to give rights to farmers who are willing to abandon their rights of using and owning their land for the purpose of gaining other properties, which will be the capital for their family settle in cities. Secondly, measures should be taken to ensure that family can stay together in cities. For example, employers can offer "couple studio" or "family studio" for their migrant worker employees. Another example is that government can build standardized public housing aiming at migrant workers, and those

housing is at a lower rent because of smaller size, thus reducing their living costs in cities, which consequentially help their family to live.

(5) Drive the reform of the current household registration and relevant institution systems in China.

No matter which level the city stays, it should make it easier for new generation of migrant workers to settle in it. Even though Chinese government has come up with policies to start the reform of current household registration system, problems arose from the current system are still far from solved. It is the relevant public service bounded to the household registration system that indeed impedes the justice and stability of urban-rural development. So, it is far from enough to reform only one system. To promote settlement, policies should be made to offer and adjust such public service like employment, housing, education, social security and so on. That is to say, relevant supporting systems should also be formed and reformed.

6 Weakness in Study

Firstly, data's limitation due to specific questionnaires and the way of survey may have negative effect on the results. Secondly, quantitative methods have their original shortages such as "data-centrism" and "the post hoc fallacy". There should be more qualitative data to support. Finally, there exist limitations of the research contents. For one, it is know desire cannot represent actions. In fact, settling desire not necessarily bring settling actions because settlement is a comprehensive decision requiring many changeable factors. For another, this study is based on the data collected at a certain moment, which cannot fulfill the need of deeper understanding of this question. Follow-up survey will benefit.

Endnotes

- ① "Social" means social communication and psychological factors like sense of belonging.
"Individual" means personal factors like gender, age and monthly income.
"Family" means the situation of marriage and children.
- ② City village: villages which remain rural form and surrounded by urban construction land after land requisition.
- ③ Flowing means migrating from rural areas to urban areas or migrating between urban areas.
- ④ Reclassified according to National Occupational Classification-NOC of China. Intelligent contains jobs in government, organizations, companies, professionals, businesses and so on. Skill-oriented contains jobs in agriculture, architecture, transportation. Physical strength-oriented contains housekeeping, clean-keeping, security and so forth.
- ⑤ Note: the reason why "Purchasing" has a very high odds ratio is possibly the unstable structure of data. So this study consider that compared with other ways to get accommodation, "purchasing" may lead to a high level of settling desire but can not explain the Mathematical meaning of specific result data.
- ⑥ Chinese hukou means household registration.

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A framework for sustainable spatial governance in rural areas under traditional authority

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Abstract

The 'homelands' created under colonial and subsequently apartheid planning, are still areas under traditional authority and are home to some one fifth of the population. Although such areas currently fall within municipal boundaries demarcated through post-1994 local government reforms, spatial governance here is generally administered by traditional authorities and not directly by the municipality. This has led to dual land management systems, friction between traditional and municipal authorities and inefficient service provision. The friction arises not only from contested authority, but also different perspectives around land and spatial governance.

The recently enacted Spatial Planning and Land Use Management Act, 2013, requires the municipality to take responsibility for all spatial planning and land use management in the municipal area. However, there are challenges associated with this, including the reluctance of traditional leaders to give up their authority over the allocation – and by implication the use – of land. Among the tensions to be navigated are the role of traditional leaders in a democratic governance system and the recognition of indigenous cultural rights.

This paper sets out principles for an inclusive land use management system that appreciates indigenous rights, the constitutional recognition of both traditional authorities and the democratic municipal governance system, and pragmatic planning needs. Key elements of the proposed framework are recognition of culture, participatory governance, with clear lines of communication and delineation of authority and commitment to co-management. The framework is based on universal principles and drawn from numerous case studies within four provinces, hence it has the potential to be applied in principle throughout South Africa.

ey ords: Spatial planning, spatial justice, spatial governance, land-use management, rural region, traditional authority, participatory governance.

Introduction

The 'homelands' created under colonial and subsequently apartheid planning, are still areas under traditional authority and are home to some one fifth of the population. Although such areas currently fall within municipal boundaries demarcated through post-1994 local government reforms, land allocation and land use management here is generally administered by traditional authorities and not directly by the municipality. This has led to dual land management systems, friction between traditional and municipal authorities and inefficient service provision. The friction arises from contested authority, informed by different perspectives around land and spatial governance.

Planning affects space with land lying at the heart of it. From a western, materialistic perspective, land is a commodity, an asset but from an African perspective land is multi-dimensional, layered in cultural and social rights. It is a space that encompasses the past, present and future (Du Plessis, 2011). Thus ownership, tenure and land use are perceived differently by different cultures. These cultural lenses influence planning as their unconscious assumption of a specific cultural perspective affects planners' approach to land and planning.

In South Africa planners currently confront this challenge of multiple cultural perspectives. Modern land management is still shaped by western modes of thinking based on a largely technical rationality (Grunau and Schönwandt, 2010, Watson, 2009) that is future oriented (Connell, 2009) and embraces "the ideal of progress" (Rydin, 2011: 92). This western perspective differs from the traditional African view time and space. Thus, any spatial governance system for rural areas will require a revised approach to planning that at very least acknowledges, if not embraces, traditional culture and worldviews.

Traditional leadership (TL) systems in Africa predate colonialism (Khunou 2009) and still play an important role in the political and cultural lives of communities, particularly in rural areas of the previous homelands. Despite the (mis)use of some tribal authorities by the colonial and apartheid state to subjugate the people, the institution is still held in high esteem (Beall, 2006) and is recognised in the Constitution of South Africa. However, the Constitution is not specific regarding the role of traditional leaders. While traditional leaders must be consulted on matters affecting their areas, and may attend municipal council meetings, they have no voting rights in the municipal council.

The Spatial Planning and Land Use Management Act 2013 (South Africa, 2013) (SPLUMA) has recently been enacted as a single piece of legislation to deal with the legacy of fragmented planning legislation and to promote spatially just, sustainable and resilient settlements. However, although normative in its aims and principles, its provisions are largely based on a Western modernist, urban rationale that differs from the traditional African understanding of space, place and identity. The provisions of SPLUMA around spatial governance appear to conflict with the longstanding roles assumed by traditional leaders and it is this that has led to discontent, if not resistance among traditional authorities. If SPLUMA is to be implemented, it will require an approach that is collaborative, appreciative of traditional values and acknowledges indigenous knowledge, yet uses contemporary insights to direct planning towards greater sustainability and improved livelihoods for the community.

This paper presents key principles and a framework that can form the basis for a functional spatial governance and land use management system in traditional rural areas. These proposals draw on concepts relating to social justice, sustainable development, indigenous knowledge systems and common pool resource management.

The next section is a short synthesis of the key principles and concepts mentioned above, drawn from existing scholarship. The section thereafter outlines five case studies undertaken by the authors that illustrate the challenges of spatial planning and management in areas under traditional authority. The framework for effective spatial governance is then presented. The paper concludes with some thoughts on the potential implications of improved spatial governance.

Space, traditional culture and authority, sustainable development and justice

Culture and traditional leadership

Culture impacts on and shapes space, giving it meaning and influencing identity. It defines relationship with space. Culture is passed from generation to generation through symbolic learning and language. Planning must embrace this knowledge to identify with distinct cultures. Unfortunately the domain of planning is one area of many where injustices against indigenous peoples occur because planning is an active cultural agent in space: cultural in the sense that it inhabits particular explanatory schemes and structures of meaning (Barry and Porter 2012; Watson 2009:173).

African culture is socio-centric rather than self-centric while personhood too, is defined relationally. Tribal authorities are a creation of local culture and thus embody the values of the community. Community exists if people mutually recognise the obligation to respond to one another's needs (Du Plessis, 2011). Through active community participation, a person finds meaning in life. The heart of the customary discourse revolves around the '*imbizo*', the gathering in which dialogue takes place.

Land in African cultures is a multidimensional space in which relationships are connected to the past present and future. Implicit in this is a religious view of land and its ancestral legacy (Thurman, 2008). Thus land constitutes a relationship between people, the clan and the community, including the future and the past (ancestors) and current relatives (Kingwell, 2008). This implies that land rights include various obligations and responsibilities to the family and community (Okoth-Ogendo, 2010).

The allocation of land is vested in the traditional authority. The chiefs (*amakhozi*) and headmen (*izinduna*) who manage the land in trust for the community, identify and allocate land – usually for members of the clan.¹ Decisions are generally made in consultation and the outcomes of decisions reported back to the community through community meetings (*izimbizo*). However, there are authors who believe that the current system of TL was subverted by the colonial-apartheid governments for their own ends. Furthermore the institution is not democratic and no longer required (Ntsebeza, 2004; Beall et al, 2004, 2005). These views lie at the heart of the contestation of authority.

The allocation of land includes both tenure rights as well as land use rights that pertain to the use of land for a homestead that may include land for crop and vegetable cultivation and grazing, where the latter may be communal land use rights (Sekonyela, 2014). Thus traditional leadership is an intrinsic part of the indigenous knowledge relating to land management in rural areas of South Africa. It relates directly to the understanding and appreciation of communities of their local environments and is embodied in rites and ceremonies and other cultural practices (Lutz and Linder, 2004).

Common pool resource management and indigenous knowledge

The co-management of communal resources is the subject of a growing literature on common pool resources (CPR) (Ostrom et al, 2002). CPR concerns the use and

¹ Land is held communally and generally not sold to community members but leased or allocated with a long-term use right by means of a 'permission to occupy'. See Du Plessis (2011) for a discussion on this issue.

management of shared ecosystems, generally by members of a defined and identified community. It is this definition of the community - the legitimate users and the 'rules' determining the users' access to resources - that differentiate common pool resources from common resources. The latter are most easily subject to Hardin's 'tragedy of the commons' (Ostrom, 2008). Much of the research on CPR has been on institutional arrangements as they are among most critical aspects of co-management along with community participation supported by good communication.

Effective institutions are deemed crucial as they embody and reinforce social values pertaining to the resource(s), including rewards and sanctions, as well the nature of information available to users (Agrawal, 2003). Other aspects such as homogeneity of the user's group as opposed to the degree of difference in wealth and social status are also significant. According to Husain (2008), where there are inequalities in the system, creating coalitions of users can generate greater equity. In an experiment based on game theory, Cárdenas and Ostrom (2004), discovered that face-to-face communication was the most important aspect for sustainable use of the resources.

Indigenous knowledge is

"a way of knowing acquired by local people over a period of time through accumulation of experiences as well as their intricate relationship with the environment. It informs the skills and practices of local people, collectively known as indigenous knowledge systems and is viewed as the sum total of knowledge and skills unique to a given culture" (Buthelezi & Hughes, 2014: 231 .

Under colonial and subsequent rule indigenous knowledge was scorned in favour of modern scientific knowledge. A predominantly 'top-down' style that favoured technical approaches was employed that, more often than not, lead to failure (Ostrom, 2008; Buthelezi & Hughes, 2014). A growing awareness of the value of indigenous knowledge has been accompanied by recognition of cultural rights by the international community through the United Nations Declaration the Rights of Indigenous Peoples and the United Nations International Covenant on Economic, Social and Cultural Rights 1966. (World Bank, 2004; Gagnon and Berteaux, 2009; Iled, 2011).

Diversity, justice and sustainable development

Multicultural space is impossible to imagine apart from inclusive democracy and principles of social and spatial justice. This presupposes an understanding of the exclusionary effects of both past and current planning (Watson, 2003, Barry and Porter, 2012). Consequently, planning too must accept diversity and different rationales from other ways of seeing the world (Sandercock, 2003). Significant shifts in the planning debate recognise planning not so much as a product of expert technical reasoning, as one that embraces multiple actors through dialogue. Communicative action theory suggests that planning decisions should be reached through collaboration with stakeholders in a way that is fair, equal and empowering (Innes & Booher 2010). Planners must accept different frames of reference if they are to accommodate different cultures with a greater sensitivity towards diversity; this includes appreciation for local ways of knowing and doing (Watson, 2003; Harrison, 2006).

Social justice is one of the cornerstones of sustainable development, along with the integrity of the environment and a viable economy that supports people and livelihoods (Syme and Nancarrow, 2001; Brandon and Lombardi 2011). Implicit in concepts of both social justice and sustainable development is the need for consultation – bottom up planning that not just recognises but incorporates local knowledge and communities' perspectives in the planning process (Haughton 1999; Healey, 2006).

Municipalities and Traditional Councils

All land in South Africa fall within a municipality. Thus most municipalities include vast rural areas that may contain commercial agriculture or traditional areas (or both). Elected councillors represent the community. Municipalities must prepare integrated development plans (IDPs) and spatial development frameworks (SDFs) that guide their planning and investment for each term of the municipal council. Furthermore SPLUMA now requires that municipalities prepare land use schemes for the entire municipal area, i.e. urban and rural areas.

Although TL is recognised in the South African Constitution, the role of TL not clear. Municipal legislation provides for a proportion of the TL in a municipality to participate in municipal council meetings, but without voting rights. Legislation regarding TL authorises them to create Traditional Councils (TC) that include TL and other members of the community chaired by the local *Inkosi* (South Africa 2003). Traditional Councils and their wards do not necessarily coincide with municipal boundaries. Thus there may be several TCs within one municipal area, but not all their chiefs may be permitted to attend Municipal Council meetings.

Case studies

The case studies presented below were undertaken to understand what the issues are regarding spatial governance in rural areas. Qualitative research methods, based on open-ended questionnaires followed up with interviews were used, with respondents drawn from the local traditional leadership, municipality and provincial government through purposive sampling. The research was conducted between 2014 and 2015. Three case studies examined either municipalities or TCs, while two were conducted at a provincial scale.

Mahlayizeni Traditional Council area, KwaZulu Natal Province

The Mahlayizeni Traditional Council area is a rural area with few jobs and a small economic base. Most households rely on remittances or social grants and subsistence agriculture for their livelihoods (Nkandla Municipality, 2014). The access to the area is poor which limits economic activity to a tea plantation, *spaza* shops,² taverns and some sand mining. Nkandla town is the main service centre while one of the greatest Zulu kings, Cetshwayo, is buried in the Nkandla Natural Forest. Traditional homesteads that include the dwelling units, '*kraals*' for livestock, fields and communal grazing is the dominant land use.

² Small general dealers selling convenience goods

Within this area are three systems of land-use management. The first is that undertaken by the municipality in urban areas and is based on western planning tools such as a zoning scheme and formal subdivisions. The second form pertains to land for commercial purposes that is managed through the Ingonyama Trust (in which all the tribal land in KwaZulu Natal is vested). The third system is that of the traditional authority. These systems do not necessarily communicate with each other. The municipality that is responsible for providing infrastructure may - or may not - be informed of new development approved by the Ingonyama Trust or the TC, which hinders planning and services provision. The TL allocates land for homesteads to members of the clan based on their indigenous knowledge and customs, but the municipality is not involved in this process.

According to the TL, the only time that they communicate with the municipality is during municipal council meetings or integrated development planning forums. According to the TL their input is not meaningful; it is only an exercise for compliance where the community is asked to ratify decisions already taken. Thus the TL have little or no influence on municipal planning. The municipality is also frustrated by the lack of communication that hampers planning and service delivery. According to municipal officials, the technical jargon used by the municipality confuses the TL and discourages them from fuller participation. All respondents maintained that better communication and an integrated land use management system that synchronises the planning systems is required. Consultation and collaborative planning is necessary.

ulindlela, Msunduzi Municipality , Kwazulu Natal Province

While Nkandla is a deep rural area, Vulindlela is part of a municipality with a city (Pietermaritzburg) at its core. As Vulindlela abuts the city, it is attractive to both urbanising migrants and people moving from the city to the traditional area where they no longer pay municipal rates or high charges for services. Modern services within the traditional area are limited: the roads are not paved and not all homes have electricity, while water has to be fetched from rivers. There is some subsistence agriculture with small vegetable gardens and herds of cattle, sheep or goats, as well as a thriving informal (e.g. knitting, sewing, wood-trading, *spaza* shops and liquor retailing). Many residents work in the adjacent urban areas, in commercial agriculture or mining

Here too the situation of three relatively independent land use management systems prevails, but because of the growth of the area, the consequences are more problematic. One homestead may accommodate several households and with the growing numbers of homesteads allocated through a 'permission to occupy' (PTO) there is increasing pressure on the environment. The customary concept of land held for past and future generations is rapidly being eroded by modernist concepts of land as a commodity and a cash economy.

Environmental stressors originate from several sources. Uncontrolled development in environmentally sensitive areas is taking place and high quality agricultural land is being used for homesteads in an *ad hoc* manner. The attempts of the TL to improve livelihoods through allocation of homesteads may now be having the opposite effect as ecosystem services are strained and the land cannot support all the activities on it.

Furthermore, the unconstrained, random allocation of land thwarts planning by the municipality and the provision of social services such as schools and hospitals. Poor communication between the TL, Ingonyama Trust and the municipality is a problem. There is limited participation in formal IDP and spatial planning processes, while the municipality is unable to regulate land uses in areas under traditional authority.

Nkomazi, Mpumalanga Province **Mchunu, 201**

This area lies just to the south of the Kruger National Park and borders on Swaziland and Mozambique to the east. Malelane is one of the largest towns in this largely rural area, where the institution of TL is held in high esteem. One critical role of the institution is that of conflict resolution with “lasting and amicable” outcomes (Mchunu 2015:48), while another is preserving traditional values and culture.

Despite widespread recognition of TL as an important local institution, there were reservations regarding their role in spatial governance. One concern relates to the random allocation of sites, making it difficult for the municipality to provide services. Another pertained to the lack of transparency or accountability, particularly around the use of the income generated through fees payable for the allocation of a site (*‘khonza’* or *‘lotsha’* fees, Nkosi, 2015), or the alienation of communal land to developers. The random allocation of sites also has detrimental consequences, such as allocation of sites on land reserved for pipelines or roads, necessitating the demolition and relocation of the homesteads. A positive role of the TL was the allocation of land for small enterprises that could not afford to locate in urban areas where land rents are much higher, yet this too could have negative consequences as there is effectively no regulation of activities after the allocation of the site.

There was agreement that collaborative decision-making around spatial planning and governance is essential, a process that should involve TL and the municipality. However, officials were of the opinion that the municipality should lead the process to ensure that services could be economically provided to all sites. Furthermore, though collaborative planning, more effective use of the land with smaller sites³, could accommodate more people. Importantly, land allocation should go hand in hand with land use management. Given that the legislation (SPLUMA) defines this as a municipal responsibility, it is essential that the TL and municipality work closely together in identifying land for development, sites (plots) to be assigned to new households and the allocation of land uses/rights. However, the TL believe that the allocation of land use rights is intrinsic to the allocation of land and thus their responsibility, but were willing to do this cooperatively with the municipality.

Although the respondents agreed that some form of spatial governance was needed, there was no consensus on the nature and extent thereof. Whereas the uniqueness of rural areas had to be considered, a single set of regulations for the entire municipal area was also desirable. Also, a balance between flexibility and firmness of the regulation was required.

³ In the past large sites were required to accommodate gardens and pens for livestock, but with the reduction in subsistence farming, there is no longer a need for large plots.

The traditional Xhosa cultural zone of rural Eastern Cape

This case study considers the implications of a single (modernist) spatial governance system for the province where deeply rooted suspicions around any planning activity conducted by government exist. Spatial planning and governance in the Eastern Cape has largely followed a western model that is foreign to the customary values and culture of the Xhosa and largely ignored the growing recognition of cultural rights and the value of indigenous knowledge. As a consequence, the TL have rejected SPLUMA. This is partially due to the lack of participation in the process of formulating the act, and partially as the responsibility for land governance is vested in municipalities while TL are marginalised in the process. Effectively it is viewed as “the separation of land and land use from Xhosa identity” (Williams, 2015: 4).

The poor communication and lack of trust is seriously hampering efforts to promote development and threatens the sustainability of sensitive areas such as the Wild Coast region. Thus, past injustices, current marginalisation of TL and culturally insensitive planning are obstructing efforts to improve the lives of one of the most impoverished areas in South Africa.

Mpumalanga Province

This case study identifies critical issues from a survey undertaken by the Department of Rural Development and Land Reform in Mpumalanga. TL from 58 of the 60 Traditional Councils as well as representatives from the nine local municipalities hosting traditional councils in the province participated in the interviews, with a total of 67 respondents.

The responses by municipalities indicate a number of issues around spatial governance including land invasions led by TL, random allocation of sites that hampers service delivery and limited enforcement of land use or development regulations in rural areas. The TL also voiced their concerns, such as a lack of meaningful consultation throughout the development process from planning to implementation, unlawful occupation of land and limited assistance in spatial governance issues by government and local authorities who lack adequate capacity to undertake their own functions. The TL believe that they have the indigenous knowledge and community support to manage their areas, provided that they have support from government.

Many of the problems mentioned by TL and municipalities could be resolved, or at least mitigated through improved communication and “authentic dialogue” (Innes and Booher, 2010: 97). The TL are willing to work with government (including municipalities) on spatial governance issues, provided that the latter have an open agenda and do not usurp their powers concerning land allocation. Moreover, including the TL within ward committees⁴ would strengthen the relationship and communication flows (Nkosi, 2016).

⁴ Ward committees are advisory committees that comprise the ward councillor (chair) and up to ten members of the community elected by voters in the ward. The committee is responsible for advising the councillor of issues in the area and representing community interests.

<http://www.localgovernmentaction.org/content/committees-and-their-duties>

Discussion

Several consistent themes emerge from the case studies: the continued respect of the institution of TL and the need to respect cultural diversity, the unsustainability of current development patterns, the lack of effective spatial governance by local government and the need for collaborative governance. These themes are clearly interrelated, influencing one another.

Traditional leadership, including the culture and values that it represents, has survived both colonialism and apartheid, and notwithstanding the current government's emphasis on elected municipal councils over TL, it remains relevant to many South Africans. For this reason alone, there is a need to respect the institution as a role-player in the spatial governance of rural areas. Additionally, the UN International Covenant on Economic, Social and Cultural Rights promotes respect for indigenous and cultural rights. Planners can therefore not dismiss traditional cultures, but must take them into account in planning. Besides the acknowledgement of diversity of culture, acceptance of diversity of values is essential in a country of multiple cultures, customs, faiths and perspectives. Where previously planning was authoritarian, using its power to command and control actions and the implementation of plans (Healey 2004:51), it is imperative that planners now include communities and their ways of viewing the world as part of the planning process.

For Innes and Booher (2010) such inclusion entails both respect for lay (or indigenous) knowledge, and collaborative planning that constitutes a partnership between communities, their leaders and the government. Hence, TL must be part of the IDP planning process from the outset, not a rubber stamp on a finalised plan and budget. Genuine participation, not tokenism (Arnstein, 1969) is required along with transparency from all parties. Participation in ward committees or regular meetings between councillors and TL may be a first step towards improved spatial governance.

Whereas customary ways of allocating sites and managing land may have been entirely appropriate under circumstances of low population and densities, the present pressure on the land is no longer sustainable. The nature of spatial governance in rural areas must adapt. Indigenous knowledge and modern ways of knowing need to be merged to manage the current reality of degraded land within the former Bantustans (Hoffman, 2014). Furthermore, the random siting of homesteads makes it difficult to meet the development goal of safe water provision to all households; thus different processes are required.

Spatial planning can play a critical role in preparing a land development plan that identifies suitable areas for homesteads, social services and economic activities as well as enabling the provision of basic engineering services. However, this must be done in collaboration with the community to ensure that there is consensus on the proposals so that they are understood and adhered to. Where the Ingonyama Trust is a stakeholder in development it too must also be a partner in preparing and approving the plan.

Besides agreement on a development plan, a mutually agreed process to manage land applications for both residential and non-residential purposes must be formulated that clearly articulates the roles of each party in the process. These could be incorporated into the

municipal spatial planning and land use management bylaws to ensure commitment and continuity between municipal administrations. Additionally agreement between the municipality and the TC on how to enforce the jointly agreed land development plan is essential to prevent building within flood-lines or land designated for services. The agreement should again explicitly state the rights and obligations of the various parties. Here much can be learned from the research around CPR management institutions. Adaptive governance that incorporates old and new knowledge, along with “processes that generate learning, meaning, knowledge and experience” (Folke et al, 2005: 445) will create social capacity to deal with the challenge of change. Recognition of TL and accountability of all governance structures is essential to improve effectiveness, participation and legitimacy of such structures

Conclusions

Spatial governance within areas under TL reveals a clash of worldviews, cultures and power. Traditional cultural perspectives around land differ from modernist views of land as a tradable commodity. The relevance and legitimacy of the institution of traditional leadership within a western style democracy is being questioned, while the legislation – notwithstanding the recognition of TL in the Constitution – appears to favour municipal councillors over TL. The consequences of the uncertainty around TL, combined with the continued respect of communities for this institution are three uncoordinated systems of land governance and unsustainable development patterns.

The resolution of this conundrum lies collaborative, adaptive governance and the principles that underlie such adaptive co-management. The first principle is the acceptance of diverse views, perspectives, customs and traditions – the appreciation of difference and the learning it can bring. The second principle relates to the right of all members of a community to be heard and engaged in the governance process, i.e. participative planning and democratic governance processes.

Improved spatial governance requires collaboration, where the TL and municipality are equal partners with clearly defined responsibilities, obligations, accountability and authority. It also demands commitment to this process and a willingness to learn from each other. There are lessons that can be learned from CPR management and the adaptive co-management of ecosystems. Ideas and principles can be tested in TC areas. Flexibility, openness to difference and the capacity to deal with change is essential. Mutual respect lies at the heart of a sustainable governance system in traditional areas.

Together these partners can undertake spatial governance processes such as land development planning and regulating change, mutual learning, adapting the plans and processes and jointly realising greater sustainability of the area and improved livelihoods for the community. Simultaneously, the local heritage and culture – as reflected in the landscape – can be preserved.

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The rise of the social elite: A challenge to planning activism and social justice in South African cities.

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Synopsis

Discussing the disjuncture's of the past that are still influential in the present African Planning context. Through reflecting and evaluating the impact by the past and current planning policies to explore the challenges posed on planning activism and social justice in South African cities by the rise of the social elitists.

1. Introduction

The then South African Prime minister Hendrick Verwoerd during his speech in parliament said "we must take the implementation of separate development so far that no future government will never be able to reverse it" (Geldenhuys: 1981). The South African 'apartheid city' and its inherent shortcomings have been widely documented given the almost unprecedented, significant challenges, ideological or otherwise, that the country faced in transitioning from apartheid to a new democratic dispensation that focused on inclusivity, equality and redressing the past imbalances.

The apartheid government promoted a specific brand of institutional racism that focussed on the separation of settlements, structured underdevelopment and economic exclusion of particular races. Perhaps the most effective instrument to attain this level of dehumanisation was the spatial planning of the time and enforcement of oppressive planning legislation, guidelines and practise, often carried out with military intent and precision. These regulations and their application thereof led to racially-divided towns and new localities of spatially structured economic, social and racial divisions.

However, pure physical exclusion and isolation was not the sole aim. True to colonial tendencies, and European ingenuity, the apartheid regime sought to make use of the indigenous population as strategic pools of labour to pursue self-enrichment underpinned by patronage and cronyism, which many argue, laid the foundations of the challenges that the country faces in contemporary times.

Whilst coloured and Asian populations were integrated within the apartheid city due to their manageable numbers, indigenous towns allowed, were highly regulated and controlled and were usually located on the periphery of the apartheid city. Natural open space, major roads, industrial areas and railway lines were the physical elements that were used as spatial and physical buffers to ensure the achievement of separating settlements according to racial groups. Black settlements lacked places of employment due to the apartheid laws that limited local economic development which resulted in few if not no local businesses and very little local capital. People were forced to

travel long distances to places of employment in the city or in the 'white towns'. The long distances travelled often meant people spent most if not all of their hard earned wages on transportation further widening the poverty gap.

Upon the dawn of democracy in South Africa, the country was characterised by spatial inequalities, uneven ownership of land and access to resources favoured the rich white communities. There was a disjuncture between where people lived and where people worked and the government was faced with the challenge of addressing the aforementioned issues. Connected via the transportation networks, cities were the concentration of employment opportunities serviced by a workforce that resides in the periphery of the city. Society had great expectations from the new government with regards to provision of housing, service delivery, job creation and equitable sharing of resources.

The democratic transition that took place in South Africa brought about the need to fast-track the establishment of appropriate strategies to improve the calibre of policies within the spheres of government, particularly in local government. The democratic government introduced new plans and policies which were systematically aimed at addressing inequality, poverty alleviation and creating equity across all institutions in society.

Whilst it is widely accepted that the increased rate of urbanisation within the first half of the 20th century is commonly attributed to well documented rural – urban migration patterns, in search of economic (high levels of per capita income) and social progress, the promotion of literacy, the improvement of the general state of health and greater access to social services and cultural, political and religious participation within cities that enjoyed them, present day urbanisation and overall urban growth, especially within cities in developing countries, occurs as a reaction, rather than an aspiration.

2. Background and literature review

Since 1994 the country has consistently reviewed its development policy position against the back drop of globalisation, capital flows, foreign direct investment and recently climate change and the economic crisis, with the intention of meaningfully addressing the challenges facing the country.

The raft of socioeconomic policy positions introduced by the new dispensation since the advent of democracy is perhaps an indication of the varying challenges that were encountered by the new South Africa in its infant stages, challenges which still prevail today be in its original form or mutated. Faced with vicious poverty cycles and chronic underdevelopment, the newly formed democracy began its strive for inclusive development and equality with the roll-out of the Reconstruction and Development Program (RDP) just after the 1994 General Elections.

The RDP had in fact form part of the election manifesto put forward by the African National Congress (ANC) and its main aim was to create a more equal society through the reconstruction and development of what was a highly fragmented landscape with divided people and questionable citizenry. The erstwhile Development and Facilitation Act, Act No. 67 of 1995 (the DFA) was introduced as the accompanying legislative arrangement meant to assist in meeting the

objectives of the RDP by fast-tracking the development process and more especially land development.

In hindsight many argue that the RDP was not effective in that, whilst the programme performed well when it came to introducing an effective welfare system which ensured assistance to the most vulnerable i.e. aged, disabled and children in need, the RDP was not as effective in creating meaningful broad based economic growth due to various reasons. Economic growth existed alongside joblessness. The DFA itself was consistently criticized as being a parallel planning mechanism and became known for disrupting municipal planning processes and in turn hindered service delivery to the most vulnerable, until its partial repeal.

The various deficiencies of the RDP prompted the fledgling government into introducing an alternative policy framework more grounded in macro-economic policy i.e. the Growth, Employment and Redistribution (GEAR) strategy which kept focus the key social objectives entrenched within the RDP, whilst simultaneously trying to bring about economic reform. GEAR itself was heavily criticized as being too neo-liberal in its approach.

Schensul (2009, p.12) reveals that the townships in which the Africans population lived were economically stagnant: townships had little to no services and bulk infrastructure. With a standardised built environment; townships were only planned as temporary dormitory facilities as indicated by (Harrison et al.1997 cited in Schensul 2009, p.12), and provided few social services. The city core however, had services and living standards equivalent to those of a first world city. Like other cities during the period, Durban had to strive towards keeping capital in the city and to even keep the white tax payers in the city. During the late 1990s Durban's economy stagnated as a result of the job losses in the manufacturing sector.

However; despite the many policy reviews instituted, the local landscape continues to be characterised by spatial fragmentation, skewed service provision, varying quality of human settlements and unequal growth, to the extent that the apartheid city characteristics are still present 22 years later. As it stands almost every major city within the country has experienced an upturn in new, high quality and well serviced residential and commercial developments albeit along those very same racial lines which the country seeks to dissolve. In essence race has been replaced by class (and access to capital) and resulted in islands of exclusivity adjacent to existing urban areas.

These urban areas on the edge of the city are still highly characterised by poor service delivery, poverty and are still predominantly occupied by the previously disadvantaged majority serving the elites due to unaddressed continued spatial fragmentation. Post 1994 with the new democratic transition there was an increase in rural urban migration, with people moving closer to the city in search of jobs and the promise of equal opportunity. With the slow delivery of promised housing stock by the government, for some the promise of equal opportunity for all has become a utopia only but a dream they might never see realised within their life time due to the ills that have engulfed the systems of society i.e. corruption. The rich get richer and the poor get poorer.

3. Methodology

This discussion paper is divided into two sections. The first section consists of a literature review of theories/concepts that relate to the debate on planning activism and social justice during the reign of the apartheid government. With the second part directed towards acquiring a thorough understanding of the relationship between the challenges of addressing this and the rise of the social elite in South Africa.

4. Problem Statement

Persisting inequality after apartheid

Too much efforts and fiscal resources have been concentrated towards making our cities global competitors in the global arena through investing in infrastructure for global sports competitions and concerts e.g. 2010 FIFA world cup, yet struggling to fully address the everyday challenges of South Africa's poor majority in cities. Cities have become too concerned with competing with each other for mega sporting events to attain world class city status. Whilst the Cityscape is characterised by inequality with the large work force of the city living in under serviced conditions not only in the periphery but within the immediate city centre as well e.g. Alexandra township located a stone throw away from the richest square mile in Africa; Sandton Johannesburg.

This further begs a question of who has means of gaining access to these facilities. Definitely not the poor because they are concerned with making ends meet and cannot afford to spend their hard earned wages on recreation. It is evident that there is a need to de-colonialize the South African spatial fabric. However, firstly there must be a systematic de-colonialization of planning, with the move towards theorising uniquely South African solutions in order to solve South African problems instead of adopting first world planning techniques and theories with the aim of implementing them in South Africa and failing the masses whilst protecting their interests of the rich elitists i.e. edge city and inclusive social housing.

It can be argued that the physical elements that were used to separate races in the apartheid era are now separating economic classes, where industrial natural spaces, major roads and railways are buffers between settlements of the rich and the poor. 20 years into democracy these elements are still being used to separate settlements under the more acceptable titles such as 'integrated human settlements, inclusive cities and edge cities', which have been developed in South African cities as a reaction to the lack of affordable housing stock for city dwellers. It can be said that the lack thereof has led to the concentration of informal settlements within cities such as Alexandra in Sandton Johannesburg and Cator Manor in Durban.

Hence within a context of substantial existing urban populations, city growth is not necessarily relative to economic growth and social fulfilment but more so related to the economic, social and infrastructure crises that plague cities. This is to say that "urban to urban migration" patterns dominate city growth as people try and escape backlogs in shelter, infrastructure and services experienced in their current urban locations. However, this is not an isolated phenomenon as rural-urban migration still features as a major influence of urbanisation especially within areas which have not experienced substantial urbanization in this case the periphery of the South African city. Within these cities "new to the city" and migrant urban dwellers experience difficulty in finding employment and shelter and thus begin creating informal settlements and economies in

order to survive. Due to existing high densities and the lack of readily available land within city centres, they are forced to locate on the urban periphery, yet travel to the traditionalist city centres to find income often competing with inner city poor for informal economies.

The influence of the 21st century and the manner in which the cities of the world conduct business is another key element which has a major bearing on development paradigms and in turn spatial trends, more so trends that relate to the structure of cities. Globalisation or "the expansion of global capital" (Soja 1997) has forced cities to review and redefine their economic organisation along locational and technological advantages. This has resulted in cities around the world taking specific and strategic roles within the globalised economy hence creating specific and functional landscapes to do so, often to the detriment of the natural environment.

5. The discussion on the rise of the social elite

Cities in the developed countries have organised themselves into flows and value chains of information, technology and money which is serviced by large capacity transport systems, e-commerce and global logistics. Where the cities in the developing countries are aspiring to become world class cities in which faceless Transnational Companies (TNCs) go on to make such cities the headquarters of their operations, investing huge sums on locational advantages and capitalize on the aspirations of urban areas becoming "world class" cities.

"Cities are the driving force in development. They grow because they are more efficient and over time, productive activities tend to concentrate even further in urban centres. Cities have higher productivity due to their economies of scale and agglomeration; they optimize the use of human and mechanical energy, they allow for fast and cheap transportation, they provide flexible and highly productive labour markets...increasing labour mobility towards more effective centres of economic growth." (Martine 2005)

In the eyes of the masses (both urban and rural) these occurrences are seen as urban success, and as towns and cities become more enticing with the lure of new jobs, money, education and entertainment so does the rate of migrations both from other cities and the hinterland. More often than not such cities have the potential to improve the living standards of its citizens but the boons of such a city are not equally shared.

In aiming to become "world class" cities and entice TNCs, municipalities implement post-modernist urban strategies which create "cocooned sites of luxury entertainment, shopping and leisure while simultaneously leaving the poor and working class urban residents to compete for access to affordable housing, dwindling public space and privatised municipal services." (Murray 2004)

Time and again cities end up divided, "The Dual City", occupied by the established and the marginalised. South African cities are characterised by this duality in city citizenry. Where the poor are forced to occupy land illegally (squatters) and live in detrimental conditions which put their health and safety at risk by drinking unsafe water and living adjacent to uncontained sewage and garbage. Highly susceptible to rising crime rates, they are blocked off from formal education, skills training and lucrative jobs markets and diverted to working in low paying jobs or operating small scale, low return businesses. The above can be seen manifesting in South African

townships within major cities like Alexandra in Sandton Johannesburg and in informal settlements within the city for example Cator Manor informal settlement in Durban.

All the while the middle and upper class (elitist) continue on patterns of social and spatial segregation, constantly trying to insulate themselves from the threats of crime and the perceived unsavoury elements. They reside in "edge cities" away from the natural centres of the city, making full use of "fortified enclaves" comprising of gated residential communities, enclosed shopping malls and cocooned office complexes aligned to "Tuscan and Victorian" themes kitted with the latest in hi-tech surveillance and armed response, serviced by miles of rapid moving highways which reinforce the spread of urban sprawl and the need for private car ownership. The Gateway Umhlanga Newtown centre in the Durban metropolitan area is an example of the promotion of an edge city. This is where the privatisation of space is highly perpetuated and controlled for the benefit of the rich few (the elitists).

The manifestation of the above mentioned spatial trends within the developing world is believed to further entrench social and class disparities or "Class Polarisation" (Murray 2004), which has originated by colonialization. It is widely accepted that the spatial structure of cities within the South African context is as a direct result of the legacy of apartheid and its particular approaches to physical planning and urban growth. As a result South African cities are presently plagued by high levels of urban sprawl and inefficient land use patterns, insignificant infrastructure, support and service costs, and strong divisions along historically entrenched race and recently emerging class lines. Should these trends be continued to be left unchecked then new urban growth will simply strengthen the existing structural patterns of urban sprawl, fragmentation and separation along both existing race lines (Mabin 1993) and the economic class lines within the South African cities.

These occurrences are perhaps most vividly described by Murray in his description of Johannesburg:

"Despite its declining significance as the country's premier financial and business centre, the embattled Johannesburg urban core anchors a geographically disfigured metropolitan region of enormous and social contrasts. The spatial morphology of the extended metropolitan region has polarised into two compartmentalised extremes: on the one hand, the spaces of affluence are healthy, functional and largely exclusive preserve of the white upper and middle class; on the other hand overcrowded spaces of confinement are distressed, dysfunctional and where the overwhelming majority of black urban residents live and work." (Murray 2004)

Interestingly, in its attempts to correct past imbalances of Apartheid, urban growth within South Africa has perpetuated spatial dispersion and fragmentation through the decentralisation of industrial, manufacturing and commercial activities and residential settlements which have in effect pushed city boundaries outward, in turn absorbing surrounding vacant lands.

The strong emergence of "edge cities" like Four ways in Gauteng and the Umhlanga Newtown Centre in Durban, away from the traditional centres of the city offering mixed use and convenient economic centres coupled with gated residential communities, glamorous entertainment spaces and in-ward looking office estates, intertwined with sprawling townships, sporadic informal settlements and mono -functional low cost housing projects which represent weak attempts at addressing urban housing backlogs. In certain instances the old city centre is left with significant

empty office and residential buildings vulnerable to invasion and vandalism. Hence in aspiring to become world class cities and in the South African context, correct historic injustices, cities and their governments have abandoned planning that strives for development of cities as an organic whole, and replaced it with neoliberalism principles that are solely driven by privatised planning that is focused on large scale urban renewal projects with integrated transport networks that are serving the middle and upper classes as they can afford the services like the Gautrain in the case of Johannesburg.

But as Murray describes it below, current post-modernist spatial trends experienced in cities today have fairly negative effects on such agendas as Inclusive cities:

“ Under the neoliberal mantra of public private partnerships, municipal authorities have experimented with new regulatory mechanisms of urban governance that cede real power of spatial management to private corporate entities which in turn establish their own legally sanctioned rules of the game that restrict entry to authorised users only. The creation of these extra-territorial spaces that are beyond (and outside) public jurisdiction, management and control, only contributes to social polarisation, segregation and fragmentation of urban landscapes” (Murray 2004)

In the case of the South African historical context, the role of civil society has been virtually non-existent in urban governance due to the segregation policies of apartheid. Thus with a strong call of unification, reconciliation and urban renewal within the new dispensation, it becomes apparent that the roles of civil society are most crucial and desirable. However; in view of the “new town” developments like Umhlanga et al, it also becomes apparent that urban development is quite contradictory. Planning has become more privatised with the capitalistic elitists possessing the power to influence urban development.

6. Conclusion

In the South African context, Apartheid planning and its consequences has placed major pressures on its natural resources as well. Existing undersized yet sprawling cities continue to marginalise various groups and operate in a decentralised manner, designed to impede movement, resulting in inefficiently managed energy, water and sanitation systems, usually in the poorer areas of the city.

Cities have become places entrenched in significant disparities of wealth, income and opportunities for socio economic advancement (Murray2004). A fundamental response that planning can make in order to avert some of the negative results of the spatial trends hereinabove discussed is to revert back to planning for the city so that it may function as an organic whole, fostering sustainable integration between people, classes and the environment.

Theoretically; planning should advocate present and future plans that anticipate possible challenges and works towards finding solutions to these problems before they arise. However, to a certain degree this has not been possible due to the limitations imposed on planning by the economic, political and social forces that influence the impact that planners can make. Planning has become a mechanism that responds to the complex challenges that arise in society. However; it is falling short because the demand for proper participatory planning is higher than the supply, leading to poor service delivery and community protests expressed as service delivery strikes.

Planning of cities should look at using the current state of cities as a point of departure. For instance, it has been widely argued that the spatial trends evident within cities presently such as high density, due to a certain degree hold various advantages for the creation of sustainable cities. High densities (but not to the extent of mega cities) favour mass transport reduction in energy consumption and even economic growth hence offers great opportunities and meaningful economic development, for effective public transport and preservation of natural resources.

In order to make cities more inclusive, those who are most excluded i.e. the poor should be allowed to have a say in urban governance. It is here that the key role of civil society is recognised i.e. the link between the poor and urban government. The stronger that link exists, the better the efficiency in urban planning and management. A move towards Inclusive and Sustainable cities should be a strong feature in the final outcomes of all planning initiatives as they offer key strategies for the stabilisation of urban populations. Even in the context of aspiring to be "world class cities" and globalisation, planning should not ignore yet work side by side with civil society and various governmental departments towards common goals.

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Citizen participation – a successful strategy in revitalization of panel building estates' public space or a marketing slogan

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Abstract/Short abstract

Nowadays, many multidimensional actions are undertaken to revitalise and unite the especially problematic and dilapidated areas to give a desired shape to the new city parts and create attractive public spaces. Unfortunately, numerous examples of large prefabricated housing estates show that these attempts are carried out chaotically, and in most cases with no reference and esteem to the essence of social and economic problems.

Many of the undertaken actions are limited to building adaptations and thermal modernisations, applications of new vibrant colours onto the elevations, which do not extend to the vast open common spaces, often neglected and changed into huge car parks. As a consequence, desired social common spaces virtually do not exist. To fully apprehend the scale of the problem, it has to be noticed that up to this day panel housing estates constitute approx. 30-40% of all housing estates in many CEE cities, becoming problematic areas in both economic, social and physical perspective. Some experts, express concern that the development and deregulation of the housing market may lead to the deterioration of panel housing estates. They predict that the middle class may move to more attractive districts, leading panel building estates to depopulation and becoming the so-called “shelters for the poor” or modern ghettos for minorities and migrants. The aim of this paper is to attempt an answer to following questions:

- is the idea of citizen participation in the revitalization of panel housing estates as implemented in many local strategies only a buzzword, a marketing slogan, used just in theory, or is it an actually used tool,

- how to use this peculiar context of the Post Socialist assumptions in urban and architectural design of modern cities to meet the changing needs of contemporary inhabitants of those districts?

The paper will mainly concentrate on a comparative analysis of revitalization projects done in co-operation with the inhabitants based on the territorial criteria, i.e. CEE countries. Case studies consist of the presentation of the projects of revitalization of panel housing estates' public spaces which were developed in accordance with the idea of citizen participation, participatory design and placemaking in Cracow, Warsaw, Bratislava and Budapest.

1. Introduction

Nowadays, many multidimensional actions are undertaken to revitalise and unite the especially problematic and dilapidated areas to give a desired shape to the new city parts and create attractive public spaces. Unfortunately, numerous examples of large prefabricated housing estates show that these attempts are carried out chaotically, and in most cases with no reference and esteem to the essence of social and economic problems.

Many of the undertaken actions are limited to building adaptations and thermal modernisations, applications of new vibrant colours onto the elevations, which do not extend to the vast open common spaces, often neglected and changed into huge car parks. As a consequence, desired social common spaces virtually do not exist. To fully apprehend the scale of the problem, it has to be noticed that up to this day panel housing estates constitute approx. 30-40% of all housing estates in many CEE cities, becoming problematic areas in both economic, social and physical perspective. Some experts, express concern that the development and deregulation of the housing market may lead to the deterioration of panel

housing estates. They predict that the middle class may move to more attractive districts, leading panel building estates to depopulation and becoming the so-called "shelters for the poor" or modern ghettos for minorities and migrants.

Taking these circumstances into account, it is extremely important to search for an integrated solution for a successful revitalization not only in a material aspect, but, even more importantly, in a social one. Therefore, the idea of citizen participation and participatory design is highly recommend in many revitalization strategies. The aim of this paper is to attempt an answer to following questions:

- is the idea of citizen participation in the revitalization of panel housing estates as implemented in many local strategies only a buzzword, a marketing slogan, used just in theory, or is it an actually used tool?
- how to use this peculiar context of the Post Socialist assumptions in urban and architectural design of modern cities to meet the changing needs of contemporary inhabitants of those districts?

2. Methodology and literature of the subject

2.1 Metodology

The current paper relies on comparative analysis of case studies selected on the basis of thematic and territorial criteria. The case studies include projects conducted in post-socialist estates revitalised with residents' involvement. The analysis of relevant literature concentrates on the examination of the character of actions undertaken in cooperation with end-users of a given space.

Given the interdisciplinary character of the research questions at hand, the paper refers to architecture, social sciences, humanities and economics. The analysis of case studies was based on photographic evidence and other material obtained from literature, in the course of desk research and on-site visits. Due to the topicality of the considered issues, the material was supplemented by information obtained from Internet websites.

2.2 Literature of the subject

There are various studies focused on the subjects of shaping the city landscape and resident participation, which are followed by different theories of management, economy and spatial planning based on economic, sociological or even political sources. There are also many scientific works talking about urban planning in the second half of the 20th century, referring also to estates raised in the countries behind the Iron Curtain and the strategies for their revitalisation.

What is interesting, however, is a combination of those two issues, namely the application of participatory design in the revitalisation of estates build after the war in CEE countries. It is important, then, to analyse the examples of such actions in order to emphasise the weaknesses and potential enshrined in the chosen design methods.

Among those scientists who have dealt with participatory design, the name of Henry Sanoff has to be mentioned in the first place with his publications „Programming Evaluation and Participation in Design”, „Participatory Design: Theory and Techniques”, „Design Games”, „Designing with Community Participation”. In his work, Sanoff engages with theoretical issues which he confronts with practical experiences. Moreover, he presents tested tools and techniques which allow for effective inclusion of members of local communities in the design process.

When it comes to creation of desired city spaces and the characteristics which they should display in order to be appropriate for social interactions, it is also necessary to

mention the work of Jane Jacobs, William H. Whyte, Kevin Lynch, Christopher Alexander and Jana Ghela.

In relation to the sociological perspective, the work of Sherry R. Arnstein are worth noting, in particular her essay "A Ladder of citizen participation" (1969) which is currently considered by many scientists to be the template for assessing degrees of participation of residents in the process of making decisions on the local environment [1].

A non-academic publication by Markus Miessen „The Nightmare of Participation (Crossbench Praxis as a Mode of Criticality)” is also an interesting voice in the discussion. The author’s stance differs from the common excitement over social participation and reveals the abuse of this slogan which is increasingly becoming a caricature of itself. Miessen notices a tendency among decision makers to overinterpret the role of the actual/real active participation of residents in on-going decision-making on the current and future operations of cities. In this context, he also refers to the ideas of Richard Sennett who observed a decline of the “public man” towards a re-evaluation of the organization and participation in public life which, as appropriately deemed by Pobłocki after Sennett, “ceased to rely on the clash of political arguments, and became an arena for the presentation of a private ‘I’”[2]. In the course of analysis of those titles one should note that, by concentrating on a single perspective, they do not refer to the confrontation of decision-making processes with the actions of architects and city planners, both with respect to design practices and theoretical considerations.

Extensive references to the discussed matters can also be found in Polish literature. The works of Kacer Pobłocki, Ewa Zielińska and Rafał Górski (among others in a book titled *Bez Państwa. Demokracja uczestnicząca w działaniu*) should be mentioned here.

On the other pole of the considered matters, there are issues related to housing estates built in CEE countries after World War II. In this context, the names of such contemporary scientists as David Tichý, Ljiljana Vasilevska, Kiryl Stanilov, Gregoreo Andrusz, Michaela Harloe and Ivana Szelenyi should be mentioned.

3. Idea of participatory design

In this context, multi-dimensional actions undertaken by public authorities at various levels and by all other interested parties are of particular importance. Such an approach enables a juxtaposition of varying perspectives, roles, interests and programmes, presented by architects, urban planners, representatives of city/provincial/national authorities, developers, private investors and, first and foremost, end-users who are the most important target of those actions. Those actions may take the shape of minor interventions or large-scale projects.

At the moment, one can observe numerous changes in the range of competences of particular entities which decide on the shape and direction of modern city development. Implementation of urban undertakings assumes new forms, such as peculiar types of public-private partnerships, etc. In the face of multiplying budgetary constraints, municipal authorities search for new, external sources of financing in connection with the implementation of urban investment. To this end, they turn their attention, among others, to the private sector. When it comes to urban policy, such an attitude on the one hand guarantees continuity and creation of new spaces; but on the other, it provokes justified concerns as to the influence of private corporations on the landscape of cities and serving individual interests (of particular real estate developers or private investors, etc.). As a result, cities witness the emergence of new public and quasi-public spaces (private spaces open to

the public). Batter Park in New York may serve as an example of such a development of space [3]. These actions bring about reasonable questions about the responsibility of particular stakeholders. A far-reaching privatization of the public sphere leads to the situation in which significant decisions on the shape and direction of city development are taken by influential investors and city decision makers. It is, thus, important to ask about the place of end-users in the decision-making process and in shaping the city space. In an effort to find balance, calls to allow city residents to make decisions on particular municipal issues through, among others, participatory budgets in which the interested parties themselves decide on a particular city expenditure (usually, this is few per cent – 1-2% of the budget of a municipality) can be heard with increasing frequency.

Social participation has gained popularity thanks to pilot projects of which Brazil was an unequivocal pioneer. Porto Alegre is a flagship example of a city where, as early as in 1989, the authorities for the first time assigned a small part in the city's expenditure to be distributed as part of a participatory budget (Southern Brazilian state of Rio Grande do Sul, Belo Horizonte or Recife can also be listed). A positive reception and success of those undertakings has led to their popularisation in many other cities and municipalities around the world, together with the development of the civil society and promotion of green politics (ecologism)[4].

In practice, social participation can have different character stemming from the varying scale and scope of spatial and social impact of a particular solution, degree of its complexity and thematic area, for example neighbourhood, public space, culture, local budget and public services, etc. It is also important that both public, social and private actors partake in the participatory processes.

When shaping a public space as part of the city's spatial policy, it is impossible to avoid various conflicts of interests which emerge between individual stakeholders. The goals of spatial planning include: taking actions to improve the quality of residents' life, taking care of the value of the urban space, as well as balancing and harmonizing its development. Indirectly, however, the fact that spatial planning decides on the assignment of particular real estate and defines the actions desired in a given area, in many instances it becomes a nexus of numerous conflicts of interests between residents, private investors and municipal authorities.

In the context of spatial planning, since 1960s such tools as participatory design have been promoted, as they may neutralize and prevent emerging conflicts while creating a platform for negotiating solutions and reaching a possible consensus [5]. To quote a definition of "participatory design" proposed by Henry Sanoff, it should be understood as "an attitude about a force for change in the creation and management of environments for people. Its strength lies in being a movement that cuts across traditional professional boundaries and cultures. The activity of community participation is based on the principle that the environment works better if citizens are active and involved in its creation and management instead of being treated as passive consumers[6]".

Can participatory design then be an effective tool to be used in spatial planning, particularly to help answer the challenges involved in revitalising the space of housing complexes created in the countries of Central and Eastern Europe (CEE countries) after World War II? Until today, they constitute approx. 30-40% of housing estates in many cities, becoming problematic areas both in economic, social and physical perspective.

4. Outline of the Problem in CEE post war housing districts

The current considerations will concentrate on the application of participatory design as a solution which may lead to effective revitalisation of housing estates created in CEE countries after World War II. In order to understand the specificity of this problem, one should try to grasp its essence.

Adopted by socialist modernists from Le Corbusier, mono-functional, universal complexes of housing estates which, as a result of post-war reconstruction, were to provide residents with access to three key goods: “sun, space and greenery” [7], as well as foster integration and socialisation of residents, are until this day a significant element of the cityscape. Although when they were raised these promoted complexes of housing estates were extremely luxurious structures, they are currently synonymous with low-quality materials, inhuman scale and, sometimes, also slow decline[8].

The popularity of this particular type of housing estates was a result of two main factors – the post-war shortage of housing and communist ideology. In the 1950s, it was necessary to find a housing model which would satisfy these goals. The then available technology, namely the typified building system (*stypizowany system budowlany*), made it possible while, at the same time, reducing the costs of implementation. Paradoxically, as the history has shown, the same solutions proposed by socialist modernists which were to provide proper comfort to residents, have become the main reason for the failure in securing those. This was, among others, because the raised estates lacked human scale and failed to create intimate social spaces, which resulted in the increasing anonymization and petrification of a conviction that common spaces belong, in fact, to nobody.

The Czech estate Chanov, situated 1.5 kilometres from a town called Most, is the most spectacular example of the problems focused in panel building estates. It was built in 1970s as a modern estate for persons of the Roma ethnic origin who were to be resettled from the old part of the town. This was also an element of the policy of the communist authorities whose goal was to assimilate the Roma and transform them into “productive and modern socialist citizens”[9]. Initially, the Roma were to populate only a part of the estate (9 out of 12 buildings). In the 1990s, the majority of the remaining middle-class residents moved out of the estate and the less affluent residents from the town and its vicinity, encouraged by decreasing prices of property, began to move in instead. The proceeding changes in the resident structure led to the gradual deterioration of the estate’s condition. Further problems emerged as a result of increasing debt. As the residents failed to pay their bills, their access to water and other utilities was gradually being restricted. This produces yet another group of problems of sanitary, economic and social nature. There are a couple of reasons why the concept put in place by the Czechoslovakian authorities did not prove successful:

- The placement of the Roma who live in closed communities and are known for their nomadic lifestyle in – at the time – modern, multi-family modernist blocks of flats was far from any conditions they had been accustomed to, which made acclimatization more difficult;
- The authorities failed to consider familial and group affiliations of the Roma who are not a uniform community, have different lifestyles, living standards, social status, level of wealth, etc. Through atomization of particular communities, this led to increasing internal conflicts. The costs of living, in the new blocks, were three or four times higher than in previous accommodation. The authorities fail to take into account the needs and expectation of future users at the stage of design. The estate (which is situated more than a kilometer from the new town of Most) was isolated and lacked communication lines with the town. As a result, the estate in a way became “a Roma

ghetto," and until today is synonymous with negative associations, and called "the housing estate of horror," "a hygienic time bomb," "a black stain" and the "Czech Bronx."

The above-presented example shows the worst-case scenario which may materialise in a panel building estate. In the case of the Chanov estate, additional factors of course come into play, for once related to the ethnic dimension. Some researchers, however, express concern that together with the development and deregulation of the housing market this scenario may be repeated in a modified form in other such estates. They predict that the middle-class may move to other locations in more attractive districts and panel building estates will then depopulate, become "shelters for the poor" or modern ghettos for minorities and migrants.

The fact that, due to their limited attractiveness for modern resident, cities do not invest enough in panel building estates is a signal which may lead to certain doubts as to their future in the structure of cities, as social changes translate onto spatial changes. The presented circumstances prove the purposefulness of undertaking integrated revitalisation efforts which are not limited to technological modernisation, but reach further to the core of the problems in the social dimension magnified in such estates.

Even though many of the estates have already undergone modernisations and first chaotic attempts at revitalisation, the results are often far from desired. Revitalisation efforts rarely take into consideration social actions dedicated to open spaces and generating social spaces. Vast open areas are usually neglected, turned into big parking lots, and rarely envisage resident participation. As it was noted above, for a correct and effective revitalisation, it is necessary to reach to the core of the problem, also in its social dimension. But even though such attempts were made, as in the case of the Krakow's estates of Nowa Huta and Petrzalka, they were not particularly popular among residents who, after years of passivity and inaction, do not feel responsible for the surrounding space.

The purpose of the following analysis is to answer the question whether using the possibilities offered by participatory design can be a chance for effective revitalisation. And, in the face of social problems piling up throughout the years, how to build strong local communities in a system which presumed the anonymity of its residents.

5. Case studies

The choice of examples presented below was motivated by a selected criterion of planned city projects dedicated for housing estates created in CEE countries after World War II, carried out with participation of end-users.

The concept of participatory design entails the inclusion of potential end-users in the design process in order for the final result to address their needs, as they know best what they need. In many instances, the below-presented interventions are grassroots initiatives implemented in accordance with the rules of placemaking [10].

5.1. „Archipelago of Islands”

The „Archipelago of Islands” is one of the first projects in Poland which were implemented using participatory design and in accordance with the rules of placemaking which, apart from physical modernisation of estates, aims at activation of local communities. The area is situated in the “Osiedle za Żelazną Bramą” [11] (*Behind the Iron Gate Estate*) in the Warsaw district of Wola, between the Krochmalna and Waliców streets. The implementation of the project engaged local authorities, architects, city planners, sociologists, local organisations,

private investors, [12] as well as the residents who took active part in each stage of the works[13].

The works on the project were initiated in 2012 and the whole process was divided into a couple of important stages: (1) consultations/workshops with residents (in the form of a city game); (2) social consultations; (3) testing of particular ideas in the form of temporary constructions in the area; (4) their evaluation; (5) development of implementation designs; and (6) final phase planned for 4 years connected with the gradual implementation of the project. The idea for accommodating this public space, developed with resident participation under the name of "Exploratorium," consists of 12 "functionally diverse small spaces-islands," which was to be a contemporary reference and interpretation of the 1960s' concept of the estate's authors. Within the estate, separate zones for residents were created with space for work and leisure, dedicated to various age groups.

After the first consultations with residents and according to their guidelines, particular design elements were developed. Then, the residents themselves in a vote decided which of the elements will be built[14]. Particular focus was placed on the functional diversification of islands taking into account active functions – in sport and recreational zones, and passive functions – in the zones for relaxation and meetings of residents. The project will consist of, among others, a hill for play with an archaeological site; green labyrinth; shallow pool (in the summer used as a pool for children and in the winter as an ice-skating rink); a movable bench (which can turn towards the sun); an open stage; island-garden – a zone for planned greenery, information-contact island (multimedia information box); open-air cinema connected to the so-called "island of creativity," i.e. a space for workshops in mural painting; sport island (with sports equipment: steps, balls, baskets); a history island (with information on the estate), etc. The project also envisages supplementing the space with street furniture, such as benches, or green compositions with climbing plants, as well as mini-courts for team sports. Replacement of the existing elements of the playground, such as swings, slides etc. is also included in the project.

The project assumes gradual implementation of the investment, which will allow for an even cost distribution in time, with respect for the rule that each year two or three new "islands" will be open for use. When it comes to architectural solutions and composition techniques, particular "zones-islands" were distinguished through diversification of the used structures and materials, among others, surface paint. Spatial forms are accompanied by a meticulous plan of events, animations, spatial programming. Similarly to the implementation stage, the stage of maintenance also seems interesting. For example, the island called "Elevated flower-beds" is planned as a system of big flower pots surrounded by places to sit and places under a roof where residents will be able to plant their favourite flowers or herbs. The foundation 'Na Miejscu' (one of the main initiator) will support the residents in garden planning (through gardening/landscape architecture workshops).

Some of the implementation work has already been completed. In 2014, the first islands were created – for children and older persons, furnished with benches, tables, bicycle stands, springboards and an open-air gym. In 2015, the island-garden with elevated flower-beds was finished. Thanks to the funds from the district's participatory budget, it was possible to install lights for the square [15]. At the end of the year, the works of the „Green labyrinth" island were initiated thanks to the urban participation tool of the Local Initiative (*Inicjatywa Lokalna*). As part of this initiative, the city will provide necessary materials and will

properly prepare the area, the residents themselves will engage in the creation of this island and its future maintenance.

Simultaneously with construction and field work, the programmes for accompanying events and animations for the residents were developed.

5.2 Nowa Huta [16]

The next case - Nowa Huta is example of socialist realism – the style particularly popular in Central and Eastern Europe countries that remained under Soviet influence after World War II. The paper is mainly concentrated on the issues of panel building estates (socmodernism), however, in author's opinion, this case is worth mentioning as well. In most of the socialist realism' housing city blocks the same social problems exist, even more serious because of the references with Socialism ideology. This example refers to actions undertaken in various parts of the Krakow's post-socialist district of Nowa Huta. After the collapse of the Polish People's Republic, its central part was affected by particular degradation and peripheralisation due to, among others, misguided spatial actions and lack of investment, etc. Nowa Huta is currently a district of older persons who settled here at the time when it was being built (i.e. in the 1950s). Although, thanks to its unique atmosphere, it is now beginning to gain popularity among tourists and young people. It is necessary, however, to take energetic action in order to return its past glory. Because of the special historical context, great urban and architectural assets and a significant potential to conduct a multidimensional revitalisation, it seems justified to involve its residents in the process.

The first initiatives of this type were proposed by local organizations, among others, MIK Lesser Poland's Institute of Culture (*MIK – Małopolski Instytut Kultury*) which, as part of a cycle "Self-portrait-Debates" („*Autoportret-Debaty*") organized in 2007/2008 consultations with residents concerning the development of an important green area situated between Nowa Huta's Culture Centre and Centre E in Nowa Huta [17]. However, it was the consultations conducted alongside the development of the Local Revitalisation Programme in 2008 which were the first, official signal from municipal authorities of a willingness to cooperate with the residents. The consultations took the form of open debates-meetings with residents concerning particular aspects of the planned actions (protection of cultural heritage, economic rejuvenation, solving demographic, social, functional and spatial problems). Due to their poor organization, the "debates turned into loose meetings of a too general character" [18] and, as a consequence, did not bring any measurable results[19].

In turn in 2009, agency "Plan" conducted research based on focus group interviews. The purpose was to gather residents' expectations concerning the planned reconstruction of the main public space in Nowa Huta – at the axis of the Rose Avenue (*Aleja Róż*) and the Central Square (*Plac Centralny*). The results were to serve as competition guidelines for "designing a concept of revitalisation of those most important sequences of the public and recreational space localised in the core centre of the district." Here, too, however, certain shortcomings of the consultation process could be observed. For example, the consultations did not include city residents other than the estate's residents, and a low turnout was registered. The residents' lack of trust in the real possibility of influencing the future shape of the surrounding space, especially after the first consultation did not bring the expected results, was also a significant element.

Another city planning competition was carried out in 2012. The purpose of the competition was to gather project designs which would "propose a new, contemporary approach towards shaping and organisation of the public space of Nowa Huta's historical centre" [20] based on the guidelines from residents which were included in the the

competition rules. Ultimately, 12 proposals were submitted. Despite the competition's great prestige, municipal authorities treated it as yet another element in the discussion on the course of public space development, and the main prize was not awarded. As Kacper Kępiński notices, based on the comments from the residents, that it could have been "a deliberate strategy from the city which thus wanted to insure itself from potential claims from residents concerning the implementation of the presented projects"[21]. Such a situation took place a couple of years earlier when the competition conducted at the time, concerning the development of an appropriation plan for the Southern part of the Central Square, was not consulted with the residents at any stage and "turned out to be a complete failure of the city"[22]. The distinguished project by Wojciech Obtulowicz was not accepted by the residents and, as a result of multiple protests, the city had to resign from its planned implementation.

The results of the competition from 2012 were not included in the city's plans. The city neglected the cooperation with the residents concerning this subject, e.g. there were no consultations of the results of developed projects. Only thanks to the efforts of the Space-People-City Association (*Przestrzeń-Ludzie-Miasto*) was it possible to organise an exhibition of the developed designs and present the results of the competition. The participants were encouraged to voice their opinions and choose the most attractive project proposals, regardless of the opinion of the competition's jury. However, despite great care from the Association for the widest coverage of the initiative and in spite of the media campaign, this time too organisational shortcomings on the part of the city, e.g. limited access to submission forms, translated onto little popularity of the debate which, eventually, attracted 50 persons who cast their vote.

The example of Krakow shows that, when faced with a deficit of consistency in the actions of municipal authorities, residents treat participatory initiatives with a certain dose of distrust. And despite declarations to the contrary, municipal authorities ignore those initiatives, proposing projects unacceptable for local communities.

5.3 Petržalka (Bratislava)

Another example concerns the plans for a development of the recreational space of the Petržalka estate, one of the biggest panel building complexes (locally known as "panelaky") in Europe and, currently – the biggest housing estate in Bratislava[23].

In the context of this example, it is important to refer to other issues than just the inhumane scale of buildings, including city planning matters such as the lack of identification spaces and public spaces, which gain particular significance when the estate is inhabited by more than 110 000 people. The revitaliation strategies have so far only relied on filling free spaces which were not finished in accordance with the initial plans. For years, Petržalka has functioned as a "dormitory" district of Bratislava, perceived as the most dangerous. In the recent times, municipal authorities have made efforts to change this disadvantageous image of the district. They, for example, introduce new investment and facilitate communication links with a new tram line, adding new functions to this mono-functional complex.

An architectural competition of 2014 was yet another pretext for a new proposal of Petržalka's transformation. The competition was entitled *Riešenie centrálnej rozvojovej osi Petržalky* (Petržalka Masterplan) and concerned the central part of the district[24]. Its aim was to choose a design which would propose an interesting vision of the area's comprehensive revitalisation, for example through creation of desired public spaces taking into account the principles of sustainable development [25]. The solutions chosen in the

course of the competition were to become basis for creation and development of local development plans, setting the direction of future development of this important fragment of Petržalka.

Due to the difficulties noted in connection with the revitalisation of this difficult city space, the design process was in this case preceded, at the initiative of municipal authorities, by participatory actions. At their first stage, they entailed interviews with leaders of the local community, group discussions, meetings with residents and specialist workshops in the course of which particular proposal were discussed. As a result, project guidelines were prepared taking into account the most important expectations and needs of the residents, among others the concepts of:

- "linear, green park,"
- ground tramline,
- solutions for vehicular transport route alongside Rameno Chorvátske watercourse.

Ultimately, 15 projects were submitted in the competition "Riešenie rozvojovej osi Petržalky" for the development of Petržalka's central axis [26]. The first place and main prize were awarded to the project prepared by Prof. Ing. arch. Bohumil Kováč, PhD. and Ing. Ladislav Benček, PRO.BE. Due to the scale of the complex, the presented project proposals, namely the proposed actions and functional solutions, concerned only the urban scale and did not go into details. They entailed, however, the creation of proper and desired social spaces which would allow residents to integrate, according to the rule that attractive spaces generate desired social interactions and neglected spaces foster degradation. According to the declaration from municipal authorities, the cooperation with the residents is to be continued at further stages.

6. Conclusions:

The above-presented examples show various approaches to the shaping of space in selected revitalisation efforts on estates built after the war in CEE countries. Successful revitalisation, especially in such specific conditions, requires multi-layered actions, where special attention should be placed on creating more responsive environments, in which the result meets the actual needs of the inhabitants. The most democratic results and successful social outcomes both in terms of cultural, emotional and practical needs can be achieved by participatory design. This unique tool which takes into account the attachment of residents to a place can become an invaluable and precious inspiration both at the stage of project development and its final implementation, since to quote Sanoff „people are motivated to protect and improve places that are meaningful to them.”

According to research conducted in five American cities of Birmingham, Dayton, Portland, San Antonio and St. Paul by Thomas et al., which Henry Sanoff mentions, [27] „participatory democracy can be a realistic direction for our future.” This was confirmed by research results which „revealed a positive relationship between participation and support of the system, trust in government officials, and tolerance toward other's points of view.” (Sanoff after Thomson et al.,1994). That approach presumes an active involvement of stakeholders (e.g. inhabitants, users, employees, partners) in the design process. Only close cooperation and mutual understanding between various stakeholders create a possibility of joint influence on the city tissue. The current design tendencies, placing more emphasis on a pro-communal approach and creation of people-friendly spaces in the cityscape, additionally accentuate the aspect of cooperation.

However, the idea of participatory design itself is not sufficient to ensure proper implementation of projects. It is conditioned upon several factors and appropriate management of the whole process. „Planning for participation requires that participation methods be matched to the objectives, and the appropriate method be selected” [28]. The first stage consists in thorough examination of the matter at hand and setting the goals. „If differences in perception and expectations are not identified at the outset, and realistic objectives are not made clear, the expectations of those involved in the participation program will not have been met, and they will become disenchanting” [29].

Effective use of participatory design requires consistency at all stages of the works in the approach of all interested parties. In this context, the example from Krakow shows that participatory design and active involvement of residents in the process of shaping the surrounding space remains a publicity catchphrase/marketing slogan where it is not followed by tangible actions. Sherryl Arnstein calls this approach, relying on „informing, consultations and appeasement, that is inviting residents to representative bodies as advisors without guarantees of listening to their voice,” by a common name of tokenism. This means symbolic inclusion in the dialogue of groups in a worse position in negotiations. It can also be called a „policy of empty gestures” [30]. Recently, a statement presented by Markus Miessen has been quoted in this context. It characterizes such an approach as actions which serve manipulative practices of the authorities. This does not, however, have a scientific basis and is more of a personal opinion and a synthesis of personal observations. Miessen did not refer to the concepts presented by Arnstein who deemed such a practice as „lack of participation.”[31]

To conclude, in order to effectively use participatory design in the revitalisation of housing estates built after 1950s in CEE countries, and not use this term only as a buzzword or a marketing slogan, used in theory, it is necessary to conduct the design process taking into account the local environment. Moreover, consistency on the part of decision makers is important in the achievement of the assumed goals. A design process which includes resident/end-user participation should concentrate not only on the achievement of the end result, but also on building social capital at all stages of the works, which is the greatest value of such cooperation. In Poland and other CEE countries, it still often happens that administrative bodies conduct social consultations and include citizens in the decision-making process to a minimum degree. There are, however, examples of cooperation which brings desired results.

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Endnotes

- 1.Compare Zielińska E.,*Nieobliczalne problemy partycypacji w zarządzaniu przestrzeni miejskiej*; [*accessed online; researchgate*]
- 2.Pobłocki K., Prawo do odpowiedzialności,Source: <https://repozytorium.amu.edu.pl/bitstream/10593/9014/6/miessen-poblocki.pdf>; Accessed on: 15.01.2016;
- 3.Compare: De Magalhães C., *Public Space and the Contracting-out of Publicness: A Framework for Analysis*, [in:] *Journal of Urban Design*, 15(4),2010, p.559-574.

4. Compare: Wall D., *The No-Nonsense Guide to Green Politics*. Oxford: New Internationalist Publications, 2010.
5. Compare: <http://mojemiesto.bblog.pl/wpis,partycypacja;spoleczna;w;planowaniu;przestrzen nym,20183.html>
6. Sanoff, H. *Community Participation Methods in Design and Planning*. New York: Wiley, 2000.
7. According to the assumptions presented in *The Athens Charter from 1933* produced by Le Corbusier and CIAM.
8. E.g. examples of Chanov and Petrzalka.
9. Glassheim E., 2007, *Most, The Town That Moved: Coal, Communists and the 'Gypsy Question' in Post-War Czechoslovakia, Environment and History*, v.13, p.447-476, 2007.
10. Placemaking – that is a term used for „bottom-up” actions propagated by the Project for Public Spaces organisation (PPS); multi-faceted actions, a process and a philosophy—that enable building societies through working on public space in a so called "ground floor of the city", that is on the streets, pavements, parks and public buildings etc. Source: <http://www.pps.org/about/>, accessed on 29.12.2015.
11. „Osiedle za Żelazną Bramą” - “Housing Estates Za Żelazną Bramą” built in 1965-1972 (based on the winning competition proposal from 1961 by J. Czyż, J. Furman, A. Skopiński); typical example of Polish Panel Housing Estate with composition of nineteen 15 - storey buildings loosely located in the open space (each building approx. 300 or 420 apartments).
12. In the project was involved: Architectural Studio Centrala, the Foundation 'Na miejscu', Latający Animatorzy i Socjologowie z Towarzystwa Inicjatyw Twórczych „Eₓ”, Skanska. Source: <http://namiejscu.org/o-fundacji/>; Accessed on: 15.12.2015.
13. Source: http://archirama.muratorplus.pl/design/rewitalizacja-placu-przy-ul-krochmalnej-placemaking-w-warszawie,68_3543.html#.
14. Source: http://issuu.com/adamkadenaci/docs/raport_du__e_konsultacje_ostateczny.
15. The project of light installation for the site worth 100 thousand PLN was selected in the competition for participatory budget of Wola district in 2015.
16. Nowa Huta was designed by T. Ptaszycki with his team: B. Skrzybalski, T. Rembiesa and S. Juchnowicz. The authorities wanted to complete the investment within six years (1950-1955). Nowa Huta was originally intended to be a separate city, but in 1951 was incorporated into Krakow; since then it has become one of its districts. In 2004, the old part of Nowa Huta was registered by the Regional Conservator "as a representative example of urban planning of Socialist Realism in Poland."
17. Compare: Report MIK_Małopolski Instytut Kultury entitled: „Co dalej?” dot. zagospodarowania terenu zielonego między Nowohuckim Centrum Kultury, a Centrum E w Nowej Hucie, <http://autoportret.pl/debaty/raporty-z-debat/>, dost. int. z dnia 28.08.2013; and with Zieliński M., *Twórczość projektowa a partycypacja społeczna w kształtowaniu krajobrazu – wprowadzenie do problematyki.*, „Przestrzeń i forma”, nr 17:2012, s. 457-466.
18. Kępiński K., O Nowej to Hucie debata, [in:] *Autoportret. Partycypacja i partycypacja*. Available at: <http://autoportret.pl/2012/10/16/o-nowej-to-hucie-debata/>; Accessed on 30.04.2016.
19. Compare op.cit. *In October 2008, The authorities of Cracow developed a Local Revitalization Programme (LRP) of the old part of Nowa Huta, prepared by Big-Städtebau.*
20. *The competition site was reduced to the axis of the Avenue of Roses and Central Square in Nowa Huta. Compare: Competition regulations for "Developing the concept of revitalization of public space in the axis of the Avenue of Roses and Central Square in Nowa Huta."* (Source: <http://imeri-int.um.krakow.pl/app-pub-szp/pages/knk-og->

detail.jsf;jsessionid=498FB447E8F4B7C9E8B148830F07E0A6?id=3987&lay=&fo; Accessed on 15.11.2015.

21. Kępiński K., op.cit.

22. Kępiński K., op.cit.

23. Petržalka is one of the most densely populated area in Central Europe with population around 110 000 inhabitants;

24. Source: <http://oikonet-communityparticipation.blogspot.com/p/bratislava.html>; Accessed on 12.04.2016.

25. Compare: "Riešenie rozvojovej osi Petržalky", all projects available at http://www.bratislava.sk/vismo/dokumenty2.asp?id_org=700000&id=11041755&p1=11050210;

Accessed on: 15.04.2016.

26. All projects available at: http://www.bratislava.sk/vismo/dokumenty2.asp?id_org=700000&id=11041755&p1=11050210; Accessed on: 20.01.2016.

27. Sanoff H., 2011, Multiple Views of Participatory Design, Focus: Vol. 8: Iss. 1, Article 7, 2011. Available at: <http://digitalcommons.calpoly.edu/focus/vol8/iss1/7>; Accessed on: 29.01.2016; Sanoff quoting Thomson, K., Berry, J.M. and Portney, K.E. 1994. Kernels of Democracy. Boston, MA: Lincoln Filene Center at Tufts University

28. Sanoff H., op.cit.

29. Sanoff H., op.cit.

30. Zielińska E., Nieobliczalne problemy partycypacji w urządzaniu przestrzeni miejskiej" [*accessed online; researchgate*]

31. Zielińska E., op.cit.

Right to housing for the vulnerable EU-citizens in Sweden?

– Learning how to deal with informality from SDI's slum upgrading in Cape Town.

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1. Introduction to the situation of ethnic Roma¹ in Sweden

Cities are growing worldwide, yet the most impulsive growth is happening in the now called Global South and mainly on the African continent. Although in these regions informal settlements are a main driver of the urbanisation process, they are often neglected by the government and not seen as part of the actual cities (Camaren & Taylor 2014). The connotation of informality in housing, economy, transportation, etc. is tied to the Global South. Yet, even the comparably affluent and formally well planned regions of Western and Northern Europe have on the edges of their societies

The term "Roma" is the Romani (romani čhib) word for "man" and "person".

While there are many Roma groups, the Swedish government often divides those living here into five main communities: Swedish Roma (the descendents of those who settled here at the turn of the 1900s), Finnish Roma (Kaale or Kalé), Travellers/Travelling Roma, non-Nordic Roma (e.g. Lovara, Kelderash, Polish Roma, Churari) and newly arrived Roma from the Balkans (e.g. Arli and Gurbeti).

Roma people have lived in Sweden since the 16th century, and since 1999 have been recognised as a national minority along with Sami, Sweden-Finns, Tornedalers and Jews. All these minority groups have a historical presence in Sweden and an explicit sense of unity. They also have their own linguistic or cultural affinity and a desire to keep their identity intact.

Illustration 1: Source: Hartmann & Gerdes 2015

become home to informal economy and housing. For decades Europe's 'most vulnerably mobile citizens' (Catalan & Parker 2014: 393), the minority of the Roma has been living in informal and/or illegal shanty and caravan settlements and their main economic activities such as begging or the recycling of scrap material have been criminalized (Buijs & Goodwin 2013). On the one hand the EU Commission argues that the socio-economic exclusion of the Roma requires joined

responsibility of the EU member states and even allocates funding for social integration such as the European Social Fund (EU-Commission 2013, 2014). On the other hand nationalist politicians argue with the same outspoken *Europeaness* of the issue against national state's responsibility (Vermeersch 2012).

This paper looks closer at the housing situation of these vulnerable EU-Citizens and how they are denied access to Human Rights in terms of housing and sanitation in Sweden. Sweden lacks the political will to provide these rights, however would have the financial means to at least find at least temporary solutions that could support them *insitu* – at the places they live. In a second step the paper presents the slum-upgrading practice of re-blocking in South Africa which not only displays an example of *insitu* upgrading, yet it also aims for the mobilisation and the capacity building of its marginalized residents. Moreover, it shows how those marginalized groups, civil society organisations and governmental bodies can successfully collaborate if a political will accepts to

1 For simplification reasons I use the term Roma which includes also ethnic groups that would not refer themselves as Roma. However I recognize the ethnic diversity and also refer to the term 'vulnerable EU-citizens' which is often used in Sweden.

offer somewhat right to the city even to the informal. This is an approach that is far from given in Sweden, a country with a history of a strong welfare-state and high level of bureaucratic organisation. However, facing the current and future challenges of migration, influx of asylum seekers and the dramatic housing crisis in Sweden's major cities, this paper argues that Sweden may learn from more flexible approaches such as South African re-blocking.

2. Methods and author's positioning

In spring 2016 I graduated from the Master Program Urban & Regional Planning at Stockholm University. My thesis is written with the South African Alliance of the organisation Shack/ Slum Dwellers International (SDI SA) and their local partner NGOs about their practices of community participatory informal settlement upgrading in Cape Town. Before writing this thesis, in my perspective slums and informality were marginal in Northern Europe, yet returning to Sweden, I realized that even there thousands of EU-citizens are squatting outside and without any basic services.

Therefore, in autumn 2015 I joined *HEM – Föreningen som stöttar utsatta EU-medborgare*² a Stockholm based organisation that is engaging in the rights of vulnerable and mobile EU-citizens, often Roma, that are migrating to Sweden though often end up without means to support themselves and hence illegally squatting in the Swedish suburban-forests. HEM exist for two years by now and is based on volunteering work, donations and project grants. Through my position as a board member within HEM, my field work and minor research projects, this article is also based on qualitative data collected through HEM and officially documented actions in Sweden. A major part for the South African part is my Master thesis on Cape Town, as well as an article that I wrote for the ISOCARP annual congress 2015 in Rotterdam.

As an Urban Planner I am not an expert on evictions laws and therefore use Natascha Ryan's (2014) Master Thesis and Jens Waldenström's³ paper on evictions in Sweden and South Africa, as major source for legal terms. With these two sources, I am criticizing from an urban planner's perspective practices on evictions and discuss opportunities for informal settlement upgrading that are however, tied to a political willingness in accepting informality and poverty beyond national citizenship. Urban planning has always been a political act as it does have a direct impact on the lives of current and future generations. Thus I consider this article as a political statement, less related towards party programs yet more in favour of guaranteeing Human Rights and accessibility especially to the most deprived.

2.1 Disposition

This paper is divided into six main sections. After part one and two on methods & positioning, it introduces into the discrimination history of Roma in Sweden, as well as the situation of newly arriving Roma migrants. Third, it investigates the right to housing in terms of the legislation in practice in South Africa and Sweden. Fourth, I very briefly discuss the South African national policy for Slum Upgrading and its implication in practice. Section five presents the specific case of re-blocking, a community based slum upgrading tool the is practiced by the SDI Alliance South Africa. Finally, it discusses what Sweden could learn and imply from the South African case in order to

² HEM webpage: <http://foreningenhem.se>, last access: 20.06.2016.

³ Waldenström studies law at Stockholm University and also works at the NGO Civil Rights Defenders.

improve the housing situation of non-national Roma in Sweden.

3. Discrimination of Roma people in Sweden. Brief history and current situation

Ethnic Romani groups have for centuries been traveling through Europe and the Nordic countries. In Sweden especially the 1900s have a dark history of discrimination and denied access to many human rights, such as the right to education, work, housing, health and equal treatment. For instance from 1935-1975 a 'legislation that derived from population control interests and that aimed to "raise" the quality of the population', forced many Roma into sterilisation (Hartmann & Gerdes 2015:9) In 2013 it has been revealed that the Skåne County Police had been keeping a register of Roma people based solely on their ethnicity as suspecting them as potential criminals. Because of this the NGO Civil Rights Defenders filed a lawsuit on ethnic discrimination against the Swedish State and won the process in June 2016 (Civil Rights Defenders 2015). Even though the laws have changed and the Swedish states has asked the Swedish Roma people for forgiveness as well has been paying for reparation many still are affected be the structural exclusion from education and labour market, as still today, 80 % of the estimated 50,000 Roma living in Sweden are thought to be unemployed (ibid: 11). Therefore Sweden runs 20year strategy aiming that a Swedish Roma person who turns 20years old in 2032, has the same opportunities in life as non-Roma. In June 2016 five municipalities, amongst them Stockholm, were selected by the government as Roma integration municipalities receiving special grants in order to achieve the 2032 agenda (Stockholm Stad 2016).



Illustration 2&3: Informal shack in a sub-urban forrest of Stockholm. Source: Föreningen HEM

However, when it comes to European non-Swedish Roma who have only come to the country in the recent years, history seems to be repeating as the governmental policy supposedly aims for the migrants to leave the country. For instance Romani children are violated in their right to education as most municipalities do not provide schooling to them (UNICEF 2015). In June 2016 the municipality of Stockholm stated that these children may not claim financial allowances anymore, despite the municipalities mandate to take care of any underage individual.

Despite these obstacles, the 2007 EU-enlargement and the economic stress in Southern Europe has turned the Nordic Countries in the recent years into a 'hotspot' for Roma migration and informal housing (Wigerfelt & Wigerfeldt 2015). There are no official numbers of how many of these migrants live in Sweden as their situation is by no means static (Levy 2016) yet marked by

periodic in- and out migration. Thus, their legal status is often unclear, since the absolute right to reside in Sweden is limited to six months for unemployed EEA citizens (Skatteverket 2014) and without (self-)employment or student status, the migrants can not access any healthcare, state allowance, education, or any other service. Nonetheless civil society organisation estimate around 4.000 of these migrants in Sweden and about 2.000 of them living in the greater Stockholm area. Many of these vulnerable Roma face large difficulties to find employment in the service oriented and highly developed economy of Sweden, as illiteracy rates are high as well as the lack of formal education forcing them into begging and collecting scrap material. Even those who have some sort of formal education or work experience often only find labour in the informal economy which still prohibits them from access to housing, health care and other social systems. Generally facing the drastic housing crisis in Sweden, especially Stockholm, most of the migrants are squatting illegally in camps out of caravans, tents and self build shacks or sleeping on the streets in the inner cities.

This repetitive violation of the rights of Roma and an increasing number of evictions, as well as the denial by national and local governments to support and integrate these migrants into Sweden, suggests that Sweden seeks the Roma to leave the country. Yet the Swedish history, as well as examples of other European countries such as France, Spain or Italy have revealed that these migrants tend to stay despite this discrimination as they are often forced by structural poverty and even are discriminated in their home countries. Due to that, I argue that these groups should especially be guaranteed access to shelter, water & sanitation and education, not only as part of their Human Rights but also as a measure to break their circle of exclusion and poverty.

4 Right to property & Housing and evictions in South Africa

4. The right to housing

The UN Preamble of Human Rights (UDHR:1948) declares in Article 25 that everyone has the right to a 'standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services [...]' and the UN Committee CESCR (1991): states further that the right to housing does not only imply shelter but also a place of 'security, peace and dignity'. 'Everyone is entitled to this right, meaning that regardless of a person's resources, the right should be vindicated. The minimum criteria used in order to evaluate how adequate housing is, are, without preference, the following: security of tenure, availability of public utilities, affordability, habitability, accessibility, location and cultural adequacy' (Ryan: 10). However, these rights were not included in the International Convention on Economic, Social and Cultural Rights (ICESCR) which does neither contain a clear definition of what a house or even someone's home is (Waldenström 2015:3,4). In Europe though, the European Convention on Human Rights (ECHR) contains the right to protection of property in Article 1 of Protocol I as well as the protection of ones home in Article 8, and Sweden as a member state of the convention has ratified this. Despite the protection of ones home, there are no criteria of what defines a home nor does the convention include a right to housing. South Africa has ratified the African charter on Human and Peoples' Rights (ACHR) which does not include a definition of a home, yet the African Commission on Human and Peoples' Rights (ACHPR: 2012) states the right to housing, especially adequate housing to women.

Moreover, the right to water & sanitation is since 2010 Resolution 64/292 (UNGA: 2010)

recognized as a human right and also as no 6 included in the Sustainable Development Goals (SDGs). Adequate, safe and affordable housing can be found in the SDG 11.1.

4.2 Evictions

The UDHR as well as ICESCR contain protection against forced eviction which does not imply a protection against all kinds of evictions though as under certain circumstances forced evictions can be acceptable (Waldenström 2015: 4). The ICESCR defines forced eviction as a 'permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection (UN CESCR: 1998). In order to separate legal evictions from arbitrary evictions, the following safe guards must be applied in all circumstances and for all individuals regardless whether or not these individuals occupy land/ property legally or not:

- Evictions should only be carried out as a last resort and only after examining all other possible solutions.
- There must be genuine consultation with those concerned before any eviction takes place and they must be able to put forward alternative solutions.
- The state must ensure that individuals are not made homeless or put at risk of suffering other human rights as a result of an eviction. Where those affected are unable to provide for themselves, the state must take appropriate measures to ensure that adequate alternative housing is available.
- The authorities must give adequate and reasonable notice to all affected persons within reasonable time.
The authorities should refrain from carrying out evictions in particularly bad weather or at night.
- Any force used must be proportionate and reasonable, and governments do not have the right to take such action for punitive purposes.
If a forced eviction has taken place, the state must ensure access to an effective remedy prior to eviction and, failing that, legal aid, as well as the right to reparation, which may take the form of restitution, compensation, rehabilitation and guarantees of non- repetition.

4.3 Evictions in South Africa

Due to the South African history of expulsion and discrimination during Apartheid, the now binding constitutions protects the right to housing and property. In the second chapter article 26 states that: *'Everyone has the right to have access to adequate housing. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of this right. No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions'*.

As stated here, every eviction must be subjected to court proceedings and proper notice must be given to the subjects and if the property is privately owned, the court has to consider the length of

the occupation according to PIE – Prevention of Illegal Eviction from Unlawful Occupation of Land Act 19 of 1998. If the property is occupied less than six months, the court must consider: '*... all the relevant circumstances, including the rights and need of the elderly, children, disabled persons and households headed by women.*' If the occupation on going for more than six month, the court must consider whether land has or can reasonably be made available for the relocation of the occupier. An urgent eviction can be requested due to health and safety risk of residents though '*health and safety cannot serve as a pretext for bypassing the requirements of the Constitution*'. Moreover, if temporarily evacuated from their homes, as due to an emergency, the subjects of eviction have the right to return as soon as possible (*Waldenström 9*).

Despite these regulations, in practice communities and individuals often can not return back to their former places of residence and even remain in location which are hard to access or lacking services, such as schools and job opportunities. A major infamous example is the eviction of the informal settlement of Joe Slovo near Cape Town. In order to make space for N2 gateway project, 'a mix of higher density subsidised rental housing units, the residents of Joe Slovo were evicted, but promised that 70% of the newly constructed housing would be provided to them. The remaining 30% were promised to backyard dwellers of the neighbouring settlement Langa. During the project implementation the dwellers should be relocated to Delft an area 34km outside the city centre and notorious for its low livelihood and job opportunities but crime. Moreover, it became clear that there would not be sufficient housing for the Joe Slovo settlers in the N2 project and that those houses provided to them would be in the Delft area. In September 2009 the Constitutional Court has suspended the eviction of the Joe Slovo dwellers until further notice, which has not been announced until now. However, many dwellers who had voluntarily moved to Delft still remain in this worse off location with less livelihood opportunities' (Heyer 2015a: 26,27).

4.3 Evictions in process in Sweden – focus on Roma communities

There is no protection against arbitrary evictions in the Swedish constitution, however the second chapter 44 § *Jordabalken*, the code concerning real property and rent there contains protection against arbitrary evictions of tenants (Waldenström: 5). Unlawfully occupation of property is seen as a civil offence and the eviction procedure is initiated when a public or private landowner makes a request towards *Kronofogden-myndigheten*, the Enforcement Authority.



Illustration 3: Eviction of the informal camp Sorgenfrilägrät in Malmö in November 2015. Photo credit: Victor Pressfeldt

'If the property is a offentlig plats (common area) as defined in 1 chapter 2 § Ordningslag (1993:1617) the police may conduct an eviction without court proceedings. If the property is used without permit and the usage is not temporary then the occupation is a crime against public order

and the police are in titled to put an end to the occupation. If there is a risk that the occupants might harm the nature on the property by pollution or littering the eviction process can be initiated by Miljönämnden' – then environmental supervising authority (Waldenström: 6).

According to the organisation HEM, whose fieldworker and volunteers are in regular contact with the Roma migrants and also have accompanied them in several evictions, the argument of environmental and health concerns is often given for accusing eviction in Sweden. As for instance the migrants often need to make use of the forests for their basic needs since they are lacking sanitation and services. However the most infamous eviction was enforced in Southern Sweden's Malmö where temporary up to 400 migrants had been residing in so called *Sorgenfrilägret*, a caravan/ shack camp in an unused industrial side. The private owner of the property had tolerated the camp for about six months before the administration of environmental affairs requested eviction based on health and environmental risks for the migrants – due to the absence of services and sanitation. The migrants were given time to move from the camp which many followed, yet as there was no alternative housing options given many stayed and protested in alliance with activists against the eviction. Hence, many not only lost their homes but also belongings and collected values.

Only in June 2016 the organisation Civil Rights Defenders has made a report to the juridical ombudsman about the eviction practices of the police Farsta-Vantör, a district of southern Stockholm. Civil Rights Defenders criticise that the police is systematically clearing out camps of vulnerable EU-citizens without be given a mandate by the Enforcement Authority but integrate these evictions into their general operations against criminality. Also, as the police is often not warning the subjects of eviction in the officially predefined amount of time these practices violate national and international laws (Civil Rights Defenders 2016). Indeed many vulnerable EU-migrants have reported to the organisation HEM that they often only get a very short notification, or sometimes even none, or unclear information about upcoming evictions, since the police would not always provide translation or documents that many of the illiterate migrants can not read. As reported and documented within HEM, once a diabetes patient's caravan and with that his medication was removed during his absence. Through the help of HEM volunteers and the organisation Civil Rights Defenders, the patient appealed against the eviction and due to his need for medication, he and also the other evicted individuals were allowed to pick up their personal belongings yet were not given back their caravans.

In the end of 2015 the municipality of Lund, also located in Southern Sweden, opened Källby camping ground for vulnerable EU-citizens to legally yet temporary live there for two months. The camping ground was closed on January 31 and since then around 40 are sleeping outside again. Joakim Månsson Bengtsson, spokes person of organisation *Help beggars in Lund* and member of the political party *Feminist Initiative*, says they had only been informed 48hours prior to the eviction though the organisation had asked the municipality for a one week notice in order to prepare the migrants and find alternative solutions (Svahn 2016). The Swedish authority for Social Administration is investing 700,000 Swedish Kroner per year, into a homeless shelter called *Smålands nation* which however does not provide sufficient sleeping spots for 35-40 individuals. An other temporary shelter had been closed in March, so that Månsson Bengtsson argues that the municipality should rather open Källby camping ground again or invest into a similar medium- or long term solution (Kurprijanko 2016) which could provided not only basic services and shelter but

also protection from crime motivated by xenophobia and antiziganism.

Thomas Hammarberg, a Swedish diplomat and human rights defender who held the post of Council of Europe Commissioner for Human Rights in Strasbourg 2006 to 2012 and now is chairman of the commission against antiziganism, supposes that much of the eviction practices are signal politics stating that Sweden is not a generous country where it would be okay to move without means of support. Here it becomes clear, that not only the right to housing but also the right to shelter is bounded to nationality and the even EU-citizenship does not guarantee any sort of rights to these. As described in Levy (2016: 51), some Roma migrants would even claim they would be 'paperless migrants' when asking for medical treatment since this status does provide them a better position than not having a correct documentation of their status in Sweden's. In this sense the migrants "'fall through the gaps' when it comes to citizenship in Europe" (ibid), as they are discriminated in many basic rights in their countries of nationality, yet also denied access to many human rights in the countries of migration, as in this case Sweden. Based on the assumption that these rights are already guaranteed in their home countries, Sweden justifies even right to some sort of shelter (*tak-över-huvudet-garanti*) and protection from homelessness through evictions as it is prohibited the ICESCR. In that sense it becomes clear that even basic human rights are tied to national citizenship and do not go beyond. As Levy (2016) puts it: 'Hannah Arendt's words, written in 1951, hold jarringly true today':

"The Rights of Man...had been defined as "inalienable" because they were supposed to be independent of all governments; but it turned out that the moment human beings lacked their own government and had to fall back upon their minimum rights, no authority was left to protect them and no institution was willing to guarantee them..." (Arendt 1979:291)

So far this article has described practices by Swedish sub-national authorities that do not give any opportunity for these vulnerable Roma to settle in Sweden but apparently intend to turn Sweden into a country unattractive staying. This impression appears align with the report Martin Valfridsson, the national coordinator for vulnerable EU-citizens, has published together with Åsa Regnér, Minister for Children, the Elderly and Gender Equality in February 2016. In this he argues, that Swedes should not give any money to begging Roma on the streets yet better donate to charity organisation that invest in the beggars' home countries (Valfridsson 2016).⁴

In order to make these migrants leaving, Sweden accepts violations of Human Rights. However, due to the truly *Europeanness* of this issue as in terms of free movement, I argue Sweden only shifts the problem temporary outside of its national borders yet will neither contribute to an improvement of the situation or nor will keep it out of Sweden on the long term. Therefore, I argue that Sweden should learn from international good-practices of how to accept and integrate informality into modern cities, aiming to assure a somewhat right to the city even to economically marginalized groups. The following section briefly introduces the history of informality in South Africa and the country's attempts to deal with its housing shortage, as well as the slum upgrading practice of re-blocking.

4 Later on the same year the Swedish Radio revealed that a charity organisation that was explicitly recommended by Valfridsson and even Prime Minister Stefan Löfven, has been involved into illegal work practices such as the failure contracts to workers in Romania. Sveriges Radio: <http://sverigesradio.se/sida/artikel.aspx?programid=83&artikel=6427708>, last accessed: 29.0.2016.

5. Informal Settlement upgrading in South Africa – the right to dignified housing

South Africa as country with a large share of the population living in informal settlements outside the core city, has due to its Apartheid history developed a right to decent housing of dignity. Hence, 'in 1994 the ANC government of Nelson Mandela started the Reconstruction and Development Programme (RDP) following the idea that adequate housing is a human right and the delivery thereof was a responsibility of the government itself (Ley 2009: 18). Thus, housing should be given for free to the poor income groups of under 3500 Rand per month. Since this honourable and very ambitious approach was launched, around 2.8Mio houses have been built, yet the number of informal settlements keeps on growing. The reasons for this have mainly been migration from the rural to urban areas in South Africa itself and the foreign immigration from surrounding, economically and socially less stable countries. However, the construction of the so called RDP houses has been problematic as well, since these often lack quality and show up cracks and other damages, which are results of struggles with the subsidy allocation but also of corruption among profit oriented developers (Tissington 2011: 62)' (Heyer: 2015b: 5).

5.1 The Upgrading of Informal Settlements Programme (UISP)

Due to these issues, it became clear that the RDP approach would not be able to fill the increasing housing backlog and the top-down approach failed to meet the actual needs of people. Therefore, a different solution had to be found and in 2004 the *Breaking New Ground* (BNG) programme was launched as a more participatory approach which intended to include communities. Moreover, it aimed for an *insitu* approach which means that residents, referred to as 'communities', will not be relocated and their homes demolished but the upgrading will happen at their current location, as a more time and cost-efficient alternative. Yet, it took five years until the National Policy on Housing was revised in 2009 and for the first time contained guidelines on how to implement participatory upgrading: the *Upgrading of Informal Settlements Programme* (UISP).

5.2 Implementation of the UISP: Re-blocking in Cape Town



Illustration 4: Flamingo Height: before and after re-blocking. Source: CORC 2014

Despite contentious eviction of communities as in the N2 gateway project, on the other hand in 2010 the City of Cape Town approved 22 pilot projects to upgrade *insitu* informal settlements in the greater Cape Town area. This form of upgrading focuses on supplying basic services, such as water, sanitation and electricity in settlements without re-locating the communities but letting them stay during and after the upgrading process. In cooperation the South African Alliance of Shack/Slum Dwellers International (SDI SA) and its partners involved are the Informal Settlements

Network (ISN) and the NGO *Community Organisation Resource Centre* (CORC), which have further developed the concept of *re-blocking* as a tool for the inclusion of communities into the

planning and implementation of the upgrading process. Re-blocking, which can be used interchangeably with the term, 'blocking out' has two foci. It is first of all a 'mobilisation tool' for communities to become organised, engaged and educated about their living situation and their opportunities to change. Second, it is the implementation of a design in which the shacks of an informal settlement can be arranged in such a way that there is space for basic services such as water and sanitation. Hence, re-blocking not only focuses on the exact needs of communities but also on the participation of them into the process.

This process involves the old structures of the settlements being torn down and replaced by standardised high quality material shacks. The new shacks are almost the same size as the original ones to sustain equity among the households. This means that a family who had around 20m² before, will get a replacement of 20 m². A couple which had 8 m² will receive 10 m² as this is the minimum size of the standardized replacements. The replacement shacks however will not be in the exact spot but arranged to allow more space for roads of at least 3m. This shall function as a fire blockade as well as access for (emergency) vehicles. There will also preferably be space for (more) toilets/ taps and any other special needs of the community, such as open space for children to play, a creche, a community hall, a so called 'jungle gym' or areas for trading.

However, besides the important physical upgrading, re-blocking seeks to improve the often minimal cohesions between the slum dwelling communities. All communities are requested to actively participate in analysing the given environmental such as spots of flooding but social structures, such as the number of children, elderly or unemployed individuals in the community. Based on these data, the community has to define themselves their needs and goals and how to implement them in the new design. An aspect could be the need for a crèche or a playground. This process is called *enumeration* and important for raising self-awareness and democratic decision making process within the community.

Moreover, and this is a very important aspect, the communities need to contribute up to 20% of the cost for the shacks themselves. This is given in order to create a sense of ownership and responsibility within the community but also raise the feeling of achieving goals. Also, it is criteria that displays the municipality and possible third investors that this community is worth investing in and a reliable collaboration partner. The costs for the infrastructure, such as pipes, drainage and toilets are taken by the municipality, 20% of the shacks by the community and the remaining costs by SDI's local partner NGOs and their donors.

These costs cause a lot of challenges and stress to communities, as for instance in Flamingo Height 90% of the residents have been unemployed, yet strongly mobilized, they still managed to save the money requested for the upgrading. Specifically women become engaged, as they are often the financial managers of families, who for instance would save the change after grocery shopping or even collect bottles and scrap material to save the costs. Many women would even develop a saving scheme as community in order to give each other loans for medical cost or smaller investments which significantly increases the cohesion amongst them.

5.3 About the (social) sustainability of re-blocking

As described, besides the physical settlement upgrading of re-blocking includes two main major important yet difficult aspects. This is on the one hand the mobilisation and involvement of

residents of informal settlements in the construction as well as planing process, and on the other hand the guarantee to home ownership. In Flamingo Heights the new structures even received an official street name as well as formal post-addresses. This example reveals how far even initially squatted and occupied areas can become formalized yet without eviction or excluding its initial residents as long as there is a political will to accept them.

In this sense re-blocking proves a major advantage towards insitu upgrading as planned by the UISP which only includes South African citizens. However, facing the increasing housing backlog in South Africa, re-blocking does not display a solution for the major shortage as the protracted process can take years and is hereby susceptible for conflicts and drop-outs of communities that might not be stable enough to collaborate and safe money in this way. However, it still provides examples of how even extremely poor, deprived and disrupted communities can become mobilize and save money for the ownership of their own places as well as actively plan these. Through this process they develop a sense of responsibility and beyond that have the chance to focus on other challenges, such as education, employment and long-term future thinking which was hardly possible before due to the constant threat of evictions. In this sense the preconditions for re-blocking in South Africa show similarities with the situation of vulnerable Roma in Sweden and display practices that could be transferred and tested if there was a political will and budget for thinking more long term about the issue.

6. Drawing conclusions on the development effects of adequate housing & sanitation – importance beyond human rights

As described above, the municipality of Lund annually invests around 700,00SEK into shelters for the Roma which provide insufficient sleeping spots and no sense of a constructive tackling of the situation. Also the 2016 budget plan of the city of Stockholm (Stockholm Stad:188) distributes 10,3mil SEK for supporting vulnerable EU- citizens with sleeping spots and mitigation of urgent needs such as in cold winter nights. Most of the shelters are run by (private) churches which are setting the prices up to 300sek per night and per bed which reveals the financial non-sustainability of this approach. Instead the part of the budget could be invested into community participatory approaches as a pilot project besides legal camping grounds as in it previously existed in Lund. The following section discusses the impact such a project could have, not only for the vulnerable EU-migrants but also why the Swedish society and state could benefit from it.

6.1 What could Sweden gain out of the providing housing to the Roma?

In 2015 at least 2,4 billion people did not have access to adequate sanitation. At least 1000 are dying on diarrhea diseases that are cause by contaminated water and insufficient hygiene. Many girls drop out of education when they start menstruating since schools do not provide them with adequate and hygienic toilets that would protect them from (sexual) assaults (WHO/UNICEF 2015).

According to the United Nations High Commissioner for Refugees (UNHCR) around 55 million people have been fleeing in 2015. Around 40million of them inside their country and 15 million have become refugees. The lack of access (safe) water, sanitation & hygiene (WASH) is only one of many direct or indirect cause for fleeing, yet a reality for billions of people world wide and even a reality for around 4000 Roma in Sweden. Of course they are coming to Sweden mostly for

economic reasons such as collecting money for their families in their home countries, yet they are facing the same struggles when it comes to the lack of water and sanitation access in Sweden as elsewhere far less affluent countries. Evidence can be found Davis' & Ryan'(2016) mapping on water & sanitation in Sweden's informal Roma settlements. Obviously the provision of WASH and housing or some sort of shelter, can not solve the transnational and deeply rooted causes of discrimination of the Roma as well as their economic deprivation. Yet it is a starting point for breaking their circle of poverty as diseases cause by bad hygiene can be lowered which would give them more time to focus on economic development or even education, providing them even with more dignity and safety – especially vulnerable women.

Of course the improvement of WASH in terms of long-term economic development can only be successful when being combined with housing and/ or shelter that is not threatened by eviction on a daily basis. The daily fear of eviction does not give any room for long-term and future planning, and in the case of Sweden even causes economic loss, as the Roma get fined for being evicted and these fines get registered in the migrants' home countries. Arbitrary evictions by the police as well as legal eviction executed by the Enforcement Authority cause a major harm prohibiting any kind development for these deprived groups which goes far beyond losing a sleeping spot. Sweden is not taking this in consideration – in favor of a political agenda that makes these migrants leave the country. In contrast, the South African PIE provides an example protecting the rights of vulnerable squatters when requesting to take the circumstances and needs of *elderly, children, disabled persons and households headed by women'* into consideration.

6.2 How can Sweden profit from supporting the Roma? Is there a win-win situation?

Understandably Sweden does not want to invest into any form of slum like developments in its own country that is characterized by a one of the highest housing and development standards world wide. Yet when facing the number of global refugees due to economic, political and environmental stress that will be only increasing in the future, it is almost naïve to believe that Northern Europe/ Sweden can leave this influx and pressure outside its borders as it has been proven latest in autumn 2015. Though boards are closing, humans in need will through their survival instinct still find their way in. Facing the housing crisis in Sweden that has only recently lead to opening up to more temporary or quick housing solution, yet still struggles to provide its citizens, especially students, (inter)national migrants and low-income groups with adequate housing.

As the internal and external pressure will only increase, it is time to work with more flexible solutions even for the marginalized and informal whom can so far still be considered as a manageable number but will only increase in the coming years. Thus, it is time now to learn from international good-practice examples before the number of deprived is out scaling and not manageable anymore. As one sized does not fit all, Sweden must learn and find its own local solution and re-blocking displays only one of many examples that not only provide infrastructure but also involve deprived groups and try to educate and empower them. Active participation in the development of ones living areas, especially within cities, is one of the most democratic acts that can be provided when electoral participation is shrinking as well as the faith that any kind of governmental authorities can provide a secure and future oriented living – which has just recently been proven by 52% of the UK citizens voting for leaving the EU.

However, alternative approaches where individuals can have a major impact are often only

possible on a smaller scale and therefore it is important to act learn from that as soon as possible in case Sweden still wants to be a country of high social cohesion, trust into authorities and high living standard in the future. Thus, Sweden needs to recognize the Roma issue and the informality that comes with it as an opportunity to learn for the future and become more flexible and inclusive in alliance with Human Rights, SDGs and democratic participation.

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Public Participation in Integrated Development Planning: A Tool for Social Justice and Collaboration in KwaZulu-Natal, South Africa

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Abstract

Participatory approach to development planning is important especially in developing world if quality of life is to be improved in a sustainable manner. Collaboration between organised civil society, including the business sector, is crucial to develop sound strategies and therefore responsive strategic development plans. Development plans not guided by deliberative and inclusive process from grassroots level have a risk of being elitist and promote maintenance of status quo. Maintenance of status quo in the context of developing and formerly colonised states inevitably perpetuates socio-economic injustices of the past. The post-apartheid government of South Africa adopted a developmental state philosophy and emphasised it even more when introducing its new system of local government in year 2000. Studies on integrated development planning and its associated public participation indicate the extent public participation is dwindling compared to earlier years. In this paper, it is argued that public participation as envisaged in legislative and policy provisions failed to take off in any meaningful way in its early years, denting the quality and credibility of integrated development planning process and state itself. This is a cause for concern given the emancipatory agenda of both concepts. Sadly, the significance of these two tools in transforming South African society has been downplayed too much especially in the last eight to ten years. The study used secondary data in terms of selected Integrated Development Plans within the province of KwaZulu-Natal, South Africa, academic literature on the subject and experience from being practitioner in IDP process since end 2001. A turnaround is to be implemented urgently if the social transformation of the urban and rural landscape of South Africa is to be meaningfully transformed. The capacity of both civil society and civil servants to engage and jointly design solutions to the socio-economic problems for every locality, as well as, authority of IDP as overarching strategic framework from where all plans and actions by government in particular, holds is key to this turnaround.

1. Introduction

The democratic government of South Africa is founded on the philosophy of a developmental state. Integrated Development Planning and public participation has been positioned as a cornerstone for making this principle a reality. "The Constitution of the Republic of South Africa (Act N^o106) 1996 envisages a robust local government system, which can provide democratic and accountable government for local communities; ensure the provision of services to communities in a sustainable manner; promote social and economic development; promote a safe and healthy living environment; and encourage the involvement of communities and

community organisations in the matters of local government” (Madzivhandila, 2014: 225). The White Paper on Local Government, 1998 provides well thought through policy argument for both integrated development planning as a tool for developmental state in general and developmental local government in particular. It also outlines the pillar of public participation as key element of this tool. “Despite the provisions for local communities to participate in the development planning processes, communities are still, in most cases, overlooked and shut out of the development planning processes” (Mashamaite, K et al, 2014: 225)

The purpose of this paper is to reflect on public participation journey undertaken to date through integrated development planning. The aim is to point out shortfalls and propose how both the state and civil society can regroup and ensure the spirit and the provisions of the policy and legislation on public participation comes to fruition. Such revitalisation is important given central role played by public participation in integrated development planning process and thus drives our governance system.

2. Rationale for Public Participation in Integrated Development Planning

2.1 Developmental Local Government

The first legitimate government of South Africa ushered in 1994 was faced with the responsibility of reengineering a society with a history of centuries of race- based domination and discrimination, resulting in gross disparities in income levels, socio-economic wellbeing, and access to infrastructure and services. As a result, in the context of South Africa, the developmental state is about giving effect to the socio-economic and political priorities – participatory democratic state, poverty alleviation and economic development. “The concept in the case of South Africa recognises that poverty, unemployment, and inequality inherited from apartheid past cannot be destroyed without major interventions by the state” (Turok, 2007: 1). In the context of the continent of Africa, the failure of structural adjustment programmers has demonstrated a need for an active role to be played by the state rather than to be only a regulator (Mkandawire, 2001).

A developmental state is one that is pro-development in its systems and processes focused on promoting and facilitating economic growth and social development. It is a state that seriously endeavours to invest its administrative and political resources to the ultimate goal of economic growth and development (Mkandawire, 2001). It is closely intertwined with the 21st century meaning of a democratic state. The democratic states are traditionally known as political systems where leaders are chosen by voters through free and fair elections at regular intervals. Huntington argues in Edigheji (2005:2-3) that a state is only democratic “to the extent that its most powerful collective decision makers are selected through fair, honest and periodic elections in which candidates freely compete for votes and in which virtually all adult population

is eligible to vote". This dominant understanding of a democratic state has key elements characterizing it – equality, political tolerance, rule of law, a multi-party system, human rights, division of powers between the legislature, judiciary and the executive, accountability, regular free and fair elections and accepting results of elections (Edigheji, 2005). However, this traditional understanding of democracy has attracted some critiques. Such a state has grown unpopular with a society that has so much of its needs not met. The socio-economic disparities have meant that a state that starts and ends at being democratic is not responsive to present society and therefore irrelevant.

Consequently, some scholars started to argue that the socio-economic justice was supposed to be the key goal of any state. It was becoming clear that for democracy to have any value, it must ensure that equality is not just in terms of the voting rights and overall non-discrimination, but equal opportunities for all citizens in terms of access to essentials of human existence. This was particularly important for countries that were once colonised, as they have had discriminatory laws and practices. Democracy in such countries had to recognise that the playing field was not levelled and that unless this is acknowledged and addressed, it will remain meaningless to the poor and marginalised. The danger is that if not addressed democracy in such situations may be seen as perpetuating historical injustices and lose credibility. The economic empowerment and improved quality of life became key ingredient to new meaning of democracy.

It was on the basis of such understanding that ours as South Africa goes beyond mere democracy, but to be a democratic and a developmental state. "A democratic developmental state is one that not only embodies the principle of electoral democracy, but also ensures citizens participation in the development and governance process" (Edigheji, 2005:5). Over and above traditional characteristics, it fosters economic development and growth as well as citizen participation in governance process. Democracy and the developmental state to have meaning especially in countries where the majority used to be marginalized, it is important to have both participation and representative approaches complementing each other. Community participation helps expose citizenry to roles and responsibilities of government and governance processes thus empowering them to better position themselves to take advantage of the services being offered.

To achieve its objective to be developmental, the state needs a particular positioning and that includes having clear and specific socio-economic objectives to be achieved through state intervention. White in (Edigheji, 2005: 6) states that some of those objectives to be: "The alleviation of absolute and relative poverty; the correction of glaring inequalities of social conditions (between genders, classes, regions, and ethnic groups); provision of personal safety and security; and the tackling of [global]...threats such as environmental degradation... overall, to the extent that democratic politics are instrumental in organizing socio-economic progress

along these lines, they can be described as developmentally successful; their success depends on the existence and efficacy of the democratic developmental state”.

The research differentiates a developmental state from the rest by firstly, having a clearly spelled out socio-economic objectives e.g. dealing with poverty and social inequalities. Secondly, being able to set out institutional structures and systems in a manner that its helps achieve its set agenda. As a result, institutional attributes of a state forms a critical part in determining whether it is developmental or not. Put differently, a developmental state, though its ideological foundations are developmental, it must also manage and deploy its resources to the economic development agenda. This explains why a developmental state is defined not only in terms of its goal but also in terms of its institutional attributes. All spheres of government are expected to comply with such characteristics and the role of a developmental state. Included in this role and characteristic is the important step of setting both the appropriate institutional structures and clearly defined socio-economic goals.

Finally, a democratic developmental state has a high degree of synergy in its agencies/ structures and they work in partnership with different stakeholders. A democratic developmental state is expected to be able to formulate and implement coherent development goals. Hence, the integrated development planning approach was adopted as a critical tool in the context of South Africa's endeavour to become a developmental state.

A developmental state in the context of local government means that the local sphere of government cannot just be a service provider but an agent for comprehensive development (from all angles) and while at it, be developmental in approach. The strategic agenda of local government is addressed in the White Paper on Local Government, 1998. It makes a point that the local government sphere must play a 'developmental role'. It further states that developmental local government should mean municipalities committed to work with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives. It should be emphasised though, that a developmental state becomes a preconditioned to developmental local government, because it cannot exist on its own but always as part of a broader framework of the state.

In our case, the developmental state remains a goal and the vehicle to realise it is the IDP. Government has adopted IDPs as the plan for all spheres and sectors of government. As such “the IDP is a critically important management tool to help transformation, growth and development at local government level” (Mashamaite, et al, 2014: 225). Although the way the state is still structured in terms of needs and pronouncement on those key needs still leaves a lot to be desired. At least in terms of intent, the IDP is a tool used by South African state for socio-economic transformation and community participation to build a democratic

developmental state.

2.2 Integrated Development Planning

The coordinative and integrative approach as a main characteristic of a development state is clear from the section above addressing the concept of a democratic development state. The working together of different state agencies towards a common goal, the resistance from particularistic interest groups and social networks suggest an integrated approach as a key feature. The nature of a developmental state is such that given its socio-economic and governance imperatives it has been about political leadership, aligning and directing spheres of government towards the same goal. As such, "a central tool in articulating and implementing political priorities has been strategic planning and the alignment of such planning across spheres" (Edigheji, 2005:21)

Policy makers for South Africa deemed integrated development planning a relevant for the governance approach that the country was to follow. Core to this tool is an understanding that it is both a process and plan. This tool is perceived on one hand, as providing a sound platform for critically analysing the current socio-economic trends of an area of jurisdiction of a municipality to provide rational decisions (plan). On the other hand, as a process, it is perceived as instilling and promoting an organisational culture on both civil servants and civil society sides of interconnectedness of different internal and external stakeholders, development factors as well as budgetary and performance management systems. The conception and application of this tool reflects a particular ontology and epistemology. While Communicative Rationality is regarded as a key theory informing integrated development planning, scholars recognize that it is more of combination of modernism and postmodernism. In the modernist era, planning was regarded as science and thus only trained officials could engage in it. As with all sciences, planning was expected to consider the environment in its totality and then follow prescribed procedures, which follow one after the other to reach a rational conclusion. On postmodernism that conceptualization of planning is challenged. It is argued in postmodernism that there is no absolute truth waiting somewhere to be revealed through an application of criteria and methods applied by professionals (Schon, 1987). Therefore it follows that not only 'scientist' is capable of engaging with planning.

The postmodern departure within planning theory has marked a fundamental paradigm shift casting planning as essentially a communicative action (Healey, 1997). This concept of communicative rationality has a different conception of human reason. The concept of a communicative model implies an expansion from the notion of reason as pure logic and scientific empiricism to encompass all the ways we come to understand and know things and use that knowledge in acting. The conceptualisation of planning as technical or instrumental

rationality, directing change is no longer plausible. Planning must be seen as a way of acting, we can choose after debate i.e. the public attention is drawn to knowledge that helps it to reach a decision.

Integrated development planning is influenced by this postmodernist perspective to planning. This tool emphasises a lot on community and stakeholder participation. It approaches planning not as an exclusive specialty reserved for specialist civil servants but a systematic and systemic engagement of all affected parties to determine wide spectrum of socio-economic development challenges and solutions. In principle integrated development planning reaches decisions through argumentation and consensus which is its communicative rationality character.

South African Municipalities are compelled to develop plans called Integrated Development Plans (IDP) in respect of areas they govern as per the provisions of the local government: Municipal Systems Act (Act N^o 32 of 2000). Integrated development planning was introduced to overcome the legacy of apartheid which related to issues such as separate development as well as disintegrated localities. It is meant to promote intergovernmental co-ordination and to ensure municipal strategic agenda and processes are encapsulated in one specific document. "The [introduction] of the IDP, as a development management tool, represented transformation of the local government towards a more developmental one" (Madzivhandila, 2014: 226). IDP's are a planning approach which requires the whole municipality to be on board in determining the best possible interventions that would enable long-term and sound development. The municipality here is meant in its broader sense consisting of political, administrative and community.

The IDPs are five yearly municipal strategic plans which get reviewed annually to take new dynamics and developments into account. The process places emphasis on community participation and always involves key stakeholders and communities. It is a strategic document that informs annual programs/ performance targets. The IDP is fully owned by a council such that after every election, they are given a chance to develop a new 5 year IDP. Indeed, they may choose to adopt one developed by the previous council or develop one of their own. The IDP seeks to balance economic, social and ecological aspects of sustainability while at the same time taking into account the institutional capacity necessary for the implementation beyond a municipality but to include provincial and national government as well other key public entities.

The legislation defines the IDP in more elaborative terms as a single inclusive strategic plan for municipalities that integrates and co-ordinates service delivery within a municipality; forms the general basic on which annual budgets must be based; aligns the resources and capacity of the municipality within the implementation of the plan; assists a municipality in fulfilling its constitutional mandate as a developmental local government; and, facilitate the process of democratisation through vigorous public participation.

3. Factors Affecting Public Participation in IDP Process

As discussed above, South Africa's democratisation of local government is embedded on ethos of developmental state with IDP as a method and public participation as overarching methodology. The White Paper on Local Government, 1998; Local Government: Municipal Structures Act (Act N^o117) 1998 and Local Government: Municipal Systems Act (Act N^o32) 2000 clearly sets out provisions to establish a coherent system of developmental local governance with community participation and integrated development planning process as the pillars. Despite the legislative and policy provisions on public participation process, rolling it out in a manner that it achieves its intended objectives has been a challenge.

Public participation is a two-way process, for it to be effective it requires a transformed civil servant that embraces the empowerment and inclusivity objectives of the process as well as capacity of the community members to engage on the subject matter. At institutional level, South Africa had during apartheid developed strong civil society movement with strong and noble leadership genuinely fighting for wellbeing of society as a whole. As society became used to democratic and representative government (shortcomings aside) this critical ingredient to effective public participation was weakened. Problems were two-fold, on one hand, most of the leaders moved to occupy civil servants positions and had to change role; on the other hand, emerging civil society leadership used their positions for narrow interests and self-gain, i.e. to be recognised for employment or otherwise. The state was left with willingness or at the very least mandate of participatory approach but the other role-player had significantly lost ground. The situation also worsened by fact that the civil servants by and large were not transformed to appreciate the spirit behind the public participation legislative and policy provisions.

For civil society to engage the state productively, it needs to be clear about the role of a municipality – a community able to deliberate on development and planning issues that affect them. The difficulty is that in developing countries, is that public participation is in itself meant to be a mechanism to empower communities to understand what government is, while at the same time, it ideally needs an empowered society to start with for its effectiveness. The journey also proved that while such intentions are noble, it requires a sophisticated civil servant and community leader. With the transition the country was going through, such preconditions became increasingly impossible to satisfy.

Nevertheless, when the IDPs as we know them today were introduced about 15 years ago, few years that followed a lot of ground was covered on the public participation front. All involved embraced both the IDP as a tool to transform our society. In the same vein, public participation method was appreciated by all as emancipatory, empowering and ensuring equal treatment of issues. At this stage community/village workshops were being held to go through strategising process and planners did a lot to avoid planning technical jargon and rather use plain language to engage communities. Sound analysis and interventions came out of this process in most IDPs. But by mid to late 2000 cracks were already showing. Frustration was two-fold. Firstly, the demand was way above available resources including time to demonstrate benefit of the process through implementation of significant number of interventions proposed. Secondly, some projects were being implemented having not been through this deliberative process causing it to lose credibility.

There has also been a disjuncture between expectations and requirements of public participation and service delivery pressure. It is a generally acceptable fact that meaningful public participation takes time given the number of stakeholders and community groupings to be engaged as well as the different levels of understanding and interests on any issue. As a result, it is quite a journey to ensure deliberations take us to common understanding on nature and impact of a problem let alone appropriate solution.

Participation in IDP is one of many platforms open to engage government in general and local government in particular. Nothing in legal terms strictly prohibits a municipality or sector department implementing a programme or project be it soft or physical development in nature to an area without first convincing all involved through the IDP process. Lately, communities are also able to organise protest action and they get immediate attention and have their issues addressed almost immediately.

In an endeavour to strengthen the process certain guidelines, circulars and regulations have been issued over the years, some with unintended consequences. One classical example was the call for municipalities to have Mayoral Izimbizo where a Mayor criss-crosses his/her area of jurisdiction to listen to the people at grassroots level. The objective for such an exercise is said to be to inform the IDP and Budget and also Mayor to share same. Such instructions while intended assist strengthen the participation process it has achieved the opposite. Firstly, some levels of duplications become unavoidable and secondly, civil servants become overwhelmed with myriad of activities towards same goal.

The public also misconstrue participation as a platform to raise demands and complaints rather than to collectively deliberate on underlying factors to socio-economic challenges they face and chart a way forward in a strategic manner. As a result, Mayoral Izimbizo has become popular as

it takes the shape communities more comfortable with. In Mayoral Izimbizo the Mayor tables what the budget for a financial year underway has for the ward in question and then gives opportunity for community to raise issues to be considered for next budget cycle. These are raised and listed for consideration without any debate you would expect in a planning process. It doesn't start by arguing what is a development challenge, how life of a community is difficult in a particular area and then argues on proposed solutions. The cause of action that gets proposed in an imbizo is not something emerging from deliberative process as theory informing IDP would suggest. "So while local communities...approach IDP meetings to ask for the street-lights or housing or sewerage system they need, and often leave expecting delivery to follow naturally...as a result, planners complain that no strategic value add is occurring through participation in IDPs" (Marais, et al, 2007: 2).

Lately, as a country we have degenerated into an all-time low with regards to public participation and it has come to be viewed simply as a legal requirement, adding no value to the IDP both the process and the plan. It is no longer a strategic document properly analysing the state of development and weighing possible workable solutions but rather straightforward wish-list document. The strategic elements of the document have become the reserve of the civil servants, which is a significant step backward. Even more worrying is the wish-list approach which indirectly perpetuates inequality meant to be countered in part, through well-structured public participation. Such unmanaged public participation processes has a problem that the dominant voice is the one that tends to put more pressure and is therefore listened to more and its ideas reflected in the plan and implementation thereafter. Such dominant voice tends to be the well-off who are better empowered and are already living a better life compared to rest of society.

Noticeably, South Africa is not alone in this dilemma. Studies on public participation in development planning context as practiced in developing countries shows that while the intentions have been good, the implementation success has been quite disappointing. "Although, many countries have adopted policy reforms to support people-centred approach, the implementation at the local level still remains inadequate in terms of increasing the magnitude and quality of local involvement in development affairs" (Aklilu, et al, 2014:258).

4. Conclusion

The discussion above attempted to demonstrate the importance of public participation in integrated development planning particularly and developmental state at a broader level. Despite well-articulated policies and legislation introduced with the developmental local government system just over 15 years ago, both the extent of participation as well as the value-add into the IDP has been quite limited. In fact, the latest trends are now about projects wish-list. It is a generally accepted fact now that "community members mainly participate in providing information about their needs and aspirations..." (Aklilu, et al, 2014:257). It is therefore not

practiced as communicative action, as a way of acting, we can choose after debate. The debate is gone.

Certain factors are regarded to be negatively affecting public participation and they include – limited capacity of understanding the concept both the rationale and the how part by civil servants, misunderstanding of the rationale by members of the public, weak and misguided community structures now being used for personal interests, inability by government to respond to an acceptable threshold in implementing interventions proposed and failure to use IDP strictly as a plan for government as a whole i.e. forcing every government entity to implement nothing other than what is contained in the IDP.

South Africa's democracy adopted a developmental state approach noting the disparities from the past and acknowledging that the struggle for democracy was not just to gain the right to vote but to redress the socio-economic imbalances. Public participation was seen as a method to ensure such social justice. "The Integrated Development Plan (IDP) has a critical place in government's on-going attempt to realise this vision in practice, as a key mechanism for hearing local voices, engaging local energies, and – ideally – aligning budgets and delivery decisions with local needs, rather than the other way round" (Marais, et al 2007: 2).

Also noticed is the fact that the quality of input has also been not as ideal even in times where the process was robust. This is owed to weakened civil society structures. Inadequate capacity to engage fails the process and the pursuit of social justice. On the other hand, moving away from the early years' workshops or any such meaningful processes give more space to the advantaged and the elite of society who are in a position to raise their issues using many other platforms including direct appointments with leadership, media commentary and customer complaints centres (to name a few) compromising the emancipatory agenda (equity, balancing development and services disparities of the past and social justice) of the IDP and public participation.

The ideals of both public participation and integrated development planning approach cannot be abandoned. The transformation of both the urban and rural landscape has become more urgent than before with growing social discontent with the promises of freedom. While the authority of IDP is not within the realm of influence of local government sphere and it can only persuade and influence the other spheres, renewed energy and refocusing public participation is within its space. For this rebirth of public participation, civil servants will have to be the first ones to be sensitised regarding its significance in broader transformation of South African society. Such capacity building should be aimed at changing the civil servants to see themselves as change agents with a responsibility to understand organised civil society dynamics so as to engage from informed position. This is also in appreciating that while rebirth of organised civil society in terms of leadership and interests is critical they may not be under direct influence of municipality as they are non-governmental after all. Lastly, once there is credible public participation in terms of both content and process, there will be quality IDPs. The next step is to ensure the IDP becomes the authority in terms of providing strategic direction of what happens in a municipal

area, at the very least, those actions taken by a municipality. This last step is important in ensuring public participation momentum is never lost again and for it to earn credibility. At the end, this shall give us transformed societies we need.

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Towards a curriculum and capacity development framework in support of a land use classification system in South Africa

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Abstract

Since the emergence of planning education in the 19th century, the profession has been confronted by the existence of a gap between “planning agendas and planning education” straddling in places, spaces and time horizons. This has had the effect of compelling planning education and its pedagogy to change and adapt to new approaches (South Asia Urban Knowledge Hub, 2015: 2). In South Africa, the Department of Rural Development and Land Reform (DRDLR) has been implementing several concurrent initiatives that aim to achieve uniformity and consistency in the collection, interpretation and reporting of data on various land uses across South Africa. These initiatives constitute key pillars in the process of rolling out the Spatial Planning and Land Use Management Act (SPLUMA, 2013) – a framework Act that aims at ensuring a coordinated approach to spatial planning and land use management in the country. Through this work, DRDLR is seeking to make significant headway into narrowing the current capacity gaps in terms of delivering sustainable land use management practices in South Africa, especially at a local authority level. It also seeks to build and nurture a critical mass of SPLUMA-oriented planning cadres that can begin to visibly transform the space economy to better serve the people. The study employed a mixed method approach to collect, collate and analyse data including one-on-one and group discussions using a checklist of research questions, self-administered questionnaires and observations. Through taking stock of existing training delivery institutions/players and assessing the training/capacity building module delivery systems in place, as well as engaging in robust discussions on the subject with a cross-section of stakeholders – practitioners, universities and statutory bodies, the study achieves its main aim of presenting a curricula and framework for capacity building in support of land use classification in South Africa. The paper discusses gaps in the current curriculum in the broader context of training initiatives currently underway or planned for the immediate future by a cross-section of capacity building stakeholders including from key stakeholders such as the South African Council for Planners (SACPLAN), South African Planning Institute (SAPI) and tertiary institutions that provide teaching and capacity building courses in South Africa. The paper also highlights the deficit that exists in terms of capacity and appropriate skills set to implement the proposed land use classification system especially in the public sector and specifically at the coalface of development endeavours – the municipality. Finally, the paper discusses the resultant Curriculum and Capacity Development Framework – covering, amongst others, the intended targets for training, a synthesis of key training needs, the desired modules complete with exit qualifications, the capacity delivery approach and a framework for measuring outcomes. This framework is intended to be facilitative tool to confer the necessary competencies and capabilities on a cross-section of planning stakeholders especially at the local level in order to support the effective implementation of the proposed land use classification and management system.

1. background and Introduction

The Department of Rural Development and Land Reform (DRDLR) is implementing several concurrent initiatives that aim to achieve uniformity and consistency in the collection and

reporting of data on various land uses in South Africa. These initiatives constitute key pillars in the process of rolling out the Spatial Planning and Land Use Management Act, 2013 (SPLUMA) – the newly enacted framework legislation that aims at ensuring a co-ordinated approach to spatial planning and land use management in the country. In June and August 2013, as an integral part of the process towards the implementation of SPLUMA, DRDLR organised two successful stakeholders’ workshops that led to the formation of Working Groups (WGs) that were intended to provide component inputs to support various objectives of SPLUMA, and specifically, to lead a process towards the development of a

. The NLUC was conceived and developed as the centrepiece of supportive tools designed to ensure the spatial and land use management system introduced by the Act becomes a reality. The constituent WGs related to: Land-Use Classification (LUC); Land Use Classification Framework (institutional framework and methodologies for transition into a standardised LUC); Definition and Terminologies; Symbolology and Notation, and Curriculum Development in support of the LUC system.

This paper is in respect to the work of the Curriculum Development Working Group, whose mandate is to facilitate the formulation of a framework that would lead to the development of a curriculum that can confer the necessary competencies and capabilities on various stakeholders in order to support the full implementation of the proposed land use classification system. Through this work, DRDLR is seeking to make significant headway into narrowing the current capacity gaps in terms of delivering sustainable land use management practices in South Africa, especially at local authority level. It also seeks to nurture a critical mass of SPLUMA-oriented planning cadres that can begin to visibly transform the spatial economy. It is important to note here that a draft National Land Use Classification Framework (NLUCF) and a draft National Land Use Classification (NLUC) system have been generated. The two documents, which constitute the backdrop to the Curriculum and Capacity Development Framework (CCDF), consistently identified capacity gaps associated with understanding, and by extension, implementing SPLUMA. The draft NLUC system proposes twelve (12) major categories of land uses with each land use broken down further and cascading into secondary and tertiary land uses. The proposed primary land use classes are enumerated in Figure 1.

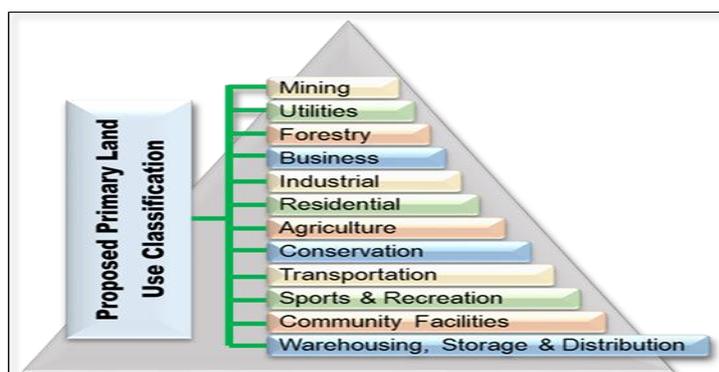


Figure 1: Proposed primary land use classes for South Africa

This paper therefore presents, amongst others, a description and an analysis of current training/capacity building programs focusing on land use classification and management. In complying with the terms of reference (TOR) for the completed project, the discussion primarily focuses on the *Curriculum and Capacity Development Framework* relating largely to Land Use Classification with some inevitable references to other elements of SPLUMA. In this regard, Land Use Classification and Management Curriculum gaps are discussed in the broader context of training initiatives currently underway or planned for the immediate future by a cross-section of capacity building stakeholders including from key stakeholders such as

the South African Council for Planners (SACPLAN), South African Planning Institute (SAPI) and tertiary institutions that provide teaching and capacity building courses in South Africa.

Capacity is defined as the ability of individuals and organisations or organisational units to perform functions effectively, efficiently and sustainably (UNDP, 1997). This definition implies that:

- Capacity is not a passive state but part of a continuing process
- Human resources are central to capacity development, and
- Overall context within which organisations undertake their functions are also key considerations in strategies for capacity development.

The Spatial Planning and Land Use Management Act, Act 16 of 2013 was approved by the National Assembly on 27 February 2013 and assented to by the President on 2 August 2013. It was then gazetted on 5 August 2013. Because it is a new instrument that ushers in widespread changes in the management and practice of land use planning, it has become necessary for the DRDLR to initiate a training and capacity building program that will enable implementers and users to understand the objectives of SPLUMA and equip them with the necessary skills and tools that will enable its effective implementation. Curriculum development in respect of a new land use classification is part of the process of building the capacities that are necessary in implementing SPLUMA. SPLUMA heralds a new era for planning in South Africa. It is the first national, integrated planning law that clearly sets out what the planning system is in South Africa, what the responsibilities are for each sphere of government within this system. It guides the content of this new system through principles, norms and standards, mechanisms and processes so that each sphere of government may carry out their mandated functions in respect of spatial planning and land use management. It provides clear instruments to achieve coherent and coordinated spatial planning and land use through Spatial Development Frameworks, new integrated Land Use Schemes, clear land development processes, guidance on land use regulators such as Municipal Planning Tribunals for decisions on land use changes and an appeals process.

Spatial planning and land use management are critical in shaping the urban and rural landscapes of the country. It is the basis of day-to-day administrative decision-making in municipalities. It is integral to many development processes that shape the built environment, be it in housing and human settlements, environment or transport. It is also responsible for the allocation of land use rights that play an important role in determining property values, significantly impacting on revenue generation for local government in general and cities and towns in particular. The objects of SPLUMA are to: Provide for a uniform, effective and comprehensive system of spatial planning and land use management for South Africa ; Ensure that the system of spatial planning and land use management promotes social and economic inclusion; Provide for development principles and norms and standards; Provide for the sustainable and efficient use of land; Provide for cooperative governance and intergovernmental relations, and Redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems. SPLUMA provides clarity on the role of municipal and provincial spheres of government in the planning system and municipalities now have a much wider scope of responsibilities in terms of SPLUMA. The Act thus provides the legal basis for concerted efforts to transform the inherited space economy towards genuine inclusivity and sustainability.

This paper presents, amongst others, an analysis and description of current training/capacity building programs focusing on land use classification and management. In complying with the terms of reference (TOR) for the project, the discussion primarily focuses on the development of curriculum and capacity building framework relating largely to Land Use

Classification with some inevitable references to other elements of SPLUMA. In this regard, Land Use Classification and Management Curriculum gaps are discussed in the broader context of training initiatives currently underway or planned for the immediate future by a cross-section of capacity building stakeholders including from key stakeholders such as the South African Council for Planners (SACPLAN), South African Planning Institute (SAPI) and tertiary institutions that provide teaching and capacity building courses in South Africa.

Through taking stock of existing training delivery institutions/players as well as unpacking the training/capacity building module delivery systems in place, as well as engaging in robust discussions on the subject, a better understanding of land use classification and management capacity/training requirements for planners has been mapped out complete with well-considered intervention options.

The scope of the project revolves around facilitating the formulation of a robust framework that would lead to the development of a curriculum that can confer the necessary competencies and capabilities on various stakeholders in order to support the full implementation of the proposed land use classification and management system. Through this work, DRDLR is seeking to make significant headway into narrowing the current capacity gaps in terms of delivering sustainable land use management practices in South Africa, especially at local authority level. It also seeks to nurture a critical mass of SPLUMA-oriented planning cadres that can begin to visibly and permanently transform the space economy to better serve its people. The objectives of the project included, but were not limited to the following:

- Build consensus on the desired curriculum to support the proposed land use classification and management system as contemplated in SPLUMA
- Build consensus on who requires capacity building and the specific areas of capacity building for the various stakeholders
- Agree on the preferred capacity building delivery approaches.
- Determine the methods of measuring the capacity building outcomes, and
- Propose an institutional mechanism for implementing such a framework.

2. Research Methodology

A mixed method approach underpinned by pragmatism was employed to collect the data to inform the development of a Curriculum Development and Capacity Development Framework in support of the proposed Land Use Classification system. Extensive literature reviews were undertaken to refine and consolidate the conceptual framework. Besides secondary data analysis, thematic discussions with selected stakeholders were also conducted thus using group interaction to generate basic data and to gain rich insights. These engagements were undertaken between October and December 2014. Stakeholder institutions and individuals (36 including 7 planning schools) largely representing practitioners were identified, short-listed and invited to participate in the process between October and December 2014. The identified stakeholders were broadly grouped into the following categories: Statutory / Professional Bodies; State-Owned Enterprises (SOEs); Government Departments; Universities; Local Government; Associations and Networks, and Private Sector Entities. A checklist of questions drawn largely from the questionnaires was employed to assist in structuring and directing face-to-face or telephonic discussions with stakeholders. Most of the questions were open-ended, giving the discussants the opportunity to pursue some issues in much greater detail and thus elicit a greater range and depth of information. Through the snowballing technique, key informants initially targeted were requested to identify other informants who, in their considered opinion, could provide useful information with which to sufficiently respond to the research questions – thus enabling contact with other informants not originally listed in the purposive (judgmental) sample. The literature review together with the initial discussion with stakeholders culminated in the

compilation of this paper.

Data was initially analysed at a two-day project team workshop organized for that purpose. Qualitative data was analysed using mostly the K-J Method / Affinity Charts – which essentially provides a systematic way of organising information and ideas into meaningful common themes with a view to unpacking the dominant threads to be used as input into the development of the proposed Curriculum and Capacity Building Framework in support of the proposed Land Use Classification system as contemplated in SPLUMA (2013).

3. Literature Review

The rapid rate of urbanization and other connected processes generated a need for urban and regional planning education in various contexts in the world. This educational input was packaged in different formats and at various levels. A review of the recent status of planning education shows that postgraduate programmes in urban and regional planning dominate the scenario Noman Ahmed (2015: 2). Basson and Dowling, 2013: 1 indicate that 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. 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, 2010:623-625). 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 (Basson and Dowling, 2013: 4)

Gurran et al., 2008:40 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, 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). Jones et al., 2009: 213-214 reminds the planning 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*”. 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).

While there is international convergence that shifts in planning are necessary (UNDP, 2009), these need to happen at three levels: policy, practice and curriculum (Tapela, 2012: 11). Blair and Manda , 2016:48 indicate that the discipline of planning is in a constant state of flux, swayed by market forces and changing societal expectations and altered power-relations in the postmodern context (Davoudi, 2012). Similar to the practice debate, there is an ongoing discussion around planning education. The curriculum cannot stand still, but rather must be an evolving entity that is revisited and revised in response to contemporary debates on the core competencies of planning practitioners (Blair and Manda, 2016:48). In determining what knowledge and technical skills form planning education, consideration must be given on how best to develop a student’s ability to challenge, to think critically and to respond creatively when applying knowledge in the planning arena (Poxon, 2001, p. 575). A collaborative approach is required between practitioners and academics with theory and evidence-guiding practice, and practice-informing education ((Edwards & Bates, 2011, p. 4). India National Centre, 2015: 2 highlight that the emergence of planning education dates back to later part of

the 19th Century in response to growing concern of rapidly urbanising centre with environmental pollution affecting human health in Western Europe (UN-Habitat 2009).

The urban agenda of the world has also been changing with time from provision of infrastructure and basic services to environment to urban growth to sustainable urban development to liveable, smart and intelligent cities (Wheeler *et. al.* 2010: 16-26). There existed a gap between planning agendas and planning education both in space and time which compelled the planning education and its pedagogy to change and adapt to new approaches (India National Centre, 2015: 2). Planning education in Africa has been facing challenges (given rapid urbanisation in a context of extreme poverty and inequality) in consolidation of curricula and research funding because of rapidly changing socio-economic scenario in Saharan and sub-Saharan countries.

Curriculum is perceived as a plan for learning experiences that learners encounter under the direction of a competent authority/institution (Oliva & Gordon, 2012). In other words, a curriculum is a guide for learning which integrates the philosophy and orientation of a training program such as the CCDF with the expected learning outcomes, key content and methodology as well as the evaluation for the teaching and learning process. Curriculum development, which requires ingenuity to mould, shape and tailor the curriculum to the needs in the market, involves five main elements enumerated namely: Identifying what learning is needed; Deciding on the type of training you need to provide to meet these learning needs; Planning the training carefully, so that learning is most likely to take place; Delivering the training so that learning does take place, and Evaluating the training so that there is evidence that learning has taken place. Oliva & Gordon (2012) contend that the context of the curriculum is often the setting within which it takes shape, and two major types are highlighted: Learner-centred (where the focus is on the learner), and Reconstructionist (where the focus is to educate the learner in such a way that they will be capable of solving society's pressing problems).

4. Discussion of Findings and Results

Without exception, stakeholders – practitioners, university/tertiary institutions and professional/statutory bodies – were unanimous in their agreement about the rationale for and therefore the importance of putting in place a standardized national land use classification system. They also felt that that a standardized LUC system would assist practitioners largely in terms of “*guiding development*” from the same departure point as well as in relatively easily determining the “*suitability of land for specific purposes*” in a uniform and predictable way, allowing for consistency, and perhaps, even circumventing or lessening the spectre of disputes, at least in the medium-to-long term, which tend to hold development initiatives at ransom. Both these terms relate strongly to the broad development principles outlined in Section 7 of SPLUMA (2013). Stakeholders also strongly believed that it was desirable to have a common, SPLUMA-driven national land use classification which can assist in spatially translating growth and development requirements for the country. In the same breadth, stakeholders conceded that there is indeed a general deficit across the board in terms of understanding the proposed LUC system, including its implementation modalities and its skills set requirements. In addition, the analysis strongly suggests that most planners have a poor understanding of their prospective tasks and responsibilities with respect to implementing a standardized land use classification system – again pointing to the capacity building question as an enduring solution concept. In part, this stems from the fact that SPLUMA is a new Act and stakeholders are still in the process of getting to grips with it. Eventually, they will get familiar with it – but because the priority is for stakeholders to get familiar with the Act now – it is imperative and inevitable that a significant amount of capacity building resources should be expended to build, at least, a minimum set of competencies

required to get the initiative started. Capacity building therefore remains pivotal to SPLUMA implementation.

In response to the contemporary challenges that South Africa faces regarding land use classification and management, the framework for revamping curricula in land use classification and management should be informed by a pedagogical framework on which the curriculum will rest. A pedagogical framework aims to provide guidelines in curricula advancement yet maintaining sufficient flexibility for it to be adapted to a diversity of contexts, pedagogical systems and approaches, local requirements, environmental targets and therefore to be applied to different educational structures and methodologies. An overall mission that can be set for this is and should be derived from SPLUMA regarding an agenda for sustainable spatial development education and informed by a critical analysis of barriers and priorities as currently required by the professional market, the learning outcomes in terms of competencies and skills expected of graduates of planning and land related disciplines on a scale that encompasses both land use classification and management design, implementation and management skills. The learning outcomes should be based on a systematic understanding of broad knowledge base on spatial and development planning combined with the identification of curriculum best practices in urban and regional planning education and enriched by the exploration of pedagogical science theories and methods that can facilitate knowledge transfer between technical and creative domains. Specifically it is recommended that the pedagogical framework be structured on the following components, namely:

- These are the list of key professional competencies as identified and developed, for example, by the SACPLAN competencies project.
- *“land use planning” “land use management schemes” “land use applications” “planning municipal tribunals” “land use classification” “land use zoning” “precinct plans” “SDFs”* are terms that are used frequently and will require clear definition and proper theoretical grounding in teaching and training of professionals. Modules should be progressively introduced that scale the use and appropriate development of key terms and concepts aimed at building a proper staging of land use classification and management concepts, theories and models.
- *Adopting a Circular Models for Spatial and Development Planning Education.* This will take into account different spatial and development planning education curricula in South Africa and further strengthening them so that a sharper and more focused land use classification and management outcome is maximised (this will include clear organisation of subjects, methods of assessment, delivery of contents, tools and training- resources etc.) for them to be proposed as potential programme structures for curriculum development, and
- Encompassing existing educational science knowledge, the pedagogical methodologies basing on which the targeted learning outcomes could be achieved have been investigated. A collaborative approach to the delivery and assessment of technical knowledge will represent a significant departure from currently common education methods. To this aim inter-, intra-, trans- and cross-disciplinary contributions to an integrated pedagogy should be explored together with the appraisal of applied/experiential learning, new analytic visualisation tools and the integration of up to date insights from pedagogical research (e.g. e-learning, virtual learning environments, shared repositories and databases, etc.). Learning and teaching methods have to be participative involving exercises, role play, use of videos, to name but a few.

Local and international research points to the centrality of capacity in determining the shape and impact of the spatial planning and land use management systems. This capacity deficit is exacerbated by the realization that many officials (practitioners) in the field of spatial

planning and land use management are finding their original training inadequate to meet these demands. This certainly calls for a massive investment in capacity building and skills transfer across the board, directed firstly, at practitioners in municipal offices, secondly at councillors who make some of the local planning decisions, thirdly, the private sector practitioners who are often hired to undertake the work, and lastly, at universities which have the responsibilities of producing tomorrow's practitioners. It is pertinent to note here that training has the capacity to resolve some of the challenges associated with implementing a transformative spatial planning and land use management agenda across the country (refer to Figure 2).



Figure 2: Training and capacity building targets

From Figure 2 we can deduce that while the implementation of the proposed Land Use Classification system will be at the national, provincial and municipal spheres, the primary focus of the capacity building initiative is at the municipal sphere – the coalface for development endeavours. As illustrated in Figure 2 above, it will be important to ensure that:

- Senior management is involved at the municipal level, including where possible, the municipal manager and the finance director.
- At the national and provincial levels, senior officials, those involved with implementation, as well as those responsible for parallel authorizations and/or who support municipalities – the majority of whom come from the departments falling under the Economic and Infrastructure Cluster, and
- Other sector containing a mixed bag of stakeholders, including associations and networks such as the South African Local Government Association (SALGA) and South African Cities Network (SACN).

5. Recommendations

The **Curriculum and Capacity Development Framework** in support of the proposed **Land Use Classification System for South Africa** eloquently captured in Figure 3 below is indeed the culmination of extensive literature reviews and consultations with practitioners, curricula development specialists and other stakeholders. It elaborates on the targets of the capacity building exercise, the desired curriculum and accompanying modules still to be developed, the preferred capacity development approaches, and the key measurement indicators for monitoring and evaluating the initiative. An innovative tool employed for monitoring and evaluation is **outcome mapping**. Outcome mapping recognizes that development is essentially about people relating to each other and their environment. The innovativeness of this approach lies in its shift away from assessing the products of an initiative such as the CCDF to focus on changes in behaviour, relationships, actions, and activities in the people and organizations such as municipalities that are direct beneficiaries. In doing so, outcome mapping debunks many of the myths about measuring impact. It will

assist CCDF to be specific about the actors it targets, the changes it expects to see, and the strategies it employs and, as a result, be more effective in terms of the results it achieves. **Outcome mapping** thus provides not only a guide to essential evaluation map-making, but also a guide to learning and increased effectiveness, and affirmation that being attentive along the journey is as important as, and critical to, arriving at a destination. It then enumerates the steps that are required to take the initiative forward together with key success factors, chief of which are the establishment of a robust institutional structure that steers the initiative and driven by a recognizable champion, as well as the provision and ring-fencing of adequate funding for the entire initiative. It then speculates on the end game – which is pitched as transformed, inclusive and equitable space economy. This draft Curriculum and Capacity Development Framework therefore constitutes a cardinal step in efforts aimed at supporting the implementation of a standardized land use classification system in South Africa.

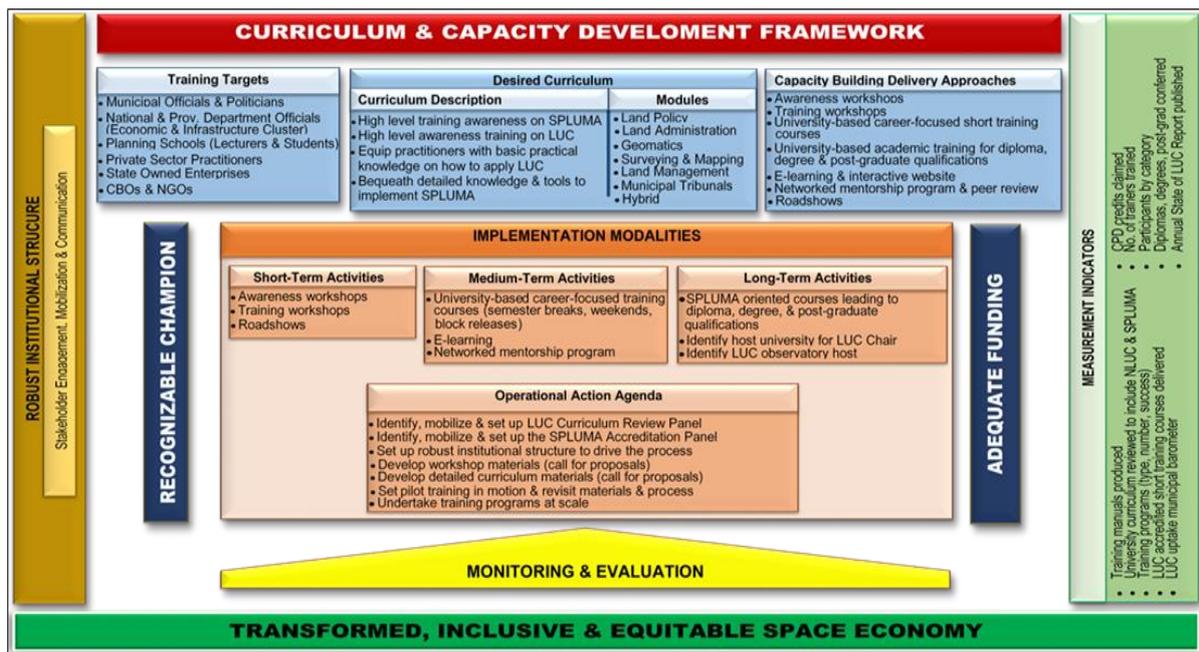


Figure 3: LUC Curriculum and Capacity Development Framework

Given that implementing such a strategic and pivotal new land use classification system should indeed be considered a game-changing massive exercise that will significantly impact the way we live, interact and do business in urban and rural areas, it needs to be accorded the importance it deserves (including, for example, featuring in the State of the Nation Address [SONA] and Budget speeches) and therefore, raising substantially, its chances of attracting adequate funding (instead, only the Urban Development Framework features in these addresses) for its implementation. Of necessity, this requires a recognizable leader (a champion) dedicated to driving the process within the ambit of a robust and empowered institutional structure. Empowering the institutional mechanism means that it is supported administratively and financially. Without this, the whole exercise will struggle to make headway – even organic change will be exceedingly laboured, while practitioners will perfect the art of muddling through. No doubt the linchpin for results delivery is a robust and empowered institutional mechanism to drive the Curriculum and Capacity Development Framework agenda. The change management leader who drives the process can either be a political leader or an official carrying significant clout among his peers as well as in the political realm. Such a dedicated institutional mechanism could be in the form of a of the Department of Rural Development and land Reform.

To strengthen this institution, it will also be important to seek to:

- Establish a multi-stakeholder board of directors/panel of experts from planners and

planning institutions to drive and steer the process. This board/panel of experts can then be allowed to metamorphose into an agency of DRDLR

- Establish a Land Use Classification Curriculum and Capacity Building Framework Review Panel / Board to oversee the curriculum development process. This could be constituted of existing committees such as the SACPLAN education committee to reduce clutter in terms too many institutions undertaking similar tasks in parallel
- Establish an Observatory for monitoring and evaluation with a strong research component – could be used to invite international scholarship to share experiences and over time could graduate to do more think-tank functions for spatial planning and intelligence in the country
- Establish a secretariat to run the affairs of the multi-stakeholder steering team. The secretariat could initially double up as the Observatory and later separate should the need arise
- Set up a technical working group focusing on curriculum development and training and capacity building to assist with the mammoth task of coordinating all activities associated with the curriculum and capacity development framework agenda, and
- Set up provincial and municipal SPLUMA support forums around which stakeholders can be galvanised around capacity development in support of SPLUMA implementation.

In order to build an agile and robust implementation vehicle with a resilient institutional memory for CCDF implementation in support of the proposed LUC system, it will be important to pay attention to the key success factors enumerated below. Figure 3 sketches key success factors relating to the implementation of the Curriculum and Capacity Development Framework agenda, some of which are enumerated below:

- At a national scale, most national government departments especially those falling in the Economic and Infrastructure Development Cluster have policies which could be described as falling within the spatial planning and land use management arena. They are also often the consumers of land use classification products. Unfortunately, individual efforts have often occurred largely in isolation of each other, with each sectoral emphasis understandably placing itself at centre-stage. This has profoundly negative developmental consequences as the sum of the parts is often not greater than the whole – but at best, is equal to or even much smaller than the whole. In provincial governments, it makes the task of producing a coherent policy framework extremely difficult. It encourages the tendency for sectoral issues to be considered in isolation, outside of any concern for the operation of the spatial unit as a totality, thereby making sound decision-making almost impossible.



Figure 3: Key success factors for implementing the CCDF

- A continuous process of engagement

and communication with stakeholders is *sine ua non* for an initiative of this type. Because the delivery of CCDF outcomes, and by extension, the successful implementation of the proposed LUC system is heavily reliant upon the actions of a plurality of actors and agencies across different operationally independent socio-economic policy sectors, it requires a significant measure of cooperation – deliberately and proactively solicited.

- Capacity for rapid implementation needs to be purposefully built at the outset. It will be important to ensure that adequate financial resources are set aside and ring-fenced to underwrite success. This needs to be driven relentlessly through the auspices of a dedicated institution with a clear and unequivocal mandate from the political leadership supported by adequate funding.
- The perceptiveness with which tertiary institutions are able to react & respond positively to market signals (e.g. by rapidly reviewing their current curricula to include LUC & generating SPLUMA-inspired accredited short courses will be crucial for rapid implementation. In addition, qualified professionals coming into the system that are already attuned to the new land use classification system, in part, as a result of the actions of the tertiary institutions, will bolster implementation initiatives. This could include the deliberate building of a critical mass of DRDLR planning experts schooled in SPLUMA to spearhead LUC implementation.
- In the long run, it will certainly make land use classification planning practice a lot easier if a LUC Meta Language was in place. It is thus important to set in motion the development processes.
- Given the enormity of the exercise and the implications it has on individuals and their organisations, it will be important to plan for change. In this regard, change management modules should be added to the list of modules.

6. Chapter Title

This paper has highlighted the importance of implementing a comprehensive capacity building programme in support of SPLUMA and for a specific focus on Land Use Classification as an important land management tool. It underlines the need to promote through the proposed classification system the philosophy that land is a finite resource and that therefore every citizen, not just planners, traditional leaders, government and land owners, should necessarily be a steward of the land, and finally that the use and quality of the land should be of prime importance to today's and tomorrow's generation. The paper has also clearly highlighted the deficit that exists in terms of capacity and appropriate skills set to implement the proposed land use classification system especially in the public sector and specifically at the coalface of development endeavours – the municipality. This implies that all training institutions offering land use classification and management courses will need capacitating to deliver more efficiently if the SPLUMA mandate is to be realised. In addition, there is a realization that besides the formal longer-term programs offered by planning schools institutions across the country, there is also an urgent need, given the novelty of the new planning system being ushered in through the auspices of SPLUMA, to build capacity of existing and future practitioners, as well as other stakeholders. This requires the development of a robust framework that can accommodate relevant curricula to assist in building the capacity of wide cross-section of stakeholders. These curriculum gaps are discussed in the broader context of current training initiatives undertaken by key stakeholders such as SACPLAN, SAPI and tertiary institutions. A final conclusion is evident – the overall impression suggests the existence of a credible basis for undertaking the mass capacity building program envisaged in the CCDF with confidence as the various pieces of the puzzle exist. What is required though is to take the recommendations of this report in earnest and duly implement them with a singleness of purpose.

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The successful transferability of community driven housing programs in South-East Asia and the role of international NGOs.

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Abstract *The Thai Baan Mankong Secure Housing Programme is one of the most successful community driven housing programmes in South-East Asia and possibly around the globe. The Baan Mankong programme is an unconventional housing experiment in which the Thai government has partnered up with NGOs and community organisations to address the housing deficit, using a people centred approach, in a structural way.*

In the first part of the paper we will provide an insight in this housing policy and show how the involvement of the different actors has been paramount to the successful approval of over 850 projects, involving almost 91000 households between 2003 and 2011.

Given its success, aspirations have risen in the region to duplicate the approach in other countries.

In the second part of this contribution we uncover the crucial role of the Asian Coalition of Housing Rights (ACHR) in successfully transferring the ideas of the Thai community driven housing programme into government policies in other countries in South-East Asia. More specifically we look at how the ideas have found their way in the recent national housing policy in Cambodia. This paper further examines how by taking into account local institutional organisations and cultural contingencies a housing policy can be successfully remodelled and applied in a different setting over time.

We conclude by highlighting the challenges that the ACHR has been faced with during the process and draw some major conclusions about the transferability of housing policies both within the South-East Asian region and on the more general level.

1. Introduction

The impact of CODI beyond the Thai borders is what will be further examined in this contribution. More specifically we will look at the Baan Mankong housing program (BMK) that was initiated by CODI in 2003. The unique and progressive characteristics of the BMK have found their way into housing policies in other South-East Asian countries. The Asian Coalition of Housing Rights, an international NGO with its main office in Bangkok, has played a crucial role in this.

In what follows we examine how the ACHR has been a key in spreading the ideas of CODI and the BMK to the region. More specifically we will look at how aspects and concepts have found their way into the approaches used by the Cambodian government to answer their housing crisis today. We conclude with highlighting the challenges with which ACHR is faced in trying to transfer principles for housing provision from one country to the next. A more general reflection about the transferability of housing policies closes this contribution.

2. Putting the Baan Mankong in context

In order to understand the possibility for a programme as Baan Mankong to emerge a look at Thailand's recent history and its housing policies is helpful. It wasn't until the 1940s that the Thai government started to develop an interest in housing issues as it was around that time that slums, especially in the capital, started to worry the Thai government. The rural-urban migration, the bombings of Bangkok during the second world war fuelled the housing crisis.

But despite the establishment of two government bodies dedicated to housing, the Housing Division within the Department of Public Welfare in 1940 and the Housing Bureau in 1942, nothing much happened until the 1950s. During the 50s two additional agencies were created, the Housing (welfare) Bank in 1953 and the Office of Community Improvement in 1960, the latter focusing on slum clearance and related issues. The housing provision approach of these agencies, and the Thai government by extension, was one that solely focused on top-down large-scale public housing. This approach was in stark contrast to the international ideas of (aided) self-help housing, promoted by institutions such as the UN and the World Bank (Giles, 2003).

During the 60s and 70s the government's attention for the housing issues led to the integration of the four different institutions into the National Housing Authority (NHA) in 1972. It wasn't until 1978 that the NHA started to acknowledge the possibility of supporting sites and services schemes and slum upgrading programmes, next to a continuation of the heavily subsidized large-scale top-down public housing schemes. Although between 1978 and 1985 small sites and services projects were realized, the self-help approach never really took off in Thailand, on the contrary it was constantly compromised by politicians (Giles, 2003). On the global scale, the 80s witnessed the rise in a blind belief in liberalization and deregulation. This had an impact on housing policies, and although in Thailand the government had been providing support for the private housing sector for years the international climate strengthened the government's choice to limit their role to enabling housing provision. The National Social and Economic Development Plan (NSEDP) for the period 1987-1991, explicitly mentions the private sector's active role in development. These policy choices, and the related housing budget cuts, had a serious effect on the ability of the NHA to answer the housing needs of the urban poor. The NHA also faced difficulties in their negotiations with landowners for their slum-upgrading projects (Giles, 2003). During this period Thailand's economy was booming and the annual growth of the GDP was one of the highest around the world. The country went through a rapid transformation and the private sector thrived, commercial banks provided easy access to loans, the middle class grew and impacted the real estate as private middle-class housing expanded rapidly to meet the demand, impacting land-prices in doing so. It cannot come as a surprise that the economic success drew more migrants to the cities, mostly Bangkok as the primary city and economic wonder. Thus despite the apparent success the disparities between population groups also grew rapidly, creating growing slums, low income communities and informal settlements. By the end of the 1980s almost one quarter of Bangkok's population was living in these conditions, more than 20% of them facing possible evictions. Thus despite the fact that the private sector seriously impacted the development and real estate boomed, the poorest 30% of the population were not reached by this construction madness. The answers to this need came in the form of experimental projects and innovative initiatives, such as community savings and community credits, the first land-sharing projects, community-driven housing actions and the formation of community networks (Boonyabantha, 2001).

The economic boom, the growing number of people living in sub-standard conditions, together with this climate of experiment and community initiatives has seriously impacted the preparations of 8th NSEDP (1997-2001). An holistic and integrated development that is more people centered and localized came to the foreground. The early nineties also witnessed the birth of the Urban Community Development Office (UCDO). It was the government's responses to the increased disparities. It is noteworthy that the government's answer to address urban poverty is channeled through housing. The government granted the money for a revolving fund of 1,250 million Baht (approx. 28 million US dollar) through the NHA. A special program was to be developed and run within the UCDO, which set up as an

autonomous unit. The Urban Poor Development Fund (UPDF), as the program was called, sought to challenge poverty by promoting community savings and increasing the capacity of poor community groups. Loans were granted to community groups at low interest rates. Savings activities and saving groups are a crucial building block for the broader development of the community (Boonyabantha, 2001). In the end the aim is to support a whole process of community development and empowerment, enabling poor urban communities to take charge of their own trajectories out of poverty.

The crisis of 1997 has triggered the Thai government to become more supportive of self-help approaches and promoting self-sufficiency and decentralization (Archer, 2012). Add to this the success of UCDOs in building community strengths and empowerment it didn't come as a surprise that from 1997 onwards the UCDO approach was changed to better answer the needs of the communities for more horizontal support and sharing responsibilities in networks. The specificity of the UCDO, functioning more as an NGO rather than a typical government organization, allowed the organization to re-align its approaches to the needs of the communities. Thus although supplying loans and supporting the communities in this was still a core activity for the UCDO, increasingly the institution acted as a facilitator for city-wide development initiatives. In 2000 the UCDO was merged with the Rural Development Fund. The Community Organizations Development Institute (CODI) was able to broaden its scope, including work in both urban and rural areas. The exceptional organization of the board, including community members was continued and the amount at the fund's disposable increased with 36%. The city-wide approach became increasingly important and next to housing provision, CODI also focuses on environmental issues, community welfare and community enterprises. Through the close working relations with the Asian Coalition of Housing Rights (ACHR), UCDO's work and later CODI's was widely disseminated. Several countries in South East Asia, but also South-Africa adopted similar approaches and have set up community development funds (Boonyabantha, 2001).

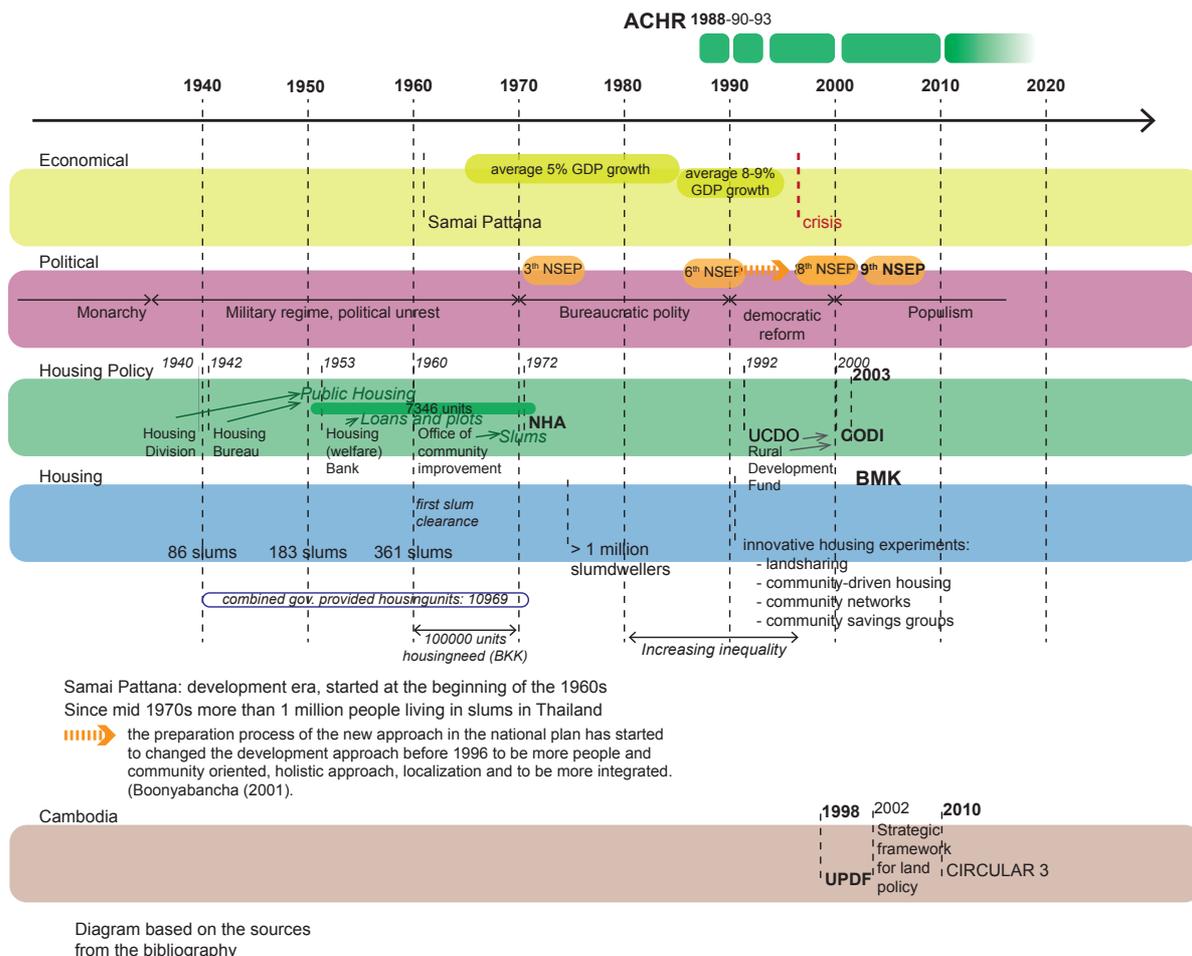


Figure 1 – Putting housing policies in context

3. Baan Mankong, a people’s driven pathway to secure housing

The crisis of 1997 has set in motion the move towards a different path of economic development and growth. Supported by the King, the idea of a “sufficiency economy” found its way into the 9th National Plan (2002-2006). A crucial shift towards social, economical, political and environmental approaches that are grounded in ethical and normative values resulted in a plea for more social responsibility and increased citizens participation (Archer, 2009). The needs of the (urban) poor communities were heard and the government recognised the urgency of addressing the housing issue.

In 2003 the government formulated the ambition to have ‘cities without slums’ within the next 5 years. To achieve this 2 programmes were launched: the ‘Baan Ua Arthorn’ and Baan Mankong. While the former is being organised by the NHA and consists of the construction of massed produced, subsidised housing units the latter is coordinated by CODI and aims to improve the housing and living condition and the security of tenure of the poor communities. The target was to produce 600.000 units under the Baan Ua Athorn programme (later reduced to 300.000) and to reach 300.000 households with Baan Mankong (BMK) (Archer, 2010 and Yap & De Wandeler, 2009).

The BMK builds on the experiences with networks of saving groups. It promotes collaboration between the communities and other stakeholders and actors, such as governments, private landowners, designers and planners en NGOs.

While the Baan Ua Arthorn has a focus on the output of units, the BMK is characterised by its strong focus on process and its attention for relationships and savings. Given its experience and its past CODI was the perfect actor to serve as the mediator between the government and the different community groups as well as other civil society actors. With the BMK programme the government turned over a new leaf, although they still used mass-produced housing they did also listened to the needs from the grassroots and with the BMK housing policies became demand-driven (Archer, 2010 and Yap & De Wandeler, 2009).

The BMK is a unique programme, one of the aspects that makes it so exceptional is that it is making the most of networks and linkages between people and groups. Mutual learning between the different actors involved is stimulated and although its aim was to tackle the tenure insecurity and housing problems of poor households at the local every day level, it succeeded in creating strong networks between communities nationwide and with authorities on all scales, including international partners.

The BMK allows for many forms of upgrading and housing approaches to exist in parallel. From upgrading, re-blocking or reconstruction on the original site to landsharing and relocation. A common element is that all communities have to acquire land in one form or another. They can try to purchase the land from the owner, or can look for a new piece of land to relocate. In order to do this the community needs to mobilise and set up a collective. Through this collective decisions can be collectively taken and loans and assistance from CODI (see fig. 2). Communities can apply for housing loans and infrastructure loans (Archer, 2008 and 2010).

At the city scale CODI aims to bring together the urban poor communities in a network in order to stimulate a city-wide upgrading process. In a collaborative effort between the urban poor communities, the local governments, NGOs and academics the city is surveyed and all communities and issues are being mapped. These maps and surveys are the basis for an upgrading plan that aims to tackle the issues within 3 to 4 years (Boonyabanha, 2005). The powerful approach, both empowering local communities while changing the physical conditions and at the mean time creating strong networks that operate on the city level and link with higher scales has served as an incubator for new structures and initiatives. The National Union of Low Income Community Organizations (NULICO) and the City Development Funds (CDFs) are probably the most prominent ones.

4. ACHR

As mentioned above the 1980s saw a rise in experimental and innovative housing projects. These were often initiated by NGOs. In the successful landsharing experiments NGOs were important intermediary partners to negotiate between landowners, developers, the community and government. The NHA's role was often limited to providing the loans for infrastructure and construction or ensure that normal regulations were adjusted for the specific program. The NGOs assisted the communities with the design of the houses and the resettlement (Yap & De Wandeler, 2009).

Set up in the late 1980s, in the wake of the UN Year for Shelter for the Homeless, the Asian Coalition for Housing Rights (ACHR) was the answer to the lacuna of a collaborative space for urban social activists, NGOs, professionals – and especially for grassroots or community groups working in Asian cities. As the region was faced with serious issues of urban poverty and forced eviction the newly established forum offered the opportunity to speak with a

stronger voice against these unjust practices. Very soon the platform started to think about possible solutions for these issues and looked for ways to incorporate the 'people's voices' in these debates. Using the support from DFID the ACHR was able to develop a Training and Advisory Support programme. This enabled participants, partners, community architects and communities to travel in the region and learn from other projects and initiatives. Thus very soon the organisation was able to set up a region wide exchange, which significantly enhanced people's knowledge and strengthened the networks. Around the turn of the century the organisation was well established and was able to realise projects and interventions on a wider scale. In several countries ACHR's interventions, support and ideas were picked up by governments and integrated into their policies. The contribution to this by some of ACHR's key activist cannot be underestimated. Increasingly ACHR members were asked to contribute to the development of policies in several countries across South-East Asia (ACHR website). It cannot be emphasised enough that these people are crucial factors to understand how new ideas have travelled between organisations and how transformation can be realised. A crucial person who has contributed to the integration of ACHR's into Thai policies is definitely Somsook Boonyabancha. She has been the secretary general of the ACHR since its inception in 1988. Trained as an architect, she started working on housing and land issues in the beginning of the 1980s in Thailand. Working first for the NHA and later the UCDO, of which she became the director, both organisations had very strong bonds. Somsook Boonyabancha later became the director of CODI, until 2009 when she became the director of the Asian Coalition for Community Action (ACCA) programme, making small grants available to more than 1000 communities in almost 20 Asian countries. This very strong entwined relationship between CODI and the ACHR goes a long way in explaining how a people-led development, very much based on NGO approaches and including participatory methods was able to sprout in a government environment. When the government launched the 'cities without slums' programme, it quickly became clear that given the huge scale of the programme help from all development actors would be very welcome.

5. Cambodia's approach to housing

Cambodia's turbulent history has shaped the current state of the country, characterised by extremely rapid development in the major urban centres (especially Phnom Penh), the presence of numerous NGOs and international agencies and an administration that is constantly running behind the facts, while individual government officials are gaining from deals with private (international) developers. As a result the urban poor are constantly being pushed to the edges of the cities through large resettlement programmes.

When the Pol Pot regime was overthrown in 1979 all land was proclaimed state property. Because of the mass killing of Cambodians by the Khmer Rouge, most city dwellers, owning property before, were killed. As people were gradually returning to the cities, empty and abandoned structures were re-appropriated on a first come first serve basis. During the first decade the city of Phnom Penh was gradually re-populated and land became more scarce. With the arrival of the UN and other international agencies and NGOs, the pressure on the land market increased and prices were rising rapidly. The effect for the urban poor has been dramatic. Not only have new immigrants who settled on state public land been relocated, but also the earlier settlers who were living on state land have been moved out, allowing the state to sell or lease the land to private developers (Khemro and Payne, 2004).

These large relocation programmes have been the standard government answer to the housing issues. But gradually other ideas have found their way into municipal and national

approaches to dealing with the urban poor. In 2002 the Strategic Framework for Land Policy recognised that in certain situations upgrading and long term-tenure security can be preferred over relocation (Khemro and Payne, 2004).

More recently the state has been working on a national housing policy, supported in their endeavour by numerous NGOs and UN-HABITAT. In May 2014 a draft was passed by the Council of Ministers. The goal of the policy is to “provide policy direction for appropriate housing solutions for all peoples in order to lessen the number of inadequately-housed families and to ensure quantities of adequate houses and financial allocations for improving existing settlements” (unofficial translation of the draft National Housing Policy, June 2010). The document also explicitly speaks about local communities and support to their organization and participation in decision making processes, collaboration with NGOs and financing mechanisms such as saving groups etc. However until today the policy still hasn't officially passed. In May 2010 Circular 03 was approved by the Cambodian government. The circular, although low on the ladder of legislative documents, outlined, for the first time, a process that was aimed at resolving disputes over occupied state land and that allowed (under certain circumstances) on-site upgrading.

It is interesting to see how international organisations and NGOs have been able to help shape the country's legislation and introduce people centered approaches to housing.

As in numerous other countries in the region, eviction of the urban poor in Cambodia was a big issue during the eighties and ACHR reacted by not only giving a voice to the urban poor but also by looking for solutions to the issues. Towards the turn of the century the organization managed to have an impact in a large number of countries. One approach is to influence policy and governments. Being a very slow process (the Cambodian government still hasn't approved the National Housing Policy) additional actions have been initiated to answer the needs of the urban poor communities.

In March, 1998 the Urban Poor Development Fund (UPDF) has been set up in Phnom Penh. It emerged out of a collaboration between the municipality of Phnom Penh, the ACHR and the city's network of community savings groups. The structure and work of the UPDF is very closely related to that of the UCDO and later CODI. Funds, from both the ACHR and the government in Phnom Penh, are used as a revolving fund (see fig. 3 in comparison to fig. 2). As with the BMK program communities are supported to set up strong support networks and to start savings schemes. Loans can be acquired through the UPDF. As in the BMK and the ACHR approach, surveying and mapping the urban poor communities on the city scale and mapping available land is a typical starting point of the process. Other typical elements of this people centered approach include the participatory design process of the houses, in conjunction with the Community Architects Network groups (eg. CAN Thailand, CAN-CAM, ...), loans for small infrastructure projects and mutual learning through exchange visits, both within a country but also across the region.

6. To conclude

In this contribution we have explained how a people's centered approach to housing (for the urban poor) was able to find its way into the national policy of Thailand and how the international organization ACHR from its inception has been a crucial actor to inform these housing approaches in Thailand, but also in the entire region.

Some aspects have proved to be of importance. It might sound very logical but the local and historical context is of major importance to understand why certain approaches could sprout and develop over time. This simple matter is often overlooked and housing projects that are

successful in a given context are just copied elsewhere, without taking into account local institutional organisations and structures, or cultural contingencies.

Looking at the Cambodian context, trying to improve community networks and starting savings groups, the UPDF and CANCAM are confronted with the heritage of the Pol Pot regime that has made people very distrustful. Especially older people still have memories that influence their ability to fully engage in these types of activities.

A second aspect is that of mutual learning, as is the case with learning between communities, organizations and policymakers need to invest in sharing knowledge and experiences through exchange visits and creating deep understanding. It is not enough to know the formal and technical details of a certain approach or a housing program, such as the BMK. It is crucial to understand how these approaches are 'touching the ground' and effect local communities.

This brings us to the third aspect. As is often emphasized by Somsook Boonyabanha "people are the solution". Seeing and understanding how a certain approach or policy impacts on people's daily life is not enough. In every specific context local community groups also need to help shape the policies and approaches in order for these to become successful. An interesting example are the 'fish loans' in Russei Keo, a district of Phnom Penh. Part of the community in Russei Keo is Muslim, which made it almost impossible for them to engage in a loan system and repayments with interests. Consequently it meant that part of the community was potentially excluded of both making a living through the organized fishing and the larger community network. The UPDF then started talks with community members to see how this issue could be resolved and they designed a very specific system that catered to the needs of the whole community, while taking into account the concerns of the Muslim group.

A fourth and final challenge that can seriously hamper the successful transferability of housing projects is something that is less easy to tackle. As mentioned higher an important role is played by individuals, like Somsook Boonyabanha, Perween Rahman, Arif Hassan and others, whose charisma and dedication are important factors. The longstanding relationship these people have build between their organizations, community groups and government officials cannot be underestimated. Mapping these connections and networks in the South-East Asian region can provide valuable insight in how the whole movement of people centered housing was able to emerge on such a scale and with such a measurable impact.

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South African Cities: Changing Spaces

Abstract/Short abstract

This paper explores the emerging of a new spatial pattern in the Province and the extent to which city builders and or planner are geared towards facilitating and embracing this change. The shifting spatial patterns are also an opportunity to support the spatial transformation agenda that is currently unfolding. The paper explores the urban, peri-urban and rural continuum. It discusses the intricate linkages between these spaces and the fact that these areas house a large part of our population which is densifying at rates similar to metropolitan areas. In addition, the paper focuses on the economies of these areas and the necessary support required by Local Government to support these local business and entrepreneurs. These space are also becoming markets for business from metropolitan areas and the agricultural activities that still occur in the peri-urban and rural spaces are also able to use these metropolitan space as areas for selling their produce. The leadership that is required must in effect be visionary, have long term plans that have a regional perspective but are flexible and able to accommodate dynamic socio-economic and population shifts within the short term.

1. Background

The spatial patterns of the past in KZN have meant that we have and continue to develop in patterns that have been pre-determined. There are historical areas of growth and investment and areas we see historical underdevelopment and lack of investment. Recent spatial documents confirm this.

However, if we pay closer attention to the spatial shifts and dynamics we begin to see a new spatial pattern emerge not just challenge past patterns but defining newer cities in newer places that are organic and reflecting a more indigenous city.

These are South African townships emerging as secondary cities and or new cities. They emerged as a result of historical spatial planning but in the 21 century are emerging as locations that addressing not only the housing backlog but as new areas for economic opportunity for a large section of our population. In addition, these areas emerge as opportunities for us to build more resilient even more sustainable cities.

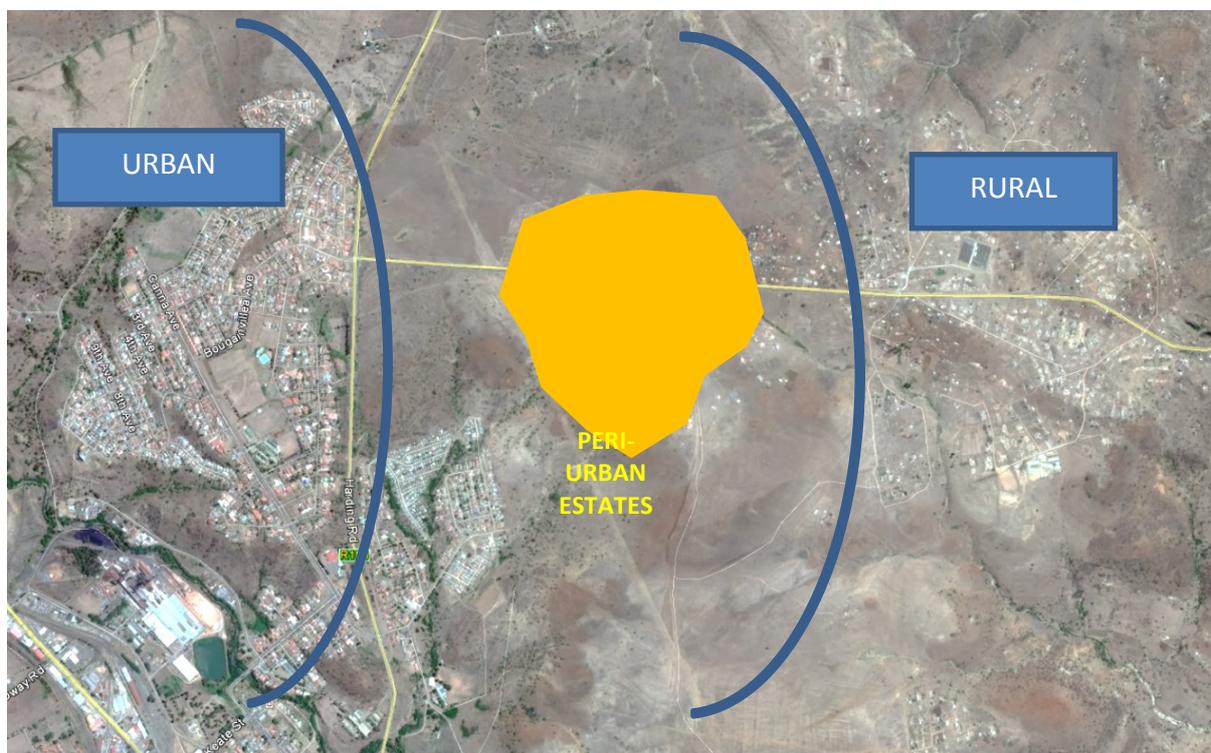
In September 2015, the Department of Rural Development and Land Reform, commissioned a study on Development Edges: A Settlement Typology. In this study it is suggested that the urban rural continuum that we are experiencing today is in fact a historical spatial configuration. The opportunity this offers is that we can develop a spatial response to redress and address the historical patterns.

This is the pattern that has emerged with the Traditional Council (now generally Ingonyama Trust Board) land would be a part of some urban areas and often adjacent to these towns, and in many cases fairly close to existing towns. This situation facilitated the growth and expansion of both formal and informal

residential areas, almost as part of these towns, as a consequence of urbanisation. The further the distance away from existing urban conurbations, the less likely were settlements in rural areas likely to grow as dense, grow as fast and grow as large. The broken topography of the eastern parts of the Traditional Council areas meant that areas were so separated from each other that there was insufficient population numbers within their catchments to support larger settled areas and larger level nodes; unless they were in extremely good interceptory locations. Consequently, much of traditional rural settlements occur in the format of low density Imizi.

However, depending on the location of the Traditional Council areas relative to road systems and to existing urban settlements (of all types) many areas close or adjacent to existing urban areas became the focus of urban migrants and many of these areas tend to exist at densities not that different to the adjacent urban areas, and in some cases even denser. In these cases settlement tends to be in the form of "Peri-Urban" transitional areas between denser formal urban areas and the very low density settlements "sprinkled" across the majority of the balance of Traditional Council areas.

The graphic below depicts the urban rural continuum in Estcourt, a large town in KZN with an expanding peri-urban area. This is not unique to Estcourt, but is occurring in other large towns within KZN.



Map depicting urban-rural continuum with emerging peri-urban area

The world has many examples of cities that have expanded rapidly without any kind of planning. The result is chaotic at best, but too often it also impedes further

development and is detrimental to citizens' quality of life and the environment. KZN planners and city leaders therefore need to be forward looking, planning for growing and changing populations and the impact on transportation, schools, hospitals, and many other aspects of city life. They also need to make sure those plans can be adapted over time to reflect the changing needs of the city. The most effective cities adopt a regional perspective and make the planning process inclusive and flexible.

2. Why a Regional Perspective

In KZN rural urban ratio in terms of population is about 3% in favour of rural. This percentage is increasingly being reduced and the reality that most of KZN citizens will live in urban space is our reality. Regional Planning can't be ignored. Historically as described above, it was ignored previously, the result, informal unplanned townships we have. In this 21 century, we pay attention to the spatial shift that emerging township have a regional spatial link with the existing metropolitan areas and consequently we as planners must plan at this scale. This regional scale also works more efficiently at this level for infrastructure. Planning leading the growth development agenda can direct type, scale and time-frame for investment infrastructure to be implemented in these spaces. A lack of infrastructure planning in these spaces delay investment in the space and limit the extent of economic expansion in these areas.

Regional collaboration is critical for the success of these spaces. This is largely due to the fact in KZN there are several key role players. The peri-urban spaces that are expanding are areas owned by Ingonyama Trust Board, a major land owner. Strategic spatial planning and road and storm water is the responsibility of the Local Municipality, while water and sanitation is the responsibility of water service authorities which are generally District municipalities. The establishment of a Joint District and Local Planning and Infrastructure Forum may assist to facilitate development in this space and regional economic agencies and other key stakeholders can be opted onto the Forum.

What we see emerge in these newer city spaces, is spatial patterns of land use that are organising themselves in terms of a compact urban space that is pedestrian focused. Planners and city builders would be encouraged to plan these new cities with local knowledge and input so as not to repeat mistakes of the past, where economic infrastructure has been placed in areas that the local stakeholders do not use. There are several examples of this currently in Kwa-Zulu-Natal.

The Municipal Systems Act, Chapter 26 already refers to the public participation that is required with Strategic Integrated Development Plans (IDP). These new space require local participation even more urgently. Creating spatial plans with local civic societies, businesses, church leadership will ensure not only buy-in of the spatial plan, but these stakeholders can assist local authorities in ensuring that the developed plans are implemented. The local authority with the local stakeholders could establish a joint planning advisory committee to develop and monitor implementation of the plan.

The changing dynamic of these spaces requires a plan that is flexible and ever changing. It should be a plan that all stakeholders understand will change periodically depending on a range of variables eg local economy, changing demographics, shifts in leadership. As a result, they evolve along with the city's changing needs while ensuring planners assess new proposals, rather than documents that determine the future once and for all. As a result, they evolve along with the city's changing needs while ensuring that the city continues to make progress toward long-term targets.

This type of flexibility does require a planning team that is multi-disciplinary and equally flexible in approach to accommodate the shifting dynamics and respective project proposals. In addition, in some emerging cities where there is relatively little existing infrastructure, planners and city leaders have the chance to build sustainable infrastructure from the outset at relatively low additional cost, surpassing the environmental credentials of even the most eco-friendly of today's older cities.

In the next 20 years most of the residents within Kwazulu-Natal will live in these cities. The peri-urban space are emerging as our new cities as discussed above. These are also the spaces we see as densifying at a rate similar to the metropolitan areas. Therefore, building higher density communities is already a reality for us, whether we build them or not. The later comment is made within the context of increasing land and housing opportunities within the existing cities. Resident are therefore looking for opportunities to be located close to economic opportunities within the existing urban areas, by living on the outskirts of the urban areas where land and housing opportunities are more accessible. However, in addition to densifying within the peri-urban areas, existing urban areas have lost residential opportunities through urban decay and neglect.

It's about regaining lost spaces and we begin to see this is transforming spaces within Metropolitan of Province. In Singapore approaches the problem methodically, identifying plots that are underutilized with a view to encouraging high-density development wherever possible.

3. Densification An Urban Land Management Response

High-density communities are a response not only to land constraints but also to concern about the environment, as they tend to use fewer resources—allowing people to walk rather than use cars, for example. They also tend to reduce unit infrastructure costs. However, high-density areas need to be close to good public transportation, so their success usually requires the expansion and upgrading of mass-transit systems. Multi-modal transit system already existing in some part of KZN and Mandeni local municipality is developing as a secondary city with a multi-modal hub as central to the city development. Arguably, those living on city peripheries can feel excluded and find it hard to take up available jobs unless there is transportation linking them to the center.

Densification is a land management tool to deal with urbanisation and while the need for such an approach has already been established, research is demonstrating that to suggest type of density within existing urban and rural areas or within peri-urban areas or even at the provincial scale would be at best risky. What is proposed is that each District and Local Municipality begins to apply the densification strategies discussed within their own planning areas as each area will have a different approach depending on areas intended to densify.

In the urban areas like Metropolitan areas and secondary cities significant densification are already happening along economic corridors, transport links and most residential areas. This densification is generally formalised, but is informal and unregulated in most townships, taking the form of backyard structures and/or additions. Backyard rentals play an important role in providing affordable rental accommodation for lower-income groups and other people not needing permanent accommodation. Furthermore, backyard rentals offer income assets to owners. Cities should develop or use the available land-use management systems that acknowledge and support different typologies, in order to accommodate various choices and improve densities. This might require infrastructure upgrading to ensure that the capacity is sufficient. Cities should develop strategies to extend basic services to backyarders, assist with creating more permanent structures and enhance tenant security. Suburban densification options must also be intensified and extended through, for example, high-rise opportunities.

In reflection on a study conducted on Diepsloot township economy, Asad Alam, World Bank Group country director for South Africa said, "Addressing the spatial inequalities in the country, reflected in the townships, is essential to improving the lives of people." With more than half of South Africa's urban population living in townships and informal settlements, turning townships into workable and thriving economies is becoming increasingly important. Although these economies face major challenges, which require collective action, townships hold numerous opportunities that need to be explored and developed, they are ultimate enablers if we are to raise people from the poverty line. A collaborative approach needs to extend from project funding to precinct design, right through to implementation and maintenance. Through a collective vision and effort between government and the private sector, townships can become a source of new hope, and new life for us all. (*Gauteng Department of Economic Development, 2014, Revitalisation of the township economy*)

In most of the emerging new cities we already see local business begin to emerge and respond to local need. In these areas one often see local convenience store, cell-phone shop, computer store, small manufacturing as well as consumer related services like hair salons, electrician, builders and catering services.

4. Transport Networks: Backbone to township development

Transport in South Africa is a key sector because it connects people to economic opportunities, which is especially important for township economies needing to be integrated into the mainstream economy. Most township residents do not have private transport and depend on public transport, to commute for work and other reasons. Thus transport is externally focused but internally driven.

Taxis or minibus taxis are the most popular form of public transport, although township inhabitants also use buses and trains. While buses and trains are government-regulated, the taxi industry is privately owned and is less government-regulated. Regardless of their area of operations, taxis generally operate from key locations and, as cities and townships have grown overtime, the taxi routes have evolved to meet rising demand especially in previously unfrequented areas.

The taxi industry plays a critical role in the success of other property developments, linking consumers to businesses. Developers of retail centres need the support of the taxi industry, and in return for their support, space is provided to build taxi ranks at the new development.

Townships did not originate or grow because their location made them good places to do business. They were established either for political reasons or as a result of a housing policy. Thus they do not possess the location attributes necessary for the range of activities that make up an economy. The economic activities that do occur are usually limited in scale and depth, and in many cases do not include particular activities.

Economic activities with an external focus need inputs and access to markets across an entire city and beyond. They also need significant infrastructure and specialised space in order to be able to operate at a viable scale. However, townships are characterised by isolation, inadequate infrastructure and poor links into the regional communication networks. This means that they are unlikely to meet the location requirements of such activities in the short to medium term. Therefore, unless these constraints are addressed, efforts to attract large scale manufacturing and high-end business services activities are unlikely to be successful.

Infrastructure and urban management in townships should be developed to be on a par with other economic nodes in a city, so that townships can begin to compete on an equal footing.

However, the scale of the impact is likely to be relatively limited because:

(1) The growth of economic activities is constrained by the size of the local market, which may in some cases have reached its limit;

(2) Infrastructure investment is only likely to stimulate economic activity when the full range of supply and demand-side factors necessary for an enterprise to succeed are in place.

Although, the potential does exist to grow township economies, especially with respect to local, consumption-based activities, it is limited. Therefore, the socioeconomic issues associated with most townships are not going to be fully addressed through local economic development initiatives alone. Consequently, it is imperative that these areas continue to be physically and functionally connected and integrated into the broader city regions, so that township residents and business people can access and benefit from the opportunities that lie beyond these borders. The focus should be on internal sectors and activities, which include retail, consumer services (personal, recreational and household services), lower order business services, transport and tourism. By definition, these sectors and activities have to occur in the area, and so townships have a locational advantage and can compete successfully with other areas.

For example, it is very difficult (if not impossible) to provide a household service (e.g. plumbing repairs) other than in a township resident's house. In addition to the location advantages, these activities often have relatively low barriers to entry in terms of start-up capital and skills required. This makes them a good fit in township areas, which have high levels of structural unemployment and generally low skill and education levels.

In addition, undeveloped (and underdeveloped) activities should be encouraged and supported, including the arts, music, faith-based activities, public services and housing.

These activities can succeed in township areas because they are near their markets, draw on a local support base and attract external customers precisely because they are township based. Townships can therefore compete with other areas from a locational perspective to start and grow such enterprises.

The approach to informal sector on the other hand, is a minefield, given that until recently, there was no documented approach to support the sector and even national statistics office is still grappling with tools to measure the contribution of the sector to both the national, provincial and regional economies. There is also a lack of consensus between the government and the informal sector in terms of what constitute the required support. The government is still stuck in the theory that support for informal sector is synonymous with formalization, leading to the paying of tax. Operators in the informal sector are not used to paying for the services such as rent, utilities and tax, thus why they continue to repel local government effort to house them in proper structures as it has an impact on their profit. Whilst the overall objective of informal sector development is well-run business and ultimately paying tax, the government messaging should be more developmental,

highlighting issues of sanitation, health and standards of their products. Only once it is understood that government support is to enhance their products and increase the competitiveness of their business, they will be willing to be moved into formal dwellings and ultimately pay tax. Even the revenue services will have to understand the sensitivities around the introduction of tax measure for the entrepreneurs graduating from the informal sector through progressive taxation.

5. Rural-Urban Continuation...

It is however important to recognise that the above township economies still do have a strong rural-urban linkage and so some reflection on how these space relate to each other needs to be considered, at least for moment.

Rural-urban linkages include flows of agricultural and other commodities from rural based producers to urban markets, both for local consumers and for forwarding to regional, national and international markets; and, in the opposite direction, flows of manufactured and imported goods from urban centres to rural settlements. They also include flows of people moving between rural and urban settlements, either commuting on a regular basis, for occasional visits to urban-based services and administrative centres, or migrating temporarily or permanently. Flows of information between rural and urban areas include information on market mechanisms – from price fluctuations to consumer preferences – and information on employment opportunities for potential migrants.

Financial flows include, primarily, remittances from migrants to relatives and communities in sending areas, and transfers such as pensions to migrants returning to their rural homes, and also investments and credit from urban-based institutions. These spatial flows overlap with inter linkages between sectors both at the household level and at the level of local economies. They include backward and forward linkages between agriculture and manufacturing and services, such as production inputs and the processing of agricultural raw materials. Most urban centres, especially small and intermediate ones, rely on broad-based demand for basic goods and services from surrounding populations to develop their secondary and tertiary sectors. Overall, synergy between agricultural production and urban-based enterprises is often key to the development of more vibrant local economies and, on a wider level, to less unequal and more “pro-poor” regional economic growth. Whilst, to some extent, these flows and linkages exist between all rural and urban areas, their scale and strength are determined by the nature of economic, social and cultural transformations.

At the local level, in particular the nature and scope of rural–urban interactions is influenced by several factors, ranging from geographical and demographic characteristics (including the nature of agricultural land, population density and distribution patterns) to farming systems (based on land tenure and access to natural resources) to the availability of roads and transport networks linking local settlements to a number of urban centres where markets and services are located.

Local governments, whose role in many nations has dramatically increased, at least in theory, with decentralization, can play an important role in supporting positive rural-urban linkages. Local government and other local actors are best placed to identify local needs and priorities and provide an adequate response to them

Local decision-making can help avoid the neglect of forward and backward linkages between agriculture and services and manufacturing. It can also negotiate and regulate the use of natural resources by rural and urban residents and enterprises, which can otherwise become a major cause for conflict. However, although decentralization has great potential with regards to efficiency and democratic accountability, it is often accompanied by costs and constraints. Local government may be unable to provide the services needed, either because of the reduction in central government funding or the inability to raise local revenue.

Access to urban markets is key to increasing incomes for rural and peri-urban farmers. Three aspects are crucial: physical infrastructure, including road networks and affordable transport; relations between producers, traders and consumers; and information on how markets operate, including price fluctuations and consumer preferences.

Poor physical infrastructure can have far-reaching consequences on producers' prices, as inadequate roads usually entail prohibitive transport costs. Traders, often perceived as inherently exploitative, can in fact play an important role in providing credit and information to producers.

In peri-urban areas, diversification overlaps with dynamic processes of transformation in land use and labour markets which, in turn, vary between different segments of the peri-urban interface. Where farming is still a significant activity, trade in agricultural produce is also likely to be an important income-generating activity for local residents. Being closer to built-up areas, service activities, including commuting for domestic service to urban households, can be important, as can industrial employment in firms relocating to the urban periphery or outside the urban boundaries in order to reduce their costs (and often to avoid more stringent or more carefully enforced pollution controls).

Mobility and migration are closely interrelated with livelihood diversification. Access to affordable transport expands the opportunities for employment or for engaging in income-generating activities through commuting. When mobility is constrained, as in the case of isolated settlements poorly served by road networks and transport facilities, migration is more likely to occur, although this may also be the case for well-served settlements in economically stagnating areas offering limited income opportunities. When moving to large urban centres, migrants are likely to settle in villages and settlements in peri-urban areas, which also attract low-income urban residents pushed out by increasingly high housing costs in city centres.

Most of the population in low-and middle income nations live either in small and intermediate urban centres or depend on them for access to goods and services. The

fact that most secondary schools, higher education institutions, hospitals and government offices are located in urban areas does not represent an “urban bias” if most of these are in smaller urban centres and serve both rural and urban populations. Similarly, there is no “urban bias” when local government offices with jurisdiction over rural districts have urban locations, unless this removes them too far from the influence of rural producers and populations.

The achievement of any government’s development goals, including those of the millennium development goals will be expressed in these peri-urban spaces. All these and the achievement of many other goals, such as reducing extreme poverty and hunger, will require great improvements in service provision – most of which will be located in small urban centres. In many low-income nations and some middle-income nations, between a quarter and half the total population live in settlements with between 2,000 and 20,000 inhabitants. In some nations, most or all of these are defined as urban; in others, most or all are counted as rural. India can be said to be less than 30 per cent urban or more than 60 per cent urban, depending on the proportion of settlements with between 2,000 and 20,000 inhabitants classified as urban or rural.

The fact that some nations classify most or all of these as urban whilst others classify most or all of these as rural is understandable because most such settlements have a mix of rural and urban characteristics. But it does mean that both urban and rural development specialists have to recognize the need to work with each other in and around such centres – and this becomes all the more important if National Development Goals are to be met. If by 2015, there has to be universal primary education, greatly reduced infant, child and maternal mortality rates, much increased numbers of people with safe drinking water, good sanitation and adequate incomes and food intakes, and a halting and reversing in the spread of Aids, malaria and other major diseases, a considerable part of the actions to achieve these will have to be in “large villages” and “small urban centres” – both to serve their populations and those in their surrounds. These are urban (or large village) concerns because they depend on adequately resourced local (governmental, nongovernmental or private) enterprises located in these urban centres; they are obviously rural-urban concerns as they serve both rural and urban populations.

The above requires strong, forward thinking leadership at both the District and Local government as well as Provincial level. This leadership must be visionary, must have a cadre of innovative flexible peri-urban and city planners that are forward looking flexible plans that accommodate the shifting socioeconomic, population and spatial rural-urban shifts. Both political and administrative leadership in the newer and or secondary cities need to create platform which engage with business, civil society and labour. Local government administrative systems must be reviewed in terms of encouraging and or facilitating higher densities , more local economic opportunities and creating platforms for the local informal sector to increase productivity and improve their revenue so as to encourage this sector to participate in upkeep of trading areas.

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Oriyomi AKINYEMI

Abstract

The high demand for housing has forced many of the urban poor to look for an affordable alternative in the periphery of the urban area where there is little or no presence of government, urban planning and land management to build shanties and thereby create slums. This paper assesses Lagos state government intervention in Makoko community as an informal settlement Vis a Vis international standards. The methodology of study is expository and adopts content analysis and evaluation approaches in the collection and analysis of reliable evidence on the upgrade of Makoko community. The study evaluates policies of the Lagos state government of Nigeria on the management of informal settlements in a global context in order to identify the issues and challenges in the socio-economic transformation of Lagos using Makoko as a case. The study reveals that the partnership of Lagos state government with the World Bank was not successful as a result of failure on the part of the state government. The paper rec

Key words: *Informal settlement, Policies, Transformation*

Introduction

Africa is currently in the midst of a number of simultaneously unfolding and highly significant transitions, among them demographic, economic, technological, environmental, urban and socio-political (UN-HABITAT The State of African Cities, 2014). The high demand for housing has superseded the supply by the governments in the recent years. This has forced the urban poor to look for an affordable alternative elsewhere in the urban area mostly the periphery where there is little or no presence of government, urban planning and land management to build shanties and thereby create slums. The increase in population and need to meet ends has also added to the expansion of informal settlement especially in the global south. These set of deprived people are excluded in the governance of the city and lack the right to basic social amenities.

Some informal settlements evolved as a result of slums creation which have been in existence for many years or even decades. They are community of people who live together and independently gathered what they have with the available resources. They are deprived and excluded form of informal settlement characterized by poverty and large agglomeration of dilapidated housing often located in the most hazardous urban land (UN Habitat, 2015)

The UN-HABITAT (2016) observed that the failure of urban planning and the construction sector in matching demand for homes has resulted in a huge housing backlog that has led to the development of informal settlements in a variety of contexts globally. Due to constraints in formal housing and land delivery systems, more and more people who would otherwise qualify for housing programs are resorting to slum settlements. Consequently, addressing the issue of an informal settlement would play a major role on their standard of living and involvement in governance.

Indeed, the dynamic of informality in affected countries is related to factors such as lack of policy tools that provide housing to the low income people and the poor distribution of wealth

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Sanchayeeta Adhikari and Kushal Deb (2004). The UN Habitat over the past three decades has made concerted efforts developing policies and working with governments of different countries with the objective of mitigating the challenges of informal settlements. However, government of many countries in the global south lacks the capacity and political will to implement the UN Habitat policies, hence, the challenges of informal remain intractable.

This study presents an evaluation of the policies of the Lagos state government of Nigeria on the management of informal settlements in a global context with the objective of identifying the issues and challenges in the socio-economic transformation of Lagos using Makoko as case study. The choice of Makoko is based on its prominence and global attention among informal settlements in Lagos. Being an expository research, the study adopts content analysis and evaluation approaches in the collection and analysis of reliable evidence on the upgrade of Makoko community by Lagos state government through the Lagos Metropolitan Development and Governance Project (LMDGP) and international best practices.

The paper is divided into six sections. The first is introductory, while the second section of the paper reviews recent literature on the subject matter. The third reviews the global policy directions towards management of informal settlements through a description of innovative approaches documented by the UN-Habitat. The fourth section, describes the study area with emphasis on what has been achieved through the LMDGP while the fifth evaluates the performance of the LMDGP in a global context to identify the shortcomings. Conclusion and recommendation on the way forward constitutes the sixth section.

Literature review

The growth of informal settlements in the global south has been a major concern to the international community for decades and studies in this regard have yielded critical insights on how the issues and challenges could be managed particularly in the area of policies and strategies. The Cities Alliance has emphasized on the need to recognize the place of informal settlements and slums in developing societies and to undertake its improvement through partnership (Mallo Daniel. et. al., 2015). It posits that an all-inclusive involvement of slums dwellers and stakeholders in slum upgrade policy will avail information at the onset as to the best ways to achieve the improvement.

Informal settlements, slums and other poor residential neighbourhoods are a global urban phenomenon. They exist in urban contexts all over the world, in various forms and typologies, dimensions, locations and by a range of names (squatter settlements, favelas, poblaciones, shacks, barrios bajos, bidonvilles). While urban informality is more present in cities of the global south, housing informality and substandard living conditions can also be found in developed countries. In Africa, over half of the urban population (61.7%) lives in slums and by 2050, Africa's urban dwellers are projected to have increased from 400 million to 1.2 billion (UN-HABITAT III 2016).

Different authors have described the nature, existence, causes, upgrade or improvement on slum communities, the difference between a slum and an informal settlement. Slums are generally perceived as negative to the city. Cities Alliance refers to slums as those abandoned part of cities with horrifying housing and living conditions. Similarly, SIDA (2006) describes slums as deteriorating urban settlements, with unhealthy environmental conditions and highly congested with poor housing conditions.

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Slum dwellers are seen as highly unskilled people with no formal education who cannot productively participate in the opportunities in cities hence their contribution to the city's economy and development unimportant (UN-Habitat, 1987). On the contrary, slums are also perceived as positive to the city, being a solution to the city housing shortage, provider of the labour force in the city among others. Slum dwellers are united and live as one family when necessary. Nawagamuwa & Viking, (2003), observed that just like any other communities in the urban areas, slums have leaders and community representatives who represent their collective interest.

Over the past 10 years, the proportion of the developing countries' urban population living in slums has declined from 39% (2000) to 32% (2010). In fact, UN Millennium Development Goal (UN-MDG) reports estimate that between 2000 and 2010, a total 227 million urban slum dwellers in developing countries experienced significant improvements in their living conditions, thus implying that Target 11 of Millennium Development Goal 7 has been exceeded by double (UN-HABITAT, 2016).

UN-HABITAT has rendered a wide range of assistance to many countries in developing strategies to upgrade their informal settlements. It also helps in strengthening institutional building as well as skills development of technical cadre from governments and other stakeholders involved in developing informal settlements. In this process, a number of participatory planning tools have been developed.

Cities Alliance noted that countries around the world have devised strategies for the upgrading of slums and one of such strategies involves the use of a bottom-up approach as opposed to top-down; it also involves the empowering of local government authorities and agencies to implemented slum upgrading programs. Some countries that have achieved success on the basis of employing this strategy include among others, Indonesia, Brazil, Jordan, India, Tunisia and the Philippines (World Bank and UN-Habitat, 1999 p. 3).

Some studies in other parts of the world show the different approaches towards improving informal settlements. The housing condition study of the urban poor in Freetown by The Government of Sierra Leone funded by UN-HABITAT, The United Nations Development Programme recommended strategic, social, economic and physical improvement on the slum and informal settlements in Freetown.

Also, the UN-Habitat (2007) report on situation analysis of informal settlements in Kampala suggested ways forward on the improvements of slums. It proposes adequate flow of information among the stakeholders, early community participation in the project and sensitizing the slum dwellers on preparation for change prior to mobilization. However, it was advised to avoid slum upgrade close to election period to avoid political interference in the project, and the community are skeptical about the implementation of the programme due to prevalence corruption in Uganda and need for in-built mechanism to control effect of corruption

The success and failure of countries in managing informal settlement is determined by several factors. However, the innovative approaches deployed in the management of informal settlements with success stories as documented by the UN Habitat is presented in the next section of the paper.

The UN Habitat report on human settlements (2009) noted that, the usual approach to informal settlements has mostly been removal or neglect in order to achieve spatial planning and regulation. However, the desire to approach informality with the conventional measures to planning, land administration and regulation is uncertain in many countries. According to the report, four feasible and innovative approaches have been identified:

- i. Alternative to eviction
- ii. Regularization
- iii. Strategic use of planning tools to influence development actors and
- iv. Partnerships between public agencies and informal businesses to manage public space and provide services.

A better alternative to the eviction of informal settlements is being suggested under this approach. Eviction according to the UN Habitat report on human settlements has sometimes been used to achieve hidden intentions of politicians to settle scores or 'ethnic cleansing. Forced evictions disproportionately affect certain groups such as women, travelers, migrants and indigenous people (Biderman et al, 2008). Scholz (2002) said in his paper that eviction is associated with violence such as beating, intimidation, rape and coercion which is especially towards women.

This approach discusses the rights of people to decent work and security of tenure which includes housing, privacy and possessions. ADB (1998); World Bank (2004); UN-Habitat (2007a) observe that eviction is a violation of human rights according to international law and urges government to consider all feasible alternatives and adhere to good practice guidelines if eviction is compulsory. Often the most feasible and appropriate action open to governments is to stop the most harmful ways in which they intervene, such as forced evictions (Amis, 2004). Publicly calling a halt to harassment and eviction of informal occupants of land in public ownership immediately increases their security of tenure, encouraging them to invest in their houses and enterprises, and improving the prospects for dialogue about the future of the areas concerned (Kundu, 2002).

Regularization is another acceptable alternative to removal or eviction in informal management. The UN-Habitat report on human settlements defines regularization as recognition and provision of secure tenure, while upgrading generally focuses on the provision or improvement of basic services, although it may also involve re-planning and redevelopment to ensure compliance with planning and building regulations. It is the process of formalizing the informal tenure system. Formalization of tenure is the provision of title to individual plots which is the strongest legal form tenure rights can take. The title will not only help in planning but gives the landowners rights and sense of belonging. This will enable the land owners to borrow using their properties as collateral.

The developing countries in the 1970s in an attempt to nationalize land and meet the urban land through administrative allocation ensure that developments are in accordance with a master plan. There are limitations to this model during the demonstration of this model and today, approaches are focused on the strategic use of public planning and financial resources to guide development. It includes construction of trunk infrastructure to influence development pattern, guided land development, land readjustment and a stepwise extension of detailed planning in defined areas.

The informal entrepreneurs are the informal economy actors who operate in the retail trade and related services, water, transport, manufacturing and other related services. This approach explains the acknowledgement of the important roles they play in urban economy, the household livelihood and the right to operate in the city by the informal entrepreneur. Also understanding their economic operation, contributions towards providing goods and services and constrains under which they operate. This therefore enables government in coming up with policies and programmes that counter adverse effects and address constraints without jeopardizing enterprises. This approach identifies six techniques:

- Recognition of informal entrepreneurs' property rights
- Allocation of special purpose areas
- Managing shared public spaces
- Provision of basic services and support
- Mixed-use zoning
- Organization of informal operators

A close examination of these innovative approaches to managing informality by the UN-Habitat reveals that managing informality in human settlements is not solely a government responsibility and should be done in collaboration with other stakeholders particularly the people that will be affected by government intervention. However, such improvements are to be initiated by the government and the execution of any programme arising from the intervention should follow due process to avoid policy failure.

All the four approaches are good and implementable however, they have their shortcomings. The first approach is a complex one that requires Non-Governmental Organization in a well-organized community. The regularization approach is as well complex and costly to fit infrastructure and facilities if sites have not been provided for this purpose. Without proper planning of new development and complementary policies, influencing development actors may benefit only large scale investors. Extending effective planning and building control to home-based enterprises and mixed-use areas in low-income countries is unlikely to be feasible for some considerable time. The fourth approach appears to be most preferred of all which explains its adoption by the LMDGP for the Makoko intervention.

The Study Area

Lagos with a land area of 3,345 sqkm and population of about 20 million people is one of the world fastest growing mega city. It is the most populous state in Nigeria with just 0.4% of the country's land area and this makes it the smallest of all the states. Lagos is the commercial capital and the financial engine of the country. The commercial nature of Lagos has continued to grow the economy of the state stronger thereby attracting migrants into the city, causing rapid rate of urbanization with a daily inflow of about 1643 people in the city.

The increase in population of Lagos with the shortage of land has made housing highly competitive and not affordable for the low income earners. This housing shortage has forced the urban poor to seek for an alternative in an informal and deprived settlement creating new and expanding the already existing slums in Lagos. Housing prices in Lagos were high due to the non-availability of long-term finance, high transaction costs for obtaining land titles and/or certificates of occupancy, regulatory and planning controls for building and construction that

Akinyemi Oriyomi, Lagos State Government Intervention in Makoko, 52nd ISOCARP Congress 2016 constrained the efficient utilization of land, as well as high inflation rates in the Nigerian economy (*World Bank, 2014*). Informal settlements and slums in Lagos have been therefore, a consequence of both market and government failures.

There are over 200 slums in Lagos according to United Nation and two third of the city's land area is categorized as slum communities. Around 70 percent of Lagos residents live in poor, often illegal, settlements, such as the renowned slum of Makoko, in or near low-lying areas (USAID, 2013). Makoko is a water front community on the Lagos Lagoon since 1860s and is globally synonymous to a fishing settlement. The community consists of settlement on both land and water with multicultural population. The land population of Makoko is estimated at 85,000 by the World Bank.

The culture, identity, occupation, and general lifestyle of most of the inhabitants are linked to access and use of open water for fishing and transportation of wood from the hinterland to Lagos. The people of Makoko community have harmoniously and peacefully existed despite their ethnic and religious differences. It is a large low-income community with a vibrant local economy in smoked fish production.

Before 2010, people of Makoko only rely on self-installed boreholes for their water supply. LMDGP in the year 2010 constructed a borehole but became dysfunctional immediately after inauguration and now recently constructed. In some cases, pipes spanning more than 500 meters were used under the lagoon in transportation of community confirmed potable water from locations beside the University of Lagos to the people on land. There are 15 borehole points on land and available to the communities on commercial basis.

Similarly, there is no presence of any health center within the community except a Non-Governmental Organization AIDS Testing center. The residents of Makoko rely on the neighbouring communities of Ebute Meta and Iwaya for health service. Prior to the recent collaboration with the Lagos waste management authority, the community's solid wastes are collected at a particular point to form land on the lagoon for their expansion while some residents patronize the private sector for their disposal. There is no any organized market structure in place within the community as the Temidire Fish Market which has now been converted to different uses like private residential, commercial and religious. There is a newly upgraded Asejere market in Makoko.

The entire community of Makoko has no secondary school. The community has a total of 15 privately owned nursery and primary schools, however, there three public primary schools which are located along the road that leads into the community. According to Makoko/Iwaya Community Regeneration Plan report a typical class of nursery school in Makoko has an average number of 18 pupils while the primary is 30 pupils. Like in the case of health service, the students of Makoko community rely on the neighbouring of Iwaya, Ebute Meta etc. for their secondary education as there is neither public nor private secondary school in the area.

Besides, the community rely majorly on the nation's national grid through Power Holdings Company of Nigeria for their electricity supply. Apollo Street where the feeder terminates, is network of wires which distribute to different houses on both land and lagoon. It is an irony to state that electricity generator popularly known as "I better pass my neighbour which is to serve as an alternative to the power supply from the national grid has assumed the role of the main power supply. The inventory of social infrastructure in Makoko is presented in Table 1.

Table 1: Inventory of Social Infrastructure in Makoko

S/N	AMENITY	EXISTING
1	<i>School-Nursery</i> Government funded Private-funded	15 (Nursery/Primary)
2	<i>School –Primary</i> Government Funded Private Funded	3 15(Nursery/Primary)
3	<i>School- Secondary</i> Government Funded Private Funded	1 (proposed)
4	Life Skill Acquisition Center	
5	Health Center	0
6	Market	1
7	Source of water	Borehole
8	<i>Water Supply Point</i> On the Land On the Lagoon	15 7

Source: Authors field investigation. 2016

Lagos Metropolitan Development and Governance Project in Makoko

In year 2006, the World Bank in collaboration with Lagos state government embarked on a project called Lagos Metropolitan Development and Governance Project (LMDGP), aimed to give Lagos a facelift by investing in the improvement of basic infrastructures. The project is focused on improving the standard of living of the citizen most especially those who reside in the slum areas within the metropolitan areas of the state by improving their housing condition. There are 9 major slums identified for this project which include Ilaje, Ajegunle, Iwaya, Badia, Bariga, Amukoko, Itire, Agege and Makoko. In the end, the project is expected to directly benefit an estimate of one million people (LMDGP Report, 2005).

LMDGP is said to involve the displacement and relocation of some slum dwellers currently living on any property that will be needed for proposed public infrastructure such as roads and drainage (LMDGP Report, 2005). The Lagos State Government as a collaborator was required to submit a Resettlement Policy Framework that will be in line with the World Bank Resettlement Policy.

The Resettlement Policy Framework would serve as a guideline for all stakeholders involved in the project to ensure transparency, accountability and due process at all time. The essence of the Resettlement Policy Framework is to ensure that the project affected persons (PAPs) are protected from any negative social, financial and physical loss that can be associated with the resettlement and those PAPs are able to improve or at least sustain their previous living conditions, before resettlement took place. It was also agreed that the World Bank policy will be adhered to where there is disparity between the Nigerian law and World Bank policy. The budget of the project is summarized into 4 areas of general upgrade of slums, drainage provision, solid waste management and capacity building in the 9 identified slums. The following are the LMDGP works in Makoko:

- Rehabilitation of Sarriyu street and Acts of Apostle street that leads to their major market -Asejere Market

- Upgrade of better life market to Asejere market
- Rehabilitation of Erejuwa street still ongoing
- Rehabilitation of Makoko round-about
- Rehabilitation of the 3 public primary schools
- Construction of 4km Dacosta-Makoko collector drain.
- Construction of 3km Oyadiran collector drain, in Makoko.

Fig. 1: Map of Makoko



Source: Google image, 2016 Makoko Iwaya Waterfront Regeneration Plan page 26

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The estimated number of the affected people is unknown, however, they are categorized into 3 groups by LMDGP for compensation consideration. These are:

- a. Individuals affected by the upgrade: There will be compensations for individuals affected by the project that suffer the loss of land, property, loss of asset and investment, access to natural or economic resources.
- b. Household affected by the upgrade: There will be compensation for any household or member of a household located in Makoko or any of the other 8 slums, affected by project activities. Either through the loss of property, restriction to sources of livelihood, or other negative effects created by the upgrade. Those provided for include:
 - (i) Any member of the household, house tenant, dependant, or friend, regardless of gender, religious affiliation, age, etc.
 - (ii) Old or handicap members of the household.
 - (iii) Household members that cannot reside together cultural or religious rules but depend on each other for support and daily existence.
 - (iv) Members of family that help with housekeeping, maintenance or productive services but may not eat together.
 - (v) Vulnerable Households: Vulnerable people that find it difficult or cannot participate in production, consumption or co-residence because of physical or cultural reasons.

(This also involves members of the production team that may exchange domestic or farming services regularly but may live separately).

- c. Vulnerable Households: Vulnerable households include owners of compound walls, shops or rooms that are partly affected by demolition from upgrade activities, if partial demolition will deprive neighbouring landlords from gaining income from rent or lean to the termination of rent by their tenants (LMDP Report, 2005).

The LMDGP collaboration with the World Bank involves relocation of the dwellers (Project Affected Persons) who are located along the development path of the project. These people are to be relocated in accordance with policy of the World Bank resettlement. Below is the World Bank resettlement policy

- Involuntary displacement should be avoided whenever possible and alternative urban projects should be considered to avoid disruptive and impoverished effects. In the case where displacement cannot be avoided, resettlement should be carried out with regard to displaced person's needs, entitlement and protection from the environment.
- Involuntary resettlement should be carried out as a 'developmental program'; where adequate opportunities is given to affected people in order assist them improve or at least restore their previous living and earning capacity. This includes compensation at replacement cost, opportunities to share in the benefits of the project and help with the movement and support while in transition at the relocation site.
- If agreed upon by the affected people, displaced groups should be moved collectively to preserve the social ties and network.
- There should be sufficient public revenue for compensating affected persons in order to ensure adequate resettlement and rehabilitation and compensate them for the loss incurred by involuntary displacement from their current housing.
- The distance between the current site and the relocation site should be minimal, in order to balance the spatial and cultural differences and economic opportunities. To enable the affected people can adapt and integrate into their new environment without difficulty.
- Both the displaced community and the host community's social and cultural institutions should be considered in the resettlement process. The affected people should be consulted and informed about their entitlement, options and moving timetable. There should be active and organized participation with the community in decision making and implementation of resettlement.
- New resettlement communities should be provided with required infrastructure and services.
- Host community to receive additional affected people must be considered in the planning process and should be given necessary assistance in tackling the social and environmental effects of population increase.
- Finally, affected people that have informal customary land with or without legal title or other resource that might be lost due to involuntary resettlement, must be provided with suitable land, infrastructure and adequate compensation for resources lost.

Given the World Bank involvement in the LMDGP it is expected that the strategies deployed are consistent with global policy and international best practices on rehabilitation of informal settlements.

The report on the success of Lagos Metropolitan Development Governance and Project is unsatisfactory to the sponsor LMDGP (2014). The shortcomings of the project could be traced to a number of factors, ranging from the project design to monitoring and evaluation of the project. The factors according to the World Bank are stated below:

- The World Bank report states that the project was largely ambitious and complex. The integration of the three tiers of government including the private stakeholders caused constraints in sharing information. The commitment of government towards the project was weakened and interest declined by the end of the project. The stakeholders meeting at this stage of the project were no longer being attended by senior officials who can make decision.

- the reported stated that multiple supervision by the state government and World Bank officials affected the implementation of the project. Also, the change of government around 2008 affected the relationship between the bank and government officials. Although, there was significance success recorded in the solid waste management but the LMDGP fund lost primacy. According to the report, Lagos was already sourcing for funds.

- The progress report on the project, expenditure and achievements was generally poor. The difficulty in keeping record of execution and achievement of targets was as a result of disconnection between different reports.

Based on the reliable secondary information on the state of LMDGP in Makoko and the international best practices in the improvement of informal settlements, the Lagos state government is far from accomplishing its goal due to a number of factors. For instance, while international standard requires full community engagement in state intervention, it is very clear that this is not the case in Makoko. The residents are not fully engaged and as such could not fully contribute their quota to the success of the project.

Besides, the state of governance in Makoko Community is a typical reflection of the top-down system of government that disconnect the institution from the citizen. The failure of the LMDGP is a signal that the bottom-up approach is highly needed to replace the top-down approach for a result-oriented community engagement. Official aid agencies and development banks in most cases do not implement initiatives on the ground, instead funding others to do so and they are only as effective as the local institutions they fund. If the funded central or local governments have no relationships with, or accountability to, the local citizens, these international organizations no matter how honest their intentions reinforce undemocratic structures (Fabienne H. & Egun A., 2015). They further observed that, the citizens of low-income communities are often acutely aware of what is required to improve their living conditions, generally needing relatively little funding.

Conclusion

The partnership of the Lagos state government with the World Bank for the socio-economic transformation of Makoko through LMDGP since 2006 is a welcome development. Evidence from literature shows that the community is unique in several ways and needs a careful intervention that would not jeopardize the livelihoods of residents. A close examination of the situation in Makoko and the review of the World Bank on LMDGP reveal that the intervention is not a success story.

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As earlier stated, the World Bank LMDGP in Makoko Lagos is focused on improving the standard of living of the slum dwellers by investing in the basic infrastructures such as road, drainage, improving housing condition, access to portable water among others. The project however failed due to inadequate flow of information, change of government, lack of commitments by the state government. Interestingly, the Bank report scored the project low in terms of project design, implementation and monitoring and evaluation. What is obvious in this study is that the Lagos state government has not taken the advantage of the expertise of World Bank personnel on the project. While the World Bank remains committed to its role in the project, it is expected that the Lagos state government should live up to expectation.

To move forward the following steps should be taken:

- Streamline the project framework for clarity and make it simple to facilitate seamless flow of information among the stakeholders. The commitment of government needs to renew its commitment for the success of the project.
- Project implementation should have a structure that eliminates multiple supervision by the state government and World Bank officials. The significance success recorded in the solid waste management should be carried on into other sector and judicious use of available funds should be ensured for goal achievement.
- There is need for proper monitoring and evaluation. Keeping of record of project execution and achievement of targets should be enhanced. There should be proper integration of all reports relating to the project.
- The Lagos state government should have an up to date report of project evaluation and compare notes with the World Bank such that project monitoring and evaluation can be harmonized.
- Finally, the Lagos state government in collaboration with the World Bank need to review the community engagement, project approach, the process and resettlement options for the project to be a success.

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Revitalizing Historic District: Dalian Xinglong Historic District Case Study

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SYNOPSIS:

Many historic districts in China's inner cities are now ghettos for the poor, socially isolated despite their central location. This paper uses Xinglong Historic District in Dalian as a case example to study the community stratification and renovation of historic district.

1. The Phenomenon of the Community Stratification in Historic Districts in China

China tore down much of its rich architectural history in favor of new high rises as a result of rapid urbanization since early 1980. A few lucky historic districts in inner cities escaped the destruction and maintained their traditional features. However, after long neglect, the dilapidated buildings, old facilities and poor sanitation relegate these districts to ghettos, socially isolated despite their central location. Both the local residents and the immigrants are low income earners, creating community stratification in China's cities. Recently, China began to rethink its former urban-renewal plans and put more focus on the cautious renewal of historic districts in inner cities.

2. Brief Introduction of Dalian Xinglong Historic District

Xinglong Historic District (Xinglong for short), located in the central Qingniwa CBD zone in Dalian, is a typical case.

Xinglong was set up near the train station in 1929, and finalized construction and space pattern in the 1940's. Famous for its classic architecture style (Dalian Style), Xinglong is one of the most important commercial districts in Dalian City at its prime. Most of the buildings have three floors. Mixed business functions, such as restaurants and shops, are on the ground floor, with apartments on the upper floors. The construction and facilities were advanced for its time while the local environment was beautiful and comfortable.

Unfortunately, Xinglong gradually lost its attraction during the large scale business development around the area since the 1980's. Though famous for its long history and rich culture, Xinglong is now an area for low income inhabitants and migrant workers, due to its decrepit buildings, poor sanitation and run-down businesses.



Figure: Location and Block Layout of Xinglong Historic District in Dalian City
Source: Dalian City Master Plan and Google Map



Figure: Photos of Xinglong in the 1940's and Now
Source: Renovation Research Project of Dalian Historic Districts

3. Research Methods

The author previously participated in the Urban Social Investigation Report Project and Renovation Research Project of Dalian Historic Districts. Based on these projects, this paper uses Xinglong as a case example to analyze the community stratification and inhabitants' thoughts and demands, as well as strategies to revitalize the historic districts in inner cities. For the study, the author conducted site surveys and polled local residents, immigrants and local workers to have a full understanding of the characteristic architecture style and the needs of persons here. The author then performed statistical analysis of retrieved questionnaires using SPSS software and set up an architecture and space model using Sketchup software to analyze the problems and challenges in the renovation process. Spatial and policy analysis of the Dalian's low income groups was carried on to find the effective strategy for Xinglong to mitigate community stratification from the range of the whole Dalian City.

4. Statistical Analysis of Questionnaire and Model Simulation: Population, Spatial and Economic Problems of Xinglong

Through statistical analysis of the questionnaire, the author presents a comparative analysis model to identify the population, spatial, and economic conditions of the district. The model comprises of population demographics, local living conditions, traffic and infrastructure, spatial patterns, and economic activities.

4.1 Population Demographics

Xinglong is home to two types of people: original local inhabitants and migrant workers. Their level of education and income are both low. Population density in the district is too high due to overcrowding by the low-income immigrants. They choose to rent apartments in Xinglong for the low rent and convenient location for jobs nearby in low-end trades, such as clerks in the retail shops inside the district and cleaners in Qingniwa CBD. This kind of residents leave the district when they change their jobs, resulting in high population mobility. At the same time, unemployment rate for original local inhabitants is high. Most of them live off of their rental income, which remains low due to the dilapidated living conditions. Thus, regardless of origin and work, Xinglong is now an area for low income groups.

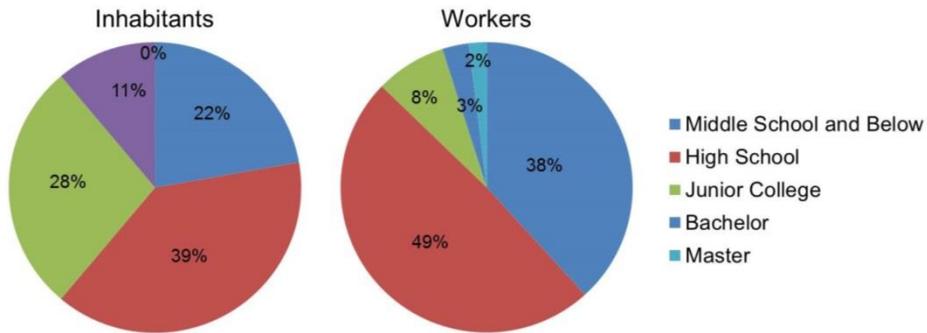


Figure: Education Level of Inhabitants and Local Workers in Xinglong
Source: the Questionnaire

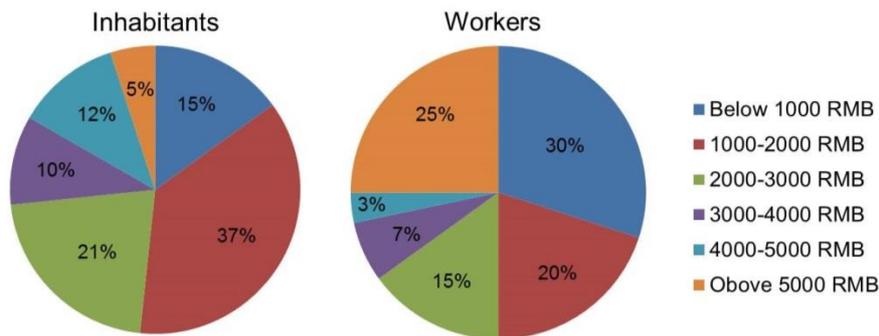


Figure: Income Level of Inhabitants and Local Workers in Xinglong
Source: the Questionnaire

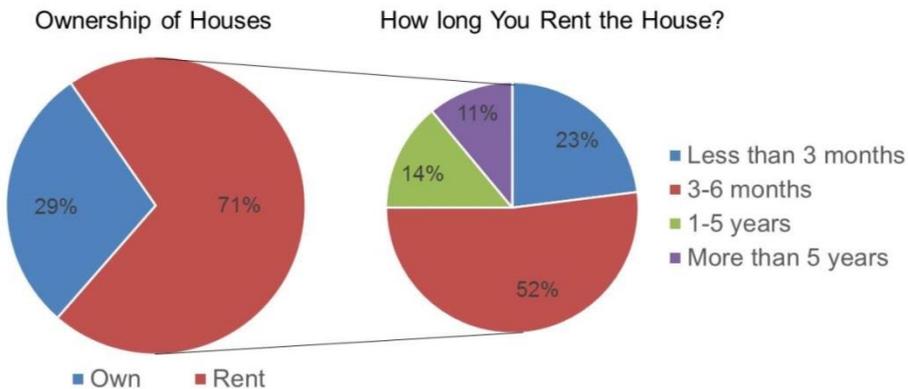


Figure: Ownership of Houses and How Long the Tenants Have Rented Their Accommodations
Source: the Questionnaire

4.2 Spatial Patterns and Local Living Conditions

Xinglong, located in the central Qingniwa CBD zone in Dalian, is well known for its classic “Dalian Style”: enclosed city blocks with internal courtyards and tree-lined streets dotted with restaurants and shops. Most are three-story buildings. The architecture is influenced by a mix of Chinese, Russian, and Japanese designs. The block texture is of great historic value. Rapid business development in Dalian City started in the 1980’s. Historic buildings in the nearby blocks were bulldozed, immediately replaced by modern commercial constructions. These new constructions became the modern city center, i.e. Qingniwa CBD. At the same time, Xinglong was able to maintain its “Dalian Style”, but the quality of buildings and infrastructural facilities declined due to long neglect and disrepair. The growth of Qingniwa CBD nearby brought low-income immigrants to Xinglong due to its cheap rent. The homeowners built more extension to their buildings with minimal investment, which were then

rented to the immigrants or leased as low end retail shops and warehouses. Buildings rose from the original three floors to five. Population density is very high, with per capita housing area below 12 square meters. The beautiful tree-lined streets became narrower and more crowded. Many houses have no private washroom or kitchen. The infrastructure is getting worse and the sanitation is poorer. Most of the local inhabitants and the immigrants are not satisfied with their living condition here.

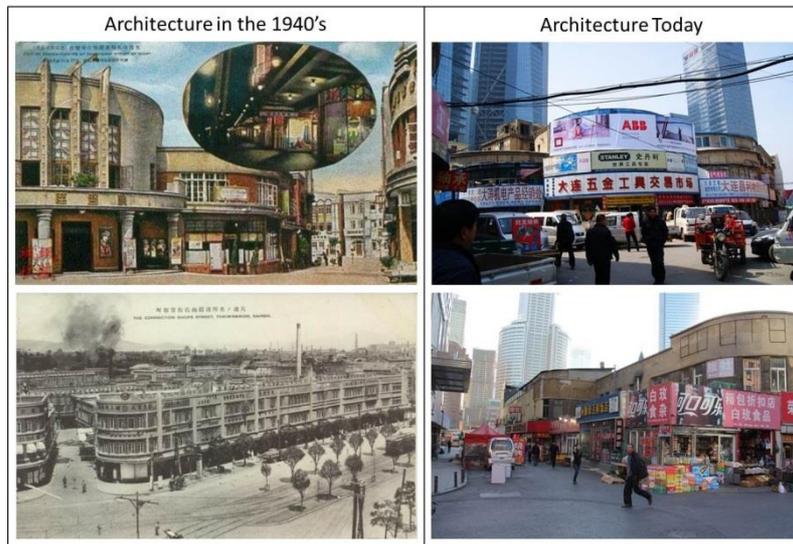


Figure: Comparison of Xinglong's Architecture in 1940's and Now
Source: Urban Social Investigation Report Project



Figure: Block Texture in the 1940's
Source: Urban Social Investigation Report Project

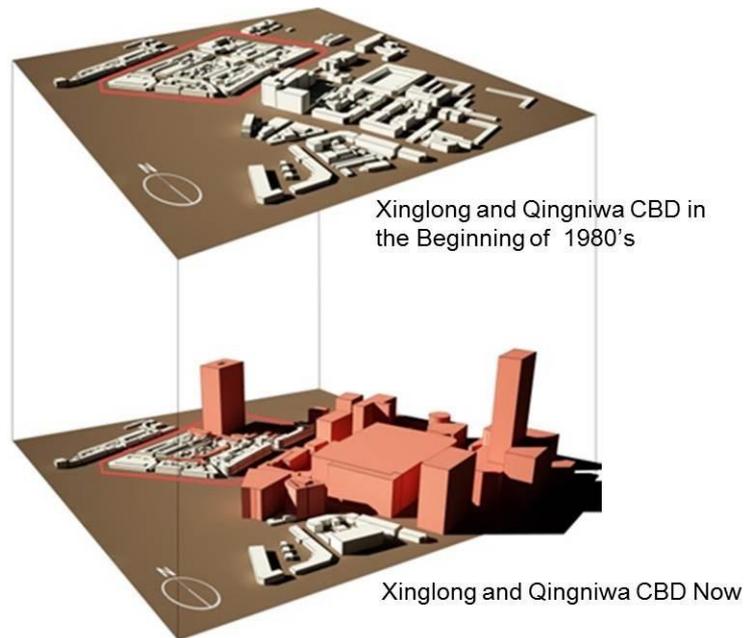


Figure: Evolution of Xinglong and Qingniwa CBD
Source: Urban Social Investigation Report Project

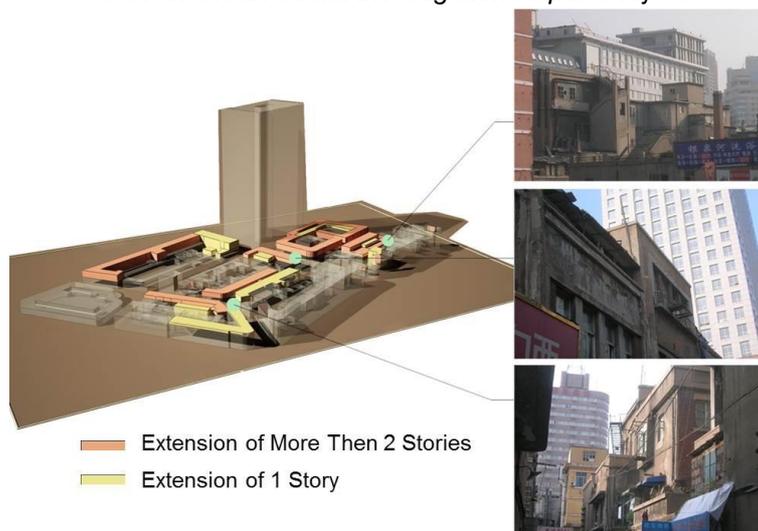


Figure: Extension to Historic Buildings
Source: Site Survey

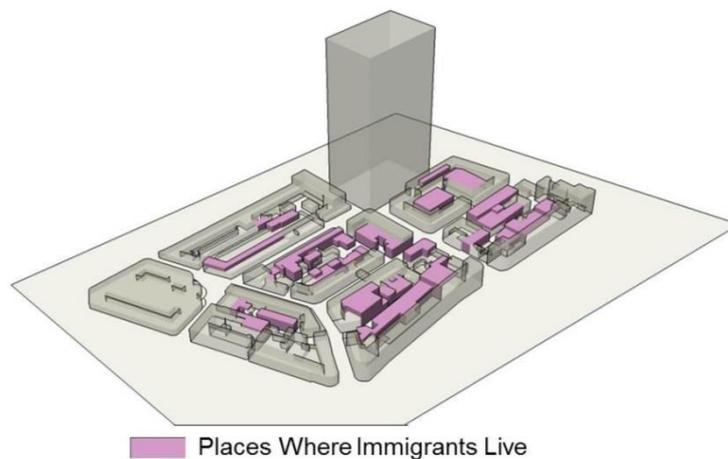


Figure: Spatial Distribution of Immigrants

Source: Site Survey

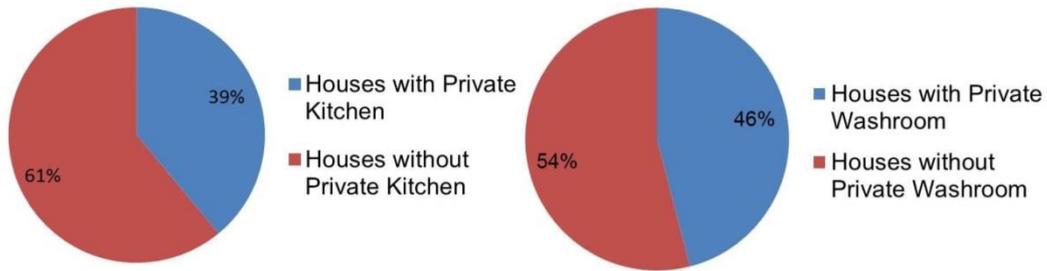


Figure: Proportion of Houses without Private Washroom and Kitchen

Source: the Questionnaire

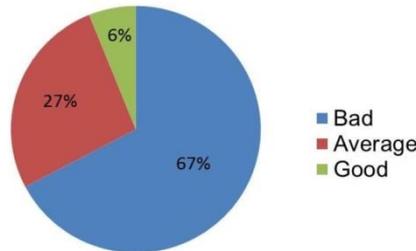


Figure: "How Do You Think About Your Living Conditions Here?"

Source: the Questionnaire

4.3 Economic Activities, Function Layout and Traffic Problems

Xinglong was the business center of Dalian in the 1940's. In addition to apartments on the upper floor, the lower two floors held restaurants, cinemas and retail shops. However, under the shadow of Qingniwa CBD, Xinglong lost its appeal. Function changed significantly in the past three decades. With more and more building extensions added on for renting, the proportion of residential space increased. The once high-end shops and restaurants gave way to low-end wholesale and retail business today. Hardware stores selling miscellaneous goods account for nearly 90% of the total retail shops. Related warehouses also grew in numbers. The low-end wholesale and retail business brought in busy freight transportation to an area with narrow roads, conflicting with the pedestrian and car traffic, especially during the rush hour. Indiscriminate parking makes the pathways even narrower.

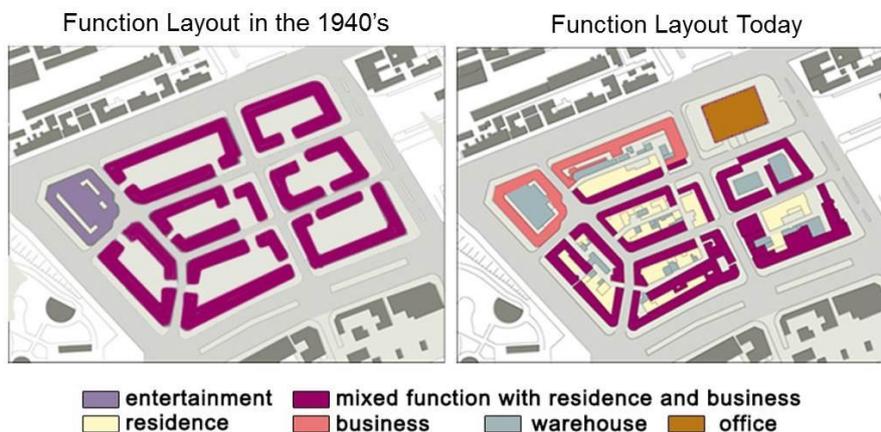


Figure: Function Layout in the 1940's and Today
Source: Urban Social Investigation Report Project

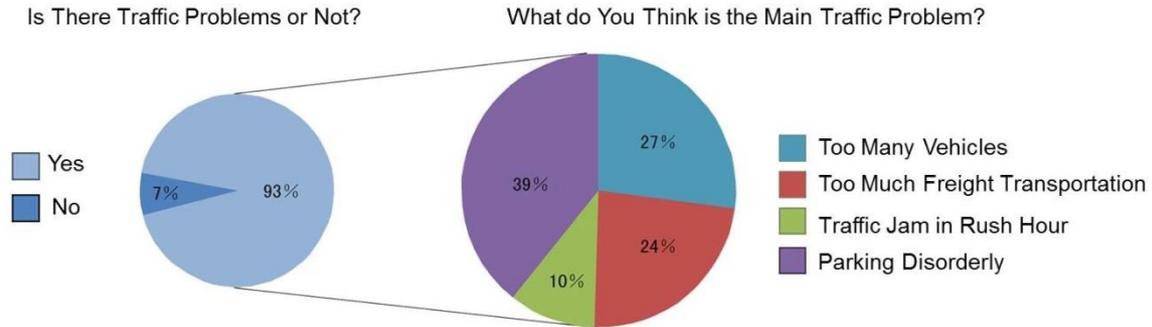


Figure: Traffic Problems
Source: the Questionnaire



Figure: Photos of Traffic and Parking
Source: Site Survey

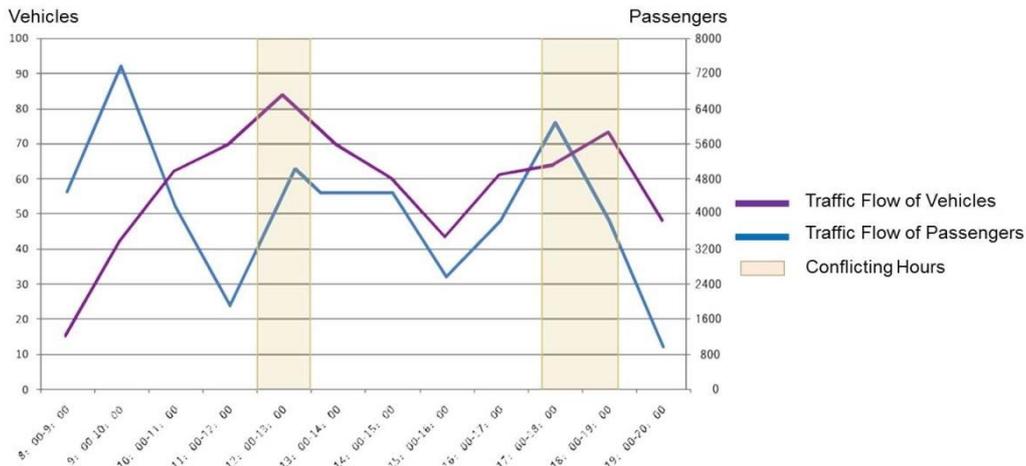


Figure: Conflicting Hours of Vehicles and Passengers
Source: Site Survey

4.4 Thoughts and Needs of Local Inhabitants and Immigrants

Of the original local inhabitants that own their apartments, most are unwilling to move away despite high dissatisfaction with the living conditions. In addition to ownership bias, the residents prefer the area for its ease of accessibility to public transportation and public service facilities, nearby employment opportunities, as well as local community attachment. Immigrants choose to reside here because they could easily find jobs nearby and due to low rent. Community attachment and accessibility to public transportation and city public service are also key considerations.

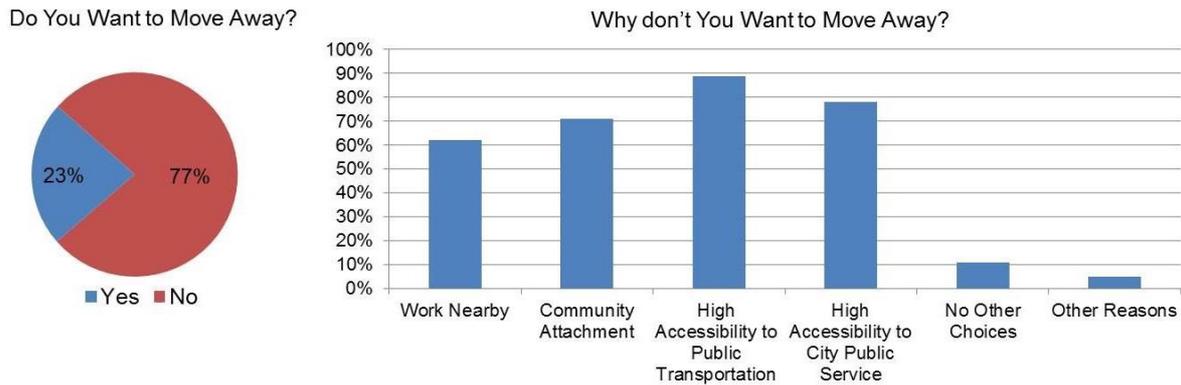


Figure: Thoughts of Local Inhabitants

Source: the Questionnaire

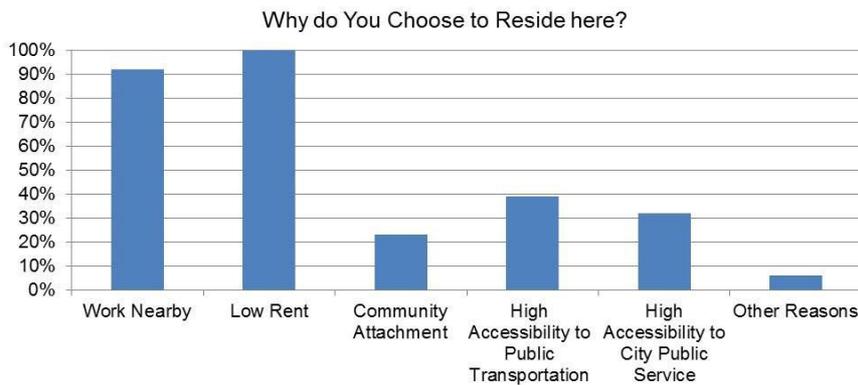


Figure: Thoughts of Immigrants

Source: the Questionnaire

5. Spatial Distribution of Low Income Residential Areas and Community Assistance Mechanism in Dalian City

To revitalize Xinglong Historic district and relieve the community stratification more effectively, it is necessary to look beyond the district to the whole city for regional coordination and enact social multi-governance measures.

Dalian’s large scale real estate development in the 1980’s brought modern residential zones and upscale communities. High income groups moved to these more livable districts while the low-income groups had no choice but to stay behind. Urban poverty in Dalian city can be categorized into two types: local born and new migrants. The former live in run down inner city districts and old work-unit housing, while the latter live in urban fringe villages. These areas suffer from community segregation.

There were previous attempts at urban-renewal in Dalian. A community assistance program called “Diversified-Reasonable Mix” program was launched to solve housing problems for low-income groups and relieve community stratification. The program launched new developments with diversified communities emphasizing on mixed income inhabitants, mixed function zoning, varied housing and landscape design, as well as a mixed range of purchase and rent prices. For the run down historic districts and the quarters in low value locations, the government provided support to strengthen the attractiveness of the area by moving away the polluting factories nearby, building parks, and improving accessibility to schools and hospitals. Profit is made from increase in land value, which is used to develop diversified-reasonable mixed communities elsewhere in the city.

6. Conclusions and Suggestions

6.1 The Decline of Historic Districts in Inner Cities and Community Stratification

Problems facing Xinglong are representative of old historical districts in inner cities throughout the world. Its once bustling retail businesses are now replaced by wholesalers and their supporting logistics businesses. These businesses are unsuitable for the narrow streets in inner cities with heavy freight transportation conflicting with pedestrian and car traffic. The once quiet and beautiful tree-lined streets have disappeared. The degree of education and income of residents and local workers is low. Population density is too high due to overcrowding by the low-income immigrants. Most of the local inhabitants live on the rental income. They try to make more extension to their buildings with less investment, and the inferior house additions were then rent to the immigrants or rent out as hardware stores and warehouses in low price. The infrastructure and sanitation is poor. Most of the local inhabitants and immigrants are not satisfied with their living conditions here.

6.2 Cautious Renovation Considering Residents' Requirements

The urban-renewal plans in the 1980's paid full attention on the new development projects and ignored the historic districts in inner cities. Now people began to rethink about the past way and more focus is on the cautious renewal of historic districts in inner cities.

The on-site survey shows that most inhabitants are unwilling to move away although they are not satisfied with their living conditions. Local inhabitants have strong community attachment to their neighborhood. In addition, the accessibility to public transportation and city public service facilities, as well as nearby employment opportunities is very important to them. For the reviving of these historic districts, it is necessary to take into account the needs of inhabitants to avoid residential segregation.

6.3 Suggestions for Population and Functional Renovation of Xinglong

The deep reason for Xinglong's decline is the run-down business. The hardware stores and warehouses are unsuitable to the district's central position and its development demand. As a result, evacuating the improper functions is the first thing to do for revitalizing Xinglong. A large number of relevant population and the freight transportation could be redistributed to the outskirts of Dalian City. The migrant workers could integrate into the diversified and reasonable mixed communities scattered in the city with the help of community assistance mechanism.

Xinglong is located in the city center, with the train station nearby to the north and Shengli Square, a large scale shopping mall to the east. Yujing Center and Xiangxieli Center, consisting of offices and serviced apartments, is to the west and northwest. Qingniwa CBD and the metro station are to the south. Thus, the proper target group should be young white-collar workers. In addition, Xinglong is a residential zone throughout history and has numerous inhabitants with strong community attachment. Thus, the proper function should be residential, office, and retail. It is important to bring in new functions, such as culture exhibit pavilion, fitness center, and entertainment center. Restaurants and shops should be upgraded. The original mixed architectural function should be maintained, with the commercial business on the first and second floors and the dwelling on the upper floors.

6.4 Suggestions for Spatial and Environmental Improvement in Xinglong

As a historic district, Xinglong is famous for its long history and classic "Dalian Style"

architecture and block style, which should be maintained during the renovation.

1. Regain the block style and renovate buildings and facilities

Enclosed city blocks with internal courtyards and tree-lined streets dotted with restaurants and shops are the main characteristics of Xinglong's Dalian Style. It is essential to regain the block style. With the evacuation of the improper functions and population, it is possible to dismantle the inferior housing additions and recover the original style.

A comprehensive assessment was made to all the buildings in the district and classified them into four categories: retain exterior and renovate interior, refresh exterior and renovate interior, renovate both exterior and interior, and complete rebuild. For those apartments with no private bathrooms and kitchens and those dilapidated buildings with poor facilities, internal spaces could be renovated according to the functions. Municipal facilities, such as water system, heating and electricity system, have to be improved. Roof gardens are encouraged. All the exterior facade renovation and new architecture construction should be performed according to a certain design criterion made by the committee of Renovation Research Project of Dalian Historic Districts to keep Xinglong's classical features.

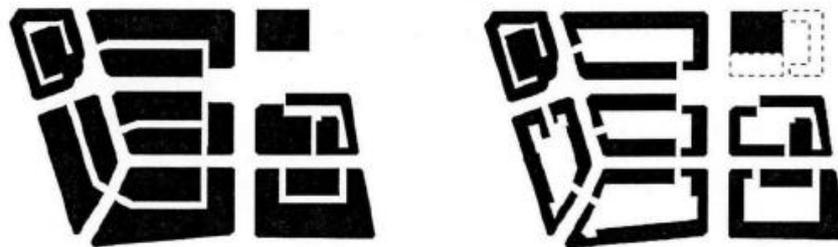


Figure: Block Texture Original and Now

Source: Renovation Research Project of Dalian Historic Districts

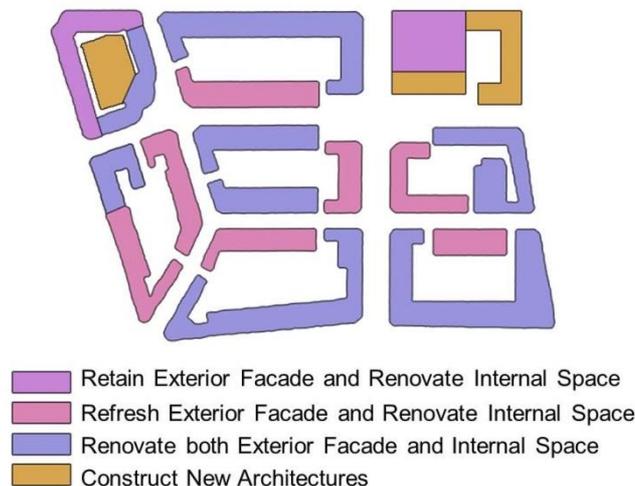


Figure: Assessment to All Buildings

Source: Renovation Research Project of Dalian Historic Districts

2. Animate courtyards and streets

Outdoor spaces, such as courtyards and streets are very important to Xinglong. A variety of design and decoration methods could be applied to improve functional usage and aesthetic appreciation. Automatic glass roof could be added to some parts of the courtyards to close in winter and open in summer. Underground spaces could be expanded and the sink-style courtyards are encouraged. Transitional spaces could be designed along the eaves.

New traffic policy is applied to encourage pedestrian traffic. Rongsheng Street, the widest street will be restricted to automobile traffic only during the rush hours to improve traffic. All the other streets are reserved only for pedestrian. As the former road density is too low to

meet the traffic need, subordinate walkways through courtyards have to be linked continuous to improve pedestrian microcirculation. Aerial continual porches could be added properly. On-road parking is forbidden. The parking need is satisfied by underground parking garage and parking lots in other blocks nearby. Street fixture, such as street lamp, chair, signpost and dustbin, together with greenery, is designed in accord with the architecture style.

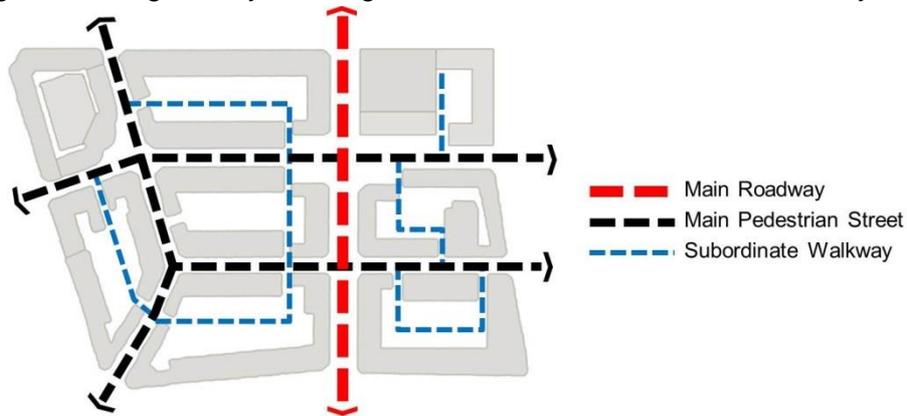


Figure: Road System Plan

Source: Renovation Research Project of Dalian Historic Districts

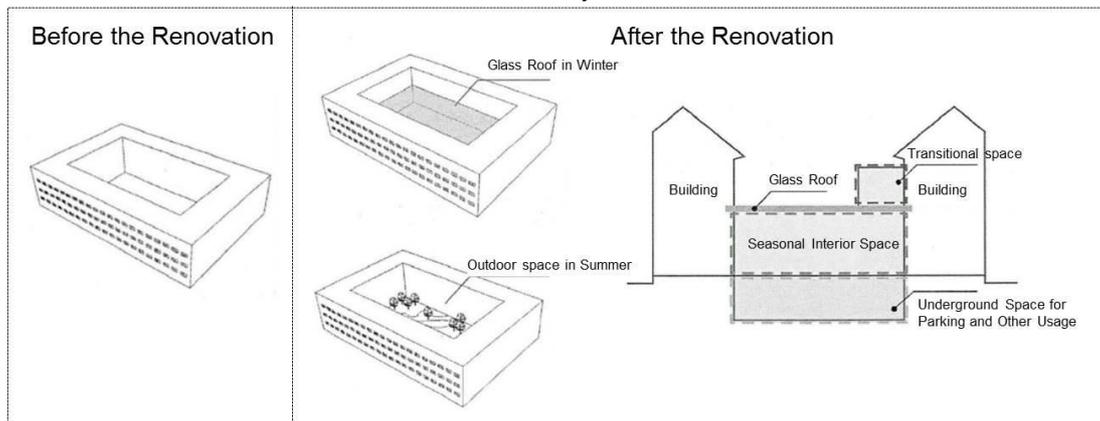


Figure: Renovation of Courtyard

Source: Renovation Research Project of Dalian Historic Districts

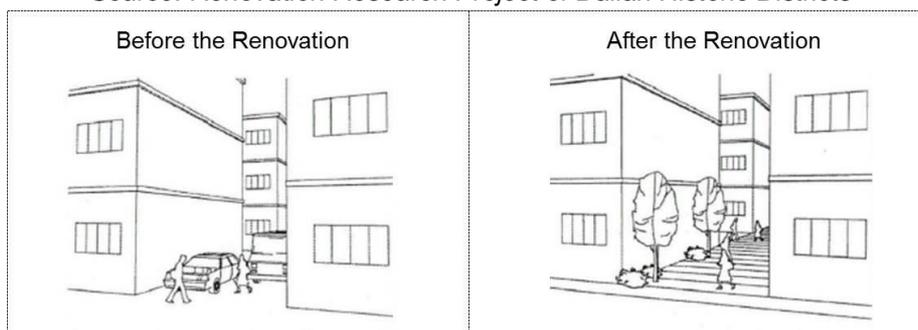


Figure: Renovation of Pedestrian Street

Source: Renovation Research Project of Dalian Historic Districts

6.5 Suggestions from the Perspective of the Whole Dalian City

With the function dispersion, a large number of relevant inhabitants have to be moved out of this district. The redistribution should be across the range of the whole Dalian City. To mitigate community stratification efficiently, it is necessary to put forward regional coordination and join in the whole city’s community assistance mechanism, i.e. “Diversified-Reasonable Mix” program, in order to solve housing problems for low-income

groups and help them fully integrate into the diversified and reasonable mixed communities and enjoy city life.

As the renovation project is ongoing, close observation of Xinglong needs to continue and to adapt to any changes.

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Neoliberal Intervention To The Coastal Areas: The Case Study of Port Alaçatı, Turkey

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Short Abstract

The Port Alaçatı Project is as an example of direct intervention of capital to the coastal areas and aimed consider unveil and develop solution recommendations by discussing spatial transformation caused by neoliberal urbanization policies on coastal areas, based on the relative acts, planning mechanisms and the actors.

1. Introduction

In this day and age, urban towns stand out as the most profitable investment areas of neoliberal urban policies, and urban spaces are transforming under the actorship of governments and the private sector. The tendency of proprietors to seek profitable areas does not stay limited to built environment and in this context coasts, with their natural attributes, become the most appealing areas. This tendency brings up the port projects which have high compatibility with neoliberal urbanization. Port projects have begun being taken into consideration regarding coastal towns in the last two decades in Turkey and they have become evident as neoliberal interferences. Within that scope of work, the project Port Alaçatı, located in Alaçatı Gulf which is in Alaçatı province of Çeşme district of the city of İzmir, is taken into focus and the neoliberal construct of the aforementioned project is being deciphered.

2. The Legal Frame Regarding The Utili ation of Coastal Areas

General provisions regarding coastal processes and proprietorship exist within the Constitution of the Republic of Turkey. The 43. article of the Constitution states that "The coasts are under the authority and disposal of the State. In the utilization of sea coasts, lake shores or river banks, and of the coastal strip along the sea and lakes, public interest shall be taken into consideration with priority." (Turkey Const. art. 43). Thus, public interest is sought as a priority in the utilization of coastal areas. Coastal areas are directed by the Coastal Law No. 3621 in Turkey. The goal of Coastal Law's 1st section titled general provisions states that the law was issued in order to protect the natural and cultural features of the sea, natural and artificial lakes and river banks, and of the coastal strip along the sea and lakes and to determine the ways to utilize them for the sake of public interest. The 5th article of the aforementioned law states that the coasts are subject to the state's adjudication and disposition and that the priority is the public interest when utilizing these areas. And the attachment to the mentioned article states that structures can be no closer than 50 meters to the coastal strip. The 6th article of the law,

titled protection of coastal strips, prohibition of construction and structures which may exist on the coast, makes it evident that the coasts are open for anyone to utilize freely and that no structures, including walls, fences, railings, wire nettings, ditches, states or any other barriers, may exist on them. The 15th article of the related law states the penal provisions for building such barriers and activities should they disrupt the natural structure of the coast. (3621/ art.1 - art.5 - art.6). As can be seen, the public interest is prioritized in the Coastal Law No. 3621 and the penal provisions for violating these laws are stated clearly.

Along with the neoliberal urbanization phase prevalent in Turkey in the 2000's, the strong traces of neoliberal urbanization policies within the regulatory developments in the planning area became evident (Bal, 2011). The additional article added to the existing law with the 13th article of the law no. 5398 issued in 2005 is one of the most evident statements of the effects of the practice of neoliberal urbanization on the coasts. With this article, the coasts with ports that allow cruise ships are authorized have touristic functions that promote the country and improve its image. In that context; catering facilities, shopping malls, communication and transportation units, consultation, information and banking services, residential units and office buildings may be constructed (5398/ad. art.13). The aforementioned additional article makes the requirement of the prioritization of the public interest emphasized in the existing law and the Constitution arguable. This article leaves the coasts under the pressure of structuring (Bal, 2008). In that context, it is seen that new investments regarding the utilization of coasts is encouraged. Port projects which are dependent on trenching are one of the main titles under this frame (Göksu, 2006).

3. Project Port Alaçatı

As a strong example of collaboration of public and private sector, the project Port Alaçatı has the mission of turning Alaçatı into a global brand. The birth of the project goes back to 1994 when François Spoerry, the architect of Port Grimaud which is located in France, suggested the municipality that they recreate Port Grimaud in Alaçatı after travelling through the area with his yacht (Hız, 2010). Afterwards, the private sector got involved in the process and the project has evolved into its current state.



Figure 1: The location of Port Alaçatı

Port Alaçatı

The top level plan that forms the legal basis for the project Port Alaçatı is the 1/100000 scale İzmir-Manisa Planning Territory Environmental Plan. In the lawsuit filed in 2009 for the cancellation request of 1/100.000 scale Manisa-Kütahya-İzmir Planning Territory Environmental Plan, the 6th Division of the State Council has brought in the verdict to halt the execution of the plan. After this verdict, in 2015, 1/100000 scale İzmir-Manisa Planning Territory Environmental Plan has been approved (Republic of Turkey Ministry of Environment and Urbanization, 2015). Upon examination of the said plans, it is observed that the planning decisions regarding the area in which Port Alaçatı is located has been gone through changes. In that context, the "Culture and Tourism Conservation and Development Area" of the old plan, including the Alaçatı Gulf, has been turned into a "Tourism Center" in the new plan (Figure 2.1). With this change of verdict, the Alaçatı Gulf and the nearby area has been classified as a location which requires to be improved for tourism movements and activities as first priority by the Ministry and the Council of Ministers (Republic of Turkey Ministry of Environment and Urbanization, n.d.). The classification of the Alaçatı Gulf and the nearby area as a Tourism Center has been a decision which has left the natural features of the area at risk due to the expected pressure of tourism.

When the plan is inspected, it is seen that the location of the project and the nearby area is within the borders of a protected natural area and is surrounded by an archeological area. In addition to that, it is stated that the domain where the Aegean Sea meets the Alaçatı Gulf is the natural habitat of the Mediterranean monk seals. In this context it is observed that the area is located in a sensitive domain. When the 1/5000 scale Alaçatı (İzmir) Tourism Center Master Zoning Plan Aimed Towards Protection is inspected, it is seen that within the protected natural

area, there are decisions of utilization such as touristic resort areas and boarding areas and the domain behind the Port Alaçatı Marina have been designated as commercial and daily tourism areas. Furthermore, it can be observed that the shoreline which is the subject of litigation exceeds the coastal strip and includes the sea. The marina is also within the boundaries of a first degree protected natural area. It is seen that the plan doesn't take account of the area's protected status in general.

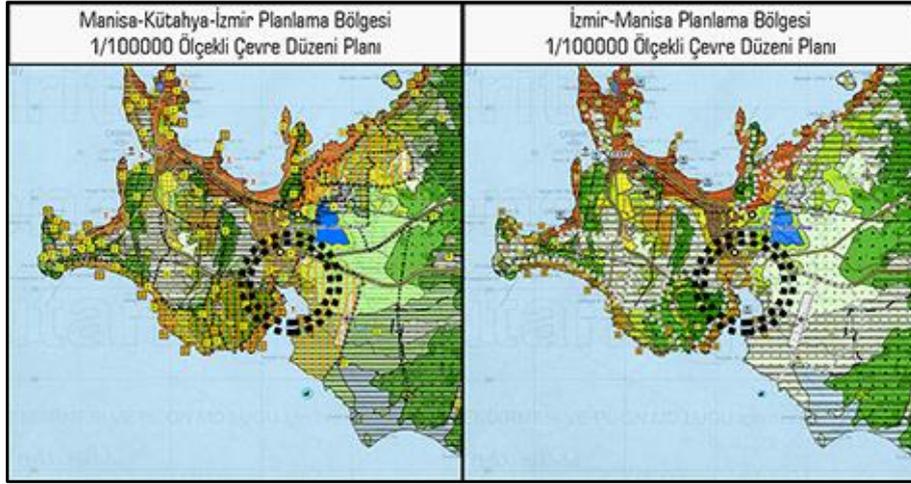


Figure 2: Port Alaçatı in old and new environmental plans Republic of Turkey Ministry of Environment and Urbanization, 201

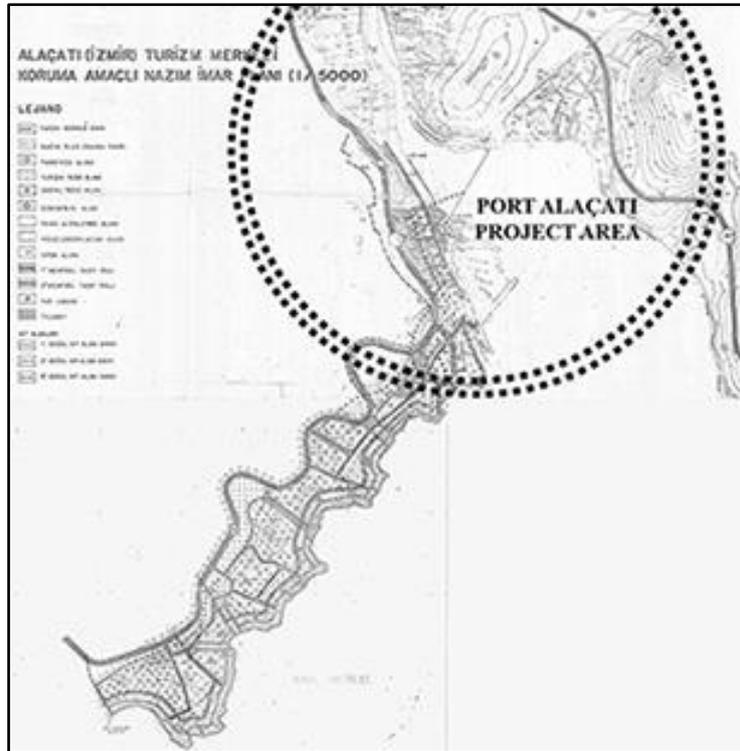


Figure 3: Port Alaçatı in 1/5000 scale Alaçatı Master Zoning Plan Aimed Towards Protection (Municipality of Çeşme)

When the 1/1000 scale Application Zoning Plan is inspected, it is seen that while the imputed value of the marina is 0.10, it is 0.30 for the surrounding islands. When the given imputed values are examined, it is observed that the building floor area is kept narrow and low-rise construction is preferred. The South of the area is designated as a Touristic Settlement Area. The open spaces have been kept excessive and the structure density has been kept low in the plan. However this seemingly positive side of the plan serves only to the segment of the community that can afford the cost of the area. The decision for the marina makes it possible for structures to be built within the first 100 meters of the shoreline.



Figure 4: Port Alaçatı Marina and its surroundings in the 1 1000 scale Application Zoning Municipality of Çeşme

When the litigation proceedings within the scope of the plans are investigated, it is seen that the objections to the zoning plans have been gathered under two main headings; establishing the shoreline and the contradiction of the prepared plans to the purposes and the principles of the plans.

Under the Constitution, the first step of planning work to be done near the sea, the lakes and the rivers is shoreline detection. Along with that, the shoreline should be identified accurately and the structuring conditions should be determined based on the area of the description of this line. Because according to the Constitution and the Coastal Law, the coastal creeks within the boundaries of Port Alaçatı are under protection just like the coasts of the sea and lakes.

However, in the prepared plans, the aforementioned shoreline has been drawn passing through the sea. This wrongly identified shoreline leads the planning works based on the said shoreline to illegality. For this reason, the shoreline which has been approved by the Ministry of Public Works and Settlement on 06.07.1992 has been a subject of litigation preeminently. Therefore the shoreline of the land towards the coast, the shoreline, the creeks and the other natural formations have been completely excluded from constitutional protection and the areas under the state's adjudication and disposition have been prepared for structuring of the kind that is prohibited by the Coastal Law (Web 2, 2008; Web 3, 2011).

An artificial canal has been created for the purpose of constructing the canal houses included in the project. The construction of the canal has been made a subject of litigation by the İzmir Branch of the Chamber of Architects for being against the Coastal Protection Law. The case has resulted with the Council of State stressing the conflict between the project and the public interest and drawing attention to the social structure which would change as a result of the project being completed (Yayman, 2007). However the litigation regarding the cancellation of the changes to the 1/5000 scale Master Zoning Plan Revision approved by the Ministry of Public Works and Settlement and the 1/1000 scale Zoning Plan changes prepared by the Municipality of Alaçatı and the cancellation of transactions for approval by the defendant Ministries has been evaluated and rejected by the decision of the 6th Division of the Council of State (Web 1, 2007).

The 1/25000 scale Environmental Master Plan and the project Port Alaçatı which is included in the plan which has been approved on 25.04.2006 by the General Presidency of UCTEA (Union Of Chambers Of Turkish Engineers And Architects) Chamber of Architects, İzmir Branch of UCTEA Chamber of City Planners, İzmir Branch of UCTEA Chamber of Landscape Architects has been cancelled due to; (Web 2, 2008)

- The scale of the plan fundamentally contradicting the purpose and principles of the plan,
- The criteria for the boundaries of the planning area being too vague,
- Neglecting the protection of acquired rights outside of Port Alaçatı Special Project Area,
- Disregarding the protection-operation balance of the resources,
- Opening the agricultural lands, protected natural areas and coasts to development,
- The lack of a clarification report regarding the basic assumptions of the plan,
- The plan being prepared to meet the annuity expectations of the entrepreneurs who own property in the peninsula,

- Uncertainty regarding the basis for the five sub-regions identified in the plan,
- Uncertainty regarding the structure and hierarchy of transportation and infrastructure,
- Making way to causing topographic changes to a 1st degree protected area,
- Not prohibiting the construction on areas which should be protected and
- The plan being a special and privileged zoning plan for the project Port Alaçatı.

of Project Port Alaçatı

With the main idea of creating the first "canal town" of Turkey via trenching new canals from the sea into the land and creating an environment similar to Venice, the project Port Alaçatı covers a total of 90 ha area, 3 ha of which is a construction zone. Due to the decisions the project includes regarding land reclamation and trenching canals, it has a quite radical design (Web 4, n.d.). Despite the entire legal process regarding the project, it is seen that applications that disrupt the natural features of the coast which includes first, second and third degree protected natural areas have been executed.



Figure : Project Port Alaçatı Web , 2008

When the completed portion of the project Port Alaçatı is inspected it is seen that no area has been left open to the public between the existing road and the sea and that all previously existing connection between the people and the sea has been blocked. Consequently, the coast has been cut off from the communal life and turned into a private area (Topal, 2010). The usage of the coast as a private area requires punitive sanction according to the laws that have been inspected. Whereas, in contrast to what should occur, it is seen that only the

professional associations have taken legal actions regarding the matter of privatization of the aforementioned coast.



Figure 6: A View of Port Alaçatı Marina From the archives of Tutar and Szeri, 2016

The first phase of the project which includes a port with a capacity of 300 yachts, 80 residential properties and a boutique hotel having been completed, work regarding the second phase of the project is currently being conducted. It is stated that upon the completion of every stage of the project, the area will have over 500 residential properties, tourism-oriented business establishments, boutique hotels, an 18-hole golf course, wind power investments, thermal health facilities, culture and sports facilities and an academic institution (Hız, 2010; Web 5, 2014). The fact that the project is quite comprehensive and includes various utilizations (residential, commercial, touristic, educational, energy providing) gives the impression that once the project is fully realized, Port Alaçatı will be a small urban town by and of itself. Along with that, the construction of a golf course which will affect the coast quite negatively by exhausting the water resources and damaging the natural life carries the risk of causing a major environmental problem. Furthermore, even though the golf course will legally be in the public domain, due to the nature of the premises, it will be used only by a certain demographic of the community and this draws a negative frame around the project. This situation, when combined with the fact that the residential areas included in the project are using "investors being able to park their yachts right in front of their houses" as a marketing point, shows that the points of view of the project managers and the public sector that supports the said project coheres with those of the upper-income groups which makes up only a small minority of the community.

Instead of privatization of all of the parcel, public and private domain both have been reserved to some extent. While 30 ha of the area belongs to the municipality, the rest of the domain is private property (Web 6, 2008). It has been observed that semi-public spaces has been

established which has private security and a closed-circuit camera system will only be used by the yacht owners. This situation, while showing that not every segment of the community can use every section of the area, causes the people who do not own property within the area to feel limited. As a matter of fact, different inhabitants of the area experiencing it distinctively is a worrying problem planning-wise.



Figure : Port Alaçatı Marina and the Private Properties From the archives of Tutar and Szeri, 2016

It is stated that a total of 500.000.000 Euros will be invested in the project that is expected to have been completed in 10 years. Along with that the residences, which have varying sizes between 100-296 square meters, are expected to cost between 1.500.000 and 120.000.000 Euros. However the residences within the second and the third stage are expected to cost around 400.000 Euros (Web 5, 2014).



Figure 8: The residences built around Port Alaçatı Marina From the archives of Tutar and Szeri, 2016

The purchasable residences being the biggest sign of privatization of public domain, the costs of the aforementioned residences goes to show that the target demographic is the upper-income groups. The residences which are strictly protected hinders the public's access to the coastal area and this situation violates the public use priority which is protected by law.

Port Alaçatı is located within a protected natural area of which its natural qualities have been highly reserved. However it is seen that, despite the protected status of the area, the project brings some radical changes to the area. In that context, the changes such as the trenching of the area, the alteration of the coastal line and the agricultural area and the demolition of the fishing port are noteworthy.



Figure 9 : The areas to be completely changed after the project From the archives of Tutar and Szeri, 2016



Figure 10: The ongoing construction works within the project From the archives of Tutar and Szeri, 2016

For Port Alaçatı is a project of which its first stage has been completed and its second stage is still ongoing, the changes to the area can be clearly seen. Currently there is a large-scale construction work ongoing in the Northern part and smaller scale construction works in the Western part of the area. Considering the information that the project will be spread through time, it is possible to say that Port Alaçatı and its surroundings will be subject to major construction activities in the future too.

5 Conclusion

It is observed that urban towns and lands that are suitable for urban towns have become investment areas of importance to the private sector after the neoliberal urbanization phase of

Turkey after the year 2000 (Bal, 2011). This tendency is not limited to the presently built environment but also inclines towards the natural environment. For this reason the coastal areas which have natural attributes and locational advantages become highly demanded areas and the Port projects become one of the most popular means to make large-scale investments which include residential, marinal, recreational and commercial functions. The project Port Alaçatı stands out as an embodiment of neoliberal urbanization policies considering the public-private sector cooperation and the legal and administrative processes involved, the high investment cost and the upper-income group it targets. Within the project, the privatization of the coast which has public use priority, devastation of natural areas ignoring their protected status and prioritization of a certain economical class regarding the usage of the coast are observed. In the context of the said project, the concept of public interest which is a must in disciplines of planning that should consider all segments of the society becomes questionable. Analyzing and preventing the ecological devastation the project causes, focusing on the public interest and finding common ground between all respondents carries high significance.

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An overview of top-down bottom-up models for informal settlement upgrading in South Africa

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The paper explores informal settlement upgrading approaches in South Africa and presents a review of top-down vs. bottom-up models, using experience and lessons learned from the Durban metropolitan area. Reflections on past upgrading efforts suggest that top-down policies in South Africa have not been successful to date. By contrast, participatory techniques, such as planning activism, can be used to enhance community empowerment and a sense of local ownership. This paper reveals that although the notion of 'bottom-up', participatory methods for community improvement is often discussed in international development discourses, the tools, processes and new knowledge needed to ensure a successful upgrade are under-utilised. Participation and collaboration can mean various things for informal housing upgrading and often the involvement of local communities is limited to providing feedback in already agreed development decisions from local authorities and construction companies. The paper concludes by suggesting directions for 'co-producing' knowledge with communities through participatory, action-research methods and integrating these insights into upgrading mechanisms and policies for housing and infrastructure provision. The cumulative impacts emerging from these approaches could aggregate into local, regional, and national environmental, social and economic benefits able to successfully transform urban areas and ensure self-reliance for local populations.

1. Introduction

The UN records that one in seven people live in an informal urban settlement; this totals to 850 million people globally, with over 80% of these living in developing countries (Habitat III, 2015). As a consequence of rapid urbanisation and population growth, informal settlements form a major part of the urban landscape globally and therefore constitute a major challenge (Habitat III, 2015; Knight, 2001). At the same time, more than half of the global population already live in urban areas with a significant increase projected by 2050; this is likely to increase the impact of issues related to poverty, inadequate infrastructure, housing and poor living conditions (Majale, 2008; Menshawy *et al.*, 2011).

In general, informal settlements have gradually spilled over from residential plots onto adjoining land zoned for agriculture, without proper planning processes (Khalifa, 2011). Most informal dwellers migrate from rural areas to escape poverty, leading to the establishment (if not permanence) of informal settlements (Tshikotshi, 2009). Misselhorn (2008, p.6) argues that informal settlements are "*holding places*" where people can access the urban environment at low financial cost in search of a better quality of life. Addressing the informal urbanisation challenge will provide benefits not only the urban poor, but the city as a whole towards the development of sustainable and self-reliant communities (Khalifa, 2015). According to Menshawy *et al.* (2011) informal settlements are products of failed policies, bad governance,

corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems and a fundamental lack of political will. Agbola and Henshaw (2011) assert that, due to failed land delivery and commercialisation systems, many informal settlements in Africa are located illegally on vacant and marginalised land.

This is a review paper exploring informal settlement upgrading approaches in South Africa, with a particular focus on top-down vs. bottom up models. The study is structured as follows. Section 1 provides an introduction to the paper. Section 2 outlines the growth of informal settlements and background context in South Africa. Section 3 provides an overview of the existing regulations and planning policies at the national level. Section 4 focuses on informal settlement upgrading, presenting the gradual change to community participation and participatory planning. Section 5 demonstrates, by means of a pilot study conducted in the Durban metropolitan area, how an inclusive partnership with all stakeholders could be a useful tool for successful upgrading of informal settlements. Section 6 provides key recommendations for policy-makers and practitioners, before conclusions are drawn together with directions for further research. The research aims to inform local communities seeking to improve their quality of life and local authorities enhancing their planning mechanisms. The findings can be also utilised by international agencies, policy-makers, implementers and practitioners working on upgrading programmes, plans and policies, particularly under the post 2015 UN Sustainable Development Goals (SDGs) and the Habitat III New Urban Agenda.

2. The growth of informal settlements and background context in South Africa

Misselhorn (2008) states that almost 50% of the South African population lives in urban centres and a quarter of those live in informal settlements in impoverished and insecure conditions. South Africa is a party to the UN-SDGs with the obligation to “ensure access for all to adequate, safe and affordable housing and basic services by 2030” under Target 11.1 (SA Government, 2009). The country has also signed up to important declarations under the UN-Habitat Programme, including: the Vancouver Declaration on Human Settlements (1976); the Istanbul Declaration on Human and Other Settlements (1996); and, the Habitat Agenda (1996).

According to the UN International Covenant on Economic, Social and Cultural Rights (ICESCR) the main indicators for adequate housing include: legal security of tenure; availability of services, materials, facilities and infrastructure; affordability; habitability; accessibility; location; and cultural adequacy. However, some of the post-Apartheid consequences have led to spatial inequalities, social segregation and also several different housing typologies (Western, 2002; Williams, 2000). There are high-density residential developments, such as inner-city flats erected shacks in abandoned inner-city buildings, private rental housing and social housing schemes. There are also subsidised houses in urban townships, backyard shacks adjacent to formal housing, shacks in informal settlements on both public- and privately-owned land, and rural housing dwellings. Hence, it becomes difficult to assess and define the term ‘adequate’ housing in the South African context.

There is no widely acceptable definition of informal settlements, as the concept has various meanings in different countries with unique context-specific parameters (Srinivas, 2005). However, informal settlements are often characterised by certain characteristics; namely: (Habitat III, 2015; Khalifa, 2015; Klug and Vawda, 2009; Marx and Charlton, 2003; Srinivas, 2005):

- *Physical aspects*: the lack or complete absence of basic services and infrastructure (e.g. access to water, safe sanitation, reliable electricity, roads, waste removal) and poorly performing building materials (e.g. wood, cardboard, metal sheets, mud, corrugated iron).
- *Social aspects*: low-income groups, predominantly migrants; accessibility to socio-economic activities, such as workplaces, transportation, healthcare facilities, education and recreational areas.
- *Legal aspects*: lack of security of tenure and legal ownership. This refers to illegal occupation without building plans and often on hazardous land.

Some literature attempts to distinguish between 'slums' and 'informal settlements'. Slums often refer to physical aspects; i.e. buildings, facilities and services (particularly sanitation and waste management) in inner cities that gradually deteriorate into slummed conditions, due to overcrowding. Informal settlements are related mostly to the legal standing of the scheme; namely, settlements that mushroom on vacant land, within and around places of opportunities, without proper planning, building regulations or standard construction methods (Khalifa, 2015). In South Africa however a clear departure from Apartheid terminology included the term 'slum' being replaced by 'informal settlements' (Huchzermeyer, 2011).

Migration and poverty are major causes of informal settlements in many African cities, including South Africa, as dwellers cannot afford to build or buy their own houses or to access formal housing schemes (Mutisya and Yarime, 2011; Wekesa *et al.* 2011). The post-apartheid period offered a number of top-down approaches to low-cost housing provision. South Africa government authorities have been responsible for decision-making on behalf of affected populations; however, top-down processes have not engaged directly with low-income communities, and have not understood in depth the nature of their vulnerability due to the impacts of local contexts (Huchzermeyer, 2011). Top-down models have been criticised as unsustainable in the sense that they continue the legacy of Apartheid in housing delivery. Development work and capacity building mechanisms typically focus on economic and physical aspects of housing and infrastructure provision. Hence, the existing social capital and needs of the local communities are often overlooked. In addition, the location remains unchanged, often in gated communities of urban peripheries without social integration and far from urban opportunities (Seekings, 2000).

By contrast, participatory techniques are widely considered a key means to upgrade informal settlements as they can enhance local empowerment and a sense of local ownership (Aron *et al.*, 2009; Botes and Rensburg, 2000; El-Masri and Kellett, 2001; Frischmann, 2012; Simpson *et al.*, 2003). Although the notion of 'bottom-up', participatory methods for community upgrading is often discussed in international development discourses, the tools, processes and new knowledge needed to ensure a successful upgrade have not seen widespread dissemination or uptake. In reality, participation and collaboration can mean various things for informal settlement upgrading and often the involvement of local communities is limited to providing feedback in already agreed development decisions from local authorities and construction companies (Binns and Nel, 1999; Hirmer and Cruickshank, 2014).

3. The legislative and policy framework of housing in South Africa

There are three streams for delivering housing provision in the post-apartheid South Africa; namely: private sector; public sector; and, self-built housing. Table 1 presents various pieces of legislation, which relate to the provision of adequate housing, covering all of the above three types of housing delivery. Article 26 of the Constitution of the South African government (1996) preserves "*the right of access to adequate housing*" and provides the overarching legislative

framework from which all national programmes and policies on housing, including slum upgrading derive their support and legitimacy in South Africa.

The Housing Act 107 of 1997 legally reinforces policy principles also outlined in the 1994 White Paper on Housing (SERI, 2011). The Act aims to put in place sustainable housing development processes by defining general principles and rules for housing development at all government levels (national, provincial and local). It also lays the foundation for financing national housing programmes and giving priority to accommodate the housing needs of the poor. Moreover, the *Prevention of Illegal Eviction Act* provides safeguarding against the eviction of unlawful occupiers living on both publicly- and privately-owned land (PIE, 1998). *The National Norms and Standards* set the minimum technical specifications for housing construction, including energy efficiency and environmental management strategies. In 2007, these standards were revised and from 2009 they are embedded in the *National Housing Code* (SA Government, 2009b). The Social Housing Policy was approved in 2005 and a revised policy has been included in the new National Housing Code in 2009. Social housing in South Africa is defined as “rental or co-operative housing for low-income people at a level of scale and built form which requires institutionalised management and which is provided by accredited Social Housing Institutes or in designated restructuring zones” (SERI, 2011; p.98).

The White Paper on Housing was the first post-apartheid housing policy aimed at realising a sustainable programme of housing delivery; it aimed to reach a target of 338,000 new homes a year (SERI, 2011). Since 1994, a number of national *Housing Programmes* have been implemented in line with the White Paper on Housing. Overall, these subsidy programmes are categorised into different intervention categories depending on the upgrading project, such as: Financial Programmes; Incremental Housing Programmes; Social and Rental Housing Programmes; and Rural Housing Programmes. For example, the Reconstruction and Development Programme (RDP) is a government-driven model allocated to beneficiaries with a household income of less than R3,500 (Landman and Napier, 2010). Beneficiaries of this subsidy receive a one-off grant for land, basic services (water and sanitation) and the house (top structure).

LEGISLATIVE FRAMEWORK
1. <i>Housing Act 10 of 1997</i> (amended by Acts 28 and 60 of 1999; Act 4 of 2001)
2. <i>Prevention of Illegal Eviction (PIE) from and Unlawful Occupation of Land Act 19 of 1998</i>
3. <i>Rental Housing Act 10 of 1997</i> (amended by Act 43 of 2007)
4. <i>National Norms and Standards for the Construction of Stand Alone Residential Dwellings</i> Financed through National Housing Programmes (revised in 2007)
5. <i>National Housing Code of 2000</i> (revised in 2009)
6. <i>Social Housing Act 16 of 2009</i> (revised in 2009)
POLICY FRAMEWORK
1. <i>White Paper on Housing: A New Housing Policy and Strategy for South Africa</i> (1994)
2. National Housing Programmes (for example, the Reconstruction and Development Programme – RDP, 1994)
3. <i>Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements</i> (BNG, 2004).
4. <i>Enhanced People’s Housing Process (EPHP)</i> (2008, following the previous PHP in 1998)
5. <i>Upgrading Informal Settlements Programme (UISP)</i> , 2004)

Table 1: Legislative and policy frameworks for housing in South Africa

In 2004, in order to counteract criticism that there was little input from the community into housing programmes and that therefore interventions did not reflect local needs, the South

African government introduced *Breaking New Ground BNG : A comprehensive plan for upgrading slum settlements*. This was a novel approach aimed at poverty eradication, reduction of vulnerability and promotion of social inclusion through participatory layout planning (Huchzermeyer, 2006). The BNG was adopted by the Department of Human Settlements Strategic Plan (2009-2014) as a policy shift to meet the challenge of slum upgrading. Under BNG policy, *in-situ* upgrading was prescribed as the best way to address the growth of slums in South Africa and support mixed-tenure and mixed-income groups to stay settled close to their existing jobs and transport routes, avoiding the marginalisation of the lowest-income households experienced until the 2000s (Marais and Ntema, 2013).

According to Marais and Ntema (2013), bottom-up, self-help housing is described as a concept which involves practices in which low-income groups resolve their housing needs mainly through their own resources in terms of labour and finance. The *People's Housing Process PHP* is a formal self-help mechanism in South Africa which allows local groups to organise their resources and contribute their labour ('sweat equity') to build or manage the construction of their own homes. By supplementing the government-driven RDP delivery with savings, additional loans and labour, communities implementing PHP are able to build larger and better quality homes (Landman and Napier, 2010). In South Africa, this approach often involves organised communities or community groups with women in decision-making, drawing on their skills of the local population. The *Enhanced People's Housing Process (EPHP)* was adopted in July 2008 to replace the previous PHP scheme. This new policy was the outcome of negotiations between the Department of Human Settlements and a group of Non-Governmental Organisations (NGOs), such as Planact, Development Action Group (DAG), the Built Environment Support Group (BESG), Afesis Corplan, Urban Services Group, Utshani Fund and Federation of the Urban Poor (FEDUP). The new policy integrates active participation into the definition of PHP seeking to involve beneficiaries into the decision-making over the housing upgrading process so as to: empower communities; create collective partnerships; mobilise and retain "social capital"; and deliver inclusive human settlements which are more responsive to the needs of the community (SA Government, 2009a).

Social inclusion and community participation are also encouraged at a municipal level by the South African *Upgrading of Informal Settlement Programme (UISP)*. UISP provides grants to accredited municipalities to run sustainable housing development projects aimed at improving the conditions of slum communities. UISP is administered by the National Department of Human Settlements (NDHS) and is the primary policy instrument used to meet national targets. There is also the *National Upgrading Support Programme (NUSP)* created by the NDHS which provides technical assistance for municipalities to undertake planning in conjunction with communities in informal settlements. In addition, NUSP provides support to municipalities (who act also as developers for the UISP) in project development and helps to implement integrated planning.

Since the end of the Apartheid system in 1994, there have been important changes in the policy landscape surrounding informal settlement upgrading in South Africa. At a municipal level, UISP encourages phased *in-situ* upgrading of informal settlements as a valid alternative to the relocation of slum dwellers. In fact, the three main pillars of UISP are (SA Government, 2009a): security of tenure; health and safety through provision of basic services (including water and sanitation); and *empowerment of inhabitants through bottom-up, participatory processes*. UISP also highlights that slum eradication, which is characterised by forced relocation of communities, is a radical approach that provides only short-term (temporary) solutions, without addressing the real challenges of slum upgrading. In reality, under UISP,

land and services were delinked from housing subsidies and became the municipalities' responsibility. Most South African municipalities have the capacity to provide basic services but fewer have explored alternative means of security of tenure, such as planning activism through community empowerment. It can be therefore argued that current mechanisms are not fostering planning activism or inclusive participatory models of housing provision and urban development. In addition, UISP mainly provides subsidies for beneficiaries that are on land suitable for permanent residential development, which is not always the case (Bolnick, 2010). The following sections will explore the issue of informal settlement upgrading and the value of community-led processes in achieving inclusive and participatory models of housing provision.

4. Informal settlement upgrading

Informal settlement upgrading refers to any sector-based intervention that improves the quality of life of the residents affected (Abbott, 2002). The motivation behind an upgrading program may be external (e.g. from the government or external agencies) or it can be developed by the community. The location of these settlements is of paramount importance for the socio-economic activities of the community living there (Abbott, 2003). Physical upgrading of informal settlements takes two general approaches: *demolition and relocation or in-situ development* (Del Mistro and Hensher, 2009). Demolition and relocation is the process of moving inhabitants from their settlements to another 'greenfield' site. However, a number of scholars favour *in-situ* upgrading as this involves the formalisation of informal settlements in their original location (Del Mistro and Hensher, 2009; Huchzermeyer, 2006; Massey, 2014). One of the main critiques of demolition and relocation is that this approach is motivated by the macro-economic target of the government to meet the housing shortage and not the improvement of poor living conditions. This has led to conflicts and significant socio-economic disruption with little regard to displacement, poverty, vulnerability and the impact of these actions on social inclusion. *In-situ* upgrading is the process undertaken to improve the conditions of an informal settlement in its current location through the provision of basic services and secure tenure to people. This model recognises three conditions: "*the property rights, the property values and the physical attributes of the underlying assets, and the impact on each other*" (Mukhija, 2002; p.554). *In-situ* projects can be wide-ranging, from simply dealing with land tenure to incremental housing improvement and/or the provision of site-and-services associated with formal settlements.

4.1. 'Self-help' and 'community-led' upgrading of informal settlements

Abbott (2002) describes a shift in the demolition and relocation approach to provide greater autonomy and dweller control in the upgrade. As the major pitfalls of the eradication strategy were realised, governments and international agencies sought to move towards *self-help* activities, as a cost-effective response to mass urbanisation and the need to house growing urban populations (Landman and Napier, 2010). Self-help housing involves practices in which low-income groups resolve their housing needs mainly through their own resources in terms of labour and finance with some help from the government (Marais *et al.*, 2008). Self-help activities are not new to South Africa, as since the 1950s incremental, step-by-step, self-building approach on serviced sites was considered the cheapest and most efficient solution to the existence of slums (Landman and Napier, 2010).

Community participation derives from self-help upgrading and refers to grassroots planning processes where the local populations decide themselves about the future of their own settlement (Lizarralde and Massyn, 2008). In practice, however, community participation often remains "*formal, legalised and politicised*" (Jordhus-Lier and Tsolekile de Wet, 2013; p.2). Critics argue that governments design top-down plans, with residents merely informed (not

engaged) at a later stage, during construction or implementation phases. Public participation approaches are prone to capture particular, often by middle class or elite, groups (Cooke and Kothari, 2001). In informal settlements, key conceptual and practical challenges hinder active community participation. These include: the heterogeneity and fragmentation of communities; lack of social and physical resource; and conflicting interests in individual and community expectations from the involvement in development projects (Emmett, 2000). Muchadenyika (2015) discusses the problematic relationship between local populations and governments, whereby issues of legislation, politics, power and identity play a major role in resource management, distribution and implementation of the upgrading project. More broadly, Innes and Booher (2004) argue that public participation can be antagonising and discouraging for participants, who feel unheard, and pitted against each other; and, for public officials, who feel unable to take public views on board. It is therefore essential to have open-minded authorities that are prepared to listen, engage and respond to local needs and novel proposals.

5. Pilot study on community-led upgrading

The international literature presents compelling case studies on successful (to some extent) community-led support-based interventions through NGO partnerships, such as the Slum Dwellers International (SDI) Alliance, also referred to as community micro-planning (Abbott, 2002). This model originates from the Indian Sub-continent and unfolds through active community participation and private-public partnerships (*ibid*). Common participatory tools involve community profiling and community enumeration (also called social mapping) to record individual housing units, size, tenure conditions and income. The community carries these processes out, assisted by the NGOs, where local populations are able to discuss and identify priority projects to benefit their community.

A pilot study was conducted by the authors in June 2015 (and repeated in June 2016) to assess the level of 'good available practice' in community-led upgrading of informal settlements in Durban metropolitan area. Empirical data on informal settlement upgrading was gathered by means of observations and informal focus groups with community leaders and NGOs. The objective was to examine community-led approaches and understand the benefits of planning activism and inclusive participatory approaches to the upgrading. The pilot study focused on Phase 1 of an informal settlement called Namibia Stop 8 (NS8) based in Inanda on the outskirts of Durban in the KwaZulu-Natal province, as shown in Figure 1.



Figure 1: Namibia Stop 8 Inanda, Durban metropolitan area

Namibia Stop 8 is a greenfield project, where uTshani Fund, partner of the South African SDI Alliance and support organisation provided the finance facilities to FEDUP, who was responsible for the housing upgrading. The project involved 96 houses using the EPHP model that is predicated on a community-driven participatory approach (SA SDI Alliance, 2012). This collaborative approach delivered substantially larger (56m²), better-designed and better-sized houses than those constructed under the government-driven RDP model (40m²). In addition, more than 85% of people continued to live in their houses after the upgrading, while the comparative figures for RDP houses (in similar projects) are about 45% (Thomas, 2016). There is also some evidence of the lower quality of the RDP houses, which (for example) have restricted extension possibilities and have limited the growth of home-based enterprises (Adebayo, 2011).

In Namibia Stop 8 Phase 1, FEDUP pioneered strong elements of community empowerment and planning activism, due to a set of participatory methods embedded in:

- *Project preparation*: detailed community profiling; three women-led saving groups established an 'Urban Poor Fund' to finance land purchase, the delivery of housing and infrastructure development, including broader asset mobilisation, blending loans, savings and social capital; participatory planning; and community-driven project management (including a Steering Committee and Community Construction Management Team).
- *Project implementation*: beneficiaries contributing 'sweat equity' (time and labour) and financial loans - in some cases their own savings - to further upgrade their structures.

The above processes created a legacy for the local people in terms of income generation, skills upgrade, and sense of ownership.

6. Discussion and recommendations

Participation should not refer to a voluntary contribution to government programmes but rather to active involvement in shaping the upgrading process throughout the project lifecycle. Communities have the local knowledge and experience of what works and why in their own settlements. Empowering local people in participatory bottom-up models offers:

- community leadership and independence;
- commitment in the upgrading process due to ownership and sense of belonging;
- skills upgrade through training; and
- leveraging additional subsidies and resources available from the municipalities.

Previous studies on *in-situ* upgrading of informal settlements in Durban metropolitan area have explored the positive impact of community participation on local inhabitants in terms of having basic housing needs met, tenure security and wellbeing improvement (Patel, 2013). However, it is important to distinguish between *aspects of participation* and *active community empowerment through planning activism*, as shown in Namibia Stop 8. From the review of the background literature the following recommendations can be drawn:

- There is no 'one-size-fits-all' model in informal settlements upgrading. Policy makers and practitioners need to understand the *local context and uncover the barriers and drivers for inclusive community-led upgrading since an early planning stage*. It is essential to understand the historical development and the dynamics of the informal settlement in order to adapt or refine the upgrading model according to complexities, strengths and weaknesses of individual cases.
- *Future policy-making in the field should go beyond provision of information and basic consultation activities* with the community. There is a need for policy instruments and upgrading models that build on community leadership and planning activism, facilitating

co-production of knowledge with the local population, whilst simultaneously leading to empowered communities and participatory models of urbanisation. Scholars argue the co-production can provide critical understanding of community-led processes and how these can be integrated into institutional formalisation, government policy, technological and managerial innovations that can enhance self-reliance, skills and quality of life (Boyle and Harris, 2009; Petcou and Petrescu, 2015).

- The *role of the support organisation and the researcher* in community-led upgrading projects is to first help local people visualise and understand the change that will effectively take place in their own environment; and, second, to provide space for community members to negotiate and therefore take informed decisions resolving issues and potential conflicts.

7. Conclusions

Informal settlements are complex and diverse entities with their own unique issues and set of characteristics. Theoretically, this paper has revealed that the challenge of informal settlement upgrading in South Africa should not be conceived simply as a housing problem but rather as a community-led, participatory process of social change, seeking to realise multi-sector partnerships, long-term commitment, and political support to gain formalisation. This process should take place from the early planning of the upgrade, as the early project phases are the most crucial for community participation. Active community participation is also endorsed by the New Urban Agenda under Habitat III, which calls for not just partnerships but *inclusive participatory models* through community empowerment and planning activism.

At a practical level, however, the study argues that there is a gap in effective community-led participatory upgrading projects in South Africa. There is also little understanding of the unique, context-specific factors that underpin the establishment of an informal settlement. Currently these local particularities are lost in the 'one-size-fits-all' government-led upgrading models adopted by the South African municipalities, thus leading to delays in: planning; service delivery and supply change; installation of services; and tendering with building contractors. Future research should explore the co-production of local knowledge with the local communities, support organisations and policymakers to inform the development or refinement of government-led upgrading models adopted by the South African municipalities and national departments.

Acknowledgements

This work is based on two ongoing research collaborations funded by the Royal Society (through an Advanced Newton Fellowship) and the Economic and Social Research Council (ESRC) as part of the Newton Fund, in collaboration with the National Research Foundation (NRF) in South Africa. The authors would like to thank the following contributors: the officers of uTshani Fund and particularly Mr Jeff Thomas for his precious assistance and support; Thomas Watson for his support in literature review; and Peter Barbrook-Johnson for editing and proofreading.

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Civil activism as a means of promoting participatory planning: the case of Tula

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The paper summarizes the author's one-year experience of civil activism while simultaneously being an urban planner. The theoretical framework of the paper is shaped by the concepts of radical planning, advocacy planning, guerrilla governance and soft power. Civil activism is considered an effective way of promoting social change in authoritarian regimes, as it is a very complex channel for exercising soft power over governments and dominant groups. The development of civil activist movement in the city of Tula and its penetration into political processes is described in detail. The results of this growth so far are presented and discussed. In conclusion, several practical recommendations for activist planners are provided.

1. Introduction

The issue of involving citizens in various planning processes is gaining popularity all over the world. There is evidence that citizens' inclusion is beneficial for planning outcomes (Legacy & van den Nouwelant, 2015) and that city planning without use of participatory planning is less effective (Gedikli 2009). Advocates of coproduction argue that involvement of different stakeholders is essential for more effective management and for societal transformations (Albrechts, 2012; Ostrom, 1996). Nonetheless, in practice there are several concerns about participatory planning. Some researchers find modern inclusion selective: despite seemingly better access to various facilities and institutions, wide spectrum of civil rights declared and broader opportunities for participation, many people cannot enjoy them for various reasons (Miraftab, 2009). Together with this, involvement sometimes serves only for legitimizing of some dominant position (Ibid.).

Moreover, issues related to participatory planning process differ in different contexts, whether political, social or economic (Sandercock, 1998). In authoritarian regimes there are several factors that hinder participatory planning: strong power hierarchy, weak communities, passive citizens, limited powers of local governments, etc. In many cases there is no understanding of the necessity of such approaches and their advantages, and they are mainly perceived to increase costs. This situation is aggravated by the logic of governments of various levels and business, which mainly think in short-term, whereas participatory planning is more beneficial in mid- to long-term.

Nevertheless, there is evidence that participatory planning is still possible in authoritarian regimes (Beard, 2003). In Russia there are cases when participatory planning is used. There are not many organizations in Russia that use this method, and the author knows only one such an organization called "Project group 8". In modern Russian Federation participatory planning is more an optional tool than an essential mechanism of planning: local governments rarely do it, and architectural firms can either apply it or not upon their own will or that of the client. Nevertheless, as one of the leaders of "Project group 8" told me in personal correspondence, there is demand for participatory planning among municipal authorities, charitable funds, private organizations and activists in some regions of Russia.

In this article issues related to promoting public involvement in planning processes in authoritarian regimes, namely in Russia, will be discussed. It is based mostly on my one-year experience of civil activism and half-year participation in expert meetings aimed at the

elaboration of Tula strategic plan-2021. In the article I argue that being an activist turns out to be useful for planner both in the sense that it broadens their understanding of some issues related to a city and various groups, and in that activism may be a means of promoting improvements in the process of planning, e.g. the application of participatory planning. This promotion process resembles that of exercising soft power by one state over another one. I also develop Davidoff's (1965) point that a planner should be an advocate of the interests of some particular group by stating that being an activist is a premise for professional becoming of an advocate (or any other type of) planner.

I will start with drawing a theoretical framework for planning, participation, activism and soft power. In that section Issues like the purpose of planning and various forms of participatory planning, the functions of a planner, etc. will be considered. Then I briefly introduce the context in which civil activism unfolds in the city of Tula and proceed with my activism narrative followed by the narrative of my participation in expert meetings and promoting participatory planning there.

2. Theoretical framework

2.1. Conceptualization of participatory planning

In order to eliminate confusion, I find it appropriate to start with the definition of planning. Here planning is defined as «*deliberate* transfer of knowledge to action in the public domain for the purposes of moving towards a shared vision of the 'good society'» (Beard, 2003).

There are various forms of planning stipulating involvement of citizens: participatory (Fenster, 2004), radical (Beard, 2003), insurgent (Miraftab, 2009), collaborative (Healey, 1997), advocacy (Davidoff, 1965), communicative (Sager, 2009) and other types of planning. Also, there are some closely related concepts like 'guerilla governance' (Legacy, van den Nouwelant, 2015). Many of these concepts are quite close or seem to intersect; therefore in this paper only those crucial for understanding the key idea will be discussed. In order to avoid confusion, the term "participatory planning" is treated extensively in this paper as any form of planning which implies citizens' participation/involvement. If any special form of participatory planning is examined, it is specified.

Although advocacy planning is not a form of participatory planning, it is important for understanding the role of a planner in planning process. Advocacy planning is a process in which a planner represents interests of a particular group and prepares development plans according to their needs (Davidoff, 1965). It stipulates that various planners have to advocate their plans at some hearings as if they were trying to defend their position in a court. Such a competitive process leads to better planning because many different alternatives are discussed from various perspectives. Together with this, an advocate planner also has an educational function, as he or she informs citizens about their rights, provides them with information related to planning process, etc. I argue that in autocracies the role, functions and competences of an advocacy planner should go beyond mere planning and advocating particular interests, especially when one sticks to the ideal of better society.

Another related concept is that of radical planning. Its distinctive feature is that it stipulates disagreement with current order (Beard, 2003; Friedmann, 1987). I believe that such disagreement is likely to occur in authoritarian regimes because they foster inequality and impose oppression. Because of control, punishment or inacceptance of those who have different opinion, often it is impossible for some ideas to be considered. Radical planning seeks to change this situation of inequality. Importantly, a radical planner must participate in the

activity of a group he or she helps, but must nonetheless «walk the thin line between standing apart from the group's practice and being consumed by it» (Beard, 2003:17).

According to Beard (Ibid.), there are several stages of unfolding of radical planning. At the beginning, it is subtler, i.e. no dissatisfaction with current situation is manifested. Then, with the course of successful actions, community members gain competences and necessary skills for better organization along with political consciousness. In some moment, opposition views may get articulated, provided that the circumstances are favourable. Among others, periods of power transition, although not always, can be considered such circumstances. At least such periods can be the moments to reinforce one's position.

Importantly, although radical planning implies opposition to the existing situation, in restrictive political context, on early stages one should find ways for their actions to get approved by the government (Beard, 2003), so that their practice did not get illegal. One of effective ways of achieving that is doing something which is compatible with existing governmental programmes (Ibid.). If this condition is respected, a community may even get different types of support from the government. For that reason, it is always important in radical planning to be familiar with governmental programmes, grants, etc.

The third important concept in this framework is that of guerrilla governance, which can be described as a set of actions performed by a community in a situation when its members feel or are excluded from some process led by a government, in which they think they have right to participate (Legacy, van den Nouwelant, 2015). Guerrilla governance can be either subtler or more direct. The first variant is likely to appear in oppressive environments where direct expression of disagreement is likely to be ignored or have negative consequences. This variant stipulates application of means similar to those of soft power in political science and international relations.

2.2. Soft power in the context of governance and planning

Joseph Nye defines it as “the ability to affect others to obtain the outcomes one wants through attraction rather than coercion or payment” (Nye, 2008: 94). In other words, exercising soft power is mainly about transmitting one's values in order to attract someone. In this article, the idea of soft power gets reversed: usually soft power is used *by* a government to influence another country's public, but here I discuss the situation when the public tries to similarly influence their own government. Although the roles appear to be changed, the approach remains similar.

Mechanisms of influencing governments are elections, referenda, civil manifestations, etc. In Russia many such instruments are proclaimed by the Constitution, but in fact their application is limited. Therefore, one sometimes has to search for alternative ways to get their opinion taken into account, and in some circumstances informal or indirect channels can be more effective than traditional ones. Among others, they can include: personal communication with officials who make important decisions, publicly announcing some new ideas, participating in expert meetings and consultative institutions established by high-level officials.

In order to maximize the effect, all the three dimensions of soft power should be considered: daily communication, strategic communication, lasting relationships (imply educational programmes, conferences, etc.) (Ibid). Together with this, one of the essential elements in exercising soft power is credibility (Ibid.), without which any soft power cannot be exercised.

2.3. Civil activism as a source of soft power

Civil activism can be considered an effective channel of exercising soft power, as it allows to combine various means of influence and helps spread ideas, values, competence, etc., use all the dimensions of soft power and, if an activist community's strategy is wise, provides resources for building credibility of officials. On top of that, a planner as an activist has numerous opportunities for professional growth, because being an activist implies facilitation, communication, involvement and other practical skills useful for a planner.

In Russia civil activism has some distinctive features. First of all, Russians appear to be very passive in this respect, as only 16% of citizens (data from 2012) participate in any civic practices, which is lower than in most countries of Europe (Sedova, 2015: 295). On the other hand, in Russia civil activism is represented mostly by "socially advanced, successful, mobile groups" (Ibid.: 284), which indicates that they have quite high potential as a driver for social change. Importantly, research indicates that non-political and political aspects of civic activism are closely related with each other, and most citizens engaged in non-political activities also take part in political ones (Ibid.). It means that these two aspects of civic activism are hardly separable, and by participating in civil activities we can and actually are participating and influencing political processes.

3. Tula case-study

3.1. Tula as a context for civil activism and planning

Tula is an old industrial city of approximately 500 000 inhabitants 180 km away from Moscow. As in Russia in general, the population in Tula is also quite passive, which got obvious during my experience of civil activism there. Close distance from Moscow influences Tula strongly. On one hand, it is easy to get there by car, or by bus, which takes about 2-3 hours to get to the outskirts of the city and 3-4 hours to get to the centre, or by train (2-3 hours to get to the centre). This provides Tula citizens with great opportunities for leisure they cannot get in their hometown. According to the on-line survey I held in spring of 2015, Tula citizens mention lack of alternatives regarding their leisure (45% versus 8% who say there is a diversity of options), despite the fact that 67% answer that during the past 1-2 years more opportunities for leisure appeared in Tula. It may indicate that the new opportunities that are created are quite similar and unattractive.

On the other hand, mean wage in Moscow is more than 2 times higher than in Tula and the number of job opportunities for high-qualified workers there is also much higher. Even if we take into account the fact that real estate rent prices are higher, the fact that many people from Tula work in Moscow demonstrates that working there is considered a better opportunity, although work-life balance may get flawed. Moreover, most Russia's top universities are situated in Moscow, which attracts young perspective students from all regions of Russia. As there are more high-qualified and creative jobs in the capital, many students stay there after their education.

In other words, the megapolis is close enough to get there to spend an evening for entertainment and come back home but too far not to move there from Tula if one wants to work or study there, which finally causes decrease in population and leak of creative people which could be in the core of civil practices.

In Tula there are two large educational institutions: Tula State University, Tula State Pedagogical University, – and several small ones. Here one can study urban planning only in Tula State University: students learn it within a special semester course at the department of

architecture. It is evident that urban planning cannot be taught well within a single course. There are some architectural bureaus in Tula, and their management complain about the quality of professional training in the city. For example, one of the top-managers at Tula bureau "Arkhproyekt" told me that they tried not to hire students from Tula as they lacked necessary skills.

Tula has a centralized power system where the governor has a wide spectrum of powers and the ability to control and affect the process of construction in Tula region. In such a hierarchical power system a lot depends on subjective opinion and actions of a single person or a group. Local authorities in Russia are limited in their powers and do not have stimuli for development, because of centralized system of finance distribution within cities and the country in a whole.

On top of that, there is a quasi-legitimate institution called "Gradostroitelno-zemelyny Sovet", which was introduced by the previous governor to legitimize some dubious construction decisions and make an illusion of consultancy and dialogue between experts. Although this institute does not have any legal power de jure, de facto its approval of a project means sanctioning of construction. This institute designed to authorize single projects works despite the existence of zoning and other official construction regulations.

There are and have been several conflicts in Tula concerning illegal construction. One of the most recent ones is taking place in the area near Tula Central Park. Some people living in that area addressed me and asked for consultancy. According to their data, which is documented, the construction permit for the building was issued for one object while what is actually being built is another one: the developer first provided the official institution with one plan and after getting the construction permit the document was substituted (the citizens have a photo-proof of that: they took a picture of the plan before the permit was issued and they communicated with the issuing institution after the permit was issued). The fact that the document was substituted indicates the case of bribery. Although the actual project is probably built with numerous violations of zoning, it should not be considered in this case, as, according to Russian construction laws, those projects, which are not built in accordance with the plan a construction permit was given for, must be demolished without considering whether they comply with regulations or not. The citizens do not want to apply to court, as they have already lost one similar case and had to pay their opponent's costs related to the trial. They do not want to do it again, because they do not believe it is possible to win such a case. Neither want they to organize protest manifestations. They try to resolve the problem using indirect channels which could, they believe, influence the developer: writing letters to senators, communicating with NGO's, etc. As the most effective means they see writing a letter to the governor. They are told by some officials that they will not succeed in any case, because those who construct the building have some influential contacts. It is obvious in such circumstances that an advocate planner should have broad qualification, as sometimes it is impossible to work within certain rules and formal mechanisms.

On top of that, there are no or almost no local communities in Tula (which I believe is characteristic for Russia), which can be considered the basis for civil activism and for fighting conflicts when legal system is incapable of that. Local communities in Russia are substituted by formal institutions called "tovarishchestvo sobstvennikov zhilya" ("Partnerships of landlords") which are supposed to solve some problems concerning their property but do not stipulate any emotional connections or shared identity. Usually citizens unite against but not for something in Russia, and after the problem is solved or they reconcile with the circumstances, their ties vanish. Nonetheless, the author's experience shows that there are some issues around which people can unite not because of pressure but because of their will

to improve something. For example, an activity aimed at beautification of a historic cemetery in the centre of Tula attracted about 30-40 unfamiliar people within a month without any significant promotion.

Some forms of civil participation were and are present in Tula, but they are mostly nominal. For example, at the web-site of Tula Administration some opinion polls are made from time to time, but usually such polls are focused on secondary problems like those of how should a new monument look like or whether the city needs art objects or not, but not city strategic development or budgeting. Usually, very few people participate in such polls and their results are not always, if at all, implemented.

One form of public participation which can be considered effective is the platform Open Region, which is an on-line service through which one can indicate existing city problems, mark them on a map, write a claim and then competent official will consider the claim and react. There is a map with accomplished renovations and comments about the citizens' complaints.

Another effective form of participation is the "Civil budget" project, where some projects of the citizens get co-funded by the Administration. The project takes place in 2015-2016 and there is no information whether it will be implemented again.

The very concept of participatory planning was introduced in Tula for the first time in 2016 by a team of civil activists called "Mozhem sami" – one of the first civil activist movement in Tula – and the author is one of its core members. In the next section I will discuss how it emerged and developed until the moment non-political civil activism expanded to political processes.

3.2. Mozhem Sami: the birth of civil activism in Tula

The author started his experience of civil activist in 2015 at the age of 22. Before that, he started to study urban planning in Moscow in 2014. Civil activism was not related to the author's thesis and was considered by the author as an accomplishment of his professional duty to his hometown. The experience started with organizing an educational event for citizens aimed at stimulating their civil activity. The preparations started in January 2015, and the event took place in June. As a part of the preparation for the event the author conducted an on-line survey related to Tula citizens' leisure and activity mentioned above. 169 People took part in the survey, and 10 were sorted out as they were not from Tula. Out of the rest, 38% organized events of different scale for other people. In the survey there was a question for those who organized events about whether they were ready to contact me. Half of them answered "yes", but only one of them actually did contact. Consequently, that person got one of the event's co-organizers. Further, he became one of the leaders of the movement "Mozhem sami | MSMI" (MSMI).

By the time the first event took place, there were about 300 people in the MSMI online-community. Although the number of members in an online-community should not be considered as meaningful data per se, it can give some insights when taken with other information. However, the movement had not been shaped yet by then, and the group was called "Citizen's Day" after the name of the first event the team organized. After the event the core of the team consisting of 3 persons was shaped. The team was named "Mozhem sami" (lit. «We can do it ourselves»). I consider this period to be the birth of civil activism in Tula, as by that moment it was the only horizontal grassroots initiative which pursued broad goals of promoting conscious citizenship (other communities are more narrow-focused) and emerged not being a part of some large network.

Within two months the number of members increased to about 15 active and about 25-30 members overall. The core consists of youth aged between 20 and 27, although there was one member 61 years old. MSMI never proclaimed any age, gender, sexual orientation, etc. The team's main activity was organizing various events and showing with this that any citizen can do the same. The underlying idea was that one should consider their hometown as an object of creation rather than that of consumption. Although the original philosophy has always been preserved, it got less articulated in the course of time, which gets clear from the changes in the events' formats from more educative and creative (lectures, workshops and beautification and cleaning activities) to more entertaining (parties and fairs). As far as ideology is concerned, it has always contained some provocation and protest: there is a connotation "We can do it ourselves because you can't" in the name of the movement as an appeal to local government. However, it is always officially proclaimed that "ourselves" means "all the citizens together without any divisions and boundaries", which was also true but hid another part of reality. Of course, many people understood the first connotation too

The first large event organized by MSMI (and the largest one by June 20, 2016) was the city picnic "Mozhem sami" held on the 29th of August 2015. According to the data of the police, 3000 persons attended the picnic. There were about two dozen activities: workshops, lectorium, concert, English classes, dances, etc. The picnic received extremely positive feedback, and many guests acknowledged that it was a unique event for Tula. However, Tula was quite late in introducing grassroot picnics. Such events already took place several times in Omsk and one time in Penza. After the picnic the number of the community followers grew up to 900.

Now there are about 2200 members in the online community, which is a success, because Tula most famous non-profits online communities consist of maximum 1,5k members except for "Mamkompaniya" (a hybrid of words "mother" and "company"), which has about 4000 members. Presumably, the reason for such a rapid growth is that the goal of "Mozhem sami" was broader than that of most communities, which are more narrow-focused.

After 3 months' the movement got its own room in a creative space called "Likerka Loft" – the only creative space in Tula so far, which is situated about 2km away from city centre at the city's central street Lenin Prospect. Despite the uniqueness and very good location, the vacancy rate of this space is about 40% according to its director (actually, it seems like 60%, because it is very empty there) and there is a continuous flow of tenants in the space. Likerka Loft has no conception and no event program, neither has it a PR team. The rental policy is also inflexible there with too high prices. The Director's inviting us was a step to attract visitors to that space.

At some moment an official appeared, which was involved in a project of redevelopment of some brownfield in Tula historical centre. He collaborated with the developer and tried to involve new experts in the development of the project's concept. He appreciated the ideology of MSMI and invited them to participate in the project. Finally, "Mozhem sami" team conducted preparatory research for this project and made the concept of its redevelopment. The project called "Small Tula" was not completed, as the investor did not get the land on satisfactory conditions, but it got the start of MSMI participation in political and parapolitical processes.

This person is an official which is subordinated directly to the Governor of Tula Region and heads Tula Headquarter for Strategic Development. This Headquarter is a consultative institution and deals with various issues related to Tula city problems. It serves as a communicative ground for different experts. The leaders of "Mozhem sami" were invited to participate in Headquarter meetings related to public spaces in the first half of 2016. Until this

moment, the idea of participatory planning was unknown for most of the public and for some experts.

With his help, "Mozhem sami" organized public presentations and discussions on several relevant topics concerning various problems of the city and of the youth in particular, which were attended by 30 to about 150 people. He helped to involve various officials and businessmen in the discussion using mailing. He managed to present the events as those sanctioned by the government of Tula, which was an effective mechanism to attract those people to the meetings, although very few actively took part in the discussion.

3.3. Current political situation in Tula

These events and discussions started being held during the office of the previous governor Vladimir Gruzdev, which resigned in February 2016. After his resignation, the Minister of Defence of Tula Region Alexey Dumin was appointed Governor-in-chief. Remarkably, many activities of the officials at that moment got frozen. It was related to their waiting for the Governor's-in-chief first steps, which could inter alia result in the change of political course and substitution of some officials by new ones. In fact, no serious changes followed, although some new officials, presumably those close to Dumin, were appointed.

The elections of a new Governor will take place in September 2016. For political reasons, there is no doubt he will be the next Governor, and he needs high rating only to decrease protest and unrest risks. In order to do this, he proclaimed several ambitious steps in the development of Tula and the Region. First of all, he initiated the development of new strategic plan for Tula until 2021. In order to do this, several expert groups were organized. The author participated in the group, which dealt with public spaces, headed by aforementioned official from Tula Headquarter for Strategic Development. Along with these groups, experts from Moscow were invited, but they, presumably, had some different tasks, and, therefore, did not take part in the expert meetings mentioned above, however illogical it may seem.

Together with this, one large expert meeting involving all the groups was held. It was aimed at collecting ideas for the Strategy. The meeting was held by some organization from Moscow, which specialized in organizing foresight sessions and doing strategic planning. They were told that they had to prepare the Strategy in 2 months (these were the words of one of the organizers of the meeting), which seems impossible for such important and fundamental documents. Such short terms may indicate that the steps performed by the Governor-in-chief are mostly declarative.

The period from February 2016 to September 2016 can be considered a period of gaining people's trust and reputation. Such a time can be viewed as a time of opportunities for civil activists and all the citizens, because while trying to achieve his aim before the elections, it is beneficial for the Governor-in-chief to take into consideration popular opinion. In addition, he actively uses consultancy, although relies more on experts from Moscow and St. Petersburg. In their turn, these experts communicate with citizens, and there is a chance that they will transmit some of their messages to Dumin. In such circumstances, civil activists and experts are more likely to be contacted (and they actually are), as they are considered opinion leaders and probably more competent persons. If an activist is also an expert, he or she is able to give important feedback, which will get to the governor, which in fact determines the way the Region will develop. There is no guarantee that every message will be received, and even less chance that any ideas will be implemented. On top of that, during such periods the possibility of reforms is higher than in the periods after elections. One of the main advantages of such periods is that one can bring to surface issues which were hidden before. Even if the changes stipulated

in some ideas will not be implemented, the awareness of some issues among the officials and the citizens will increase.

Right now the activity of local expert groups has finished, and the draft of the Strategy has been presented to the public recently. Noteworthy, its essential part is 19 pages long, which speaks for itself. The part in which I participated is less than a column long and is far too general in comparison to what was discussed at the expert meetings. This can either once again point at the declarative character of the transformation or signify that the provisions provided by the experts will be presented in further documents.

4. Conclusion: reflection and practical recommendations

Because all these political processes are still in progress, it is too early to predict definite outcomes and to say that civil activism turned out to be an effective way of promoting participatory planning. Still, it is possible and useful to reflect on MSMI dynamics so far and to draw some preliminary conclusions. First of all, the case of MSMI repeats the path along which radical planning is unfolded as mentioned by Beard (2003), when primarily subtle disagreement finally turns into open opinion statement, although it is clear that MSMI has not yet passed all the stages of radical planning, as it has not yet led to social transformations and probably will achieve it in foreseeable future. The outcomes of MSMI's activity seem insignificant, but in fact they are impressive when one considers the context in which all MSM activity takes place. In less than a year, without any contacts in the government, our movement started to participate in expert meetings (although only I have background in urban planning) in consultative institutions subordinated to the governor, who makes all the significant decisions in the region. The movement succeeded in bringing to surface the idea of participatory planning, which is itself a great achievement. On top of that, active members of the movement gained new competence and skills. The future of the movement is unclear, as now it is in the state of decline. Anyway, it is an important case for understanding how is perceived in restrictive hierarchical environments, how they are promoted and why being an activist is useful for a planner.

To sum up, in authoritarian states civil activism can get an effective means of promoting various concepts and practices like participatory planning in authoritarian regimes. In a broader sense, it can be a strong driver for social change in any society. In order to bring or stimulate this change one should keep in mind following.

- If an activist is also an expert in some issues related to planning, social development and other areas, it is always a strong advantage, especially when the activist serves some ideals like better society.
- In authoritarian countries one should first seek for governmental approval and conceal their disagreement in order not to be oppressed and better to be supported.
- Such social change may last many years and one should be extremely patient waiting for the outcome.
- Periods of change (like elections, even if they are flawed) are periods of opportunity for introducing new ideas and moving towards social change.
- Soft power is more appropriate for those who disagree with current situation to foster social transformations.
- In order to be better accepted, one should proclaim positive rather than negative demands ("we are for our city", not "we are against corruption"), even if the latter seem more honest and true.

- Any statements of activist group should be accompanied by appropriate and consistent actions.
- An activist planner should act very cautiously, as their actions may finally be considered dangerous by the government.
- Gaining government's credibility is one of the most important tasks on the way to social transformation.

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Hello City!

Discussing Urban Planning in the Age of Connected Citizens

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Abstract/Short abstract *Hello City!* researches the patterns of communication on urban issues among the digitally active citizens of two very different European cities: Rotterdam (The Netherlands) and Belgrade (Serbia). The results of the quick-scan give some insights about how to use the energy of the connected citizens to create more liveable and equal cities.

1. Introduction

Before the digital revolution, the way cities communicated with it's citizens was a kind of close-circuit, top-down, one-way direction messaging. As Anthony Townsend remarks in his book "Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia": "A century ago, the telegraph and the mechanical tabulator were used to tame cities of millions". But today, as we know, the cities grew so complex that they can not be "tamed" that easily anymore. Besides that, digital age has provided the citizens with the tools to discuss and to influence the city more directly, putting the pressure on the municipal governments to provide them (the actual users) and not the city as a system with better solutions. In this way, contemporary urban planners have to deal more and more with the issues of politics, public relation and policymaking then solely with the issues of design, aesthetics or functionality.

The paper scratches the surface of the increasingly complex relation between the citizens and the cities (it's government and it's planning authorities). Modern technology allows more access to information, and it can also give voice and a podium to groups who would previously not be included in the process of planning. How to deal with this changing context of planning is something urban planners should take into account for the future.

Digital technology transcends boundaries and countries, and the paper bases it's quick-scan research on the data from two cities: one from the developed, West-European economy (Rotterdam, the Netherlands) and one from emerging, South-East European economy (Belgrade, capital of Serbia). The results paint two very different pictures about how citizens see the urban challenges in their immediate surroundings, and how do they communicate and organize themselves in a spontaneous way, using technology to overcome the social, political, economical or cultural obstacles.

2. Who is a connected citizen?

2.1 Brief contextual background of Belgrade and Rotterdam

The two cities come from a very different context, but they do share a typical European approach in urban planning and design (*figure 1*). Both cities experienced devastation of it's central areas in the Second World War, and both cities have energetically embraced new (predominantly Modernistic) approaches in urban planning following the WWII years. In the last 6 decades, Rotterdam enjoyed relatively steady, unbroken economical development and

prosperity, while that of Belgrade was interrupted by the fall of the Communist ideology and civil war at the end of the 20th century.

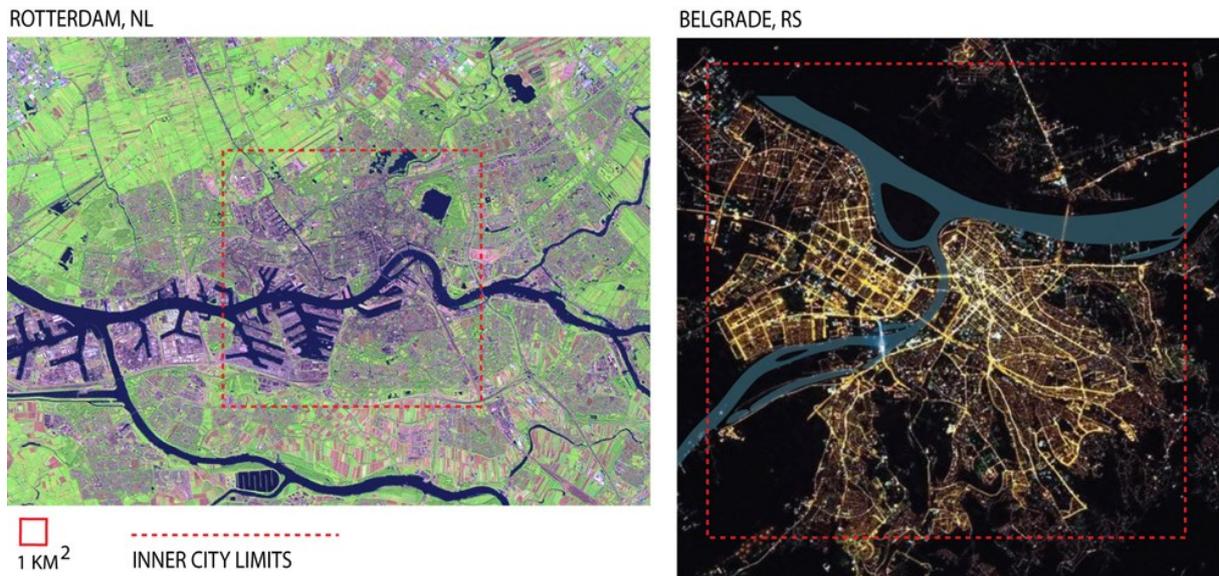


Figure 1: Satellite images of Rotterdam and Belgrade. Source: Wikimedia Commons. Graphic interpretation: Milena Ivkovic

Today, Belgrade is the capital of a country of approximately 7 million people, with promising economical growth. Some 20 % of the inhabitants of Serbia live in Belgrade, making it by far the largest and most important urban hub. In Rotterdam lives only 3% of the total Dutch population of 17 million, but together with Amsterdam, The Hague, Leiden and Utrecht it is a part of the dense urban network of cities at the western coast of the Netherlands, an economical powerhouse with total population of more then 6 millions.

The following table (figure 2) shows the disparity in the economical “well off “ of the citizens in the observed cities. The average annual income (per household) is twice as much in Rotterdam then in Belgrade, while unemployment rate is much higher in Belgrade then in Rotterdam.

	gross labor participation and unemployment	income per year / per household
Belgrade	650.000 total labor force, of which 20 % unemployed (ca.129.600)	14.000 Euro
Rotterdam	291.000 total labor force, of which 12,6% unemployed (ca. 36.600)	29.400 Euro

Figure 2: Basic demographic and economical indicators of Belgrade and Rotterdam. Source: Institute for informatics and statistics, “Belgrade in figures”, 2015, Belgrade, City of Rotterdam, “Facts and figures Rotterdam”, 2012.

2.2 Profiling the connected citizens in Belgrade and Rotterdam

To understand the connected citizen – a city dweller using technology daily - one should look into the presence and availability of digital technology. The data to illustrate this can not be easily pinpointed to a city, so we will lean on the national data, as presented in the figure 3.

	number of inhabitants	surface (urbanized area)	internet natives (born after 1985, in percentage of the total)
Belgrade	1.3 mil	1031 km ²	430.000 / 27%
Rotterdam	0,6 mil	319 km ²	204.000 / 34%

Figure 3: Internet and mobile phone use in Serbia and the Netherlands. Source: InternetLiveStats, Institute for informatics and statistics, "Belgrade in figures", 2015, Belgrade, City of Rotterdam, "Facts and figures Rotterdam", 2012.

The crucial term in understanding the profile of the connected citizen is the so-called "Internet native". As defined in "Serious games: a new route to training, fun and cultural change"¹⁾, internet natives are those born after 1985, persons who never knew other context than the hyper-connected, digital world with all its gadgets. Those individuals, are at the core of digital citizenship, present and future. The way they are communicating and participating is heavily dependent on the technology.

At this point, it is important to say something about digital inclusion (or exclusion). The obvious disadvantage of Belgrade lies in the fact that some 47% of the households have access to broadband Internet, compared to 61% of the households in Rotterdam⁴⁾. Having a desktop / laptop computer with a monthly broadband subscription is quite expensive for an average Belgradian, since the price of subscription and the hardware is almost the same as in Rotterdam.

But if we look at the amount of mobile phones being used in Serbia, compared to amount of mobile phones used in the Netherlands, the picture is quite the opposite: in Serbia there are approximately 120% more mobile phones numbers²⁾ than inhabitants. In the Netherlands that percentage is around 93% as stated by Internet Live Stats. Another interesting indicator is the number of active native-language websites per capita, which can be found on Google Analytics. In the Netherlands there is some 98000 registered native language websites (6 websites per 1000 citizens) and in Serbia only 4000 registered websites (less than 1 website per 1000 citizens). Digital culture in Serbia, thus, relies heavily on the use of the popular international websites (offering the services in local languages) and social media outlets, preferably accessed through a mobile phone.

Without going deeper into the intricate details of the way of using, the preferred content or the issues of users' demographic, (all these data is increasingly difficult to compile, since quality data sets belong to the commercial network providers) we can say at this point that mobile technology (and smart phones in particular) are crucial for including the wider social layers of citizens into a new ways of participating in the urban processes. The advantages of mobile technology in emerging economies are quite obvious: the monthly fees are lower, and it doesn't require expensive hardware to be connected to the Internet. In terms of enabling greater participation in urban planning, it seems that mobile technology is the right platform to use.

3. How does the connected citizen discuss the city?

3.1 The method of observation

The aim of this paper is to draw attention to the phenomena of civic engagement and urban planning participation in two different urban contexts, and by using the digital media. Getting relevant data about the online participation (and in relation to two particular cities) is not an easy task. To start with, civic engagement in urban planning is not actually a very popular segment of the Internet. Entertainment, news, sports, pop-culture figures, fashion, cooking recipes – they all have far larger audience than urban development or urban planning topics. Most of the time, urban planning topics are part of larger, more discussed themes, such as “Society”, “Politics”, or “E-governance”, “Culture” and “Smart City”. There is a general opinion among planning professionals that urban issues do motivate larger amounts of people to take serious action, and that social media plays a major role in channelling the sentiment about particular urban developments. Still, trying to rationalise on this impression and collect the solid numerical data behind the process of civic engagement in urban planning is quite a challenge. In his critique “From Habitat II to Pachamama: a growing agenda and diminishing expectations for Habitat III” Prof. Michael Cohen⁵⁾ underlines that official international bodies and world-wide conferences on planning still do not use the potential of the digital media to better convey it's messages.

In the digital world, the success of an interactive medium (an application, a website, a Facebook page, a Tweet, or a You-tube channel) is usually measured by the “amounts”. Although it sounds simple, the typology of these amounts is so diverse (sometimes we talk about number of users, sometimes about number of likes, or the number of downloads) that they often give a twisted image about the real relevance of the topic. From the rational side, if we want to measure the interaction between the citizens and the city more precise, researching the available city-service applications would be the most “true” medium to analyse. The app's cover almost all possible urban function, have usually very clear disclaimers, the users have to be registered and verified in some way, sometimes there is also a payment involved – all these parameters can contribute to building solid arguments on how the connected citizens see and interact with the city, and what kind of services they need to better use the city.

But while applications profile themselves primarily as services, social media stays relevant as a true digital platform when it comes to participate in urban life. Social media has become ubiquitous tool, and the dominant communication weapon in terms of initiating civic engagement around any topic. This is perfectly logical in the world of internet natives, where “present awareness” (receiving information in real-time, anywhere, anytime) a component incremental to social media, is winning over some other digital ways of expressions, like e.g. the websites. More about how communicating and agitating through a website has become the least effective tool for an activist can be found in the excellent article “Why aren't activist websites fulfilling the dialogic promise?” by Erich J. Sommerfeldt, Michael L. Kent and Maureen Taylor. ³⁾

Considering how relevant social media is, and considering the large number of existing social media outlets, I will concentrate on using only one channel - the still biggest social media outlet – Facebook - and use the quick-scan approach (as a rapid investigation method) to derive ready-made facts. Fully aware that mere indications can be a result of this quick-scan,

I aim to give an inspiring picture of an important phenomenon, and initiate some deeper investigations.

3.2 *Quick-scanning the Facebook*

Citizens participation – whether it is a call to action, opinion poll, criticism, political activism or simply organizing neighbourhood's urban farming lot – is still very much attracted by informality. By quick-scanning a selection of Facebook pages (the main criteria being the amount of likes or members of a certain page), I will look closely on the inter-connections between spatial levels of action (city level, neighbourhood level) topic of the action, and who is initiating (or administrating) the page. The results are compared between the two cities, and conclusions are drawn about the specifics of what is the preferable model of organization, and which topics are the most urgent.

The following figure 4 presents the top-10 pages dealing with Belgrade on the city-wide level. It is followed by the similar overview on the neighbourhood level (figure 5). The same comparison is also done for the top-attractive pages dealing with typical Rotterdam issues (figures 6 and 7).

The pages are examined according to the content they are creating around the certain topics, the kind of action they would like to ignite, who is administrating the page, and what are other ways of connecting with the topic and with other people of similar opinion.

	Likes, members	Active since	Title	Short content description	Aim	Type	Initiator	Other media
1	187.257	2014	Live from Belgrade's trams and busses	Images from public transport vehicles and stations	Criticism, fun, diverse practical info about PT	Spontaneous activism	Not disclosed	e-mail
2	55.000	2015	We don't give up Belgrade	Criticism of urban development	Political activism, policy criticism	Organized activism	Registered civic group (NGO)	website, mail, twitter, hashtags
3	37.000	2011	Black and White Belgrade	Historical, black-and-white only images of the city, it's architecture and people	Culture preservation, nostalgia, historical research, fun	Spontaneous	Several private citizens	e-mail
4	29.000	2015	Belgrade without Mask	Public space images from different areas	Criticism, social activism	Spontaneous	Not disclosed	Not disclosed
5	10.800	2013	Belgrader	Current events in the city, urban life and culture	Fun, culture, diverse info about the city, mildly critical	Organized media platform	Not disclosed	website, e-mail, twitter, hashtags
6	9.510	2011	Streets for Cyclists	Belgrade's streetscapes and cycling images	Promotion of cycling in the city, active criticism of the lack of good bike paths	Organized activism	Registered civic group (NGO)	website, e-mail, twitter, hashtags
7	5900	2011	Belgrade Flower Festival	Public space images, Belgrade's urban greenery	Raising awareness about sustainable urban green, policy criticism, promotion of urban farming	Organized activism	Registered NGO	website, mail, twitter, hashtags
8	4491	2013	Humans of Belgrade	Portraits (images) and stories of everyday citizens	Culture, fun, promo of citizens' initiatives, charity support	Spontaneous spin-off of the "Humans of New York" project	Not disclosed	Not disclosed
8	4000	2015	Critical Mass Belgrade	Cycling Festival: 1-day traffic free city centre for cyclists, cycling images	Better cycling policies, criticism of urban traffic	Organized activism, spin-off of the larger international initiative	Registered civic group (NGO)	website
10	2411	2015	Campaign for Sustainable and Free PT	Images from public transport	Better PT policies, free PT, improvement of PT conditions	Organized activism	Registered civic group (NGO)	website

Figure 4: Belgrade – city level action, top 10. Source: Facebook Systematization: Milena Ivkovic

	Likes, members	Active since	Title	Short content description	Aim	Type	Initiator	Other media
1	13.847	2014	Preserve the Old City	Images, news, ideas, initiatives for the neighbourhood, open civic forum	Cultural preservation, diverse info about the ongoing initiatives	Organized	City of Belgrade, Municipality of Old City	Not disclosed
2	1.178	2015	Save our park in the Block 9a	images and news from the neighbourhood, open civic forum	Opposition to the city plans to transform the neighbourhood	Spontaneous activism	Private citizen	e-mail
3	400	2015	Municipality of New Belgrade	news from the municipality, open civic forum	Diverse information about the city supported projects in the neighbourhood	Organized	City of Belgrade, Municipality of New Belgrade	website, e-mail
4	239	2013	Savamala Society	images, news, initiatives for the Savamala neighbourhood	Cultural preservation, social activism, neighbourhood information	Spontaneous activism	Not disclosed	Not disclosed
5	236	2013	Preserve Cetinjska and Zetska Street	images, news, open forum	Awareness raising about the noise pollution in the street	Spontaneous activism	Informal group of citizens Zetska and Cetinjska Street	e-mail

Figure 5: Belgrade – neighbourhood level action, top 5. Source: Facebook Systematisation: Milena Ivkovic

	Likes, members	Active since	Title	Short content description	Aim	Type	Initiator	Other media
1	30.000	2016	Opening of Dreamline, cable car line	Invitation to the opening of the cable car line in August 2018	Promotion of the idea of the cable car transport in Rotterdam	Organized PR stunt / activism	SME	e-mail
2	24.000	2013	Rotterdam Inner City	Images, stories and an open forum about the inner city of Rotterdam	Information about the development and various activities in the inner city	Organized municipal platform	City of Rotterdam	e-mail, website, Twitter
3	18.556	2012	Humans of Rotterdam	Portraits (images) and stories of everyday citizens	Culture, fun, promotion of different civic initiatives	Spontaneous spin-off of the "Humans of New York" project	Private citizen	e-mail, website
4	16.587	2014	Rotterdam	Images, stories and an open forum about the whole city of Rotterdam	Municipal services and initiatives of the city of Rotterdam	Organized municipal platform	City of Rotterdam	e-mail, website
5	17000	2015	Rotterdam Celebrates the City	Festival page becoming an open forum on urban development	Culture, fun promotion of built heritage	Organized	City of Rotterdam	e-mail, website, other social media
6	15000	2012	Open Rotterdam	Open forum, civic life, initiatives in the city	Social activism, local news, culture, fun	Organized local media	Registered civic group	e-mail, website, YouTube channel, other social media
7	12200	2015	Rotterdam from Before	Historical, black-and-white only images of the city, it's architecture and people	Culture preservation, nostalgia, historical research, fun	Spontaneous	Not disclosed	Not disclosed
8	10900	2014	Right On Rotterdam	Images of the civic initiatives for the cleaner city and waste separation	Environmental activism, sustainability, charity	Organized	City of Rotterdam	website
8	8800	2016	We want a Night Metro in the Weekend	Civic initiative for the extension of the metro night service	Policy criticism, call for action	Spontaneous	Private citizen	e-mail, website, other social media
10	8400	2009	Rotterdam's Harvest	Festival page becoming an open forum on "food and the city"	Environmental activism, promotion of urban farming, food culture	Organized activism	Registered civic group (NGO)	e-mail, website, other social media

Figure 6: Rotterdam – city level action, top 10. Source: Facebook Systematisation: Milena Ivkovic

	Likes, members	Active since	Title	Short content description	Aim	Type	Initiator	Other media
1	2.800	2012	Cozy in Rotterdam North	Images of various activities and public spaces in Rotterdam North, open forum	Cultural promotion, fun, community building, neighbourhood information	Organized local media	SME	website, other social media
2	2300	2013	Nesselande neighbourhood prevention	Visual reports on the issues of neighbourhood safety	Public space safety awareness, information exchange, call for action	Organized	Registered civic group	website, other social media
3	1100	2015	We Delfshaven	Images on the civic initiatives in the neighbourhood	Social activism, policy criticism, call for action	Organized	Registered civic group	website, other social media
4	564	2015	Middelland Beautiful	Images on the civic initiatives in the neighbourhood, open forum	Social activism, call for action, ideas exchange	Spontaneous	Not disclosed	Not disclosed
5	450	2015	Neighbourhood in Charge-Katendrecht	Images on the civic initiatives in the neighbourhood	Reporting on civic initiatives and events in the neighb.	Spontaneous	Private citizen	Not disclosed

Figure 7: Rotterdam – neighbourhood level action top 5. Source: Facebook Systematisation: Milena Ivkovic

3.3 Understanding the results

If we take a closer look on who is initiating the engagement on the city level, in Rotterdam it is the municipal government who is administrating several very well visited pages. The municipality acts as a facilitator and promoter of the civic engagement and cultural values of the city, carefully framing the topics, and providing the platforms for connecting the citizens around certain issues (figure 8). Facebook page becomes an extension of the certain policy, (not necessarily an urban planning policy, but closely intertwined with the sense of urbanity) and an instrument to popularize it, by allowing the interaction between the citizens.

Figure 8: Who is initiating the engagement in Belgrade and Rotterdam on the city level? Source: Facebook Systematisation: Milena Ivkovic

In Belgrade, on the other hand, (figure 8) we get the impression that the municipality is not active at all in presenting and discussing relevant urban issues, or at least it is not doing via a Facebook page. It is the registered civic groups and NGO's that are taking the role, very clearly blending the urban planning issues with political activism.

The statistics of figure 8 show that amount of pages initiated by the municipality (Rotterdam case) and by civic groups (Belgrade case) are larger then amount of spontaneous or "unknown citizen" pages. Still, one interesting fact is that in Belgrade the most popular page

is by far and most the spontaneous one, by which we actually don't know who are the initiators (the page: Live from Belgrade's trams and busses). In Rotterdam it is also not the municipality, but the SME (small medium enterprise) initiative (thus with a commercial background) that managed to get 30.000 likes in just a couple of months. Both of these pages deal with the issue of public transport.

This question of who is initiating actions is quite different if we look at the neighborhood and street level. (figure 8)

No. of pages	Belgrade		Rotterdam	
	city level	neighbourhood level	city level	neighbourhood level
spontaneous	4	3	3	2
organized	6	2	7	3
	0 pages municipality 5 pages NGO's 1 page SME	0 pages civic groups 0 pages SME 2 pages municipality	4 pages municipality 2 pages NGO 1 page SME	2 pages civic groups 1 page SME 0 pages municipality

In Rotterdam, the neighborhood-level activity on Facebook is lead by the organized civic groups, with very clear concerns: safety, greenery, general quality of life and event the popularity of the neighborhood. On this small sample and spatial level, the municipality does not carry a big role. On the opposite, in Belgrade, it looks like it is the municipality is trying to take more taking active lead on the neighborhood activism, using Facebook as a channel to establish open forum about neighborhood issues and going into dialogue with citizens.

Similar to the city level, despite the amount of administrated pages, the most attention of the audiences goes to "spontaneously" organized ones. Here we can see a clear distinction in attitude what is important when it comes to activism on the neighbourhood level – in it's content, the spontaneous, bottom-up Belgrade pages deal much more with the sense of urgency ("save the ...") while the same sort Rotterdam pages are more oriented towards the preservation of the established values.

As expected, similar or identical page content ranks differently in Rotterdam and in Belgrade. (figures 4,6,9) For example, pages calling upon the "urban feeling" and nostalgia (such as call to post old photographs of the city) are relatively more popular in Belgrade then in Rotterdam. Obviously, the harsh reality of everyday life in Belgrade evokes nostalgia for some other times and values.

If we look at the "franchised" Facebook pages "Humans of", the Rotterdam page is more popular then it's Belgrade counterpart. The "Humans of" initiative is a typical civic pride project focused on celebrating the individuality of the citizens and the diversity of urban life in the present time. Judging by the number of followers, (figures 4 and 6) this subject is obviously experienced as less engagement-worthy in Belgrade.

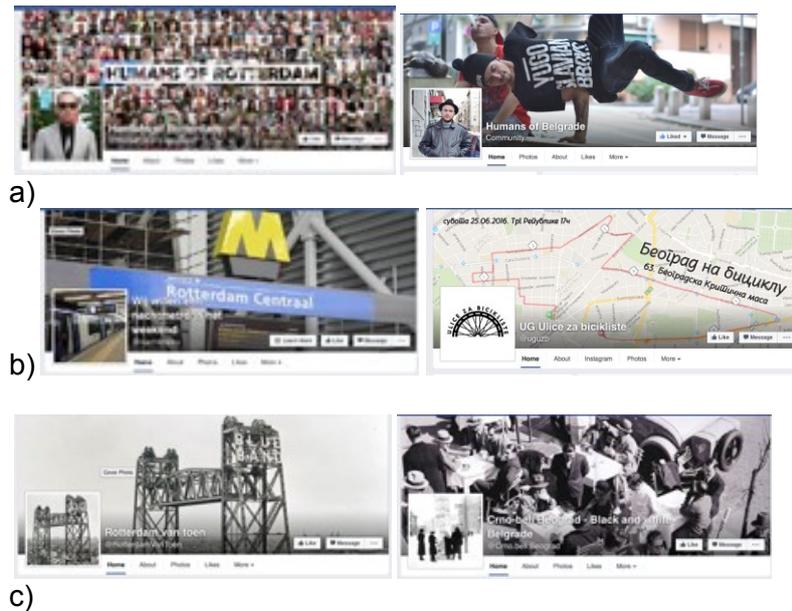


Figure 9: Similar subjects, different cities: a) civic pride b) better public transport solutions c) city's history. Source: Facebook Systematisation: Milena Ivkovic

4. Final conclusions

The pace of quick urbanization that can polarize the citizens and increase the inequality is one of the main civic concerns in the emerging economies. The good news is: with the available technology it is getting easier to talk about it. Comparing Belgrade's underlying currents of criticism, actions and discussion on the several Facebook pages with the Rotterdam ones, there is a clear expression of doubt and skepticism if the city will ever be developed in the "right way". The general feeling among Belgrade's connected citizens is that of 'endangerment'. There is a need to protect the human-scale city from what is perceived as aggressive, profit-driven development. This fear of losing the quality of (communal) life to quick urbanization is very much present. The availability of mobile technology and the benefits of being able to voice your opinion on the social media without being totally visible to the top-down city government is a major driving force behind the ways how urban development has been seen and discussed.

If we take the example of Rotterdam, the discussion among citizens is not less critical, but the focus is on staying at the "right side of development" and moving towards innovative ways of preserving and upgrading the existing quality. The municipal government is ready to show less of its governmental and executive side, and tries to act as a catalyst to civic processes enabled by the technology.

What can urban planners learn from these few quick conclusions? First, the connected citizens are here to stay, regardless of the current state of urban development, and are using the available technologies more and more to express their opinions and criticism. But also to organize themselves when it comes to solving problematic issues. Secondly, municipalities and planning authorities should not be passive beacons of delivering the information about how and when the city will develop. Instead, they should try to clearly connect different aspects of physical planning with civic causes, and use digital communication channels to

create approachable stories which citizens can understand and get inspired by. Some future research could focus more on these tactics, since urban planning is getting closer then ever to be mixed with other disciplines, such as PR and content management and how to reach the future citizens.

Endnotes

- 1) Serious games: A new route to training, fun and cultural change
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www.sagepublications.com

Housewives Roles in House Extension Strategy A Case Study in High Density Urban Kampung Cikini, Jakarta, Indonesia

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Abstract The matter of urbanization may not about the percentage itself but the rapid growth of economy which going together with the rapid growth of population. High density housing is growing rapidly both in the central urban area and in the suburban area. Located at the strategic-middle of Central Jakarta, high density urban Kampung Cikini has been transformed in several times and has survived since Colonial era. In a busy area with limited land availability, minimum space with overlay spatial usage of different actors has become one strong characteristic at Kampung Cikini. It encourages local people to be more flexible in tackling the spatial usage issue and to modify their houses, particularly housewives who spend their time mostly inside kampung. By using the perspective of housewives, the focus of this paper is to analyze the house extension formed by housewives in relation to support their activities in a high density urban kampung. This analysis is based on the assumption that the activities of housewives influence the space and land claiming in relation with negotiation to have house extension which could be permanent and non-permanent characteristics. The research was done by using mapping of house extension characteristic at three of six blocks observed (100 houses) and focus group discussion with a group of housewives, also with detail interview and following the daily activities of three housewives. Permanent house extension is mainly formed in houses which in-directly connected from city's main access, stronger sense of belonging with easy negotiation among neighbor housewives while non-permanent house extension is directly connected to the city's main access and formed on the agreement with local leader which based on regulation from the government. As part of housewife's support system, house extension strategy has been increasing the productivity both in social and economy aspects. Hence, house extension strategy by housewives may contribute in kampung spatial planning and may be considered as part of primary aspects in reading house extension strategy and space claiming activity particularly in high density urban kampung context as part of urban planning.

Keywords: kampung, housewives, house extension, Jakarta

1. Introduction

Kampung and survival issue in high density area like Jakarta, one of megacities in the world is not only about how to build more spaces or more houses to be lived in. It is also about how dynamically local people and community manage their living environment such as informal economic activities, community activities, and other intangible values. Hence, the approach of spatial modification is always developed together with the current needs. Those organic and dynamic value have become the main characteristic of kampung.

Urbanization is inevitable and today 54.5% of the world is urbanized. Kampung Cikini is one of many kampung in Jakarta which has been survived and transformed for several times and period in facing urbanization. In case of Jakarta, it might be slightly different between slum and kampung since kampungs were the original identity and norm in Jakarta, but as urbanization

goes by, they started to become the leftover regions, also Kampung Cikini which is located in Central Jakarta. In fact, although kampung is considered as a place with low environmental and infrastructure quality, it provides good atmosphere and flexible space for everyone who moves to Jakarta and wants to live in, particularly people with low income. In kampung, community could creatively modify their spaces depending on both physical needs such as space for selling activities and non-physical needs such as social need, the need to gather with community. Hence, some programs to reactivate and to improve kampung as part of urban planning are considered as one of possible solutions in facing urbanization.

Idea of working with community in kampung, both in spatial planning and research has become a concern in government, academic institution, until independent institution such as non-profit organization and or non-governmental organization. Some different approaches by different parties have been implemented in kampung. One approach which is having direct collaboration with specific actor in kampung improvement as a strategy to build more sustainable research and spatial planning has successfully implemented in some programs. In Venezuela, architect Ana Vargas is working together with children to trace and to reclaim public spaces in slum and propose the findings to the local institutions. In Yogyakarta, Arkom Jogja is working together with housewives to renovate houses in kampung by collecting money with arisan system to improve the neighbourhood of kampung. Their proposal is also supported by Yogyakarta government.

It is a good timing for us to do more with community and local institutions and later propose micro-scale interventions. To collaborate with specific actor like children or housewives is one consideration in specific implementation and micro scale interventions by using the research findings.

2. House Extension Issue and Housewives Roles in High Density Urban Kampung

2.1. House Extension Issue

In a high density urban kampung, minimum space with overlay spatial usage of different actors has become one strong characteristic at kampung. It encourages local people to be more flexible in tackling the spatial usage issue and to modify their houses and neighbourhood area.

In kampung, the moment when we step outside of the house, we are already in the shared space. No rush and slow flow is happening outside the houses in kampung. Shared spaces could be various in terms of spatial usage and the location in the neighbourhood. According to Budi Prayitno, Indonesian architect and professor of Gadjah Mada University who has done several researches in Indonesian kampung, alley and pocket space are two shared spaces in vernacular kampung. Alley is used as access but it is more like a shared space which give the residents opportunities to meet each other. Pocket space is used for both social activities and community's informal activities involving the kampung retails and services. Those shared spaces are the physical skeleton but those are actually produced by activities of the local people or community as the extension activities from their houses. Thus I would like to see those shared spaces in a perspective of consider them as part of house extension strategy in kampung.

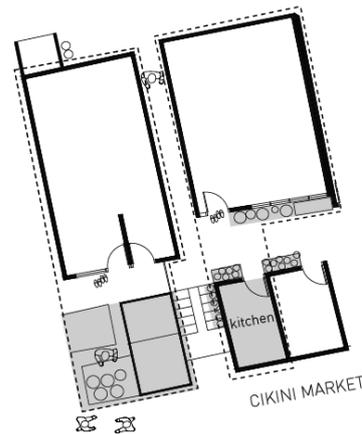


Figure 1. Example of house extension strategy at Kampung Cikini, Jakarta at RT 6

Activities at the shared spaces in kampung, according to Prayitno, could be divided into five: passing by/circulating through (*go space*), opening small business activities, playing with children, and receiving guests (*do space*), relaxing, playing cards or chess (*sit space*), storing, drying clothes, parking bicycles or motorcycles (*place space*), having meetings, wedding ceremony, funeral ceremony and religious rites (*occur space*). These division will support this research in seeing the relationship between activities, spatial usage and shared spaces (house extension) in kampung.

Those house extension strategies and activities could be different based on where they are. In this research, I will use the alley as parameter of site categorization. Prayitno used the terms: gate, outer alley, inner alley, and riverside alley based on where the alley is located. Alley as parameter of site categorization will support activities and spatial mapping of community at kampung since alley is considered as most common spaces. Adapting to the research site condition, I am using the same terms and add the width of the each alley as parameter for mapping: *outer alley* which is directly connected to the main alley-street (>120 cm & could accommodate 2 motorcycle), *inner alley* which is indirectly connected to the main alley-street (<120 cm & could accommodate maximum 1 motorcycle), and *riverside alley* which is located around and on riverside.

By having those basic ideas and research limitations I expect the outcome of seeing how actually the significance of house extension strategy in supporting daily activities in kampung. In one side, house extension which is located in public area is not permitted but in another perspective it could be an opportunity to see how it can be a strategy in fulfill the spatial, socio-economic, and physical environmental needs of community. The pattern of house extension at kampung based on criterias and parameters mentioned above will respond the first research question: How are the spatial usage and activities of community, particularly housewives, affect in house extension strategy?

2.2. Housewives Roles

In kampung, housewives are having more chances to execute spatial ideas especially related to their urgency in the needs of socio-economic activities. As they are mostly spending their time inside kampung, it is an opportunity to see the connection between house extension strategy and the activities which happen in kampung in a perspective of housewives. In this research, housewives roles could be based on their occupation and the spatial characteristics of their activities take place at. Seeing the detail and frequency of their activities both in collective scale and individual scale will support this research in reading the direction of

housewives roles in spatial planning. The information of housewives role and their activities will respond the second research question: How the roles of the housewives influence their decision in house extension and support planning policy?

3. Research Purposes and Methods

This research is aimed to respond the urgency and alternatives of having more specific planning policy in kampung as one possible solution in facing urbanization and as the norm of living in high density area like Jakarta. By using the perspective of housewives who spend their time mostly on alley and inside kampung, the analysis is based on the assumption that the activities and roles of housewives influence the spatial usage and local planning policy in relation with negotiation to implement house extension strategy, in this case is house extension at the neighborhood.

The research steps are as follows:

1. Observation: Similar Research Project

Observation of similar research project is important to define the position and contribution of this research. By joining activities of community architecture in Yogyakarta (Arkorn Jogja) and reading literature about community architecture in Venezuela (Trazando Espacios) by Ana Cristina Vargas, this research try to adapt the method and activities to be implemented in Kampung Cikini, Jakarta, Indonesia.

2. Reading: Site Situation

The reading process was mainly by having conversation and recording time lapse video. The same method was done by William H. Whyte in reading the social life of small urban spaces in 1979. This method is to see the network activities in relation with time.

3. Observation: Physical and Non-Physical Characteristics of Site

Observation was done by measurement of the house extension area and join local activities particularly housewives activities, both individual and collective.

4. Discussion

This step is to share and to re-confirm the findings and thinking to the community. With housewives, together we create ideas to be elaborated in collaboration and replication step.

5. Collaboration and Replication (further step)

After having enough data the next step is collaboration in thinking about micro-scale interventions that can be done with housewives community. The first collaboration is started in one most possible site among three sites. If the first collaboration is considered as succeed one, the replication will slowly started with the other site.

Step 1 until 3 are done in back and forth process since there are always new findings after discussion with community and sometimes it will need more site reading and observation to compile the final findings. The research process itself go through dynamic process that depends on each step to validate the next step.

The research was done by using mapping of house extension characteristic in three main blocks of six blocks observed (100 houses) and focus group discussion with a group of housewives, also with detail interview and following the daily activities of three housewives. Spatial relationship in house extension production will be expected as research findings. In this paper, the step is done until step 4, discussion and mapping with housewives. But at last, the research findings is expected to be the references for having micro scale interventions with housewives in Kampung Cikini. The replication or repetition of micro scale interventions will be implemented if the prototype can be succeed.

4. Former Community-based Research-Planning Activities and Positioning of Current Research

Before starting the research, discussion with and literature study about community-based researcher and planner are held to support the preliminary knowledge for further research.

4.1. Having Discussion and Joining Activity in Arkom Jogja

As a non-governmental organization which has been existed for more than 10 years, Arkom has been facing more challenges in dealing with architecture and community issue. Arkom is "Arsitek Komunitas" which means Community Architect. Arkom Jogja has been collaborating with 33 kampung in Yogyakarta, Indonesia, along Winongo riverside and Gajahwong riverside from 3 years ago. One interesting story is about the idea of saving by collecting. Every day housewives (usually 1 group=9/10 housewives) in those kampung collect 2000 rupiah (1/7 US dollar) and every year the collected money will be divided into 3 housewives to improve some parts of their houses based on the needs. The next year the other 3 housewives, and the next year other 3 housewives. In Indonesia it is quite similar with the idea of "arisan", a group of people gather and collect money but the collected money will be rolled based on lottery. In Arkom Jogja (Kalijawi community) case, it is not based on lottery but based on the renovation priority. By thinking "rather than spend 2000 rupiah a day for tobacco, it will be better to save 2000 a day for housing and environmental improvement", this system has been implemented for more than 2 years.



Figure 2. Joining activity: Kampung mapping with housewives at Kampung Baciro

4.2. Literature Study: Tracing Public Space, Venezuela, Latin America

Ana Cristina Vargas is an architect and academician in Venezuela. She has community architecture projects in several countries like US, Chili, India, and Venezuela from few years ago. Her idea is about collaboration with children to trace and to reclaim their potential public space by having survey, design process, and micro scale intervention in several points of public spaces in their living environmental area. The engagement with community is considered as the best way to reborn community with supportive sense of belonging of their living spaces.



Figure 3. Tracing Public Space with community initiated by Ana Vargas

This research is adapting the way of those activities Arkom Jogja in doing participatory mapping and discussion with housewives and inspired by Ana Vargas in collaborating with community in micro scale interventions. The position of this research will be one starting point preliminary project at Kampung Cikini concerning on working with housewives in research and spatial planning.

5. Local Administrative System and Current State of The Study Area: Kampung Cikini, Central Jakarta, D I Jakarta, Indonesia

In Indonesia, there is local administrative system named RW, below urban sub-district which consists of a number of RTs. This system allows local people to manage their neighbourhood in smaller scale. The policy which could be decided by head of RW usually based on negotiation among the neighbourhood. The system make some policies become more flexible and dynamic. It is open the opportunity to community to be more cooperative.

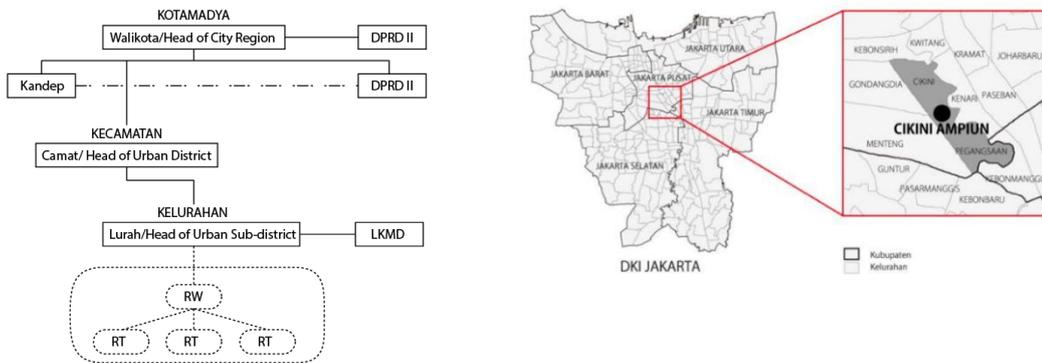


Figure 4. Local administrative system in Indonesia left , Location of Cikini in DKI Jakarta right

Cikini is located in Pegangsaan administrative village (Kelurahan Pegangsaan), Menteng district (Kecamatan Menteng), Jakarta Pusat, DKI Jakarta. The area of Pegangsaan is about 0.82 km²: 2258 households, 66 RTs, and 5 RWs. The research was conducted in RW 01. Kampung Cikini consists of eleven RTs and the area is about 40,000 m² with population 3,200 people. Residential floor area in Cikini is 32,000 m² and the density is about 800 people/ha. The land owner of Cikini is state, specifically National Railways Company, but in 1950s-1960s some local people claimed the land as their own land. Based on annual research and survey, in 2011, 268 RW (sub-region) had improved but 132 RW got worse and in 2013, 136 RW had improved but 23 RW got worse (BPS, 2013). Kampung Cikini is located close to the economical centre of Jakarta. High-rise buildings are being constructed right next to the houses in Kampung Cikini. The atmosphere of Kampung Cikini is so warm since the socialization among community is going really well.

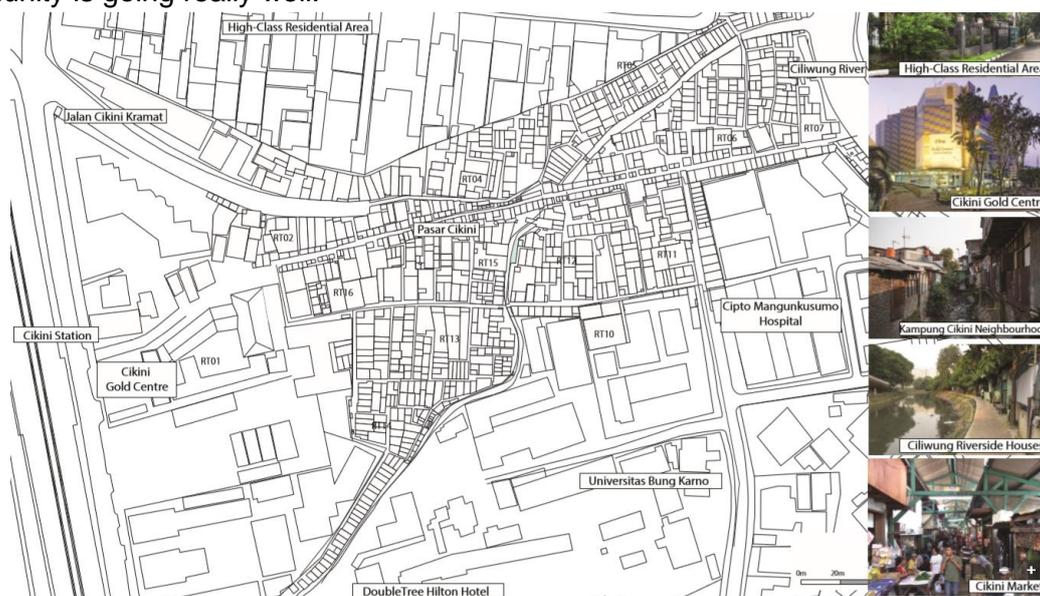


Figure . Block Plan of Kampung Cikini

6. Housewives Roles and House Extension Pattern Findings

In this research, the interview was done with housewives at six blocks but the detail mapping was done at three of those six blocks. As mentioned before, the criteria is: *outer alley* which is directly connected to the main alley-street (>120 cm & could accommodate 2 motorcycle), *inner alley* which is indirectly connected to the main alley-street (<120 cm & could accommodate maximum 1 motorcycle), and *riverside alley* which is located around and on riverside.



Figure 6. Study area of research

Among 104 housewives interviewed, 49% are housewives, 6% are employee, 41 % are doing informal income generating activities, and 4% are doing full-time family welfare programme. Here are the diagram of housewives number in each activity at Kampung Cikini:

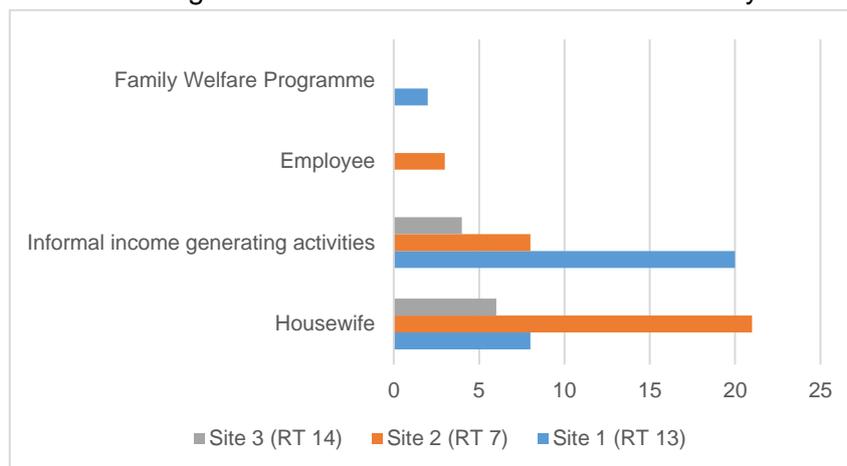


Diagram 1. Daily Activities of Housewives at Kampung Cikini in number

Mappings were done with housewives group or representatives of each block. The tools are printed base map, coloring pencil, and marker with different colors. Firstly the printed base map is posted on the wall. Then, the housewives are gathered and discuss about how we will

map the block. The goal is to figure out how they use spaces for activities, how they extend their house into house extension, and how they define their shared spaces.



Figure 7. Mapping with a group of housewives at Kampung Cikini

Detail usage of spaces is mapped by following the daily activity of specific actor in each block. From early morning until night, I followed a housewife of each block to see the network of her activities and the relation with the spatial usage.



Figure 8. Following daily activities of housewives at Kampung Cikini

The mappings done by housewives are summarized into digital drawings. And here are the drawings showing pattern of activities and house extension characteristics in each alley:

House extension in outer alley SITE 1: RT 13



- Dominated by do space and sit space
- The house extension is claimed and produced by more removable materials (demolition prevention)
- In many cases, small mortar seating spaces is made in front of houses
- The agreement with local government is importantly needed before making the extension
- The social activities is more routine especially the informal economic activity
- Housewives are coming from various houses, include who are living outside the block/neighborhood

House extension in inner alley SITE 2: RT 0



- Dominated by place space. The extension sometimes happens inside neighbor's house
- In few cases, small mortar seating spaces is made in front of houses
- There is no agreement needed since mainly the extension is just putting stuffs in front of houses (garbage, pail, etc)
- The social activities are more located in the edge of alley (seating space, MCK, small open space) and more about leisure and chatting
- Housewives are mostly coming from the same block/neighborhood

House extension in riverside alley SITE 3: RT 14



- Dominated by go space and sit space. There is place space which actually forbidden by government (but made by removable/light materials)
- Mortar border is made by government but used as seating/gathering space
- To install something in front of the house is difficult since the regulation about riverside space is quite strict.
- The social activities is located in those mortar border
- Housewives live around feel comfortable to do everything outside (like preparing cooking materials, etc)

7. Housewives Roles in House Extension Strategy

In this chapter, I would like to discuss about the responds for two main research questions. The main activities or housewives are depends on the opportunity to make a living. In outer alley area, housewives have more opportunity in having informal economic activities at the outer alley close to Cikini street. Many houses installed additional mortar in front of their houses to be used as informal economic activity or storage. The consequences, it is more difficult for housewives to deal with the policy and regulation regarding outer alley usage for informal economic. One demolition was held few months ago and housewives had to stop their activities for a while. But with the permission from local leader (RT leader) they could try to start their activities again. In inner alley area, since the area is not so big, housewives prefer to have

communal activities at the edge of the alley and or at RW leader house. Most of housewives are doing full-time housewives with no side job. The house extension is more non-physical such as gathering and doing communal activities at neighbor's house. In riverside area, the house extension is so limited because of the existence of river. Building something above the river is now not permitted so the activities now are more public at riverside. Housewives gather at riverside while doing their daily activities. Two houses are still trying to occupy the area above the river by making kitchen. But since they realize that they could get evicted, they make the house extension with light materials such as wood and zinc. With these three different characteristic, we shall make different approach with different actors.

8. "Claiming by Sharing" as Proposed Policy in Micro Scale Intervention

It may difficult to propose an exact or specific idea, planning, and design in kampung spatial planning. The opinion from different layer will be important to find the most possible alternatives for each site. So in this research, defining agents is the first step before go further into proposing policy. In this research, we propose this division:



Diagram 2. Agents at Kampung Cikini

By looking into mapping and research findings, the policy shall specifically works in every different block/site. But among all sites, there are similar tendency. There are the tendency to share and to claim at the same time. In one side, housewives try to claim their house extension by put or build something outside their houses. On the other side, they are unconsciously share the space like alley, street, and front area of their houses to be used by others, both for communal activity and individual activity. So rather than clearly divide space into public and private, we propose "claiming by sharing" space. One example of explanation diagram of the proposal is as follows:

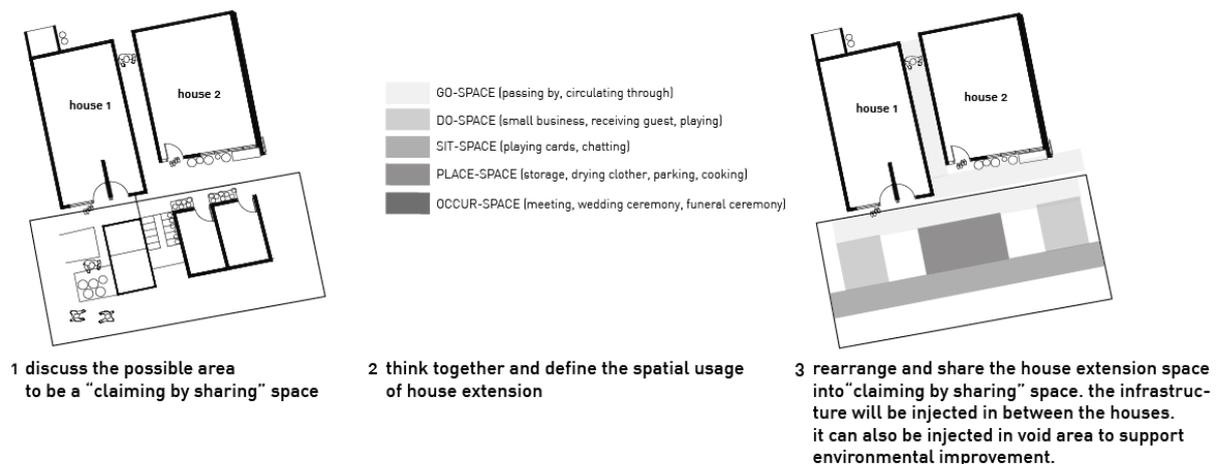


Diagram 3. One example step in "claiming by sharing": improving house extension strategy to support housewives activities, also environmental and infrastructure improvement.

9. Conclusion and Further Research Plan

In high density urban kampung, housewives take part and roles in managing and dealing about spaces. Since they are facing different site and alley characteristics, their approach and strategy in install house extension is different each other. With site and activities and categorization, the research was mapped the relationship between housewives activities and the spatial usage in making house extension. It is also mapped how their spatial usage influence the planning policy. Seeing the number and percentage of occupation type, housewives and informal economic become the main activities of housewives at Kampung Cikini. It influences their decision in house extension strategy.

In outer alley, housewives are taking opportunity to widen their house extension in wide alley that is not always located right in front of their houses. The space claiming activity is more blur and not easily detected among the housewives. But when it comes to the higher level of regulation for the example from government, those housewives need to have more deal and agreement regarding their extension particularly for the informal economic activities. In inner alley, the activities in between of the houses and in front area of the houses are not so crowded. The claiming activity is easily defined by housewives and mostly is about movable stuff which put around their front area of the houses. Most housewives are doing their daily activities inside of their houses and sometimes gather in neighbor's house who own big size of house. In riverside area, the house extension is depending on the situation of the river which is decided by higher level of decision maker such as government or local leader.

Different approach and method in implementing planning and micro scale intervention will be different in each site. But with the same idea in seeing the same tendency in those sites, claiming by sharing could be tested as part of contribution in reorganizing the house extension strategy in high density urban kampung. Working with specific actors in each site will make the planning process more feasible since the perspective is really coming from the insiders. Claiming by sharing is only one kind of approaches which could be tested and implemented before go further in bigger scale space interventions.

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Analysis on Influencing Factor of the Choice on Commercial Facilities for the Elderly Going Shopping on Foot—an Empirical Study of Three Typical Residential Communities in Central Shanghai

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Abstract: Along with China's population aging degree increasing, all kinds of aging problems are increasingly outstanding, the studies aimed at the elderly group's daily activities, individual demand and travel characteristics have become the top priority. Walking is a major trip mode for the elderly, shopping trips occupies a large proportion in their daily trips. So this paper plans to analyze the influencing factors on choice of commercial facility for the elderly going shopping on foot and proposes measures to improve the quality of the elderly going shopping on foot. This study selected the elderly in three typical residential communities in central Shanghai as the objects of survey. The data of the elderly shopping choice, commercial facilities spatial features, the walking path spatial features were collected and processed. This study took the utilization ratio of the commercial facility for the elderly as the dependent variables. A multiple liner regression model was established to discuss the impact of the multiple factors on the choice of commercial facilities for the elderly going shopping on foot. The results leads to the following conclusions: the distance between commercial facilities and community, pedestrian passage width, the number of the intersection, the number of the barrier-free facilities have significant impact on the choice of commercial facilities for the elderly going shopping on foot. However, the scale of business facilities, the green area around the commercial facilities have minor influence on the choice of commercial facilities for the elderly walking to shop. So we can draw the conclusion that the elderly pay more attention to the distance between commercial facilities and community, safety, convenience and comfort in the walking environment than any other factors when they go shopping on foot.

Keywords: The Elderly, Go Shopping on Foot, Utilization Ratio of Commercial facilities, Quality of the Spatial Environment

1. Introduction

At present, the aging of the population aggravates and it brings new challenges to the development of the city and society. China has entered the aging society as early as 2000, Chinese aging population growth rate and the proportion of the old people is more than world level. In Shanghai, household registration population will reach peak about 600 million in 2030 (the sixth census, 2010). With changes in physical condition, the elderly individual needs, daily activities and travel characteristics obviously change. Studies have shown that, walking is the main traffic mode for old people (Huang Jianzhong, 2015). Shopping is an important trip purpose for the elderly, the quality of the shopping trip is an

important factor affecting the quality of elderly people's life (Zheng Zhang, 2009). In a word, walking shopping is very important for the elderly travelling activities. Because of the low mobility that the elderly group has, the choice of commercial facilities are different with other age groups. Through analyzing the spatial factors affecting the aged pedestrian shopping choice of commercial facilities, we will know that elderly people's true demand during the walking shopping activities and finally we put forward measures and suggestions to improve the elderly pedestrian shopping trip quality. In a word, it is of great practical significance to study the influencing factors of the choice on commercial facilities for the elderly to guide the rational development of the urban commercial facilities and the environment of the pedestrian space.

2. literature Review

2.1 Research Method

The study of shopping behavior in the elderly has attracted the attention of researchers in many fields, including geography, marketing, urban planning, and pathology of the elderly. Among them, Behavioral geography is the most commonly used method on studying the elderly shopping behavior. Behavioral geography studies from individuals, describe the individual behavior of the elderly in the urban spatial distribution and analyze relationship between the elderly daily activities and material environment, so as to summarize the activity characteristics of the elderly population. On the methods of studying people's shopping behavior, behavioral geography is divided into "experience behavioral" method and "cognitive behavioral" method. The "cognitive behavior" method is to the study of spatial behavior from the subjective perception of shoppers. The "empirical behavior" method is to analyze the characteristics of the old people's behavior by observing the behavior of the elderly.

2.2 Research conclusion

Western scholars have already begun to pay attention to the old people's shopping behavior since 1980s. Some western scholars' research based on behavioral geography concluded that: the main factors influencing the aged people's decision on commercial facilities are accessibility, the characteristics of the shopping area and the characteristics of the goods. In terms of accessibility, its importance differs from types of goods, but for the elderly consumers' food shopping, the spatial factor is very important. (Smith G. C., 1985) In terms of the characteristics of the shopping area, the elderly consumers regard comfort and convenient as well as the quality of service as important factors, while young people pay more attention to the store's "parking facilities" and "open space" (Smith B. W., 1979) . In terms of the goods characteristics, the elderly consumers consider the level of commodity prices and discounts as the most important factors, which reflects that many old people have limited economic resources and in order to save money they choose stores carefully. (Smith G. C., 1988)

With the arrival of the aging society in China, Chinese scholars have begun to pay attention to the aged people's behavior of walking shopping. Li Changxia's research with

the "cognitive behavior" method shows that there are three factors affecting the elderly decision making on the food shopping. They are the distance from the shopping place, the food price and the number of the food category, There is a low cost dominant tendency. (Li Changxia, 2004). Chai Yanwei's research with the "empirical behavior" method shows that: in China more than 60% of the elderly shopping behavior concentrated in the range of 0.5km. Whether they buy food or buy daily necessities, the daily shopping activities of the elderly are subject to the basic distance decay laws: with the increase of distance from home, the proportion of elderly people's shopping activities gradually decrease. Residential and commercial facilities' richness degree and accessibility directly determine the degree of convergence of the old people's shopping space. By contrast the elderly shopping behavior in Chinese different big cities, they found the elderly shopping space convergence is to the maximum extent in Shanghai.

Although the existing literatures analyze the factors that affecting the decision-making of the elderly shopping, but they are not aiming at walking shopping of the elderly. One part of the elderly make use of public transport to reach commercial facilities. In the choice of commercial facilities, the elderly consider different factors when they go shopping on foot and go shopping by bus. What's more, there are a lot of research on the influence of the elderly social economic characteristics on the choice of commercial facilities, but the study aim at the spatial factors is insufficient. Based on the existing literature, this study intends to investigate and analyze the spatial characteristics of the commercial facilities, such as the spatial characteristics of the commercial facilities, and so on, The purpose is to draw the various influencing spatial factors and their influence on the choice of commercial facilities for the elderly walking shopping. Finally, based on the conclusions of the above research, we put forward some suggestions and spatial measures to improve the quality of the aged people's walking shopping.

3. Research methods and data

3.1 Research methods and research objects

Through the methods of questionnaire and interview, this study selects old people above 60 years in three residential of Shanghai downtown as the researching objects, we acquired the information about their daily walk shopping sites and walking routes through investigating.

The researching area is located in Yangpu District, Shanghai City. It is in the northeast of Anshan Road, northwest of Fuxin Road. Fushun road and Sujiatun road divide this area into three residential areas. (Fig.1—Fig.2). These communities were founded in 1978, most people are long-term residents and more than 60 years old.

The questionnaire survey is mainly divided into 3 parts: the basic information of the elderly, the elderly daily walking shopping sites as well as walking shopping routes. Among them, the basic information of the elderly selects their related social and economic characteristics, including: gender, age, residence time, income; The elderly daily walking shopping site requires the elderly to fill in their most often used commercial facility during their walking shopping; Walking shopping route requires the elderly to mark the line between home and the commercial facilities according to the cognitive map.

Questionnaires were distributed in these three residential communities, we issued 50 questionnaires in each community, and 150 questionnaires were issued in three communities.

Through the method of questionnaire investigation, the elderly daily walking shopping sites and the walking paths to commercial facilities were acquired, we further analysed the spatial characteristics of the pedestrian path and the commercial facilities. Afterward, we took these spatial factors as the independent variables, the use of commercial facilities as the dependent variable. SPSS were used for multiple linear regression analysis to explore the impact of these factors on the choice of commercial facilities for the elderly pedestrian shopping.



Fig.1. Research plot location



Fig.2. Research plot area

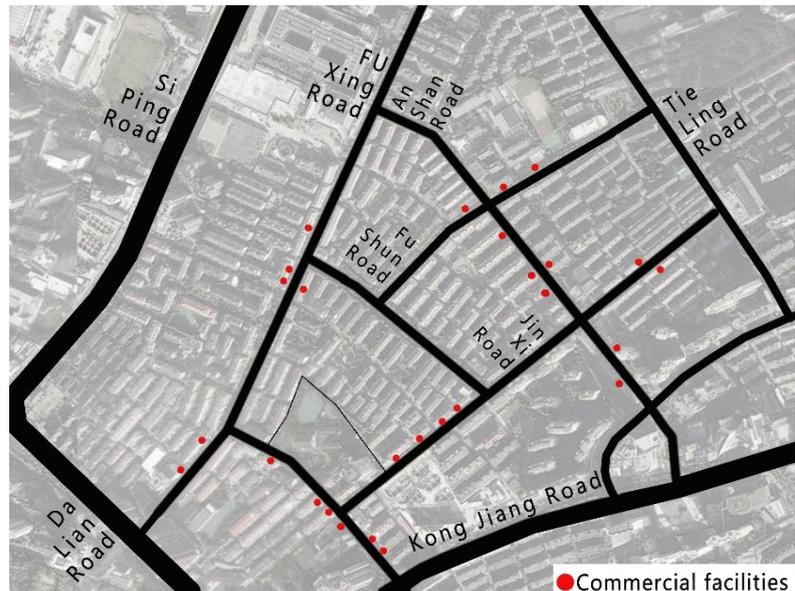


Fig.3. Commercial facilities around the research plot

3.2 Data integration

The integration of these residential communities survey data shows that the average age of the elderly in this study was 68 years old; the average residence time is 8 years, the average monthly income is 2300 yuan. In this survey, the majority of the elderly have been living in this place for a long time, so almost all of them have formed a stable shopping habits. In addition, the research objects were in the middle age of the elderly and had middle level income, so their demand for shopping is representative for the elderly.

The investigation shows that, elderly daily walking shopping places are Liangyou supermarket, Hualian Supermarket, Diya supermarket, Yangpu Fuxin market, Wuyuan discount store, Shuhui greengrocer, a total of 23. Among them, 18% of old people tend to go shopping in Diya supermarket, 14% of elderly people are used to walking to Hualian supermarket to shop, 10% of old people tend to walk to Yangpu Fuxin market to shop.

According to the results of the survey, the spatial characteristics factors of the commercial facilities chosen by old people and pedestrian route of are quantified. Among them, commercial facilities' spatial factors features include the scale of commercial facilities, altitude between indoor and outdoor, outdoor green area, leisure facilities' quantity, Walking

path spatial factors features include: barrier-free facilities' quantity, intersections' quantity, the number of street furniture, width of the pedestrian road, walking road cleanliness, the area of street greenbelt, the number of public service facilities and the parks, and so on. The description of the variables are shown in Table 3.

Variable Type	Factor grouping	Variable	Maximum	Minimum	Mean	Standard deviation	Brief description	
Dependent variable	Using Characteristics of commercial facilities	Commercial facility Utilization ratio (%)	18	0.8	8	4.3	Ratio of the elderly using the commercial facilities	
Independent variable	Spatial Characteristics of commercial facilities	Scale of Commercial facilities (m ²)	2000	80	676	646	Construction area of commercial facilities	
		Spatial environment quality of commercial facilities	Number of recreation facilities	6	0	1.4	2.11	Number of recreational facilities in the interior and peripheral of commercial facilities
			Outdoor greening area (m ²)	6	1	3.1	2.1	Construction of commercial facilities around the area of green
			in & outdoor altitude difference (m)	0.9	0.01	0.102	0.28	Height difference between indoor and outdoor commercial facilities

Tab.3. Variables description

Variable Type	Factors	Variable	Maximum	Minimum	Mean	Standard deviation	Brief description		
Independent variable	Spatial Characteristics of commercial facilities	Length of walking path (m)	350	40	193	121	Walking distance to commercial facilities		
		Walking path space environment quality	Safety	Number of barrier-free facilities	0.08	0.01	0.02	0.01	Number of barrier free facilities within the pedestrian path
				Number of ways intersection	4	0	1.1	0.5	Number of road crossings within pedestrian paths
			Comfort	Number of street furniture	0.1	0	0.03	0.04	Number of street furniture within the pedestrian path
				Walking road width (m)	3.5	2.5	3	0.3	The average width of pedestrian path
			Beauty	Cleanliness (%)	0.95	0.82	0.88	0.05	The proportion of clean road.
				Street green area (m ² /m)	2.5	1	1.7	0.7	Green area of the unit length within walking path
			Convenience	Number of public service facilities	9	2	5.8	3.96	Number of public service facilities in the walking path and in the extension section
				The number of small garden / Park	4	0	1.4	1.43	the number of small garden / park in the walking path and extension sections

Tab.3. Variables description

4. Modeling analysis

First in order to improve the accuracy of the model results, Min-Max standardization of various types of factor data. Then, multiple linear regression analysis was performed using SPSS (table 4- table 5). The correlation coefficient of regression equation was 0.935, and the confidence level of 99% was satisfied, which indicated that the regression equation could describe the relationship between the utilization ratio and the factors of the commercial facilities.

From table 4, table 5 shows that: (1) in the 99% confidence interval, walk line length, walk line intersection number, walk the road width, no obstacle facilities number, street furniture such as the number of factors significantly affected the elderly pedestrian shopping choice of commercial facilities; (2) if reduced to 90% confidence interval, increased walking path in the park, small garden of the number, the number of public service facilities, commercial facilities, indoor and outdoor elevation of three factors for the elderly pedestrian shopping choice of commercial facilities significantly; (3) In the 95% confidence interval, some of the factors that are usually considered to have a significant impact on the choice of commercial facilities for the elderly have no significant impact on the elderly walking shopping choice of commercial facilities, Such as the size of commercial facilities, the number of recreational facilities, etc.

R	R ²	Adjusted R ²	Sig
0.935	0.875	0.870	0.000

Tab.3. Model summary

Type	Factor	Variable	coefficient	t	Sig		
Independent variable	Spatial Characteristics of commercial facilities	Scale of Commercial facilities (m ²)		0.345	0.329	0.209	
		Spatial environment quality of commercial facilities	Comfort	Number of recreation facilities	0.653	0.534	0.357
	beauty		Outdoor greening area (m ²)	0.412	0.219	0.287	
	convenience		in & outdoor altitude difference (m)	-2.329	-1.583	0.056	
	Spatial Characteristics of commercial facilities	Length of walking path (m)		-8.239	-6.253	0.000	
		Walking path space	safety	Number of barrier free facilities	4.129	2.451	0.003
				Number of ways intersection	-6.688	-5.008	0.019
		Walking path space	comfort	Number of street furniture	-5.125	-1.164	0.043
				Walking road width	5.143	0.437	0.062
		Walking path space	beauty	Cleanliness (%)	0.235	0.106	0.421
				Street green area (m ² /m)	0.167	0.092	0.352
		Walking path space	Convenience	Number of public service facilities	2.634	2.156	0.084
	The number of small garden			3.527	2.764	0.069	
	constant			-11.22	1.664	0.001	

Tab.3. Results of multiple linear regression

5. Conclusions and discussion

5.1 significant impact factor discussion

(1) The length of the walking shopping path is the most prominent influence on the choice of commercial facilities for the elderly, and the regression coefficient is -8.239, which is higher than all other factors. Thus the main factor affecting the elderly choice of commercial facilities is the distance between commercial facilities and the starting place, the elderly walk shopping trip is short distance based. The preliminary investigation results are in good agreement, the most commonly used commercial facility by the elderly pedestrian is Diya supermarket which is nearest from the community.

(2) The number of intersections and barrier-free facilities in the pedestrian path have very important influence on the choice of commercial facilities for the elderly. The regression coefficient of the former is -6.688, that is, the more number of intersections in the path of commercial facilities, the lower probability that the older people choose the commercial facilities. The latter's regression coefficient is 4.129, the more number of barrier-free facilities in the path to commercial facilities, the greater probability that older people use the commercial facilities. It is concluded that the elderly consider the security as a very important factor in the choice of commercial facilities.

(3) The number of street furniture and the width of the pedestrian pavement have a significant impact on the elderly people's choice of commercial facilities. The regression coefficients of the two were -5.125, 5.143. The more number of street furniture and the wider width of the road, the greater the probability of the elderly to choose the business facilities. This is due to the need to stop during the elderly walking. They often need rest or contact with acquaintances during walking shopping. The street furniture in walking path and a wide pedestrian road provide adequate space for the elderly to do these activities.

(4) The number of public service facilities and small park garden in the walking shopping path has certain influence for the elderly. The more number of small garden and public service facilities, the greater probability that older people choose the commercial facilities. Because some elderly people's leisure travel, medical travel and shopping trip is at the same time, they often complete their shopping activities during going to the hospital, park, or returning from this places.

In the course of the investigation we found that Sujiatun road has the largest number of the small garden, street furniture, no obstacle facilities and walking road width is largest, street space environment quality is the best. Old people often walk through Sujiatun Road to commercial facilities, and do recreational activities in the small gardens on the sides of Sujiatun Road

(5) Indoor and outdoor altitude difference have a certain impact on the elderly to choose facilities. The factors of regression coefficient is -2.329, the greater the elevation of indoor and outdoor commercial facilities, the smaller probability that old people choose the probability of commercial facilities. Because when the elderly make use of commercial facilities, they take into account into account the convenience of entering the room, if the height difference inside and outside the room is large, it's inconvenient for the elderly to use the commercial facilities.

5.2 Discussion on the influencing factors of non-significant

(1) The scale of commercial facilities does not significantly affect the choice of commercial facilities for the elderly walking shopping. If old people walk to a large scale commercial facilities, they are more concerned about safety, comfort and convenience of walking path connected with the commercial facilities and home.

(2) The number of recreational facilities in commercial facilities does not significantly affect the choice of commercial facilities for the elderly. Survey found that old people generally chose to use leisure facilities in the small garden or park which has good environment. However, they scarcely use leisure facilities in commercial facilities because of the bad environment. In a word, the number of recreational facilities is not a very important factor in the choice of commercial facilities for older people.

(3) The aesthetic factors in the space environment quality has a minor influence on the choice of commercial facilities for the elderly. Compared with the aesthetic factors in the quality of spatial environment, the security, comfort and convenience factors are closely related to the actual needs of the elderly which can affect the choice of commercial facilities.

5.3 Suggestion of measures

Based on the conclusions drawn from the above analysis, in order to improve the quality of the elderly walking shopping, this study puts forward the corresponding measures.

(1) Commercial facilities for the elderly daily used, such as grocery, fruit shop and supermarket should be equipped around the community. The elderly should be able to buy all kinds of daily necessities in the short distance travel range (a range of 500m). (2) A sufficient number of street furniture should be set up on the side of street, and the width of the pedestrian road should be ensured, in that way the needs of the elderly rest and communicate with acquaintances during walking shopping trip can meet. (3) A sufficient number of non-barrier facilities should be set up in the walking path and commercial facilities, in order to enhance the safety of the elderly daily shopping. (4) The intersection in the elderly walking shopping path should receive safety treatment. For example, the intersection signal lamp should consider the elderly walking speed and extend the time for the elderly. What's more, the width of the intersection crosswalks should be increased. Calming measures should be adopted if necessary, such as setting the deceleration zone, reducing the speed of cars, and improving safety of the elderly walking through the intersection. (5) The link between the park, hospital and the commercial facilities should be strengthened. So that the elderly pedestrian can easily reach the park, hospital when they go shopping on foot.

Walking shopping is one of the most frequent activities in the elderly daily life. Therefore, it is necessary to take the above measures to improve the spatial environment of the commercial facilities as well as walking path, and gradually improve the quality of the elderly pedestrian shopping trip.

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Track 3
Envisaging planning theory and practice for the
next decades



Heterotopia and Equilibrium of Contested Urban Space: An Investigation of an Accommodation-Assimilation Mechanism

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Abstract

The cities in our generation are marked by the presence of discontinuous, highly contested urban spaces and extremely mixed population. Growing urban heterogeneity brings new urban materials for future development, as well as the question of how we can understand the space produced in this changing scenario and how the space itself adapts to multiple urban changes. In this article, we propose that the concept of heterotopia can be applied to understand such unsettling space produced within shifting urban paradigms, and through a mechanism of accommodation-assimilation, heterotopia has the ability to adapt to turmoils and changes. We use Milan Chinatown as an example to show how heterotopia can be used as an analytical tool to understand the transformation of urban space and the possibility this point of view offers to future planning practice.

1. The problem of heterogeneity

Traditional urban space has been transformed from continuity to fragments, and the new space created is often self-centred without a clear overall logic, due to the transformation of production paradigm from a massive production system to a more flexible and customised one as well as the new development aspirations. At the same time, the massive population flows in recent decades further add to the social heterogeneity of space. Different populations make use of space in their own ways, creating a variety of urban landscapes that either coexist or conflict with each other. The idea of this changing spatial and social configurations is further expressed in the changing conceptual urban models, from the concentric zone model and sector model put forward by Burgess and Hoyt that respectively represent the city as formed by centre and edge, to the different expressions such as postmodern global metropolis, cosmopolis, post-metropolis and so on, used by Soja to describe the fact that cities are becoming entities that are physically and socially fragmented instead of those with single centres (Knox and Pinch 2006). These shifting paradigms suggest, on the one hand, the ever-growing presence of heterogeneity, and on the other hand, the fact that contemporary urban space is more prone to changes due to its unstable structure. An interesting inquiry is how urban space is produced through multiple transformations and how space survives various changes but still maintains a certain level of consistency. In this article, we propose we could apply the concept of heterotopia that has been developed by many scholars in different fields as an analytical tool to understand the mechanism of adaptive urban space. Before entering the discussion of the idea of heterotopia and the adaptation mechanism, we will first look at Chinatown in Milan as an example of an urban space that emerges within shifting physical environment and social relations and constantly adapts itself to new urban elements. The choice of case study might suggest an attention to ethnical issues, but this is by no means the focus of this article. We primarily look at the area as a space of constant changes and adaptations which has been given little

attention. Therefore in the case study, the immigration issues will not be dealt with in depth. Alternatively, we will try to provide a detailed but selective account of its history to have an idea of the entire development process of the district and how it has adapted itself to many changes throughout its history. With an idea of the case in mind, we will look into the discourse of heterotopia in changing contexts, and examine how this analytical tool can be used to explain particular aspects of urban development.

2. Milan Chinatown: a case of contested urban space

The so-called Chinatown in Milan, also known as Canonica-Sarpi district, is located northwest to the historic centre of Milan, close to Sempione Park (Figure 1). Unlike many other Chinatowns in cities around the world that have become famous tourist attractions, Milan Chinatown lacks this publicity, and indeed it lacks genuinely ethnic features, except for the prevalence of shop signs in Chinese and the presence of more Asian, especially Chinese people compared to other parts of the city. The entire area is composed of typical Milanese multi-storey buildings, with more than ninety percent of the residents here being Italian.



Figure 1 Milan Chinatown as indicated on Google map
Source: <https://www.google.it/maps/place/Chinatown>

Today the Canonica-Sarpi district centres around the main road, Via Paolo Sarpi, where most of the activities are concentrated today, but the district originally sprang from its west border, Via Luigi Canonica, which was once called Borgo degli Ortolani, literally meaning Village of Green Grocers. The road had a long history, and had served as a major passage for trade and commerce within the rural setting until the eighteenth century (Figure 2). Since the second half of the nineteenth century the city of Milan experienced a series of urbanisation outside the city wall, and already at the beginning of the twentieth century, the district had become part of the dense urban fabric with service networks and industrial production facilities (Figure 3). With regard to building typology, since the Middle Ages the buildings here had been arranged to face the street and the rectangular plots for agricultural production had been put at the back (Figure 4). The upper floors of the buildings were used as residences, while the ground floor housed small workshops for handicrafts and trades related to cultivation (Bricocoli and Savoldi 2010). In the twentieth, the area had been established as a major business district, and a new housing typology, “house to rent” (casa a pigione) was developed. This typology was characterised by multi-storey buildings with facade facing the street and inner courtyards (Figure 5). Similar to the traditional type of housing, the ground floor was used for shops and other commercial activities, while the upper floors housed residents of various social classes (ibid).

Chinese people and the local Italian residents. The presence of the Chinese community, quite unexpectedly, helped preserve the original socio-economic organisation of the district, which was characterised by the coexistence of workplaces and residences, during post-war real estate boom (Bricocoli and Savoldi 2010)(Figure 6). Since the late 1980s, the third phase started. The feature of this period is the fast growing of wholesale activities, although the immigrants are also engaged in other activities. The explosion of wholesale activities was closely connected to the expansion of Chinese foreign trades, as well as an industrial decline in the Italian context. Wholesale stores, especially those of clothing, boomed in Canonica-Sarpi district.

Before this boom of wholesale business, the district has always remained peaceful for the Chinese are known as being quiet neighbours. Since the beginning of the twenty-first century, huge spatial and functional impact of wholesale business started to disturb the neighbourhood (Figure 7). Because the interior spaces of Chinese shops are limited for wholesale business, Chinese business people sometimes directly put the stocks on the streets that are old and narrow, and more garbage like cardboards for wrapping, have appeared. Besides, the logistic requirements of the wholesale business bring more trucks and vans than usual to the Canonica-Sarpi district and the surrounding neighbourhoods, which is considered as a serious degradation of the local environment by Italian residents. The new but more influential type of trade quickly expands unstoppably, occupying the public space, the sidewalks and intersections. The wholesale stores keep replacing the existing trades, reducing the diversity of the neighbourhood. These conflicts, fuelled by the political notion of a “Chinese invasion”, has been used by the public authorities to control the Chinese trades in this area. The trucks and vans used for delivering, loading and unloading were strictly monitored and sanctioned if they did not abide by some strict rules. The Chinese traders, to deal with the situation, started using trolleys and bicycles with luggage rack to deliver goods from the surrounding neighbourhoods to their shops (Figure 8). When these activities became also closely monitored, they even started to carry the packages to the shops on their backs.

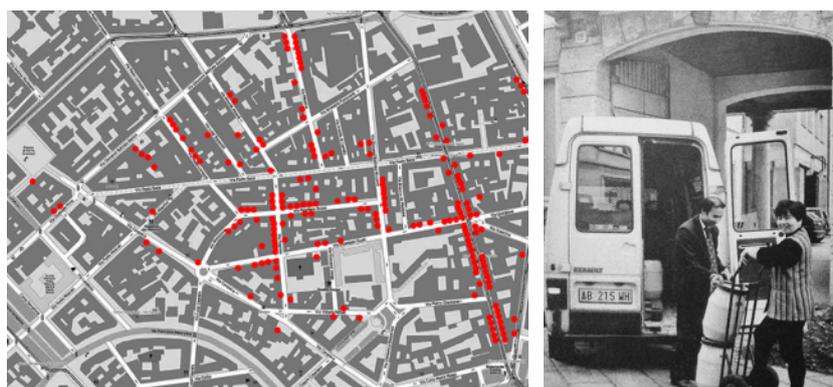


Figure 7 (left) The distribution of wholesale business, 2001

Source: adapted from Cologna, D. (2002). (ed) “La Cina sotto casa. Convivenza e conflitti tra cinesi e italiani in due quartieri di Milano”

Figure 8 (right) Chinese merchants and their trolleys

Source: Farina, P. etc. (1997). “Cina a Milano. Famiglie, ambienti e lavori della popolazione cinese a Milano”

Tensions kept accumulating and finally broke out in the form of a riot in April 2007. According to the news reports, hundreds of Chinese people demonstrated in the streets, overturning cars. The incident started from a parking fine given by the policemen to a Chinese trader, and during this event, other businessmen joined to support their countryman. The dispute soon turned into a big turmoil. Following the riot, in November 2008, the district became one of the few Limited Traffic Zone (ZTL) in Milan. Under the regulations of ZTL the district was only open to residents' cars, excluding taxis and motorcycles, and limiting the time allowed to transport goods. Then, starting from January 2010, a regeneration project aimed to pedestrianise and beautify the area by redesigning the roads and facilities (Figure 9). The redevelopment project was designed to create new space for pedestrians, commerce and communities, using materials, greenery, street furniture and lighting. The roads have been redesigned into three sections, green space has been increased by planting more trees and a system of "green margins" clearly demarcated authorised traffic and pedestrian activities.

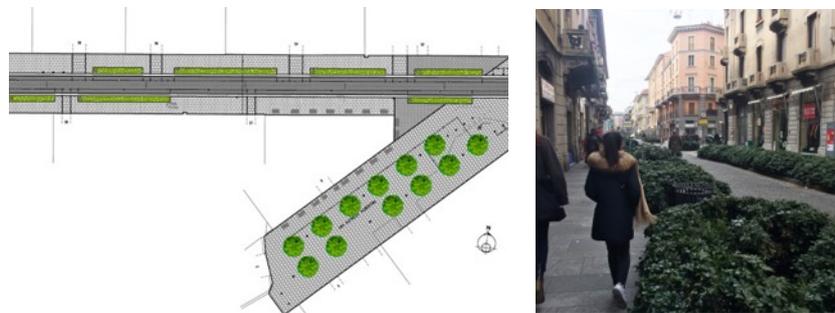


Figure 9 Plan of the redevelopment and the current streetscape
Source: <http://www.metropolitanamilanese.it/>; photo by author

The transformation of Chinatown in recent year, including the establishment of ZTL and the pedestrianisation of the street has greatly changed the lives of both the traders and the residents, the Italian people and the Chinese people alike. Despite the efforts from the municipality to regulate even eliminate the wholesale businesses, trolleys and bikes for delivering goods are everywhere to be seen, and piles of goods are still piling up on the pedestrian walks (Figure 10). For most of the Chinese traders, these regeneration schemes that target at the loading and unloading of goods cause great inconvenience for their business. Local Italian population, on the other hand, are divided into two groups with regard to their opinions on the establishment of ZTL and the pedestrianisation. The residents welcome the ideas, embracing them as a step to regenerating a more liveable environment. But the Italian traders have reservations about these decisions, because for them, the regulations also create difficulties in goods delivering.



Figure 10 bicycles, trolleys and goods
Source: photo by author

3. Heterotopia: a space of adaptation

In the case above, we try to bring to light an urban space that is seldom noticed but nonetheless has gone through many transformations throughout the history. In the following sections, we will analyse how it adapts to various changes through the lens of heterotopia. But first we will briefly trace the development of the concept of heterotopia itself, before developing it as a dual mechanism of assimilation and accommodation.

3.1 *Heterotopia revisited*

"Heterotopia" combines "hetero", meaning another and different, with "topo", meaning place. The concept was originally used in medical contexts, meaning "misplacement or displacement, as of an organ" or "the formation of tissue in a part where its presence is abnormal", indicating the condition of a normal tissue growing in an unexpected way in unexpected places. This displacement, however, does not influence the functional performance and development of the entire organism (Sohn 2008). Foucault brought this term to the attention of architecture and urban studies but it has remained a source of confusion and debate since. In his elaboration, the concept indicated institutions and spaces that interrupt and contradict the continuity and normality of ordinary everyday space (Dehaene and Cauter 2008). The idea became well-known through the essay "Of Other Spaces", in which Foucault (1986) summarised the six characteristics of a heterotopia: the presence of heterotopias in almost every culture; different functions of heterotopia throughout time in a given society; the capability of heterotopia to juxtapose several incompatible spaces in a single place; linkage to slices in time; possession of a system of opening and closing that isolate and make them penetrable at the same time; and a function in relation to all the space that remains. For him, heterotopias are sites that are in relation with all the other sides, which has a curious property as to "suspect, neutralise, or invert the set of relations that they happen to designate, mirror or reflect" (Foucault 1986). He further identified two types of heterotopias: heterotopias of crisis, which are forbidden places reserved for individuals going into a state of "crisis" from the point of view of society because they can no longer undertake their original social rules but are yet prepared to assume new roles, and heterotopias of deviance, where individuals whose behaviours are considered deviant compared to the social norms or requirements are kept, and these heterotopias on the one hand underline the normality of the society and on the other hand exhibit how certain behaviours are incompatible with the perfectly normal society at the same time.

Based on this classification of heterotopias, there have been conceptualisations of other types of heterotopias that are more relevant to contemporary urban and social situations. Shane (2005) considers heterotopia as one of the three basic urban elements (the other two being enclave and armature) in which the other two elements are kept in constantly changing balance, and with the function of maintaining the stability of the city as a self-organising entity. He proposes heterotopias of illusion as the new development of the other two types of heterotopias, and the primary distinction between heterotopias of deviation and heterotopias of illusion lies in that the latter type enables the urban actors to adjust to changes in urban system using images and symbolic icons. During the shift from heterotopias of crisis to heterotopias of deviance then to heterotopias of illusion, urban actors use changing ways of accommodating changes, first picking out those who are undergoing periods of crisis and confining them to a cell that is neatly woven into the urban fabric, then throwing them into powerful machines isolated from the social norm and ordinary urban fabric and applying

logical and rigid rules to establish order to reform the deviant, and finally allowing them to adjust to the urban system by manipulating images within new communication systems, at the same time making it once more possible for heterotopias to stay in everyday urban fabric.

At the same time, Cenzatti (2008) proposes heterotopias of difference as a new type of heterotopias produced by social shifts. Since "change" is the key word for recent urban development, heterotopias have been evolving from heterotopias of crisis that created fixed space for changing population, to heterotopias of deviance in which fixed population were kept in fixed places, to the contemporary heterotopias of difference, characterised by a multiplicity of changing spaces and changing population (ibid). The basic rules still apply in this new type of heterotopias, while in contemporary situations, neither space nor population are fixed, but on the contrary, in constant change and contradiction. Faced with this level of multiplicity, it's no longer possible to cut a clear line between "normal" and "deviant", and each voice could not be easily controlled or oppressed, but should be treated as differences that coexist and interact. Heterotopias are not "other space" simply because it is deviant, compared to certain kinds of an urban environment or conventional societal codes; it's all the different spaces it embodies, the characteristics of these differences compared to those in other situations, and the overall effect they produce that constitute the otherness of heterotopias. "Otherness", then, is not intrinsic, but is "a combination of materialism, social practices, events and characteristics that represent contradictions with other sites" (Shoshana 2014).

Many authors associate heterotopia with concepts such as power and resistance, since, from the post-structuralist point of view, power and resistance are often juxtaposed in the same site (Kong 2012) and the postmodern perspectives tend to consider heterotopias as highly inclusive places that are related to the empowerment of marginalised and minority groups (Sohn 2008). Heterotopia is seen as where the voices from the marginal and powerless urban actors demonstrate their own identities. It is a kind of "counter-hegemonic representations" of resistance used to represent certain social and cultural image (Cangià 2013). Heterotopias tend to include a multiplicity of different groups of populations, with their respective social and spatial practices, therefore becomes places where different voices especially those from the relatively marginalised groups can be heard. Heterotopia is also seen as where unconventional social practices take place within the mainstream society and urban space, or an affiliated space created outside the primary space. Related to this idea is concepts like "loose space", where people recognise new potentialities within an established space, and create new possibilities by using existing elements or bringing new ones (Franck 2006). These uses are not necessarily marginal but nonetheless demonstrate new social and spatial orders. In other words, it results from a certain kind of spontaneity that creates new activities and uses other than the intended and established activities. The separations of these alternative social and spatial from the ordinary space and the existing form of power create new space with alternative ordering, contrasting with the environment it emerges out of through different forms of built environment and social events (Helten 2015).

3.2 Heterotopia and dual mechanism of assimilation and accommodation

For further discussion, a summary of some key points is given here. First of all, heterotopia is not a site that has intrinsic characteristics that make it appear different from other places. Its otherness only exists in relation to other sites. Secondly, heterotopia has a layered quality. It is composed of a variety of different, sometimes incompatible layers of social relations and

corresponding spatial representations. These layers are open and dynamic, in that they are related to other sites and therefore subject to changes. Heterotopias today, compared to the "classical" ones, are tied together with much broader global contexts. Thirdly, heterotopia is not about established sets of orders but about the processes of ordering (Hetherington 1997). Ordering is not only making things fixed; ordering creates ways to arrange and distribute social activities (Law 1994). Last but not least, contemporary heterotopias, unlike heterotopias of crisis and heterotopias of deviance in which rigid codes are enforced, have more diverse ways of controlling and manipulating rules, from elements of the physical environment to images and relations.

The concept of heterotopia has significance in relation to understanding urban development in that, on the one hand, it points out once more the growing tendency in contemporary city that within a single site there could be a juxtaposition of multiple economic, cultural and social forces that overlap and sometimes have conflicting effects and that there is no longer a centre that exerts strong control, and on the other hand, it suggests that heterotopia could be applied as an analytical tool since it deals with the ordering of conflicting elements, and therefore has the power to construct a mechanism of adapting to changes. Urban development is constituted by many different layers of physical environment and social life. These layers are related to both the local context and the global trend, the latter gaining more and more relevance in contemporary times. In usual situations spaces are at a state of relative equilibrium. When a new layer with all its elements is added to the existing space, and when the new elements are in one way or another incompatible with the original system, a series of reactions are triggered to act on the new elements. Heterotopia can be applied here to explain these reactions.

In constructing a working mechanism for heterotopia, we first turn to two concepts used in psychology and cognitive studies in order to explain the relationship between the mechanism of heterotopia and a broader urban setting. The concepts are assimilation and accommodation, which are two ways of internalising the knowledge from the outside world. According to Piaget (1952), the cognitive process of a young child's intellectual growth is essentially a process of adaptation, which is further divided into three interrelated states: assimilation, accommodation and equilibrium. Assimilation is the process of using the existing cognitive schema when faced with new information and knowledge, while accommodation happens when the existing schema is no longer able to work, and has to be revised so that the new information could then be processed (ibid). Schema here denotes the pattern of thought or behaviour that organises information and the relationships between them (DiMaggio 1997). A state of equilibrium is considered to be achieved when the schema is able to process most of the new information through the mechanism of assimilation, but when the existing schema cannot incorporate new information, a state of disequilibrium occurs, and the existing schema has to be changed through accommodation so that a new balance could be achieved, until the next time changes are needed to adjust the new schema.

These concepts are undoubtedly helpful in studying urban questions, especially when we consider a city as a living organism that has to constantly adapt to stimulations and changes. Taking the analogy, we propose that heterotopia is a space of adaptation, and therefore part of the mechanism that gives a city the ability to adapt to changes. This could generalise the different heterotopias described by different authors, be it a heterotopia that is used to regulate deviant behaviours or a heterotopia where differences coexist. Within the complex

process of adaptation, otherness emerges that make the space a heterotopia. Adaption happens both in physical space and social space. Adopting an actor-network point of view, a social network is not only formed by the interactions of human beings, but also the interactions of human beings and other materials (Law 1992). Series of social associations define and constitute physical space, and at the same time, space is so arranged that it is programmed for certain types of actions to be conducted (Murdoch 1998). Any urban space is in a state of dynamic equilibrium composed of the external physical environment and the internal social networks. When new social and spatial logics enter the urban space, and if they could be fit into the existing order, they will be assimilated without greatly disturbing the established social relations and spatial configurations. However, if the existing system is unable to sustain the changes made to it, the equilibrium will turn into disequilibrium, and the existing system has to be changed to accommodate the changes and the new paradigms. At the same time the new elements are also being modified to fit into the system. After this process, a new equilibrium with its spatial and social orders replace the old system. Heterotopia exists in the whole adaption process, and even more pronounced in the stages of assimilation and adaptation. It is not about the established order but about ordering, where new ways of ordering emerge in response to the fact that the order that already exists can no longer cope with changes and new ideas.

Through the process of adaptation, otherness is established, which is the main feature of a heterotopia. Otherness can be constructed both spatially and socially. Any features of the built form is controlled by certain urban agents (specific persons, and local or even trans-local forces of various force), and the built environment as a whole is a multi-layered system, with different players on many levels (Habraken 2000). The levels of control of different actors are manifest in the properties of the built form. The agents communicate and negotiate with each other, and spatial configurations remain in stasis when agent relations are stable, the space perceived as a consensus. When the balance is broken, either because of the changing power balance of existing agents or the entrance of new agents, new spatial configurations emerge as other than the consensual space, while the otherness can be detected in various spatial arrangements and representation. Otherness can also be constructed socially. This usually happens when different social groups are "forced" into the space and have to find a way to coexist. As Koch (2016) points out, we depend on codes of behaviours and expressions to establish knowledge of each other. While we tend to consider ourselves as diverse, differentiated and complex, we tend to think of those with whom we are not familiar as generic others or types of others, either because we depend on limited knowledge of them during our limited encounters, or because we directly assume what they are from what we have heard about them without direct contact. Therefore there is the social process of othering: individuals and groups are defined as others based on a selective reading of codes and behaviours (ibid). Differences are magnified and strengthened, while similarities are sometimes overlooked. In this way, heterotopia answers the question of how a city adapts to changes. Through "othering" and "ordering" both spatially and socially, new elements are accommodated or assimilated to the existing system, while the old system might also change its original structure in the same process to once again reach the state of equilibrium.

3.3 Milan Chinatown: a heterotopia

It's clear from the chronological account of the historical development of Canonica-Sarpi district that the so-called Chinatown only started to develop its character in recent decades,

and it only turned into a heterotopia since the expansion of the wholesale activities since fifteen years ago, if we adopt the idea that heterotopia is essentially a site of adaptation. From the very beginning of its history, the district has been subject to constant changes, resulting from the evolving socio-economic structure. But the new elements had always been successfully assimilated into the old urban system, be it a new type of trade or a building typology or a new group of immigrants. For example, when the Chinese people first settled in the area, their presence and activities did not create great problems, since the handicraft businesses they were engaged in did not differ essentially from the traditional activities carried out there, and their workshops were successfully integrated into the urban fabric using the existing courtyard housing typology. In this sense, the original equilibrium of the district had not been disturbed, with all the changes gradually assimilated. It was only when the wholesale business started to boom in the district that the existing spatial and social structures became unable to adapt to the new changes. The rise of this type of business was not only a local development but also connected to the growing economic power of China and a huge circulation of cheap Chinese goods ever since. From the spatial point of view, the ways that Chinese traders use the space conflict with the local residents' established spatial perceptions. The conflicts in appropriation and use of space constitute otherness in spatial terms, compared to both the typical Italian spatial configuration. On the other hand, the Chinese traders have also been socially constructed as others. This, ostensibly, is due to their ethnic identity but more importantly is due to the habits and activities that initially and even until today are not well comprehended by local Italian residents. They are judged on the basis of a series of behavioural codes that are considered a nuisance. For the local context, nuisances are primarily connected with the businesses: the loud noises of logistic activities, the irresponsible use of streets and public space, they work excessively and the fact that Chinese businessmen tend to sell cheap products from China which becomes their competitive advantages. But there are more deeply and culturally rooted judgements. For example, the Chinese community has always been constructed as closed with restrictive entrance to their social circle and unwilling to integrate into the local society. This stereotype may hold true for the first generation of immigrants because they relied heavily on kinship and close social ties to survive in the new environment. But the second and the third generation of immigrants are obviously more integrated into the local environment. Nevertheless they are still constructed as other by many local Italian residents.

To adapt to changes that cannot be assimilated, the original social and spatial structure have to be transformed themselves. In the case study, new regulations and regeneration projects have greatly changed the character of the district, only after which the changes could be accommodated. The change of the neighbourhood into a limited traffic zone is not only restrictive to the traffic caused by the unwanted Chinese business, but also to the needs of other local businesses. This traffic regulation, together with the subsequent pedestrianisation, greatly alters the ways in which the activities have been organised originally, which from an urban point of view greatly alters the original urban structure, both spatially and functionally. On the other hand, the disturbing elements themselves have also undergone changes themselves. The use of trolleys and bikes for delivery of goods was a way for the disturbance, that is, the need of wholesale business, to accommodate itself to the existing system at an early stage. Even today, because of the pedestrianisation, these delivering methods are still used, although the public authority has always wanted to eliminate such practices. The layout of the shops are further modified so that goods could fit properly in the internal space, without damaging the streetscape. Furthermore, with regard to social integration, further efforts, such as the establishment of Chinese associations and publicising

Chinese culture, have been made so that the Chinese community could participate more in local affairs. These are all efforts of disturbing elements to adapt itself to the established structure.

4. Conclusion: Heterotopia and future planning

In the above discussions, we trace back to the core of the concept of heterotopia and argue that heterotopia today is a space of adaptation. It is a mechanism that the city uses to adapt to changes resulting from evolving socio-economic and cultural contexts on various scales and to maintain the state of dynamic equilibrium by way of assimilating and accommodating the conflicting element. There are at least two implications of heterotopia for the future of urban development and planning. First of all, it once again proves the fact that it's impossible to control every detail of a complex system, and the most prevailing planning practices centred around land use plan are gradually losing credibility. Planning and regulations should take into consideration of a level of uncertainty. Second, in the face of spontaneity existent throughout the history of urban development, it's interesting to underscore how planning could give more space to the self-organising quality of urban development.

A city is composed of a multiplicity of autonomous systems with their respective logics (Sudradjat 2012). These logics may coexist or cooperate, while sometimes they could run into conflicts. This indicates that it is not possible to have a central organisation that is able to control everything. The different systems cannot be forced into a pre-decided set of order, but have to be coordinated through a process of ordering, so that the mechanism of adaption can work effectively to cope with new changes and variations. Spatial organisations and social interactions cannot be rigidly managed through a set of anachronistic images of how they ought to happen; instead, they happen when there are true needs. Arguably, given the absence of overall control, a singular system based on established codes will give way to multi-centred, more flexible and heterogeneous systems that can more easily coordinate multiple layers and actors and could better adapt to changes. A master plan that sets the rules of the game at a specific time without considering much the actual working process of the city is losing both credibility and effectiveness. In view of this, it would be meaningful if future planning practice could take into account the uncertainty and indetermination inherent in urban spatial and social transformations.

From a reversed point of view, the city always has an intrinsic logic of self-organising that is sometimes beyond any human control. The diverse interactions among people and the interconnections of urban elements create what Jacobs terms "organised complexity". Then it would be interesting to see and discuss if cities could be left to develop by themselves, or a higher level of control must be placed on the self-organising system. The mechanism of an adaptive heterotopia suggests that for most of the time, the urban system itself is able to accommodate changes to keep itself intact, and structural changes that are strong interventions through planning and regulations only have to be in place when changes are too drastic to be accommodated and the system itself has to be transformed to assimilate the disturbance. So it would be beneficial to test if urban development could be mediated through minimal top-down control.

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Through a Rhizomatic Process of Planning Rethinking Brazilian planning experience

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This paper develops a cartographic map of planning by taking the Brazilian planning experience as reference. It understands planning as a multiple, relational and mixed social process for dealing with the contingencies of a dynamic and complex world. In this view, planning is not limited to the institutionalized activity of formal planners, but it also includes the action of informal networks of agents seeking to promote their own social life. Based on the philosophy of Deleuze and Guattari it understands planning as a 'rhizomatic network' of horizontal connections that evolves in several directions through the action of multiple and different actors working along lines of flight in order to deconstruct de-territorialize old social premises and re-territorialize them as a more democratic, inclusive and just society. This rhizomatic kind of planning proceeds through a haphazard process of growth with no hierarchical structure, no central command or control. Based on recent experiments in Brazil this paper suggests that planning as a creative, interactive and fluid process may prove essential for keeping both the process of social transformation and the way planning is actualized and turned into a democratic, participative and collaborative assemblage.

Keywords: Rhizomatic Planning, Becoming, Deleuze-Guattari

1. Introduction

In an often complex and conflicting world, social institutions are under constant pressure to adapt its decisions and working procedures to new social imperatives. The objective of this paper is to identify the main elements in this process of adaptation and institutional transformation.

In order to discuss the contemporary processes of social and political transformation this paper takes the propositions advanced by Deleuze and Guattari, which advocates for a permanently changing and moving world. Their ontology suggests a number of interrelated concepts in order to demonstrate the pervasiveness of the difference/heterogeneity in relation to the idea of unity and homogeneity. For them the world is but a succession of moving scenarios composed by ever increasing diverse entities. This paper explores that approach in the first part of the text by analyzing the main concepts that comprise their ontology. The second part evaluates the implication of this approach for planning practice. It discusses several experiments of planning as a free, collaborative and rhizomatic process extracted from Brazilian experience. The aim is to set the basis for an understanding of planning not as an idealized and closed activity of plan making, but as a democratic and relational process for dealing with a complex and fast changing world.

In this view, Deleuze and Guattari ontology is seen as ontology of difference, which is concerned with the world's change and transformation and whose focus is the process by which such a transformation is created. This means that planning as a social process, should not be guided by models, ideal visions or prescriptions, but by a process of experimentation,

which requires investigating problems¹, exploring relations between elements “and being open to what might happen if; what differences might emerge” (Hillier, 2013).

2. Deleuze and Guattari Ontology

One of the main concepts of Deleuze-Guattari ontology relates to **connectivity**. Connectivity involves a mode of reasoning that understands the world (urban space) as system of meaning, affinity, multiplicity and performativity. Such way of thinking presupposes an inherent process of change and transformation in which difference and diversity is the rule. In this understanding, the world is in continual process of adjustment and that fixed, stable structures are only the exception. They propose a “theory of change” that focuses on movement, flux, and transformation rather than in stability, order or permanence. In this theory, change and movement are the objects of investigation. Movement is the general rule and it relates to emergences, flux and contingencies. Structures, patterns, fixities or orders are incidental events in the flux of change and movement.

Another fundamental concept of Deleuze - Guattari (1987) work relates to the idea of *immanence*. By immanence, they mean an ever-moving material and immanent space and society. This paper takes this concept and argues that in order to understand the world's ongoing change planners should pursue the immanent dimension of reality, a dimension of unrealized, possible worlds that unfolds behind the transcendent/organized world (of structures and orders). Deleuze and Guattari (1977) argues that this immanent dimension is like a latent surface of possible realities that are in process of “becoming”, although not yet fully realized or turned real. This text argues that planning frequently works with latent/immanent virtual realities of possible worlds, and in order to go through that it should learn to deal with the unfolding of improbable likelihoods. The aim of planning in this formulation is not to play a schizophrenic role of seeking governability in an unforeseeable and ungovernable context of immanent becoming, but to understand and work with the dynamic and complex contingencies of a transforming reality and to facilitate such change through a multiple and participative process .

Following Deleuze-Guattari (1994, 1995) ontology, concepts should do something very specific and the objective of theorizing is not to explain what something is, but to elucidate what it does. More fundamentally, it should inform what and how it might affect what others things do. With regard to planning, we should ask what a concept does for or affect planning practice. This approach has been understood as non-essentialist (De Landa 2002) or as a post-structuralist *ontology of difference* (Hillier 2008). *This ontology is concerned with the new, with change and transformation* and points out to a continual creation a recreation of reality. Nevertheless, it recognizes the importance of structures, systems and orders, in defining the agency power, the power relations between agents, and agents' networks. (De Landa, 2006)

Deleuze/Guattari work presents a new empiricist-constructivist conception to the relation between theory and practice. Their contribution emphasizes the importance of *praxis* to the *transformations* of the structures and the role of “bodies” in this process. According to them, reality has three different dimensions: The Actual, the Process of Actualization and the Virtual. The **actual** is the world around us and it is comprised of many participants (humans and non-human): people, houses, trees, animals, forests. That dimension displays the actual/observed

¹ The concept of problem in Deleuze ontology emerges from his thinking about objectivity. For him the idea of problem is linked to three assumptions: (1) the difference in nature between the problem and its solution, (2) the immanence of the solution and, (3) the transcendence with respect to any possible solution.

entities in a continuous and frenetic process of interaction to each other in complex and diverse ways. However, reality is not limited to what can be seen or observed in the outside world. According to Deleuze-Guattari (1994), an observation is only part of reality: that which displays “images” that our senses can grasp. That (actual) “reality” does not offer an understanding of how “things” come into being, how they affect, how they might be affected by other entities and how these *affects* affect what other entities can do.

In order to understand how the world unfolds or emerge, Deleuze/Guattari (1994) proposes another dimension of reality - **the virtual**. The real-virtual is defined as the reality that precedes the real-actual, and therefore is not visible. The real-virtual can be understood as a field of many possible/parallel realities that can be actualized (turned visible). The real- actual is one among many virtual realities which is actualized along with the process actualization. In fact, many concurrent worlds (virtual realities) may result in different realities, and often we cannot anticipate the unexpected along the process. For Deleuze (1987) we can only perceive a small part of the real-virtual (which comprises those entities in the process of becoming actual), which in general, surrounds the real-actual entities, and which we identify as important. The *virtual* is therefore, that part of the actual which cannot be seen. It is beyond the visible actual. This dimension is made of *becomings* which are entities that have not yet started their movement toward the actual. They are *formless, latent realities to become*, with no apparent sign of *what* they might become and *how* they might become. This real-virtual world is constituted by clusters of *becomings* (virtual diagrams) and lines of potentials (planes of immanence).

According to Jean Hillier (2006), planning should approach the world from the ontology of **becoming**, rather than from that of **being**. While in the latter² the world as made up of objects with transcendental and fixed essences, the former³ approaches the world from the ontology of becoming. That ontology contends that real objects are in a perpetual the process of becoming something else and that the real world is a continual unfolding of events that do not necessarily move toward a specific end or final destiny. Planning working with ‘the world of becoming’ does not search for stability, certainty or fixed patterns, but seeks to cope with and manage unpredictable futures. It moves by improvisation and creativeness, seeking to identify trends or scenarios from “disparate flows, energies, events, entities and spaces in more or less temporary alignments” (Hillier 2007). Planning according to Hillier (2007) “have had a pervasive commitment to an ontology of being which privileges end-states and outcomes, rather than an ontology of becoming which emphasizes movement, process and emergence.” Planning that privileges processes and movements deals with a continually emerging world in a fluid course of becoming.

In this perspective planning deals with the world as it actually is, instead of working with idealist prescriptions about what it should be. This approach is neither prescriptive nor normative, but intends to devise the most effective practices that enable planning to help bringing about the future and facilitate the process of change⁴. Planning as practice directed to setting off the future, does not prescribe a particular (or desirable) future, because it is just that which is the object and target of planning as a practice of seeking new futures. In fact, that practice emerges from the conflict of ideas and political views, through the movements along the lines of flight,

² This approach is taken from Plato and Kant ontology.

³ Rooted in Aristotle, developed by Nietzsche, and embraced by Deleuze and Guattari,

⁴ This position is, associated to Michel Foucault. Foucault argues that the role of the intellectual is not to propose any fully formed political agenda, but to analyze the political terrain and to participate of political struggle, as member of any popular or social movement. (Foucault, 2012).

through the process of deterritorialization and the courses of fleeing to new lands. It is working with and through these movements, that planning as process of bringing about the future can help to produce (desired) new worlds. This “desired” new world will probably be product of some rhizomatic process of many competing desires, and perhaps, it might never epitomize the truly desired outcome of any particular vision.

This approach implies a political agenda as Deleuze and Guattari intended. There is a clear compromise with the process, with change and transformation of whatever political, social or economic structure. This planning does not advocate for preservation of any institutional order, practice or rule, it has no compromise with old conventions or traditional habits, but instead, it seeks the new, the different and the diverse in order to create multiple ways of producing a free and more just mode of doing and living together in the world.

2.1 Lines of Flight and Becoming.

Lines of flight” are one of the most important concepts of Deleuze and Guattari’s ontology (Deleuze & Guattari, 1986; 1987). The notion of flight brings about the idea of escape from the apparatus of capture. Instead of using the notion of “point”, Deleuze-Guattari employs de concept of “line” in order to indicate motion through the points. While points are fixed in the space, lines are associated to motion and the idea of becoming⁵.

Apparatuses of capture work to imprison the bodies to a fixed point. Escaping from the apparatus means start moving along a line: a line of flight. This movement away from the fixed rules gives rise to a process of becoming different, becoming something else and new. Similarly, the concept of deterritorialization is also used to imply a process of escaping from the apparatuses of capture. To deterritorialize means to start a movement of liberation, detached from the rules of the territory (Deleuze & Guattari, 1986). Although deterritorialization and flight are hopeful movements, they may turn however extremely risky. In fact, the common outcome of deterritorialized bodies pursuing a line of flight is to be recaptured and reterritorialized according to the rules of an apparatus⁶ (Deleuze & Guattari, 1977).

The process of fleeing and recapture is a cyclical one. However, this is not an endless mechanical process since each movement of escape lead to some “piece of the system to get lost in the shuffle.” Along the historical process, the repeated flights and recaptures will affect and marginally change the apparatus. This continuous process, they hope, scars the system and deteriorates the apparatuses of capture (Deleuze & Guattari, 1986).

Deleuze & Guattari find a way out of this limiting cycle of flight and recapture, by turning to concept of “revolutionary connections” (Deleuze & Guattari, 1987, p. 473). When a deterritorialized body that succeeds to escape from an apparatus of capture begins to move through its line of flight, it does not have to do so alone. It can link up with other deterritorialized bodies combine with other lines of flight, and form flows, aggregates, collective multiplicities moving together in a shared project to elude recapture (1987). According to Deleuze and Guattari, these associative behaviors are in the nature of desiring production: to produce

⁵ Instead of adopting the concept of contradiction as a methodological axis, the authors work with the idea of Lines of flight. Lines of flight seek to explain the constituent movements of each society beyond the legal and institutional regimes aimed at normalize and control of social life.

⁶ This can parallel the events of land occupation promoted by social movements in Brazil. A particular plot of the urban land is occupied by low income (land less) population, producing a temporary outcome, but eventually the police arrive to and enforce the private property rights of the owner.

connections. One of the most important characteristics of desiring bodies is to connect with other bodies and together to produce larger assemblages (Deleuze & Guattari, 1977). Desiring-production relentlessly unsettles the apparatuses of capture, it sets elements in motion along lines of flight, and at the same time, it induces those lines of flight to seek connection with other lines. They argue that bodies in movement of flight connecting with other fleeing bodies will be able to construct a larger and stead and continuously growing network of escape. The process of "connection indicates the way in which decoded and deterritorialized flows boost one another, accelerate their shared escape, and augment or stoke their quanta" (Deleuze & Guattari, 1987). According to our earlier example, the *Landless Movement* in Brazil encompasses many cells of landless groups linked to a bigger movement. The larger the network grows, the more it is empowered psychologically and materially, and the easier it is to ward off recapture by the apparatuses of the state or the capitalist economy.

2.2 Rhizome

The network of fleeing bodies/entities is not an organized and striated process, but instead it grows and evolves in a rhizomatic manner⁷. The Rhizome is a disjointed, acentric, non-hierarchical network of entities communicating horizontally with any other entities. (Deleuze & Guattari, 1987) Deleuze and Guattari contrast the rhizome to an arboreal structure in which all flows must pass through a single connection, in which all relations are hierarchical. In an arboreal structure, all communication must pass first through a single coordinating "trunk" before it flows out to the limbs and branches. Rhizomes, by contrast, are acentered; they have no trunk, no general command, and no central committee that coordinates the whole. Rather, organization and coordination emerge naturally, on its own, without any intentional or purposeful action. The network organizes itself. It is only through rhizome that a desire can operate, follow its inclinations, move and produce in the way that is proper to it (Deleuze and Guattari 1987, p. 14)

Deleuze and Guattari insist that rhizomes must operate this way. In order to form properly revolutionary connections, the lines of flight must associate with each other in rhizomes without leaders, where coordination emerges spontaneously. Deleuze and Guattari suggest that rhizomes will never come to rest, but will relentlessly grow and spread by sending out new stems, any one of which can connect with any other in the rhizome, or with deterritorialized elements that are not yet part of the rhizome (1987). That is why Deleuze and Guattari ask us to "make rhizome everywhere", to free up escapes that "dismantle the strata in their wake, break through the walls of significance, pour out of the holes of subjectivity, fell trees in favor of veritable rhizomes, and steer the flows down lines of positive deterritorialization or creative flight" (1987). The more successfully we can do this, the more likely we are to create a runaway effect in which deterritorialized flows of desire "become parts and cogs of one another in the

⁷ Rhizome is an epistemological model in the philosophical theory of Gilles Deleuze and Felix Guattari. The concept of rhizome was borrowed from botany and indicates the structure of some plants whose shoots can branch out at any point, as well as thicken and turn into a bulb or tuber. It can either function as a root, stem or branch, regardless of their location in the figure of the plant. For Deleuze and Guattari the rhizome exemplifies an epistemological system where there are no roots - i.e. propositions that are more fundamental than others are - which ramify under strict dichotomies. Deleuze and Guattari contend that according to the Anglo-Saxon tradition of philosophy of science, the structure of knowledge does not evolve by logical means through fundamental principles, but it is drawn up simultaneously from all points under the influence of different observations and conceptualizations. This does not imply that a rhizome is necessarily a flexible or unstable structure, but requires that any order model can be modified. There are in the rhizome, solid lines and organization determined by groups or sets of related concepts. These sets define a relatively stable 'territories' within the rhizome.

flow that feeds one and the same desiring-machine, so many local fires patiently kindled for a generalized explosion" (1977).

2.3 New Land

Deleuze and Guattari work with the image of lines of flight connected to each other in a rhizomatic pattern directed to help deterritorialized bodies, to remain in flight and keep flowing, away from the apparatuses of capture. If enough lines can manage to flow together and progressively form a large mass so that they begin to trace out a plane or a fluid and yet substantially consistent two-dimensional space, then they can form what Deleuze and Guattari eventually call "a new land". This land is understood as a generalized condition for humanity in which becoming, flow, and desire pervade the community and choke or occlude being, fixity, and capture – a coherent but always growing and spreading rhizomatic multiplicity (Deleuze & Guattari, 1977).

This process of flight-and-connection may become revolutionary, since it is pushed "to a point where the process cannot extricate itself, continue on, and reach fulfillment, except insofar as it is capable of creating – a new land" (Deleuze and Guattari, 1977). The line of flight as a schizophrenic escape has the potential to become revolutionary and this involves withdrawing from the apparatuses of capture and living on the fringe.

The new land brought about by this transformation implies the collapse of the system and of apparatuses of capture. In the resulting disorder, some regularity can emerge and some form of coordination among the elements will come to exist. Nevertheless, that coordination, as in a rhizome, must always be immanent or emergent. Regularity and coordination must arise spontaneously out of the collective will and the activity of the rhizomatic network. This is not planned process or managed by a leadership, or brought about by a central and more important node in the rhizome. However, liberated desires will not simply live free and undisturbed in the new land. According to Deleuze and Guattari (1977), it is likely, that in the new land new institutions will emerge and new centralized apparatuses of management take control. Hence, as Deleuze and Guattari warn, desire must continuously flee. It must remain in motion, always on the line flight, permanently escaping and resisting the new apparatuses (Purcell, 2013).

That is why the new land is something like a contradiction, for it is in fact made up of flight. The movement of escaping desire traces its topography. The fleeing elements can never come to rest because the apparatuses are never eradicated once and for all. Capture will continually reaffirm itself in forms like state agencies, private property, party organizations, corporations, planning departments. Fleeing agents of desire will always continue the process of fighting off these apparatuses, preventing the formation of institutions that will try to regulate desiring-production, organize it into organs, and assemble it into machines directed to perform restricted functions. Like desires, planning in this new land will be in an endless movement, acting along the flux of desires to promote change and transform the world into a new, and possibly a better land.

2.4 Self-Government. No centrality.

The debate about whether humans are capable of self-organization has a long history in political thought, one that we certainly cannot resolve definitively here. Advocates of self-organization often point to natural examples: the anthill, the beehive, the bird flock. Michael Hardt (2004) and Antonio Negri (1999) work with the metaphor of swarm intelligence, where decisions emerge from the whole instead of being issued by a central power. Deleuze and Guattari, talk of rhizomes, trees, and wolf packs. Perhaps the prime example is that of a flock

of starlings. They rise together into the air, a black mass of perhaps 50,000 birds, to hunt insects. The flocks are cohesive, but they are constantly changing shape, undulating purposefully as the birds move about in pursuit of prey.

Everybody knows the flock is an assemblage of individual birds, but it seems a single coherent thing, a single life form with an autonomous intelligence, seeking for food. Scientists explain that there is no leader, that the flock makes decisions without any centralized system of command (Hayes, 2011). The flocks do not take flight, turn, or change direction gradually, but despite the quantity of birds they can change direction suddenly. The flocks operate as a collective mind and are able to change movement promptly. Throughout their evolutions, the collective of birds can suddenly disappear, before we can process what we see. They seem to rematerialize as fast as they fade.

2. *De territoriality and the Bordering*

Deleuze and Guattari understand the concept of flight (flee) and the process of fleeing to the border as an event of *becoming*. As dispersed events of flight, the process of fleeing virtually generates and opposes all institutionalized structures and established rules of organization. The process of flight encompasses a large number of affective and transformative accomplishments through which social and spatial orders are continuously reconstructed.

For Deleuze-Guattari fleeing to the border means, an escape from institutionalization. This is accomplished by producing *affects* that operate outside of the influence of existing organized assemblages. Such lines of escape produce new frames, which in turn produce new affects. The movement of fleeing to the border involves evading the limits of established structures and/or disabling archaic moorings. This is a rhizomatic course in which entities fleeing through a process of heterogenesis⁸ assert their uniqueness and heterogeneity in opposition to a transcendent, universalizing homogenization. Heterogeneity manifests desire; it expresses a process of becoming that is always in the course of changing, adapting, transforming and modifying.

To deterritorialize a body means to transform it into a body without organs. That is a process of recovering its various affective capacities rather than breaking it up into functions and categories. The body becomes a multiplicity supporting new connections, affects, assemblages, etc., with other bodies, a process of infinite possibilities. It is worth note that for Deleuze-Guattari the deterritorialized body does not mean reducing its actual territorial complexity, but rather the deterritorialization and heterogenesis that it experiences, creates a socio-spatial complexity which, in fact was kept concealed by the functional and definite compartments of the establishment.

Lines of flight and deterritorialization are developments that help in the escape from the instituted body (Marks, 1998, p. 31). Nevertheless, Deleuze and Guattari warn that there are always forces of stratification seeking to capture deterritorialized bodies in order to re-organize and reabsorb (reterritorialize) them into transcendental orders of homogenized bodies. Deterritorialized bodies are always at risk of being caught by the magnetism of the organization and fall back into the territory of institutions. These are mechanisms of repression and capture responsible for attracting the external into a system of interiority. That system is made of identities, which are abstracted from actually existing bodies and transposed onto another dimension: the world of transcendental structures.

⁸ An active, immanent process of singularization of subjectivity.

The concepts of territory and flight (to the border) advanced in this paper does not convey the idea of a stable, permanent, definite or inexorable spaces and events, but rather “[a]t the limit, all that counts is the constantly shifting borderline” (Deleuze and Guattari, 1987, p. 367). The movement toward the borderline that marks the process becoming diverse and heterogeneous is a movement toward the borderlands of established states, which are territories marked by profound nonconformity and creativity. The smooth spaces generated by resistance assemblages like “shelter or land movements” (in São Paulo) that resist both the striating forces of the state and the reterritorialization of capital are themselves constituted through the bordering activity of becoming.

Assemblages such as *land and home movements* take their lines of flight from what they are struggling against, that is, the striations, organizations, institutions that seek to close the escape points and fold these fleeing aberrations back into the order of things. The group’s strategy seems to speak to the solution proposed by Deleuze and Guattari: ‘it is by leaving the plan(e) of capital, and never ceasing to leave it, that a mass becomes increasingly revolutionary and destroys the dominant equilibrium of the denumerable sets’ (1987, p. 472). If capital succeeds to erase the international borders (globalization), the movement of leaving the plan(e) of capital requires that you carry your bordering with you, such as proposed by Massumi (1992). The erasure of national borders (which is itself always an incomplete becoming) would not mean the end of borders.

Following Deleuze-Guattari (1994), we can problematize the concept of border as a fixed place, and understand it as distributed across diverse spaces, and not simply constituted by capital or state striations, but emerging from the assemblages of bodies becoming-other upon it. The urban movements demanding home, land, health, education are movements of fleeing to the border, a process that embraces the perpetual end point proposed by Massumi (1992): “To achieve the goal that has no end means ceasing to seem to be what you are [‘legal’] in order to *become what you cannot be*”. In fact, the goal is a limit that can be approached but never reached. Massumi (1992)

2.6 Assemblages

Deleuze develops his theory of assemblage (agencement) from Hume. Accordingly, Hume solved the problem of subjectivity by developing the concepts of association, belief and exteriority of relations. *Association* is a natural principle that works by producing relations between things. *Belief* is a human reflexive sense based on habit, which allows the individual to transcend a given reality. It allows the subject to be *creative* and to go beyond the given by means of connecting habits. The *relations of exteriority* mean that component parts of a whole are more or less autonomous, that is they do depend of the whole to exist. In this type of relation (external), the relation may change without changing the component.

An Assemblage is any number of heterogeneous components (parts, or things) gathered into a single context. In the assemblage, components keep *certain* autonomy from the whole from which it is part. A component in an assemblage has the ability to establish relations with other components and to form as many assemblages at the same time. This ability to connect in various directions, allows the component to affect and to be affected by other components, and this double affect process (interaction) determine which interactions are possible.⁹

⁹ Assemblage in Deleuze and Guattari sense is a mode of thinking the social, reality as a relational process of *composition* and as a methodology directed to practice. *Assemblage* is concerned with the processes of assembly: of bringing heterogeneous elements together.

Each assemblage is made of components of immediate lower scale. What is Macro (Molar) in one scale is that which plays the role of the whole (the assemblage), in turn, what is Micro (Molecular) is that which plays the role of component (part). The *Molar* is a *statistical result* of a *Molecular* population at any given scale and not a causal product. There is no causal relation between molecular and molar, because there is no linear relation between them. Since the relation between them are not coherently (but contingently) produced, there is no unity in assemblage theory¹⁰.

An assemblage can be regarded as an unintended and not totally determined product. That is why it is not self-determined at a higher level but results from lower level connections. However, a larger scale assemblage acts as a source of resources and limitations for lower level components. An assemblage molar lines enable as well constrain the parts in specific ways. In this context, both the parts and the whole are historically produced. This means that the parts of an assemblage retain a kind of autonomy from the whole.

An important aspect of an assemblage is that does not become a homogenized entity when it connects to a larger assemblage. The assemblage ontology is open to any connections and these connections have relations of exteriority with those that are already included. According to Deleuze-Guattari (1987), there are two ways of approaching the concept of assemblage. The first takes assemblage as a mode of thinking. *Assemblage thinking is mode of reasoning* that evolves through a 'rhizomatic or nomadic process' forging 'linkages or connections between different systems of knowledge'. This growing connection with different modes of thinking, reshape the way we see, understand and live the world.

The second way of approaching the concept of assemblage focuses on how entities (humans, for example) are connected and organized. They are then described through a variety of capabilities they develop to make connections and 'to form assemblages with other individuals, organic or inorganic' (DeLanda 2002, 63). For Deleuze and Guattari (1987), the main characteristic of the assemblage is its *tetralency*, which means that assemblages can combine elements in four ways: *machinic content*, *collective expression*, *territoriality* and *detrterritorialization*.

2. *Real, virtual and Actual*

An assemblage refers both to a *virtual space* (of pure potential on the plane of immanence) and to *actual space*, (an actualized form on the actual/transcendental plane). Thus, an *assemblage as a Real entity* has both a virtual and actual dimension. Abstract machines belong to the virtual (immanent) space, and they are actualized as assemblages. The virtual is accessed through a *diagram* that *maps* 1 the unactualized tendencies (singularities) and (2) the unactualized capacities to affect and to be affected¹¹.

¹⁰ Assemblages are made of two vectors: the actual and the virtual. The first is oriented toward the *plane of transcendence or molar or strata*. This vector produces a *relative* de/re-territorialization. The second vector is oriented toward the *plane of immanence* and produces *absolute movements* of de/re-territorialization. Movements on a *plane of immanence* are seen as *virtual*. The absolute and thus virtual movement of de-territorialization is called as a Line of Flight.

¹¹ *Singularities* are seen as attractors that allow many actualizations to a problem. Actualization is a temporary solution to a problem and is derived from processes of individuation. Real problems are defined by singularities. The concept of *truth* applies to problems (in general). It does not apply to actualizations because it is only a temporary solution to the problem (in the process of difference and repetition). Problems maintain certain autonomy from their particular solution. The capacity to *affect* is the potential to form connections with diverse elements in an assemblage.

Everything that exists in the actual space is a response to a problem. Each actual thing is a solution to a problem that emerges in the world of virtual possibilities. Each solution however, is not the only solution to that problem. A liberal state or an autocratic state is different responses (solutions) to the problem of how to organize society. The 'real' consists of two planes, one correspond to the ACTUAL (form) and the other to VIRTUAL (formless). They are both two different parts of the REAL.

2.8 Change

Since assemblages are made of heterogeneous parts they do not dissolve into the next larger scale, but evolve through a creative process and thus remain open for new and different connections and therefore for (immanent) change. The identity of an assemblage is always unstable, uncertain because other processes act to destabilize or decode it. The identity of an assemblage is that of a unique singular individual. Its properties are not given; they are merely potential if not exercised.

De-territorialization is understood as a movement that produces change. It expresses the creative potential of an assemblage to become, to connect differently and to grow in a disorganized way. To de-territorialize means to loosen, release, disconnect from fixed connections of an assemblage, while reconnecting into new organizations is defined as re-territorialization. De-territorialization is not the opposite of re-territorialization. De-territorialization is the territory intrinsic/natural process of transformation; it is linked to the process of change, which is immanent to a territory. Thus in order to know how an event emerges and advances, it is not enough to trace its developments from actual events, but instead, to map it, which implies (1) to embrace the space of potential, and (2) to counter-actualize the becoming of the setting.

The next section deals with the becoming of planning experiences in Brazil. Instead of examining points or the fixed properties of the assemblages, it focuses on the different lines that frame it and make up the process of transformation. These experiences shows how a network of horizontal, acentric, non-hierarchical connections evolving in a rhizomatic way can result in new possible forms of land and modes of doing and becoming.

3. Local Experiments: Planning as Rhizomatic Process of Planning the Unforeseen

This section discusses some planning experiments and participatory practices carried out by a diversified range of informal, advocate groups and local movements. These experiments evaluate the working of these groups in dealing with specific and concrete situations. The main target is to face a range of small but real problems confronted by the community. The distinctive aspect of these experiments is the collaborative and networked effort accomplished by the participants. The recurrent feature of these networks is the absence of any kind of central or institutionalized apparatus, be it public or private.

The history of local planning in Brazil has been mostly conservative. For the most part planning institutions only served the private interest of elite groups. In fact, these groups always dominated the local institutions, and as such, most of the administrative procedures only produced outcomes to promote those interests, mainly in detriment of the majority of the population. Only recently, changes introduced in administrative practices—mainly under the impact of democratic governments—allowed popular involvement in public planning activities.

The first innovations, which started in Lages and Boa Esperança during the seventies, pointed out to the emergence of local and popular groups such as neighbor associations, rural

organizations, housing and land-tenure defense movements, etc. These early associative experiences and their participatory practices open the way for new experiments and that require new institutional arrangements for the management of urban realm. That entails the construction of a new political culture, which may involve the assemblage of new relations between formal institutions and the public.

But what are the direction these experiences points? What they innovate? What kind of political project or utopia they carry on? However, innovations by themselves cannot teach us anything, as they do not indicate the direction of the process. It is important to be aware that democratic processes of deliberation may conceal their meanings. Anyway, these movements can be seen as lines of flight seeking to construct new spaces and new modes doing and dealing with the issues at hand. However, as Deleuze-Guattari warns us these flights may be recaptured by the institutional apparatus and indeed dominant interests may seize them, and use them to deceive, co-opt, and control the political power. In fact, lines of flight recouped may be used as an instrument of manipulation of people's dreams and expectations and work to disarticulate any possibility for genuine popular action.

The experiences described in the following paragraphs are part of experiments under way in Brazil, and they are connected to many aspects of the urban or rural life. These experiments take place in many spheres of informal governance system and counts with the involvement of different kind of individuals, informal groups and associations, participating of the construction of what Deleuze-Guattari call "new lands". These experiments are mostly present outside the formal institutions and in many cases may even be carried out independently of any formal government participation.

The next section describes some experiences we call rhizomatic collaborative planning. These experiences differs in scope, objectives and results, and are taken from an array of informal, low profile, practical experiences of local communities, seeking to solve their real problems. The main features of these experiences are the informal, non-hierarchical, a centered and collaborative work the participants perform along and within the process. Actors interact freely and collaboratively with no central control and actions are taken with no need for bureaucratic intermediation or formal regulation. Decisions are not a formal top-down process, but instead they are based on free dialogue among participants and solutions are not definitive—an ultimate and fixed point—but emerge as flow of possibilities, that is built along the way from the diverse of views, opinions and interests of the participants.

3.1 Hulha Negra Township Experiment.

Hulha Negra is a small community of the Rio Grande do Sul State, where a remarkable experience of collaborative work has taken place. The interaction of two local councils dealing with different issues (economic development and scholar meals) introduced a new perspective for local rural producers and improved the quality of local student's meals, by changing the logic food supply of local schools.

Several small producers (local farmers) participated in the council of school meals since their children belonged the local education system, but they were also members of the economic development council seeking alternatives to improve the local economy (and local producers revenues). Initially, they thought that they needed to increase demand for their local commodities in order get increases in income, lately they discovered that the local administration used local resources to buy food for the school meals outside the town – from foreign dealers and/or producers. They also discovered that the quality of the meal was poor and inappropriate. The collaborative work of the councils, the farmers and of the local

administration resulted in changes in the school meals policy: the local farmers organized a cooperative and began to provide the meals to the local public schools. This allowed public resources to remain within the local economy and the children meals improved considerably.

3.2 Monsenhor Tabosa Experiment.

Monsenhor Tabosa is a small town in Ceara State, in the northeast of Brazil, a poor and depressed region in the country. In Monsenhor Tabosa initiate the Programa Arco Iris (Rainbow Program) a very interesting collaborative work among the local government, a local NGO (Conselho de Segurança do Bairro de Fátima) and Abrinq Foundation (a Nationwide NGO sponsored by the Toys Industry Federation). The main target of the program was the students of primary education. After many discussions among the parts representatives and the local community, it was decided that the program should start by improving the capacity of the local teacher in order to enhance the quality of the teaching, and by that to improve the child school performance. Pedagogical workshops covering a variety of subjects (ethics, art, history, citizenship, bio-dance) were implemented with the objective of persuading the professor on the need to revise and change their old educational practices. Abrinq Foundation covered the main costs of the program while the local government paid for travel and meals expenses. Some years later, the municipality of Monsenhor Tabosa shows a dramatic change in their educational patterns with a noticeable improvement on the entire school system performance as indicated by the figures showing a drop on student's academic failure or school abandonment. In fact, this collaborative work shows important and interesting aspects. First the process started in a small town far from any significant urban or information center. Second, it also started outside formal government, through the action of a local NGO and the community. Third, these local groups were able to seize important connections not only with local public institutions but also with institutions at the national level.

3.3 Women in Action Program.

This program starts in Leme, a medium size town of Sao Paulo State. It is directed to the low-income families and unemployed people. The main objective of the program is to increase the professional capacity of the women by means of educative courses, events, workshops, and meetings and active social work. The program is handled by local the Lyons Club and The Solidarity Social Fund (a private NGOs) in cooperation some branches of local government.

With the partial contribution of each of these partners, Leme city was able to create a very powerful social program directed on the one hand to help woman emancipation and, on the other, to face problems of poverty and unemployment. What is important in this case is the informal alliances and non-hierarchical work between the participants – government, private groups, population. The program achievements soon became clear. It has contributed, on the one hand, to soften poverty and unemployment, and, on the other to generate income and self-confidence for poor families. Some of the women who participated in the courses of dressmaker and cloth painting are now working by themselves, at home and trading their products. Other women created a cooperative and are now producing bed-sheets and uniforms for the Public Health and Education departments of the local administration.

3.4 Community Garden Program.

In 1995 slum dwellers in Sao Bernardo do Campo – a median size town of 400.000 inhabitants situated at Sao Paulo metropolitan area – starts a program called Community Garden, directed to increase the quality of the food consumed by the low-income population. Several partners sponsored the program: slum residents, local government, the Methodist University Alumni Association, local firms, and other interested citizens. In addition to solve the food supply issue

for poor people, the program also sought to increase family income. Each participant works in collaboration with the other. There is no central coordination, or rules for participating. The local administration¹² and the private firms provide the land for cultivation, the low-income people work on the land with the technical supervision of university professors (agronomy engineer), and the Alumni Association offer technical and legal support and undertake the project management.

Initially all the members discuss how to distribute the land, who will prepare the land for plantation and who does the infrastructure work. Once the land is cultivated, new meetings are held this time to decide how to share production and to whom the new plots for cultivation will be assigned. After the harvest and distribution of the yields, the surplus is commercialized. During the whole process, the alumni association in connection with the local university carries out an education program.

The vegetable garden experiment achieved an enormous success all over the country, and soon other municipalities started a similar program. The program success is mainly due to its ability to involve directly the target population, solve the food problem of low-income families, and create an alternative for increasing the earnings of those families of unemployed parents.

This is a relatively cheap collaborative program. The local administration gain by alleviating poverty, the private firms gain by improving their image in the city, the university and the alumni association gain by providing an opportunity for students and alumni to apply their knowledge, and the low-income families gain twice as they have their food quality and family income improved. At this moment, many municipalities over country have adopted programs like this mainly as a real alternative policy against unemployment.

4. Conclusion

The history of social struggles in Brazil is a history of struggle for citizenship and social justice, which can be summarized as the pursuit for democratization of the public sphere. In the case of planning, such democratization involves access to arenas of collective deliberation. For this reason, movements and associations of civil society carries previously incorporated into their practices, a strong ability of working together, of sharing and collaboration: a history of network organization, solidarity and mutual strengthening. (Freire, 1994) These movements are carriers of a new social ethics: the ethics of respect, brotherhood, justice and freedom—an ethics that seeks equality of opportunities in a world of diversity and differences.

These participatory social action experiences do not appear anywhere. They are the product of specific circumstances, of real political actors and of tangible action social groups. Often, experiences emerge of informal, isolated actions; other times, they are part of larger movements of transformation of civil society institutions. In most cases the current decline of political forces and the decay of conservative governance institutions nowadays, result from their inability to build a political pact that paves the way for new discourses to manifest and new political actors to emerge. In contexts of change and transformation, new social agents materialize as political actors constituting movements and practices that will seed new forms of political and social regulation.

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¹² São Bernardo do Campo local government was at that time fleeing political project from the mainstream political system.

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Mis-Romanticism of Hidden Spaces in Infrastructure

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Abstract

This paper proposes a new understanding of how in many countries with a growing middle-class, culturally-significant spaces that appeal to a specific demographic emerge to an almost cult-like following, out of the patchwork of underutilized infrastructure. Many factors have become apparent that influence how these spaces come about, the identities of the clientele and what the influx of these spaces means for cities. Specifically of interest are how reciprocally demographic shifts cause an increase in spaces of a particular aesthetic disposition as well as how the production of these spaces incites a particular type of consumer—one with a view of becoming a producer of cultural vernacular. Such spaces as craft breweries, third wave coffee shops and food truck markets are hot-spots of as Richard Florida (2011) describes the new 'creative class'. The ways these spaces come about, their clientele, notwithstanding the infrastructural aesthetic that dominates much of the landscape of 'hidden spaces' are questions related closely with a contemporary class struggle that are underpinned still in this day and age by strong notions of race and ethnicity. This will be examined vis-à-vis the lens of gentrification theory as well as theories of cultural production.

1. Introduction

As urban planners, we are conditioned to approach our practice ideally with a sensitivity to how culture is attached to specific places. When this culture becomes a local vernacular, planners are often encouraged to play to this voluntary assertion of a local identity by helping citizens to develop spaces based on public consultation and participatory design. Recently, appealing to people's curiosity and sense of intrigue, certain spaces have emerged from underutilized infrastructure in regions around the world experiencing rapid demographic change. Many define this as gentrification yet many of the same individuals that are considered 'gentrifiers' stand in great ideological opposition to the changes that brings to their communities. It is therefore suggested that rather than simply changes in types of business establishments as a result of demographic shift, new middle class cultural producers and those aspiring to live as cultural producers fall victim to a romanticism of space that is often associated with fantastical notions of employment in creative industries. As a result of these sub-publics' attempts to rationalize such middle-class values and desire for nuance, increasing inequality is born and it is this challenge for urban planners that this paper aims to address.

The first section examines the 'hidden spaces' that emerge from disused infrastructure. In this context hidden spaces are establishments that are discussed and shared among individuals leading to a cult-like idealisation of their role not only as places for consumption, but also as places of a unique cultural production. Specifically this concept will be explored through a critical examination of sub-publics. Secondly a case study of the physical and aesthetic manifestations of these spaces will be described. Part three discusses gentrification theory and whether or not it is applicable to these observed trends. Finally observed patterns of cultural production that augment a romanticism or fetishisation of infrastructure will be explored. This romanticism of infrastructural aestheticisation is questioned as to whether planners can use this as a response to only middle-class demands or if it should be seen as a contemporary trend to be replaced in the next generation by new romantic notions of the city. It should also be recognized that this conversation lies within the lens of urbanist discourse, and will be examined vis-à-vis the concept of subaltern publics as per Crawford (1991) and re-imagined as purely an analysis of spaces for a specific 'sub-public'. This term shall henceforth be introduced as a method of explaining the dynamics of space polity recognising that the group colloquially called 'hipsters' may inhabit and reproduce a very key physical aesthetic. Should urban planners prioritize or demonize these

aesthetics as a passing 'scene', or do they speak to a larger understanding of the direction that ageing millennials will eventually follow? Ultimately the question must be posed as to whether infrastructure-based spaces that cater to a middle-class exist simply as romantic spaces for youth to revel in, or do they provide benefit that goes beyond our current economic state being one of production.

A personal note:

In writing this paper, I have come to the realization that perhaps I too, may fall easily under one of several categories of 'sub-publics' given my demonstrable eschewing of mainstream patterns of consumption, adding an additional layer of meaning. This project has me trying to make sense of how I ascribe my own ideals and aesthetics on planning projects, and has become an exercise in self-analysis of my own cohort and how they relate to the world around them. Perhaps this is a personal series of anecdotes that move towards redefining my own knowledge of my place in the world.

2. Sub-publics

Among the generation that has been dubbed 'Generation Y', 'Echo-boomers', or the colloquial term, 'millennials' there is little doubt that attraction to newness, diversity and non-conformist products and services is a large part of the dominant rhetoric (Florida 2011; Frank 1997; Harris 2012). Physical spaces that attract diverse human capital are increasingly a part of desirable urban environments where members of this generation want to live and have become a necessary part of the social trope of our time. Many in these generations delineate their social circles and make choices about the establishments they patronize based on their expectations of the types of people with whom they expect to have chance encounters (Cronin et al. 2012). This mentality has effects not only on social interaction, but is increasingly accompanied by an infrastructural aesthetic that can lead to an effect of visual homogeneity (Florida 2011).

There is also an observable trend in such generations that tend to abandon the fantasy of the suburbs in favour of the inner city, which often contains a high concentration of decommissioned (typically industrial) infrastructure (Alfrey 2010; Currid & Williams 2010; Slater 2012). The prevalence of such infrastructure and the ensuing emergence of 'hidden spaces' has more to do with the combination of the age of a city and an aesthetic temperament of its residents that is exacerbated by a youthful resistance to conformity (Ley 2003; Cronin et al. 2012; Harris 2011). Ley describes this as an extension of Bourdieu's concept of aesthetic disposition, and how it can be extrapolated to illustrate many of the aesthetic transformations witnessed recently in inner-city development or renewal (2003). Yet it is the ability to have ownership over transforming one's everyday—defined by Ley as class-privileged temperament (2003) that must be examined in conjunction with the construction of spaces that rouse particular human interest. It is therefore suggested that this could explain reasons for the dominance of specific demographics in the building, creation and patronisation of such hidden spaces, as well as a public resistance to such changes manifesting itself in a criticism of gentrification (see section II). What concerns us in this section, are the physical and ontological manifestations of such spaces and what defines their apparently homogenous infrastructural aesthetic.

The aesthetic appropriation of place, with its valuation of the commonplace and off-centre, appeals to other professionals, particularly those who are also higher in cultural capital than in economic capital and who share something of the artist's antipathy towards commerce and convention. – David Ley, 2003

This appropriation suggests that it is likely the 'mix' and consolidation of various sub-publics in urban areas that ultimately results in a visually homogenized aesthetic, i.e. it is the summation and average of all sub-publics' attempts to distinguish themselves that leads to a relatively homogenous visual identity (Arnould & Thompson 2005; Crawford 2013).

Sociologist Pierre Bourdieu asserts that the distinguishing characteristics of a particular group can only be expressed through the conference of aesthetic status on banal or common objects and this is best exemplified through appropriation of infrastructure (1984). In our contemporary age, one of the more obvious sub-publics that we can witness engaging with this type of distinction is that of hipsters (Bridge 2006; Cronin et al. 2012; Deveau 2015; McCracken 2010).

Several scholars have attempted to define the term 'hipster' since the late 1970s. The discourse is dominated by ethnographic studies and scholarship on consumer trends, yet rarely has the concept been extended to the realm of urban planning and the study of creating communities with such changing urban demographics in mind. The first known use of the term 'hipster' was in Norman Mailer's essay entitled *The White Negro: Superficial reflections on the hipster*. Mailer describes the hipster as emblematic of an appropriation of culture, style and an amassment of various identities (1957). Cronin et al., describe in their analysis of food-based resistance strategies in the production of identity, hipster as a 'community of consumption' (2012: 6). The term 'hipsterdom' (often credited to the novelist William S. Burroughs), is for some 'a style of consciousness that derives from the special viewpoint and social condition of the drug addict' (Skerl in Burroughs 1984: iix). Some equate this imprint on the cultural landscape with a 'scene' (Bachelard 1994; Deveau 2015), yet 'scenes' are often understood as transient in nature and therefore signify a passing trend. Arsel and Thompson insist that 'hipster' has become synonymous with a 'fashionable counterculture'. Others state that as a follow-up to the bohemian culture that emerged in the 19th century, hipsters too have forged their identity based on the 'perceived mismatch between creative ability and the market' (Wilson 1999: 12). What many do agree on is the hipster's deliberate assertion of an identity of distinction, one based on a phantasmagorical conception of an authentic urban experience.

Accepting the notion that hipsters forge their identities specifically through appropriation of infrastructural space, it logically follows that certain types of capital are necessary for this. *The Hipster Handbook* is a satirical guide written by Lanham, Nicely and Betchel who describe hipsters as largely a middle class phenomenon falling in stark contrast to the cultural movements of their predecessors (2003). This implies that many have the financial resources to play out this identity through physical means. Some, such as Richard Florida, suggest that this could be a re-emergence of a class phenomenon that is once again becoming a significant part of how we distinguish ourselves (2011). Could this emerging aesthetically-motivated sub-public simply be a factor of a new class and the resources available to those with certain financial means? Bourdieu asserts that enclaves of certain groups originate from the financial means of those on a particular social ladder that has persisted through time, based on a romanticism of the group's own history (1984). This 'authenticity' of experience is emphasized throughout the literature as imperative for the maintenance of social cohesion and as a safeguard against the group's diffusion. Deveau explains with regards to hipsters in Toronto's East End that many 'pursue what they perceive to be 'authentic' cultural experiences in what they deem to be undiscovered, creative spaces resulting in a frequently repeated cycle of gentrification and redevelopment' (2015). Planners are however, while deeply entrenched in cycles of redevelopment or urban regeneration, typically unable to correctly assume anything about the make-up and interests of populations not yet in existence. If a site takes an average of ten years for redevelopment, the middle-class, middle age demographics that are assumed to move in upon completion, have not yet fully asserted their infrastructural aestheticisation. Yet, once a specific group is understood to be a primary instigator of such changes, the authenticity that Deveau suggests, can be understood to be pursued through methods of craft production, with the clear purpose of seeking locally derived commodities detached from modern and industrial production and marketing (Ley 2003). Yet how does this result in a consistent aesthetic of 'hipster spaces' that can be so easily observed in cities around the globe?

3. Physical Aesthetic Appropriation

Even with our conventional top-down planning institutions, such sub-publics as hipsters are making and developing their own spaces. This is done through what Ley describes as 'stylisation of life' (2003). This is often associated with artists whose very identity is forged by aesthetic views and practice, occupation and valorisation of space (Ley 2003). More so than fashion, the valorisation of space is what incites hipsters to achieve a highly stylized, hybrid aesthetic that responds rapidly to the threat of diffusion (Alfrey 2010). Such spaces are highly adaptable, can be monitored and changed on a whim, and any threat to their uniqueness is re-asserted with new functionality. Modular, renewable and often with a seemingly low ecological footprint, hipsters appear to be practicing what the urban planning and design professions preach. Yet it is this stylisation—this self-empowering creation—that is what I claim can lead to romanticism, one that is an invented notion of urbanity for those who have the luxury and means to create their own aesthetic. This concept of 'place-making' can be understood as a building of an aesthetic, however, criticism of the idea often stems from the population who are most in control over their own domain (Bonner 2002). 'Made places' are developed the world over simply by nature of those with power, creating the lifestyle they expect—services including restaurants, cafes and theatres—the world over (Bonner 2002). People such as expats, international consultants and cosmopolitan financiers all have expectations of the style, quality and aesthetic of establishments they patronize the world over. Along with these expectations of the power to influence one's domain, comes an assertion of a particular aesthetic, which challenges our norms of spatial production (Harvey 1993). Does this imply that planners have much to learn from the ways in which hipsters develop space in an adaptable and retrofitable way?

Many equate the perceived uniqueness of such spaces to a factor of 'coolness' that is attractive for many who have the means to explore beyond their basic needs. Simply building spaces for those that are able to participate in the search for activities beyond the mundane does not however encourage the growth of a middle class (Smith 1979), it simply furthers the class-cultural divide (Harvey 1993; Florida 2011). Yet there is also a strong sense of fantasy of following in the artist's footsteps by successive cohorts of professionals that produce such socially stratifying results along socio-economic, class and racial divides (Ley 2003). Compared to lay-people, artist followings tend to be associated with philosophical, existentialist questions and a depth of critical thought. Yet as many through the lens of cultural theory assert, in every temporality, there are certain elements of contemporary culture that are accepted, even if they do not serve the best interests of the majority (Bourdieu 1993). This leads to interactions that emphasize the 'coolness' or authenticity of such spaces, and connotations of rarity, exclusivity and distinction that being a part of such a community provides.

Many have undoubtedly encountered what I assert is a 'mis-romanticism' in everyday interactions. Comments such as 'There's this new cool bar you should check out,' or 'the St. James Street farmers market is heaven for a locavore' are enigmatic of this generation that prides itself on novelty and neolocalist dogma and is easily fatigued by frequenting the same locations. Do these comments contribute to an urban area's development or are they simply misplaced fetishisation of one's assumptions of the physical, analogous to re-propagation of timeless socio-cultural venues? With this in mind, these spaces are perhaps best understood as the speakeasy of our current generation, one broadened to include food truck fairs, gastropubs and inner-city rooftop patios and some of the following examples.

Figure 1 shows several examples of the types of establishments observed that for the purposes of this paper are considered hidden spaces:



*Bellwoods Brewery (Toronto, CA) –
Former auto repair shop*



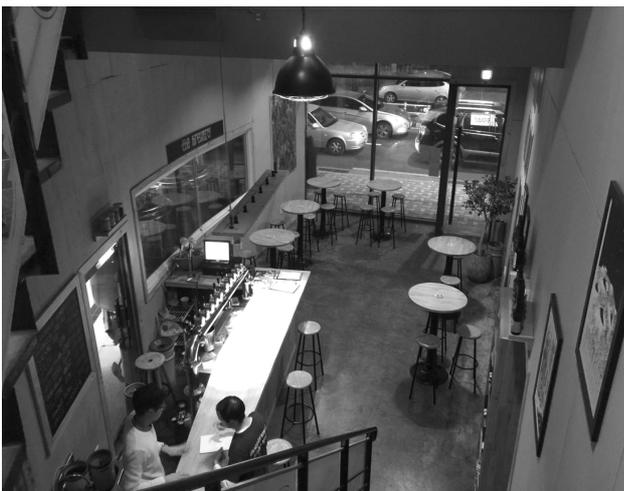
*Street Feast (Dalston, London, UK) –
Former warehouse and builders yard*



*Jaqen Craft Beer (Bordeaux, FR) –
Former servant's quarters*



*Fenix Food Factory (Rotterdam, NL) –
Former dry dock/ warehouse*



*Galmegi Brewing (Busan, SK) –
Former warehouse*



*The Alchemist (Nairobi, KE) –
Former upscale residence*

Figure 1 - All images property of Jacob Kalmakoff

General trends:

- Bars, public houses or unknown establishments under elevated train tracks
- Multi-purpose establishments: ie., café-o-mat, bikebar
- Usage of uniquely coiled incandescent light bulbs hanging from the ceiling
- Usage of repurposed wooden surfaces as furniture at such establishments.
- High Ceilings
- Container box establishments
- Independently-owned, non-consumer

Networks of aesthetically-similar brands form a large part of such spaces that involve specifically the consumption of 'craft' or 'artisan' food and beverages. Sitting at Bellwoods Brewery on Toronto's notorious counter-culture mecca of Ossington Street, one can witness this first-hand through the presence of Blackbird Baking Company—another since 2011 establishment—on the food menu. This idea of how such specialized businesses piggyback off others for inclusion in a network of hidden spaces, reasserts the perceived exclusivity of such spaces in the minds of people with interest in specialized food products. Cronin et al., explains how through the hipster experience of food, ie. choosing what to eat, not only are new identities forged, but these identities are bolstered by the appropriation of spaces that reflect ideas of non-conformity (2012). This is clearly a large part of what leads to these spaces being unknown in that they appeal to individuals who desire a sense of participation in a network-like alternative consumer community. Clearly, however, the aesthetics of place-making in hidden spaces go far beyond the semiotics of food as simply choosing to commute to a further supermarket for better quality produce does not imply that the establishment has been gentrified. Such individual choices make up individual behaviour patterns, not a common aesthetic. Yet specialized patterns of choice consumption, often exalted as 'craft' or 'artisanal' have been shown to necessarily represent a new type of production (Arsel and Thompson 2011). The exclusivity is where the fantasy lies; yet this comes with a few specific characteristics of the space (Deveau 2015). One is the observable trend that the primary patrons of such establishments—even in such cities as Seoul and Nairobi—appear to be Caucasian. Alternatively, even in such international multicultural metropolises such as London or Toronto, the demographic is clear. By assuming that we are building spaces for this type of urban demographic, we limit the types of spaces we create (Frank 1997; Thompson and Arsel 2004). Yet once we begin to describe the characteristics of these communities of consumption (Arnould and Thompson 2005), the networks that emerge undoubtedly point to exclusion of certain people. This has been described by many as gentrification—the emergence of diverse communities all consuming various non-conformist products, leading to a fear of diffusion and ultimately to—price exclusivity.

4. Gentrification

The prevalence of clientele of certain socio-economic and ethnic demographics patronizing hidden spaces must not be dismissed as inconsequential as it provides clues into phenomena that are relevant for planning discourse. What is of specific importance to the aestheticisation of infrastructure is the discourse between varying sub-publics that make up the city and individual gentrifiers. Not only must gentrification be understood as a displacement of population based on the cost of housing, but it must be also seen to occur when one is no longer able to financially afford participation in certain social environments.

Literature on gentrification has come a long way since Ruth Glass's seminal work that first brought the term into common usage in 1964. Smith points to gentrification as a process of accumulation of capital through the urban land market, and his assumptions lie in the treatment of gentrifiable housing markets that valorise the closing of the rent gap, bringing new capital into inner city areas (Bridge 2001; Smith 1979, 1996). Much as Harris contends, this view does not reflect the people at the centre of any gentrification action—whether the state enacting gentrification policy, or sub-publics moving to other places for a better quality of life (2012). Zukin in *Naked City* espouses Brooklyn's social transformation as a wilful

gentrification—one where residents of Manhattan's rapidly commercialising neighbourhoods, eager for more authentic spaces, took their middle-class incomes across the river (2010). Yet of late, much of the gentrification literature is incomplete in that it still promulgates the continuation of Jacobsian ideals of the city as a tapestry of diverse groups (Jacobs 1961). This is problematic in that it demonizes informality and assumes a Eurocentric view of elite landowners facilitating the impoverished in climbing the socio-economic ladder (Crawford 2013; Ghertner 2015). Jacobs assertion that 'new uses need old buildings' along with the inverse, shrouds the challenges that gentrification poses in our society with racial and ethnic legacies of tension (Chang, 2014). Others such as Harris emphasize that rather than the a focus on production of urban space for progressively more affluent users, the cultural landscape, histories and aesthetic registers should be equally incorporated into analyses of gentrification (2012). Even more specifically scholars such as Crawford describe patterns of gentrification as a factor of cultural environment, rather than as congruent structures reflective of a location's past (2013).

Additionally, the cultural and lifestyle values of this new middle class that tend to include liberal political views, historic preservation of the urban core and consumption of non-standardized commodities is a clear summary of the characteristics attributed to this movement (Ley 1996). These seemingly innocently reasonable—almost humanist values—appeal to many for whom the movement garners attention. Planners fall victim to this romanticism too—a world in which the human is at the centre of planning and participatory architecture is the norm and on where every individual has the means, wherewithal and capacity to influence his/her own domain. This understanding of gentrification better explains reasons for increases in cultural production and therefore how the infrastructural aesthetic is a contemporary manifestation of gentrification. Characterized by a being typically university graduates, employment in 'post-industrial occupations' or tertiary sectors desire for control, politicians, planners and social engineers place a high value on these populations as a result of their financial capacity (Bridge 2001; Slater 2012; Smith 1979). This however, is where it is clearly possible to see aspects of gentrification becoming detrimental to a community. When one is able to afford access to certain locations and spaces and one's next-door neighbour is priced-out of the same establishment, a rift easily forms in a community even though there is will for all to be one day able to afford it. Thus exclusivity meets the delicate but slow pull of gentrification—where there will always be some unable to feel economically viable in the area where he or she lives (Florida 2011; Thompson & Arsel 2004). Even if one can afford rent in a neighbourhood, when one can no longer afford the local watering hole, a second wave of gentrification has begun (Slater 2012).

Part of this may be a result of the financial costs of the implementation of physical aesthetic elements described above, providing an incentive to raise prices beyond the local average (Bridge 2001; Smith 1979). Another possibility is suggested that it may be the perceived exclusivity of such spaces that gives reason for a supplementary levy (Deveau 2015). Or perhaps that in anticipation of a clientele with more liquidity, items may be priced higher than average in the neighbourhood (Ghertner 2015). Whatever the mechanism, establishments that are seen as 'hidden' have a higher perceived value by either the consumer or the producer, challenging other surrounding businesses with pricing. Bridge asserts that this urban gentrification at the individual scale is a strategy for distinction for an emerging class that was set upon distinguishing themselves from publics in the suburbs (2001). His interpretation emphasizes a competition between the suburban-based middle class and the inner-city dwellers who: '...Lacking sufficient economic capital to outshine [suburban dwellers] through conspicuous consumption, this group deployed their considerable cultural capital to create a distinctive lifestyle through the renovation of older houses in the central city' (Bridge 2001: 206). This is not, however, the sub-public that is contemporarily associated with the bearded artisanal craftsperson eschewing all forms of cultural hegemony but the occasional *Pabst Blue Ribbon Beer*. The 'hipster' that has become the epitome of much cultural discussion is one who can afford all the urban luxuries yet consciously seeks to differentiate by choosing non-conformist or non-standardized patterns of consumption (Alfrey 2010; Cronin et al. 2012). This may include renovating older houses

in once predominantly industrial urban centres—areas that also happen to contain significant stock of disused infrastructure. A successive third wave of gentrification therefore is a popularisation of a lifestyle cache, whereas members of the professional middle-class are attracted to opportunities for living that gentrification provides typically associated with this higher income bracket (Bridge 2001; Matthews and Patton, 2016).

For planners this ultimately means that as we witness such 'underground' and self-build aspects of retrofitted infrastructure as a net-positive contribution to a community, the proprietors become an idealised sub-public who can be seen as 'citizen partners'. The assumption that this 'new middle-class' (as per Slater 2012) is the public for whom cities should be built in mind, is akin to Ghertner's notions of how top-down institutions in New Delhi prioritise standardized aesthetics in urban development (2015). Ghertner describes this with reference to aestheticisation in New Delhi as the practice of evaluating territory based on its adherence to aesthetic norms—'revitalization', rather than gentrification (2015). But inequalities often become more apparent through small-scale wealth production in urban revitalization areas, and even in India, this is driven for the most part by caucasian and middle-class expats (Ghertner 2015; Matthews and Patton 2016). Even in cities where they are the minority, white middle-class individuals appear to be the very same gentrifiers that are creating hidden spaces and networks of spaces within such cities as Seoul, Dhaka and Sao Paulo. This brings with it several questions that hint at notions of neo-colonialism, which are too broad to be discussed in this paper. Yet it should nevertheless not go without being noted as it is a particular trend in cities that are internationally recognised as being multicultural. Even though, as Smith claims, individual gentrifiers are important in initiating rehabilitation (1979), as described in part one, it is the networks that these small-scale businesses create that challenge the notion of neighbourhood regeneration or revitalization (Wallace 1956). Wallace goes on to define a revitalization movement as a 'deliberate, organized, conscious effort by members of a society to construct a more satisfying culture' (1956: 265). Yet in cases of organized and deliberate revitalization through networks, those responsible should be also aware of the secondary effects of this change on a community. It is suggested that perhaps if hipsterdom and the attitudes of many members of generation Y is one of 'revitalization', this may explain the clear trend towards a purposeful production of new culture through ageing infrastructure. Conversely, Bourdieu describes gentrification as an unconscious response (1984), one that doesn't play to a network of actors, or of questions of the racial identity of the gentrifiers. The question remains as to whether the networks or individual actors are aware of their role and influence within cities no longer with physical borders to define the aspects of cultural production that enter and exit, whether physical or not.

Ultimately, it is the aestheticisation that often concerns us when attempting to understand the political connotations of spaces we build as planners. If one individual has an artistic vision of a space and how it should appear physically this outlook is likely to have more sway with planners and those who value the cultural field (Bourdieu 1984). Perhaps the most poignant expression of the assertion of identity is the notion that gentrification is simply the aestheticisation of a space (Ley 2003). Aestheticisation becomes a fantastical and romantic response for a sub-public existing on the periphery of the local. Understanding the varying forces behind gentrification, we can begin to see how it can be seen as both a facet of social production as well as inducing social stratification of sub-publics.

5. Patterns of cultural production – infrastructural romanticism

Romantic ideas of secluded, 'underground' or hidden spaces set the stage for much of the fatigue—sometimes to the point of boredom—that many in Generation Y experience when little variability exists in their daily lives. As described previously, for one who does not consider him or herself yet privy to the awareness of a variety of hidden spaces, curiosity of others' abilities of cultural production becomes a focal point of intrigue in his/her life. In *The Field of Cultural Production*, Bourdieu describes how the tendencies of various groups to inspire production rather than consumption, incites fantastical ideas of what the artist can produce (1993). The fantasy is one of production—not merely consumption—that

substantiates a need for assertion of an aesthetic value. This is not only a production of new and exciting 'craft' products, but the deliberate production of an identity—one that I argue, fails to account for the changing nature of cities. Yet another contemporary understanding of cultural production asserts that this production of cultural capital is a method of maintaining community in areas undergoing a demographic shift (Crawford 2013; Cronin et al. 2012). This idea of ensuring stability of community is one that pervades many of the worries of those living and working in cities leading to concepts such as (Markusen 2003; Slater 2012). But with the rapid rate at which our cities are changing, very few neighbourhoods remain stagnant (Currid and Williams 2010). Specifically, with the growth in artistic modes of production, the identity of the artistic producer has shifted as well towards one who targets more carefully of cultural autonomy (Zukin 1989). But this no longer simply stops at the artist themselves. Many are increasingly a part of networks of those employed in tertiary sectors that have divulged from creative industries into methods of economic accumulation. From the emphasis on overconsumption in many fully-developed economies, the shift from festivals to festival markets and from cultural production to entire economies centred around local networks is indicative of the rise of new industries centred entirely on production (Ley 2003). The existence of these industries of production force one who is already a consumer to be in close physical proximity to the physical infrastructure deemed 'necessary' for this cultural production (Currid and Williams 2010). This implies that not only is there a need for high-value infrastructure, but an association with this infrastructure and creative forms of production develops in the minds of such consumers. Many tend to associate such spaces with creative industries and this artistic production is commonly attributed to the infrastructure, as well as the artists desire and ability to form a community from this infrastructure. Often however, designated artist live-work spaces in redeveloped areas of cities such as Vancouver stray far from the ideology that many artists wish to convey as cultural producers (Ley 2003). Many are commoditised to attract other types of human capital as well. This ultimately validates what Markusen and King call the artistic dividend—the necessity for artists in our current era to actively seek capital accumulation and increasingly this is accomplished through aesthetic appropriation of space.

'Hidden spaces' can also provide opportunities to reassert or reimagine a local contemporary cultural identity. As has been discussed above, with the case of craft breweries, certain smaller communities along the West Coast of the United States have developed in the past ten years, a burgeoning craft beer 'culture'. Matthews and Patton cite place-based marketing as a common strategy for assertion of a local identity (2016). Much of the cultural production associated with the over 3000 craft breweries in the United States alone, can be understood as a 'neolocalism' which Shortridge describes as a 'deliberate seeking out of regional lore and local attachment by residents (new and old) as a delayed reaction to the destruction in modern America of traditional bonds to community and family (Shortridge 1996: 10). Those on the periphery of neolocalism, are responsible for much of the attribution of various aesthetics of such values (Frank 1997; Matthews and Patton 2016; Wilson 1999). Even as craft breweries grow in numbers and in geographic spread, the customer demographic has been shown to remain essentially the same (Matthews and Patton 2016; Reid et al 2014). In-depth field analysis which I undertook in August 2015 of 75 craft breweries in Washington, Oregon and California, illustrates the specific patterns of localisation that are of interest and value specifically to groups that are financially liquid (Kalmakoff, forthcoming). Not all the groups and individuals surveyed reported to be high-income earners and not all were seeking an authentically neolocal experience. Just as such spaces can breed a type of community, certain spaces can equally foster isolation of communities. This demarcation appears remarkably along racial and ethnographic lines.

Despite this apparent monocultural patronage of craft breweries, third wave coffee shops and food truck markets as will be shown in (Kalmakoff, forthcoming), these spaces are not simply romanticised by those who produce this cultural analogue. Rather, they are romanticised by the consumer, few of whom are equally self-reporting producers of culture in their tertiary industries. For the romantic consumer, the decision to locate in Seattle is no longer a world apart from London in its amenities, facilities or ambience (Atkinson and Bridge

2005). At the same time, those whose livelihoods provide them with the liquidity to explore or produce beyond their daily 'breadwinnings', do little to change this. Many would claim that customers come from more of a managerial class, but increasingly, it is those who aspire to be a part of this class who are first to seek out such infrastructural aestheticisation (Bourdieu, 1984). This is the main group for whom I describe a mis-romanticism of the spaces. Those for whom such establishments are not quite within their financial means yet have a strong desire for to be a part of a community—albeit one that revels in opportunities for financial gains—are not necessarily victims, but are active in seeking alternate realities in their social lives. We too as architects, engineers, urban planners, policy makers as well as those in civil society are challenged by certain fantasies—that of self-build communities—which we exalt as an ideal future. The increase in urban legibility of the urban publics for whom we build is heralded as leading to their eventual capability of creating what top down planning can not—a hedonistic personalised space. Part of this is challenged by our contemporary time—one of livelihoods tied to needs of production and consumption; part of this is a mis-romanticism of the urban in all its glory and the opportunities that concentrations of sub-publics can provide, even if upheld by a monoculture.

Romanticism however, is a challenging concept as it defies much of what impassions people to produce and create. One's notion of his/her own space is defined by a romanticism that cannot be qualified as a means of production. It is a personal 'fix' of controlling one's environment—one, which is rarely fully satisfied. Bachelard describes this polarity with reference to two secluded spaces—the attic and cellar (1994). Each particular space opens up very different perspectives for the imagination in that our dreams take on the irrationality of such depths of space, sending us to nonsensical or mis-romanticised ideals of the roles of this space in our lives. The polarity of the attic and the cellar is important as it gives a distinct character to different types of hidden space—one that is defined differently in the imagination, therefore assuming different fantastical manifestations. The reality is that physically these spaces are produced in the same way to the same effect—to develop a consumer. If we as planners are creating cities for and with these cultural producers, they must be considered a major stakeholder, but they should never be seen as simply a consumer of our urban plans. The delineation of these sub-publics of both consumption and production is boundless.

6. Conclusion

Hidden spaces can be seen in most major cities around the world and are unified by a consistent aesthetic. They are produced and maintained—even upheld—by a distinct generationally linked group, namely hipsters. Yet the consumers of much of this culture, although often members of a similar racial and ethnic demographic, are better described as aspiring producers in search of more distinct ways of shaping their identities. The common aesthetic that many of these spaces share speaks to the demographic, but also to our globalizing world—a world in which living in any city of a population of over a million can result in similar romanticist notions of opportunities to produce one's livelihood. Scholarship of globalisation in planning theory however, has not yet met this challenge as the notion of 'scale' is still held in high regard. If neighbourhoods are the new small-scale unit, then it follows that local context becomes less relevant. This neolocalism is perhaps a new topic for the field of gentrification to explore.

One must also recognise how cultural memory can be engrained into such spaces. Are these modern-day speakeasies simply fragments of cultural memory doomed to be ultimately disused? Currently the aesthetics promulgated by adaptive re-use and revitalization of infrastructure are part of a cycle of more environmentally-friendly and socially responsible intentioned production (Harvey 1993; Thompson and Arsel 2004). Yet the political values inherent in such examples of contemporary culture often shroud major social issues that planners must also address. Are we to build and create spaces that play to this romanticism, or are we to develop new typologies that can address multiple sub-publics? This romanticism is not helping us to build better cities—the spaces will grow organically on

their own. Simply, self-build establishments that emphasize these values both aesthetically and ideologically do little to create an alternate vernacular. Re-using and adapting an infrastructural space will not necessarily encourage street life or play to any of the planning jargon that we are encouraged to develop. These are unfortunate factors of a rising middle class and a growing inequality in urban areas around the world. Only with the complete disregard for existing infrastructure, can a new type of urban vernacular be revealed and a new political realm be discovered.

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In search for new urban planning education and research formulas for future cities

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Abstract *This paper shows research and educational urban planning projects based on interdisciplinary approach including innovative elements to conduct research on built environment. Their common aim is to search for a new perspective on the city development and challenges resulting from changing conditions.*

1. Introduction – changing role of planners and planning education

Dynamic processes taking place in the urban space cause change of the role of the urban and regional planners. Education and applied research methods are the key to the future design for the cities we need. To influence planning practice there is a need of a new formula of research and education of future practitioners. While studying urban processes the understanding, the ability of perceiving and analyzing the phenomena determining the changes is required. In the era of the rapid urban development, it is important to think outside the box and to encompass a wide range of competences allowing to solve complex urban problems. Future planners, are the ones to decide on future cities shape but while performing this task they need to respond to the needs of their residents. Nowadays not only urban planners decide on the development of the cities but also a number of other actors, therefore it is necessary to support the improvement of the interdisciplinary skills in education and research.

2. New urban planning education and research formulas

This paper is introducing new planning education and research formulas taking as case studies two recent urban planning projects both dealing with research and education. Gdansk is a hub for both projects which are based on cooperation with multiple stakeholders and include innovative elements to conduct research on built environment. Their common aim is to search for a new perspective on the city development and challenges resulting from changing conditions. Common denominator of both projects is that they use an interdisciplinary approach, involving not only the planners, but also specialists in other sectors. Furthermore, in order to fill the gap between theory and practice, stakeholders from non-university sector should be involved such as local NGO's, business and public authorities representatives. They all provide an opportunity to exchange experience by all the involved parties and propose a new approach to the training of future urban planners. Both projects being the platforms for exchange concentrate on local problems, involving local research team always with an international perspective and combine knowledge build on different experiences integrating the academic community and researchers on different levels of their career including students, PhD candidates and senior researchers.

3. Mentor & Student Research Lab

The Mentor & Student Research Lab (abbreviation: MSRL) is an ISOCARP programme that combines research, field work and collaborative design. It has been

organized twice and the MSRL second edition research was focused on the Baltic Sea Region, considered a multidimensional urban phenomenon, with Gdansk acting as a hub for the research teams. The programme became ISOCARP platform for research promoting the collaboration of professionals from all over the world, graduate and PhD students by bringing together the mentors with a local research team to share experiences and propose strategic recommendations to strengthen sustainable urban development. The Idea of the MSRL with the core theme Vibrant Urban Solutions for Baltic Cities started three years ago during the first edition: Urban Transformation held as a side event for the ISOCARP congress, which at that time was organized in Gdynia. It was the first time the results of these programme were presented. Since then many organizer thoughts and reflections, remarks given by the participants and comments from the observers have resulted with continuous improvements. Today the programme may be called as innovative formula of research collaboration as the effect of the new work model that was created. After all, the three years have brought the involvement of more than 20 organizers supported by 3 supervisors, with more than 100 participants including PhD students and 10 mentors leading the teams.



Figure 1: MSRL teams; Source: author Agata Hinca

3.1 Project goals

The academic education entails numerous needs corresponding to the presented programme. First of all, it gives the opportunity of working together with experienced researchers from all over the world while integrating the local academia. What is worth mentioning is the possibility of bringing together both the practitioners and the theorists within common research platform with students and early-career researchers to establish a common ground where youth and ambition met with experience, professionalism and methodology to discuss the urban issues.

Besides the research, methodical and educational goals which are the most important for MSRL, this model of collaborations brings three main aims, which were also defined by the European Framework of Qualifications, including in particular:

- 1) Technical, which includes the development of the ability of using new technologies, what gives the possibility of working remotely between people from different universities. For many participants involved it is not only the first time working on the scientific research, but also a new experience which requires self-discipline and dealing with the challenges resulting from the distance working and collaborating.
- 2) Integrative, mainly related with the elements of the integration within the academia, as well as with the intercultural exchange and a development of the network of scientific cooperation between universities involved.
- 3) Social, understood as the development of not only the knowledge and skills of all the actors working within the programme, but also social skills resulting from the teamwork,

which is so important in the world of research.

3.2 *Relevance of the topic*

The transformation Polish cities have undergone started after democratic transition, of which the 25th anniversary took place in 2014. There was and still is an urgent need for an interdisciplinary discussion concerning perhaps the most significant issue that influences the quality of our life, namely space. The self-governance anniversary provided a great opportunity to think of how the Tricity (Gdańsk - Sopot - Gdynia) has changed in the last 25 years and to ask the question of what it will look like in the next 25 years. It is important to realize that in the post-war period, Gdansk underwent a unique transformation: from massive destruction to the recent fast urban development and most recently spectacular public and private investments, thanks to which the city can aspire to the role of a metropolis (Obracht-Prondzynska, 2014). The occasion as well as the ongoing public discussion became an inspiration to establish the research platform and start the first edition based on the core theme of the MSRL programme – Urban Transformations and for the undertaking of research projects by students and mentors.

During the first edition the research groups were searching for answer the question of the direction in which the Tricity and its surrounding areas should develop and whether it is an example of sustainable development. One group decided to research on smart infrastructure for waterfront cities. Thereafter, they chose Gdynia, a Polish harbor city and a part of the Tricity, for the case study. The outcome of their work was a set of proposals divided into groups: transport, basic supply infrastructure, social infrastructure, public order and protection, and economic infrastructure. Another one analyzed the European cities concerning the basic aspects of mobility such as bicycles, mobility plans, car-sharing, parking policy, bus on demand etc. Their next step was to conduct the research of mobility in Gdansk. There was one research focused on comparison of the Baltic cities before and after changes in 1989. The analysis of the transformations that affected the cities after 1989 was to indicate possible directions for interventions that should be made by the authorities to ensure that the cities develop in the best possible way. The study consisted of gathering and analyzing data from domains as space, city branding and identity, transport, economy, society, administrative systems, legislative systems as well as identifying crucial problems and working on the selected aspects in details (Appenzeller 2016).



Figure 2: Inspirations for the second edition; Source: MSRL materials

This are only the examples of the research project that the MSRL teams has been working on so far. However, the last one mentioned above became an inspiration for the second edition where the task for the research teams was to share experiences and propose the strategic recommendations to strengthen sustainable urban development initiatives for Baltic Sea Region at international, regional and local levels.

The groups focused on finding multifunctional spatial solutions to render Baltic cities and communities more sustainable through the concept of ecosystem services. One group was searching for creative solutions for waterfront cities in the context of climate change. With great interest the groups have taken up topics concerning the identity of the Baltic cities, therefore within one research the guidelines for middle east cities wounded during the war based on the cities destroyed during World War II in context of process of rebuild, architecture and urban design, has been prepared. Moreover, the MSRL research was also related with social aspects such as the differences in culture of urban planning management where the multicultural coastal cities were compered.

3.3 Process and tools

During the three months' research work the groups supervised by ISOCARP mentors and led by early-career researchers establish a common ground where youth and ambition met with experience, professionalism and methodology to discuss the urban issues. Each so called "project actor" had a specified task to fulfill during the three months' period the programme was taking place.



Figure 3: Project timeline; Source: MSRL materials

Mentors who answered to an open call to join the programme were asked to specify the research topics from the proposed core themes. They were obligated to supervise a team of their own young, inexperienced researchers and to support PhD student teams with their skills and knowledge. On the other hand, students who decided to apply and join the initiative were supposed to be actively involved in international research work, which consisted of three workshop meetings and most of all online work and cooperation both with mentors and other participants. These, somehow experimental methods required responsibility for all work from each member of the group. It would not be possible without actively involved students. The most important modification during the second edition of the programme concerned PhD students who were the most important project actor, while becoming a "key" between students and their mentors. The aim was to provide an opportunity to master their methodical skills and teaching methods by conducting international scientific research. They were responsible for leading the group of students by supporting them with their knowledge and ideas as well as assisting and managing the communication between the mentor and the research group (Obracht-Prondzynska & Rusin, 2016).

Also worth mentioning is the fact that these programme brought valuable benefits to everyone involved. For mentors, it was a chance to lead and shape urban

or architectural focused research under their guidance and of their own design. Moreover, it gave the opportunity to guide a dedicated team of PhD candidates and students who valued their academic and professional input. The aim of the programme was also to invite mentors to participate in preparation of the report that addresses the relevant issues for the host city (Gdańsk). It gave students a chance to complete international work with support of practicing urbanists and architects. Furthermore, all participants could expand their knowledge of the design process with a good chance of publishing internationally as well as obtaining and gathering research and professional skills.



Figure 4: Work process; Source: author Agata Hinca

3.4 Outcomes and recommendations

The programme has designed and implemented an innovative modality - attractive, agile and dynamic to produce studies on the contemporary city in a relatively short time with an interesting final product. It gave an opportunity to bring together both professionals and students of different disciplines related to the study of the organization of cities. Twice, for 3 months, five groups of students from Polish universities, supervised by the urbanists from, kept working on the research projects devoted to the challenges cities are facing, focusing their attention on the Tricity and referring to both problems and good practices of the foreign countries. However, the most important fact is that a few groups went one step further, drawing conclusions and working out proposals ready to implement in the urban fabric. Almost from all the research it is possible to learn a lesson and find recommendations for future urban planning. The most spectacular outcome are three reviewed publications, although the most popular is the Public Space Planning and Design Manual as a user-friendly handbook, which consist of many recommendations providing a holistic approach to planning for public space that is applicable to almost any city at any scale, from a small village to a megalopolis (Kreps & Rusin, 2014).

The example of MSRL programme and its result emphasize the enormous meaning of transformation in architectural and spatial design training, workshop as new method of research and learning, great effects of the international collaboration between participants on different educational levels. Professionals and professors are eager to work with fresh students' minds on the basis of partnership. Young students are pleased to work with experienced professionals. New opportunities are within reach.



Figure 5: Project results - publications; Source: MSRL materials

4. Project “(Co)urtyard” as a participatory research in urban planning

Project “(Co)urtyard” is a project aiming to prepare a civic concept of development of the courtyard in historic downtown of Gdansk. The inhabitants of the quarter, before deciding whether to take responsibility for the area closest to them - lease the yard from its owner, the city - were able, together with the participants, to elaborate solutions from point of view of the functionality, visuals form and management possibilities. The project is a bottom-up initiative supported by Gdansk Municipal Property Management Agency. A great advantage of this project is that participants were able to work out feasible solutions, that can be implemented. During the conceptualization of the project Design Thinking method was used, as a useful tool for participatory design process.

4.1 Project goals

Abovementioned project is not only participatory research and educational initiative, but in the the same time, is answering to real life problem and its outcomes are being implemented to transform the courtyard. Therefore, there are several goals of the project, answering on different needs and dealing with its different aspects:

- 1) **research goal**, conduct participatory research by scientists involved in the project who form a multidisciplinary team,
- 2) **educational goal**, develop hard and soft skills and competences of the project participates: students, PhD candidates, representatives of NGO's, academia and business,
- 3) **social goal**, support the development of civil society, including stakeholders involved in the project, most significantly residents of the quarter
- 4) **methodical goal**, encourage use of wider range of participatory methods in planning

and spatial management than previously used in spatial policy of the City.

4.2 *Relevance of the topic*

Changes, which occurred in Central and Eastern European cities after socio-economic transformation of 1989, are significant, both physical structure of the cities developed and the quality of life improved (Kamrowska-Zaluska, D. & Szechlicka, J. & Mrozek, P. 2015). In the last decade community's involvement in planning increase considerably (Kamrowska-Zaluska & Lorens, 2013), still there is a need to change indifference and languor attitude inherited from former system and, for all the stakeholders, to share responsibility for their neighborhood. City of Gdansk is taking considerable effort into regenerating of public spaces. Special attention is put on the streets of historic downtown of Gdansk. Though backyards of urban quarters are still wide, open spaces, mostly devastated, filled with garbage, parked cars and "holes" left by the unfinished archaeological excavations.



Figure 6: Interiors of court yards in historic district of Gdansk; Souce: author Joanna Szechlicka

This project is already second edition of Design Thinking project of courtyard revitalization. For pilot edition in 2014 - most challenging area was chosen for which model solution was proposed. The project itself was not implemented in the proposed form though it started to initiate social change in all the courtyards of the area of the Main Town. Recently shortly after completion of the pilot project, City Hall introduced several new funding schemes to support revitalization of the courtyards in historic downtown of Gdansk. These new tools make it possible to prepare a comprehensive project of revitalization. The condition to access these funds is for a residential community is to take responsibility for the area - to lease or buy it at a preferential rate. This is the only way for Gdansk Municipal Property Management Agency (GZNK) to give commission to preparing project and finance construction of redevelopment of the courtyard. Furthermore, when communities come to consensus and sign a lease agreement it opens further possibilities of financial support (up to a total of approx. 30 000 euro taking into account the different funding schemes).

During the meetings with GZNK residents raise concerns to the fact that the will of the lease must be undertaken without the knowledge of how the yard will look like after revitalization and how it will be managed in the future. It is a stalemate for both sides: GZNK funding can't be used without the prior initial will declaration and the community fear the lack of control over the future shape of the courtyard, so they are not eager to sign it up. Another problem, reported by stakeholders, is how to manage such a courtyard which would be leased by 14

housing cooperatives. Abovementioned situation was a starting point for “(Co)urtyard” project.

4.3 Process and tools

It is very important to stress interdisciplinary character of the project, involvement of different disciplines, as well as transdisciplinary involvement of all four sectors: public, NGO's, academia and business, as well as participants on different stages of their carriers.

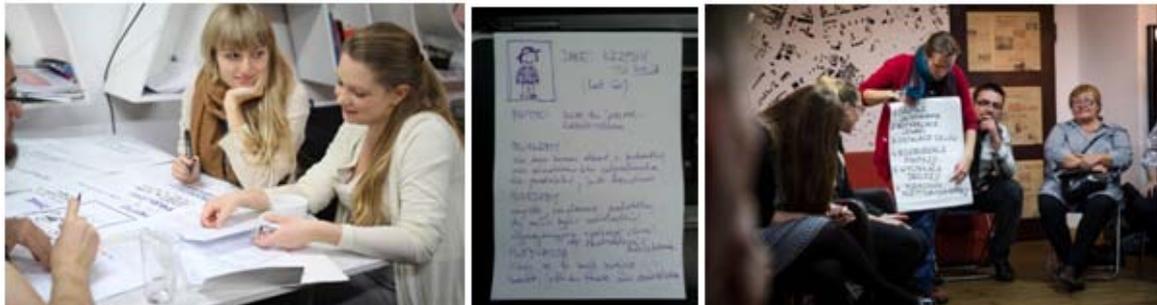


Figure 7: Persona building process; Source: author Joanna Szechlicka

While the project we went through the process of Design Thinking (DT), which is mapped in the 5 steps used by Stanford d.school including: Empathy – Define – Ideate – Prototype – Test (Brown T. & Katz B. 2009). DT with strong emphasis on empathy and UX, allows to understand users and other stakeholders – their needs, expectations, context then define the problem from users' perspective. Further investigation allow to answer how the needs of stakeholders are to be met and problems solved. The ideation phase stimulates both individual and team creativity in order to find a number of solutions to be prototyped and tested with users.



Figure 8: Five steps of Design Thinking process; Source: Stanford d.school

DT aims to develop the most suitable solutions through iterative approach. Often there is a need to come back to one of the earlier steps which turned out to be incomplete or even not justified: back to prototyping, ideation or even to defining problems may be required. It causes transition of process in the loop. There may be the need to pass through the stage of empathy, if it turned out that vital stakeholder was not asked for opinion or important questions was not answered (in line with Ok2Fail principle).

During all steps of the process several different methods and tools were used, including creative ones such as map of empathy, 'Lotus Blossom' and 'Attribute Matrix', Disney Brainstorming Method, the Business Model Canvas, or mood boards. They were combined them with traditional methods and tools used in planning fields.



Figure 9: Codesign process; Source: author Dorota Kamrowska-Zaluska

4.4 Outcomes and recommendations

Design Thinking as a strongly defined methodology systematizes workflow. At the same time implementation of Design Thinking was posing restrictions on design process, sometimes not giving enough flexibility needed in specific project situation. Failure acceptance approach of participants throughout the whole process and iterative form of Design Thinking is appropriate to solve real life problems.



Figure 10: Project results; Source: Design team

In course of the project most important goal was achieved - civic concept of development of the courtyard was prepared. Participant took part in real-life process of participatory design which ended in implementation of the project. In the same time it was a challenging project as participants were not only learning new methods of participatory design but also using them in actual project with actual users of the space. They learned not only to answer the need of users but co-design with them, to listen to all stakeholders but also to be aware of own role as an expert.

Interdisciplinary and different stages of career of participants where both asset and challenge of the project. It allowed to create comprehensive solution taking into account different aspect of design, but it also prolonged the initial phase as common platform of understanding had to be created. At the beginning there was a needed to establish common language for all the participants representing different disciplines such as architects, planners, civil engineers, economists and sociologists. Project was especially challenging as participants were only facilitators of the process and couldn't fully influence outcomes such as: consensus building and readiness to sign the agreement, which were vital factors for project's implementation.

Project aimed not only to change single courtyard but more important, to help to initiate social change in all the courtyards of the area of the Main Town. Participatory approach will strongly influence the type of the space created in the future: if, as an outcome of development, a semi-public space (open to everybody) or semi-private space (fenced and used only by its residents) will be created. A quarter would look differently depending if the priority is given to car-parking or to other uses.

5. Discussion and conclusion

Both projects have provided not only educational benefits but also puts participants in contact with a particular problem. Analyzing and interpreting the situation allowed them to gain knowledge and improve skills needed to solve real life problems. Both project put a strong emphasis on the work process: in case of Co-urtyard project on applying user-oriented approach and Design Thinking methodology and in case of MSRL to teach participants how to design research and how to apply different scientific methods, which in both cases was as important as the final solutions and projects. They both teaches how to work in the place where different disciplines are crossing and brings together participants with different backgrounds and professional experience. Moreover, both initiatives are not only solving specific problems in space but also could be voice in discussion about common responsibility for shaping urban space. This approach yields a variety of innovative findings, recommendations, as well as planning and design solutions.

Summing up, it should be emphasized that both projects received numerous positive opinions from both the participants and the observers. MSRL teams working from different places managed to create research projects on Baltic Cities bringing lots of recommendations for their future urban projects. In Co-urtyard project expected aims were achieved, consensus among stakeholders was build, development project for the courtyard in historic Downtown of Gdansk was created and the project itself is going to be implemented. Both organized projects became a unique opportunity to express everyone's opinions, share ideas and create interdisciplinary teams. It showed new quality of planning process' approach and allowed to implement new educational formulas.

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Evaluating the Implementation Performance of Conservation Planning for Historic Township: Case of Guangfu Town, Suzhou, China

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Abstract: The lack of empirical studies measuring the performance about implementation of conservation planning for historic township represents a gap in planning both in theory and practice. Focusing on whether the planning is implemented and the effectiveness of planning implementation of historic township, this research establishes a framework of planning performance evaluation by analyzing the evaluation factors, criteria and methods with a case study of Guangfu Town.

Keywords: Conservation Planning for Historic Township; Evaluation of Urban Planning Implementation; Performance Evaluation

1. Introduction

The key part of urban planning is its implementation. However, in the field of China's conservation planning for historic township, the evaluation of implementation has been too much ignored for a long time both in theoretical and practical level. In the theoretical level, there are few researches, institutions and standards for the evaluation of planning implementation; in the practical level, some historic townships just pay attention to the planning making processes which are important to applying for historical and cultural heritage, so that few people care about whether the plan is implemented after the planning making process.

However, the protection of historic township can only work when it is effectively implemented, so this paper focuses on the problem how to estimate the implementation of conservation planning for historic township specific to the actual demands in the conservation planning for historic township. Meanwhile, it perfects China's theoretical system on the conservation planning by establishing assessment elements, criteria and evaluation methods of the conservation planning as well as evaluation framework on planning implementation. It boosts the development of research and takes Guangfu town as the object of empirical study; by assessing the conservation planning for the historic township, it investigates the effects of implementing conservation planning for Guangfu historic township; meanwhile, it finds out existing problems in planning compilation and implementation, providing feedbacks for compilation and institutional improvement of historic township planning, as the feedbacks will also be popularized as theoretical reference and practical experience.

2 .Focus and scope

Evaluation research on conservation planning for historic township is one part of the evaluation research on urban planning. The evaluation research on planning mainly includes

two types: the first is evaluation on planning scheme and the second is evaluation on planning implementation. The latter is specific to the implementation situation and results after a period of implementation of planning (Sun Shiwen 2003). This research is mainly directed against the latter. Implementation evaluation falls into three types according to different evaluation objectives: firstly, the conformity evaluation on planning implementation about whether the planning is carried out or not; secondly, the evaluation on planning implementation process, which means evaluating the policy implementation process and operation mechanism in the planning implementation; thirdly, the performance evaluation, which means evaluating results and influence after implementation.

Since conformity evaluation is the basis of all evaluations, this paper will focus on studying performance evaluation on implementing conservation planning for historic township based on conformity evaluation. In this paper, conservation planning for historic township is selected to be the object for evaluation research, and the conservation planning implemented by Guangfu town is taken as the object of empirical study to evaluate the implementation situation.

3. The context of planning evaluation

As one type of urban planning, conservation planning for historic township shares a same evaluation method as urban planning. Researches related to evaluation of urban planning implementation abroad mainly appear after 1960s, and can be divided into comparison evaluation of planning map, conformity evaluation of planning implementation and performance evaluation according to different focuses.

In previous evaluation research, planning map is considered as the criterion for evaluation of planning implementation. Since this period is influenced by determinism of modern urban planning material space and the thought of pursuing ultimate state (Li Dehua 2001), it is believed that the final results of implementation should be totally coincident with planning scheme, and only in which way that planning can be said carried out. The primary representative is A.Wildavsky (1973) evaluation research on rigidity comparison based on performance degree of planning.

As a result, the period when achieving planning objectives is taken as the evaluation basis for planning implementation started in 1980s. During this period, the evaluation of urban planning implementation focuses on the conformity of planning goal instead of substance. Corresponding researches include that by Emily Talen (1996), J.B. McLoughlin(1968/1988), Morris Hill (1968), Alterman and Hill (1978), Calkin (1979) E.R.Alexander (1981), Faludi (1987), Alexander and Faludi (1989) and so on. Therein, Alexander and Faludi (1998) proposed a PPIP (Policy- Plan/Programme- Implementation- Process) evaluation model based on the planning process evaluation after comprehensively studying a large number of evaluation theories of planning implementation and cases of the day. PPIP model covers the evaluation system of the whole urban planning process. Although the total evaluation process

is too extensive and a large amount of data and information related to decision-making process are still in need, the relevant evaluation thought can provide some reference and examples for this paper. The researches of this period construct the basic theory for conformity evaluation of urban planning and lay a foundation for the researches on performance evaluation later.

With the development of performance evaluation in policy evaluation field since 90s, and the application of system approaches in planning as well as critical researches on planning implementation (Jacobs 1961), numerous researches and literatures on performance evaluation related to planning implementation begin to appear in the urban planning field. This kind of evaluation adopts some methods and viewpoints of public policy evaluation; instead of only about whether to implement planning or not, it pays more attention to the resultant social influence and utility from the planning implementation. As for the evaluation on urban planning's social performance, the realization degree of goals should be taken as the basis to see whether plans work or not; however, the realization of goals is not only limited to those designed in compilation, but all goals adapting to social development and changes (Talen 1996), which is consistent with the starting point of this paper. Alexander and Faludi (1989) didn't think that performance evaluation of urban planning was only a simple linear relation between policies and results, but should be explained for performance evaluation through analysis of implementation process. Planning goals, implementation process and results are inseparable. The way of examining performance and social influences of planning doesn't only reflect planning's purport, but also the implementation process of planning. As a result, in performance evaluation of planning, the goal—implementation process—resultant evaluation system (Talen 1996) is supposed to be established.

In this paper, appropriate analysis and researches on conformity evaluation methods and various kinds of performance evaluation methods will be conducted, and scientific and reasonable evaluation method system will also be proposed according to the specific features of conservation planning for historic township.

4. Evaluation Methods

This paper focuses on whether the planning is implemented or not and what the effectiveness is, that is, confirming whether planning is conducted or not and then carrying out performance evaluation on the finished parts; in the specific construction of evaluation methods, relevant theories on conformity evaluation and performance evaluation in the above studies will be used for reference. The detailed evaluation methods and progress are as follows (figure 1).

4.1 Construct Evaluation Framework and Tool Kit

Since the concrete contents of conservation planning vary from place to place or time to time, constructing a fixed evaluation framework and indicator system can possibly meet the applicability conflicts in practical. As a result, this paper expects to build a relatively flexible

evaluation framework and employs the mode of tool kit in setting concrete evaluation factors and indicators, that is, enumerating evaluative features and tool kit involved in regular evaluation as well as selecting appropriate elements and indicators in practical use according to practical situations of the evaluation objects.

The establishment process of evaluation framework is as follows: sort out the functions of existing theoretical researches related to historical and cultural conservation planning in protection of history and culture of cities and towns as well as update and development of cities and towns by literature research; on the basis of that, arrange laws ('conservation ordinance of historic city/township/village', 'preparation and approval procedures of historic city/township/village', etc.) and regulations as well as institutional contents like basis of compilation related to conservation planning for historic township; Analyze the function of conservation planning for historic township from institutional aspect and make clear the effects of planning and corresponding planning content, to put forward evaluation elements against these contents and relevant planning effects. Then construct the fundamental framework of evaluation through arranging the evaluative element system; based on this framework, tool kits like evaluation index and criterions of all parts are respectively established according to different items.

4.2 Construct Evaluation Framework According to the Evaluation Objects

Analyze documents related to conservation planning for historic township which needs evaluation and selects indicators and criterions in the evaluation tool kit mentioned above according to the specific contents in the documents; meanwhile, amend partial indicators and criterions according to reality and construct targeted and feasible evaluation framework.

4.3 Conformity evaluation

This evaluation mainly investigates whether planning is implemented or not and how the implementation situation and degree of the planning content are, as the core concern is: evaluate whether all protection and urban construction achievements conform to the planning content and how the coincidence level is. However, this conformity doesn't only refer to the correspondence to contents in planning results, but also includes detections in aspects like targets and principles determined in planning achievements. It is because some construction achievements could possibly satisfy the planned goal, principle and other overall ideas even if they are inconsistent with planning result (Talen 1996).

4.4 Satisfaction Evaluation

The actual users and subjects feeling urban planning implementation are the public, thus the public's satisfaction evaluation on effects of planning implementation is an important aspect of planning performance evaluation. In this paper, the satisfaction of planned and implemented parts will be evaluated, as the specific process is: firstly, build satisfaction evaluation framework and indicator of implemented contents based on planning; then, collect the data of satisfaction evaluation of residents within the core protection range through ques-

tionnaire; finally, figure out data of satisfaction with all items and analyze the practical achievements of all implemented parts.

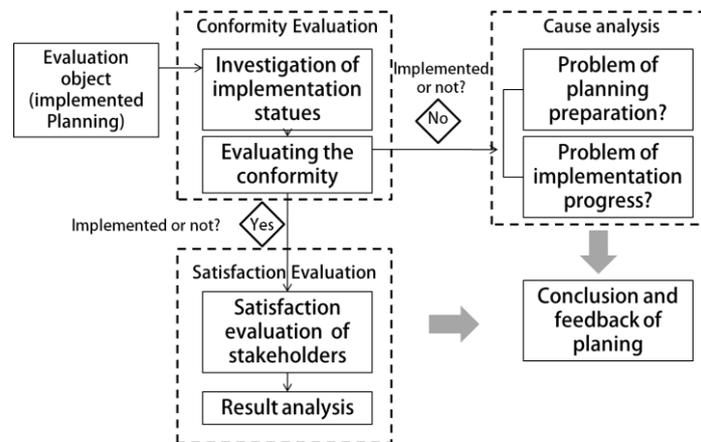


Figure 1. Evaluation process

(Source: concluding by the author)

5. Evaluation framework

5.1 Identification of Evaluation Elements

Historic and cultural towns are a macro system integrating complex elements, as they don't only bear material and non-material cultural heritages, but also are living space residents depend on; meanwhile, they are potential to drive the development of local society, culture and economy. Consequently, it is believed in existing document literature that the core effects of conservation planning should include two aspects: protection of historical and cultural heritage as well as regeneration of historical towns. Meanwhile, according to the available institutional documents such as 'conservation ordinance of historic city/township/village', 'preparation and approval procedures of historic city/township/village', etc., the main function of conservation planning for historic township is to ensure the actual protection of historical and cultural heritages, enabling scientific, reasonable and effective implementation of conservation planning for historic and cultural heritages and related implementation management, meanwhile, it will also coordinate the relation between protection and construction development, as the core contents mainly include determining the principles, contents and focuses to be protected, demarcating protection range and proposing protection measures.

Based on the analysis of planning effects and contents mentioned above, the core contents of implementation evaluation on conservation planning are supposed to cover two aspects: firstly, how to protect historic and cultural heritage; secondly, how to regenerate historic conservation area. The protection of cultural heritage mainly includes demarcation and control of conservation area, tangible and intangible culture protection as well as protection in spatial pattern and style and features; regeneration of historic protection area primarily includes heritage and utilization of historical culture and community regeneration and so on. Based on that, the evaluation contents can be subdivided to form the factor system of evaluation.

5.2 Evaluation Framework and Tool Kit

This paper preliminarily formulates the planning evaluation framework and indicator tool kit (table 1 and 2) through analysis on evaluation elements according to the protective theories of historic township with reference of planning implementation evaluation methods. In the practical application process, indicators will be appropriately adjusted according to the actual situation of evaluation objects and the practicability of indicators, to select suitable evaluation indicators.

Table 1. Evaluation framework and tool kit

Category of evaluation	Evaluation factor		Evaluation indicators(Tool Kit)
	Specific factor	Sub-factor	
(A) Conservation issues	(A1) The control of conservation area	(A11) Protection status of the core conservation area	<ul style="list-style-type: none"> Control and rehabilitation of height, color, building form, function of the river /street, landscape structures, historic monuments and sites, greening, etc.
		(A12) Protection and townscape control status of the development control area	<ul style="list-style-type: none"> Control of the main colors, styles, forms, functions, intensity, density and height of the buildings.
	(A2) Protection of tangible culture	(A21) Protection status of officially protected monuments and sites	<ul style="list-style-type: none"> The definition of the conservation area and the development control area; Protection/ refurbishment status of officially protected monuments and sites; Listing proportions of notice board about the conservation planning implementation; Establishment of alert mark for protection.
		(A22) Protection status of historic buildings	<ul style="list-style-type: none"> Protection/ refurbishment status of historic building; Notice board for about the conservation planning implementation; Establishment of alert mark for protection.
		(A23) Protection status of historic environment elements	<ul style="list-style-type: none"> Protection/ refurbishment status of historic trees, historic bridge, wharf area, furui and other historic environment elements. Control of the overall townscape of the historic environment elements.
	(A3) Protection of intangible cultural	(A31) Protection status of intangible cultural heritage	<ul style="list-style-type: none"> The Registration status of intangible cultural heritage.
		(A32) Protection status of the other intangible cultural	<ul style="list-style-type: none"> Protection and promotion status of folk culture, traditional food, traditional crafts, historical memory, culture and art , etc.
	(A4) Protection of spatial pattern and	(A41) Street (river) pattern	<ul style="list-style-type: none"> Protection status of spatial layout of buildings and environmental elements in the nodes, axis, belts, etc.

Category of evaluation	Evaluation factor		Evaluation indicators(Tool Kit)
	Specific factor	Sub-factor	
	townscape	(A42) Corridor line of sight	• Conservation status of the corridor line of sight.
		(A43) Height control	• Height control status.
		(A44) Natural landscape pattern	• Protection/ refurbishment status of the mountains, rivers and other landscape elements.
(B) Regeneration	(B1) Inheritance and utilization of historical culture	(B11) Cultural exhibition, cultural propaganda, cultural industries and tourism development, etc.	• The development status of the tourist attractions or projects with historical and cultural theme
	(B2) Community rehabilitation	(B21) Improvement of Infrastructure for historic community	• Security and improvement of the water for life and firefighting; • Status of rain and sewage diversion; • Power network configuration; • Status of implementing FTTH.
		(B22) Improvement of traffic	• Improvement of portal space of the transportation; • Traffic system improvement; • Improvement of parking facilities.
		(B23) Public facility of historic community	• Improvement of commercial service facilities, cultural facilities, medical facilities, educational facilities, welfare facilities, etc.
		(B24) Improvement of community environment	• Improvement of green belt and public space.
		(B25)Community vitality	• Community organizations • Public participation

(Source: concluding by the author)

Table 2. Evaluation Criteria

Conformity evaluation	Whether the planning is implemented or not/ the conformity with the planning text
Satisfaction Evaluation	Satisfaction level of stakeholders/ users

(Source: concluding by the author)

6. Case study

Situated in Taihu Lake of southwest suburb in Suzhou, Guangfu is one of the historic townships in Jiangsu province, with long history and cultural heritage (Figure 2).

The first edition of Guangfu's conservation planning for historic township was prepared in 2003 and has been implemented for 13 years. Until now, most of the protection and rehabilitation work has been completed and has achieved some success, so it has the basic conditions for evaluation. Meanwhile, the new round of preparation for conservation planning has launched, so it needs to evaluate the implementation of the original plan which can form an

effective feedback for planning preparation. Taking the 2003 edition of Guangfu's conservation planning for historic township as evaluating object, this paper uses the evaluation methods proposed in the previous study to evaluate the implementation of the conservation planning.



Figure 2. Location of Guangfu



Figure 3. Conservation area of Guangfu

6.1 Evaluation Framework of Guangfu

Based on the above evaluation framework, the evaluation framework suitable for Guangfu is preliminarily formulated (table 3) by combining the contents of 2003 version conservation planning for Guangfu as well as the knowledge of implementation status.

Table 3. Evaluation Framework of Guangfu

Category of evaluation	Evaluation factor		Corresponding planning contents	Evaluation indicators
	Specific factor	Sub-factor		
(A) Conservation issues	(A1) The control of core conservation area	(A11) Protection Status of the core conservation area	<ul style="list-style-type: none"> • Conservation area : Historic areas along the riverside. Its range is shown as Figure. 3. • Conservation requirements: protecting buildings, townscape and features along the riverside; The river needs to be flowing, clean and clear. The green belt along with the river should be harmonious with scenery of old water town. 	(A11-1) Control and rehabilitation of the river street; (A11-2) Protection and rehabilitation status of the water quality ; (A11-3) Protection and rehabilitation status of the landscape structures; (A11-4) The greening improvement.
		(A12) Protection and townscape control Status of the development control area	<ul style="list-style-type: none"> • Conservation area: The range is shown as Figure. 3. • Conservation requirements: the building types basically with sloping roof and small volume. The building should be mainly black, white and grey in its color, dwelling and public building in its function. 	(A12-1) Control of the main colors of the buildings; (A12-2) Control of the roof shapes; (A12-3) Control of the functions of the new buildings.

Category of evaluation	Evaluation factor		Corresponding planning contents	Evaluation indicators
	Specific factor	Sub-factor		
Category of evaluation	(A2) Protection of tangible culture	(A21) Protection status of officially protected monuments and sites	<ul style="list-style-type: none"> • Protect 2 provincial units of officially protected monuments and sites, 13 municipal units of officially protected monuments and sites. Delimit the conservation area and the development control area. 	(A21-1) The definition of the conservation area and the development control area; (A21-2) Protection/ refurbishment status of officially protected monuments and sites;
		(A22) Protection Status of historic buildings	<ul style="list-style-type: none"> • protect 7 historic buildings 	(A22-1) Protection/ refurbishment status of historic building;
		(A23) Protection status of historic environment elements	<ul style="list-style-type: none"> • Historic trees: The historic trees should be managed and classified in a unified way, kept and protected according to classification. Their protection and nursing department should be confirmed. • Historic bridge: Conserve the existing type of bridge. No extra building or rebuilding is allowed. • Wharf area :The old wharf area must be controlled strictly and no constructions allowed. 	(A23-1)Protection/ refurbishment status of historic trees ; (A23-2)Protection/ refurbishment status of historic bridge; (A23-3)Protection/ refurbishment status of wharf area; (A23-4)Control of the overall townscape of the historic environment elements.
	(A3) Protection of intangible cultural	(A31) Protection status of intangible cultural heritage	<ul style="list-style-type: none"> • Strictly protect those which have been recorded in list of tangible cultural heritage. 	(A31-1)The Registration status of intangible cultural heritage.
		(A32) Protection status of the other intangible cultural	<ul style="list-style-type: none"> • Respect cultural conventions, ensure, support, create, maintain and inherit social group of these heritages as well as their material environment. • Protect and promote Folk Culture (ancestor worship, godliness worship, praying, marriage customs, etc) , Traditional Food And Traditional crafts 	(A32-1)Protection and promotion status of folk culture; (A32-2)Protection and promotion status of traditional food; (A32-3)Protection and promotion status of traditional crafts.
	(A4) Protection of spatial pattern	(A41) Street (river) pattern	<ul style="list-style-type: none"> • Node --- Provide protection to rivers and lakes, temples, dwellings, downtown streets, ancient bridges, ancient woods and memorial archways. • Axis --- protect style and features axis 	(A41-1)Protection status of spatial layout of buildings and environmental elements in the node; (A41-2)The recovery of tra-

Category of evaluation	Evaluation factor		Corresponding planning contents	Evaluation indicators
	Specific factor	Sub-factor		
	and town-scape		of Fuxi water town, business axis of characteristic streets in Main Street. • Landscape belt along with Fuxi River --- protect and rebuild Fuxi River and its buildings each side.	ditional commercial district (streets) in the commercial landscape belt; (A41-3)Protection/ refurbishment status of the rivers and buildings along the river belt.
		(A42) Corridor line of sight	• Protect 6 Corridor lines of sight	(A42-1)Conservation status of the corridor line of sight.
		(A43) Height control	• Officially protected monuments and sites, historical buildings, and buildings along the riverside should maintain the present height. The maximum height of constructions near Turtle Mountain in the north side of Fuxi River and Xiaojujiao Street is 3.3 M (cornice); Normal traditional construction area keeps the present height of 6.2M; the maximum height of new constructions is 9M.	(A43-1)Height control status.
		(A44) Natural landscape pattern	• Protect mountains, such as Turtle Mountain, Fengming Mountain and Tiger Mountain • Protect Taihu Lake and wet land near its shoreline emphatically; Remold environment of riversides;	(A44-1)Protection/ refurbishment status of the mountains; (A44-2)Protection/ refurbishment status of historical patterns, water quality, riparian environment of the waters.
(B) Re-generation	(B1) Inheritance and Utilization of historical culture	(B11) Cultural exhibition, cultural propaganda, cultural industries and tourism development, etc.	• Demonstrate historical features and cultural characteristics of water town • Establishing a tourism industrial pattern which is coordinating and matching among six factors including travelling, eating, accommodation, buying, going out, recreation.	(B11-1)The development status of the tourist attractions or projects with historical and cultural theme
	(B2) Community rehabilitation	(B21) Improvement of Infrastructure for historic community	• Meet the requirements of rational distribution of public facilities including water supply, water discharge, power Meet the requirements of rational distribution of public facilities including water supply, water discharge, power	(B21-1) Security and improvement of the water for life and firefighting; (B21-2) Status of rain and sewage diversion; (B21-3) Power network con-

Category of evaluation	Evaluation factor		Corresponding planning contents	Evaluation indicators
	Specific factor	Sub-factor		
			supply and communication.	figuration; (B21-4) Status of implementing FTTH.
		(B22) Improvement of traffic	<ul style="list-style-type: none"> • Improve the portal space of the Transportation • Improve the Traffic system to Constitute the road system cycle. • Add parking facilities 	(B22-1) Improvement of portal space of the transportation; (B22-2) Traffic system improvement; (B22-3) Improvement of parking facilities.
		(B23) Public facility of historic community	<ul style="list-style-type: none"> • Improve commercial service facilities: • Retain the current cinema, enlarge the scale of senior citizen activity center, build new historic exhibition hall. 	(B23-1) Improvement of commercial service facilities; (B23-2) Improvement of cultural facilities.
		(B24) Improvement of community environment	<ul style="list-style-type: none"> • Improve green belt along the rivers and streets. • Add public space 	(B24-1) Improvement of green belt and public space.

(Source: concluding by the author)

6.2 Evaluation results

With the above evaluation framework, the conformity of planning implementation is evaluated and the results are as table 4. In the satisfaction evaluation, the satisfaction (P) is quantified as five levels: Extremely Satisfied ($8 \leq P < 10$), Very Satisfied ($6 \leq P < 8$), Satisfied ($4 \leq P < 6$), Somewhat Satisfied ($2 \leq P < 4$), Not Satisfied ($0 \leq P < 2$). Then, the scores are counted through the questionnaire of residents (table 4).

Table 4. Evaluation results

Evaluation factor		Evaluation indicators	Conformity evaluation (implemented or not)	Satisfaction Evaluation	
Specific factor	Sub-factor			Satisfaction scores	Satisfaction level
(A1)	(A11)	(A11-1) The height, color, building form, function control and rehabilitation of the river street;	Yes	6.3	Very Satisfied
		(A11-2) Protection and rehabilitation status of the water quality ;	Yes	7.6	Very Satisfied
		(A11-3) Protection and rehabilitation status of the landscape structures;	Yes	7.8	Very Satisfied

Evaluation factor		Evaluation indicators	Conformity evaluation (implemented or not)	Satisfaction Evaluation	
Specific factor	Sub-factor			Satisfaction scores	Satisfaction level
		(A11-4) The greening improvement.	Yes	4.3	Satisfied
	(A12)	(A12-1) Control of the main colors of the buildings;	Yes	7.8	Very Satisfied
		(A12-2) Control of the roof shapes;	Yes	8.3	Extremely Satisfied
		(A12-3) Control of the functions of the new buildings.	Yes	7.3	Very Satisfied
(A2)	(A21)	(A21-1) The definition of the conservation area and the development control area;	Yes	9.3	Extremely Satisfied
		(A21-2) Protection/ refurbishment status of officially protected monuments and sites;	Yes	8.8	Extremely Satisfied
	(A22)	(A22-1) Protection/ refurbishment status of historic building;	Yes	7.3	Very Satisfied
	(A23)	(A23-1)Protection/ refurbishment status of historic trees ;	Yes	8.3	Extremely Satisfied
		(A23-2)Protection/ refurbishment status of historic bridge;	Yes	6.8	Very Satisfied
		(A23-3)Protection/ refurbishment status of wharf area;	Yes	7.8	Very Satisfied
		(A23-4)Control of the overall townscape of the historic environment elements.	Yes	8.3	Extremely Satisfied
	(A3)	(A31)	(A31-1)The Registration status of intangible cultural heritage.	Yes	5.8
(A32)		(A32-1)Protection and promotion status of folk culture;	Yes	7.5	Very Satisfied
		(A32-2)Protection and promotion status of traditional food;	Yes	7.3	Very Satisfied
		(A32-3)Protection and promotion status of traditional crafts.	Yes	8.3	Extremely Satisfied
(A4)	(A41)	(A41-1)Protection status of spatial layout of buildings and environmental elements in the node;	Yes	7.8	Very Satisfied
		(A41-2)The recovery of traditional commercial district in the commercial landscape belt;	Yes	6.8	Very Satisfied
		(A41-3)Protection/ refurbishment status of the rivers and buildings along the river belt.	Yes	5.8	Satisfied

Evaluation factor		Evaluation indicators	Conformity evaluation (implemented or not)	Satisfaction Evaluation	
Specific factor	Sub-factor			Satisfaction scores	Satisfaction level
	(A42)	(A42-1)Conservation status of the corridor line of sight.	No	—	—
	(A43)	(A43-1)Height control status.	No	—	—
	(A44)	(A44-1)Protection/ refurbishment status of the mountains;	Yes	7.5	Very Satisfied
		(A44-2)Protection/ refurbishment status of historical patterns, water quality, riparian environment of the waters.	Yes	6.8	Very Satisfied
(B1)	(B11)	(B11-1)The development status of the tourist attractions or projects with historical and cultural theme	Yes	3.8	Somewhat Satisfied
(B2)	(B21)	(B21-1) Security and improvement of the water for life and firefighting;	Yes	7.3	Very Satisfied
		(B21-2) Status of rain and sewage diversion;	Yes	7.5	Very Satisfied
		(B21-3) Power network configuration;	Yes	7.8	Very Satisfied
		(B21-4) Status of implementing FTTH.	Yes	7.5	Extremely Satisfied
	(B22)	(B22-1) Improvement of portal space of the transportation;	Yes	7.8	Very Satisfied
		(B22-2) Traffic system improvement;	Yes	7.3	Very Satisfied
		(B22-3) Improvement of parking facilities.	Yes	3.8	Somewhat Satisfied
	(B23)	(B23-1) Improvement of commercial service facilities;	Yes	6.8	Very Satisfied
		(B23-2) Improvement of cultural facilities.	Yes	6.3	Satisfied
	(B24)	(B24-1) Improvement of green belt and public space.	Yes	7.0	Very Satisfied

(Source: concluding by the author)

6.3 Analysis for the Conformity evaluation results

Based on the above results of evaluation, most contents of the conservation planning (2003) has been implemented except '(A42-1)Conservation status of the corridor line of sight' and '(A43-1)Height control status'. Through the interviews of the administration and field research, the reasons would be as follows:

(1) The corridor line of sight 'Guangfu Temple - Tiger Mountain Bridge - Tiger Mountain' is not well controlled for the Tiger Mountain Bridge was blown up in 2012 so as to build new road.

No effective protection was set up for Tiger Mountain so that the important node of the corridor was destroyed. The main reasons for this involve both planning preparation and the process of planning implementation. In the planning preparation level, Tiger Mountain Bridge was not included in the mandatory protection objects, thus it has not been effectively protected; in the planning implementation process, the policy implementers didn't protect the important node effectively which can be seen as a kind of inappropriate behavior.

(2) There are some buildings that cannot meet the height control requirements in the development control area which affects the results of the evaluation. The reason is that the demolition or renovation of these buildings was delayed because of the compensation difficulties in the planning implementation process.

6.4 Analysis for the Satisfaction Evaluation results

Through the above evaluation results, the factors '(A12-2) control of the roof shapes, (A21-1) the definition of the conservation area and the development control area, (A21-2) protection/ refurbishment status of officially protected monuments and sites, (A23-1) protection/refurbishment status of historic trees, (A23-4) control of the overall townscape of the historic environment elements and (A32-3) protection and promotion status of traditional crafts' get the highest satisfaction. This demonstrates that these six factors are well implemented from the respondents' view which is suggested to be maintained in the future work.

The factors '(B11-1) the development status of the tourist attractions or projects with historical and cultural theme and (B22-3) improvement of parking facilities get the lowest satisfaction. The residents thought that the tourism development is far from expectations and parking facilities cannot meet demand. So these two factors need to be pay more attention to and improved.

7. Conclusion

To sum up, the paper comes to conclusion as follows:

(1) It establishes a framework of planning performance evaluation of conservation planning for historic township by analyzing the evaluation factors, criteria and methods.

(2) It uses a case study of Guangfu Town in Suzhou to evaluate to what extent the conservation planning achieve its goals and what is the effect by using the framework established above which includes both conformity evaluation and satisfaction evaluation. This integral evaluation process can be a referenceto future evaluation studies.

(3) Based on the evaluation results, the research finds out the problems in the planning making and implementation processes and discusses policy implications for improving plan implementation performance of Guangfu Town.

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Using the natural system to achieve urban societal ambitions

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Abstract *Across the world cities are expressing the need to develop in a resilient and climate robust manner. The need for healthy, adaptive and livable urban areas is increasing, as pressure in urban areas increases by demographic and climate change. To plan and design resilient urban areas new strategies are needed. This article elaborates on a new planning approach based on the metabolism of the urban ecosystem, a system-based approach. The approach focuses on the interaction between the socio-economic (urban) layer and the natural (ecological) layer and has been tested in various urban pilot studies.*

This article explores the effectiveness and applicability of different interventions in the urban ecosystem developed for three focal points: climate sensitive urban planning and design, nature based solutions in the city and planning of the subsurface. Examples of the measures are: vulnerability assessments of the natural and socio-economic layer of the urban ecosystem, design principles for multifunctional green in the city and linking the surface and subsurface in urban planning using planning support tools.

Concluding from the pilot studies, the natural layer of the urban ecosystem can provide services that help achieve the city's goals and societal ambitions. Nevertheless, several barriers must be overcome to enable integration of the socio-economic and natural layer to achieve societal ambitions in urban planning. It still proves to be difficult to raise awareness of the possibilities to create value, to define the indirect value of the natural layer and to bridge the gap in language and working manner between engineers and designers.

1. Introduction

World-wide the need for healthy, adaptive and livable urban areas is increasing, as urban areas are growing in size and population. The coming decades the pressure in urban areas increases by demographic and climate change (UN (2014) ST/ESA/SER.A/352). Resilient cities and climate robust cities are goals, which are often heard in urban planning, but not yet achieved. Hence, there is an urge to change the profession of urban planning. To deal with these ambitions, a vision is needed on how to design smart and healthy cities. This paper proposes a strategy called *Smart Urban Planning*. It is based on the concept of the metabolic city, which is often heard in the process of the New Urban Agenda (Sijmons et al. 2014). It is encountering the circularity of the urban ecosystem and focusses on the interaction between the socio-economic layer and the natural layer within the city. The socio-economic layer reflects the need of the society. The natural layer of the urban ecosystem can provide services that help in reaching societal ambitions. Examples of these services are water storage, temperature buffering capacity for soil energy, filter pollution from the air and reducing local air and ground temperature (heat stress). In addition, not using the natural layer in a sustainable manner can result in shortage of freshwater, urban flooding, soil subsidence, decrease of water quality, (future) problems that cities are facing nowadays or need to tackle (Meyer 2013). Hence, analyzing, understanding and using both the natural and socio-economic layer is important for the design of a healthy and climate robust city. This article elaborates further on this possible new planning approach using the outcomes of

several research projects in practice. Different measures are described that enhance the integration of the natural layer into the practice of planning and design ascertaining that the natural layer is effectively used for the design of resilient cities.

2. Theoretical background

Using the natural layer of the urban ecosystem in planning and design

Though urban practice is already encountering the socio-economic layer of the city, the benefits of incorporating the natural layer of the city in planning and design is not common practice yet. The natural layer is defined as the world's stocks of natural assets which include geology, soil, water, and air in both surface and subsurface. Since we are building houses, roads and parks on the natural layer of the urban ecosystem without understanding or taking into account its functioning, additional costs are made or value is not used to overcome or prevent failures (Alberti 2008). If urban planning is taking both the socio-economic and natural layer and its relation into account, so called system engineering, one is encountering challenges and opportunities of the ecological layer enabling to reach city goals and societal ambitions. For example: planning buildings in certain locations and with specific measures could lead to a natural cooled area with a healthy micro climate next to the sea, which is not threatening the new build houses. It is from this natural layer that humans derive a wide range of services, often called ecosystem services, which make human life possible. Ecosystem services of the natural layer can be divided in four categories: 1) provisioning services (e.g. availability fresh water, energetic content, food); 2) regulating services (e.g. attenuation capacity of the subsurface, soil bearing capacity, storage capacity); 3) cultural services (e.g. archaeology); and 4) supporting services (e.g. biodiversity and habitat) (Groot et al. 2015).

Depending on the characteristics of a location (e.g. soil type, elevation, groundwater level) and the objectives of the stakeholder(s), different ecosystem services can be demanded and obtained in urban planning and design. Besides the required services, also additional services can be obtained, creating surplus value when including the possibilities of the natural layer at an early stage in the planning process. Consequently, innovative planning and design measures are developed to both support an integrated approach and enhance sustainable use of the natural layer in the urban environment. These measures are developed by both academic institutions and urban practitioners and tested via pilots (in an urban context). Additionally, this method uses design as a tool to combine different disciplines. This article elaborates on the effectiveness and applicability of different measures developed for three focal points: climate sensitive urban planning and design (using green and blue infrastructures to reach city ambitions), nature based solutions (for sustainable and surplus value flood defenses) and planning with the subsurface (sustainably using and maintain its functions and surfaces).

3. Case Studies

Developing measurements to design with the natural system

This chapter gives an overview of the different measures that have been developed using different (urban) case studies. First, an overall introduction will be given. What is the focal point about? What are main challenges to overcome? And what opportunities could be used in practice. Second, the applicability of the focal point will be explained using case studies. These are cases in which the applied knowledge institute Deltares (the Netherlands) has been involved. All cases make use of participatory processes, though the process has a different focus in every case study. Additionally the cases are not only cases from the Netherlands, but are also pilots from abroad in a different urban context. Consequently, the applicability of the method is tested in a broad sense.

3.1 Climate Sensitive Urban Planning and Design

The first focal point is focusing on climate sensitive urban planning and design. Nowadays, a shift from blue print planning towards more integrated planning can be seen in urban practice (Batty 2013). The city can be seen as a complex and dynamic system, also called an urban ecosystem. It consist of several layers, in which people, animals, the production of energy and other dynamic infrastructures are connecting the static layers like infrastructure and subsurface. Figure 1 gives an overview of the different layers of the urban ecosystem. Still, it is necessary to find harmony between the natural and the socio-economic layer in both strategy-making on the regional level and urban design on the local scale. At present we hold little or no account in urban planning of this system thinking. This results in a depletion of the urban system. Therefore, awareness is raised that we have to take a circular instead of a linear way of planning. Climate sensitive urban planning is based on an approach in which the urban ecosystem is planned and designed as a whole is seen.

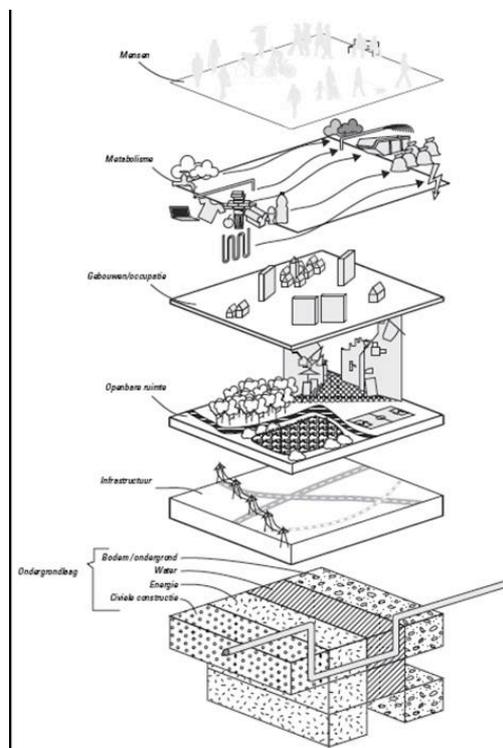


Figure 1: The urban ecosystem (TU Delft, Deltares)

Yet it remains difficult to apply this integrated approach in practice by the current sectorial approach. The communication between different disciplines and sectors remains difficult. In addition, each discipline often has its own objective and interest. Additionally, it is difficult to change the planning method that has been there for decades to a more integrated and dynamic planning method. Hence, the city is often not yet seen as an integral system.

But achieving the objective of integrated urban planning and design is not the only result (the design) that is important. Also the process influences the level of an integrated design. The urban ecosystem is extremely dynamic on a various scales by different actors, functions and land use. By integrating various disciplines at an early stage, we can work together on an integrated urban plan. This focal point has been tested in several projects, but only one iconic project will be explained and compared to the other focal points.

One of the research projects in which this approach has been tested more in depth is Adaptive Circular Cities (Gehrels et al. 2015). This project was a joint project of Dutch research institutes, local stakeholders and urban practice. The objective of Adaptive Circular Cities was to develop innovative combinations of ecosystem services taking into account the maximization of the added value to the urban environment. Optimal combinations should simultaneously contribute to climate change mitigation, climate change adaptation and resource efficiency.

Case studies that have been used are: a new urban development in a former industrial area of Amsterdam; the large scale redevelopment of the central part of the city of Utrecht and (re)developments in the city of Almere. Other cases are located in Rotterdam and Ho Chi Minh City. The research project has been working together with local stakeholders and they were able to take a closer look at the different local urban contexts. Consequently, the outcome of the research project is twofold. On the one hand it delivered tailor made advice for these different cases. On the other hand principles for other cities on both city level and street level to design have been developed, because of the representativeness of the chosen cases. Project results are also generically usable for other cases and transferable via principles. Hence, these principles can be seen as design patterns combined with ecosystem services that integrate both the natural and socio-economic layer of the city.



Figure 2: Design principles for climate sensitive urban planning (Adaptive Circular Cities 2015)

3.2 *Nature based solutions in the city*

The second focal point is focusing on delta-cities. They have been and are popular cities, because of their fertile land, good location according to transportation and availability of fresh (river) water, soil and sand. However, these are also very vulnerable cities considering the impact of climate change, with high risks for flooding and sea-level rising. To encounter this, hydraulic structures are built. These structures are often hard, not flexible and one-purpose/value structures. By using natural elements such as wind, currents, sediment transport, flora and fauna in designing a hydraulic engineering solution, additional benefits for livability, nature, recreation and the local economy are created (Balla et al. 2015).

The benefits of utilizing natural processes are that it is cost-effective as one is working with nature instead of against, it “uses” natural processes, such as sediment transport or vegetation growth which are for free, it also creates additional functions. Instead of only creating a flood defense system (climate proof), a flood defense system with functions like nature development, recreation, education, improved water-quality and air quality can be developed by effectively using the natural layer and its processes. In this way several objectives and ambitions can be met with one “action” (climate adaptive, health and livability).

A current example of urban nature based solutions is the project of Building with Nature in the city. Both the city of Rotterdam (NL) and Dordrecht (NL) are used as case study in the project (van Geest et al. 2016). Both cities are located along the river in the Rhine-Meuse Delta. Though the socio-economic and natural layer of both cities differs from each other, general principles for the design of urban tidal parks have been developed. These are parks along the urbanized riverfronts that strengthen the relation between the river (nature) and city (people) in a positive manner.

Several urban nature based solutions that have been developed are:

- Creating soft fore banks (e.g. using willows or other vegetation) to mitigate wave impact, so that the dike behind the fore bank does not need to be raised or strengthened as much
- Measures to improve the water quality and biodiversity: hanging and floating structures;
- Piers for fore bank formation and ecological biodiversity vegetation and
- Tidal park, as flood protection measure and ecological recreation/education park

Figure 3 shows a visualization of an urban tidal park, which is made by an urban designer. The image can be seen as an outcome the process between an urban design office, the planning department of the municipality and the academic world. By trial and error the design principles for the use of the natural system for achieving urban ambitions like hydraulic infrastructures, climate mitigation, recreation, etc.

First, to incorporate the concept of nature based solutions in urban planning and design it is necessary to work together with urban practice. Knowledge that has been developed in by academic institutes should be translated into principles that are useable by urban practice. Nevertheless, there is a gap between the languages of the two different worlds. A researcher will not have the same design skills as a designer, but at the same time the designer has a different way of working than a researcher. Bridging the gap between the two worlds should be one of the top priorities for the implementation of Urban Nature based solutions. Hence,

academia and planners should work together in research projects to actively work on the issue of transferring knowledge between the two worlds.

Second, time and money are challenging in the world of soft engineering. Urban planning and design is a world that has to move fast and make decisions on urban plans all the time. Changing the way of working is difficult and challenging. Hard engineering constructions that have been proven to work effectively and are less expensive will be preferred instead of soft engineering constructions. Also, soft engineering constructions have to develop over time and won't have the same esthetics as hard engineering from the beginning. Though soft engineering has to develop over time, the benefits and added value still has to be discovered by urban planners and designers. Though more research still needs to be executed on the functioning of urban nature based solutions, it has been proven that there is added value. The link between people and nature in the city can be improved by nature based solutions like tidal parks along the urban river, green roofs and local food production. For example food production in tidal parks could both improve biodiversity and social cohesion on a local scale.



Figure 3: Green corridors along the river that create value for both people and biodiversity (Urbanisten, 2015)

3.3 Sustainable integral management of the subsurface

The third focal point is focusing on an integrated and sustainable approach of managing the subsurface. Next to demographic changes, climate change and the need for resource efficiency, continue to increase the pressure on the available space and the complexity to meet the needs in urban areas. One of the solutions is to make better use of subsurface space and its functions. Unfortunately, much of the subsurface value is already lost, because space is inefficiently used due lack of spatial planning, promising (combinations of) soil functions are not employed or damage has occurred due to unexpected effects or interferences. To avoid this, sustainable integral management of the subsurface is needed. The main goals for sustainable and integral subsurface management are: 1) to use the subsurface in a sustainable way within urban spatial planning (using its benefits, avoiding

problems) and 2) to manage and maintain the (urban) subsurface and its functions. For example: when the strategic goal of a city is climate change adaptation. This can be translated to a task: take measures to avoid pluvial flooding; this can be achieved by increasing the volume of a sewer system but also by using the water storage capacity of the subsurface. Both the sewer system and the water storage capacity of the subsurface contribute to the strategic goals and can be considered and managed as an asset.

The functions that the subsurface provides are considered as valuable assets. Methods for integral subsurface management consist of 3 different aspects:

1. Subsurface functions and boundary conditions. These depend on the ambitions and goals, which functions of the subsurface can be employed and/or need to be maintained within an area. Consequently, the opportunities and challenges that the subsurface offers and poses need to be mapped, using area knowledge and available subsurface data and models. Different methods have been developed to systematically analyze the potential of the subsurface for the urban system. Examples of these methods are: SEES (System Exploration Environment & Subsurface) (Hooijmeijer, 2013) and Resources methodology for subsurface (Smit, 2007).
2. Risks: Both, risks appearing from subsurface for projects and land use functions and risks for the functioning of subsurface functions need to be assessed. Also the complex and inseparable subsurface system and urban system are examined to assess the effects of interferences.
3. Related costs and benefits are assessed to be used in the processes of making alliances and decision making. Additional factors due to the slow-responding system like irreversibility and scarcity need to be taken into account here as well.

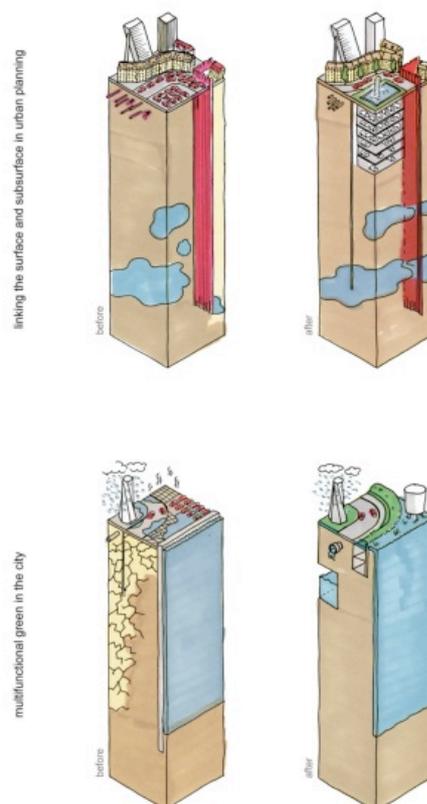


Figure 5: Designing the urban ecosystem by linking the socio-economic and natural layer (Blauw & Maring 2016)

To obtain a sustainable and optimal use of the subsurface two important transitions are needed :

- 1) An integrated approach is required. To reach this, the system needs to be taken into account instead separate objects (sectoral approach). The subsurface is a system, containing anthropogenic assets and natural assets with (in)direct value for the urban environment. These functions can co-exist, compete for underground space, or interfere with each other, leading to positive or negative effects.
- 2) For a sustainable approach, from lifecycle to land cycle. Often asset management considers the life cycle of the asset, an asset having a specific life time and is considered from construction to disposal. This is not the case for functions of the subsurface. These functions are just there and when maintained well, for "eternity". Therefore they should be considered using a land cycle in which they perform their role.

4. Discussion

An important challenge is *raising awareness of the possibilities in gaining value and decreasing costs* when managing the natural layer sustainably. Within spatial development the natural layer is often not taken into account or seen as a black-box with its advantages and disadvantages, where we just have to deal with. When considering the natural layer at an early stage of planning and design, conscious decisions can be made how to optimally use and deal with this natural layer and its opportunities and challenges. Much value can be gained and costs can be avoided when it is recognized that the natural layer is a system that influences positively and negatively the socio-economic layer in reaching its societal ambition.

Another challenge is *defining the (indirect) value of the natural layer*. This is both needed for balancing performance, costs and risks as well in the communication to other parties concerning the importance of sustainable subsurface management. Factors playing a role are the degree of (ir) reversibility, possibility for multifunctional use and scarcity of the function.

Additionally, it is *hard to quantify the effectiveness of the delivered services by the natural layer, and thus its "real" added value*. It takes more time to implement measurements, because of the innovation phase it is right now. Current planning approaches are old-fashioned and stuck and therefore it is difficult to integrate a new approach. Also the effects of soft engineering and system thinking are unknown and investors are therefore difficult to convince of the benefits. Hence, a solution could be found in the process.

It is necessary to include different stakeholders from the beginning of the planning phase. In addition, during stakeholder involvement it is *important to bridge the gap in language and the way of working between engineers and designers*. This could be done according to the so called "living labs". As seen in the examples of Adaptive Circular Cities and Building with Nature in the City, combining all stakeholders, planners and academics during the process it could lead to a broadly accepted result in which both the plan is developed according to scientific parameters and executed in reality.

Another barrier to overcome is *difference between the academic world, aiming for in depth research, and urban practice that aims to execute plans without spending too much money and time*. How are we going to combine the fast and commercial world of practice together with the academic world that takes time, and thus money, to conduct in depth research?

5. Conclusion

By integrating the socio-economic and natural layer, many societal ambitions can effectively and sustainably be achieved in urban planning. The natural layer often offers unknown added value, which can easily be addressed, especially when it is considered at an early stage in urban planning. All governance, engineering and design should be included from the beginning of the process.

Hence, for this system based approach, it is stressed that working in interdisciplinary teams creates easily added value for urban strategies and plans. The negative effects of climate change on urban plans can be prevented by working with nature, acknowledging its opportunities and recognizing its threats.

Additionally, urban plans could become less labor-intensive and could be maintained by local inhabitants themselves. This could improve social cohesion on a small scale. At the same time soft engineering solutions can improve the quality of the urban living environment, which again will impact the development of the neighborhood and/or city over time in a positive manner. By using natural elements such as wind, currents, sediment transport, flora and fauna in designing a hydraulic engineering solution, additional benefits for livability, nature, recreation and the local economy are created.

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Planning for Sustainable Communities is Planning for Green Spaces

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Abstract *The sustainability notion of green space planning is a recent occurrence with adequate evidence to state that planning for sustainable communities is linked to the planning of green spaces. Regrettably little or no attention is given to the planning initiatives of green spaces within the local South African context, due to various economic, political and social issues. As a result green spaces are not always prioritised as a primary need as the demand for basic services and the continuing growing population overrules.*

Extensive amounts of open spaces occur within urban and rural areas within South Africa. Unfortunately these open spaces are usually left unmaintained, causing a broad range of environmental issues concerning these spaces (EPA, 2013). When these open spaces (parks) remain unmaintained it could however be categorized as unused spaces causing numerous concerns about the present and future use of such unused spaces (Tankel, 1963:57). In order to plan for sustainable communities, these open unused spaces should be re-thought, transformed and re-designed according to local needs.

This paper aims to capture the importance and benefit of green space planning as an alternative planning focus, in order to address current spatial issues, enhance sustainable community development and address (some) of the issues related to the broader sustainability thinking. An overview and definition of green spaces will be portrayed in this study along with the examination of the place-making concept in order to implement qualitative green spaces, ensuring sustainable communities.

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 green space planning

Previous imbalances have occurred within spatial planning in terms of green space amalgamation within South African communities. Planning for green spaces and the value it adds to communities as well as the environment are more often than not unidentified within South Africa. This is due to the spatial implementation and planning of green spaces that are too often situated "at the bottom of the priority list" by reason of financial constraints, political considerations, and a lack of implementation strategy (Parker, 2014), amongst others.

Green spaces are diversely defined. According to Barbosa *et al.*, (2007:189) public green spaces are every parcel of land categorised as a natural surface, i.e. earth, water or living things, and should be accessible to the public. Urban green spaces are furthermore defined as areas having continuous vegetated localities, public or private space, directly or indirectly

available for the users (Atiqul & Shah, 2011:601; Levent *et al.*, 2004:9; Mensah, 2014:1; Thai Utsa *et al.*, 2008:221).

Furthermore qualitative green spaces seek to enhance a city's attractiveness for living in urban areas, enhance social aspects and improve neighbourhood relations (Atiqul & Shah, 2011:603; Parker, 2014). Qualitative green spaces, for the purposes of this paper, refers to all open, green areas in an urban or rural environment, which has a function and contributes to the quality of the surrounding area.

Green spaces provide numerous benefits for the public and community, including enhanced social cohesion, recreational opportunities, health and mental well-being and aesthetic enjoyment (Clouston & Stansfield, 1981:6; Harper, 2009:3). The development and improvement of green spaces also benefits the urban environment (Atiqul & Shah, 2011; UrbSpace, 2010) as it contributes to improving air quality, by removing pollutants from the air (Project EverGreen, 2013) and thus improve overall human well-being (Prange, 2014). Green spaces furthermore contribute to the quality of an area, by inter alia improving the quality of life for the residents of the area and by having a positive effect on the sustainability of the relevant area (Cilliers, 2015), thus ensuring economic benefits (direct and indirect). Accordingly the benefits of green space planning are discussed in terms of social, economic and environmental impacts.

2. Benefits and impacts of green space planning

At present, urban green spaces are considered an important constituent of sustainable development of cities (Levent *et al.*, 2004:2; Prange, 2014; UrbSpace, 2010). The incorporation of green spaces within the urban fabric play an essential role in social, economic and environmental aspects of sustainable development, holding great benefits as well as challenges for the urban environment (Atiqul & Shah, 2011:601). Emphases are laid on a balanced development within urban areas, providing sufficient open and public spaces and simultaneously creating the harmony between human and nature. Table 1 describes theses social, economic and environmental benefits in terms of green space planning.

Table 1: Description of the social, economic and environmental benefits of green space planning

Benefits	Description
Social	The social benefits of green space planning are directly related to the leisure and recreational aspect of the spaces itself. Social contact (communication), health and well-being of communities are directly influenced.
Economic	The economic benefits are directly related to the economic and financial gain, which is directly affected by the green spaces provided within its specific area.
Environmental	In terms of the environmental benefits that green spaces provide, ecosystem services and ecologic systems play a major role, resulting in enhancing biodiversity. The main benefit is however the vast impact on sustainability within the

	direct surrounding area as well as the broader area of the urban environment.
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Source: Own creation based on Cilliers (2015)

Furthermore the impact that green spaces have in terms of these social, economic and environmental benefits go far beyond the obvious (Atiqul & Shah, 2011:602). Table 2 below illustrates these impacts along with identifying the main benefit as portrayed in Table 1 above.

Table 2: Impacts of green space planning in terms of the social, economic and environmental benefits

Impacts	Benefit	Description
Ecological Benefits	Environmental	Supply of ecosystem services. Mitigate the situation of heat island effect.
Pollution Control	Environmental	Air and noise pollution is in general a problem in urban areas. According to Atiqul & Shah (2011) 85% of air pollution can be filtered in a park and noise levels can be reduces by green spaces (parks).
Biodiversity and Nature Conservation	Environmental	Serve as protection for reproduction of different species and plants. Green spaces serve as a link between urban areas and nature, contributing to sustainability and maintenance of ecological aspects.
Energy Savings	Economic	Increasing green spaces regulates the temperature in urban areas.
Property Value	Economic	Increases property value by making areas more attractive for the residents.
Aesthetic Value	Environmental	Green spaces offer the value of substituting gray infrastructure in the urban areas. People can enjoy nature.
Recreation and wellbeing	Social	Contributing to sustainable development, green spaces also provide opportunity for outdoor activity, resulting in mental well-being and a healthy lifestyle.
Human health	Social	Reduces stress levels of people who are exposed to green spaces. Increases the physical wellbeing of urban citizens.

Source: Own creation based on (Atiqul & Shah, 2011; Cilliers, 2015; Mensah, 2014:1)

Apart from the well-defined social, economic and environmental benefits that green spaces offer to the public and communities, the palpable main benefit is the impact on sustainable development.

The ultimate goal of sustainable development, redefined by Brundtland Report (WCED, 1987:54) as "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs", is to provide a healthy environment coupled with a high quality of life for the existing generation and many to come. This includes environments with balanced geographical areas and socially cohesive economic development which would reduce negative impacts on global and local environments. Sustainable development thus balances three dimensions namely social aspects, the economy as well as the environment (Cilliers, 2010:IV) and can be achieved through implementing the place-making approach, referred to as both an overarching idea and a hands-on tool for improving a neighbourhood, city or region.

3. Creating qualitative green spaces through place-making

Current open unused spaces within urban areas could be transformed into green spaces by applying the place-making approach. The place-making approach is focused on the importance of providing and developing lively neighbourhoods and inviting public spaces within the urban fabric (Atiqul & Shah, 2011:601). The approach thus inspires people to create and improve their public places, strengthening the connection between them and public spaces itself (Atiqul & Shah, 2011:601; Prange, 2014).

By incorporating the place-making concept and using it as a tool in the developing process of cities or town, in order to provide green spaces, the attractiveness is enhanced along with the improvement of sustainability. According to the Metropolitan Planning Council (2008:1) place-making is how public spaces are collectively shaped, to maximize shared value. Place-making furthermore involves the planning, management, design and programming of public spaces, in this case green spaces.

By giving a space a certain function or meaning the area is transformed to an area where people can relate to certain objects and feelings. These spaces become the shared focal point of a city and community that reflects the character of the area. In the design of cities and especially the design of the urban centre, the CBD, it is necessary to create public green spaces, forming a destination and attraction point for the residence.

Figure 1 captures the four different attributes of place-making as identified by PPS, namely sociability, uses & activities, access & linkages and comfort & image.



Figure 1: PPS Judgement of any place. Source: Project for Public Spaces (2015)

The following table illustrates the preliminary design guidelines for the implementation of green space planning in conjunction with the four key concepts, as identified by PPS for improving or developing public green spaces. These concepts should be developed in harmony with one another, for the space to reach its maximum potential, contribute to sustainable development and provide for the needs of the community.

The elements set out in the first column of Table 3 are only a small selection of the many cost effective elements that can be implemented in a short period of time in order to observe successful and innovative transformation. These elements can vary in type and quantity depending on the size of the space and need that exists within the area. Table 3 furthermore links each element with the benefit it contributes towards in terms of the social, economic and environmental aspects and also categorises each element under the suggested PPS attribute as described above.

Table 3: Green space planning design elements

Element	Benefit	PPS Attribute	Description	Applicability within South Africa
Variety of plants and trees	Environmental	Uses & Activities	Incorporate plants of varied colours, textures, shapes and species. As a result different birds and butterflies will also be attracted to the space, thus serving fauna and flora.	Indigenous plants and trees incorporated within the space will contribute to the green element of South African flora.

Moving water features	Environmental	Comfort & Image	The incorporation of sustainable practices i.e. moving water provides for a calm and soothing sense of well-being.	Moving water contributes to a peaceful environment and is applicable to open spaces as numerous people often make use of these spaces to “escape” the rush of life for a while.
Plant & tree identification	Social	Uses & Activities	The provision of interpretive signs identifying the different types of plants and trees result in interaction between people and their direct environment.	Through identification methods of plant and trees within the space, educational enhancement is achieved in terms of the different indigenous species within South Africa
Seating & pathways	Social	Comfort & Image	Seating and pathways should be incorporated to ensure an inviting feeling with the space. The microclimate should however be taken into consideration as sun, wind and shade will have an impact on the use of the park.	An inviting space, providing seating will contribute to a peaceful space provided for the passing public in need of a resting area or a space to enjoy their lunch through the busy working day.
Temporary Enhancements	Economic	Access & Linkages	Temporary improvements and enhancements should be invested in before permanent solutions i.e. utilize pots and planters able to be moved to different locations.	Temporary enhancement along with small changes is cost effective methods that is applicable to transform unused spaces within South Africa.
Public Art	Social	Sociability	Local artists are incorporated through developing different art within the space (sculptures and wall painting), serving as focal point. Rotate art in order to provide a reason for people to return.	With minimal costs, entertainment is provided. Public art incorporation is applicable within South Africa as a diverse cultural group exists with different art levels to be exhibited to the public.

Source: Own creation based on (Cilliers & de Jong, 2013:5; Marcus & Francis, 1998:89-91)

4. Local realities and challenges: Green space planning within South Africa

Current reality in South Africa suggests that green spaces within urban areas are unmaintained, uninviting, and without clear form of character (Hedman & Jaszewski, 1984:1;

Parker, 2014), with the reality that these urban green spaces are neither safe nor inviting, resulting in the fact that South African cities are not liveable (eThekwini, 2013) or integrated. The unfortunate is that little or no attention is given to the public environment (Parker, 2014; Southworth, 2007:4), where urban green spaces are left to result in open unused spaces within the urban area. Urban green spaces, referring to traditional parks, are increasingly being eliminated and not maintained. These spaces (parks) are regarded as unaffordable to provide and maintain for, where it cannot compete for popular or political support in the face of demands for basic services (Prange, 2014; Southworth, 2007:4), due to South Africa's continuing growing population causing urbanization.

As a result urban green spaces have historically fallen between the cracks and consequently have not had an institutional home or budget (Parker, 2014; Prange, 2014; Southworth, 2007:5). Ironically, the spaces that should be created within South African cities cannot be achieved in terms of current urban realities, regulations and practices (Parker, 2014).

4.1 Local case study: Carletonville

An open space situated in the town of Carletonville, governed by the Merafong Local Municipality was identified as case study for this research. Carletonville is situated in the Gauteng Province of South Africa, as illustrated in Figure 2.

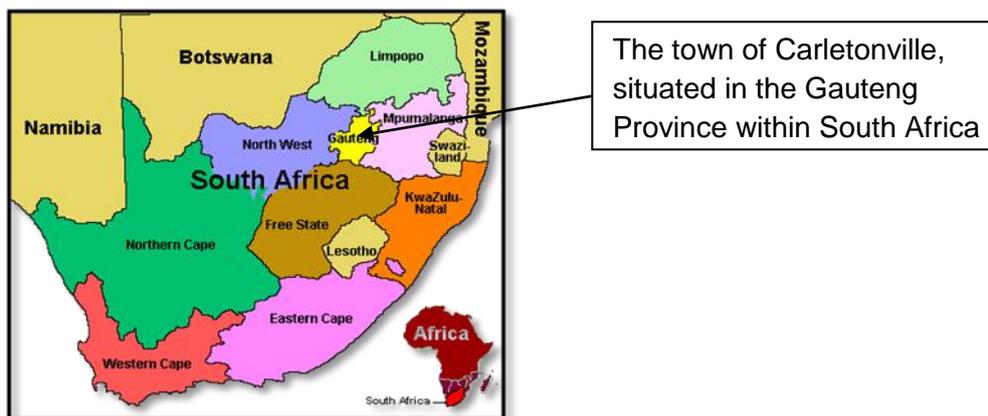


Figure 2: Gauteng Province location within South Africa. Source: Africa Deluxe Tours (2006)

The Carletonville case study is captured as part of this research to illustrate a typical example of a planned open space that resulted in an unused space within the central area of a local South African Town. The evaluation of the identified space were based on a methodological analysis and consisted of two steps including a visual analysis and a SWOT analysis.

The visual analysis consisted of a visual interpretation of the identified space and included a figure ground study as well as visual illustrations. Figure 3 illustrated a figure ground study compiled in terms of the CDB area of Carletonville. Proposals are illustrated in terms of providing a linkage between the current identified open space, through the centre of the town.

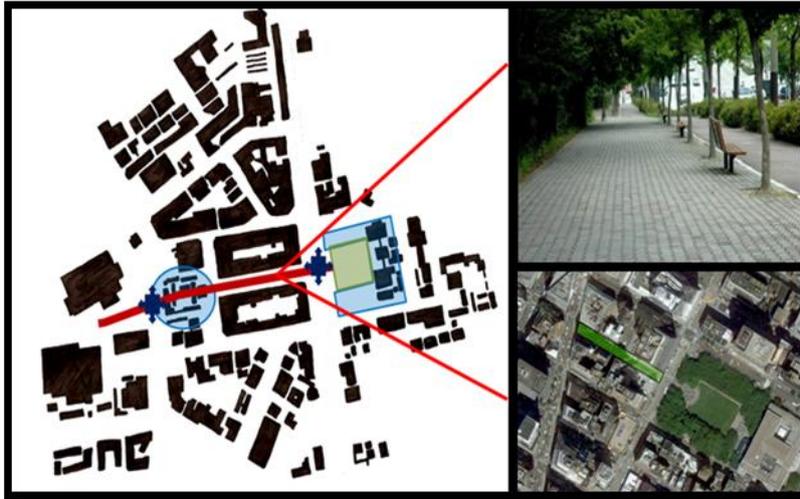


Figure 3: Figure ground survey of Carletonville. Source: Authors own

Figure 4 below illustrates the identified open space in its current state. The space provides and portrays the green element but is not used to its full potential as the space lack specific elements. These elements could be incorporated through applying the place-making approach as described in Section 3 of this study.

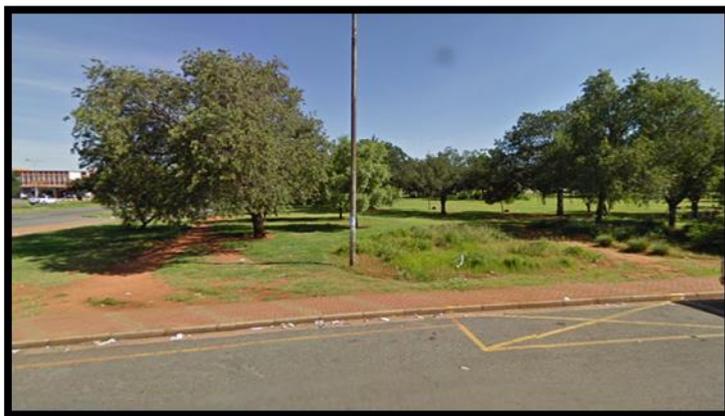


Figure 4: Current open space. Source: Authors own

The method of a SWOT analysis was subsequently applied in order to establish the strengths, weaknesses, opportunities and threats. The strengths within the park refer to the perceived dimensions included and found from the analysis. Weaknesses within the park refer to perceived dimensions the site did not fulfill or was short of. Regarding opportunities these seek to open a dialogue concerning possible improvements or new solutions for maintaining the attractiveness and providing a green space for the public. The threats within the park refer to challenges, future and present, which endanger and put the values and liveability of the park at risk.

Table 4: SWOT analysis of Carletonville open space

HELPFUL ↓	HARMFUL ↓
STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> - Trees can be identified in the space - Good access - High quality location - Traffic calming elements - Integration of natural environment - Strengthen current recreational and social functions 	<ul style="list-style-type: none"> - Park is not fenced off from surrounding area, in order to improving safety aspect - Safety issues in terms of crime and vandalism
OPPORTUNITIE	THREATS
<ul style="list-style-type: none"> - Focused on the green aspect of the town, improving sustainability - Within walking distance for surrounding amenities - Create a broader development vision for the area - Enhancement of local character and image of the place 	<ul style="list-style-type: none"> - Park is large in size - Maintenance of space - Implementing international best practices that would not fit the local context

Based on the evaluations it was evident that the strengths and opportunities of the proposed green space improvement planned for the Carletonville area, outweighs the weaknesses and threats thereof. As portrayed in Table 3 of the theoretical section of this study the current open space can be improved through enhancing the green element in terms of various place-making elements also identified in Table 5 below.

Table 5: Green space planning design elements in terms of current identified space

Element	Benefit	PPS Attribute	Applicability in terms of current identified space
Variety of plants and trees	Environmental	Uses & Activities	Various trees can be identified in the space. Additional plants should be incorporated to contribute to the green image and provide a variety within the space n terms of type, size and colour.

Moving water features	Environmental	Comfort & Image	No water feature is currently incorporated. Moving water will contribute to the sense of place aspect, providing a calm environment
Plant & tree identification	Social	Uses & Activities	Through the incorporation of plant and tree identification elements, interaction between the public and the public and space is provided.
Seating & pathways	Social	Comfort & Image	Currently the space lack seating options. Various seating options, benches, should be provided for the public. In addition pathways should also be incorporated for the public to interact with the space, providing a method to explore.
Temporary Enhancements	Economic	Access & Linkages	Temporary enhancements should be first priority as financial constrains could influence the transformation process. Access to the space and the linkage it provided to the centre could be enhanced.
Public Art	Social	Sociability	A platform for local unknown artist is provided through the movement of allowing public art within the space. This will also serve as a attraction to the public.

Source: Own creation based on (Cilliers & de Jong, 2013:5; Marcus & Francis, 1998:89-91)

The following image provides a visual representation of the identified space to be transformed based on the abovementioned recommendations:



Figure 5: Visual representation. Source: Baltimore City Department of Planning (2010:12)

5. Concluding remarks and findings

The value of green space planning is no new phenomena within international context, but unfortunately limited within local context. With that said the benefits of green space planning should firstly be identified and understood in order to become a priority within the discipline of spatial planning within South Africa. As portrayed, the benefits that urban green spaces provide in terms of social, economic and environmental elements impacts the urban area as well as the residents on various levels, improving the overall well-being of the community.

It can be concluded that the case study, as portrayed, made it clear that the identified area rather consisted of open unused space rather than an urban green space that provides an identity and a sense of pride to its users. The lack of integration of planning and design principles causes numerous spaces to lose character, providing opportunities for transformation to take place. The identified areas that needed attention in terms of transformation into an urban green space were brought to light by making use of the place-making approach, including various cost effective elements.

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Sustainability and the Revolution in Urban Planning

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Synopsis

The key paradigm for sustainable planning is the 3-circle 'Triple Bottom Line Model', but it provides no guidance as to implementation. However, by exploring the inherent tension between the natural and built environments in a way that demonstrates sound links to environmental science and the rural-to-urban transect, an operational sustainability model is developed. It is then demonstrated that it is hypothetically feasible to apply automation to a geographical information system to produce the 'first draft' of an urban structure plan.

Planning for the Twenty-first Century

Urban planners and designers are faced with the task of housing an additional three billion people in towns and cities by the year 2050. This is the equivalent of building six one million-person cities every month for forty years. If climate change displaces another 200 million people the task will be that much greater.⁽¹⁾ It is truly one of Alejandro Arevena's "3S Problems": a problem that is simultaneously large scale, requires a speedy response and must be dealt with by individuals or teams suffering a scarcity of means.⁽²⁾

Compounding this problem, but also demonstrating that it might be part of the solution, the developing economies are generating large scale employment in their urban areas, some 900 million jobs in the thirty years from 1980 to 2010, but most of these jobs require the level of education that only a well-designed and managed large town or city can provide.

One billion of the additional three billion new urban dwellers are expected to be in China, India and Nigeria, the remaining two billion will be in the countries around those countries: a massive arc stretching from North Africa to the western side of the Pacific Ocean.

At the same time, there are cities and towns across the western world that are declining in population and economic output. These places have been significantly impacted by globalisation, falling birth rates and a small, but constant, migration to sunnier climes.

Clearly, if massive areas of new urban development or renewal are required very quickly, then a series of plans for an area (strategic, structuring, detailed and statutory) that previously took ten years to prepare will now need to be completed in about twelve months. The planning process must therefore move from "slow and ponderous" to "fast and reliable", and must be conducted by efficient, well-managed planning agencies and at least equally competent consultants. This requires not only the adoption of all that the new technologies have to offer, but also the development of a plan-making paradigm that optimises the application of that technology in a way that produces good urbanism.

Massive global need to urbanise, coupled with emerging disruptive technologies, will both require and enable plans for new cities to be developed in months and planning permits in an instant. It will be a revolution in urban planning.

Twenty-first Century Urban Planning

There is no doubt that advances to geographical information systems and related software will progress to the point where plans will be made by computers⁽³⁾ and planning applications assessed and approved or rejected automatically, but this opens up the problem of 'garbage in, garbage out' (GIGO). In the field of computer science this refers to the fact that computers, since they operate by logical processes, will unquestioningly process unintended, even nonsensical, input data ("garbage in") and produce undesired, often nonsensical, output ("garbage out").⁽⁴⁾

Avoiding the "garbage-in" side of this famous saying must start first with the fundamental principles of twenty-first century urban planning, one of which is clearly 'sustainability'. So, this paper is concerned with understanding sustainability in the context of the coming revolution in urban planning.

The Sustainability Model

At present our key paradigm in this venture is the three-circle 'Triple Bottom Line Model'.⁽⁵⁾ This Venn diagram (fig. 1) represents the environmental, economic and social dimensions of sustainability and their overlaps demonstrate the interrelationships. It is a simple but powerful model that has changed the paradigm and inspired environmentalists and planners the world over to strive to create a more sustainable society.

This diagram powerfully demonstrates the concept that we should always act in ways that simultaneously satisfy a 'triple bottom line' consisting of good environmental and economic outcomes that are also equitable in their impact on the individuals and groups of which the relevant community is comprised. Note that 'equity' includes respect for the individual and collective spirituality and culture, but more clearly identifies the desired outcome required than the less precise words 'social', 'society' or 'socio-cultural'.⁽⁶⁾

While it was a major advance at the time, and there have been some development of it, notably the 'Circles of Sustainability' diagram used by the United Nations, the three-circle 'Triple Bottom Line Model' provides no guidance as to implementation, it gives no specific guidance as to what should be built where, or in what form, beyond the generalisations that whatever is planned should be environmentally, economically and socially sustainable.

For a more detailed discussion of diagrammatic representations of sustainability see Moir and Carter.⁽⁷⁾

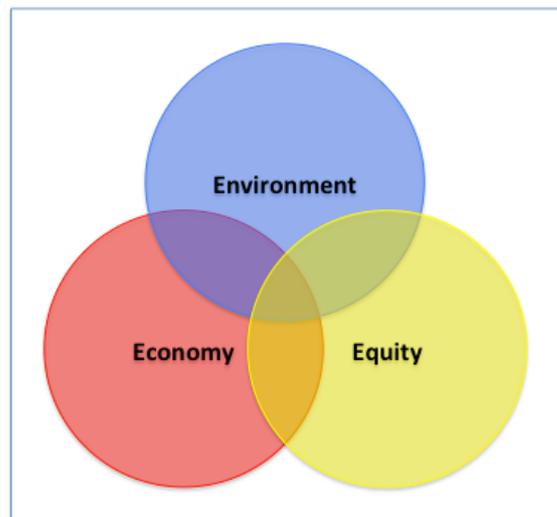


Figure 1: Diagrammatic representation of sustainability after Moir & Carter⁽⁷⁾ and Wheeler⁽⁶⁾.

The Planner's Trilemma

While the concept of sustainability is vital if humanity is to survive past the middle of this century⁽⁶⁾ and its diagrammatic representation as three overlapping circles (a.k.a the Sustainability Model) has been useful in promoting an understanding of what is required, the fact remains that of itself the diagram provides no immediate guidance in decision making. In every case the decision maker or his/her adviser must analyse the detailed impacts of not only the proposal, but every facet of the proposal.



Figure 2: House, apartment or high-rise?
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For example, how does the Sustainability Model guide a choice between the options shown in figure 2? The answer, of course is that of itself, it cannot. To make even a simple decision like this recourse must be had to a list of interrelated factors requiring extensive study and consideration. These factors have been codified as checklists, such as LEED⁽⁹⁾ in the United States, BASIX⁽¹⁰⁾ in New South Wales and Estidama⁽¹¹⁾ in the Emirate of Abu Dhabi, which have value in guiding plan preparation, but they

are essentially scorecards applied after the plan has been prepared. In addition they often incorporate value judgements, such as the proportion of open space to be provided, in amongst more verifiable factors, such as the size of windows facing towards the equator.

The extra consideration required to ensure sustainability has therefore lengthened strategic and statutory plan making procedures and planning approval processes at exactly the same time as we are faced with the task of housing an additional three billion people in towns and cities by the year 2050. Clearly, unless we solve this problem *Limits for Growth*⁽⁸⁾ will be proven true and human civilisation will not survive this century.

Sustainability as 'Things'

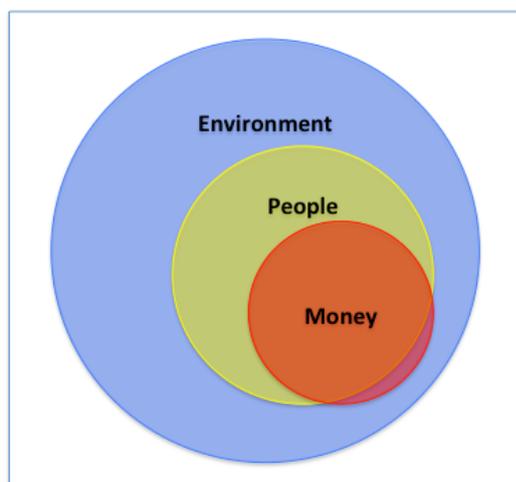


Figure 3: Diagrammatic representation of sustainability after Carter & Moir⁽⁷⁾.

Returning therefore, to sustainability as a Venn diagram of factors for consideration, we can re-draw it as a Venn diagram of things, as opposed to factors - as at figure 3.

Note that some money has been lost to the environment, and while there is the occasional discovery of a trove of Roman coins or suchlike, no doubt there is much more to be found, so the diagram illustrates this. Unfortunately, while it might provide encouragement to treasure hunters, it provides little additional guidance to urban planners: but what guidance do these professionals, and their mayors and ministers, require?

To answer this we must first consider what urban planners actually do. While there are many such analyses, from my own long experience it boils down to the actions and outcomes at figure 4.

ACTIONS	OUTCOMES		
Study	Protect some parts of the natural environment.	Destroy other parts of the natural environment.	Determine how much of what to build or landscape on existing urban or previously unspoilt land, and where and when.
Plan			
Design			
Implement			
Monitor			

Figure 4: Urban planners actions and outcomes summarised.

So, isn't sustainability, at least for the planning, architecture and design professions, actually all about sustainable solutions to the conflict between how to protect the natural environment while maintaining an economy that will support an equitable society within the built environment? This leads to a better understanding of the real situation: there are actually four main groups of things that we have to deal with, as shown in the Venn diagram of things at figure 5. Note that a few people still live in the natural environment and some money has been lost to both the built and natural environments.

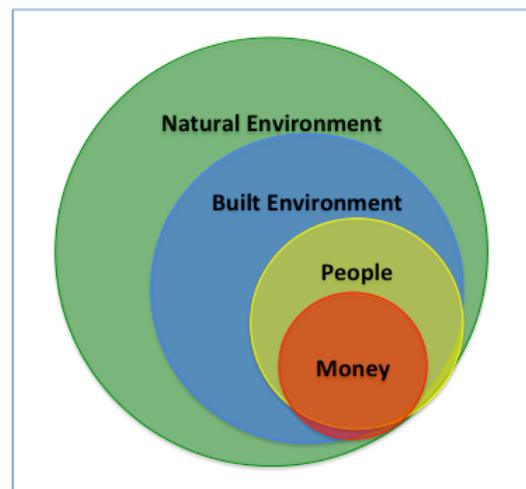


Figure 5: The four factors of sustainability as physical things.

Figure 6 also neatly illustrates that money is a means of communication between people that, in essence,

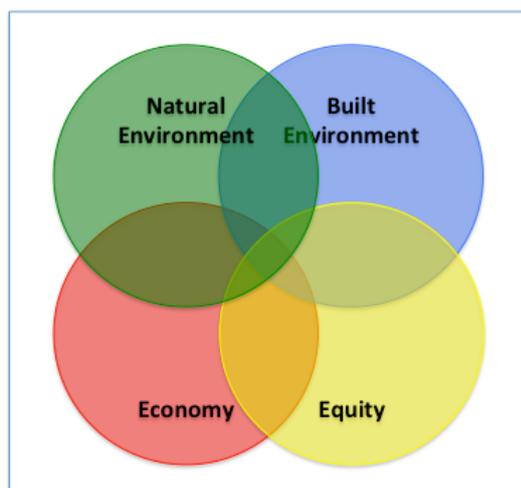


Figure 6: The four factors of sustainability as factors for consideration.

facilitates the exploitation of the natural environment in order to create and maintain a built environment that meets the needs of the people.

From this analysis of the environment as real things, we can now produce a Venn diagram (fig. 6) of the actual factors to be considered in finding sustainable solutions to the conflict between how to protect the natural environment while maintaining an economy that will support an equitable society within the built environment.

The Tension

Society, in pursuing increased wealth and greater equity creates a tension between the built environment as it is 'used' to exploit the natural environment (fig. 7).

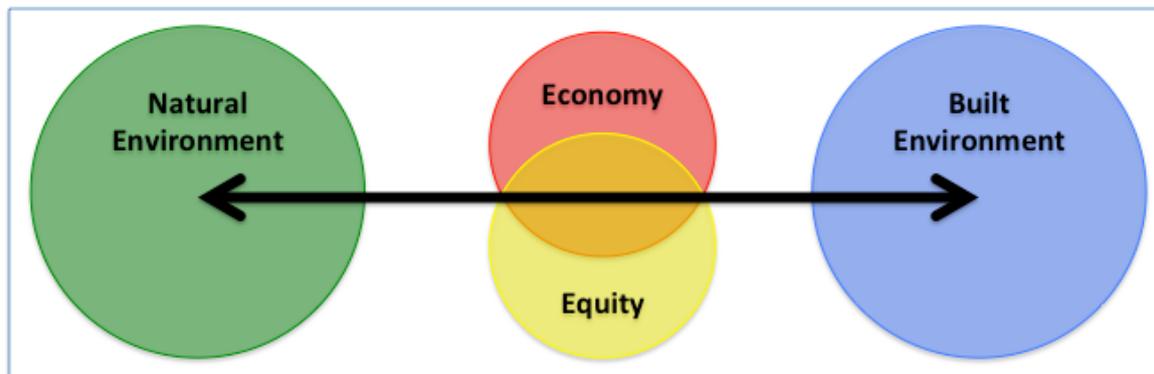


Figure 7: The four factors of sustainability in tension.

This creates a 'tug of war' between two opposing 'goods' (it is good to protect the natural environment and it is good to provide for people by way of an economic and equitable built environment), but the difficulty of finding the sustainable middle ground has led to the development of two opposing camps, respectively pro and anti development. Short term 'wins' for one side over the other encourages the feud to continue, resulting in long-term losses for society as a whole. We need to resolve this conflict in a more sustainable way.

The Rural to Urban Progression

Whatever the outcome of single issues, cumulatively the outcome at the regional level can be represented schematically as a transition from the most pristine natural environment, through farmlands and suburbs to the densest urban core (fig. 8). From left to right across this transect animal and plant species decline in number and diversity while humans increase in number and their structures increase in mass.

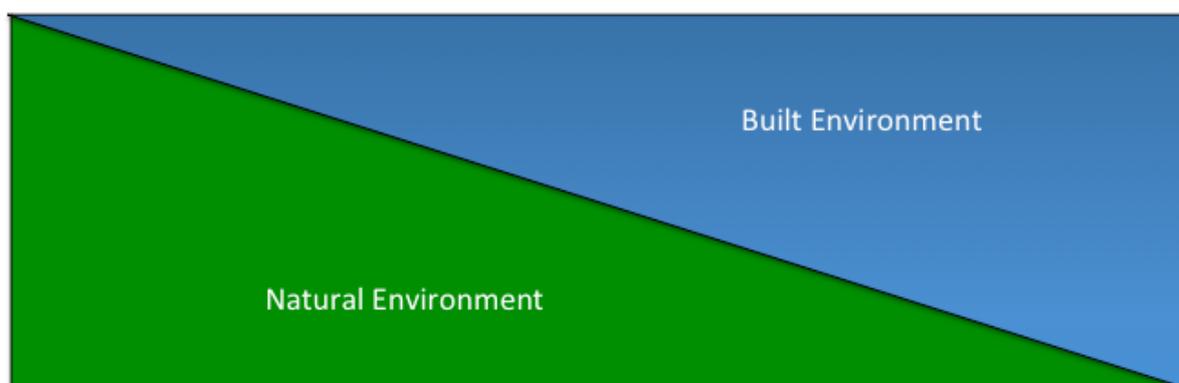


Figure 8: The natural and built environmental factors as a transect

An excellent study on this basis was conducted by George Seddon in his ground-breaking environmental, sociological and urban planning treatise: *Sense of place: a response to an environment, the Swan coastal plain, Western Australia*.⁽¹²⁾ However, much has happened in

urban planning since 1972, most notably the slow death of modernist planning and its gradual replacement by the New Urbanism.

The New Urbanism

The Charter of the New Urbanism was signed at the first Congress of the New Urbanism (CNU) in 1993. "...it proposed a rethink of neighbourhood design by returning to many features of the old streetcar suburbs – in particular highly connected street patterns, pedestrian oriented street design, mid-block alleys, and architectural features such as front porches and garages behind the house. ... Movements for Smart Growth, livable communities, and sustainable development dovetailed into many aspects of the New Urbanism."⁽¹³⁾

Many statutory planning systems use land use as their primary organising principle and then control built form by regulations specific to particular land uses. From the town of Seaside (1981, by Andre Duany and Elizabeth Plater-Zyberk of DPZ, Miami, USA for Robert Davis) onwards the New Urbanists have instead regulated built form first and then controlled land use, as necessary, by specific regulations.⁽¹⁴⁾

As with any statutory planning technique there is a lot of 'devil in the detail', but in essence "Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes are presented in both words and clearly drawn diagrams and other visuals. They are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development, rather than only distinctions in land-use types."⁽¹⁵⁾

The Rural to Urban Transect

The form-based code was further developed by adapting to it transect analysis from environmental science.⁽¹⁶⁾ This has resulted in a very useful body of knowledge and related planning and design techniques, including many images that are available on-line, such as figure 9 below, and the latest version of *The SmartCode – Version 9 and Manual*⁽¹⁷⁾ (which aligns the use of transect-based plans to the United States statutory planning system).

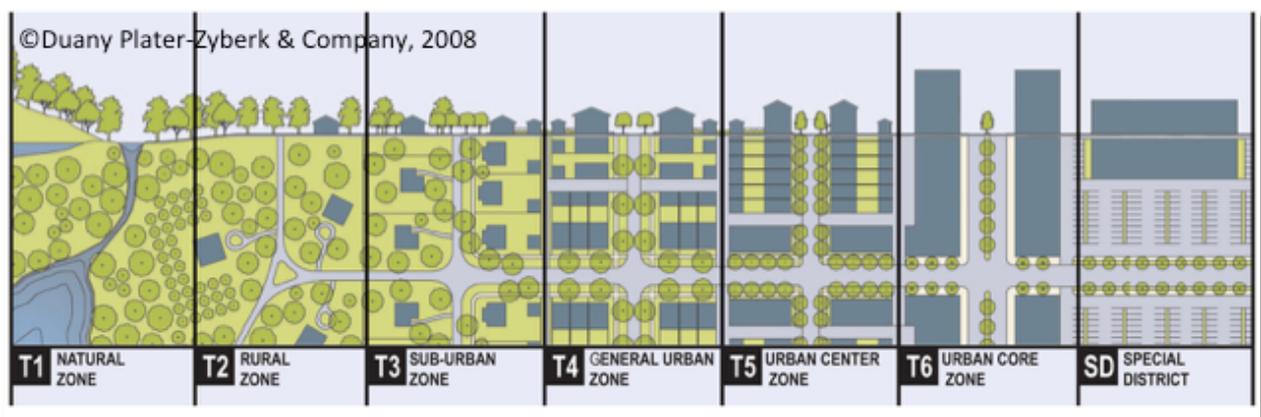


Figure 9: The standard diagrammatic representation of the rural to urban transect.⁽¹⁸⁾

The CNU website describes transect-based planning thus:

Naturalists use a concept called the transect to describe the characteristics of ecosystems and the transition from one ecosystem to another. Andres Duany has applied this concept to human settlements, and since about 2000 this idea has permeated the thinking of new urbanists. The rural-to-urban Transect is divided into six zones: core (T6), centre (T5), general urban (T4), sub-urban (T3), rural (T2), and natural (T1). The remaining category, Special District, applies to parts of the built environment with specialty uses that do not fit into neighbourhoods. Examples include power plants, airports, college campuses, and big-box power centres.

The Transect is useful for designing and developing what Duany calls “immersive environments”: urban places in which the whole is greater than the sum of its parts. Duany Plater-Zyberk & Company describes the concept thus: ‘The Transect arranges in useful order the elements of urbanism by classifying them from rural to urban. Every urban element finds a place within its continuum. For example, a street is more urban than a road, a curb more urban than a swale, a brick wall more urban than a wooden one, and an alley of trees more urban than a cluster. Even the character of streetlights can be assigned in the Transect according to the fabrication from cast iron (most urban), extruded pipe, or wood posts (most rural).’⁽¹⁹⁾

Following my recent paper on special districts within transect-based planning⁽²⁰⁾ my colleagues in the United States and I are considering an expanded rural to urban transect, now incorporating the economic zones of the city, as shown at figure 10. Assessment of the prototypes (including sub-categories, where required) and community units (see below) is now underway.

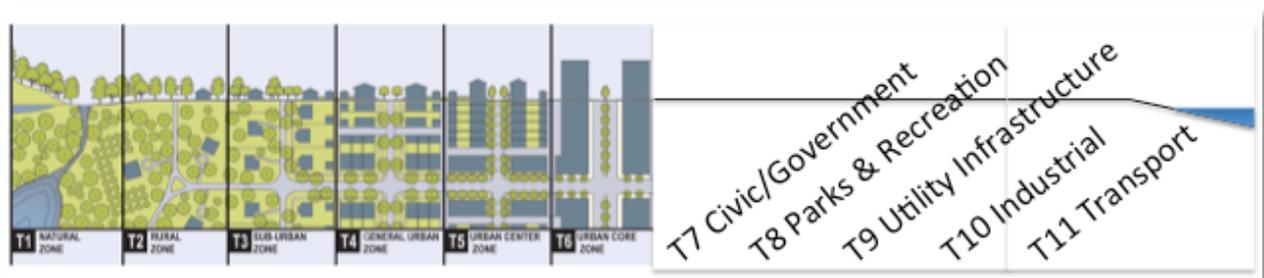


Figure 10: The interim diagrammatic representation of the expanded rural to urban transect.⁽²⁰⁾

It is important to note that in few cases will the transect through a real place look exactly like these illustrations, even when allowing for the longitudinal compression of the diagram. Therefore, transect-based planning always starts with a synoptic survey of the existing situation, followed by a process of localisation to adapt the model progression above to local prototypes of urban form. However, such surveys usually reveal very close outcomes between the same transect elements (or urban ecological zones) in very different environments (e.g. north America and Arabia⁽²¹⁾) and very similar relationships along the transect. Therefore, the actual terms used are not as important as the concept of good prototype urban zones relating to their adjoining zones in a progression from rural to urban.

It is also important to appreciate that the urban ecological zones are usually grouped into community units before areas are designed in detail. Essentially, the urban structure is formed from these units and their supporting infrastructure. The standard community units are now:

- *Clustered Land Development* (CLD), e.g. a hamlet, typically contains T2, T3 & T4;
- *Traditional Neighbourhood Development* (TND), e.g. a village or a neighborhood, typically contains T3, T4 & T5;
- *Transit Oriented Development* (TOD) e.g. a neighborhood or district centre with good transit, it also typically contains T3, T4 & T5;
- *Regional Centre Development* (RCD), e.g. a regional centre or a CBD, typically contains T4, T5 & T6; and
- *Special District* (SD-X) a community unit with a defined boundary condition (e.g. fenced, secured or fortified) containing multiple transect elements (i.e. urban ecological zones) and designed for a special purpose ('X'), e.g. ports, airports, power plants, college campuses, medical complexes and military bases.

Application of Transect Planning to Sustainability

Clearly, the transect has an intrinsic relationship to sustainability and its similarity to figure 9 above is immediately apparent, but can it be used to predictably guide the preparation of plans in at least a partially automated process, and through them, the assessment of applications? The approach proposed consists of mapping at the regional scale the factors shown at figures 11 to 13.

These factors include topography (fig. 12) and travel time to centre (fig.13), as well as locational rent (fig. 14) in accordance with the work of Johann Heinrich von Thünen (1783–1850) who developed locational rent as a mathematically rigorous theory of marginal productivity.⁽²²⁾ Finally, for the purposes of this exercise, total retail and commercial floor space (fig. 15) is shown in accordance with Central Place Theory as proposed and utilised by the German geographer Walter Christaller (1893–1969).⁽²³⁾

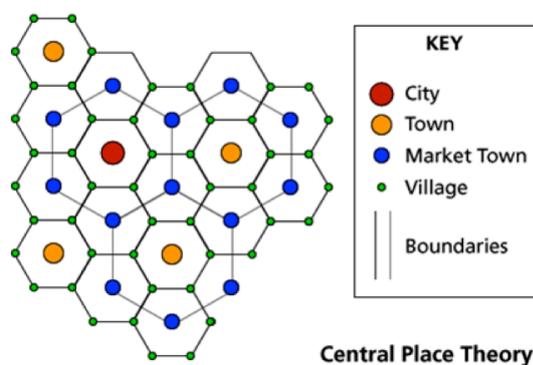


Figure 11: Central Place Theory⁽²⁰⁾

For the purpose of the current exercise, the allocation of total commercial and retail floor space to an east-west transect through the city centre of figure 11 has been assumed as 2.5 million square metres for the city/CBD, 250,000 sq m for the town/sub-regional centre, 25,000 sq m for the market town/district centre, 2,500 sq m for the village/neighbourhood centres and an average of 250 square metres, representing the occasional corner shop, and the like, for the suburban areas between these centres. These values have then been transformed to a

logarithmic scale and multiplied by twenty in order to both highlight the pattern and express it on the same scale as the other factors.

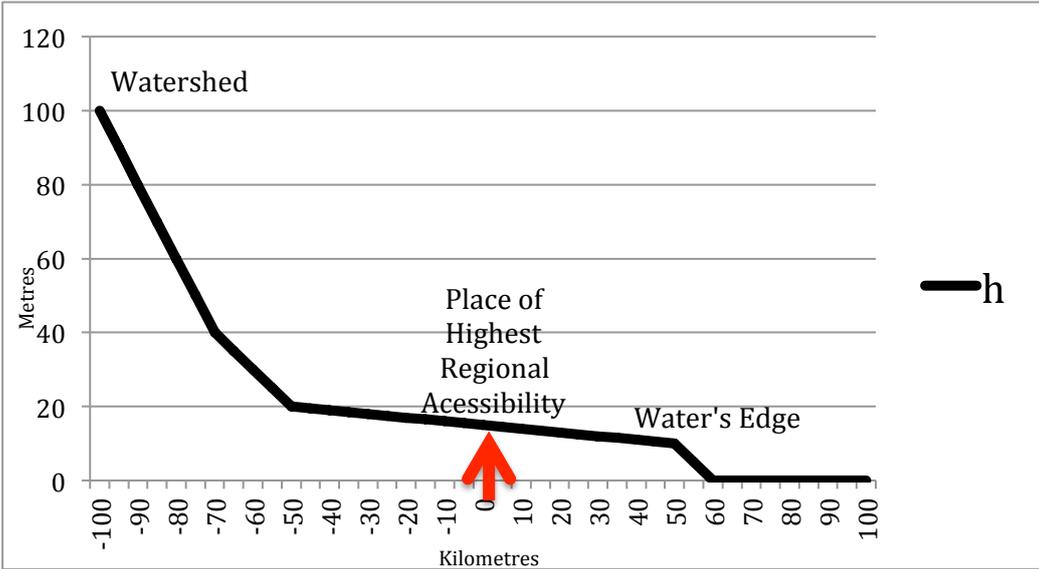


Figure 12: Height above mean sea level along a theoretical transect.

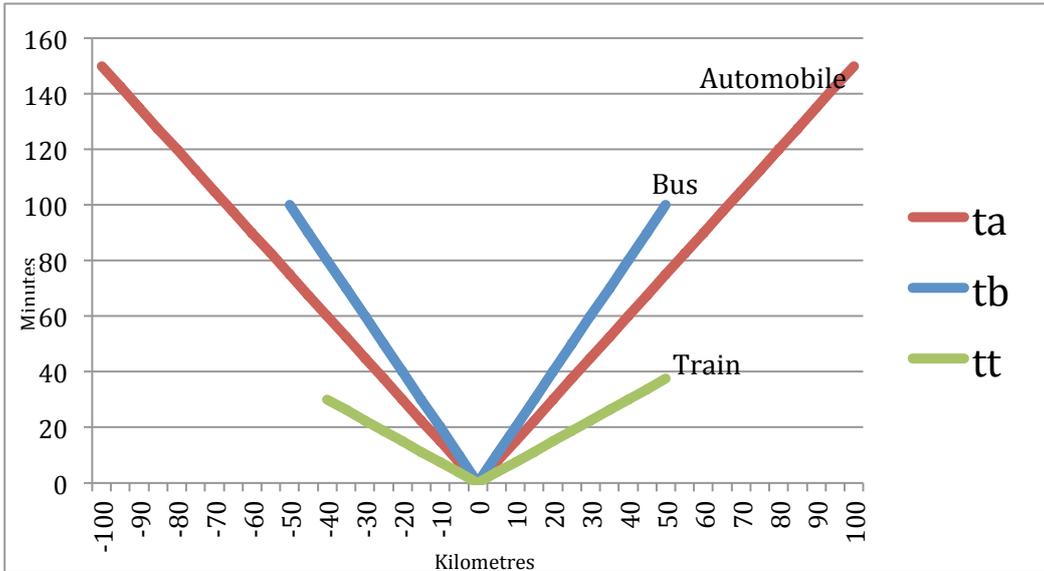


Figure 13: Travel time to centre along a theoretical transect.

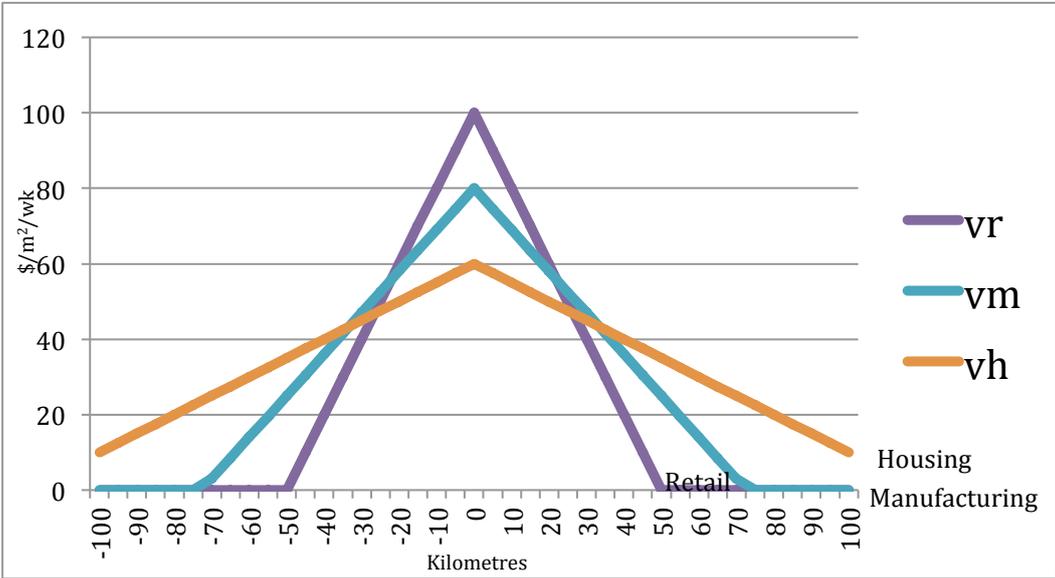


Figure 14: Locational rent (after von Thünen) along a theoretical transect.

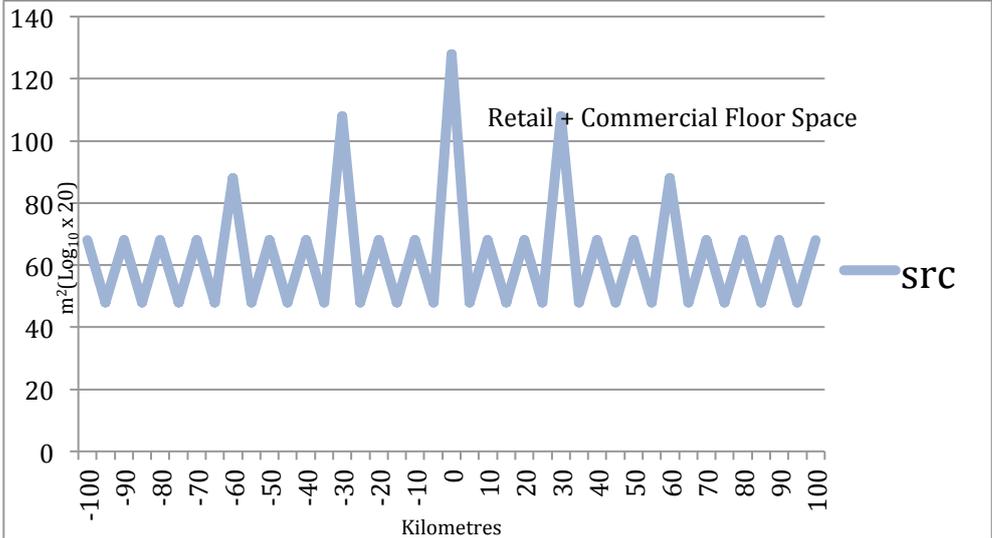


Figure 15: Retail & commercial floor space (after Christaller) along a transect.

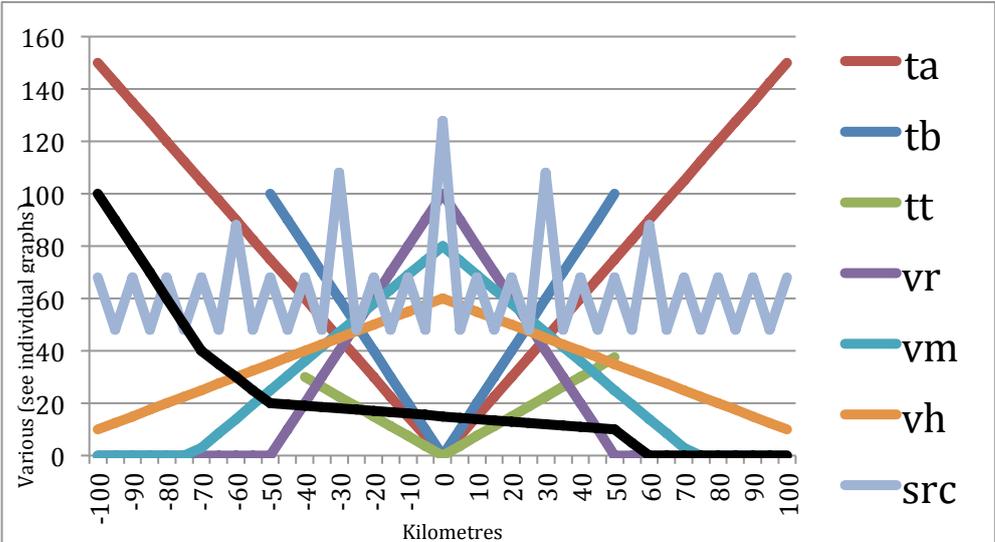


Figure 16: Multiple factors overlaid along a theoretical transect.

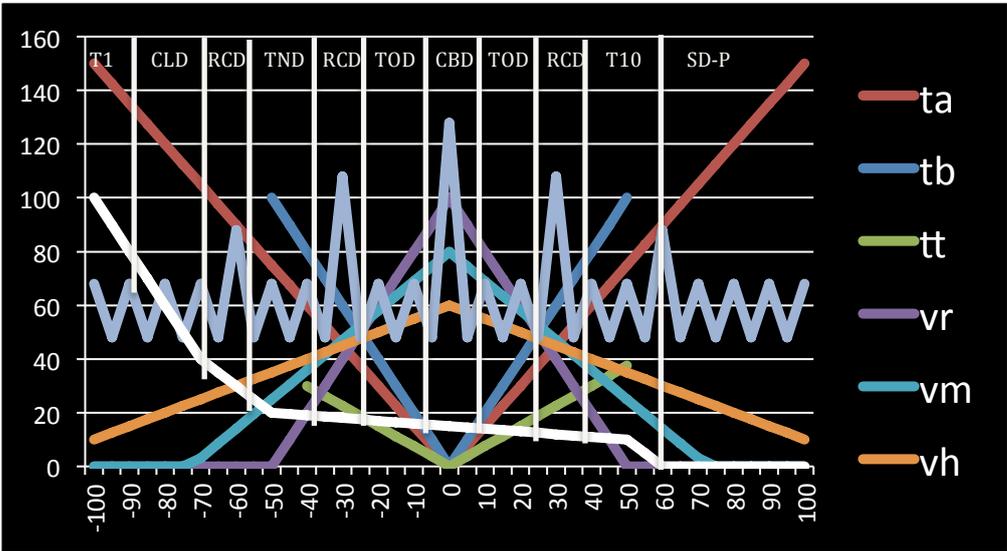


Figure 17: Urban structure applied to multiple factors along a theoretical transect.

When these factors are combined into one graph (fig. 16) the results look slightly confusing, but when the transect-based planning community units are applied (fig. 17) the urban structure is immediately clear: from left to right T1 (i.e. natural), then CLD (e.g. a hamlet), RCD (e.g. a small town on the edge of the urban area), TND (e.g. traditional fine-grained, mixed-use, walkable neighbourhoods) and so on through to SD-P (e.g. a port) on the coast.

Applying this analysis to any urban area where areas for environmental protection have been identified and a transect-based synoptic survey and localising process has been completed could quickly produce a 'first-draft' urban structure plan. Refining this plan, checking infrastructure and traffic demand, etc. should follow quickly, because it is usually the process of preparing and testing the 'first-draft' many times that is the most time-consuming element. Note that the process of designing the community units in detail is still a professional design process, but this can be done in stages, as required, after the urban structure has been resolved and while the major infrastructure design is underway.

So, it has been demonstrated, using a hypothetical example, that standard urban metrics, applied using well-known theories can be combined with transect-based planning to automate the production of a 'first-draft' urban structure plan. With collective experience this process will become more rigorous and more reliable, but for now it is wanting of a real life project to conclusively demonstrate the possibilities.

Conclusions

Massive global need to urbanise, coupled with emerging disruptive technologies, will both require and enable plans for new cities to be developed in months and planning permits in an instant. It will be a revolution in urban planning.

At present our key paradigm in this venture is the three-circle 'Triple Bottom Line Model' representing three dimensions of sustainability. It is a simple, but powerful model that has changed the paradigm and inspired people the world over to strive to create a more sustainable society, but (beyond the generalisations that whatever is planned should be environmentally, economically and socially sustainable) it gives no specific guidance to urban planners as to what should be built where, or in what form.

However, by exploring the inherent tension between the natural and built environments in a way that demonstrates sound links to environmental science and the rural-to-urban transect, an operational sustainability model is developed. Based on this analysis, two important innovations are developed; firstly, a demonstration that, at least for urban planning, the sustainability factors resolve into the application of a rural to urban transect that is already well understood; and secondly, it is hypothetically feasible to apply automation to a geographical information system to produce the 'first draft' of an urban structure plan to the level of community units.

Further development of this approach could turn the transect diagram into the centrepiece of an urban planning model suited to the 21st Century and, hopefully, inspire planners, architects and designers to integrate geography, environmental science, urban planning, urban infrastructure, architecture, landscaping and interior design with a detail and beauty that has not been seen since the highest expressions of city building in the late 19th and early 20th Centuries, such as those created by the City Beautiful and Garden Cities Movements and the glories of the *Belle Époque*.

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Tackling urban challenges in sub-Saharan Africa through indicator-based Sustainability Assessment

Tjark GALL; Urban Framework; Lilongwe, Malawi

This paper examines the scientific background and practical possibilities of indicator-based sustainability assessment in urban sub-Saharan Africa. The proposed methods act as a platform for site and project selections as well as an evaluation tool for existing approaches of different stakeholders. It will be exemplary applied in the context of Malawi.

1 Introduction

Fifty percent of the world population is already living in cities, until 2050, it is expected, that more than two-thirds will live in urban settlements. The growth will mostly occur in African countries. With today about one billion people living in Africa, until the end of the century, more than four billion people are expected and thus make up more than one-third of the world's population. The United Nations expect 28 African countries to double their population until 2100 and ten countries including Malawi are expected to quintuple (United Nations 2015).

The rapid growth of the global urban population has steadily increased the importance of sustainability in urban planning. Many assessment methods and indices, created for this purpose, use indicator systems to evaluate the sustainability of urban development and generate spatial and temporal comparisons. To date, most models have been created to describe existing city patterns and fabrics. An indicator-based approach on sustainable development could further be used to evaluate urban development concepts prior to its implementation—and make data-based changes accordingly. The main focus of this paper will be centred on these opportunities and their feasibility.

This includes a thorough analysis of existing approaches, as well as a suggestion of a preliminary assessment framework and an indicator set. The paper starts with an overview of the background theory and methods currently in use, which are necessary to understand the proposed framework as well as the applied ways of selecting and aggregating indicators.

The paper aims to contribute to the discussion of the track of 'Envisaging Planning Theory and Practice for the next decades' once as a way of assessing social-spatial relations in existing settlements, as well as the possible improvement through planned developments. Further, the indicator-based assessment is the basis for the Urban Framework, a main project of our NGO, which aims to automatize several aspects of urban planning due to its steadily rising complexity and allows data based and informed decisions, planning approaches, and adaptable case-studies, and generations of possible future developments, while ensuring a sustainable, human-scale progress of urban agglomerations in sub-Saharan Africa.

2 Background

2.1 Theory of Sustainability

The paper is mainly based on the theory of sustainability of the World Commission on Environmental Development, which was founded by the United Nations for the purpose of a better understanding of a long-term sustainable development. The commission stated in its report "Our Common Future" the following explanation, which is, even if not precise, unchanged in use until today and underlies all recent approaches for the sustainability assessment:

„Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.“ (WCED 1987)

While the sustainability started in the environmental dimension, it was extended over the years by Elkington to the Triple-Bottom-Line, including the economic and social dimension. (Elkington 1998) Later the Quadruple-bottom-line was introduced by Teriman, which adds governance due its major contribution on every scale of sustainable development. (Teriman et al. 2009) The latter is nowadays mostly used and underlies this paper as well, even if the dimensions are not divided that strict anymore to avoid the occurrence of problems with multi-dimension indicators, which will be discussed later on.

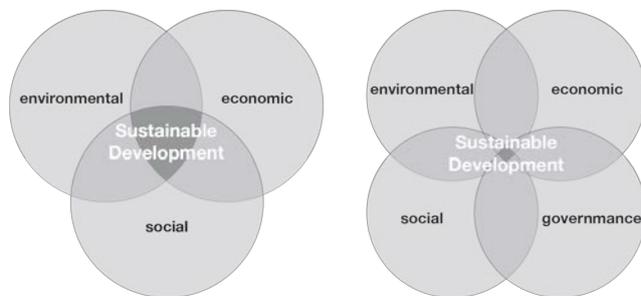


Figure 1: Left – Triple-Bottom-Line based on Elkington (1998);
right – Quadruple-Bottom-Line based on Teriman (2009)

2.2 Assessing Urban Life-Quality

The leading prospect of the developed assessment system focuses on tackling urban challenges. These challenges ultimately start with the humans living in the urban agglomerations. Further, the biggest impact urban planning can have on people's lives is on a spatial scale, regardless if it's through infrastructural projects or small-scale interventions, which affect the overall urban fabric punctually. Therefore, the primary goal is to assess Urban Life-Quality to measure the consequences, planning initiatives or projects can have on people's life and where it's most important to tackle what challenges. But assessing the well-being or social aspects in general, is always a challenge in itself. In the past, the Gross-Domestic-Product (GDP) was mostly used for that reason, but as pointed out by Richard Easterlin in the so-called 'Easterlin-Paradox', even if a growth of the personal income affects the life-quality of the individual, it has no effect on the general well-being of the country's inhabitants, which is probably even more relevant in sub-Saharan countries, where the gap between the poor and rich is much higher than in Western countries. The OECD (Organization for Economic Co-operation and Development) published the highly acknowledged paper 'How's life? Measuring well-being?' in 2011, which covers most measurable aspects of the quality of life and is one of the primary sources for the social indicators. (OECD 2011) Additionally, Maslow's hierarchy of needs is still a relevant tool to prioritize the different aspects and therefore acts as a base to organize the aggregation of the individual indicators, and further shows the importance and influence of the urban fabric on the individual's life. The following figure is adapted to the studied field of social-spatial relations of urban development. (Maslow 1943)

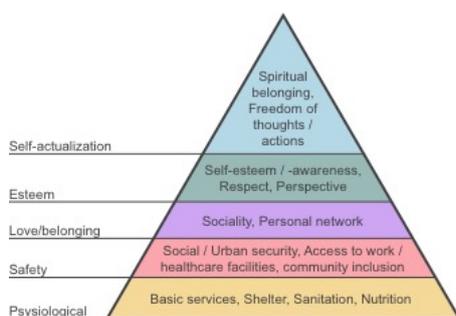


Figure 2: Maslow's hierarchy of needs, adapted to urban context (Maslow 1943; Gall 2016)

2.3 Assessment Frameworks

The developed assessment framework is based on several existing approaches and studies done in the last years. The 17 Sustainable Development Goals, published by the General Committee of the United Nations provide the aspired goals. The following six goals are directly connected to the proposed framework, while the remaining 11 can be archived indirectly.

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable (UN 2015)

Further, the various findings of UN-Habitat combine the sustainable development with the field of Urban Planning and Design and name the three main aspects of Gender / Youth / Human Rights / Climate Change, Housing & Slum Upgrading, and the Urban Basic Services. Additional to the main driver of Urban Planning and Design, Urban Finance and Urban Legislation are two secondary involved fields, important for sustainable development. (UN Habitat 2015)

The BEQUEST Framework, developed in 2005 by Curwell provides a good overview of all themes and sub-themes of Urban Sustainability Assessment. It divides the sector in Development, Environmental & Societal Issues, the spatial level, and the time scale. The development activity is further divided into planning, property development, design, construction, and operation. The Environmental and Societal Issues use a slightly adapted version of the Quadruple-Bottom-Line sustainability dimensions, which will be discussed more in detail on the next page. The spatial level spreads from the global to material level, while the time scale uses three different time-frames, starting at short-term outcomes of less than five years up to the long-term development of more than 20 years. (Curwell et al. 2006, pp. 15–32) The sustainability dimensions, as well as the time scale, is used in the same way, while the development activities and the spatial levels are adapted to the sought more specific assessment method. In 2014, the International Standardization Organization (ISO), aimed the first time to develop a standardized indicator set, which can be used in every scale and context. The 17 proposed schematic themes of the ISO 37120 (Economy, Education, Energy, Environment, Recreation, Shelter, Solid waste, Telecommunications and innovation, Finance, Fire and emergency response, Governance, Health, Transportation, Urban Planning, Wastewater, and Water and Sanitation) provide another set of useful themes, which are integrated into the proposed framework. (WCCD 2014)

Lastly, the background theory of the application and evaluation of development initiatives is based on the approach of searching instead of planning from William Easterly, explained in his widely known publication of the development fields 'The White Man's Burden.' Additional to its various coverage of different scale aid projects, it concludes in the assumption, that large-scale planning rarely can fulfil its expectations and small-scale (grassroots) projects, combined into the term 'Searching' has a much better input-result-ratio. Further, he points out, that international organizations prefer to take action in areas, which sound better on paper. An example therefor is the preference of treating people's diseases instead of attempts to avoid the outbreaks in the beginning. (Easterly 2007) Despite the influence on my personal decision, to reset my focus on the work more on the field instead of only staying in the research area, it lists endless well supported examples, why a critical assessment of existing or planned projects of the development and aid sector is fundamental for better long-term effects

compared to the results of the last decades. Therefore, it's crucial to evaluate projects before, during and after their execution on their actual results in comparison to the money and other resources spent.

2.4 *Dimensions and Themes*

As introduced in the Theory of Sustainability, the Quadruple-bottom-line divides sustainability into four dimensions or pillars. Even if they are still used in many contexts, it is not advisable anymore to differ between them, due to the fact, that many indicators affect several dimensions and therefore cause problems if only assigned to one. The United Nations introduced themes as a replacement for the pillars to cover cross-cutting issues and emphasize the multidimensional nature of sustainable development. (United Nations 2007, p.10) In the proposed framework the dimensions remain but are detailed through the use of sub-themes and impacts as a way of better assessing particular fields and aspects of sustainable development.

2.5 *Impacts*

Indicator-based assessment always aims to study the impacts of a particular development field and compare it either spatially or temporally. Therefore, the developed framework must allow the prioritization of several aspects and needs to be adaptable to several effects, which shall be studied. The impacts include amongst others the different dimensions of sustainability, more specific issues like health care, or infrastructural consequences on social well-being of a planned development.

2.6 *Scalability*

Urban sustainability assessment of one urban agglomeration can be mainly executed on four different scales. The largest is city-wide, where districts (4 in Lilongwe) or areas (62 in Lilongwe) can be compared; or a grid of 1 km x 1 km (depending on the examined topic) is applied to the whole city and therefore creates a grid as a comparison tool. The next scale is the district level, which again allows the comparison of areas; or the application of a grid of 1 km x 1 km or smaller. The second last scale is an area, which allows the comparison through either the included neighbourhoods or a grid of 100 m x 100 m. The neighbourhood scale is the most detailed, which can compare (if applicable) the existing blocks or even go down to the individual households, depending on data availability. The scale must always be chosen depending on the studied topic; for a general analyse of larger infrastructure development, a city-wide scale should be selected, whereas for a project site for example in an informal settlement can be determined through the comparison of individual blocks or households in the selected settlement.

2.7 *Distinction of Indicator-types*

Based on the model of the Global City Indicator Facility indicators are divided into profile and performance indicators. The first mentioned are necessary for a general classification but are not considered in the grading/evaluation process, whereas performance indicators describe the performance of the examined area and thereby the impacts on the sustainability. (GCIF 2011) Further, indicators can be distinguished in core and secondary indicators. The core indicators give comprehensive information about the area and can be used regardless of the intended impact, or chosen scale and dimension. Secondary indicators are additional indicator-sets, which allow the addition of more accurate information based on the studied field of sustainability. (OECD 2011, p.21)

2.8 *Aggregation*

Aggregation is a necessary weighting procedure to combine various indicator values to a grouped result. It always needs to be adapted regarding the importance and reliability of the used data and the sought outcomes. The grouped indicator scores result in a composite index score. Three aggregation methods are normally used, regarding the grouped data and its specifications: summing up (linear aggregation), multiplying (geometric aggregation) or non-linear techniques (multi-criteria analysis). (Yigitcanlar & Dizdaroglu 2015, p.182) Further, there are two different kinds of aggregation, which depend on the analyzed impact: the content-based and spatial aggregation. A spatial aggregation can be executed on different scales, while a content-based aggregation always concentrates on one or several subject themes. (Grunwald & Kopfmüller 2006, p. 61)

2.9 *Data Types and Availability*

For a fully functional indicator-based assessment extensive datasets are essential, which is in sub-Saharan Africa even a bigger challenge than in Western regions. Therefore, it's important to choose the indicator set according to the data availability and adapt the aggregation in a way, missing information don't affect the results to a negative extent. Further, it can be differentiated between quantitative, semi-quantitative, and qualitative data. Quantitative data is mostly the central element of indicator systems and can always be shown in exact numbers. Examples are the population or the density. Questions for semi-quantitative data can always be answered with yes or no. Examples for this are the general availability or access to electricity or public transport. Qualitative data is the most challenging because it can neither be shown in numbers nor as a yes or no information. They are described in words and can therefore just be used for the general assessment if they are simplified and aggregated. Furthermore, data can be distinguished in subjective and objective, whereas objective indicators are using information, which is gathered by organizations or official institutions and rely exclusively on measurable data. Subjective information is collected from a group of people which are providing their personal perspective on something, exemplary their content with a particular context. Even if this part seems to be quite theoretic, it is crucial for the understanding the full sustainability assessment and mostly the weighting of different indicators.

3 **Developed Methods and Results**

3.1 *Possibilities of Application*

There are various ways the developed assessment framework can be used in the urban planning area. However, I am concentrating on the two major ones, which can be applied to several real projects and initiatives and therefore are detailed in the following pages:

- The assessment of the existing urban setting and the possibility of locating projects in areas which can archive the best results
- Assessment of development initiatives and their ability to archive the sought goals, as well as results and sustainability of the work from several local and international NGOs and governmental initiatives

3.2 *Proposed Assessment Framework*

Based on the previously explained theory of sustainability and the main principles of indicator-based assessment of urban development, the following framework was developed. It is divided into nine categories, starting with the general theme/dimension of the assessed field. The second column shows the sub-themes, mostly based on the ISO 37120. The third column shows the approach or method, through which the impacts/goals of the following column are tried to be archived. The impact is the major category for the aggregation because every

sustainability assessment should start with the aimed impact. The next two columns situate the indicators in a spatial and time level, while the last three provide more information about the type of the indicator and used data. Each indicator can be assigned to one or several of the first six categories, while the last three require (with few exceptions) an absolute assignment.

Theme / Dimension	Sub-theme	Approach / Method	Impacts / Goals	Spatial Level	Time Scale	Indicator	Data-Source	Data-Type
Environmental	Local Economy	Urban Planning	Healthy lives and well-being	City	long-term > 20 years	Core Profile	Objective	Quantitative
	Education		availability and sustainable management of water and sanitation					
	Energy	Urban Design	access to affordable, reliable, sustainable and modern energy					
	Environment		Recreation					
Economic	Shelter	Urban Finance	sustained, inclusive economic growth, productive employment and decent work	District	medium-term 5-20 years	Core Performance	Subjective	Semi-Quantitative
	Solid waste		Urban Legislation					
	Telecommunications and innovation	Education / Training	inclusive, safe, resilient and sustainable cities and human settlements					
	Finance		Gender / Youth / Human Rights					
Social	Fire and emergency response	Land Tenure	Climate Change	Area	short-term < 5 years	Secondary Profile	Subjective	Qualitative
	Local Governance		Housing & Slum Upgrading					
	Health	Property Development	Urban Basic Services					
	Transportation		...					
Institutional / Governmental	(Infrastructural) Urban planning	Construction		Neighbourhood		Secondary Performance		
	Wastewater	Operation						
	Water and sanitation							
multiple assignments possible						absolute assignments		

Figure 3: Assessment Framework based on several references and adapted to specific context (Gall 2016)

3.3 Indicator Sets

From 21 indicator frameworks and sets,

- Bossel (1999) : Indicators of sustainable development for different scales
- Hasan (1999) : List of key indicators
- Keirstead (2007) : UES indicators for London
- United Nations (2007) : CSD Indicators of Sustainable Development
- European Commission (2009) : EUROSTAT sustainable development indicators
- Salman & Qureshi (2009) : Selected indicators of urban regeneration
- UN-Habitat (2009) : Habitat Agenda Indicators
- Purevee (2010) : Sustainability assessment of Darkhan
- Yigitcanlar & Dur (2010) : Indicator System of the SILENT Model
- Alpopi et al. (2011) : Indicators for assessment of status of Romania
- Global City Indicator Facility (2011) : GCIF Profile Indicators
- Global City Indicator Facility (2011) : GCIF Performance Indicators
- Shen et al. (2011) : Compliance of practices with IUSIL
- Joburg (2011) : Proposed indicators for four outcomes
- Lynch et al. (2011) : Existing Indicator Database
- Lynch et al. (2011) : Sustainable Urban Development Indicator Matrix
- OECD (2011) : Indicators for measuring well-being
- CAPE PRC (2014) : Selected Urban Development Indicators, 1990–2013
- Saberifar & Falahat (2014) : Compact City Indicators
- UNEP (2014) : Core indicators
- Musakwa et al. (2015) : Indicators based on GIS / EO data

a total number of 1028 indicators were collected, some are similar and can be combined, while others can not be applied to the context of sub-Saharan Africa. However, it still results in more than 500 indicators covering almost every measurable field of urban development, which can somehow be described by indicators. Each of these can be assigned to one or more fields of the developed framework. Following are four examples of various sets. However, the fourth indicator only shows one exception, that some basic profile indicators are assigned to each category, because of the general need for grading and aggregation based on, in this case, the density.

3.3.1 Indicator 1: Cost of the longest transit trip (Lynch et al. 2011)

Theme / Dimension	Economic Social
Sub-theme	Transportation Infrastructural Urban Planning
Approach / Method	Urban Planning Operation
Impacts / Goals	Sustained, inclusive economic growth, productive employment and decent work Resilient infrastructure, inclusive, sustainable industrialization, and innovation Urban Basic Services
Spatial Level	City
Time Scale	Long-term Medium-term Short-term
Indicator-Type	Primary-Performance Secondary-Performance
Data-Source	Objective
Data-Type	Quantitative

3.3.2 Indicator 2: Quality of life (Keirstead 2007)

Theme / Dimension	Social
Sub-theme	Recreation Shelter Health ...
Approach / Method	all approaches / methods
Impacts / Goals	Healthy lives and well-being Gender / Youth / Human Rights
Spatial Level	City District Area Neighbourhood
Time Scale	Short-term
Indicator-Type	Primary Performance Secondary Performance
Data-Source	Subjective
Data-Type	Qualitative

3.3.3 Indicator 3: Number of noise complaints (Salam & Qureshi 2009)

Theme / Dimension	Environmental Social
Sub-theme	Environment Recreation Health
Approach / Method	Urban Planning Construction Operation
Impacts / Goals	Healthy lives and well-being
Spatial Level	City District Area Neighbourhood
Time Scale	Short-term
Indicator-Type	Primary-Performance Secondary-Performance
Data-Source	Subjective
Data-Type	Quantitative

3.3.4 Indicator 4: Number of inhabitants per km² (Shen et al. 2011)

Theme / Dimension	all themes / dimensions (primary profile indicators are in general important for each category)
Sub-theme	all sub-themes
Approach / Method	all approaches / methods
Impacts / Goals	all impacts / goals
Spatial Level	all spatial level
Time Scale	all time scales
Indicator-Type	Primary Profile
Data-Source	Objective
Data-Type	Quantitative

However, there is a need for secondary performance indicators of the financial and resource field, which can be used to compare the improvement of the urban fabric to the invested resources. The most important indicators would be:

- financial resources invested (project cost, running costs, ...)
- human resources (local / international)
- total time spend
- assurance of lasting and scaling effect on involved stakeholders
- installation of evaluation methods
- development of long-term controlling methods

4 Scenarios for Application

In the last part, I discuss two possible ways of applications of indicator-based sustainability assessment. The first is for locating the site with best results and consequences on the surrounding urban fabric, while the second functions as an evaluation and grading system of planned and completed projects. Both scenarios start with the selection of several fields of the framework, which best cover the aspired outcomes. These selections result in an indicator set and an automated assessment process adapted to the available information. Due to the extent of this paper, one is described shortly, while the second is covered more in detail including sample indicators.

4.1 Scenario 1: Evaluation of project after completion / 1 year / 5 years / ...

A donor organization wants to evaluate its recently financed projects in the urban development field to improve their investment-outcome-ratio. Their objectives are the decrease of negative environmental effects and the increase of electricity and water supply. The methods of funded projects concentrated on education/training and construction and aims for the availability and sustainable management of water and sanitation, as well as the access to affordable, reliable, sustainable and modern energy. The spatial level is the whole city, while their projects are based on medium-term development. Due to the fact, that they want to involve the subjective opinions of the city's inhabitants as well, all kinds of data are included. This scenario would result in this framework:

Theme / Dimension	Sub-theme	Approach / Method	Impacts / Goals	Spatial Level	Time Scale	Indicator	Data-Source	Data-Type
Environmental	Local Economy	Urban Planning	Healthy lives and well-being	City	long-term > 20 years	Core Profile	Objective	Quantitative
	Education							
	Energy	Urban Design	availability and sustainable management of water and sanitation					
Environment	access to affordable, reliable, sustainable and modern energy							
Economic	Recreation	Urban Finance	sustained, inclusive economic growth, productive employment and decent work	District	medium-term 5-20 years	Core Performance	Subjective	Semi-Quantitative
	Shelter	Urban Legislation						
	Solid waste	Education / Training	inclusive, safe, resilient and sustainable cities and human settlements					
	Telecommunications and innovation							
Social	Finance	Land Tenure	Gender / Youth / Human Rights	Area	secondary-term 5-20 years	Secondary Profile	Subjective	Qualitative
	Fire and emergency response							
	Local Governance	Property Development	Climate Change					
Health	Housing & Slum Upgrading							
Transportation		Construction	Urban Basic Services	Neighbourhood	short-term < 5 years	Secondary Performance	Qualitative	
(Infrastructural) Urban planning								
Institutional / Governmental	Wastewater	Operation	...					
	Water and sanitation							
multiple assignments possible						absolute assignments		

Figure 5: Assessment Framework adapted to Scenario 1 (Gall 2016)

4.2 Scenario 2: Organization / company searching for best location / topic for project

An NGO wants to start a project in the largest informal settlement of Lilongwe, Malawi. The main ambition is to tackle the social dimension, in particular, the shelter issue. They want to reach an improvement through Urban Design and Education/Training and aim for Housing and Slum upgrading. Due to the challenge of data availability, they concentrate only on objective data to avoid negative effects on the concluding spatial grading. These decisions result in the following adapted framework.

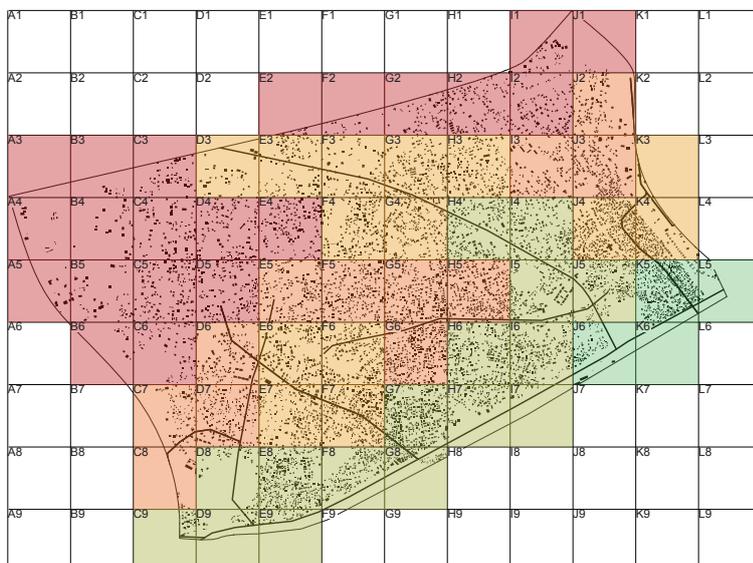
Theme / Dimension	Sub-theme	Approach / Method	Impacts / Goals	Spatial Level	Time Scale	Indicator	Data-Source	Data-Type
Environmental	Local Economy	Urban Planning	Healthy lives and well-being	City	long-term > 20 years	Core Profile	Objective	Quantitative
	Education							
	Energy	Urban Design	availability and sustainable management of water and sanitation					
Environment	access to affordable, reliable, sustainable and modern energy							
Economic	Recreation	Urban Finance	sustained, inclusive economic growth, productive employment and decent work	District	medium-term 5-20 years	Core Performance	Subjective	Semi-Quantitative
	Shelter	Urban Legislation						
	Solid waste	Education / Training	inclusive, safe, resilient and sustainable cities and human settlements					
	Telecommunications and innovation							
Social	Finance	Land Tenure	Gender / Youth / Human Rights	Area	secondary-term 5-20 years	Secondary Profile	Subjective	Qualitative
	Fire and emergency response							
	Local Governance	Property Development	Climate Change					
Health	Housing & Slum Upgrading							
Transportation		Construction	Urban Basic Services	Neighbourhood	short-term < 5 years	Secondary Performance	Qualitative	
(Infrastructural) Urban planning								
Institutional / Governmental	Wastewater	Operation	...					
	Water and sanitation							
multiple assignments possible						absolute assignments		

Figure 5: Assessment Framework adapted to Scenario 2 (Gall 2016)

List of sample indicators:

Core profile indicators	Population (by gender / age)
	Percentage of House Owners
	Density
	Average plot site
	Floor area per person
	Household size
	Automobile ownership
	Road length
...	
Core performance indicators	Distance to public transport / market / healthcare / recreational areas (in meter)
	Commute to school / work (in min.)
	Rent / Income ratio
	Permanent structures (in %)
	Quality of built structures (aggregated through floor type, wall and roofing materials)
	Access to water (defined through quality, daily period, minutes to access-point, stability)
	Access to electricity (in %)
	Access to private basic sanitation facilities (in %)
Commonness and quality of solid waste management (aggregated through various factors)	
Housing affordability rate (aggregated through income, land-, construction, maintenance-cost, mortgage to credit ratio, ...)	
...	

Exemplary application in Area 58, Lilongwe, with 100 x 100 m grid, showing the distances to public transport / market / healthcare / recreational areas



5 Conclusion

Indicator-based sustainability assessment as a way of tackling urban challenges in Malawi in particular, and sub-Saharan Africa in general, can support the decision-making processes of all involved stakeholders in many beneficial ways. Even if urban development decisions always need to be adapted to the country and site-specific conditions, the challenge of social housing and fast urbanization is comparable in many locations around the world and mostly in sub-Saharan Africa. Therefore, the methods and results of this paper can function similar at other places and are applicable in various situations, even more through the ease of adapting and re-selecting of performance indicators and more site-specific target values. However, the system does not function productively in practice yet through several factors. Therefore, it is amongst others important to re-evaluate the framework and system on a regular basis. First and foremost, it needs to be applied on a larger scale with as many data inputs and indicators as possible to identify possible challenges and develop an aggregation system, which best reflects the actual urban fabric—an issue we are working on currently. Further, the lack of data is a major challenge, which needs to be addressed through more and various ways of input, including governmental institutions, international organizations, universities, and community involvement. Without enough data provided on a regular basis, it is impossible to use indicator-based assessment on a viable scale. Another issue is the extent and complexity of data and its assignment to geographical features, which can be just archived through a full integration of GIS-systems. Even if most governments work already with GIS-data, it is still not common on a large scale, which is crucial for an easier application of the proposed framework. On a long term, we are aiming for a fully covered and regularly updated GIS databank which, as far as possible, automatically includes all existing spatially assigned data from various sources. Without this basis, the shown application will probably always remain exemplary or will just be executed on small scales which unfortunately reduces the viability of the whole approach. However, through more work on the topic, a better involvement of all stakeholders and the advancing utilization of technical opportunities, indicator-based sustainability assessment can contribute an important part to urban development and assist and automate many decisions through better visualization, comparison and generally better-informed decisions.

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“Normal” Informal Living Spaces in Low-Income Human Settlements in South African

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Abstract *Housing delivery remains a major burden on the South African government. The ever increasing backlog of delivering standard housing to the low-income sector remains, and the unwanted informal settlements continue to increase in the urban areas. For many migrant urban poor, the informal has become the normal despite the challenges of spaces for daily activities, especially the lack of space for social and cultural practices. For households that have received the standard subsidized houses, challenges of space limitations still exist. This is evident with innovative extensions being carried out by households in the state subsidized housing settlements in a bid to accommodate various socio-economic and cultural activities. These extensions are often in contravention of municipal norms and standards, and can lead to slummed environments if not checked. This paper seeks to compare how households deal with socio-cultural practices in informal dwellings and settlements and how the practice is handled in the formal (subsidized) settlements. The study advocates for a more flexible and contextual policies that is informed by grassroots approaches, which are layered and multifaceted, with not merely socio-economic but also socio-cultural imprints, are essential to meet urban poor's needs. A theoretical approach, combined with a pilot study based on observations and interviews with inhabitants, is applied to narrate the daily activity of households and to deeply understand their characteristics of “normal informality” in some low income settlements located in KwaZulu-Natal province (South Africa). The overarching aim of this research is to re-examine informal settlements through the “normal” lenses of the community. The study starts investigating the meaning of ‘Informal settlement’ questioning normality and informality. It argues that in-fact the informal settlements can be said to be normal at least for many urban poor. The intended “Normality”, based on pre-defined standards, is compared with the Indigenous Normality and the pilot study's findings suggest the need to incorporate the latter in policy and upgrading programs led by the community.*

1. Introduction

Informal settlements are said to be home to one in eight persons in the world today, of which 80% can be found in the developing countries (Habitat III, 2015). This phenomenon has been blamed on failed policies, especially relating to rural-urban migration and population growth. In South Africa, the problem of informal settlements can be traced back to the unpreparedness of the housing market to engage with the rural urban migrants coming into the urban areas in search of a better life (Demissie, 2004). This was particularly evident with influx of the African population into the urban areas, in search of economic opportunities and services. The concern at the time was not that the African population were moving in (as this was a legislated move), but was supposedly about the living conditions in which they had to live and its impact on the urban area. The apartheid state provision included the single sex hostels for migrant workers, ‘dormitory’ accommodation in rows of ‘standardized’ housing in sterile environments lacking communal and commercial facilities. And even though, there was no formal private provision,

many African migrants found shelter in backyard shacks. These conditions were considered *substandard* and needed to be 'uplifted' to the more 'civilised' urban environment (Demissie, 2004). Others took self-help initiatives and occupied vacant marginalised land they could access closest to where they could find economic activity or basic subsistence.

This paper seeks to re-examine informal settlements through the "*normal*" lenses of the community. A theoretical approach, combined with a pilot study based on observations and interviews with inhabitants, is applied to narrate the daily activities of households and to deeply understand their characteristics of "normal informality" in some low-income settlements located in KwaZulu-Natal province (South Africa). The study starts investigating the meaning of 'Informal settlement' questioning normality and informality. It argues that, in-fact, informal settlements from the perspective of the urban poor can be said to be normal. Adequacy and building standards are compared with traditional norms and common practices captured in some informal settlements in South Africa. The intended "Normality" is compared with the *Indigenous Normality*. The fieldwork findings suggest the need to incorporate the latter in policy and upgrading programs led by the community. An in-depth understanding of this "normal informality" should be a key driver for upgrading programmes in informal settlements. A shift from rigid and standardized norms, towards more flexible and contextualized policies, informed by grassroots approaches, is suggested for more responsive upgrading processes.

2. "*Informal*" Human settlements

The UN-Habitat define *informal* settlements as settlements where inhabitants have no secure tenure in respect of the land or dwelling they inhabit which may or may not comply with city planning and building regulations. According to Huchzermeyer (2002) these are *settlements that are developed through unauthorised invasion of land and construction of shelter*. The neighbourhood is void of basic services, and infrastructure and often situated in geographically and environmentally hazardous areas. (UN-Habitat III, 2016). Despite these pitiful conditions the UN-Habitat also notes that informal settlements are also a form of *real estate speculations* for all income groups in the urban areas. *Informal* settlements are characterised by self-help efforts, often illegal, and considered 'informal' as they do not align with prevailing regulations. In the self-help efforts residents make use of the limited resources available to them for the purposes of erecting shelter on interstitial or marginal land (Dovey and King, 2011) often close to economic, social or survival benefits. Dovey and King (2011) record that informal settlements often form small pockets of irregular, unconventional, substandard, unregulated human settlements, with few instances where informal settlements take up larger geographical area as in the case of Dharavi in Mumbai, Rocinha in Rio de Janeiro, Kibera in Nairobi, and Ezbet el-Haggana in Cairo.

Furthermore, *informal* settlements are often located on prime land (Hassan , 2012) and better located than new housing developments that are constructed to accommodate inhabitants in cases of relocated. They can be conceived as active housing agents, as they source locations for new housing developments (Huchzermeyer, 2002). On the other hand informal settlements may be located on hazardous land but offer other benefits to the informal dwellers, and offer immediate response to housing needs in urban areas of developing countries. The location of these settlements is critical for the socio-economic activities of inhabitants (Abbott, 2003).

Informal settlements have been attributed to failed policies, corruption, poor governance, inappropriate land markets, finance systems and regulations and a lack of political will to address housing Menshawy *et al.*(2011) and El-Batran & Arandel (1998). Others have blamed informal settlements on inadequate institutional capacities, and escalating poverty (Majale,

2008). Despite all the efforts to reduce its growth, the number of informal settlements is still constantly increasing. Therefore, addressing the informal urbanisation challenge represents a key strategy that benefits not only the urban poor, but the city as a whole, towards sustainable and self-reliant communities (Khalifa , 2015).

In the South Africa context, the main housing concern is the poor living conditions of the poor and its effect on the broader environment. Section 26(1) of the South African Constitution affords everyone the right to access adequate housing and Section 26(2) puts the responsibility on the state to create avenues through legislation for this right to be achieved. This right is extended to all including the vulnerable, children, marginalised groups and prisoners. Further to this, the South African government has committed itself to the UN-Habitat agenda of making human settlements safer, healthier, and more liveable, equitable, and productive (5th Economic and Social Rights Report Series 2002/2003 financial year, 2004).

In terms of the Housing Act of 1997 'Housing Development' means:

'The establishment and maintenance of habitable, stable, and sustainable public and private residential environments to ensure viable households and communities in areas allowing convenient access to economic opportunities, and to health, education and social amenities in which all citizens and permanent residents of the republic will, on a progressive basis, have access to permanent residential structures with secure tenure ensuring internal and external privacy and providing adequate protection against the elements; and have access to potable water, adequate sanitation facilities and domestic energy supply'.

Further amendments, in 2014, are stipulated to improve the thermal performance of the dwellings there by improving habitability of the dwellings delivered at an increases cost to the state (i.e. the controller of the resources). These considerations are represented in the pyramid below and will be discussed later.

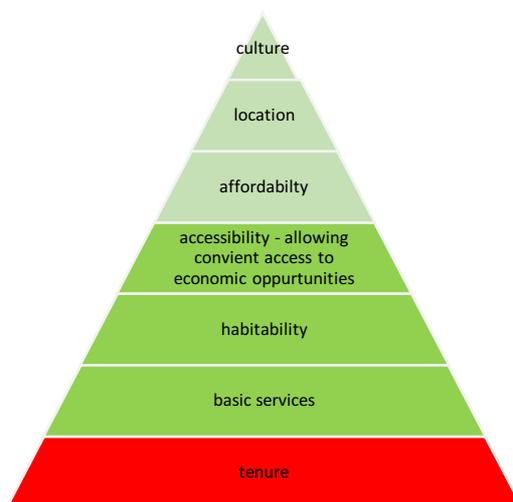


Figure 1: Provider's perspective of Housing development - Developed by authors, based on the Housing Act 1997

3. Theoretical framework: adequacy, normality and globalisation.

3.1 Expected standards in adequate housing

Adequate housing is recognised by various international organisations and recorded in declarations such as the 1948 Universal Declaration of Human Rights and the 1966 International Convention on Economic, Social and Cultural Rights. The UN-Habitat recognises that adequate housing transcends more than just brick and mortar and outlines seven

elements that must be catered, namely: tenure security, services, habitability, accessibility, affordability, location, and cultural adequacy as illustrated in the figure below.

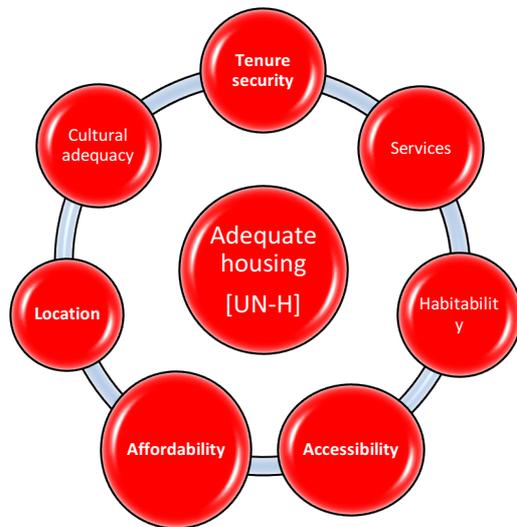


Figure 2: Illustration of adequacy based on the Universal Declaration of Human Rights

3.2 Levels of adequacy

Adequacy refers to the ability to meet the basic needs required. The term adequate simply means a state of sufficiency and it is derived from the Latin word *adaequare* - to make equal to the requirements of the situation. The situation in terms of housing may vary from one context to another. For instance, it is possible to have a permanent place of abode, or to just have shelter for the night; thus, adequacy will vary from one context to another. With the state intervention, housing has been packaged as an urban intervention to address the three big issues of poverty, inequality and unemployment, thus taking into account the impacts housing has as both a product and a process, with more benefits accruing the state when considered as a process. Adequacy, in terms of housing as a product, provides long term benefits to the state, but immediate benefits to the enduser particularly in terms of adequacy. In essence, meaning of adequacy will vary significantly for the various stakeholders. It can also be argued that the level of adequacy is dependent on the stage in life cycle. This was the basis on which housing prototype was rolled out during the apartheid era. Calderwood (Godehart , 2006) recognised three stages in the life cycle of a household, these were firstly the single persons starting out for whom was provided the Hostel accommodation. The second group was the newly married who were provided with flats and then lastly the families who were allocated houses. It was assumed that this was the normal pattern and that people will fit into the prototype housing provided following the nuclear family life cycle. However, it is not as simplistic as many house hold structures do not follow the normal pattern.

3.3 The link between place of abode and socio-cultural practices

Many have argued that there is a complex interrelationship between culture and the built environment (Rapport, 1969), (Gyuse, 1985), (Hanson, 1998), (Wahab, 2007), (Heywood, 2011). Gyuse notes that in cultures without formal planning, design is an 'unselfconscious' process that is symbolic of the way of life of the users. Built forms represent the accumulated wisdom of past generations of anonymous designers. To every society, the forms emphasize these cultural relationships that are considered most essential to the maintenance of internal harmony. He argues that the essential relationships vary from one culture to another citing

dwelling- solar, dwelling and the heavens, dwelling and kinsmen, dwelling and family, dwelling and food (economic) security (Gyuse, 1985). In particular, in the context of the indigenous Zulu culture, Gyuse notes that the cultural relationship emphasised the hierarchical organisation of the society, which places the head of the home in the most prominent location. It can be argued that this form of authentic architecture cannot be *ab'normal*' and also that the complexity cannot be standardized. In the post-apartheid urban South African reality, many households do not follow the family life cycle pattern due to the impact of the apartheid legislation which destabilized the concept of the family (5th Economic and Social Rights Report Series 2002/2003 financial year, 2004) and thus rendered household hierarchal relationships dysfunctional. Ironically, the group targeted for state housing are the most affected by dysfunctionality. As a result of the apartheid era, African workers had restrictive movements in the urban areas and cyclical migration was the order of the day. It is noted that these factors contributed to delayed marriages, creation of female-headed households, and unstable household compositions among the African population (Department of Social Development, 2010). The department recognises that there is not one single or standard definition of the family but rather advocates for the recognition and respect of diversity of families in South Africa, which should be well functioning, loving, peaceful, safe, stable, and economically self-sustaining (Department of Social Development, 2015). The department describes the distinction between a family and a household, whereby family has to do with an affiliation of close emotional relationships such as blood relatives, marriage, or adoption; and household is a person or group of people who stay together for more than four nights a week, and are dependent on the same source of sustenance (Department of Social Development, 2015), thus making family and households distinct concepts. The Department, therefore, recognises four types of households - single, nuclear, extended, and complex household. The Department of social Development (2010) records that in the African population it is more common to have the extended family setup with more than two generations living together. At each stage of life, certain socio-cultural practices occur, especially with the African communities.

3.4 Normality

Another fundamental part of the theoretical framework applied in this study is represented by Foucault's thoughts on 'normality'. (Taylor , 2009). Foucault believed

'(...) that one of the meanings of human existence is never to accept anything as definitive, untouchable, obvious or immobile. No aspect of reality should be allowed to become a definitive and inhumane law for us'.

In light of this, it can be argued that the definition of human existence is continuously evolving and relevant to the context. Others have alluded this to issues of globalisation whereby cultural identity is lost (Gob, 2001) (Yildirim & Korkmaz). Foucault further argued that the norm is specifically associated with modern forms of power (Foucault , 2003) In his work 'Abnormal' 1975, Foucault identifies the norm as the element upon which a certain exercise of power is founded and legitimized. That was the case of separate development (segregation) typical of the apartheid era, which affected not only residential location but also access to basic services such as education, health and transport services. As such the access to such facilities and services such as housing not catered for by the 'powers that be' are considered illegitimate (informal) as they were not in line with the intended normality, ie the legitimized standards.

3.5 *Building standards and traditional norms*

Prior to 1947, in South Africa, Demissie notes that there were no building standards for the public housing (Demissie, 2004). The housing responsibility, however, rested upon the National Housing and Planning Commission (NHPC), who coordinated the minimum standards for the country. These standards were necessary for two reasons: *“to establish some (...) yard stick by which to relate the physical standards to their social and human background and against which to measure the actual achievements in housing in various centers”*. (Connel 1947 cited in Demissie, 2004: 494). Various indigenous forms of housing are noted prior to 1947. These were considered traditional being acclaimed as architecture but without architects (Rapport, 1969). According to Bourdier & Minh-ha (2011) Traditional Architecture embodies a society's collective perception of the role of men and women in the universe and the relationship they maintain with their physical, sociological and spiritual surroundings. Much literature exists on the connections between socio-culture and the spatial organisation (Rapoport, 1969), (Gyuse, 1985), (de Blij, 1993) (Wahab, 2007), (Bourdier & Minh-ha, 2011), as noted in traditional settlements without (or prior to) 'standardized' planning and design, such that the built-form symbolically captures the way of life of its users. It encapsulates the lessons from generations of experiences [i.e. the wisdom of past generations of anonymous designers]. Gyuse (1985) notes five types of connections between culture and spatial organisation and argues that each society places emphasis on what it considers most important for continuous existence (i.e. most essential to the maintenance of internal harmony). One of the five connections is the relationship with the solar system; this is the case with the Hopi and the Zuni Indians in the USA, where the villages are orientated to respect the sun (Rapoport, 1969). Reference to the solar system is also found in Togo with the Batamaliba tribe who refer to the position of the sun so as to locate the dwelling entrance in the west which is considered the side where dead people are buried. In so doing, this they keep a relationship with the ancestors who are believed to visit from time to time. (Bourdier & Minh-ha, 2011). Thus, the house embodies an ongoing bond between the living and the dead where complex references and wider cultural context such as the rites of separation and reintegration, of purification, of incorporation linked to pregnancy, birth, adultery, and death occur. In other instances, the symbolic representation of the settlement as a microcosm of the universe is crucial. This is the case with in Dogonland in Mali, where the living environments are built in pairs representing heaven and earth. It encapsulates the human dwelling in cosmic terms where for instance the ground floor represents the earth and the roof terraces the heavens. Similar to this is the philosophical underpinning of the Feng-shui courtyard house of Beijing which is a structured vision of the dwelling in harmony with the universe such that man is protected from the elements and man also does not harm the environment (Liu & Awotona, 2014). In other instances, the representation of the living environment in hierarchical terms of the society as in the case of the Zulus in South Africa, and the Yoruba's in West Africa. The latter, however, place more importance on kinship (i.e. extended family) over the broader society as with the Zulus (Basom 1955 in (Gyuse, 1985). Gyuse also notes that other communities such as the Tiv in northern Nigeria regard closeness of the family relationships, emphasising equality through equal visual and physical access to the central court yard area. And lastly is the importance afforded food security as in the Sura of the Jos Plateau of northern Nigeria.

The above discussion shows the continuous reference to spatial arrangements around important relationships which vary from one society to another but in each case is given the safest location (priority space) within a compound is a common thread through all the traditional dwelling. The spatial organisation also encourages (enables) the connection of the natural and

the spiritual environments. In simplistic terms, in the socio cultural-spatial relationships are considered normal and describe the relationship between the gods and nature, born out of spiritual and productive relationships (Bourdier & Minh-ha, 2011). Where these relationships are ignored in standardising practices, there is a mismatch of demand and supply of housing (Ntema, 2011) and the incongruous use of space (Wahab, 2007). As earlier mentioned, it is noted that there is a continuous evolving of the traditional as it reflects cultural values of new people arriving, functional needs or new construction methods, especially when societies meet and there is a conflict in the understanding of the other. This is further complicated with the disruption of autonomy and traditional structures, and the emergence of an administrative powers that controls resources in the name of Globalisation, thus the need to basic standards to even out the playing field. The South African standards are in line with the 1997 Housing Act and provide minimum technical standards in relating to housing development. It was expected that the adaptation of norms and standards should be based on performance and should be acceptable by the end-users. The norms and standards provide for a minimum gross floor area of 40sqm, allowing for two bed rooms, bathroom with a toilet, shower and wash hand basin, an open floor plan for living and kitchen provided with a wash hand basin and a supply point for electricity (if available in the area). It could be argued that this standard is based on the assumption that all these activities can be contained in the 40sqm house, and does not take into consideration the implication of space (socio-cultural) beyond the physical space. It is expected that technical specification will be project specific taking into consideration the soil conditions, topography, accessibility to water and sewer connections. Further to this, the norms and standards make provision for the standard building materials assembled in a manner that meets 'rational design' as spelt out in the South African Building Standards 0400 (SABS0400). It could be argued that the SABS 0400 'Deemed- to –satisfy' rules allow for incorporation of indigenous designs by the acceptance of rational design methods.

4. Normal reality in low-income human settlements

A pilot study conducted by the authors included the visit of two peri-urban settlements in the Tongaat area (eMagwaveni/Greylands) and two peri-urban/rural settlements in the Mfolozi municipality, with both formal and informal housing. Both Tongaat and Mfolozi settlements include the typical subsidised RDP houses (White Paper on Housing, 1994) and informal settlements with shacks and traditional houses.

By interviewing both informal settlements dwellers and municipal officers, a big gap between the Municipality agenda and real needs of the community clearly came out. In each settlement, with the assistance from the municipal official, community leaders were notified of the visit and recruited as participants; other community members present within the settlement at the time were also interviewed. Many dwellers complained that the real needs of the community were not reflected into the municipal upgrading interventions. For instance, at the Mfolozi municipality the municipal official refers to a shopping mall earmarked for development, but the community expressed no knowledge of this planned development. Nevertheless, this gap obliges them to re-organise themselves and try to meet their own requirements, creating other spaces (extensions) or simply using outdoor environments. For instance, informal retail shops (tuck shops) and taverns are commonly built by communities to accommodate small informal businesses always present in formal and informal settlements.

Empirical data, collected by means of interviews and observations of inhabitants in low-income housing, were used to map the Normal reality (everyday activities) in formal and informal settlements while showing the different levels of adequacy achieved. The data collected reveal some patterns in the everyday life of inhabitants for both formal and informal settlements

confirming the above mentioned theories. For instance, everyday activities such as cooking, washing, dancing, forums (committees), are mainly done outdoor, while religious rituals, eating, reading, etc. are predominantly done indoor. Indeed, the need for proper spaces to accommodate those socio-cultural activities is reflected in informal extensions of the units, self-built with local available materials. The extension (often with circular floor plan) for religious rituals (i.e. communicating with the ancestors) or to accommodate more members of the family, is very common in low-income formal and informal settlements in KwaZulu-Natal Province, as captured in the pictures below.



Figure 3 and 4: Examples of extensions of additional room and chicken shed for economic benefits in eMagwaveni and uMhalthuzi village (Northern KwaZulu-Natal 2016)

The present research revealed that, in fact, informality is characterised by its own normality, made of indigenous norms mainly dictated by socio-economic and socio-cultural factors. Extensions can be found in several low income formal and informal settlements in South Africa, to accommodate socio-cultural and religious activities as discussed above.

While the factors of adequacy are theoretically captured and relevant, it can be argued that adequacy may differ in different contexts and so may not have equal relevance in all circumstances. For instance, interviews with informal settlement dwellers revealed that *tenure security* and *affordability* may be a more pressing factor than all others, even though other factors are relevant. In fact, these two factors address the main challenge of poverty which usually limits the option of living elsewhere. In reality therefore the adequate housing indicators can be illustrated as shown in figure 5 below.

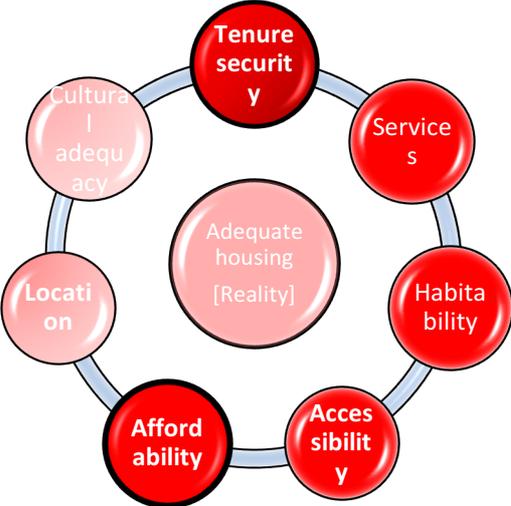


Figure 5: Adequate housing indicators from interviews conducted
 Comparing the illustrated UN-Habitat and “reality” indicators which emerged from interviews, the authors developed a set of adequacy indicators that are grouped into three key categories, namely functionality, permanence, and social status, as summarized in Table 1 below.

Measure of adequacy	Permanence	Functionality	Social status	Determinants / Indicators
Cultural adequacy			✓	Acceptance / tolerance
Location		✓	✓	Legislation, Acquiring/ Releasing land
Affordability	✓		✓	Market forces- if supply surpassed demand the price will fall
Accessibility	✓			Infrastructure Planning and regulations
Habitability		✓		Skills, construction knowledge
Basic Services		✓		Infrastructure planning
Tenure	✓			Legislation

Table 1: Authors: Factors of adequate housing

These indicators are based on the relative importance and complexity related to how adequacy may be achieved and how they relate to comfort and usability. The first set of indicators relates to Permanence, and in terms of the adequacy of Tenure and Accessibility. For example, to

have a house but without access, (e.g. due to environmental factors such as flooding or civic unrest or having to travel long distances), may be considered to be as good as not having the house. And likewise, the mere access to the house without security of tenure, implicates a situation of temporality and prevents the household from settling. It also emerged that where there is no security of tenure the respondents indicated that there are no problems until the demise of the beneficiary, and then other family members want lay claim to the house. In such instance the community stands in to protect any eviction of the dependents left behind. The second group relates to functionality, whereby the ability to access some basic level of habitability is required. This group of adequacy includes a stable structure with basic services of water, electricity and sanitation. Lastly, there are indicators that relate to social status, which relates directly to affordability, location and cultural values and expressions. Location is a sensitive factor which relates to such concepts as the apartheid, and NIMBY (Not In My Back Yard) (Ndinda , 2003) syndromes. It, therefore, differs from accessibility and relates to the context in which it exists, for instance, if the dwelling is in a safe location and close to economic opportunities. This indicator, as with accessibility, is brought about by the *controllers of resources*, which could be the state (as with the case of apartheid) or private sector (as in the case of the NIMBY mind sets).

4.1 Incorporation of the 'normal' in the standardizing housing developments

The incorporation of the 'normal' in standardizing housing developments is crucial and needs to be implemented with care. For instance, in the South African context Connell (1936) is recorded as taking cognisance of the communal tendencies of the African and recommended that the 'Africans should be housed in such a way to enable him live in close cooperation with his fellows'. The interpretation of this communal living was the flat housing system which Connell argued will allow for '*a community ...that can run its own affairs in the old democratic ways of the Bantu people. The leader or superintendent of each block of flats can be elected together with his advisors and executive council*'. This assumption shows the limited understanding of the household structure and the poorly extruded meanings of communal living. It is a classic example of trying to establish a yard stick, which is in fact an attempt to standardize the African human settlement, and the negative consequences are well documented. Basic standards are also in place to offer a minimum requirement of acceptable living conditions. The importance for complete wellbeing (such as physical, social and psychological) cannot be underestimated. It can be argued that while physical wellbeing is the most important, also the social and psychological ones are more relevant than tenure as illustrated below.

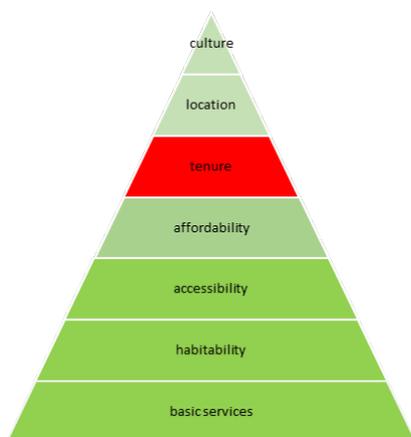


Figure 6: RDP dwellers perspective of Housing Development - Developed by authors

5. Conclusion and recommendations

The paper has reexamined the concept of normality by discussing real needs of communities in two RDP settlements. It has considered '*normality*' using Foucault's theoretical arguments about relationship between 'power' and what is considered normal, and demonstrates the gap between the normality from the perspective of the state and the reality from the perspective of the community. The paper submits that for many migrant urban poor, informality has become the normality despite the challenges of spaces for daily activities, especially the lack of space for social and cultural practices. The paper provides theoretical and empirical analysis of the gaps existing between pre-defined standards (intended Normality) used in housing policies and indigenous norms and practices (Indigenous Normality) in low-income formal and informal settlements in South Africa. A pilot study, conducted in informal settlements in the KwaZulu-Natal Province, has revealed that informality is characterised by its own *normality*, made of indigenous norms mainly dictated by socio-economic and socio-cultural factors. An in-depth understanding of this "normal informality" should be a key driver for upgrading programmes in informal settlements. A shift from rigid and standardized norms, towards more flexible and contextualized policies, informed by grassroots approaches, is suggested for more responsive upgrading processes. In fact, only contextualised norms and standards can inform effective upgrading programmes meeting the real socioeconomic and socio cultural needs of inhabitants. Future research should explore the methods to include "grassroots regulation" as something that is more tailored to community needs and purely based on bottom-up approaches.

Acknowledgements

This work is based on two ongoing research collaborations funded by the Royal Society (through an Advanced Newton Fellowship) and the Economic and Social Research Council (ESRC) as part of the Newton Fund, in collaboration with the National Research Foundation (NRF) in South Africa. The authors would like to thank the following contributors: the officers of the eThekweni Municipality, in particular Mr Nkululeko Xulu and Nomalungelo and the officers of Mfolozi Municipality, particularly the Housing manager Mr Magubane.

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Spatial Planning In Nairobi: Beyond The Post-Colonial Paradigm?

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Abstract

The dismal performance of spatial planning in African cities is partly attributed to colonial and Western development and planning models. However, over the years, the number of development actors in the African city has expanded to include East development partners such as China and Japan. This article is an attempt to explore how the recent Nairobi Integrated Master Plan (NIUPLAN), developed by the Nairobi City County government in collaboration with Japan International Cooperation Agency (JICA), differ from colonial and immediate post-colonial planning primarily driven by the West. The research examines to what extent NIUPLAN's proposals on housing, transportation and service provision address informal settlements that embody socio-spatial inequalities and host over 50% of Nairobi's population.

Keywords: *Post-colonial Planning, Informal Settlements, Nairobi, Social-Spatial Inequalities*

1. Introduction

Past urban Planning has failed to deliver in African cities (Watson 2009a, Huchzermeyer 2011, HABITAT 2014). The discourse on this dismal performance of planning is largely located within the broader context of global political economy and international development - with planning 'failure' partly attributed to context inappropriateness of planning policy, colonialism and neo-colonialism through the continued dominance of the West on African development policy (Boniburini 2011, Andersen, Jenkins et al. 2015). Upon independence, African cities inherited planning policies initially introduced in Africa as colonial tools to further oppression and the interests of colonial powers (Myers 2003, Slaughter 2004, Njoh 2009). Post-independence, African states still continue to rely on the West for development assistance championed by agencies such as the World Bank, IMF and United Nations agencies. These agencies are however seen as an extension of Western hegemony into the African continent that continue to exploit the development frustration of nations, by forcing them to implement programs that not only reinforce but create the conditions they purport to remedy (Njoh 2009, Watson 2009b, Boniburini 2011, Eze, Elochukwu et al. 2015).

This dissatisfaction with West derived development models and shifting geo-politics is alienating African nations, driving them towards the East for development inspiration and capital (Eze, Elochukwu et al. 2015). The shift is evidenced by the increased collaboration and partnerships between African Countries and the East (especially Japan and China). For instance, since 1993, Japan has been actively involved in Africa's infrastructure and human resource development through the Tokyo International Conference on African Development (TICAD) and JICA. During the 4th TICAD conference in 2008, Japan pledged to double its Official Development Assistance and direct investments in Africa (TICAD 2013). Similarly, China's presence in Africa's development agenda has been growing over the years (Alden 2007). Between 2000 and 2007, China established bilateral relations with several African countries aimed at encouraging China's investments in the continent (Davies, Edinger et al. 2008). In 2007, China hosted the China- Africa summit, which saw the establishment of China-Africa Development Fund to finance development in Africa (Campbell 2008). Through these development collaborations and commitments, several mega infrastructure projects are currently under way in countries like Tanzania, Nigeria, Angola, Ethiopia, DRC and Kenya funded by

China and Japan governments or agencies (Alden, Large et al. 2008, Power and Cristina 2012).

Advocates of these development partnerships argue that they stand to produce better and equitable outcomes than those directed by the West, as they are based on mutual respect and shared interests (Hinga and Yiguan 2013). Ramo claims that the Chinese development model 'is driven by a desire to have equitable, peaceful, high quality growth', at least in China (Ramo 2004). In a March 2016 policy workshop held in Nairobi, in anticipation to TICADIV, both Japanese and Kenyan delegates applauded Japan for coming to the aid of Africa through TICAD when the West had deserted the continent. The Japan Ambassador to Kenya stressed that, the Japanese development model is built on teaching Africa how to fish unlike the West approach of poverty eradication akin to giving a man fish (Kenya 2016). But do these developments under South-East partnerships really differ from those previously informed by Western derived policies, and particularly in their ability to address socio-spatial and economic inequalities?

This paper hopes to explore the above question by analysing the Nairobi Integrated Urban Development Master Plan (NIUPLAN) developed by the Nairobi City County (NCC) government in collaboration with Japan International Cooperation Agency (JICA) in the year 2014. The purpose of the analysis is to explore the character of NIUPLAN as a representation of plans and projects directed by East agencies to determine the extent to which they reflect or represent a changed approach from those that preceded them and especially in how they address social, spatial and economic inequalities. The focus of this paper is particularly on how NIUPLAN proposals address informal settlements, which represent poverty and exclusion in Nairobi.

The paper is divided in to three main sections. First, I discuss the legacy of colonial and West planning models in Nairobi; second, I highlight and discuss the general recommendations of NIUPLAN regarding housing, service provision and transportation in the context of informal settlements. Lastly, I conclude with thoughts on what the South-East partnership may mean to the dismantling or perpetuation of socio-spatial inequalities in Nairobi based on NIUPLAN's handling of informal settlements.

2. Socio-Spatial Inequalities In Nairobi As A Legacy Of Colonial And West Driven Post-Colonial Planning Policies

2.1 Introduction to Nairobi City

Nairobi is the capital and largest city of Kenya, with a population of over 3 million people (KNBS 2010). The city is both a national and regional economic hub for Central and East Africa. Nairobi alone generates over 50% of the national GDP and accounts for more than 50% of Kenya's formal employment (JICA&NCC 2014). Despite its functional and regional significance, Nairobi is characterized by high socio-economic and spatial inequalities, embodied by informality and informal settlements (K'Akumu and Olima 2007, Huchzermeyer 2011). Over 50% of Nairobi residents live in about 5% of the total residential land crammed in over two hundred informal settlements (International 2009). The housing in informal settlements is of low quality, usually made with temporary materials. These settlements are also underserved by public infrastructure and services such as energy, transport, water and sanitation. According to a 2004 Nairobi slums study by (Gulyani, Bassett et al. 2012), only 19% of respondents had access to piped water either through individual connections or yard tap. Likewise, only 22% had access to electricity connection with just 29% reporting connection to formal or informal public sewer. The rest used pit latrines or flying toilets.

Similarly, the provision of public social services such as schools and healthy facilities is disproportionately low in slums as compared to the rest of the city. There is barely any public

school or health facility in slums. In 2009, Amnesty International observed that about 130,000 residents of three villages in Kibera relied on one NGO-run health facility. Equally, about 25,000 residents of Soweto village in Kibera did not have any public school. Children in these areas rely on NGO-run schools or low quality but costly private schools provided by entrepreneurs in the slums. Otherwise they have to walk long distances to access public schools (Tooley, Dixon et al. 2008). These settlements also lack transport infrastructure and access roads, hence limiting resident access to public transport. Consequently, slum dwellers are forced to walk long distances to work, school or to access other services (International 2009).

2.2 The Role of Colonial and Post-colonial Planning in Creating or Reinforcing Socio-spatial inequalities in Nairobi

Like in many other African cities, Nairobi's current inequalities and socio-spatial inequalities are partly attributed to colonial planning legacy and the continued dominance of Western policies among other factors such as rapid urbanization, capitalist development and urban poverty (K'Akumu and Olima 2007, Boniburini 2011). The stringent planning standards, anti-urbanization stance and racial discrimination elements enshrined in colonial and post-colonial planning policies are believed to have created a ground for the growth and expansion of slums in Nairobi. For instance, the 1926 and 1948 Nairobi colonial plans incorporated racial segregation zoning, creating exclusive enclaves for foreign settlers and separate zones for natives in low value zones (Charton-Bigot and Rodriguez-Torres 2010). Proper infrastructure investments were provided in the white occupied parts while little or no investments were made in the native occupied zones (Owuor and Mbatia 2008). After independence racial segregation transformed to 'socio-economic and legal-tenural residential segregation' as government bureaucrats and elites re-allocated themselves the hitherto white occupied affluent zones while the poor masses remained in low value underserved zones (K'Akumu and Olima 2007:87)

Nairobi colonial plans and policies were also anti-urbanization, particularly in relation to native population urbanization. Colonial policies restricted natives from moving in to urban areas by instituting pass laws that prevented African moving in the city unless they had a job as well as limiting housing production for the African population in the city (Huchzermeyer 2011). The restriction of the African from the city coupled with the limited housing production and Africans low wages forced natives to establish informal settlements on the fringe of the city (Anderson 2001, Olima 2001). Informal settlements were considered illegal and ineligible for service provision. At independence, rapid urbanization occurred, following the elimination of the pass laws. This population explosion could not be accommodated in the limited existing formal housing and thus led to the growth of new slums and expansion of existing ones. According to Ngau, (1975), the housing units in slums rose from about 500 in 1952 to about 22,000 in 1972 and accelerated to about 111,000 in 1979 (Olima 2001). Independent Nairobi did not formalize slum areas. In fact, the response to informal settlements by the government was largely negative ranging from brutal evictions to outright denial of service extensions (*ibid*).

Past Nairobi plans were also replicas of European stringent planning standards based on modernist ideals. The main objective of the 1926 plan was to 'turn Nairobi into a thing of beauty' (Myers 2003:195), while the 1948 plan envisioned Nairobi as a 'European Type Town, that is European in Architecture, a little frigid, but efficient, tidy and progressive' (Slaughter, 2004: 39). The consequence of this modernist approach and the adoption of stringent building standards was that, most natives could not meet the prescribed standards nor afford the proposed 'modern' materials and thus ignored such rules and used local construction materials (Anderson 2001, Huchzermeyer 2011). Structures built using local materials were termed temporary or illegal and therefore ineligible for public service provision. Upon independence, the government adopted the same stringent planning tools as well as continued to rely on Western agencies

such as the World Bank and UN HABITAT for planning and development ideas.

Since 1970s, the World Bank has directed as well as funded low-income housing projects and slum upgrading projects in Nairobi such as the Site and Service Schemes and Kenya Informal Settlement Projects (KISIP). The UN HABITAT is also instrumental in providing direction on slum upgrading in Nairobi with a recent attempt being the Kibera Soweto Slum Upgrading project. These models have failed to deliver. The Site and Service schemes of the 1980s by the World Bank hardly reached the targeted poor population. Rather, benefits accrued mostly to middle income population due to affordability issues among other factors (Boniburini 2011). The Kibera Soweto slum upgrading project supported by UN HABITAT is already displacing residents owing to unsustainable and unaffordable repayment requirements to current slum dwellers (Huchzermeyer 2008).

While the failure of post-colonial planning in African cities such as Nairobi is largely attributed to colonial legacy, several shifts have taken place recently, with a number of countries in African countries partnering with Japan and China in planning and development projects. An outcome from such partnerships is the NIUPLAN. The section below analyses NIUPLAN's proposals on housing, service provision and transportation with the hope to understand how the current South-East partnership in planning is addressing the issue of informality and informal settlements attributed to past planning. The choice to focus on housing, service provision and transportation proposals is informed by their current state, particularly in slums and the link to past planning as earlier discussed. The analysis focuses solely on the general proposals and rhetoric's of the plan as most of the plan is yet to be implemented.

3. The Nairobi Integrated Urban Development Master Plan (NIUPLAN)

3.1 Introduction

NIUPLAN is a long-term development strategy for Nairobi, spanning the years 2014 to 2030. The plan was prepared by the Nairobi City County (NCC) in collaboration with JICA, as part of the Japan government technical assistance to Kenya. The plan preparation was responding to the longstanding urban challenges such as traffic congestion, environmental degradation and the continuously expanding informal settlements (JICA&NCC 2014). Consequently, the Plan hopes to accelerate sound and sustainable development, by enhancing access to services such as water supply, transportation, solid waste management, and to transform Nairobi to "*an iconic and globally competitive city*" (JICA&NCC 2014): p.6-12 Part 2). The geographical coverage of the plan includes both the official boundary of NCC that covers about 700km², and the greater Nairobi Area, which covers an additional 20km² from the Nairobi City Boundary (see Fig 1 below). The inner grey part of Fig 1 below shows Nairobi's official boundary and the population density, while the surrounding area represents the additional 20km. The planning process started in 2012, ending in 2014 and consisted of a highly participatory process drawing participants from the public, private sectors, academia as well as the community. The JICA team formed the lead planning experts.

The final plan offers general framework and proposals to guide development in several sectors such as infrastructure, environment, land use and human settlements, urban transport, governance and institutions. Key components of the plan document include a detailed analysis of existing social-economic, institutional and infrastructure conditions; development proposals and priority programs for specific sectors to be implemented in the short term before 2018.

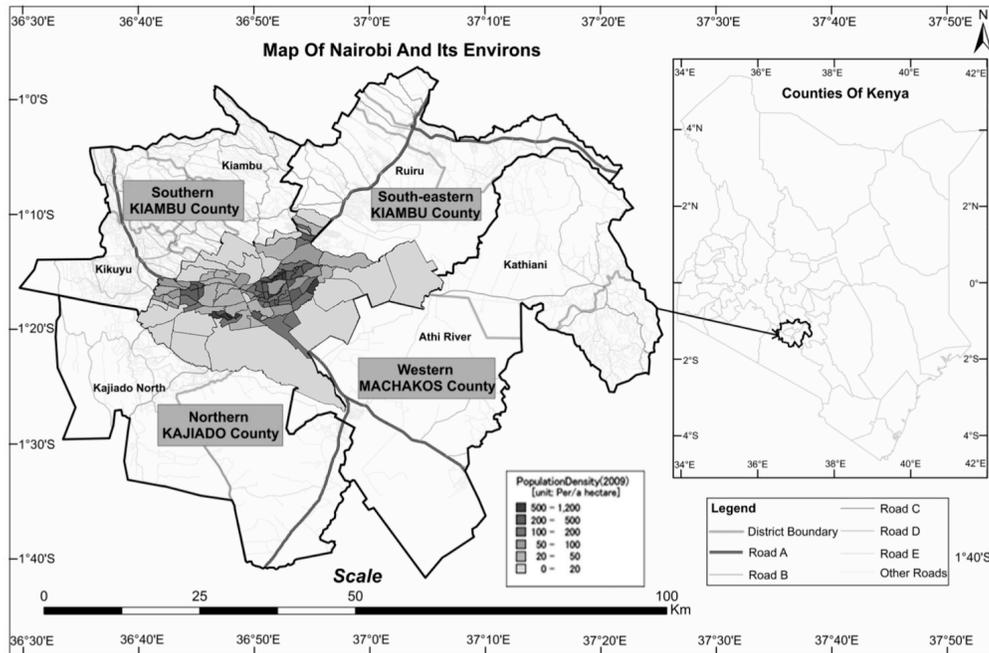


Fig 1: Geographical Coverage of NIUPLAN and Nairobi Population Density
Source: (Adapted from NIUPLAN, 2014)

3.2 NIUPLAN Proposals On Housing, Service Provision and Transportation

3.2.1 NIUPLAN Housing Proposals

In regards to housing, NIUPLAN acknowledges the inadequacy of proper housing for a variety of income groups and especially low-income groups. The plan also identifies affordable housing, high rents, poor housing conditions and congested residential areas as some of the major challenges facing the housing sector in Nairobi. Accordingly, the plan suggests that government step in to provide housing through the servicing and appropriation of residential land. It also proposes the densification of residential zones, strengthening of institutions in the housing sector as well as the establishment of public private partnerships to enhance housing provision. Unlike in other sectors that have detailed proposals and action plans, there is very little in the plan dedicated to housing and particularly in regards to informal settlements. In fact, the plan deliberately left out the areas covered by informal settlements in the plan analysis and concept development. The JICA team cited incompetence in slum planning in addition to stating their mandate included planning of the formal part of the city (Field Interview, 2014).

The plans broad proposal that government step in to provide housing for low-income population fails to acknowledge the failure of past government housing schemes for the poor. The government through the National Housing Corporation funds and constructs low-income housing for public servants. However, rarely these housing reach the target beneficiaries. Public housing meant for low-income households has always gone to middle income households (Huchzermeyer 2008). A major challenge to low income-housing provision in Nairobi is the lack of affordable housing models options for the middle and upper-income groups. This vacuum in housing provision creates competition for housing produced for low-income groups (*Ibid*).

Though the plan calls for the government to provide land for housing, there is need to curb land speculation and reform housing finance and especially to meet the housing needs of middle and upper income groups. The cost of housing production is quite high in the country owing to urban land speculation and high cost of capital. The current mortgage rate stands at

over 15% in most commercial banks. A 2016 analysis did by Centre for Affordable Housing Finance in Africa showed that a \$10,000 house, at a repayment rate of \$107/month within a twenty-five years period would be affordable to only 20% of Kenya's urban residents. The final cost would be over three times the initial cost totalling to \$34,237 (Africa 2016). Additionally, the government needs to provide highly subsidized housing for those at the bottom of the income pyramid. Overall, NIUPLAN failed to offer housing solutions for the least well off and therefore unlikely to address the question of housing in informal settlements.

3.2.2 Service Provision

NIUPLAN carried out a comprehensive analysis of select services such as water and sanitation, solid waste management, telecommunications, storm water drainage, health and school facilities. For the purpose of this discussion, I focus on schools, water and sanitation. These services are largely provided by private individuals in informal settlements who charge exorbitant prices for low quality services, sometimes even beyond those in the formal areas (Gulyani and Talukdar 2008). For instance, in 2009, water in the informal settlements cost over four times what it cost in the formal parts of the city at Kshs 45/M³ and Kshs 10/M³ respectively (Ogendo, Kamundi et al. 2009)

Water and Sanitation

The plan aggregates the analysis for water and sanitation per the administrative Nairobi districts. Based on this analysis, there is a trend with districts where slums are located having low levels of service provision. For instance, Nairobi West consisting of Dagoretti and Lang'ata/Kibera districts has the highest number of pit latrines at 68%. Kibera and Kangemi slums are located in these districts. Similarly, Nairobi West and Nairobi East have the highest number of households relying on water vendors at 20% and 22% respectively. Mukuru slums and low-income residential estates are largely in Nairobi East. In addition to the disproportionate water distribution among the various districts, NIUPLAN identifies old water network and limited water sources as other issues limiting water and sanitation access in the city.

The plan offers general proposals like the replacement of water supply systems, majority of which were constructed between 1950-1980 and haven't been replaced or expanded since then, thus limiting the capacity of water that can be supplied as well as contributing to system losses through leakages. Because the city does not have a direct involvement in the supply of water, and sanitation the plan recommends the establishment of a committee at the City County to liaise with Nairobi City Water and Sewerage Company (NCWSC), the body responsible for water and sewage management in Nairobi. In regards to informal settlements, the plan suggests that water and sewage management in informal settlements to be handled through on-going projects by World Bank and other institutions such as the Water and Sanitation Service Improvement Project (WaSSIP) and Kenya Informal Settlement Improvement Project (KISIP).

Schools

The Physical Planning Act, (1996), requires one primary school for every 5,000 people with the distance to the school not exceeding ½ km. A secondary school should also be provided for every 25,000 people and be located within not more than 1km radius. Based on this requirement, NIUPLAN establishes that Nairobi has a deficit of 443 primary schools and 77 secondary schools compared to the available 185 primary schools and 49 secondary schools.

As per the above criteria, NIUPLAN identifies the highest deficit of schools in districts to the East and South of the city such as Lang'ata and Kamukunji. Areas such as Westlands and Starehe have almost similar amount of schools as Embakasi in East of Nairobi which has over 2.5 times the number of school going children. Slum areas are also highly impacted. For example, areas like Kayole a low-income area and Mukuru Kwa Njenga a slum to the East of the city, have a deficit of over 15 primary schools and 5 secondary schools. Fig 2 below shows the distribution of primary schools within 5km buffer in relation to population density. The plan

proposes the establishment of new schools in areas outside the 5km buffer.

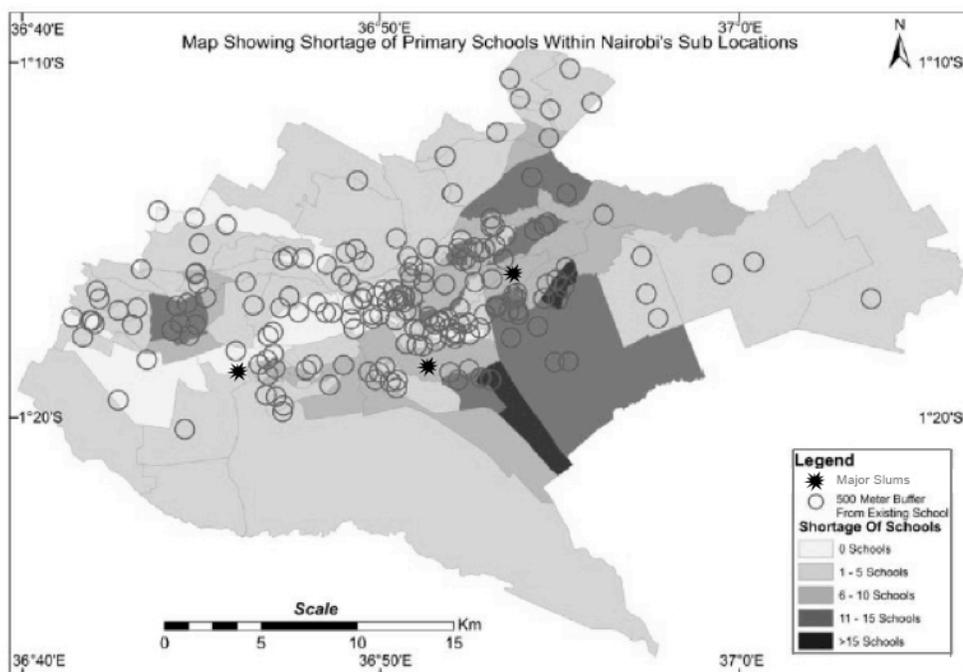


Fig 2: Primary School Distribution in Nairobi in Relation to Nairobi's Major Slums
Source: (Adapted From NIUPLAN, 2014)

Though NIUPLAN observes that services such as water and education facilities are underprovided in districts hosting slums, there are no specific recommendations for improving service delivery in slums. The plan recommends broad proposals using aggregate city demand projections. The closer the plan comes to addressing deficiency of services in slums is simply stating the need to extend services to informal settlements. While the official acknowledgment of the disparity and call to provide more services in these areas is a critical step towards making provision for such services, more need to be done to close that gap. Given the magnitude of slums, they should be treated as special planning areas.

Again, the plan's proposals do not necessarily address the root causes of the service disparities, which include land tenure insecurity, poverty, and the lack of informal settlements recognition by public service providers. Service provision in Nairobi both during colonial and postcolonial era has been closely linked to formal housing policy and security of land tenure. Public services are mainly provided in areas that have land tenure and are formally planned. This criteria thus locks out slums and settlements that lack tenure security and are therefore termed informal or sometimes illegal settlements. Though some providers like water companies are taking steps to provide water in informal settlements, the inability to include slums in current plans undermines such efforts. Any well-meaning plan should thus provide guidelines for service provision in slums as well as advocate for their regularization.

3.2.3 Urban Transportation

NIUPLAN identifies the main challenges facing the transportation sector in the city as: congested CBD due to through traffic passing in the city and the location of all bus terminals in the CBD; insufficient public transit options; poor and limited Non-motorized Transport (NMT) networks. To address these challenges, NIUPLAN proposes several measures categorized in 4

broad areas: investment in public transport, Non-Motorized Transport (NMT), Railway and road network enhancement.

In regards to public transport, NIUPLAN suggests the adoption of Mass Rapid Transit (MRT) such as Light Railway Transit (LRT) and Bus Rapid Transit (BRT) along the 6 major lines leading to the city; staggering of work hours; the development of a bus terminal outside the city centre and; the movement of long distance vehicles outside the city to decongest the city centre among other measures. Further, the plan advocates for the expansion of some of the existing road network as well as the construction of new roads within the city to enhance the flow of traffic. The plan also proposes investment in NMT facility in the entire city with priority given to dense streets. In addition, it proposes the refurbishment of railway system and commuter trains. Fig 3 below shows the distribution of proposed public transportation networks in relation to Nairobi's major informal settlements.

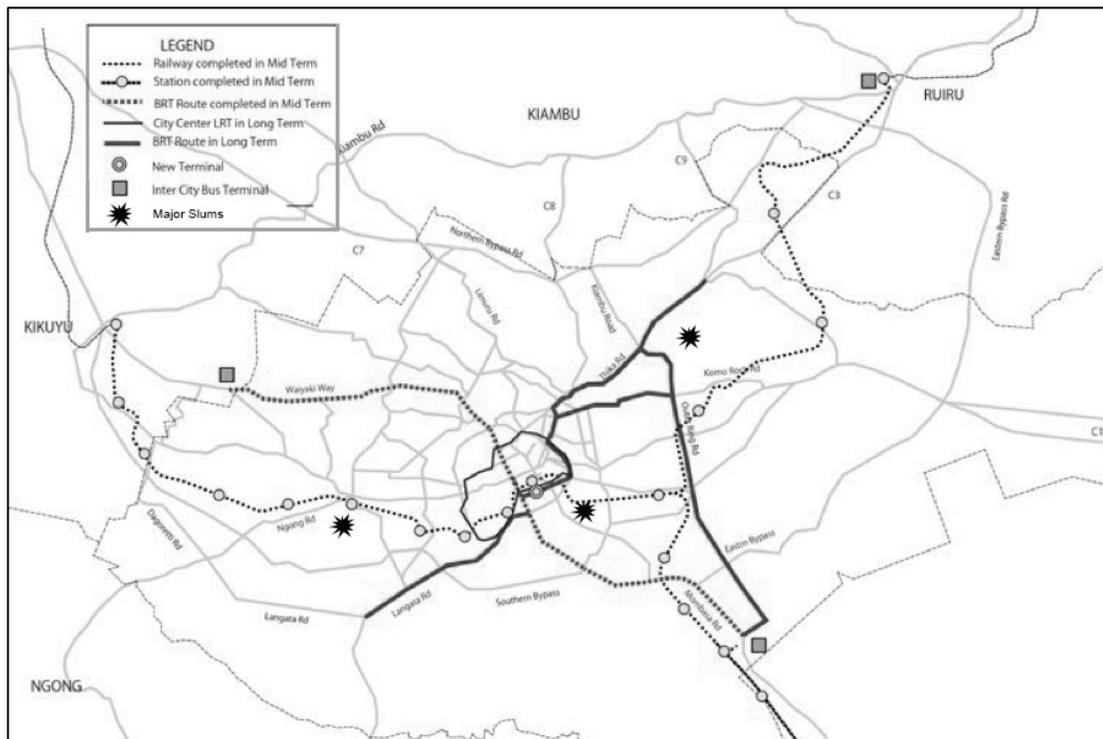


Fig 3: Proposed Public Transport (Railway, BRT and LRT) in Relation to Nairobi's Slums
Source: (Adapted From NIUPLAN, 2014)

Theoretically, NIUPLAN's transport and NMT proposals provide strategies likely to impact the prospects of the less well off but not necessarily slum dwellers. Over 80% of Nairobi households have at least a member who regularly uses public transport (Salon and Gulyani 2010). Hence, the move to improve public transport through BRT and LRT may significantly benefit low-income populations, who are the majority users of public transport. These proposals however, rarely impact slum areas. The BRT, LRT proposals are made based on existing major transport routes, which do not pass near slums. Even those that do pass by, like the Light Rail, hardly are any stops provided in slum areas. Similarly, though investment in NMT networks is likely to improve the mobility of low-income residents by providing cycling and secure walking as an alternative to public transit, none is proposed within the slums. This is despite the fact that, over 65% of adults and about 96% of school going children in slums walk to work and school respectively (Salon and Gulyani 2010). Overall, the plan fails to specifically address issues of

linkage and movement in slums, which lack proper accessibility within and to adjoining areas.

4.0 Concluding Thoughts On NIUPLAN And Planning in Nairobi Under A South-East Partnership

Current post-colonial planning in Nairobi is taking place under relatively different social, political and economic dynamics than it did during colonial and immediate post-colonial era. Development or underdevelopment debates in African cities continue to be discussed in the context of colonialism and West-driven policies and practices. However, the entrance of East partners is shifting development relations and hence the development debate. In the face of emergent actors in South development, (Roy 2008:93), calls for the need to 'recalibrate' the 'Anglo-American accountability' to underdevelopment in the global South. She stresses the need to 'acknowledge the other geo-political vectors through which planning and development ideals are now transacted'. Taking that challenge, this paper uses the case of NIUPLAN to explore how the South-East partnerships are contributing to dismantling or reinforcing the social-spatial inequalities in the city of Nairobi.

The results do not provide much of hope. The plan failed to provide concrete measures to address the challenge of low-income housing, services and transportation in informal settlements as discussed above. In fact, the plan completely left out informal settlement from the analysis and concept development. The neglect of slums that house over 50% of Nairobi residents in the NIUPLAN process puts to question the ability of the South-East partnerships to address past development inequalities. Again, the claim that these partnerships are built on equal relations and seek to promote equitable development is questionable, particularly given JICA's ability to dictate what the plan should cover - for instance, the use of agreements (JICA versus Kenyan government) to exclude informal settlements. Such decision-making models resemble donor/recipient relations between the West and Africa. Watson (2009b), notes that one of the ways that colonial and imperial relations continue to express themselves is through patterns of inequality affecting what counts as expertise and knowledge. Hence, in my opinion the JICA-Nairobi city planning model does not differ so much from the Western and colonial development models. The 'foreign experts' in this case the JICA lead team choose which policy options to pursue just as in the case of colonial and West driven projects.

This calls for the need to ensure that the emergent development partnerships are truly committed to meeting the interests of the vulnerable through real democratic processes such as public participation and representation. Given the decision to leave out slums was taken in spite of the high level of stakeholder involvement, it is critical to ensure that the insertion of public voices as stakeholder views is not an act of power that occurs to legitimate the actions of decision makers. As it is now, it seems that the rights to determine who benefits, who is involved and what is included still continue to be the preserve of foreign imperial partners. Therefore, the key task for current critical theory is probably to elaborate how to actually make the voice of the local and marginalized in the African city count, given the deeply entrenched imperialist relationships in planning practices-between planners and communities, donors and recipients that imposes decisions on others as in the case of NIUPLAN. In fact, the case of NIUPLAN demonstrates that the problem may not be the geopolitical location or origination of ideas. Rather it may lie in the power relationships between decision makers as well as the system and context under which decisions are taken.

Overall the plans failure to address housing, transportation and service provision in informal settlements even under South-East partnership attest there is more to the current failure of planning in the South including Nairobi than colonial legacy and West planning approaches. This is not to deny colonial legacy and the continued influence of Western actors to Africa's development policy directed by institutions such as the IMF and World Bank. Rather, it's

a call to begin to acknowledge and seriously grapple with contributions from the South city systems such as Nairobi that make them so vulnerable to manipulation. To see the failure and problems of planning in the South and Nairobi in particular not only as a result of colonial legacy and global North approaches but also as a result of the local cultural and organizational structures allows a new perspective - one that requires local planners and the state to understand their role in perpetuating social inequalities and segregation and hence position themselves to seek and to discover the opportunities for transformation of planning towards Justice.

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What theory explains the tale of two cities : community engagement in urban planning in New South Wales Australia

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Abstract

Planning reforms in NSW Australia have resulted in weakening of community engagement. Independent scholars have used rational, collaborative and neoliberal planning theory to explain the reforms. However, theoretical underpinnings of effective community action by the affluent in the East and resignation to fate by the poor in West in Sydney metropolitan have not been explored.

Introduction

Planning system in NSW is in perpetual reform. Rapid economic growth is the main motivation. Community engagement in planning matters is considered the barrier that slows the planning process, related construction and economic development. Softening community engagement in planning matters has therefore been the main-stay of the planning reforms that have taken place for the last 15 years.

The NSW state has implied it has adopted discursive democracy and collaborative planning approaches. Various scholars have tried to explain what has been transpiring in NSW through various planning theory lenses including rational, communicative/participatory and neoliberal planning theories. This paper presents a brief review of the scholarly work on engagement aspect of planning reform in NSW.

The reality of community engagement in planning in NSW however is explained more by ability of the communities to engage than any of the aforementioned planning theories. It is a tale of two cities in metro Sydney. This paper presents examples that demonstrate that community engagement in planning in Sydney plays out diametrically differently in the affluent East (NIMBY-Land) than in the poor West (Bogan-Land).

Among the NSW planning apparatus, the community engagement philosophy for Sydney Metropolitan seems to be "NIMBY-Land is too hard - dump it on BOGAN¹-Land - they will not even notice it". This paper explains how affluent communities craftily use their connectedness and mastery of digital technologies to stymie even the most reasonable developments and how the poor are unable to voice opposition even to the most outrageous.

This paper argues that Planning theory and practice has neglected the spatial variation in community engagement with planning and planning outcomes within a metro, state or province. It searches for a suitable theoretical frame that could explain the current situation and guide the future discussions on the tale of two cities for community engagement in NSW.

¹ Bogan is a derogatory Australian term that is used to describe a person of lower working-class background, whose speech, clothing, and behaviour is considered unsophisticated. Western Sydney inhabitants are often referred to as Bogan by affluent Eastern Sydney residents.

volution of planning theory as it relates to planning in NS

The temporal evolution and merits of various planning theory have been explored by a number of researchers since 1970s. Faludi (1973), Healey (1992), Yiftachel (1998) and Allmendinger (2009) are the most prominent examples of that research.

Contemporary Planning, since its inception in the twentieth century, has been entrenched in modernity or scientific/instrumental rationality. Healey has traced the roots of rational comprehensive process model of planning in the Mannheimian conception of planning as the 'rational mastery of the irrational' and its translation by the Chicago school into this highly influential form of planning practice.

“Mannheim's advocacy of a form of planning which harnessed systematised social scientific knowledge and techniques to the management of collective affairs in a democratic society proved inspirational for the influential Chicago school of rational decision making.” (Healey, 1992;p145)

Thoughts of Plato, Karl Mannheim, John Friedman, and the Chicago School serve as intellectual basis of rational planning (Healey, 1992; Green 2009). Rational planning is rooted in the liberal democracy and scientific rationalism and has strong and ever growing underpinnings of neoliberal economic thought. In NSW, in addition to neoliberalism, rational planning has undertones of political imperatives, pragmatism, and even corruption (Schatz and Piracha,2013; Piracha 2014; Piracha 2015). Since 1970s there has been a growing concern about rational planning because of environmental harm to local environments and ignoring of differing interests and cultural contexts of individual communities i.e. social justice considerations. The concerns of rational planning have led to two different thoughts (Healey 1992).

The first is to expand the realm of rationality beyond scientific truth to include diverse communities' thoughts. Jürgen Habermas proposes communicative rationality as a solution (Bernstein 1985). This concept of Habermas serves as basis of discursive/deliberative democracy and communicative/ collaborative planning. Coining the term, “Planning through Debate” Patsy Healey (1992) argues in favour of this style of planning. A consensus is sought in this type of planning through an expanded view of rationality.

Habermas encourages us not to give up on reason. He would like the society to shift emphasis from an individualised, subject-object conception of reason to reasoning formed within inter-subjective communication (Healey 1992). Habermas' communicative rationality is similar to practical reasoning that includes all the ways we use to understand and know things (Allmendinger, 2009).

Habermas' theory of communicative rationality action has been criticised by those who believe that social relations of class, race, gender and culture have such deep divisions that cannot be resolved through rationality. They rather require power struggle (Healey, 1992).

The second is the postmodern thought/relativism that is based on philosophies of Gramsci and Foucault. Postmodern rejects rationality and argues that consensus serves only interests the powerful (Allmendinger, 2009). Agonism championed by Chantal Mouffe (2000) is a strand of the postmodern thought. According to Mouffe agonistic pluralism negates consensus seeking instrumental rationality and Habermas' theory of communicative rationality. Rather than achieving consensus Mouffe (2000) would like to provide an arena where differences can be confronted. The postmodern thought faces the problem of difficulty in translating it into workable planning tool/system/mechanism (Allmendinger, 2009).

In Australia the dominant form has been rational planning with a strong and ever intensifying flavour of neoliberalism (Piracha, 2009; Piracha 2010). However, lip service has been paid to communicative/collaborative planning (Piracha et. al 2011a&b). In some parts of the country such as WA (Western Australia) communicative planning was given somewhat serious consideration (Hopkin, 2010). In NSW however it has only been used as an excuse for fast tracking planning (Piracha et. al., 2011a). The following section presents an overview of planning system, practice and reforms in NSW.

Planning Practice in NSW Australia

In the Australian state of New South Wales, planning reform has almost achieved "rock star" status: media coverage is constant and is controversial; and (amongst other things) the system is seen as being a barrier" to economic growth.

It has been in and out of rehabilitation often in attempts to make it more efficient and streamlined: At the time of writing, this public spectacle continues. For more than a decade, those in positions of power have argued that planning reform will raise NSW's status and mitigate the often-malicious accusations which are frequently directed at the current system. These convictions tend to force decision-makers to tinker constantly with the planning system. And when the system fails to meet their desires, politicians become more desperate and more frantic in their tinkering:

Modern urban planning in New South Wales began in 1945 with legislative changes to the Local Government Act 1919 (Park 2010). By the early 1970s, this early legislation was seen as being overly complex and failing to ensure protection of the natural and cultural environment. These concerns led in due course to the creation of a new body (under the 1974 Planning and Environment Commission Act) whose subsequent report formed the basis of the Environmental Planning and Assessment Act (EPA), (Pearson 1994). The 1979 Act afforded greater importance to ecological considerations in land use planning, to public participation in the planning process, and to coordinating planning and development by public and private interests (Hort and Mobbs 1979).

The EPA introduced a three-tiered system of Environmental Planning Instruments (EPIs) for strategic and statutory planning. The three tiers of the system were Local Environmental Plans (LEPs), Regional Environmental Plans (REPs) and State Environmental Planning Policies (SEPPs). The Act devolved matters of local planning to the local councils. The State Government was made responsible for planning issues of state and regional significance. Overall the EPA was a significant move forward in the planning area, receiving accolades from various quarters within the state and outside. The Act and the planning system which it accommodates and on which it depends for its implementation have, however, gone through a large number of reforms, abandonment of reforms and re-reforms. These reforms, enacted in the name of simplicity and efficiency, have made the system more complex and confusing. A detailed account of those reforms is given in the next section (Piracha, 2010).

In New South Wales the past decade and a half has seen continual tinkering with the balance of power between state and local government, and between the often-conflicting aims of encouraging development and conserving the environment. When Piracha (2010 page 240) commented on the 2004/05 and 2007/08 changes, "planning reforms in NSW have gathered pace they are becoming more urgent and more dramatic" he was underestimating the pace of reforms to follow. Since then a number of new reforms have been introduced and some of the previous reforms have been abolished and then reintroduced. The first set of amendments to the EPA 1979 was introduced in the form of

the 1985 Environmental Planning and Assessment (Amendment) Act. New provisions included: Greater ministerial power to determine development applications; Ministerial powers to direct local councils on financial contributions to be made by developers towards the provision of public amenities; Ministerial powers to nominate the determining authorities for major infrastructure projects; Restrictions on the power of local planning authorities to impose conditions on (or to refuse) development applications lodged by official state agencies.

In 1993, further amendments to the Act enhanced the planning minister's approval powers, and excluded local councils from the decision-making process in certain matters (Park 2010). In 1997 came further major amendments including the introduction of the concept of state significant development. Developments declared to be "state significant" in an Environmental Planning Instrument (EPI) were to be determined by the Minister. In the same set of reforms, the concepts of "exempt" and "complying" development were introduced. Very small developments were to be exempt from seeking approvals; and slightly larger complying developments were to face simpler standards-based approval processes (Park 2010). The 1997 reforms constituted the forerunner of more drastic and more controversial reforms to the state planning system which followed.

In March 2011, the Labour Party lost the New South Wales state election after sixteen years in power. The winning Liberal-National coalition ran their election campaign (in part) on the back of widespread resentment over Labour's planning reforms - the most controversial of which related to new ministerial powers over major projects. In effect, the minister had been granted the power to determine the fate of any project by declaring it to be of major (state) significance and thereby removing it from the jurisdiction of the local planning authority. The new state government abolished this provision immediately after coming into power. Shortly after, the government embarked on the much lauded path of drafting new planning laws and designing a new planning system. Results since then, however, have received a mixed reception from community, institutional and developer quarters alike. Consultation processes have been poorly handled. Some reforms to the existing system will apparently be retained in the new system. Developers advocate some by-passing of local councils in order to eliminate perceived delays in getting decisions on development applications. At the Sydney metropolitan level, there is constant pressure from developers to release more 'greenfield' sites for housing. There have even been claims that the state government itself has been ignoring recommendations of its own internal consultation team which was appointed to manage the introduction of the new planning system etc.

Since it took power in 2011 the new conservative government in NSW has introduced many reforms to the state planning system, and at the time of writing is considering the introduction of many more through a re-write of the current statutes. The discussion below is based on the contents of the April 2013 NSW Government White Paper entitled "A New Planning System for NSW" and the conversation around it. The major changes can be summarised as follows: Ecologically sustainable development The mention of ecologically sustainable development (ESD) has been replaced with narrower 'sustainable development' in the proposed new planning system. The precautionary principle, biodiversity, ecological integrity and the polluter pays principle have been omitted altogether. This reflects the trend in planning in recent years to give pre-eminence to economic development over ecological sustainability. Assessment of development applications

The white paper points to a major shift to 'code-based assessment' for a range of residential, commercial and industrial development. Councils will have to approve a development application in 25 days if it meets performance criteria set out in the Local Plan. The new planning system will aim to increase exempt/complying code-assessed development from

the current 23% to 80% in five years. The remaining 20% (high impact) development applications will be merit assessed. Rights of local residents to object to unwanted developments Community participation will take place at the strategic planning stage, rather than the development assessment stage. Concerns have been raised about the communities' capacity to engage at the plan making stage. Communities tend to engage/react to the concrete development proposals in their local areas. In the proposed planning system, communities will lose their ability to have any say once the local plans have been made. In short, the record shows that at the time of writing, planning in New South Wales is not taking a cohesive direction. Its path is uncertain and confused - despite frequent official claims that all is well. Reforms appear to be driven by short-term priorities and concessions to powerful lobby groups rather than by concerns for long-term issues. In metropolitan Sydney, the perceived shortage of land supply (for example) seems to be driving a number of reform measures. It seems clear that reforms introduced during the past decade and a half have overwhelmingly favoured development at the expense of a concern for the environment; and have had the effect of entrenching state controls over those available to elected councils at the local level.

In 2015-16 development assessment aspect of planning continues to become speedy, automated and privatized. Community engagement in planning is weakening. Local council mergers are taking place. Local strategic planning is getting replaced by metro and state planning endeavours such as Greater Sydney Commission. The latest planning reforms are absolutely in line with the changes of the recent past.

Many of the above mentioned reforms of planning have been under the pretext of collaborative planning. The NSW state government has repeatedly argued they are making these fast-tracking changes in the planning system as that is what mom and dad developers (general public) want (Piracha et. al. 2011). The following section outlines how the above described theory and system of planning in actual manifests in community engagement and planning outcomes.

Case studies that tell a tale of the two cities

Sydney is a beautiful harbour-side city. Properties with views of water are however beyond affordability for the most. Proximity to water, CBD, and good schools (important factors in modern lifestyle) fetches much higher property prices than the rest of the metro. In recent years the property price gap has markedly increased between Eastern part of metro i.e. closer to water, CBD and good schools (in particular in the northeast) and the western part that is away from natural and cultural amenities (Piracha, 2014).

There exists a transport, employment, educational, health and cultural divide between the rich east and the poor west. The east is very well served by public transport, jobs, educational and health infrastructure. The east also has the first rate cultural facilities and even good weather (warmer than the west in winter and cooler in summer). Western Sydney experiences a job deficit, has a highly congested car reliant transportation system, poor quality educational institutions, poor health outcomes and lower life expectancy and higher mortality (The Daily Telegraph 2013; The Centre for Western Sydney 2015).

The residents of Eastern Sydney are more well educated and are well versed in the use of social media. They are able to effectively participate in planning. They often resist proposed developments in their areas through vocal protests and mobilizing their networks through traditional and social media. Their actions often verge on the borders of NIMBYism and they

have been accused of engaging in entrenchment of privilege. They do not wish any changes (in particular increase in population density) in their areas.

The western Sydney residents have little capacity to effectively participate in community engagement in urban planning. They seem unable to oppose even landfills, recycling facilities for smelly and hazardous waste, motorways and warehouses with heavy truck movements in their midst. Figure 1 shows the east-west divide of the Sydney metro with an oblique line. To the east of the line lies the NIMBY Land and to the west the Bogan Land. The diving line has been drawn on the Sydney metro strategy.

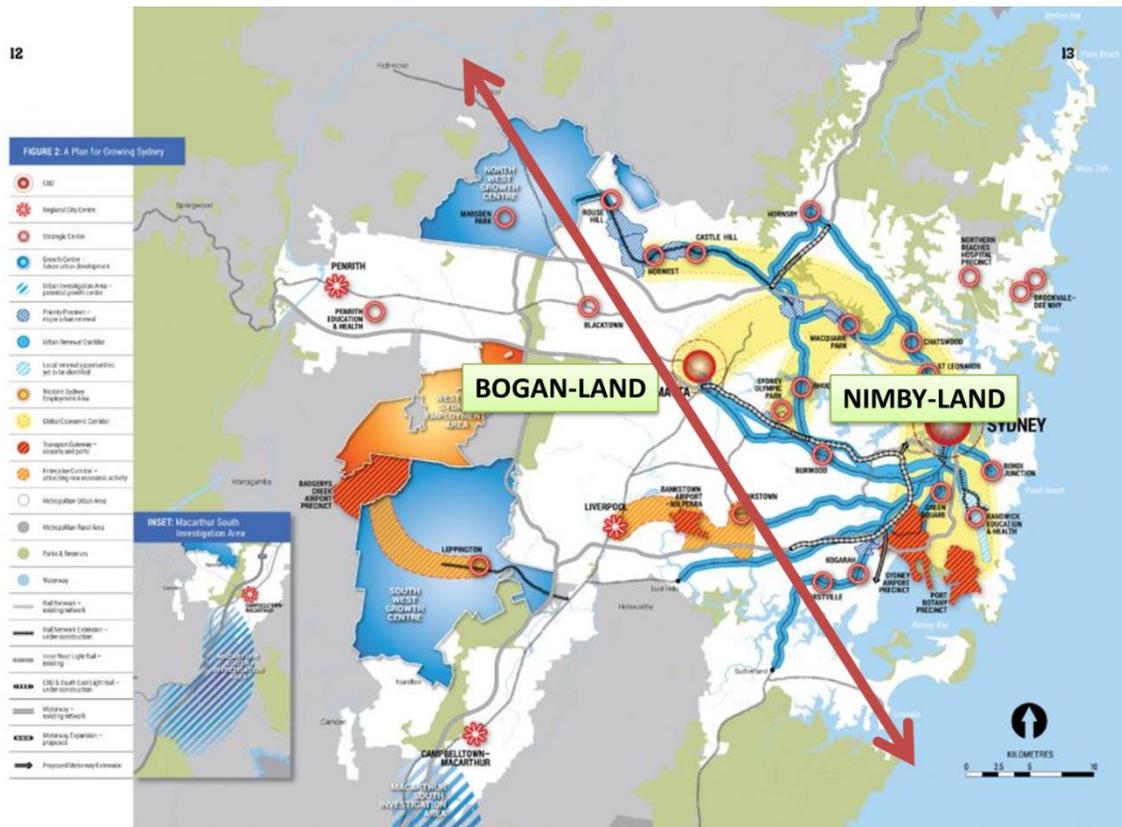


Figure 1: The NIMBY Land and the Bogan Land drawn by the author on the Sydney Metro Strategy of Department of Planning and Environment NSW released in Dec. 2014

The Attitude of the planning agencies towards community engagement can be summarized as, “NIMBY Land is too hard, let us dump it on the Bogan Land – they will not even notice it”. In the following three examples of this phenomena have been described.

1. Parramatta Road Corridor Redevelopment

Parramatta Road is the 20 km long corridor, which connects Sydney’s two CBDs: Parramatta in the west and Sydney CBD in the east. The corridor can be characterised by traffic congestion, noise and low quality commercial activity such as second-hand car yards.

Urban Growth NSW – the main state-owned developer came up with a redevelopment plan for the Corridor that includes Parramatta Road, land adjoining and at least one block back from the Road, and eight growth Precincts (Urban Growth 2016).

Urban Growth (2016) NSW consulted with the ten councils (municipalities) along the corridor to deliver the Parramatta Road Urban Transformation Strategy. The strategy is the NSW Government's 30-year plan for densification and betterment of the corridor. Main outcomes of the project are outlined by the Urban Growth (2015) as up to 70,000 people in 40,000 new homes over the next 30 years.

In the consultation process for the development of the eight precincts along the corridor, the Urban Growth encountered stiff resistance to any population density increase by the affluent communities in the East. An indication of very high level of opposition to any density increase is the eastern local council (municipality) of Leichardt's complete refusal to cooperate with Urban Growth in developing the renewal strategy (Urban Growth 2015). The protracted community consultation lead to the strategy that is very weird. As a result of the high resistance in the east the strategy dumps most of the additional residential development (high density) on the western end of the corridor The eastern end of the corridor closer to the Sydney CBD will see almost no density increase. Figure 2 shows the eight precincts along the corridor that will receive the additional population.

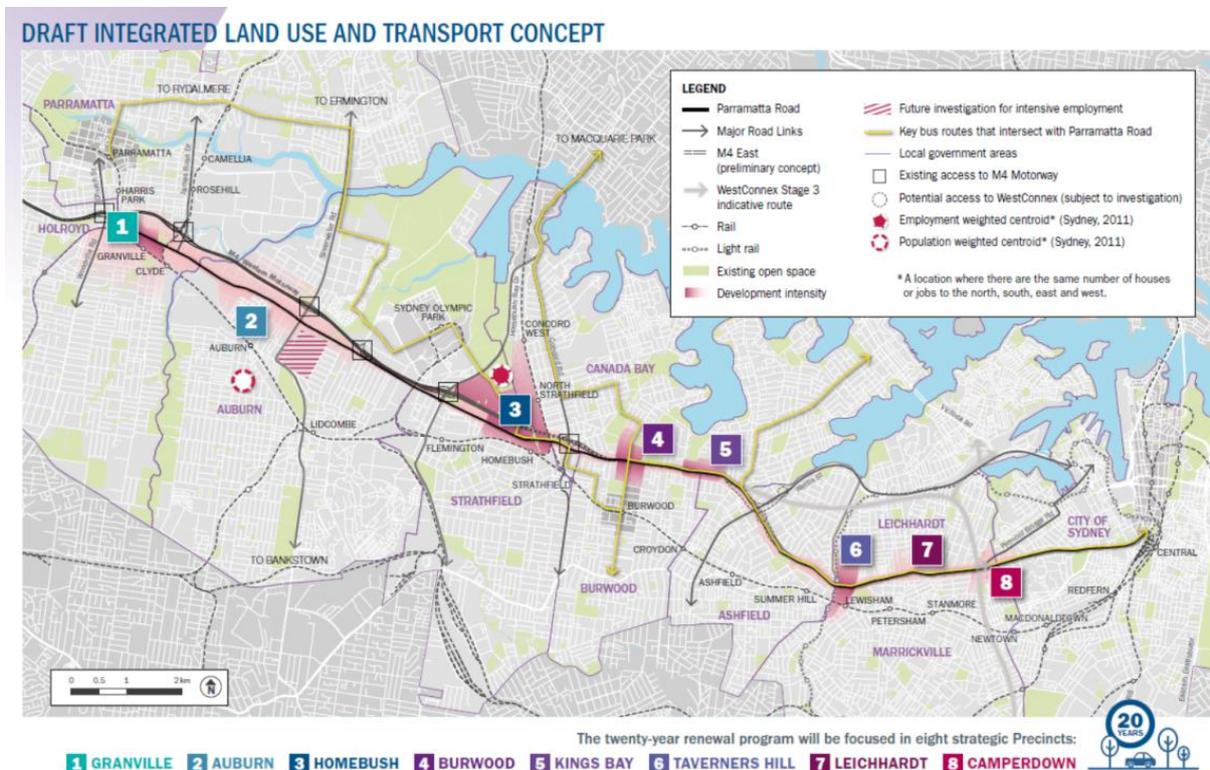


Figure 2: Eight precincts of the Parramatta Road Urban Transformation Strategy Urban Growth 201

There is no discernible difference in current population densities of the precincts in the east and the west (estimation conducted by the author using Australian Bureau of Statistics census data). Good planning practice would demand higher increase in densities closer to the Sydney CBD in the east which a large number of people regularly visit to access employment, health, education and cultural facilities. Providing higher densities on the eastern side of the corridor would have led to reduced travel demand due to shorter trips and possibility of access to facilities by non-motorised transport. However due to very high community opposition in the east the Urban Growth has proposed quite the opposite. The three western most precincts of Granville, Auburn and Homebush are planned to received 70% of the additional housing and population while the two eastern most precincts of

Leichardt and Camperdown will receive only 5% of the additional population resulting from the corridor renewal.

2. A modest increase in FSR² of a club building in the inner-eastern suburb of Bronte

Bronte is beach-side eastern suburb of Sydney that is located just 8 km from the city centre. Due to its water-views and proximity to the city it is considered a very attractive place to live. In Bronte the average house price is close to three million Australian dollars (2.25m USD). The residents of Bronte are very affluent, highly educated and very well connected.³

Williamson and Ruming (2015) have documented a very interesting case of community's ability to resist and prevent a moderate increase in height of a club in Bronte. Figure 3 shows location of Bronte.

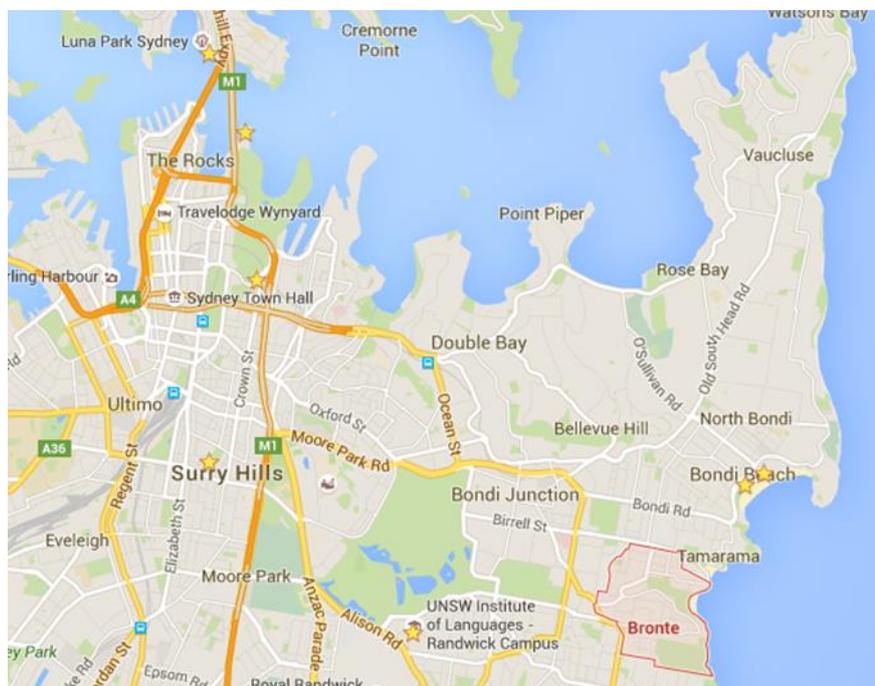


Figure 3: Location of Bronte google maps

The proposed development in Bronte was that of increase in height of a registered club (2,230 sq. meters floor area) from 13 to 20 meters representing an increase in floor space ratio from 1:1 to 2.1:1 (Williamson and Ruming, 2015). The proposed development was a for that of mixed use retail, registered club and residential. It was a moderate and reasonable increase in the height and bulk of the building in an area that is close to Sydney City CBD located in a metro that is fast growing and will need to house another 1.6 million people by 2035 (DoP&E, 2014).

The Bronte residents formed a group in 2012 to oppose this relatively small redevelopment. The group was able to get local politicians on their side in opposing the proposal by the state planning agency (savebrontevillage.com). The group also launched social media campaigns. Its twitter account attracted 200 influential followers and made 1923 tweets (Williamson and Ruming 2015). The affluent community targeted key stakeholders such as politicians, media personalities, journalists, and business and community groups. Their successful campaign

² Floor Space Ratio

³ Data from abs.com.au and realestate.com.au

led to the cancellation of the project. Figure 4 shows the retweet network of the campaign. Williamson and Ruming (2015) explain that the green nodes in Fig. 4 represent retweets. The community group had communicated every day with people reminding them about the public exhibition and encouraging them to make a submission to oppose the proposed development.

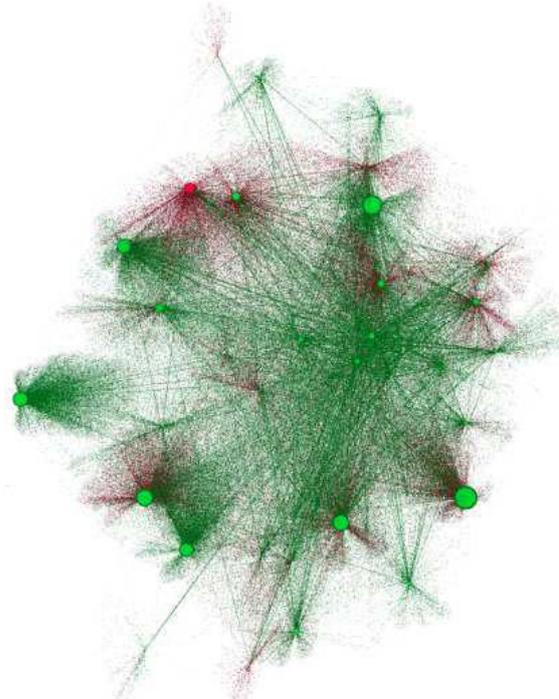


Figure 4: Bronte opposition group retweets Williamson and Ruming 201

3. One of the World's largest Industrial Waste Incinerator next to residential areas in the outer-western suburbs

The state government of NSW has in principle approved an extremely polluting industrial waste incinerator that will be built right next to residential areas in outer-western Sydney (the so called Bogan Land). This waste incinerator is proposed to burn 1.35 million tons of construction, industrial and other waste per year for 30 years in a 24 hours operation (SMH 2015).

The information that was sent to some neighbours of the facility misleadingly presents the incinerator as a green renewable energy facility. Author of this paper is a resident of this area. In his discussions with neighbours he realized that they did not understand what will be built and where. The neighbours also expressed their hopelessness. They did not believe anyone would listen to them and they did not intend to do anything.

The EIS of the project (carried out by a UK company and based on an incinerator in the UK) was displayed for comments in May 2015. The EIS failed to acknowledge and consider latest knowledge about damaging health impacts on human populations in areas surrounding such incinerators (Bell and Bremmer 2013). Not many objections have been made to the project.

The soon to be built incinerator with non-stop truck movements will generate extremely large amounts of noise and toxic pollution (dioxins, air particles, complex hydrocarbons) (Bell and Bremmer 2015) that have the potential to devastate peace, health and property values of the dense urban population living right next to this incinerator.

This part of the outer western Sydney spanning over several suburbs (Minchinbury, Rooty Hill, Erskine Park, Eastern Creek) has already been experiencing, for the past five years, extremely strong stench from existing waste facilities in the area. Despite numerous complaints to EPA and odd community meetings with EPA and local waste facility operators, the problem has continued.

Conclusions

Thinking in planning theory has been shifting from rational planning to collaborative planning informed by the communicative rationality and discursive democracy as well as to postmodern thought including agonism. The state of NSW in Australia is no exception. Traditional rational planning in that state has been (claimed) to have become more collaborative/communicative.

While it is known what the temporal changes in planning theory and its application are, the spatial dimension is not very well studied. It is not recognized that different planning theories may explain the planning and community participation conditions in different parts of a metro at the same time.

This paper has presented three case studies that demonstrate that community participation and planning outcomes take very different shapes in the affluent east and the poor west in Sydney while operating under the same planning regime informed by the same planning theory. Affluent and well connected communities in the east are able to resist and prevent even very simple and appropriate developments. Poor and despondent communities in west are unable to oppose even the most outrageous and dangerous developments in their midst. Perhaps different planning regimes informed by different planning theories should be utilized to reduce this disparity within the metro.

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BI-CONCEPTUAL PLANNING MODELLING IN TACKLING A RURAL THRESHOLD CHALLENGES IN NIGERIA

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Abstract

Rural development involves a set of designed policies aimed at raising the pattern of living of the rural population. Problems still persist despite research efforts targeted at solving them due to single theoretical approaches. This study is design to tackle the rural threshold challenges in Nigeria using bi-conceptual planning model. A cross sectional research design was adopted. Central place theory and village regrouping as a bi-conceptual model was adopted. Both primary and secondary data were collected for the study. In testing the reality of the model, case studies of selected villages in Ibadan Nigeria with various development challenges were purposively chosen. Focus group discussions were conducted among some stakeholders such as elders, market women, the youth and farmers. The results were content analysed. The result shows that part of the challenges of the rural people among others were internal conflict, lack of citizen participation that could be guaranteed by all-inclusiveness, threshold population and high level of illiteracy. Also, lack of basic amenities and services were mainly responsible for the rural urban migration creating a back wash effect as well as bad political will. The study concluded that a single model for solving this plethora of developmental challenges may not be ideal. Therefore, bi-conceptual planning model is suggested to bring the population to reasonable level of threshold that will guarantee the location of those facilities and amenities which absence have acted as push factor from the rural area thereby bringing a balance region.

Keywords: Rural threshold, Bi-conceptual model, Development, Citizen participation, Planning

1. Introduction

The rural areas of Nigeria are inhabited by the bulk of the nation's population; they serve as the base for the production of food and fibre. They are also the major sources of capital formation for the country, and a principal market for domestic manufactures (Olatunbosun, 1975). In general terms, the rural areas engage in primary activities that form the foundation for any economic development. Yet, despite the importance attached to the rural areas, they are not attractive to live in. there is absence of infrastructure such as portable water, electricity and

good feeder roads, which improves the quality of life. The rural people have low purchasing power and standard of living. Attempts at solving the rural problems had been the concern of the governments as well as corporate body over the years. The contention of the policy makers is that rural infrastructure, if adequately provided, can enhance the quality of rural life. However, it is assumed that the rural people have benefitted very little from most rural development programmes. Despite all the intervention programmes there are still developmental challenges pervading the rural fabrics all over Nigeria. This call for investigation into why such failure continues to best all the interventions. It is against this backdrop that this paper seeks to assess the challenges of facility planning in Ojedeji Rural Area of Akinyele Local government Area, with the main view of getting first-hand information about their problems and how best to help ameliorate the challenges. The paper is divided into six sections. The first section deals with problems of the rural area with particular reference to Oyedeji being the case study. This is followed by Nigerian rural infrastructural intervention policies over the years. Section three captures the theoretical interventions aimed at solving infrastructural problems. Section four discusses the methodology while section five deals with findings of the study and finally the conclusion and recommendation of the paper.

2. Statement of Problem

In most countries of the world, different geographical areas are not endowed the same way, in terms of human, natural and material resources. Hence some areas tend to grow and develop at a higher rate, at the expense of others which can be witness in most urban areas in the federations, where they are more developed than their rural counterpart. Observably, the rate of endowment or concentration of resources determines the migration pattern of people to such an area thereby leaving lagging areas of settlement shrinking. The emerging patterns of development as identified by Adeniyi (1983) show that there are disparities in development between urban and rural areas and among different geographical areas in the country. This necessitates a deliberate intervention in resource allocation or reallocation, opportunities distribution, and overall development pattern.

The problem of threshold population has been a common phenomenon in the rural communities. In most of the rural communities, literacy is still low with basic human needs and infrastructure such as portable water, electricity, healthcare and good housing is still lacking and where available are in dilapidated state.

In spite of the abundant resources in the rural areas in Nigeria, rural areas for many years have not received the deserved attention in terms of policy formulation and implementation. This is an indication that the rural areas which currently accommodate over 60 percent of the Nigerian population had long been neglected (Olujimi, 1988, 2003). Similarly, the long neglect of the rural areas in Nigeria has always been associated with high poverty rate and underdevelopment. It has also resulted in the classification of the zones as areas with high propensity for outmigration. Olujimi (1996) established that the long neglect of the rural areas has equally resulted in non-availability of rural infrastructure in the areas. The lack of rural infrastructure has been the bane of rural problem, which often time's governments on their own part have been hiding under the pretext that the scattered distribution pattern and the small

population in the villages have not made the provision of rural infrastructure in villages a viable project.

The lack of spatial focus in rural development planning has handicapped the rural infrastructural programmes. Usually, most villages in the country are scattered which raises the problem of threshold population for sustaining the infrastructure provision. For instance, in Ojedeji Village has no adequate population size to support the sitting of facilities like hospital, secondary schools, etc. As observed, villages where infrastructures like schools and hospitals have been provided before have witnessed the closure of these facilities due to lack of threshold population.

Ojedeji village by her nature lack the fund, power and political will to decide on the type and quantity of their infrastructural needs. In cases where they embark on community development usually result to abandonment of the project as witness in Ojedeji rural area where they embarked on construction of a health centre which has since been abandoned due to lack of fund.

Rural community of Ojedeji lacks other means of encouraging rural infrastructural provision. For example, the lack of good roads, portable water and electricity hinders the development of socio-economic activities which could improve their source of livelihood. There is also lacks access to infrastructure and services limited (largely because of distance, low density and limited capacity to pay). They have fewer opportunities for earning cash; more for self-provisioning. Greater reliance on favourable weather conditions.

The population is made up of elderly people who are not productive, whereas the young people have migrated to urban areas in search of white collar jobs. Also, livelihoods are dependent on access to rural capital which includes crop cultivation, livestock, forestry or fishing. All these raise the question of threshold which is required to handle the existing development challenges.

3. Literature review

3.1 Nigerian rural infrastructural policies over the years

Pre-Independence Period

Government's involvement in infrastructural provision began as far back as 1917 when the colonial government promulgated the Township ordinance. This ordinance classified settlements in the country into three classes: namely, the first, second, and third class townships. The first class townships harboured the whites and their workers. There was heavy concentration of infrastructure in these settlements (an example being Lagos). They differ from the second and the third class townships, which received little or no facilities. The situation continued until 1952 when the local government councils were established in Western Nigeria, the local governments were seen as avenues through which infrastructural facilities could be extended to the rural areas. But then, the fund allocations to the local governments were hardly enough to maintain facilities in the council headquarters. In fact, little or no fund was available to initiate new schemes for rural development. Yet ironically, in spite of the limited benefits of the colonial policies, the investment pattern established during the colonial period was further consolidated by subsequent governments after independence. This is evident in all the development plans initiated since 1960.

Post-Independence Plan Period (1960-Date)

We shall attempt to summarize the post-independence plan period under five major eras: The First National Development Plan Period (1962-68); The Second National Development Plan Period (1975-80); The Fourth National Development Plan Period (1980-85); and The Post Fourth Plan Period (1985-1990).

The First National Development Plan (1962-68): The First National Plan of Nigeria (1962-68) had a total budget allocation of N1, 353 million. The plan made no clear statement on rural infrastructural development. As agriculture was still an important exchange earner, the plan's objectives were to encourage the assemblage of agricultural produce for export purpose.

The Second National Development Plan (1970-74): The Second plan was launched shortly after the end of the civil war. The plan attempted to rehabilitate economic activities in the war-affected areas. The plan spelt out five principal national objectives meant to achieve a united, just, strong and self-reliant nation. Some N2, 050.738million was allocated as expenditure. But just as in the first plan, government did not make any clear statement on rural infrastructural development. However, it was stated in the plan that government was committed to spending N500, 000 for village regrouping. This was perhaps to reduce the cost of providing economic and social infrastructure such as health, electricity, water and educational facilities for the rural areas. The sum allocated to rural development looks too paltry, and generally like the previous ones. The plan failed to introduce any radical package towards rural infrastructural development.

The Third National Development Plan (1975-80): Serious concern for rural development at the national level was first highlight in the third national development plan. The objectives of the plan are similar to those of the second national development plan. The plan emphasized the need to reduce regional disparities in order to foster national unity through the adoption of integrated rural development. The total budget allocation in the third national development plan was N32 billion. The plan provided for: - the allocation of N90 million towards nationwide rural electrification scheme: - the establishment of nine River Basin Development Authorities (RBDAs) in addition to the two existing ones (Sokoto and Rima (RBDAs); - the construction of small dams and boreholes for rural water supply and the clearing of feeder roads for the evacuation of agricultural produce and – the supply of electricity to rural areas from large irrigation dams.

The Fourth National Development Plan (1981-85): The Fourth National Development Plan exhibits several distinguishing features. First, it was formulated by a civilian government under a new constitution based on the presidential system of government. Second, it was the first plan in which the local government tier was allowed to participate fully in its own right (Fourth National Development Plan, 1981).

The plan emphasized among other things the need for balanced development of the different sectors of the economy and of the various geographic areas of the country. It emphasized the importance of rural infrastructural development as a vehicle for enhancing the quality of rural life. Consequently, about N924 million was allocated to the eleven River Basin Development Authorities whose functions include among other things, the construction of boreholes, dams,

feeder roads and jetties. About 12,064 kilometres of feeder roads, 2,650 boreholes, 2,280 wells, 20 farm service centres and 249 earth dams, were expected to be constructed by the River Basin Development Authorities. The Federal Government allocation N645 million for a country-wide electrification, in addition, all the states of the federation allocated N700.4 million for the electrification of about 1,600 towns and villages.

The Post Fourth Plan Period (1985 to Date): The post fourth plan period witnessed the establishment of the Directorate for Food, Roads and purpose of providing rural infrastructure in the country side. The laws establishing the Directorate was promulgated under Decree number four of 1987. The core of the Directorate's programme is the promotion of productive activities. Besides, the directorate recognized the provision of rural infrastructure such as feeder roads, water, electricity and housing as essential for the enhancement of the quality of life in the rural areas.

The programme of the directorates includes:

- The organization and mobilization of the local people to enhance or facilitate closer interaction between the government and the people. In addition, the local communities were asked to form unions or associations for the purpose of providing common facilities for themselves;
- The provision of rural infrastructures such as rural feeder roads, rural water and sanitation, rural housing and electrification;
- The promotion of productive activities such as food and agriculture, rural industrialization and technology;
- The promotion of other extracurricular activities such as socio-cultural and recreational programmes, intra and inter community cohesion activities. The plan for the implementation of DFRRI programmes was organized into two phases.

Other development strategies include according to Saleh 2015 is hierarchical market or service centre strategy which is based on the assumption that for any rural planning to be purposeful, some kind of historical system is necessary to ensure efficient supply of social services to distressed rural population. The creation of hierarchical market centres and the development of rural services in any micro-region is also based on the assumption that every rural producer needs to be within a convenient travel time of some adequately competitive selling places for his produce, some equally competitive sources of consumers and producers, goods and some adequately diversified service centres.

Furthermore, growth centre strategy advocates that making a regional plan should include an assessment of the availability within the region of suitable growth centres and the formulation of a list of activities and services to be concentrated in them. The rationale is that bigger towns are more attractive than smaller towns, and that it is necessary to deliberately channel new development to a number of selected towns (Saleh, 2015).

Strategy of Community Development and Co-operative Schemes were also as one of the strategy used in regional development according to Saleh (2015), the contention of this strategy is that the full fruit of social progress is only meaningful if reaped by a society in which the generality of men and women are not only perceived recipients but practical contributors. Today,

people are encouraged by governments to organize themselves into group and engage in self-help under taking as a way of making practical contribution to the welfare of the society in which they live. In rural areas, these self-help undertakings go by the name community development, or rural co-operatives.

4. Theoretical intervention in solving infrastructural problems

In tackling the rural areas problems both policy makers as well as the academia have contributed in making sure that the development of the rural area is attained. There several theories that have been used in providing solution to the rural development challenges. However, more often than none, those theories are either not sufficient to handle the problems given the multifaceted and multidimensional nature of rural problem. Similarly, since rural policy and programme has been failing as identified in the literature review, it therefore will require that theories be considered to understand what the problem is and be able to carefully handle it paper may not be able to explore all the rural development theories. So, central place theory and the concept of village re-grouping is therefore considered. Also, this paper also deals with

4.1 Central place theory

Central Place Theory (CPT) is an attempt to explain the spatial arrangement, size, and number of settlements. The theory was originally published in 1933 by a German geographer Walter Christaller who studied the settlement patterns in southern Germany. In the flat landscape of southern Germany Christaller noticed that towns of a certain size were roughly equidistant. By examining and defining the functions of the settlement structure and the size of the hinterland he found it possible to model the pattern of settlement locations using geometric shapes.

Assumptions:

Christaller made a number of assumptions such as:

All areas have

- an isotropic (all flat) surface
- an evenly distributed population
- evenly distributed resources
- similar purchasing power of all consumers and consumers will patronize nearest market
- transportation costs equal in all directions and proportional to distance
- no excess profits (Perfect competition)

Explanation of Some Terms: Central Place, Low Order, High Order, Sphere of Influence

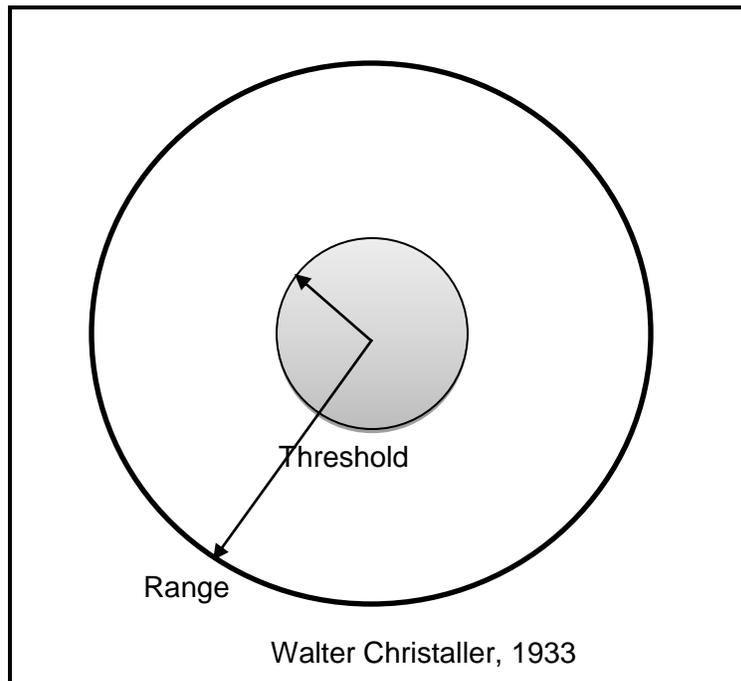
A Central Place is a settlement which provides one or more services for the population living around it. Simple basic services (e.g. grocery stores) are said to be of low order while specialized services (e.g. universities) are said to be of high order. Having a high order service implies there are low order services around it, but not vice versa. Settlements which provide low order services are said to be low order settlements. Settlements that provide high order services are said to be high order settlements. The sphere of influence is the area under influence of the Central Place.

Details of the Theory

The theory consists of two basic concepts:

- threshold: the minimum population that is required to bring about the provision of certain good or services
- range of good or services: the average maximum distance people will travel to purchase goods and services

Figure 1: Details of the Theory



From these two concepts the lower and upper limits of goods or services can be found. With the upper and the lower limits, it is possible to see how the central places are arranged in an imaginary area.

4.2 The Concept of Village Regrouping

The main aim of regrouping villages is to create larger settlements where small industries, markets and community services can be provided at less cost per head. Since the more concentrated the population of an area is the better the chances of accommodating industries. This strategy therefore, through the creation of relatively large settlement, provides the necessary threshold population which makes viable the location of certain socio-economic facilities, markets and services. It is a fact, which cannot be denied that it is more costly to provide social amenities to dispersed rural population than concentrated villages. Administration of taxes, law and order, supervision of welfare services and other publicly induced development programmes are cheaper to provide where people live closer together than with scattered population (Onakomaiya, 1981 and Mabogunje 1974).

Village regrouping strategy seek to use selected central villages as district centres serving a group of villages and attracting their enhanced job opportunities, migrants who might otherwise move to large cities. The exponents of this strategy also believe that grouping of scattered

villages into large rural centres will lead to a better and easier management of rural development programmes.

Village regrouping is an exercise that very much relates to population resettlements schemes. It involves movement of people from the original domicile to another place, usually an existing village, or a vacant site. The need for regrouping and its subsequent movement of people may be as a result of several and varied forces.

People move from their original domicile to another site in order to adjust to natural disasters such as floods, earthquakes and epidemics. People are also sometimes moved and re-grouped as a result of major man-initiated technical enterprises such as dam construction, or gigantic land development projects and urban settlement development. Movement also results due to political problem of mass deportation of a group of people from one territory to another. Movement also takes place as a result of a pull by new accessibility routes and inaccessibility town or village moves to a new road side location to take advantage of accessibility offered by the road. There could also be movement of regrouping out of sheer desire to create a necessary threshold for socio economic amenities. Fundamental to all these types of movements and their associated regrouping is that they are undertaken either compulsorily or voluntarily. Incidentally, however, voluntary movement is a movement as result of a foreseen objective which is the underlying principle of planning, which is lacking in most respects (Onakomaya, 1981)

5. Methodology

A cross sectional research design was adopted. Central place theory and village regrouping as a bi-conceptual model was adopted. Both primary and secondary data were collected for the study. In testing the reality of the model, case study of a Odedeji village, Akinyele Local government, Oyo state in Nigeria with various development challenges was purposively chosen. Focus group discussions were conducted among some stakeholders such as elders (community leaders), market women, the youth and farmers. The results were content analysed.

6. Discussion of Findings

The FGD revealed the community's time of existence which can be traced as far back as 1800s from the Ogunmola battle in Ijaiye which caused the people to migrate to Ajeja, Akwuro then to Ojedeji which they finally moved to their present location. It has a population of between 500-800 people and the building ranges between 60-80 houses. The established long history of the existence of the village coupled with its proximity to Ibadan metropolis should have brought a significant increase in the size of the population that could guarantee the allocation of facility for rural development, but unfortunately the population is far from reaching the desired threshold. This further revealed that the study area have the characteristics of a rural community.

The study further revealed that Ojedeji rural area of Akinyele local government lacks community participation. According to FGD, the approach to rural development employed by government was rather top-down, as there is absence of total community participation. This is the reason people evoke unwilling responses as they are regarded as being 'incapable of standing on their feet'. The study also revealed that there is lack of grassroots planning in the study area, as little or no attempt is given to the rural communities to identify the problems and goals, analyse their own needs, and commit themselves to the achievement of targets. According to the FGD, local

experts, Chiefs and community leaders were taken for granted in deciding what projects to embark upon, and where and how to execute them. Instead, they embarked on community effort in providing their needs. They further listed the project embarked by the community to include:

- Construction of health centre which has been abandoned due to lack of funds
- Market which is just a row of shop from our field observation built as Fadama III agricultural project
- The community has been solely relying on the natural spring as source of water but shortly before study were given a borehole and a police station by a philanthropist (Pastor Kasali, an indigene of the area).

Through the FGD it could be observed that although, the Baale informed us about a philanthropist, also wish to further provide electricity in the area. The youth arm encouraged more community based organizations and NGOs to come to the aid of the community in terms of infrastructural provision. The study further revealed that government has not used local resources available in the study area optimally. Local talents and manpower as well as other resources are also ignored, thereby losing the opportunity of evolving appropriate technology. The study revealed that the people were predominantly into farming and petty trading. Youth activities, which among other things included playing of football. All these resources can be harnessed and used optimally to the development of the community. They claimed that their long year of neglect have contributed to lack of harnessing the resources.

The study identified the lack of cohesive identity among the community. It was observed that any innovation that does not guarantee the cohesiveness of the group and respect for their history and beliefs have little hope of survival.

7. Conclusion and Recommendation

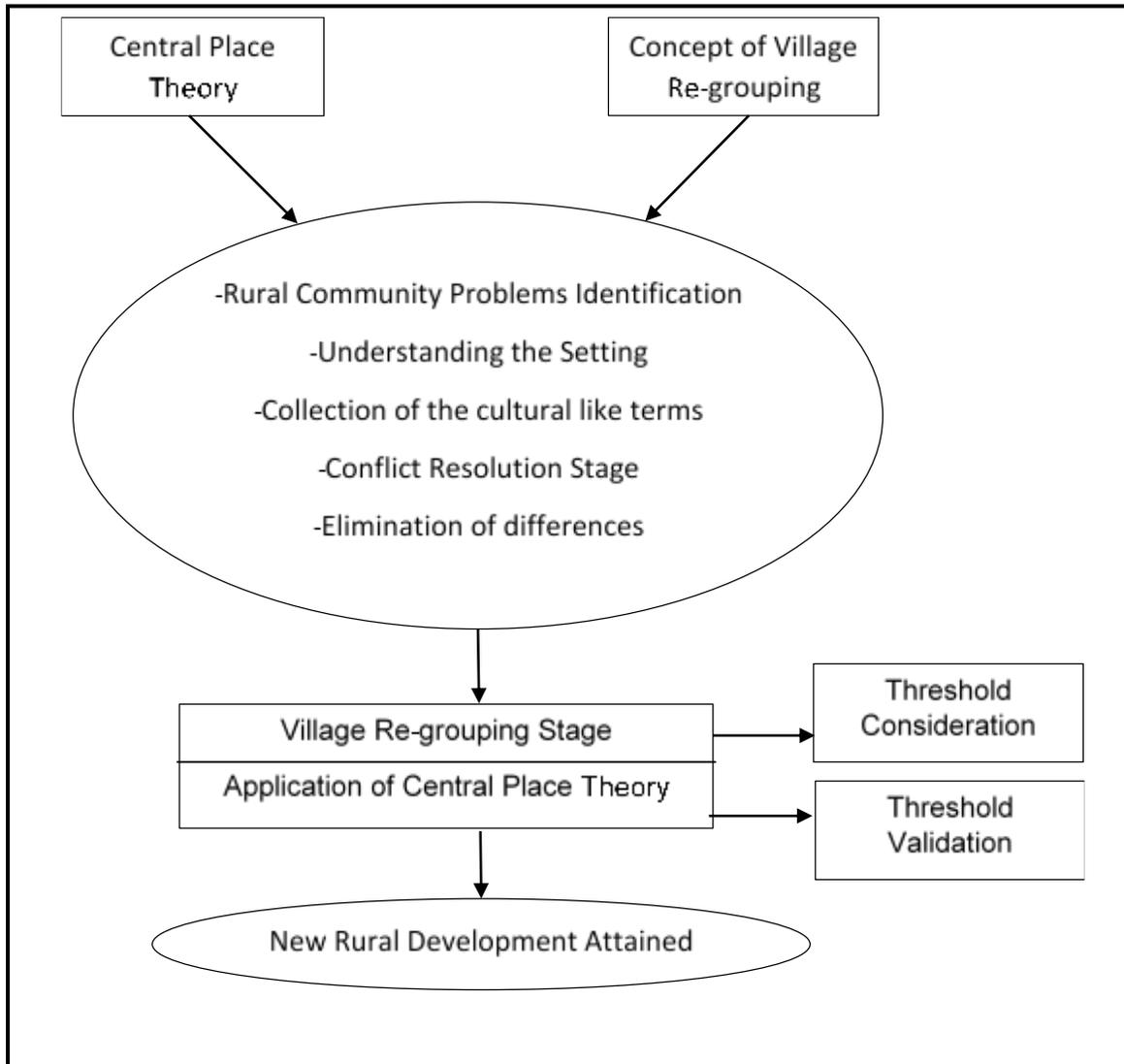
It could be registered that the major problem faced by this people is lack of threshold that could justify the allocation of infrastructural facilities in the area. This owed to the kind of theory applied in allocating the resources to the people thereby neglecting the rural poor from benefitting from the resources. Therefore, the study concluded that a single model for solving this plethora of developmental challenges may not be ideal. Therefore, bi-conceptual planning model is suggested to bring the population to reasonable level of threshold that will guarantee the location of those facilities and amenities which absence have acted as push factor from the rural area thereby bringing a balance region.

Application of Bi-conceptual Model in Tackling the Rural Threshold Challenges in Nigeria

In the application of the theory one of the things that have to be first handled is the case of identification of the existing problem. At this stage of development the planner identifies the challenges that are inherent in the community of interest (Mainly Infrastructural and facilities challenges). This also includes the sampling of the villages that have similar challenges.

Understanding the Setting. In understanding the setting, the planners has to get involves knowing the cultural configuration of the communities that are involved. At this stage, the planner needs to get familiar with both the endogenous and exogenous variables of the communities of interest.

Figure 2: Bi-Conceptual Planning Model



Source: Jimoh, 2016

Collection of the Cultural Like-terms. At this stage of human development, the cultural differences have to be identified. This centres on the collection of cultural like-terms so as to be able to know the area of differences and the similarity.

Conflict Resolution Stage. At this stage, conflict resolution strategy is embarked upon. Thus, all the area of conflict identified by the planner would have to be resolved through effective resolution system. This also can be enhanced through the elimination of the cultural differences.

Village Re-grouping Stage. At the lower box is the village regrouping stage. This comes up immediately after the conflict resolution and elimination of the differences. Then the population is then considered through the regrouping of the village for ideal threshold.

Central Place Theory. At this stage, the population threshold is validated this include the agreement of the communities involved in the on the identification of the type, location and

standard of facility and service provision required that links implementation strategies to other planning mechanisms and resourcing arrangements. Since, the community facilities and services generally operate within a hierarchy of provision, with different scales of infrastructure servicing varying sized catchments. For example, primary schools, child care centres and community halls generally service local catchments; secondary schools and community health centres generally service district catchments; and hospitals, universities and correctional centres service sub-regional or regional catchments.

New Rural Development Attained. In this case the rural infrastructure is provided to enhance the economic activities as well as livelihood in the area. People can then stay behind in the village and be productively engaged. Thus, rural threshold problem is been tackled which eventually eliminate a backwash effect always created by regional imbalance.

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A Reflection on the Changing Faces of Urban Land Use Planning in Ghana

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This paper relates to Envisaging Planning Theory and Practice for the next decades and I also request for peer review.

Abstract

Brief description of the problem

Ghana like most developing countries inherited her urban planning system from her colonial master – Great Britain. Over time, this urban planning approach has been criticized as being rigid, non-participatory and unresponsive to the challenges of current urban development particularly land ownership and administration. The result has been inadequate coordination between urban planning authorities and indigenous land owners, leading to poor implementation of spatial plans and the development of unplanned informal/illegal settlements.

Under the old master planning system, spatial plans have been prepared by the responsible department (Town and Country Planning Department) but these remain as blue prints whilst the land owner leases the lands to prospective developers contrary to the dictates of the plans. Over the years, the department have been operating under the old law, Town and Country Planning Ordinance, 1945 (Cap 84) which has actually been reviewed partially in 1964 and has remained as such. The preparation of these plans also takes a long time and cannot adequately meet the current urbanisation rate the country is experiencing with this millennium. The failure to effectively involve the public in the urban land use planning process has led to grave consequences in Ghana. However, there have been a number of reforms in Ghana to ensure sustainable urban land use planning including the development of the three-tier planning system and the review of the town and country planning law, Cap 84 of 1945, under the currently running twenty-five years Land Administration Project (LAP) in Ghana.

This essay is to explore the key issues in urban planning in Ghanaian cities including the attempts made at ensuring sustainable and integrated urban planning system. The study will further analyse the new spatial planning bill and how it addresses participation and inclusiveness of the general public in the urban land use planning process. The historical perspective will be documented with the view of looking for the ideologies and the theories at work.

The lead question will be what are the provisions and regulation for participation and inclusiveness in the urban use planning process under the new land use planning bill in Ghana?

What stakeholders have been identified and how do they participate?

How is this to be ensured under the three tier land use planning system?

How will this address informal/unauthorised developments in urban areas?

1.0 Introduction

2.0 Historical Perspective of Urban land use planning in Ghana

2.1 Colonial beginnings of Town and country planning

The practice of town and country planning in Ghana started with the establishment of the Public Health Boards during the colonial period. Between 1920 and 1927 and during the time of Governor Gordon Guggisberg, some plans were prepared and implemented in Accra and Kumasi (Leith, 1974). During this period, Governor Guggisberg launched a 10-year development plan for the development of the Gold Coast which was geared towards infrastructure development including roads, schools, hospitals, housing and institutional development. Guggisberg considered spatial planning as an integral to economic development. The Guggisberg plan was considered as the “first of its kind in the world” (Adarkwa, 2012, p.3). In 1944, the colonial Resident Minister for West Africa, Lord Swinton, appointed a consultant, Mr. Maxwell Fry, and charged him with the duty of setting up a town and country planning organization for the purpose of preparing draft planning schemes and reports for the major towns of West Africa. Five of such schemes were prepared for Ghana to guide the growth of Accra, Kumasi, Sekondi-Takoradi, Cape Coast and the Tarkwa ‘region’.

From a spatial planning perspective, Guggisberg 10 year development plan is important on two levels. Firstly, in the colonial territories an attempt was made to plan and regulate human activities in space to ensure orderliness, safety and health of settlements. The mining areas ordinance of 1925 was enacted to provide guidelines for the mining areas as these areas served the colonialists’ interest in terms of investments. Again, the population growth attracted attention hence the need to regulate land uses. However it was hardly enforced (Wood, 1970). Secondly, the enactment of the Town and Country Planning Ordinance, 1945 (CAP 84) resulted in the formulation of the colony’s first comprehensive spatial planning framework and contained important features of the Guggisberg Plan.

2.1.1 The Town and Country Planning Ordinance and the Board

In 1945, statutory recognition was given to Town and Country Planning as a major function of government by the enactment of the Town and Country Planning Ordinance (Ordinance No. 13 of 1945). The Ordinance created a Town and Country Planning Board and charged it with the duty of ‘securing the orderly and progressive development of land’. This was replaced by the Town and Country Planning Ordinance 1945 (CAP84). The system of town and country planning introduced by the Ordinance prevailed after independence, except that the Town and Country Planning (Amendment) Act 1959 introduced a Minister responsible for Town and Country Planning to supercede the Board and to take over all the responsibilities and authority vested in

that body. With the Minister, the present Town and Country Planning Department emerged as offices and administering resource of the Minister.

2.1.2 Post-Independence Attempt to Revamp Town and Country Planning

The rapid development after independence that resulted in the setting up of industrial projects in the various parts of the country without proper coordination and feasibility studies gave rise to planning problems. Upon the advice of the Town and Country Planning Department, the Government invited a United Nations Regional Planning Mission to help develop a methodology for integration of economic and physical planning in the country. The proposal made in this respect by the Mission was for the establishment of a three tier planning administration at the national, regional and the local levels.

A follow up Mission was charged with the responsibility to implement the recommendations of the earlier Mission and to frame a legislation that would support the new administration appropriate to the social, economic and political objectives of Ghana. The outcome of this effort was a Draft Physical Planning Bill that stressed the integration of economic and physical planning but which was never passed as a result of the coup in 1966. As if to compensate for this downturn of events, efforts were made in this direction by transferring the Town and Country Planning Department to the Ministry of Economic Affairs, thereby bringing the two main organizations concerned with development planning under one authority and renamed, Physical Planning Department.

2.2 Ministerial Location of the Department

In 1969, as a result of the re-organization of Ministerial Portfolios, the Town and Country Planning Division was re-transferred to the Ministry of Works and the Regional Planning Division of the Department transferred to the Ministries of Finance and Rural Development. And indeed since independence the ministerial location of the Department has shifted several times. The department is said to have been shifted about 16 times since its establishment. The last of such shifts occurred in 2008 when the Town and Country Planning was once again transferred from Ministry of Local Government, Rural Development and Environment to the Ministry of Environment and Science, Technology and Innovation.

2.2.1 Decentralization of the Department

By 1993 the Department has been decentralized from when it used to be a central government line agency under provisions of the Civil Service Law (PNDC Law 327) and the Local Government Act (Act 462). Under this arrangement, the former Regional and District branches of the Department became establishments of the Regional Coordinating Councils and the District Assemblies respectively while the Head Office was to be integrated into the then Ministry of Environment, Science and Technology. The integration effort at the three levels of the Department's operations was not fully realized until in 2006, under the auspices of the Local Government Service Council and in conjunction with the Ministry of Public Sector Reform and the Office of the Head of Civil Service it was directed that the time has come for particularly

decentralized agencies under the Ministry of Local Government, Rural Development and Environment, including their Head Offices, to integrate fully.

2.3 Mandate

Presently the Department derives its authority and for that matter its mandate from the Minister responsible for Town and Country Planning also from the various decentralized local bodies i.e. Metropolitan, Municipal and District Assemblies as well as the Regional Coordinating Councils. This mandate of the department is also underpinned by the following five main legal instruments, namely:

- Local Government Act, 1993 (Act 462)
- National Development Planning Commission Act, 1994 (Act 479).
- National Development Planning (Systems) Act, 1994 (Act 480).
- National Building Regulation, 1996 (LI 1630)
- Town and Country Planning Ordinance, 1945 (Cap 84)

3.0 Reforms in Town and Country Planning

Basically, the Department has since its inception remained responsive to its duty of 'securing the orderly and progressive development of land'. However, by the late 1950's, the global challenge of planning showing little concern for social issues, the environment and the quality of life, informed planners in Ghana and elsewhere to broaden planning to deal with these concerns. In Ghana broadening the scope meant integrating mainly land use planning and development control activities with economic, social and physical development for the good and wellbeing of the society. It cannot be gainsaid that whereas the approach has served the needs of the country well, the new concept of development which has human settlements as one of its central elements again calls for planning to prime itself to deal with issues emerging from that. It is against this background that a restructuring of the department was conceived.

3.1 Land use planning and management project (LUPMP)

The land administration project (LAP) is a fifteen to twenty five years project initiated by the government of Ghana with support from the World Bank (WB) to carry out reforms in land administration and management in the land sector agencies. Currently the project is in its second phase (2011 – 2017) to implement the key Policy actions recommended in the National Land Policy of 1999 to address critical issues militating against effective and efficient Land Administration in Ghana.

Ghana as a developing country relies primarily on Agriculture, Forestry and Mining for its economic sustenance. Heavily dependent on land, these three key sources form about 70% of the country's GDP. The first phase of the reforms under LAP-1 implemented from 2003 to 2010, laid the foundation by reviewing the statutes on Land, carrying out institutional reforms and undertaking pilots on a number of initiatives such as Customary Boundary Demarcation, establishment of Customary Lands Secretariats, Digitizing Land Records Establishment of Land Courts, Systematic Title Registration, Land Use Planning and Management, among others. The Second Phase (LAP-2), aims to consolidate the gains made under Phase 1 by deepening the

reforms, enabling the land Sector Agencies to be more responsive to clients, cutting down the cost and time of doing business and providing an enabling environment to reflect the objective of an efficient and transparent service delivery.

Under the reforms the Town and Country Planning Department is the key agency implementing the Land Use planning and Management Project (LUPMP) which is a sub component of the main LAP.

The implementation of the Land Use Planning and Management Project started in 2007 and is aimed at enhancing the institutional, legal, technological and human resource capacity of the Town and Country Planning Department (TCPD).

3.1.1 Objectives

The objective of the project is to re-establish an effective and efficient land use planning system in Ghana through:

- The development of a new law that identifies the roles and responsibilities of TCPD and other agencies in spatial planning and management practices;
- Formulation of planning standards and development guidelines to standardize planning in Ghana;
- The development of new spatial planning models based on a three tier planning system;
- The implementation of Geographical Information System (GIS) including integration of new and existing data (maps and other data) to support integrated planning at all levels;
- The development of an information/public awareness campaign strategies and materials to support the implementation of the reformed planning system; and
- Identifying and responding to the training needs of TCPD professional and technical staff, District assemblies and traditional rulers.

3.1.2 Project Approach

LUPM Project approach is through the development of the system and field testing the new planning system in pilot areas. The results of the pilot work will lead to refinements of the planning system and technologies as well as enhancing the skills of those responsible for town and country planning at all levels of Government.

3.1.3 Project Progress and Achievements

- Human settlements policy study used in National Policy Guidelines for MTDP
- Framework for a Land Use Planning Law drafted and subjected to national consideration prior to drafting of the proposed law.
- Establishment of the Land Use Planning and Management Information System (LUPMIS) to support integrated planning at all levels;

- Development Guidelines for the new planning model, new Permitting Procedures and Planning Standards developed. These will standardize planning in Ghana;
- Training and Capacity Building of staff in Project Management, Participatory Planning, Communication Skills, and ICT/GIS. Provision of equipment for TCPD offices. These include Ejisu, Takoradi, Asankragwa, Cape Coast, Awutu-Senya, Tamale, Savelugu, Dodowa, Agona Nkwanta.
- Institutional Reforms

An Institutional review has been carried out by the project and recommendations have been made, including making TCPD an Authority to give it more powers.

- Gaining District Assembly support for TCPD

The Project has facilitated the recognition of TCPD within the Assemblies. Some Assemblies have provided office space, rehabilitated them and funds some TCPD activities.

Development of a three tier land use planning system. The system has a Spatial Development Framework (SDF) at the top followed by a Structure Plan, and a Local Plan in that order.

- Communication/Public Awareness

- Communication Skills training held for regional, metropolitan, municipal and district directors of TCPD.

- Calendar highlighting activities of the project produced.

- Newsletters, brochures produced and distributed to create awareness on the project.

- Briefing of Journalists and writing of articles on land use planning and management in major newspapers.

- Presentations to Ministries, Departments and District Assemblies and at for a.

Further Support to Land Use Planning and Management Project

Currently, the phase two of the land administration project is on-going and the land use planning and management project is being supported in the following;

- a) Completion and passage of the Land Use and Spatial Planning Bill
- b) Drafting and passage of the relevant legislative Instrument (LI) in support of the law
- c) Preparation of National and Regional Development Frameworks
- d) Further Development of the Land Use Planning and Management Information System (LUPMIS)
- e) Development Permitting Reforms
- f) Support the formation and operationalization of the Land Use and Spatial Planning Authority (LUSPA)

Business Process Re-engineering

Automation and proper records management by upgrading and operationalizing the land Use Planning and Management Information System (LUPMIS) developed in LAP to reflect the current trends and urban growth challenges that our cities are going through. Due to the high volume of

building permits application there is the need to streamline the business procedures and reducing turn-around time for development permitting and also training stakeholder on the permitting reforms.

New planning system three tier planning system

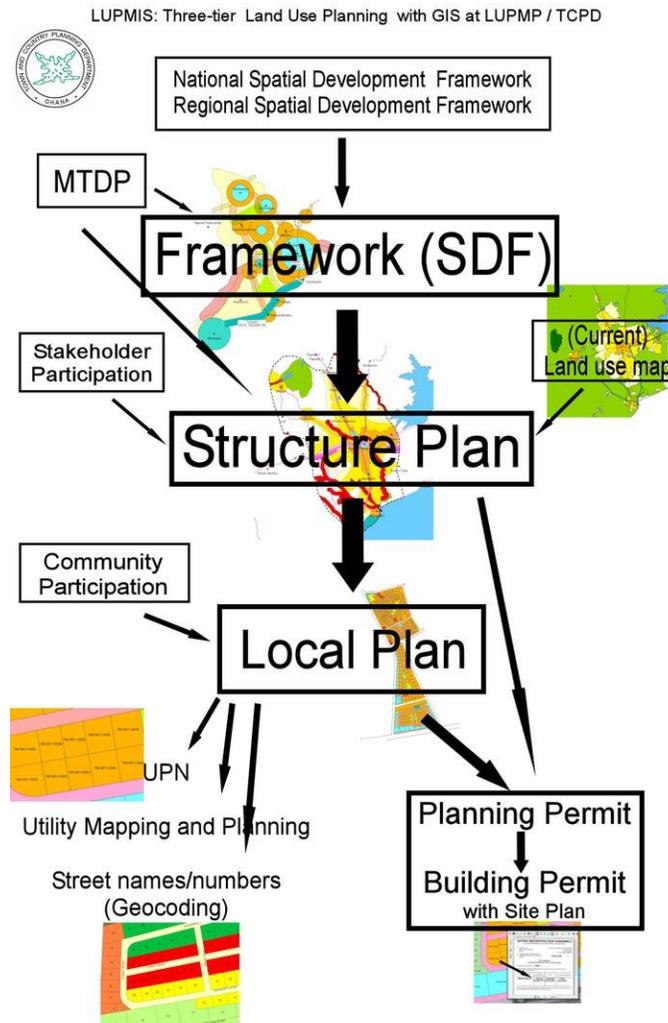


Figure 1-1: the three tier spatial planning system in Ghana

Adopted from LUPMIS 2016

The Land Use and Spatial Planning Bill

After years of working with Cap 84, a new bill for land use planning and management has been drafted and is now before Parliament. The essence of this bill is to repeal the old law Cap 84, look at the provisions under Act 426 which established the MMDA as planning authorities with planning powers and NDPC Acts 479 and 480.

The main objective of the land use and spatial planning bill is:

“to harmonize and regulate the laws on land use and planning, provide for sustainable development of land and human settlements through a decentralized planning system, ensure judicious use of land in order to improve quality of life, promote health, safety and regulate national, regional, district and local spatial planning, and generally deal with spatial aspects of socio economic development as well as provide for related matters”.

Planning standards and zoning guidelines

The Planning Standards and Zoning Regulations are statutorily enforceable guidelines used in the preparation of both Structure and Local Plans. They are complementary documents to the Planning Guidelines for Structure Plans and Local Plans, which form a separate series of documents on the new Planning Model. All are a complementary part of the proposed Land Use and Planning Bill before parliament. Applications for development permits will be required to show that they conform to the zoning ordinances that forms an integral part of the plan as well as complying with the Planning Standards and Zoning Regulations. The Planning Standards and Zoning Regulations must be used by the Local Planning Authority in approving any development within their area of jurisdiction. This replaces the Planning Standards and Development Guidelines which have been in use for many years under Chapter 84 of the 1945 legislation and other Technical Memoranda that were introduced over the years.

These regulations provide clear definitions for land use activities within each land use zone; the uses that are permitted and prohibited in these zones. They also spell out the considerations that must be taken into account if the land use zone is to be changed, either for an individual plot or parcel of land within a Local Plan, which does not alter the land use zoning classification in the Structure Plan, and where a change would affect the classification.

Objectives of the Planning Standards and Zoning Regulations

The objectives of the the planning standards and zoning regulations is to provide clarification on the permissible uses of land and the space requirements that must be taken into account by anyone or any organisation preparing plans and seeking planning permission and a development permit. It will also provide a legal basis for reviewing development proposals which will be binding on all persons, organizations or institutions proposing the development of land as defined in the law.

Definition of Zoning

Zoning is a tool used by planners and planning authorities to prescribe the acceptable use and form of development of and on an area of land. Zoning defines the use category of the land, prescribing allowable and non-allowable activities and developments on a parcel of land within a zone. The zoning plan is an essential and integral part of the Structure Plan. Within a Local Plan, each individual parcel of land is prescribed a permissible use. Zoning plans, however, allow a range of uses which are refined to a specific use for the parcel in the Local Plan.

In addition, the planning authority may also prescribe as part of the Structure or Local Plan, ordinances that cover the form of the development and other considerations that must be observed by those developing or using the land. These may include:

- a) The land coverage of the construction on a plot in the zone, if not covered by the Planning Standard relevant to that particular Land Use.
- b) The form of the construction on the land
- c) The height of the buildings if not prescribed in the Planning Standards for the particular Land Use
- d) The materials used in the facing or construction of buildings on the land
- e) The colour of buildings or the doors windows and or roofs of the building constructed
- f) Requirements to preserve existing trees
- g) Requirements for the preservation of existing structures
- h) Requirements for landscaping or tree planting
- i) Sanitation requirements for the all developments within a designated area.
- j) Environmental protection requirements

Zones are defined as an area whose boundaries can be accurately georeferenced within 20 m. The zones are defined in the Structure Plan and determine the types of development that will be detailed at plot level in a Local Plan.

Development Zones

Division of a Planning Scheme Area into Zones

To ensure that land use activities are sited in areas which best suit their functions and also mitigate the adverse impacts associated with noise, traffic, safety of operation and amenity, all land within a town planning scheme area shall be zoned. The plans for an area are subject of approval by the local Planning Authority, namely the Assembly for the area of jurisdiction into which the area being planned, falls. Once the Plan has been approved by the Assembly, it becomes a legally binding document.

A standardized system of colour coding is used for all the legally binding types of plan. The Structure Plan uses a simplified range of colour codes as the zoning relates to areas of land that contain multiple parcels of land, while the Local Plan specifies the intended use of all parcels within the plan area. The zoning at the Structure Plan level is less prescriptive than at the Local Plan level.

Plan preparation manuals

The failure of land use planning and the rational use of land has many causes. However, a major cause has been the lack of a clear system of planning, and instead, the main task of professional planners employed by the district assemblies has been to approve individual development applications, most frequently without any broader plan for the rational use of land in the area. The new planning model aims to provide a logical link between national social and economic policy

and through the new planning system to the approval of individual development permits. The model, therefore, identifies the parties responsible for the preparation of the plans, requirements for the involvement of stakeholders, the statutory approval process, the implementation and revision or updating of plans and the monitoring of the all stages of the process.

The Constitution recognises the District Assembly as the ultimate planning authority in the area, with the Region having responsibility for harmonising and coordinating the plans. This responsibility has been interpreted for the most part as being limited to social and economic development planning. While the system of spatial planning was seen as a function of the NDPC under Act 480, little was done to realise this responsibility. The result has been a disjoint between social and economic planning and the spatial realisation of that plan. The National Development Plan is reflected in the guidelines for the development of the District Medium Term Development Plans (MTDP), but there is no parallel spatial development plan to complement the proposed social and economic development. While the concept of a hierarchy of settlements has long been accepted, this is not clearly linked to the development objectives of the country and strategies to achieve this distribution have remained unclear. The need for a long term view of desired spatial development at National level to guide the process of harmonisation at Regional level and hence District level is clear.

The model proposes that Spatial Development Frameworks be prepared for the National, Regional and District level, which will provide the development parameters for the next level of planning, the Structure Plans. These in their turn provide guidance for the development of the local plans. In effect there is, therefore a hierarchy of conformity with each level of planning being in conformity with the one above it. At the same time it is recognised that plans so often fail in their realisation because the key stakeholders are not involved in the development of the plan. In many cases they are not aware of the plan nor of any planning proposals. The new planning model, therefore, proposes greater involvement of stakeholders, whether individual plot holders, large scale landlords, traditional rulers, real estate developers, or institutions and organisations with their own areas of development responsibility which have spatial implications. The new model of planning, therefore, puts great emphasis on stakeholder participation in the planning process.

Types of plans

The system of planning proposed provides a direct connection between national development strategies and the spatial realisation of these strategies and local plans, through a 'chain of conformity'. Spatial plans prepared for the Region or sub-region must be in compliance with the parameters established in the National Development Plan and its spatial realisation, the National Spatial Development Framework. Likewise the spatial plans at Metropolitan, Municipal and District level should be based on the spatial plans and strategies approved for the Region. Spatial plans for urban areas, otherwise known as Structure Plans, must be based on the District Spatial Development Frameworks and Local Plans must be in compliance with the broad land uses identified in Structure Plans. Individuals seeking a permit to build must first ensure that the proposed structure conforms to the specific land use for that plot as shown in the Local Plan. Through the system of Unique Parcel Numbering, plots identified in a Local Plan can be tied in with the land administration system used for titling and land valuation.

The first level of spatial plan, has a number of variations. Spatial Development Frameworks are applied at National, Regional and Sub-regional and at District level. Structure Plans apply to parts of the MMDAs which provide a particular development opportunity, such as a coastal belt to be developed for recreation and tourism, as well as urban and urbanising areas. Structure Plans may also be developed for 'sectors' or parts of a town. Structure Plans for a sector may be developed alongside a Local Plan for part of that sector. Local Plans are referring to detailed land use plans where the individual plots and their uses are clearly defined and may be used for subdivision plans, redevelopment schemes, upgrading projects and schemes for industrial estates, commercial development, recreational and tourism projects. A Local Plan has to be prepared every time a development requires an access road or has its own internal circulatory road system. A large building or construction project on a single or composite plots, which do not require the construction of a local road system connecting the parts, will be treated as single developments and require only a planning permit. The exception will be those cases where the proposed development is not in compliance with the zoning scheme, in which case a change of use, and in some extreme cases, a re-zoning of the area will be required. It is through the Local Plans that Structure Plans are implemented and provide the basis for the approval of the planning and building permit (the development permit).

Spatial Development Framework

Spatial Development Framework (SDF) is the spatial strategy for development which will help realise clearly stated development policies and objectives. It addresses the spatial implications of issues like economic development, employment, housing, infrastructure services (waste, water, energy, etc.), education, health care, tourism and leisure, transportation, communications, economic infrastructure, culture and nature and the environment.

The SDF is an indicative plan, showing the expected development over the planning period, which will include the location of key components of the strategy aimed at achieving the desired social and economic development. Once approved, it should be revised every four years, taking into account shifts in national objectives and the performance of the plan on the ground.

The SDF provides a strategic vision (desired future) for the **spatial** development of the region over the plan period, and a perspective/view on and approved proposals for **what** kinds of development should take place, **how much/how many** of it should occur, **where** this should happen, and, broadly, **how** this should happen in order to take advantage of opportunities presented by amongst other things, the competitive advantage of a location for particular forms of development.

The SDF at the District level must be coherent with the Medium Term Development Plan/s (MTDP) and other relevant national and regional-level policies, plans and programmes (PPPs). The economic and social development goals, objectives and strategies of the MTDPs, as complemented where necessary with these other PPPs on national and regional scales, are to be given spatial expression in the SDF. The same applies to both the Regional and National SDF, which must consistent with the National Development Plan, as produced by the Administration at the time, and any Regional Development Plan.

The District SDF includes the identification of areas that must be subject to Structure Plans. It provides the parameters for Structure Plans, but must be in compliance with the higher level plan. Areas outside of the areas for Structure Plans within the District SDF will be treated as Rural Areas, and include forest reserves, watershed protection areas, plantations, areas of different types of agriculture, wetlands, game reserves and areas of historic or cultural interest in which very limited development will be allowed.

Structure Plans

Structure Plans are a legal document prescribing both private and public use of land. A structure plan is a statutory long term framework used to guide the future development of a town or city, the development or redevelopment of a part of these areas or a part of the District with special development opportunities. It consists of a Zoning Plan (sometimes known as the Structure Plan) and a report on the justification for the plan and how it was prepared. The Structure Plan provides the framework within which all Local Plans for the city or town should be in compliance.

Local Plans

A Local Plan is a legal document which proposes the disposition of land by function and purpose, or to be preserved in its present state, to meet the present and future identified community needs within the time frame for which the plan is valid. Local plans should be prepared when needed and the uses of land must be in conformity with permitted uses of the land in the designated Zoning Plan, which forms part of the approved Structure Plan.

Categories of Local Plans

Local Plans include plans prepared for homogeneous areas which will be built or developed within a limited period of time and cover:

- a) Development schemes for greenfield sites (predominantly on the edge of fast urbanising areas) Redevelopment schemes where the previous structures or layout is considered sub-standard or no longer required
- b) Slum upgrading projects
- c) Urban consolidation schemes
- d) Industrial Parks
- e) Commercial and mixed use development schemes
- f) Educational complexes
- g) Mining Complexes or parts thereof
- h) Tourism schemes or part thereof.
- i) Government or administration complexes

Participatory governance for inclusive Stakeholder Consultation

Under the new proposed land use bill before parliament and the planning model guidelines for the preparation of three levels of plans, the stakeholder participation requirement has been stated to depart from the old ways under the cap 84. The requirement is for a participatory planning system to be used in the preparation of all levels of plans. The plan preparation process will require periods for key stakeholders to air their views and opinions. Participation as used here shall be a departure from what in the past has been mere consultation and information provision which often came as “fait accompli “. In this context it shall mean a process of active involvement that affords actors the opportunity to learn, and hence, own the process and break and transform past habits in order to achieve the desired objectives of the plan. Participation may involve information sharing, consultation and collaboration. Achieving this will require that simplified and interactive techniques such as Participatory Learning Actions be employed. Participation shall however not mean that the technical aspects of the plan preparation process that demands technical competence be sacrificed in the interest of involvement. Even as this good balance is sought, the following category of stakeholders shall mandatorily be involved in the planning process particularly in already developed areas. They include:

1. The District Assembly through all sub committees
2. Executive Committee of the District Assembly
3. Assembly men (if Assembly is in session)
4. Members of the Statutory Planning Committee
5. Heads of Technical Departments of the Assembly
6. Survey and Mapping Division of the Lands Commission
7. Land Title Registrar of the Lands Commission
8. Identifiable interest groups, including land owners and users in the plan area and, in the case of small subdivision plans, the residents within the broader community who might be affected by the proposed development
9. Chiefs/Elders/Traditional Rulers
10. Land Owners and Developers
11. Representatives of Utility Providers
12. District Budget Office

Stages and methods of Consultation

The Local Plan requires a minimum of four rounds of consultation. These are at the following stages|:

- a. Preliminary Planning Stage
- b. Draft Plan and Report Stage
- c. Phasing of Plan
- d. Final Plan and Report Stage

In all four stages, adequate notice must be given to the general public to make meaningful inputs or, if published in the newspaper or exhibited in the Assembly Offices and the Public data Room.

The stakeholders will be consulted and involved in the planning process through some or all of the following:

1. One-on -one contact using interview guides and questionnaires;
2. Public notices in newspapers;
3. Mass media (radio, television) and internet;
4. Newsletter,
5. Fliers, in particular, to encourage attendance at meetings;
6. Public Hearings and group discussions;
7. Community Meetings/Consultations;
8. Conferences, Seminars, Workshops; and
9. The public data room.

Reports on Stakeholder Consultation/Public Forum

Reports on the public consultation process will be published and summarised in the local media. Full copies of the outcome should be made available at the offices of the MMDA, in their public data rooms. The reports should identify how many responses were received and where from and the weight of opinion expressed, and will form an annex to the Local Plan.

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Investigating the lack of integration within district municipalities: effects of SPLUMA on integration.

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Abstract

The issue of a lack of integration between government levels has been prevalent since 1910 unionization. After 1994 when South Africa became a democracy three levels of government was instituted and the issues as well as the lack of integration increased. One of these issues is the fact that there is has been a constant state of fluxution between policies and legislation provision since the 1994 democratization of SA and has been described as complicated, confusing and incomplete. The White Paper on Spatial Planning and Land Use Management (RSA, 2001a) states that land-use and development decisions must promote a harmonious relationship between the built and the natural environment while ensuring that land development is sustainable over a longer term.

Many planners have started to recognize the need for integration between professions and municipal functions but due to the unaddressed implementation of the integration a highly negative impact on planning instruments, tools and all the levels of government and professions involved.

Through the recent Spatial Planning and Land Use Management act (SPLUMA) that has been passed planning practices will have an even greater effect on the different municipal functions. It is a hope that SPLUMA would address the issues of fluxution policies and legislation by supplying some form of overreaching guidelines help build much needed capacity within municipalities and to promote integrated planning. A question stands whether the past disjointedness and lack of integration will be rectified by SPLUMA.

Co-operation between interconnected planning-related and other professions is a required foundation for promoting a horizontal type integration and alignment.

One of the ways a municipality can test integration is though testing the level of integration between spatial planning and transportation. It has been noted that within literature there is a lack of the study of integration between spatial development and transportation.

For the purpose of this study the Municipalities that will be used for this study are the district municipalities of; Eden and Overstrand and the municipality of Hessequa. The relevant planning instruments generated and implemented by the above mentioned district municipalities will serve as the be the frame of reference to test the level of integration within each municipality as well as the current policies and legislation that serve as the guidelines for the promulgation of these instruments will be studied to give an foundational understanding of the current level of integration being implemented within and between municipal professions and functions.

Key Words: Integration, capacity building, spatial development, transportation, policies, legislation district municipalities, SPLUMA

1. Introduction

Throughout the struggle to deliver adequate infrastructure and give communities functional and liveable cities and regions there is an ongoing element of evaluation. Planners, policy makers, politicians, citizens and researchers throughout the whole world have a need to measure the positives and success to help understand the future impacts of policies and municipal instruments. The failure to consider and measure the implications of policies and municipal instruments – including the lack of integrated policies and instruments or the lack of effective enforcement and implementation of each – is a major driver behind many of the problems facing governments today.

Normally this evaluation involves tools and models for the interpretation of possible and actual findings concerning the value of proposals, policies and instruments. The importance of element of evaluation is paramount to understand and learn from past failures and to assist with beneficial decision making for the future of communities. The test for integration between policies and municipal instruments can be used as a tool for evaluation.

Over a large number of areas there has been an increasing amount of calls for more policy integration, environmental policy-making being on the forefront where integration is often perceived as being pivotal for supportable development. A wide assortment of sectoral policies end up having unforeseen and frequently undesirable environmental consequences (or externalities) that were not considered during the policy-making process thus decisions have been made on to avoid from such divided and fragmented decision-making through integrating different, yet interrelated policies.

Policy integration concerns the administration of cross-cutting issues in policy making that rise above the limits of proven policy fields, which regularly don't relate to the institutional obligations of individual departments (Meijers & Stead, 2004:1).

The aim of this article is to study the integration between spatial development planning and transportation planning with specific reference to the municipal context. This article will commence with a study of the literature concerning this type of integration as well as delivering into the possibility of developing a type of 'best practice' checklist to help test and evaluate integration between policies and municipal instruments with. The Firstly add to this study an evaluation of the recently approved Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013) and the SPLUMA Regulations (23 March, 2015) to test whether SPLUMA will improve the level of integration between spatial development planning and transportation within municipalities. Secondly the testing of the level of integration between transportation and spatial development and planning through the Integrated Development Plans (IDP's), Spatial development Frameworks (SDF's) and the Integrated Transport Plans (ITP's) of the three Municipalities chosen for this study are: Eden District Municipality, Overberg District Municipality and the Hessequa Municipality

2. Integration

There are striking contrasts between policy integration and policy coordination. The principle contrasts concern two perspectives: (1) the level of communication; and (2) the yield or output (See Figure 1). Policy integration requires more sectoral communication and interaction than policy coordination. This only in part clarified by the distinction in output. Whilst cooperation aspires to modifying sectoral policy to make them commonly enforcing

and consistent, policy integration in the end results in one joint approach or policy for the sectors included in the process. This distinction in output of yield depends on a distinction in objectives as well. Co-ordination concerns policies that are of associated organisations having approximately the same sectoral objectives, while integration policy-making withdraws from an objective not secured by, and on a higher scale than sectoral objectives. Such an objective could well be known as a cross-cutting objective, (for example, sustainable improvement).

Where integrated policy-making is more extensive than policy coordination, policy coordination alternatively is more comprehensive than co-operation. Also, the literature is not sure on the best way to translate the connection between co-ordination and co-operation. While a few authors consider co-operation and co-ordination to be unmistakable and separate, others see co-ordination as one sort of co-operation as can be concluded from Alter and Hage's book, (1993): Organizations working together (Meijers & Stead ,2004:4,5).

A shared characteristic among policies is their multi-sectoral nature which involves that their effect expands past the transportation category itself to different areas, for example, education, health and environment. This circumstance has put tremendous weight on decision-makers to encourage collaborated activity among the scope of participants included in the transportation-policy evaluation, financing, usage and observation (Hatzopoulou & Miller, 2008:149).

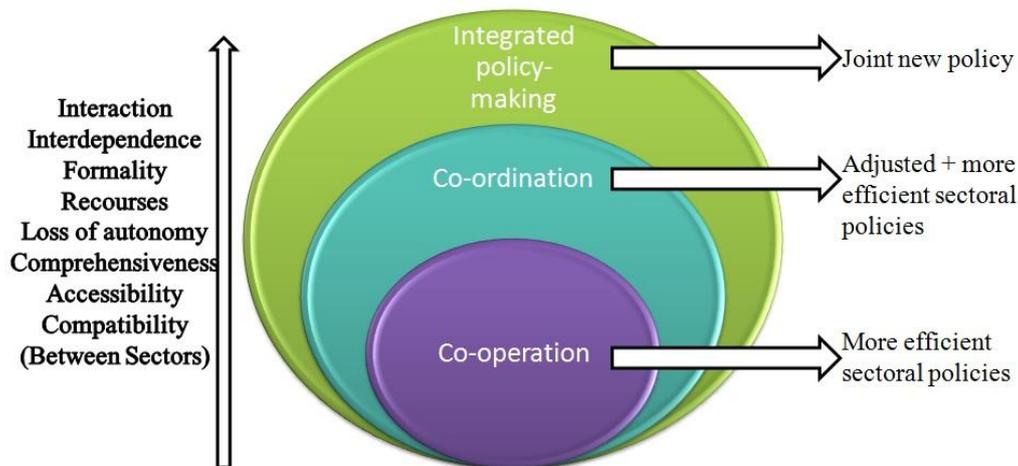


Figure 1: Integration graphic indication the relationship between integration, co-ordination and co-operation. Source: Own design

Pro's of integration:

1. Hidden connections between instruments and policies can cause a ripple effect that can cause damages if ignored by addressing fields as standalone entities.
2. A design of a policy and instrument intervention can achieve multiple benefits that can address the existence of a conjunction of different issues.
3. Harmonization of the multiple interests between the range of stakeholders concerning policies and instruments can assist with a successful implementation thereof.

Three levels of integration:

1. Firstly take into account the implications and dealings concerning the issues of policies and instrument and how these issues can be solves. The attention is on enhancing reciprocities and minimizing trade-offs among the dimensions of sustainability
2. Secondly the sustainability considerations should be factored into the development cycle (Figure 2) of the policies and instruments with a special focus on the beginning stages. It is understood that the development of policies and instruments is not a liner process but is rather a multi stage cycle with sub-stages, a multi development cycle that is always evolving without a clear staring point (Integrated Policymaking for Sustainable Development, 2009:6).

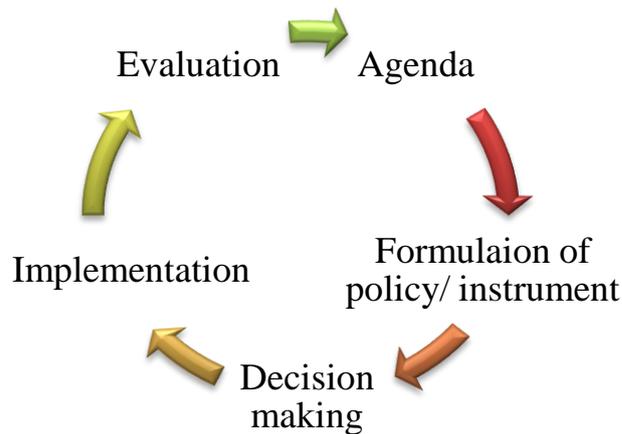


Figure 2: Development Cycle Source: *Integrated Policymaking for Sustainable Development*, 2009:6

3. Thirdly policy and instrument development process constraints need to be taken into account through vertical governmental support, administrative capacity and analytical capacity:
 - 3.1. Vertical support is vital for integration may cause important changes for the norm altering the existing balance of power.
 - 3.2. Administrative capacity refers to the capacity of municipalities to implement first the policies then the instruments.
 - 3.3. Analytical capacity is crucial to ensure a non bias integration process to better navigate the many complexities and uncertainties facing such a process (Integrated Policymaking for Sustainable Development, 2009:6-7).

A “comprehensive” perspective looks at sustainability as an ample number of *integrated* issues that cannot be handled using current transportation decision–making practices, which permit solutions to one problem that worsen others. This point of view implies that sustainability demands a decrease in total travel volumes (Litman & Burwell, 2006:345).

Sustainable transport planning requires a shift in understanding: an integral modification in the manners which individuals conceive and solve problems. This shift concerns a more in-depth breakdown of impacts (also taking into account the indirect and cumulative impacts) and the taking into account a larger scope of solutions than what normally transpire including as a more effectual public participation in transport planning (Litman & Burwell 2006: 339).

All three these elements form a triangular blueprint (Figure 3) of the development process each having a great influence on the scales of integration, tipping it either towards success of failure.

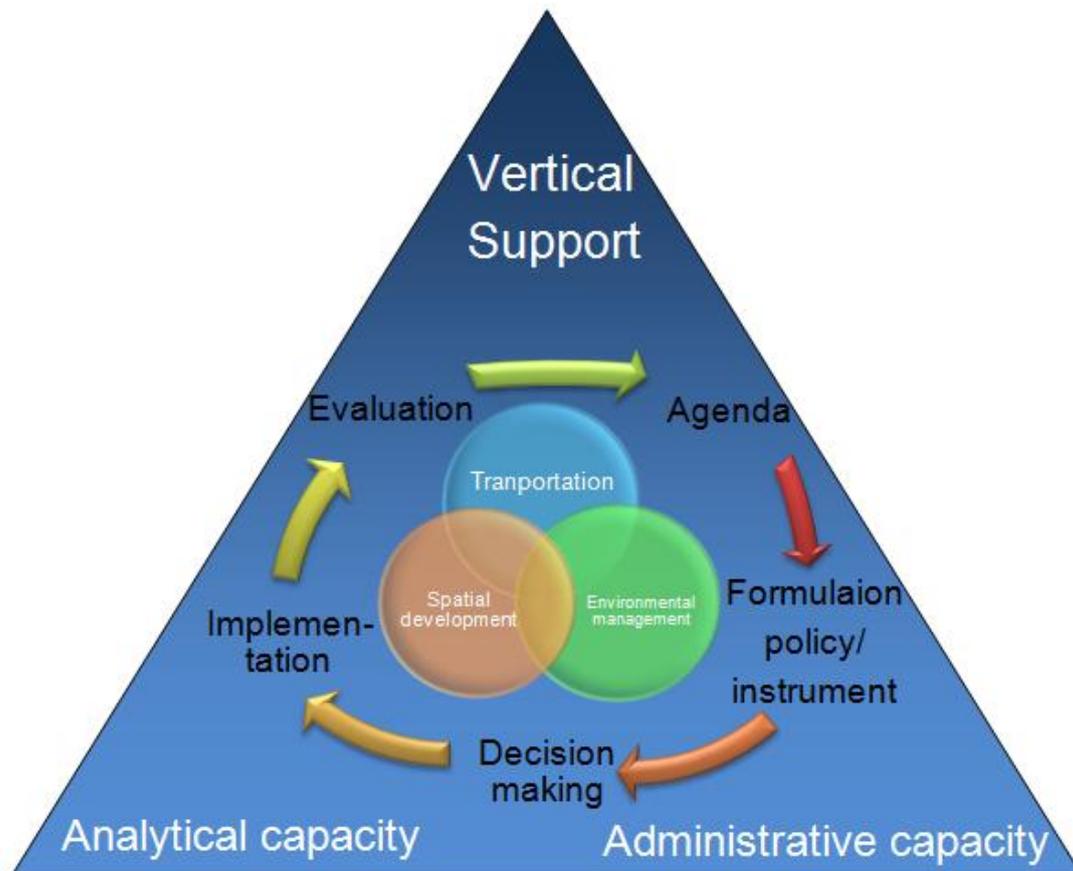


Figure 3: Integrating objectives, environment and process Source: *Integrated Policymaking for Sustainable Development, 2009:7*

Some of the main factors concerning a sustainable transportation system stand as follows:

- provides the current generation with the needed accessibility;
- develops in such a manner as to provide future generations with the means to provide for their own access needs (due to growth that will be a result of an increasing population and economic growth);
- renewable or inexhaustible energy resources powers it;
- causes minimal to no air, land or water pollution;
- is technologically viable;
- is affordable economically and financially for all and provides a desired quality of life;
- is affordable and clean; and
- supports sustainable development goals locally, nationally and globally (Hanyane, 2009: 171, 172).

3. Land use and transportation

Of significance in such manner is the accompanying explanation by Hanyane (2009:173): “Land transportation functions must be integrated with related functions such as land use and economic planning and development through, among others, development of corridors,

and densification and infilling, and transportation planning must guide land use and development planning” (Hanyane, 2009:173). By considering the interdependent characteristics of the relationship between land use development and transportation, the integration of spatial development and transportation planning can assist in the goal of some day achieving a more sustainable future.

Through the study done by Hatzopoulou & Miller, 2008 of a article done by WS Atkins (2001) on ‘European best practices in the delivery of integrated transportation’, it was found that Atkins talks about the influence of local powers overcoming any issues between national policy manufacture and the carrying out of local transportation is viewed as an essential element for successful achievement, given that these powers have their own particular budgets (from national government provision in addition a portion of local revenues). For the case studies inspected by Atkins, he found that provincial authorities have expanded the responsibility of decision-making and to emphasize investment on accomplishing integrated planning over the district as opposed to just on local needs. Regions have additionally figured out how to enhance the coordination of transportation and land-use planning and to diminish rivalry between neighbouring authorities (Hatzopoulou & Miller, 2008:150).

Meanwhile academics tend to often separate the transportation and spatial development land use fields of research, practitioners in reality are forced to deal with the many integration points between the fields.

The recommendations below composite the chief solutions on how to enhance the implementation process of land use transportation policies:

- Take note of the problems or obstacles, (e.g. funding and public cooperation), also find solutions by taking the initiative.
- Grasp an understanding and adopt a broad strategic concept for the city.
- Cooperation and coordination must be strengthened.
- Promote and encourage the involvement of stakeholders and local inhabitants.

With the increase of taking the more general impacts of transportation into account (such as issues of quality of life and social inclusion), institutional integration will be required to broaden its horizons beyond transportation or land-use planning and adapt to education, health, housing etc. As a result, institutional integration will need to happen on the vertical and regional levels, as well as happen on an inter-sectoral level - which means that many government departments (for e.g. housing, health, environment and municipal affairs) are required to take part in the policy decision-making process (Hatzopoulou & Miller, 2008:161).

In conclusion it is noted that to achieve this integration, the literature has illustrated the integral importance of sustainability in the achievement of integration between transportation and spatial development within planning as a profession. Below the next section takes a look at the integration between transportation and spatial development within South Africa through the evaluation of the recently approved SPLUMA and the spatial development and transportation instruments of three municipalities.

4. Policies and Municipal Instruments

In 1994 the new South African government acquired numerous spatial planning and development issues and problems including yet not restricted to segregation, fragmentation of the spatial frameworks and problematic spatial economic ramifications (Drewes, 2013; Schoeman, 2010; van Wyk, 2012:25 & 25).

Pushing ahead without planning ahead the new government emended with a large amount of new municipalities (local and districts) that were compelled to accept the old existing municipal obligations consequently winding up with under capacitated staff to handle full-time urban and regional planning obligations (Drewes, 2013; van Wyk, 2012:101-127). The integration between policies and legislation provides a top down view of the current integration found in South Africa.

The complexities in integration from a vertical (between spheres of government) and a horizontal (professions and stakeholders) can be deduced from a study of the existing South African policy and legislative frameworks. Misalignment and lack of integration, subjective application of planning principles and planning tools, and non-delivery in terms of roles and functions is promoted because of the many diverse and complex parts of each legislative framework. In order to further understanding these complexities, the transformation through the years of spatial planning, transportation planning and environmental management should be noted (Schoeman, 2015:44)

4.1. Spatial planning transformation: An overview

The spatial development and planning transformation finds its roots within the Development Facilitation Act, Act 67 of 1995, that serves as a vehicle to help initiate spatial change and transformation (RSA, 1995). The commencement of the spatial development and planning transformation started in earnest with the Draft Green Paper on Development and Planning prepared by the National Development and Planning Commission in 1999 and a few years after the White Paper on Planning and Land Use Management (RSA, 2001) followed. After these acts and papers came about planning instruments such as the Integrated Development Plan (IDP) process (strategic planning) and the introduction of Spatial Development Frameworks (SDFs) as well as other sectoral plans were introduced. These processes, even though they signify progress in transformation, lacked solutions to the need to change the legislative reality that is meant to guide the spatial planning and development process in municipalities in terms of the new South African democratic needs and expectations. These expectations are being met to a certain degree, is being addressed by the annunciation of SPLUMA (13 of 2013) and its Regulations (2015) (Schoeman, 2015:44).

The formulation of Integrated Development Plans (IDPs) (previously Land Development Objectives (LDOs)) for all institutional entities within the municipal spheres of government resulted out of the initiation of the Constitution (Act 108 of 1996), Municipal Structures Act, Act 117 of 1998 (RSA, 1998b) and the Municipal Systems Act (32 of 2000). The process of transition and development led to the foundation of the National Planning Commission (NPC) in 2011, the National Development Plan (NPD) in 2012, and in the end the generation and finalization of SPLUMA (2013) and SPULMA Regulations (2015) (Schoeman, 2015:45).

Spatial development and planning (including that of land use development and planning) has the capability to interface with transportation planning and environmental management. This

relationship is controlled by the policy and legislative frameworks managing such capabilities (Schoeman, 2015:44).

4.2. Transportation planning transformation

With the enactment of the Urban Transportation Act 78 of 1977 (RSA, 1977) transportation planning in South Africa became a statutory planning activity. Core policies and legislative frameworks guide the transportation planning; development and management (see Tables 1 and 2). Until the promulgation of the National Land Transport Act and its Regulations in 2009 the National Land Transport Transition Act (NLTTA) 22 of 2000 was used (RSA, 2000a). Various policy documents (see Table 1) guide the transport planning and regulating transformation process: White Paper on National Transport Policy (RSA, 1996a); Moving South Africa (Vision 2020) (RSA, 1999); Rural Transport Strategy for South Africa (RSA, 2003); the National Transport Master Plan 2050 (NATMAP 2050) (RSA, 2011) and the Draft National Land Transport Framework (2014). In 2014/2015, the National Department of Transport (NDoT) launched the revision and adaption of NATMAP 2050 by the articulation of a Synopsis Report with the aim to manage specific components related to co-ordination, integration and transportation-related system and network issues and problems. This revision entails the management of the interface between the NDP (2012), SPLUMA (2013) and NATMAP 2050 and any other related areas of concern (Schoeman, 2015:45).

Within most of the policy and legislative framework provision had been made for the promotion of alignment, co-ordination and integration of functions and processes between all spheres of government. In reality the lack of the physical real world delivery within all spatial systems is an indication of issues and failure of the implementation of the needed alignment, co-ordination and integration of processes and functions with the goal being to assess the role of alignment, co-ordination and integration within this article.

The purpose of this article is the assistance on studying the integration process thus no formal surveys has been carried out however an evaluation was done on SPLUMA and the relevant spatial planning and transportation instruments, of the chosen municipalities, to help assess the integration between spatial development and transpiration.

4.3. Spatial Planning and Land Use Management act (SPLUMA)

SPLUMA (2013) provides for the following objectives:

- To provide for a uniform, effective and comprehensive system of spatial planning and land-use management.
- To ensure that the system of spatial planning and land-use management promotes the social and economic inclusion.
- To provide development principles, norms and standards.
- To provide for sustainable and efficient use of land.
- To provide for co-operative government and intergovernmental relations within all spheres of government.
- To redress imbalances of the past and to ensure equity in spatial development planning and land-use management systems (SPLUMA 2013: 14).

Table 1: Interface in focus and instruments as provided for in Spatial Planning, Transportation Planning and Environmental Management.

SPLUMA (2013)	NLTTA (2000)/NLTA (2009)
<ul style="list-style-type: none"> • Development principles and norms and standards • Intergovernmental support • Spatial Development Frameworks (SDF's) • National Spatial Development Framework (NSDF) • Provincial Spatial Development Framework (PSDF) • Regional Development Framework (RSDF) • Municipal Development Framework (MSDF) • Land Use Management (LUM) • Land Development Management (LDM) • Municipal Land Use Plans (MLUP) • Statutory Planning (SP) 	<ul style="list-style-type: none"> • General principles for transportation planning • Types of transportation plans • Provisions on transportation planning • National Land Transport Strategic Framework (NLTSF) • Provincial Land Transport Frameworks (PLTF) • Integrated Transport Plans (ITPs) • Freight Transport Plans (FTP) • Transportation plans and changes in land use and public transport infrastructure and services • Rationalization of public transport services (RATPLANS) • Public Transport Plans (PTP's) • Commuter rail plans (CRP) • Transport Impact Studies (TIS's) • Traffic Impact Assessments (TIA's)

Source: Schoeman, 2015: 48. from SPLUMA (2013), NLTTA (2000), NLTA (2009).

SPLUMA commenced on the 1st of July 2015, although it will have significant implications on the various municipalities it will only come into effect after the current municipal operating standard and planning instruments have been renewed with the next cycle.

After and study of SPLUMA (2013) it was found that it recognizes and specifies the roles (inclusive of intergovernmental support) of national, provincial and local municipalities (Chapters 2 to 4). Land-use management and land-development provisions and arrangements are discussed and handled within the Chapters 5 and 6 deal. It was found that within Section 8 (Norms and Standards) alignment and integration will promoted through the determination by the National Minister to allow for consistency within spatial planning within municipalities across the country.

It was found that SPLUMA (2013) operates parallel to other laws but also annuls the existing national laws. Ultimately SPLUMA has added to what the Municipal Systems Act (2000) provides for in terms of the IDPs and SDFs, and it should be noted that SPLUMA does not contradict the MSA (2000) or any other act (Schoeman, 2015:52).

5. Evaluation

Through the use of the policy integration stages as a guideline an evaluation checklist was developed as an assessment tool with which spatial development and transportation policies and instruments can be evaluated. This type of 'best practice' checklist is made up out of the following core themes:

- **Agenda:** Is a list of issues or problems that include potential opportunities to which the policy or instrument initiators and developers take note of and utilise towards developing integration solutions
- **Policy/Instrument formulation:** A process of generating policy/instrument options in response to an established problem/issue identified through the agenda stage.
- **Decision making:** Stage where a government decision-maker or an official decision-making body selects a course of action or non-action among a small set of options identified at the formulation stage with a view towards implementation.
- **Implementation:** Implementation is the stage where a selected option must be translated into action (Integrated Policymaking for Sustainable Development, 2009:21, 29, 36, and 43).
- **Other:** Criteria that does not fall under any of the integration stages yet are still relevant

Under each of these themes a collection of integration and sustainability criteria was developed against which the policy and instruments could be tested, the policy and instrument was tested upon whether the criteria was M=fully met, P=partially met or N=not met. A score was then provided that indicated the level of integration each policy and instrument attained. Below is a table that shows the relevant results of the evaluations.

Table 2: Results of checklist evaluation of municipal instruments

	Eden DM		Overberg DM		Hessequa LM
	SDF	ITP	SDF	ITP	IDP
M=Fully Met	10	8	7	5	10
P=Partially Met	17	12	17	12	13
N=Not Met	11	17	14	21	15

Source: Own construction, 2016

Through this evaluation it can be noted that there has proven be only limited integration happening within the municipalities with most of the results leaning towards integration between spatial development and transportation only being 'partially met' with an exception of the Overberg ITP not meeting a high level of integration at all.

Table 3: Results of checklist evaluation of SPLUMA

	SPLUMA
M=Fully Met	11
P=Partially Met	16
N=Not Met	11

Source: Own Construction, 2016

In the Table 3 above the evaluation of the Spatial Planning and Land Use Management Act (SPLUMA) (2013) it can be noted, despite that fact that SPLUMA aims to promote integration, that within the specific context of integration between spatial development and transportation SPLUMA has only 'partially met' the requirements for integration as has been assessed through the checklist. This result shows that although the concept of integration has been or will be advanced through the implementation of SPLUMA that more study and research concerning the implementation of specific integrating between spatial development and transportation is needed to accomplish better sustainability.

6. Conclusion

Numerous authors have done many studies concerning the integration between spatial development and environmental management however though these studies are numerous there has been noted that there has been very little research done on the need of integration between that of spatial development and transportation.

There were no interviews done for the purpose of this study, to ascertain the level of integration being implemented, yet an evaluation was done through a 'best practice' checklist to aid in the furthering of the debate around the concept of integrations and to add the concept of a interface between that of spatial development and that of transportation.

Through the literature study it has been noted that there is a limited amount of research done on the specific topic concerning spatial development and transportation integration, although numerous studies have been done on the concept of intergradations itself a minimal amount of these studies provide sufficient evaluation methods or guidelines to test integration or promote the implementation of integration within current municipalities and between policies and legislation.

Although the integration between development and transportation could lead to more benefits, it is very apparent that until now through the evaluation and study of the Spatial Planning and Land-Use Management (SPLUMA) act 2013 as well as the spatial development and transportation instruments of three municipalities it has been found that it is difficult to reconcile and integrate the concepts of transportation and spatial development with each other fully.

It is recommended that further studies of examples where a greater level of integration is achieved could be done to look into the factors that can promote better integration in future planning instruments as well as the 'on the ground' implementation thereof.

Despite this fact the evaluation method used within the research of this article provided a baseline for the development of much needed evaluation methods. Further development and research needs to be conducted on this subject to assist with a more comprehensive and thorough evaluation checklist with the aim of attaining a greater understand of integration and how integration can promote sustainability.

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Transforming the Inner City of Durban – A new Approach to the Preparation of a Local Area Plan for the Inner City of Durban, eThekweni Municipality

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S NOPSIS

This paper explores the preparation of a Local Area Plan for the Inner City of Durban and considers the contribution that it could make to the restructuring of the City and an alternate approach to spatial planning that has the potential to contribute to a more relevant city structure.

1 Introduction

The Inner City of Durban, like many other CBDs, has not escaped the trends of urban decline, increasing problems of crime and grime and capital flight. Moreover, despite various National Policy directives and concerted efforts by the Municipality over the past two decades to restructure the city, Durban, remains sprawled and segregated; and the financial and social costs of service delivery are unacceptably high. This paper explores the preparation of the Inner City Spatial Framework or Local Area Plan, as a key component of a long term plan for the Regeneration of the Inner City of Durbanⁱ. It explores the contribution that this could make to a new approach to Local Area Planning that has the potential to enable a more viable and relevant city for a growing urban population (Theme 3 of the conference), and to contribute to the restructuring of the City (Theme 1 of the conference). The paper is based on current work being undertaken by a multi-disciplinary consultant team on behalf of the eThekweni Municipality and adopts a case study approach, providing an example of an applied process to develop a framework for moving from “The City We Have” to “The City We Need” which will hopefully contribute to improved planning practice. No attempt has been made to analyse the work in terms of planning theory, although there is definitely scope for this.

The paper firstly outlines the project context, and considers the ‘Enquiry by Design’ approach to the preparation of the plan that was proposed by the team. The discussion then turns to a brief summary of the design rationale that was arrived at through this process. The contribution the proposals could make to restructuring the City are then briefly highlighted, as well as a summary of key actions required to implement the plan. In conclusion, we look at some of the innovations that have been possible and some lessons we have learned through this process.



Photograph 1: Inner City of Durban

2 Project Content – “The Inner City We Have” and Current Planning Processes

Implementation of well-intentioned development policies over the last 22 years have entrenched spatial segregation in Durban rather than redressing it and the City remains sprawled, segregated and largely poor, with slow and mostly jobless economic growthⁱⁱ. Figure 1 illustrates that the highest population density remains in the Inanda, Ntuzuma and KwaMashu area to the north and Umlazi to the south (dark brown areas).

In addition the Inner City, has not escaped the trends of urban decline, increasing problems of crime and grime and capital flight, particularly to the north and west of the city. Urbanisation projections for the future require serious consideration as the impacts will be significant, and there is growing consensus that well-functioning urban centres are the most likely hedge against the crisis of poverty, inequality and unemployment as evidenced in recent policy directives such as the IUDF.ⁱⁱⁱ

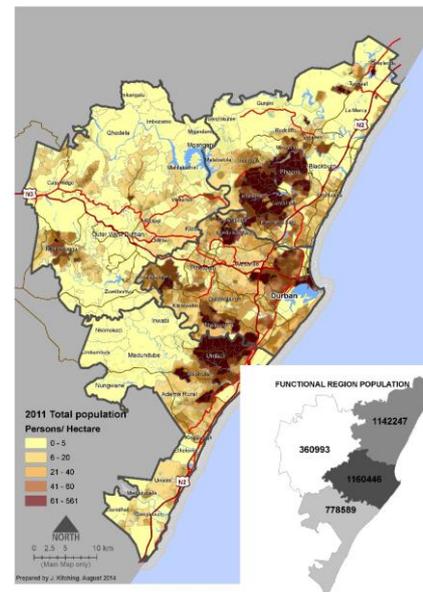


Figure 1:
The Population Distribution of Durban^{iv}

Observations during the project process suggest that the Municipal officials generally have a good understanding of “The City We Have” and have been working to address identified problems. However, their efforts have met with varying degrees of success and business remains disenchanted with a perceived lack of progress in the Inner City in particular. Local policy interventions, for example the eThekweni Densification Strategy^v, and project driven implementation across a range of different sectors provide hope, but appear ad-hoc and uncoordinated. Moreover, Council grasps at any promise of private sector investment, which diverts attention to specific projects on individual sites, at the expense of systemic interventions that address the experience of the Inner City as a whole. Traditional, technocratic planning methods such as transport and infrastructure modelling, environmental impact assessment and zoning are the tools predominantly used to assess the impact of projects. Project specific decisions seem to be made with little understanding of how they may or may not contribute to making an economically, socially and environmentally revitalized and sustainable city. Prioritisation of the motor vehicle, with little attention paid to the quality or amenity of the public realm, the accommodation of pedestrians or public life, has prevented meaningful change.

What has been lacking is a compelling vision of the “City We Need.” This has been recognised and has been the driver of the efforts of the Consultant and City teams that have been working on this project.



Photograph 2: Inner City of Durban Conditions

3 A Different Approach to the preparation of the Inner City Local Area Plan

The study area for the Inner City Local Area and Regeneration Plan extends from the Umgeni River in the north, to the Point in the south and from the coastline in the east to Umgeni Road in the west, as shown in Figure 2. The planning horizon for the project is 2040 and beyond.

Today the Inner City is home to some 70,000 people. Of note is that the current population constitutes only 2% of the metropolitan population, which is very low compared to other Inner City locations around the world.

The low population within the Inner City, significant amounts of government owned land (390ha), as well as a large proportion of vacant and underdeveloped land (approximately 215ha) pointed to the opportunity to contribute significantly to the restructuring of the existing spatial pattern of the eThekweni metropolitan area by providing more Inner City residential opportunities within a mixed use live, work, play environment.

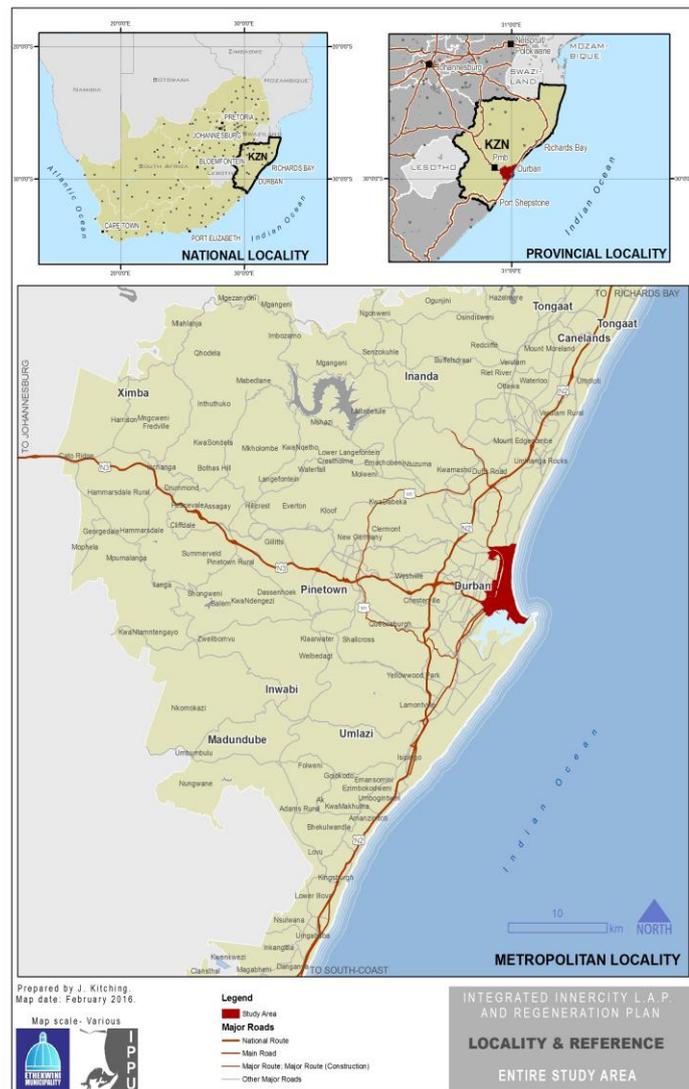


Figure 2: The Inner City Study Area

The team began the project by proposing and demonstrating an alternative approach to the usual Survey, Analysis and Design (SAD) process typically used in planning projects. Instead they adopted an 'Enquiry by Design' approach to develop and thoroughly test and refine ideas at each stage of the project cycle.

The project commenced with a three day workshop with key municipal, private sector and community stakeholders where the design of the spatial vision for the Inner City was initiated. Through this and a series of focus groups held thereafter, a conceptual vision plan was drawn and used to capture the inputs of various stakeholders. This plan was used to:

- Garner knowledge and insight about the Inner City from stakeholders: Their knowledge was captured and integrated into the plan and the status quo became embedded more with each iteration. The interactions around the conceptual vision plan focused inputs of both stakeholders and the consultant team, and the process

was more efficient and we would argue, more effective, than the usual exhaustive situational analysis.

- Focus on issues, big and small: The integration between large scale issues and the connection to small scale interventions is lost in traditional planning processes. Strategic decisions are depicted in swathes of colour on inaccurate desktop studies while small interventions are localised to specific sites. The Enquiry by Design process allows for strategic thinking and decision making, while simultaneously exploring the potential of making a network of small interventions the solution at the larger scale. The process also contributes to breaking down the “silos” between departments in the local authority structures. Everyone is literally working on the same page.
- Develop a Spatial Rationale for the Inner City: The initial concept plan was also used to test and develop the spatial rationale which frames the whole project. An initial list of eight spatial principles was refined, through workshopping with stakeholders, down to four. This rationale formed the basis for all design explorations as the project progressed. The three cross-cutting themes identified were the agreed expression of the over-arching intentions of the plan.
- Ensure stakeholder ‘Buy In’: A wide range of stakeholders participated in the formulation of the draft vision for the Inner City. A level of buy-in to the principles and the vision plan was achieved by incorporating all the issues raised by stakeholders in many different engagements including small meetings, focus group sessions and meetings at key milestones with the project steering committee. The spatial principles have become part of every interaction between stakeholders, and have been used as a basis for testing and explaining all thinking and ideas during the development of the plan.

To date, as testament to the intentions of this process, sixty-eight meetings and workshops have been held in addition to an open day where the draft proposals were displayed for the public to view at their leisure and presentations of the proposals were given during the day. The private sector has shown a keen willingness to engage in the development of this plan despite their disenchantment with planning processes in general. A webpage on the Municipal website has been set up where individuals and organizations can register and make comment on the proposals.

In addition to a revised project process the team proposed a variation to the product and focused on generating a plan that is robust and adaptable in the long term, whilst providing a clear decision making framework and a guide for project identification, prioritisation and budgeting. The Municipality has long adopted a framework rather than master plan approach to the preparation of their package of plans, however, the primary difference in this plan has been promoting the use of the three cross cutting themes and four spatial principles developed through the Enquiry by Design approach as the tools by which projects should be adjudicated rather than the usual technocratic tools of Traffic Impact Assessment, Environmental Impact Assessment and Zoning alignment.

The focus of the LAP is on land use intensity and spatial form - in relation to the quality and amenity of the public realm; rather than on land uses and zoning. The plan has been conceived as a set of proactive and performance based proposals and guidelines that are intended to provide integrated and relevant tools to guide decision making into a future that

we cannot accurately predict. This, together with the usual evaluation tools, which still have their place, should result in projects that contributes to the overall vision of the Inner City and to making an economically, socially and environmentally revitalized and sustainable city centre.

4 The Project Outcome - A Vision for “The City e Need”

The outcome of the Enquiry by Design process has been the development of a new Vision for the Inner City of Durban which is broadly underpinned by a number of theoretical concepts, including Place Making Theory, the Walkable City, the Movement Economy, Space Syntax and Urban Resilience, investigation of a broad array of precedent cases, and is aligned with National Government directives towards spatial restructuring.

The proposed vision statement aligns with National, Provincial and Local Government visions, but is more specific, and has been captured as:

“By 2040 the Inner City of Durban will be

Africa’s leading, most vibrant, liveable, walkable City Centre

providing economic, residential, sporting and leisure opportunities for all.”

This vision is supported by the spatial rationale that was developed with stakeholders and consists of three cross cutting themes and four spatial principles that are summarised in the diagram below and described more fully in the sections that follow. The section concludes with the spatial vision plan for the Inner City study area.

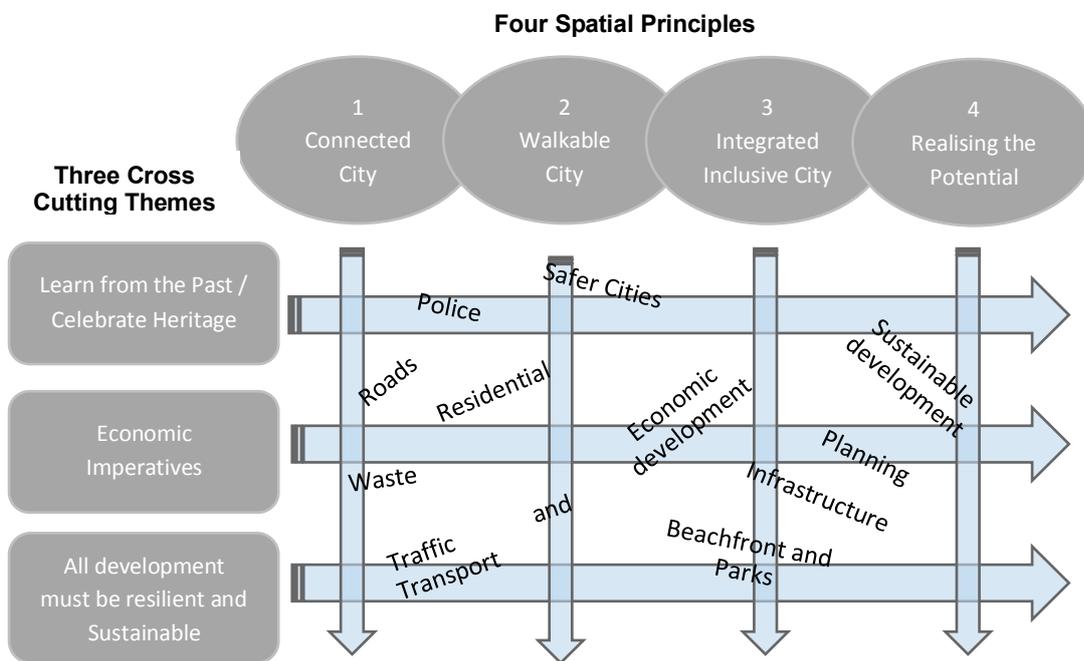


Figure 3: Spatial Rationale for Decision Making

The three cross cutting themes are intended to underpin all deliberations about development within the Inner City. Firstly, future development should be based on an understanding of the past (why did the Inner City area develop as it did and what lessons does this have for future planning), and a thorough understanding of the current situation, from a range of

perspectives. Secondly, if regeneration is to be successful, planning must focus on economic imperatives and be based on a solid understanding of the drivers of economic growth, as well as potential socio-economic factors that may undermine them. Finally, all future development proposals must be resilient and sustainable, including climate change mitigation and adaptation, socio-economic impacts, and long term operations and urban management of the Inner City.

The geology and hydrology of the study area provided a useful starting point for exploration of how and why the Inner City developed as it did, and what lessons this might have for the future development of the area. The eastern and western vleis that drained from the Umgeni River southwards to the port presented barriers to early development, although some of the areas that were prone to flooding were subsequently drained to create more developable land. The allocation of land to the military (the old ordinance land) and the first airport to the north of the original CBD also presented barriers, and helps explain why development emerged along the port edge and westward towards the Berea rather than northwards towards the Umgeni River. Large blocks of vacant land within the study area fall in the area to the north between the historic city grid and the river.

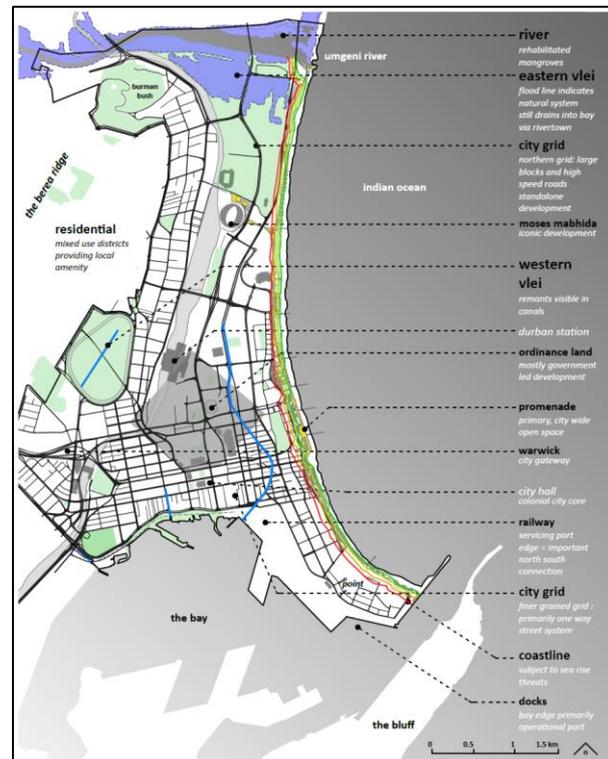


Figure 4: The Inner City Today

The drainage lines of the vleis are still visible in the urban form and street lines and beg the question of more sustainable and resilient drainage of the Inner City in the future. The military land is still largely owned by Government Departments and is home to the main municipal complex with other Government complexes such as the Court buildings and Safety and Security Cluster in close proximity, slightly to the north of these.

Apartheid planning is still reflected in the separation of the Warwick and Greyville areas by the buffer of the western vlei, and later the railway line, which is still a significant barrier.

Addressing the barriers to a connected integrated city is one of the key principles of the proposed plan.

The Inner City currently provides approximately 100,000 jobs and fulfils a wide range of roles including the economic hub of the metropolitan area - commerce, port and industry, informal sector, tourism, sporting and cultural facilities, the major transport hub, a range of housing, social and education facilities serving the immediate and metropolitan population, as well as the courts and legal cluster and municipal and government offices and facilities. The CBD is

well serviced with a high property asset base and is an important contributor to the Municipal rates base. The Municipality cannot afford to allow it to decline further. Moreover there is an urgent need to stimulate economic growth and provide housing in accessible areas that does not increase transport and servicing costs. A 2015 Study by Smart Growth America^{vi} found that companies were “moving to and investing in walkable downtown locations, in large part because these places help to attract and retain talented workers. These companies are looking for walkable, live/work/play neighbourhoods and regional centres with nearby affordable housing for their employees, with a vibrant mix of restaurants, cafes, shops, entertainment venues, and cultural attractions all within easy walking distance of offices.”

Through research of the existing trends and markets, the potential economic drivers of the Regeneration within the Inner City were identified as being Tourism, including international, domestic, events, cruise and sports tourism; New Business, both large and small; and Services and Education. The proposed urban form and urban management needs to address the needs of these three sectors which will in turn drive demand for a “smart” city (integrated information and communication technology), a well-managed city, as well as additional retail, accommodation, public transport, and social services.

Investment in a high quality public realm has been identified as a key intervention to increase investor confidence in order to retain and attract investment across all sectors, and to make the Inner City a desirable place to live work and play. Additional measures to stimulate economic growth will be outlined in the Regeneration Plan which is still being developed.

According to the Brundtland Report (1987) Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Resilience is a relatively new term that is gaining traction in the urban development field and is defined as the capacity of individuals, communities, and institutions within a city to adapt to various stresses and shocks that they face and be able to not only bounce back but to ‘bounce forward’ to a better improved state (source of this definition??). The eThekweni Municipality was one of the first 33 cities in the world to be invited to participate in the Rockefeller Foundation’s 100 Resilient Cities Programme^{vii} and it is expected that a city wide resilience strategy will be developed as part of this initiative in 2016. The focus areas that have been identified for this strategy are bold and participatory governance, a knowledge-centred city, innovative place-making, a sustainable and ecological city, a catalytic and transformative economy, and an equitable and inclusive society.

Key issues identified through this plan to ensure an ecologically sustainable and resilient Inner City are management of development adjacent to the beach, minimising flooding and flood impacts through innovative stormwater management strategies, managing the heat island effect, reduction of GHG emissions, improved waste management and enhanced biodiversity.

Socio-economic integration, and accommodation of informality are recognised in the 100 Resilient Cities work as key strategies for resilience in Durban, and are addressed through application of the spatial principles that underpin the inner city plan and will be further explored in the Regeneration Plan.

The spatial rationale for regeneration of the Inner City is expressed as four spatial principles which will guide the development of strategies (what to do), the spatial framework (where will it happen) and projects (specific implementable actions). The principles all contribute to urban regeneration, and to be effective must be applied across all sectors and departments within the Municipality and used as a tool to inform the assessment of all private sector development applications. The four spatial principles that were agreed upon through the 'Enquiry by Design' engagement process are firstly: A Connected City, secondly: A Walkable City, thirdly: an Integrated and Inclusive City, and finally: a City where the full Potential of the area is unlocked and realised.

One of the key status quo findings was the extent to which the inner city is disconnected from other parts of the city e.g. Morningside and the Berea, and the extent to which parts of the Inner City are disconnected from each other e.g. Warwick from the CBD, the sports precinct from the beach. The barriers are a combination of the railway line, high speed, often one-way roads and large tracts public land, including sports grounds that have been fenced, cutting off motorised as well as non-motorised access across the city. Addressing this concern involved a fundamental shift from planning to accommodate cars to designing to accommodate people.

An expanded Inner City mobility network for pedestrians, cyclists, public transport and cars; linking the Berea to the Ocean and the north to the south, with new and reconfigured connections that overcome barriers to accessibility has been proposed (Figure 5). The increased connectedness will stimulate development potential. Specific proposals include: extending the grid of streets to the north, proposing a variety of street types to increase accessibility within the city, reconfiguring one way systems to two way roads, which has been shown to improve traffic accident rates, crime and property values^{viii} and providing increased pedestrian priority on key roads. Reconfiguring the nature of the M4 and M12 from high speed arterials to local connectors means that the Inner City will begin at the Umgeni River rather than much further into the study area at Sandile Thusi (Argyle) Road. Reconfiguring streets for pedestrian

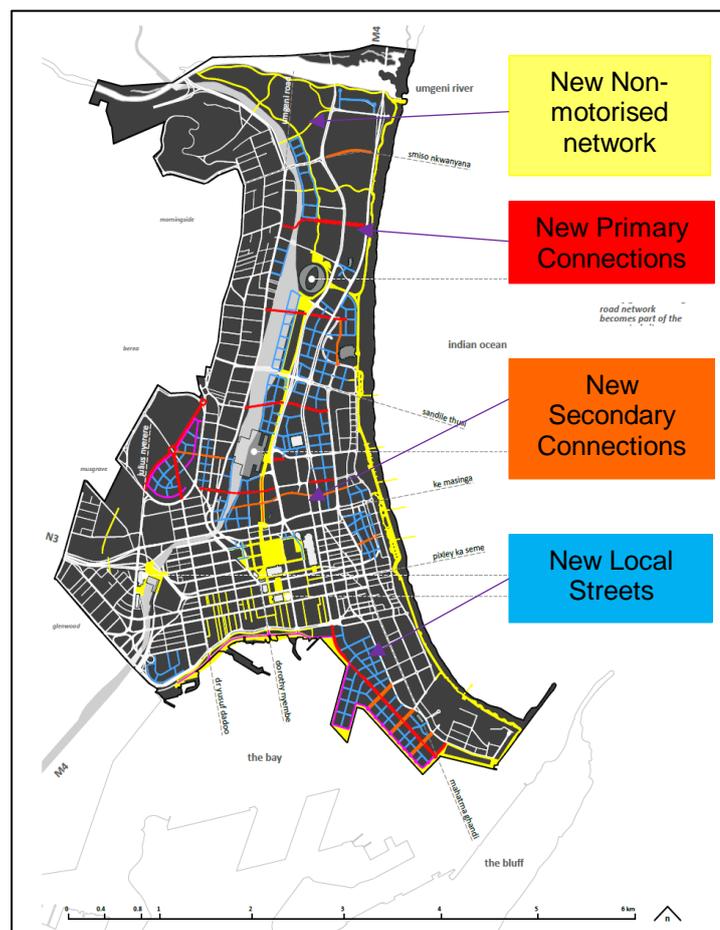


Figure : Principle 1 - A Connected City

prioritisation will give priority to all forms of non-motorised transport, whilst still accommodating effective public transport and the private car.

Internationally, writers are suggesting that a walkable structure is key to the success of cities^{ix}. Analyses of cities regarded as successful, indicates a pattern of development around a set of walkable neighbourhoods. Each has a high density mixed use core accommodating commercial, residential and social facilities, with lower density development radiating out to a distance of about 400 meters which is a comfortable 5-minute walking distance. These nuclei tend to form at approximately 800 meters or a 10 minute walk apart.

The existing walkable neighbourhood structure of Durban's Inner City was first mapped from observations, and found to be broadly consistent with international findings. The pattern was extended to form the basis of a walkable city structure where all basic amenities could be provided within a 400m walking radius, promoting an integrated live, work play environment. This was tested using Space Syntax^x, a proprietary modelling tool based on Hillier's concept of the movement economy of cities^{xi}. The model indicates the areas of highest connectivity and economic opportunity. Proposals for pedestrian prioritisation of these connections, is not the same as pedestrianisation. Rather it is an attitude that includes roads as part of the public realm and the concept of complete streets that accommodate a range of transport options, with priority given to public transport and non-motorised transport.

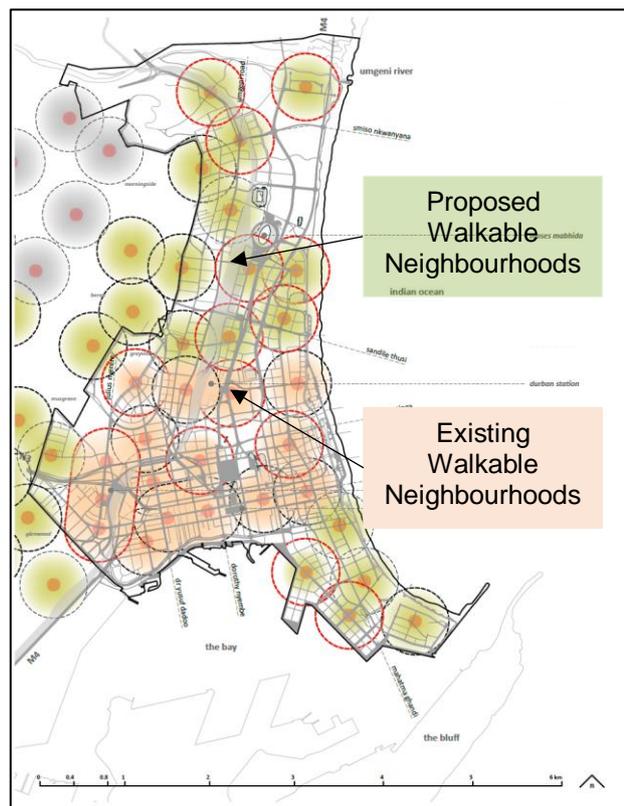


Figure 6: Principle 2: A Walkable City

The proposed walkable neighbourhood centres were superimposed on the existing walkable neighbourhood structure and the proposed new connections were added. The proposals were adjusted to ensure that the areas of highest connectivity coincided with the pattern of proposed new walkable neighbourhoods. Figure 6 indicates the existing walkable and approximate positions of the proposed neighbourhood nuclei.

Walkability is not only about travel distances and distribution of uses. The quality of the pedestrian experience is crucial, and therefore the quality of the public realm, which is inextricably bound up with the quality and character of the built form that surrounds it, as well as the more obvious factors such as landscaping, lighting, surveillance and safety. In Durban, appropriate accommodation of street trading, and urban management are also key issues. A report by Leinberger and Rodriguez takes a close look at the effects of walkable places on the wealth and equity of metros^{xii}. They argue that Walkable Metropolitan areas are more affluent, are more highly educated, and have higher levels of social equity.

Building on, and in support of the walkable neighbourhood structure, the third spatial principle expands the concept to address the need for an integrated and inclusive city. An appropriate range of activities and uses offering a variety of housing, social, economic and movement opportunities, is achieved through a land use intensity guidelines rather than conventional land use controls.

As illustrated in Figure 7, the most intense, mixed land uses, including offices, retail, high density housing and the like should be encouraged at the heart of the walkable neighbourhoods (dark blue). Corridors of development (lighter blue), including medium to high density housing, some commerce and regional social facilities, should link these nodes together along local and regional and local connections. Infill development (pink) will occupy the spaces between the nodes and corridors, including lower density residential uses with some local amenities such as local corner shop, schools, and local parks. Facing onto or adjacent to primary public realm elements such as the Gugu Dlamini Park, Beachfront, Peoples' Park, and other large parks such as Victoria Park and Greyville,, will be higher density residential uses, commanding high property values (dark grey).



Figure : Principle 3 – An Integrated and Inclusive City

Rahul Mehrotra^{xiii} argues that equity, density and democracy must be considered simultaneously. He describes a condition that he calls Kinetic urbanism, and an 'elastic urban condition'. He says that density is not always a measure for intensity; the image of the city is not necessarily defined by its built form, but also by the way that it is used, which is dynamic. "Inequity often dissolves in a condition of high density. People make space elastic and the difference between the rich and poor dissipate as the porosity between territories is heightened and exaggerated." He proposes that the character of Indian cities is read as much through the periodic processions, festivals, street hawkers etc. This is useful for considering Durban, e.g. areas such as Warwick, Gugu Dlamini Square, Albert Park and the beachfront, and strengthens the case for focusing on the public realm, and a land use intensity approach with form based guidelines that support the definition of the public realm, as opposed to only land use planning.

The final principle focuses on unlocking the potential of the Inner City to regenerate and expand. This will require implementing new connections to increase development potential, releasing new parcels of land for private sector development, as well as releasing land within the existing city fabric for infill development and facilitating conversion and redevelopment of existing building stock.

This principle requires that the actions, programmes and projects that are identified to regenerate and expand the city are guided by the overall spatial rationale comprising the principles outlined above (connectivity, walkability including the public realm and integration). Without this co-ordinating framework, actions and projects will be ad-hoc and unfocused, often designed with the best intentions but not contributing to the overall vision or successful regeneration

Public realm upgrade and maintenance will be a major focus of Municipal activities to encourage and facilitate regeneration, cognisant of the requirement for sustainable and resilient development that is conscious of risk areas.

Although the study area is largely serviced already, the development proposals require some upgrading of existing infrastructure and the provision of additional services. The status quo findings indicate that much of the inner city infrastructure is aging, and replacement will provide opportunities to implement innovative servicing solutions and new technologies that reduce demand and include alternative sources of supply.

The vision for the development of the Inner City has been translated into an overall vision plan (Figure 8) that gives an overview of the spatial framework within which all decision making in the Inner City is framed. Together with the cross cutting themes and spatial principles, this provides a tool-box to be used to inform investment decisions, project identification and prioritisation, project adjudication, and budgeting across both the public and private sectors.

Whilst difficult to read at the scale possible to include in this paper, Figure 8, attempts to illustrate the level of detail provided in the plan to guide future development.



Figure 8: The Inner City Spatial Framework

5 Contribution to Restructuring the City

The approach adopted in the project was framed by National Policy directives, most obviously in the National Development Plan^{xiv} and more recently the Integrated Urban Development Plan, A New Deal for South African Cities and towns^{xv}, which recognise the potential of urban centres to create opportunity, stimulate the economy, and address the triple challenges of unemployment, poverty and inequality.

Using the framework proposed it is estimated that the Inner City could accommodate approximately 450,000 people compared to the current 70,000. This is an increase from the current 2% to about 10% of the metropolitan population, in a dense, mixed use, walkable city

structure. Job opportunities are estimated to increase from approximately 100,000 to 250,000, in a location that is already serviced.

This increase in population and jobs in the heart of the City would constitute a significant shift in emphasis and a real opportunity to achieve restructuring of the eThekweni Metropolitan Area, efficiently offering real urban amenity and a range of residential options, within walking distance of major social, recreational and economic opportunities and close to key transport networks, including rail, the Integrated Rapid Bus transit stations at Warwick and the Centrum site and an inner city public transport distribution system. In short, this framework plan is robust, and has the capacity to respond sustainably to a range of development pressures and demands into the future, while ensuring that the overall vision is not undermined.

6 Making it Happen

The spatial framework indicates how and where we envisage development should occur, however, critical to the process will be making this happen. Three key elements have emerged as success factors including firstly co-ordinated leadership, secondly intensive urban management and thirdly the implementation of large and small projects that will contribute to the regeneration of the Inner City (Figure 10). Co-ordinated leadership will undoubtedly require partnership between the Municipality and the private sector to drive the vision forward.



Figure : Making it Happen

7 Conclusion and Lessons Learnt

This paper has attempted to summarise the process and outcomes of the preparation of a Local Area Plan for the Inner City of Durban, and to describe a case where a Municipality has adopted a new approach to the plan preparation process and outcome, delivering a

performance based framework that is robust and adaptable in the long term, whilst providing a clear decision making and implementation framework.

The main innovations have been the manner in which stakeholders have been engaged in a process of co-creation of the plan and how this process of developing and then applying the spatial rationale has clearly defined the roles of the private and public sectors. It is clearly the municipality's role to attend to the public realm, public transport, infrastructure, and most importantly to apply the performance guidelines embodied in the spatial principles in the assessment of development proposals. New connections, and strategic release of land for development, are tools that the municipality can employ to catalyse priority elements of the plan.

The private sector will respond to the opportunities that arise from implementation of this plan, and may do so in ways that we cannot predict. If the plan is successful, the tools and performance guidelines that comprise the spatial rationale will ensure that the overall intentions and vision are achieved. It is also the Municipality's role to market and popularise the plan, giving confidence to potential investors that there is a clear vision for The City We Need.

The work is by no means complete and the proof of the success of the planning proposals will only be in the implementation. Despite the preparation and circulation of the document at all stages in the project cycle, as well as involvement in many workshops, recent interactions with some municipal officials suggests that not all have yet been able to take on-board the new approach to preparing the framework or how the principles would be applied in a decision making process. A period of adjustment to new ways of working will be required.

ndnotes

ⁱ eThekweni Municipality, June 2016, eThekweni Integrated Inner City Local Area Plan

ⁱⁱ eThekweni Municipality, June 2016, eThekweni Integrated Inner City Local Area Plan

ⁱⁱⁱ Department of Cooperative Governance and Traditional Affairs, 2016, Integrated Urban Development Framework, A New Deal for South African Cities and Towns

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^v eThekweni Municipality (2012) eThekweni Densification Strategy

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^{xiv} National Planning Commission, 2012, National Development Plan 2030: Our Future - Make it Work

^{xv} Department of Cooperative Governance and Traditional Affairs, 2016, Integrated Urban Development Framework, A New Deal for South African Cities and Towns

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Photograph 1: Source: Dean: <https://www.domesticflights-southafrica.co.za/break-away-kwa-zulu-natal/kwa-zulu-natal/>

Photographs 2: eThekweni Urban Management Zone team

Growing the seed of spatial transformation: An overview of the capacity building and training dimensions of SPLUMA (2013), South Africa

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Abstract

The Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013), was approved by the National Assembly on 27 February 2013 and assented to by the President on 2 August 2013. It was gazetted on 5 August 2013. SPLUMA from one perspective can act as a “*catalyst*” in the further promotion, development and consolidation of integrated human settlements. Such a platform is central in strengthening spatial transformation in South Africa. This can be understood in the context of SPLUMA being a legislative instrument that establishes a framework for migrating from “*cities we have*” i.e. post-apartheid cities to “*cities we need*” i.e. inclusive and resilient cities. SPLUMA (2013) can therefore be viewed as both an instrument and an approach serving the purpose of being “an interface in promoting alignment and integration within the existing policy and legislative framework guiding planning and development” in South Africa (Schoeman, 2015: 57). Consequently, the ushering in of SPLUMA has meant a call for action in respect of capacity building and training for the planning and development stakeholders such as industry, government, academia and research institutions in South Africa. This is because *inter-alia* SPLUMA is a new instrument that introduces widespread changes in the management and practice of land use planning. It has thus become necessary for the DRDLR to initiate a training and capacity building program that will enable implementers and users to understand and fully appreciate the objectives of SPLUMA and equip them with the necessary skills and tools that will enable its effective implementation. This paper presents an overview of the processes and outcome of the stakeholder capacity building and training workshops/programs carried out by DRDLR in preparation, support and promotion of the shifts and changes in planning theory and practice as informed by SPLUMA in South Africa. Lessons for similar future training and capacity building are also drawn with particular reference to South African planning law and generally for application in developing countries.

1. background and Introduction

The Spatial Planning and Land Use Management Act (Act 16 of 2013), was approved by the National Assembly on 27 February 2013 and assented to by the President on 2 August 2013. It was gazetted on 5 August 2013. The ushering of SPLUMA presents capacity building and training imperatives for industry, government, private sectors, academia and the research institutions in South Africa to name just a few planning and development stakeholders. This is because *inter-alia* other reasons SPLUMA is a new instrument that ushers in widespread changes in the management and practice of land use planning. Consequently, it has become necessary for the DRDLR to initiate a training and capacity building program that will enable implementers and users to understand and fully appreciate the objectives of SPLUMA and equip them with the necessary skills and tools that will enable its effective implementation.

SPLUMA as a framework act seeks to promote consistency and uniformity in procedures and

decision-making in all spatial planning and land use management legislation in South Africa. Additionally, it seeks to address historical spatial imbalances and the integration of the principles of sustainable development into land use and planning regulatory tools and legislative instruments. The Spatial Planning and Land Management Act provides for a new spatial planning and land use management system for the National, Provincial and Local spheres of government. In particular, the new spatial planning and land use management regime introduces a new national framework for municipal decision making and appeals with regard Spatial Planning and Land Use Management, which differs considerably from the previous approaches to municipal spatial planning and land use management. SPLUMA establishes the municipal Land Use Scheme (LUS) and Spatial Development Framework (SDF) as principal tools for Spatial Planning and Land Use Management. Municipal Planning Tribunals are established as the primary land use regulators for decision making in land development applications submitted in terms of municipal land use schemes. SPLUMA provides for municipalities to establish their own Tribunals, or to enter into agreements with other municipalities to establish joint Municipal Tribunals or District Municipal Tribunals. SPLUMA also provides that municipalities may, in addition to establishing a Tribunal, authorise that certain types of land development applications may be considered and determined by an Authorised Official in the employ of the municipality. The enactment of SPLUMA has brought several fundamental changes in spatial planning and land use management. Among the key ones, it confirms municipalities as authorities of first instance in matters of land development and land use management and provides clarity on the role of municipal and provincial spheres of government in the planning system. Municipalities now have a much wider scope of responsibilities and it is thus important that they are provided with the capacity, knowledge and skills to enable them to implement SPLUMA.

Spatial planning and land use management are critical in shaping the urban and rural landscapes of the country. It is the basis of day-to-day administrative decision making in municipalities. It is integral to many development processes that shape the built environment, be it with respect to human settlements, environment or transport. It is also responsible for the allocation of land use rights that play an important role in determining property value, significantly impacting on revenue generation for towns and cities. Consequently, the Department of Rural Development and Land Reforms (DRDLR) with the assistance of a service provider developed core training material. As a sequel to this, the DRDLR has since mounted a training and capacity building programme to support provinces and municipalities in discharging their respective duties in compliance with the Act. The core developed training material were and are necessary to provide a consistent institutional and operational framework within which provinces and municipalities will be able to discharge their Spatial Planning and Land Use Management functions and thus equips relevant entities with the appropriate knowledge and skills to make effective and efficient determinations on Spatial Planning and Land Use Management.

This paper presents an overview of the processes and outcome of the stakeholder capacity building and training workshops/programs carried out by DRDLR in preparation, support and promotion of the shifts and changes in planning theory and practice as informed by SPLUMA in South Africa.

The envisaged objectives of this paper which were incidentally the SPLUMA training objectives included the following among others, namely:

- Recognising that SPLUMA is a new instrument that ushers in widespread changes in the management and practice of land use planning, the training was/is therefore critical to facilitate smooth transition from previous legislations to the new legislation;
- The training will enable both implementers and users alike to understand the

objectives of SPLUMA and equip them with the necessary skills and tools that will enable them to oversee and ensure the effective implementation of the Act throughout the country; and

- Developing a cadre of provincial, district and local municipalities' core training team that would facilitate a sustainable *"train-the-trainer"* SPLUMA implementation model in South Africa.

The expected outcomes from SPLUMA training included the following, namely:

- Participants and delegates are equipped to initiate changes required in their municipalities to comply with the objects of SPLUMA with regards to land development application process and land development regulators
- Participants and delegates have increased appreciation of spatial planning and its importance in shaping the spatial form of development so that they can (re) consider the organisational structure and include planners in appropriate structures
- Facilitate the identification of the key spatial planning instruments and their legal status and function so that these legal instruments can be employed in supporting the preparation and approval of spatial plans and land development applications by political office bearers
- The training was an opportunity to explain SPLUMA and demonstrate how SPLUMA is different from existing legislation (i.e. in terms of providing for provincial variation as an example)
- Explaining the key legal concepts that inform SPLUMA and the roles of each sphere of government in the implementation of the Act
- Applying development principles when making spatial planning decisions
- Identifying the roles and responsibilities of the different spheres of government with regard to the different spatial planning instruments and what institutional changes need to be made at provincial and municipal levels to comply with SPLUMA
- Navigating the Act to find required information and ensure compliance
- Applying the principles and key requirements of SPLUMA in a municipal context, and
- Guiding the processes necessary to prepare spatial development frameworks (SDFs) and land use schemes (LUSs) in their organisation.

The SPLUMA national training programme was conceived and crafted with the intention to have a wide reach so that as many users of SPLUMA as possible could benefit from the training as possible. The main training target group hence included:

- Municipal officials, planners in particular and those involved in land development processes
- Municipal councillors, particularly those who participate in planning structures such as portfolio committees and in SPLUMA appeal bodies
- Municipal managers and senior managers/directors who will need to drive the implementation of new institutional structures, and
- Other professional services – private and public - that either inform planning or take direction from planning e.g. integrated development planning (IDP) managers, local economic development (LED) managers, heads of engineering, infrastructure.

2. Research Method

A robust and innovative training research methodology was adopted. The philosophy and guiding principle behind the adopted methodology included flexibility, appropriateness and pragmatism. Consequently, to operate SPLUMA training in a systematic manner, it was conceived that the training had to cover inter related SPLUMA provisions, components and processes as graphically depicted in Figure 1 below.

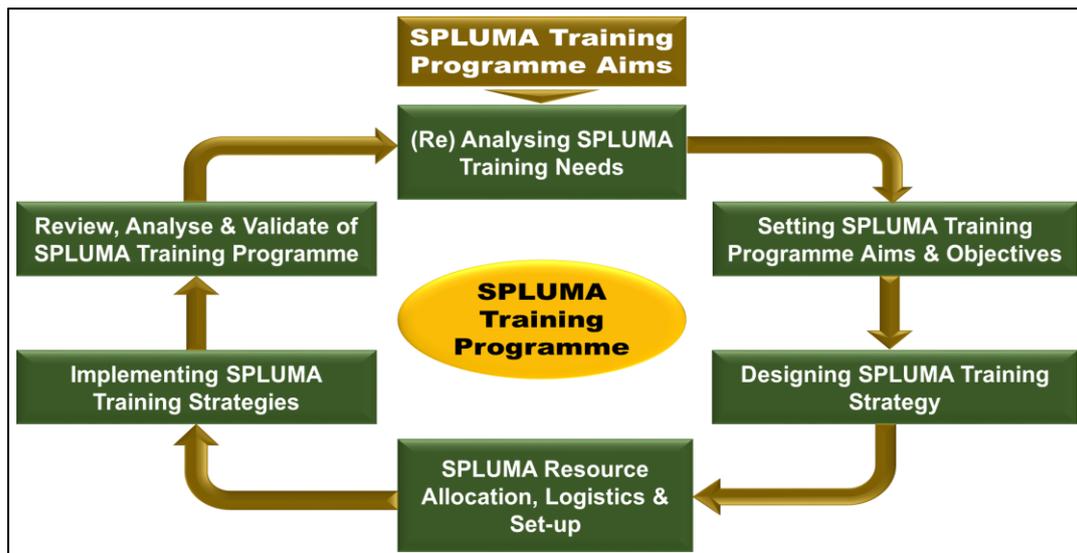


Figure 1: Schematic Illustration of SPLUMA Training Programme Considerations

Source: Authors own conceptualisation, 2015

Figure 1 above depicts that SPLUMA training programme was developed as an interactive process whose success hinged on the performance of all related sub-components. Suffice to point out that SPLUMA training was conceived and implemented in a context where both internal and external validity was critical and required achievement. Consequently, the entire process was covered by the term systematic approach to training (SAT) which is depicted in Figure 1 above.

From Figure 1, we can deduce that SPLUMA training was not simply organising classroom sessions. There was more to SPLUMA training as the processes included the identification of the roles of the personnel responsible for organising training and implementing a robust training programme among other key considerations. Taking into account Figure 1 above, the adopted SPLUMA Roll Out provincial model (refer to Figure 2 below) included a tripartite approach, namely: provincial core training team as facilitators e.g. Mpumalanga, provincial core training team and service providers (Facilitators) e.g. Limpopo and Provincial Core Training Team, DRDLR and Service Providers (Facilitators) e.g. province of the Eastern Cape.



Figure 2: Adopted SPLUMA Training Programme Models: Provincial Training Programme

Source: Authors own conceptualisation, 2015

From Figure 2 above, we can deduce that the adopted and implemented provincial Training model was flexible and informed by provincial training capacity building and training requirements, time and budget constraints. The train the trainer SPLUMA model and

approach adopted was based on leveraging inexperienced instructors through receiving coaching and mentoring from experienced national, provincial, district and local municipality facilitators. The seasoned personnel's role was to guide the less experienced in developing the skills and knowledge they need to deliver responsive and relevant SPLUMA course modules in the Provinces. Training has been defined as *The systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job*¹.

3. Literature Review

Spatial planning covers a large spectrum of scales ranging from neighbourhood, city/municipality, city region/ metropolis to national and supra-national/transboundary. It aims at facilitating and articulating political decisions and actions that will transform the physical and social space and affect the distribution and flows of people, goods and activities (UN - Habitat, 2015: 1). The discipline of urban and spatial planning is underrepresented in many developing areas, with 0.97 accredited planners per 100,000 people in some African countries and 0.23 in India. This is compared to 37.63 in the United Kingdom and 12.77 in the United States (UN-Habitat, 2015: 2). The sustainable development goal (SDG) agenda emphasize the development of inclusive, safe, resilient and sustainable human settlements and urban planning was acknowledged as a positive means for shaping a sustainable and equitable future. The objects of SPLUMA are to: *Provide for a uniform, effective and comprehensive system of spatial planning and land use management for the Republic; Ensure that the system of spatial planning and land use management promotes social and economic inclusion; Provide for development principles and norms and standards; Provide for the sustainable and efficient use of land; Provide for cooperative government and intergovernmental relations, and Redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.* Orange and Merrifield (2010: 45) suggest that planning reform and action in post-apartheid South Africa requires a "government systems that are located more in the harder edged realms of intervention and control, and less so in the softer spheres of dialogue, facilitation and guidance". The silver lining is that planning transformation will not be an automatic process but will require smart integrated and interconnected interventions at different scales and forms of governance if significant change is to be realized (Chakwizira and Mashiri, 2009: 1-19). Capacity building and training of existing and future planners constitute a vital lever in the quest to migrate from the spatial apartheid fragmented and manufactured cities and regions we have in South Africa to the envisaged post-apartheid integrated, inclusive, resilient and transformed South African cities and regions we aspire to.

4. Discussion of Findings and Results

Rolling out a training programme that was "fit for purpose"

Consequent and in view of the developed training programme objectives as elaborated in the section on the objectives of this paper, SPLUMA training hinged on the following philosophical principles and tenets, namely:

- Training was targeted at Provincial SPLUMA stakeholders in preparation for the commencement of SPLUMA as law on the 1st of July 2015
- Training was aimed at assisting in a "pain free" transition from "old" legislation to "new" legislation
- The Train the Trainers Approach aimed at building provincial and local planning competencies and capacity on SPLUMA
- Facilitators were drawn from Provinces [i.e. Province, District municipalities (DM) and Local authorities (LA) in line with developing grassroots SPLUMA competence and capacity]

- DRDLR Head Office and Service provider to provide a quality assurance and supportive role/function; and
- Recognition of provincial differentiation and customisation realities of each province in South Africa.

The SPLUMA Train the Trainer (TtT) National Workshop was held from the 22nd – 25th June 2015 at Lakeside Mall Hotel and Conference Resort, Benoni. The cross-section of participants and delegates who attended & participated at the TtT programme was representative of the broad sections and sectors that are impacted and drive the implementation of SPLUMA, namely: DRDLR Officials [Head Office & 8 Provincial Offices]; COGTA Officials; SALGA Officials; SACPLAN Officials; KENA Consult; and Municipalities [8 Provinces]. In line with the “*learning by doing*”, “*continuous improvement*” and “*quality enhancement*” training and capacity building approaches, workshop evaluation forms were completed by delegates and participants to gauge the relevance as well as sketch the gaps in the SPLUMA training. DRDLR training program on SPLUMA covers eight (8) modules which are enumerated in Table 1 below.

Table 1: Brief Overview of SPLUMA Training Modules in South Africa

Module	Brief Module Description
1	Spatial Planning: Why it is important: The purpose of this module is to provide the context for SPLUMA by creating an understanding & appreciation of the importance & impact of spatial planning, planning systems & municipal planning for development.
2	Introduction to SPLUMA: The purpose of this module is to provide a broad understanding of SPLUMA, rationale for its contents, the main departure points that it introduces to create a new planning system & how SPLUMA fits into the wider inter-governmental system of planning.
3	Complying with SPLUMA: The purpose of this module is to enable the participants to identify the requirements for complying with SPLUMA & the implications for their municipalities (region, district & local) & provinces. This will enable participants to guide the implementation of SPLUMA & assist decision-makers to initiate strategic & operational decisions for their institution & clarify issues of prioritization, timelines, responsibilities & allocation of necessary resources.
4	Land Use Management Systems & Land Use Schemes: The purpose of this module is to introduce the concept of a land use management system so that participants are able to understand what the purpose of a land use management system is, why it is important that it functions efficiently, what the components are & how they relate to each other to form a coherent system that mediates the use & management of land. This module component of the land use scheme (LUS) provides understanding of the role of Land Use Schemes in meeting the goals of the Act & consistency in the understanding & application of land uses, land use zones & land use schemes. This will enable participants to make decisions in line with the Act & develop an action plan for implementation considering issues of prioritization, timelines, responsibilities & allocation of necessary resources.
5	Spatial Development Frameworks: The purpose of this module is to develop a deeper understanding of the Act with regard to SDFs so participants can make strategic decisions for implementation, in line with the Act, & develop an action plan for developing a SDF for their institution, considering issues of prioritization, timelines, responsibilities & allocation of necessary resources.
6	Land Development Management – Applications: This module aims to heighten understanding of what constitutes a land development application process & key steps that an application follows from submission to final decision in terms of SPLUMA so participants can make decisions in line with the Act & develop an action plan regarding land development for their institution.
7	Municipal Planning Tribunals & Appeals: This module aims to provide an understanding of the requirements of SPLUMA with regard to decision making structures in land development management, including the role, functions & operation of the Municipal Planning Tribunal & the appeals process. This will enable participants to ensure that municipalities can comply with SPLUMA to set up & manage a Tribunal, & it will equip participants to make decisions that take into account the principles & objects of the Act.
8	Implementing SPLUMA – Next Steps: The purpose of this module is to enable the participants to reflect on the implications of implementing SPLUMA, to clarify what needs to be done by when & to draw up implementation action plans.

Source: DRDLR, 2015

Delegates and participants were asked to indicate in terms of their training experience what had stood out from the SPLUMA TtT workshop in Benoni. The aim of this question was to find out the strength and weaknesses of the SPLUMA TtT course programme and structure. Understanding the strength was essential in consolidating and further developing critical training areas. Acknowledging the training weaknesses was equally important in the further development and refinement of the TtT course offering. Figure 4 below presents what delegates liked most about SPLUMA core course training material. Figure 5 below subjects

that delegates felt should be included in the SPLUMA training. Further presents suggestions for improving the implementation of SPLUMA training in Provinces.

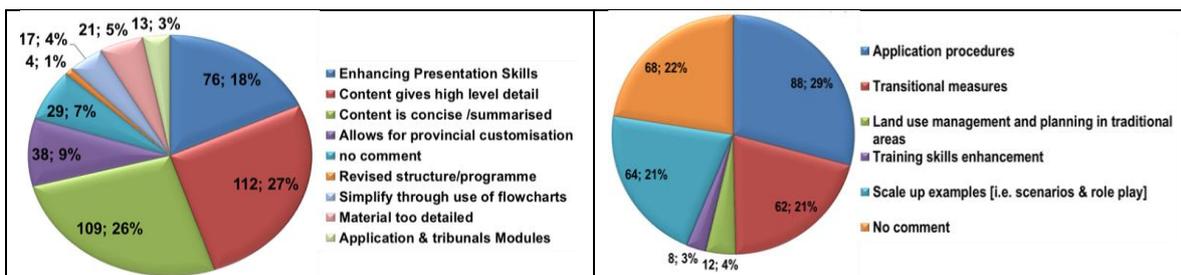


Figure 3: What Delegates Liked about SPLUMA Core Course Training Material: Benoni TtT National Workshop

Figure 4: Are there any other subjects you feel should be included in the training skills course

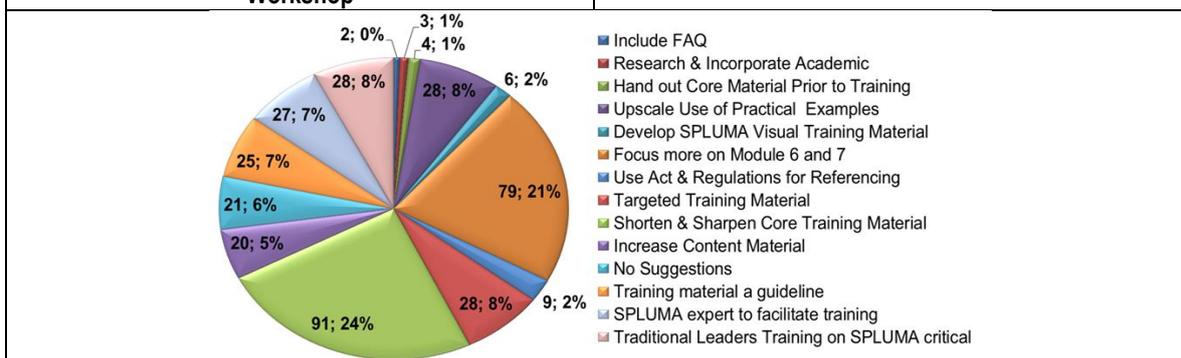


Figure 5: Suggestions for Improving the Implementation of SPLUMA Training in Provinces

Source: Research Findings, 2015

From Figure 3, we can deduce that 26% of the delegates felt that the training content is concise and summarised. 18% of the participants were of the opinion that the TtT workshop enhanced presentation skills that are essential in SPLUMA training roll out. 27% indicated that the content gave high level detail that enabled provincial, district and local training teams to use as a base in crafting contextually relevant SPLUMA modules. 9% noted that they appreciated that the SPLUMA core course material had been developed to allow for provincial differentiation and customization. Hence the course material was viewed as flexible, robust and capable of being adapted to different areas, regions and provinces in South Africa. 4% of the respondents highlighted that the simplification of course materials through flow charts made the material user friendly and accessible. However, 5% were of the view that the material was too detailed for generic core course material. In addition, 3% of the delegates who completed the evaluation indicated that the most striking areas for them was the material on tribunals and land development applications. Overall, the developed core course material was viewed as setting a good base and platform for rolling out SPLUMA training in South Africa.

Delegates and participants were asked to indicate whether in their opinion there were learning areas that needed to be incorporated in the SPLUMA TtT programme and course structure. The intention of the question was to solicit input and suggestions on critical (i.e. fundamental), additional and complementary courses necessary for SPLUMA training implementation. Alternatively, the question sought to establish and explore which course modules required more emphasis and focus in the roll out of SPLUMA training. Figure 4 above presents subjects that delegates felt should be included in the SPLUMA training. From Figure 4 we can deduce that a tripartite split training emphasis was suggested by the delegates i.e. 29% (application procedures), 21% (transitional measures), 21% (scale up examples in terms of scenarios and role play as examples). These indicated responses that delegates were of the opinion that equipping officials with a methodology and skills for

managing land development applications including the transitional measures for moving from the “old legislation and applications” to the “new legislation” and handling of SPLUMA submitted applications” constituted the key SPLUMA implementation levers.

Delegates and participants were further requested to make inputs regarding how the provincial SPLUMA training could be approached. The logic behind the question was to ensure that provincial, district and local SPLUMA team started to think of a pragmatic implementation frame and grid for SPLUMA. Figure 5 above, presents suggestions for improving the implementation of SPLUMA training in Provinces. From Figure 5 above we can deduce that 24% of the delegates indicated that prior to rolling out Provincial SPLUMA training, the core training materials needed to be shortened and sharpened with a clear provincial focus. 21% of the delegates highlighted that the focus of SPLUMA training should be on Module 6 and 7. These modules cover handling development applications and management of land use regulators i.e. MPTs. The argument was that this was the “soul and heart” of SPLUMA and the area in which stakeholders would interface and interrogate SPLUMA on. Other delegates noted that the use of the Act and Regulations in training would be useful to ensure better training (i.e. 6%). 8% indicated that targeted training material was required. As an example the training material for Councilors, Politicians, Traditional Leaders and Technocrats could not be the same. 7% were of the opinion that a SPLUMA expert must be used in facilitating the provincial training programmes. Overall, recommendations aimed at enhancing training mode delivery and output were made whose intended outcome was enhanced and strengthened SPLUMA training programme offering.

The SPLUMA national training programme roll out occurred from the 21st of July -18th of September, 2015. The implementation of the programme took into account the need to mobilise provincial training teams, preparatory meetings and hold dry rehearsals sessions by provincial training teams. Additionally, there was a need to ensure that all training logistics and support systems were in place prior to the training e.g. securing training dates and venues, issuing notices for the workshop to target training audiences/groups etc. Table 2 presents selected summarised highlights from the national training programme roll-out in South Africa.

Table 2: SPLUMA National Programme Roll-out Programme – selected highlights

PROVINCE	MUNICIPALITY / AREA / DISTRICT	DATE	NO OF DAYS
GAUTENG	SEDIBENG DM	21 July 2015	2
	WEST RAND DM	29 July 2015	2
	EKURHULENI	05 August 2015	2
	MOGALE CITY LM	21 August 2015	1
Total			8
EASTERN CAPE	Planning Meeting	21 July 2015	1
	MTATA (Alfred Nzo & OR Tambo)	30 July 2015	1
	PORT ELIZABETH (Nelson Mandela Metro)	04 August 2015	1
	QUEENSTOWN	06 August 2015	2
Total			5
MPUMALANGA	Planning meeting 1		1
	Planning meeting 2		1
	NKANGALA DM	01 September 2015	3
	ENHLAZENI DM	08 September 2015	3
	GERT SIBANDE DM	15 September 2015	3
	All Sector Meeting	TBC	1
Total			12
LIMPOPO	Planning Meeting 1	17 August 2015	1
	Sekhukhune	14-16 September, 2015	3
	Vhembe	14-16 September, 2015	3
	Capricorn District	16-18 September, 2015	3
	Mopani District	16-18 September, 2015	3
Total			13
NORTHERN CAPE	Frances Baard DM	21 st July 2015	1
	ZF Mgcaawu DM	28 th July 2015	1

	John Taolo Gaetsewe DM	30 th July 2015	1
	Namakwa DM	5 th August 2015	1
	Pixley Ka Seme DM	12 th August 2015	1
Total			5
KwaZulu-Natal	uThungulu DM Councillors & Traditional Leaders	10 June 2015	1
	Private Sector Engagement	26 th June 2015	1
	Hlabisa Council Engagement	30 June 2015	1
	aBaqulusi Council Engagement	7 July 2015	1
	Ilembe Chamber of Commerce	31 July 2015	1
	uMzimkulu Council Engagement	22 July 2015	1
	Jozini Local Municipality Engagement	19 August 2015	1
	Ingwe Local Municipality Engagement	21 August 2015	1
	Abaqulusi Municipality Traditional Leaders	25 August 2015	1
	Training of Planning & non-planning officials with KZN Southern Districts: Ugu DM, Ilembe DM, Harry Gwala DM, uMgungundlovu DM, uThukela DM	2 September 2015	1
	Training of Planning & non-planning officials with KZN Northern Districts: uMzinyathi DM, Zululand DM, Amajuba DM, uMkhanyakude DM, uThungulu DM	3 September 2015	1
	Ugu Spluma presentation with UGU House of traditional leaders	8 September 2015	1
	Harry Gwala presentation with Harry Gwala House of traditional leaders	18 September 2015	1
Total			13

Source: Research Findings, 2015

From Table 2, we can deduce that the SPLUMA Training programme focused on training planners and technocrats from national, provincial, district and local municipal level. While instances in which traditional leaders and politicians were trained, these were far and in between. This is one of the areas that future training will need to focus on. Overall, in summary the major SPLUMA roll out programme highlights include the following, namely:

- Training focused mainly on technical staff;
- However few politicians were trained during the “*first SPLUMA wave of training*” (e.g. Vhembe - Limpopo & Ehlanzeni - Mpumalanga) and Traditional Leaders trained (only in KZN);
- SPLUMA training programme duration ranged from a 1 (one) day training programme to a 3 (three) day training programme;
- Training was customized to provincial needs, although common trends emerge revolving around the following: Land Development Applications; Municipal Planning Tribunals; Interim Transitional Measures; Traditional leadership and land use management & planning areas in rural areas; and Training should be continuous and is not an event

Overall, provinces employed the generic SPLUMA core training material as a departure point in developing customised provincial SPLUMA core training material. At the same time most provinces emphasised module 6: Land Development Applications, Module 7: Land Development Regulations and Module 8: Implementing SPLUMA next steps. This was largely expected given that the target group for the first phase was technical and professional planners. This target cohort of professionals was more interested in how to implement and make SPLUMA work in enhancing job performance and delivery in their context. Table 3 below presents provincial SPLUMA roll out programme generic course coverage summary.

Table 3: Provincial SPLUMA Roll Out Programme Generic Course Coverage Summary

Module Name	NW	FS	MP	LP	KZN	NC	GP	EC
Module 1: The Introduction to SPLUMA			x	x		x		
Module 2: Compliance with SPLUMA			x					
Module 3: Land Use Management			x	x				
Module 4: Spatial Development Frameworks			x	x		x	x	

Module 5: Land Use Schemes			x	x				
Module 6: Land Development Applications	x	x	x	x	x	x	x	x
Module 7: Land Development Regulators	x	x	x	x	x	x	x	x
Module 8: Implementing SPLUMA Next Steps	x	x	x	x		x		x
Model By-Laws			x		x	x	x	
Interim/Transitional Measures	x		x		x	x	x	x
Environmental Impact Assessment Processes		x						
PAJA decision making guide		x						
Basic Status of Readiness			x	x			x	

Source: Research Findings, 2015

From table 3, we can further deduce that provinces further added training on by-laws as well as interim/transitional measures, EIA and PAJA as key levers for successful SPLUMA implementation.

SPLUMA training delegates and participants throughout all provinces were requested to complete an evaluation form to give feedback on the training programme. This section discusses the evaluation outcome of the feedback from the participants. In Limpopo, the overall evaluation by participants was that the training was excellent as it prepared delegates for SPLUMA implementation (refer to Figure 6 below). From Figure 6 below, we can deduce that no participants indicated that the training was poor, while only 6 participants indicated that the training was fair. Of the delegates who completed the evaluation forms, those who indicated that the training was fair and average indicated that they would have preferred that the training focused more on interim measures and model by-laws.

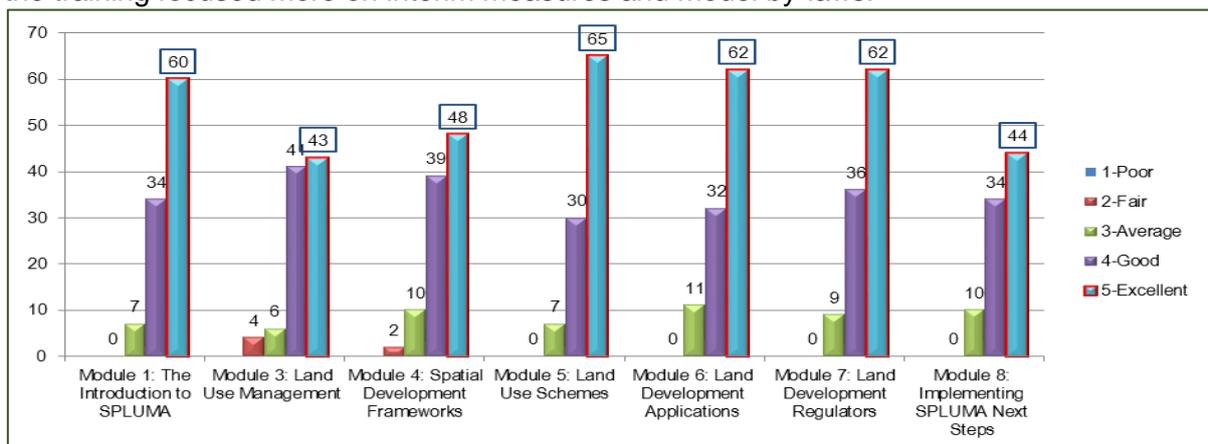


Figure 6: Limpopo Province Summary: Evaluation of Training by Participants

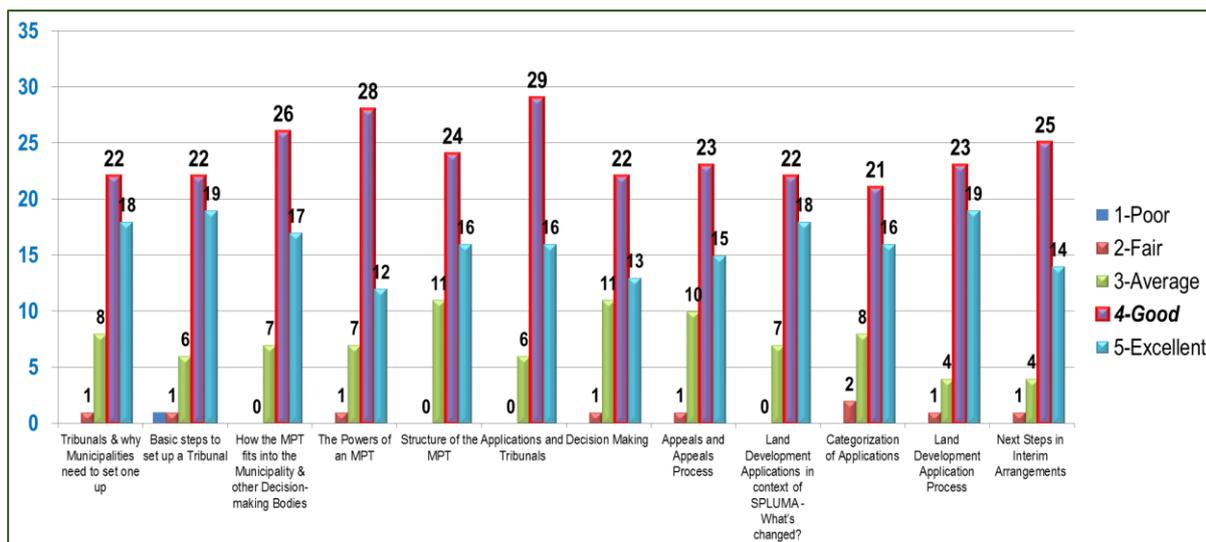


Figure 7: North West Province Summary: Evaluation of Training by Participants
 Research Findings, 2015

In the North-West province, the overall evaluation by participants was that the training was good as it prepared delegates for SPLUMA implementation (refer to Figure 7 above). From Figure 7 above, we can deduce that the overall scoring of the SPLUMA training in the NW province ranged from good to excellent. Delegates were of the opinion that if role play and mock tribunals had been included then the training would have overall been excellent.

5 Recommendations

An analysis and synthesis of the SPLUMA provincial and national training workshop highlights emerging lessons and gives pointers for further strengthening SPLUMA training in the country. The recurring and emerging issues that require further investigation and action/improvement plans include among them the following, namelyⁱⁱ: Need to train Inspectors as Peace Officers; Need to train Traditional Leaders on SPLUMA to clear grey areas of misunderstanding; Provincial Tribunal Secretariat can train LA on MPT Registry Functions; Adopt MPT model that is fit for purpose; Need for Clarity on the Intervener Status regarding limits and implications on planning applications; Need to address delegation of authorizations e.g. EIA, Mining Rights; Department of Agriculture etc.; and Sharing of experience and expertise in province regarding interim and transitional measures. A key thread that ran through SPLUMA training implementation was managing transition from the old to the new legislation. The central question revolved around how prepared and what systems were in place to ensure “smooth” transition and implementing of SPLUMA. This was particularly indicated by participants from Limpopo, North West and Eastern Cape feedback evaluation forms. Participants further argued that implementing SPLUMA also hinges on the transitional measures and the guidelines issued by the DRDLR constitute critical direction measures. At the same time, each province required to speed up the finalisation of provincial SPLUM legislation as well as the gazetting of municipal by-laws.

Participants were also asked to indicate future training needs. Table 4, presents future potential training needs disaggregated by province.

Table 4: Future SPLUMA Training Needs by selected Provinces

Province	Identified Possible Areas for Future Training	Target groups
Limpopo	• Customized LA Training for Officials; Municipal Planning Tribunals (MPTs) & Traditional Leaders	• Municipal Officials; MPT appointed officials, AO & Traditional leaders
Mpumalanga	• Targeted Municipal Training for Officials; Traditional Leaders & MPTs	• Municipal Officials; Traditional House of Leaders & Tribunal Members

<i>Northern Cape</i>	<ul style="list-style-type: none"> Planned sessions to train municipalities on appeal procedures / SDF guidelines & LUS compilations. 	<ul style="list-style-type: none"> Councillors; Municipal managers; Service providers & Tribunal members.
<i>Eastern Cape</i>	<ul style="list-style-type: none"> Focus on MPT's & then Councillors & Traditional Leaders & service providers/departments. 	<ul style="list-style-type: none"> Tribunal Members; Councillors; Municipal Officials & Service providers/departments
<i>KwaZulu-Natal</i>	<ul style="list-style-type: none"> Training needs to focus on processes & functioning of Tribunals. 	<ul style="list-style-type: none"> Tribunal Members; Authorised Officers; & Planning Administrative Staff

Source: Research Findings, 2015

6 Conclusion

In conclusion in implementing SPLUMA training for sustainability there is need to adopt a strategy of continual “waves” of Training on SPLUMA. Such a sustained training strategy should focus on the following target groups among others, namely: Traditional Leaders; Councillors; Service Providers; Government Departments; Business Sectors & Allied Professions; and MPT members. A key recommendation that continued to be echoed by all participants throughout the country was that the DRDLR is expected to continue to support Provinces in strengthening and building planning capacity. Additionally, there is need to explore the development of a complete SPLUMA generic video like the SPLUMA introductory video. At the same time SPLUMA training should not be abrogated only to the DRDLR but other training institutions should be encouraged to complement the efforts from the Department. In this vein, there is need to engage Universities, Colleges and private training companies to assist with up-scaling and owning SPLUMA training development. In short, with the advent of SPLUMA and other supporting policy documents such as the national development plan (NDP) 2030 the seeds of spatial transformation to create the cities and regions we need in South Africa have been planted, and history and time will serve to illustrate whether in future we will achieve the cities and regions we want. At the same time, it should be highlighted that SPLUMA and the NDP in themselves will not lead to the creation of the spatial spaces and places we want but in combination with efforts from different sectors, agencies, communities and non-state actors will result in the realisation of vibrant, sustainable, inclusive, integrated and resilient cities that the SDGs state as the desired pathways for our cities and regions.

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ⁱⁱ This list is just indicative and not exhaustive

A paradigm Shift form Resources Economy to Knowledge Economy: The Case of Urban Development in Qatar

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Introduction

The last 20 years of the 20th century, Gulf urbanity was mainly characterized by a commitment to use oil revenues to allow primitive, small and simple Gulf cities to rapidly transform into modern status. A process of massive transformation of the endless deserts into real estate mega projects coupled with qualitative upgrade of cities' infrastructure to get them ready for a new modern condition. Observing skylines of cities in the Gulf or tracing their geographical boundaries during the last two decades would prove what diverse researchers have considered unprecedented momentum of development. Yet, during the last five years, major Gulf cities have emerged as rapid growing knowledge economy localities. A well-planned process for building Qatar's new assembled identity and urban brand. Qatar is now capturing the world's imagination with an exceptional balance between global aspirations and local necessities. Doha, its capital is planned as future hub in different areas such as a cultural hub exemplified by museums and cultural events. A sports hub manifested in a considerable number of world class events including the Asian Games of 2006 to the successful bid for World Cup 2022. Doha is gradually becoming a business and services hub as manifested in the intensive activities of international companies, banks and oil and energy industries. The critical narrative of constructing such a brand is the focus of this paper. The paper examines the vision and strategy of Qatar to use its oil and gas revenues to diversify its economy.

Context and Territorial Background

Until few decades ago, Qatar was dominated by nomadic people whose livelihood depended on fishing and pearling. However, the discovery of oil and gas has encouraged not only socio-economic changes, but environmental changes as well. Today, the capital is home to more than 90% of the country's 2.5 million people, the majority of whom are professionals from all around the globe (QSA, 2015)¹. Up to the mid-1960s, the majority of Doha's built environment was composed of traditional houses that represent local responses to the surrounding physical and

¹ Qatar's overall population witnessed unprecedented increase since 2010. The current population of 2.4 million, of which only around 15 percent are native Qataris, and the peninsula is just 11.571 square kilometers.

socio-cultural conditions. During the 1970s and 1980s Doha was transformed into a modernized city. Over the past decade, Qatar has become one of the major producers and exporters of Liquefied Natural Gas (LNG) in the world. The wealth produced by Qatar's oil and gas exports has generated a construction development boom in the capital, Doha, and the surrounding vicinity. This resulted in significant growth at all levels from urban development and infrastructure provision to cultural and educational facilities.

The Concept of Creative and Knowledge Cities

To illuminate the connection between creativity, knowledge and city planning, Richard Florida's "Creative City" (2008, 2006, 2005, and 2002) theory is an essential tool for understanding how cities have become central to the achievement of competitive advantage. Therefore, the real economic competition today plays out among cities, not nation states as Florida rightly argues. An essential part of Florida's theory is the notion of creative class; the body of talented people that would be attracted to a specific city. Florida's theory emphasizes three main factors; Technology, Talent, and Tolerance, as responsible for attracting the "Creative Class", contributing to the national economy and establishing the requisite framework for sustaining competitive advantage. The creativity of cities is attributed to various factors, including openness to diversity, level of tolerance and the peaceful coexistence of differences in a society. Levels of technological innovation and a population comprised of talented and innovative people are also believed to have a direct impact on the creativity and hence, development of a city. In his latest book, Florida (2008) asserts that people can now choose the cities in which they want to live in, and this choice is shaped by the characteristics of the cities.

Post Carbon Era: A Need for an Alternative Urbanism

All Gulf States came to the conclusion that a focus on strategies for a post carbon paradigm is essential. The recent decline in oil prices from 100 \$US to a less than 40 \$US suggests a swift change in the way Gulf States envisioned its future. Therefore, the principles of knowledge economy was declared as the backbone in all Gulf States' future visions including Bahrain 2030, Dubai 2030, Abu Dhabi 2032, Qatar 2030 and Riyadh 2025. Emerging knowledge cities in the Gulf, mainly Doha, Manama, Dubai, Abu Dhabi and more recently Riyadh are transforming from their previous status as oil producing economies to cities celebrating education, research, innovation and attracting knowledge workers. For this process to thrive, a different kind of urbanism is required. The needs of knowledge workers moving to the new cities will change the spatial contents, boundaries and qualities of these cities. Knowledge-based urban development

(KBUD) can be an appropriate vehicle towards a new planning paradigm for Gulf cities. More specifically, establishing a creative or knowledge city implies its ability to affect the spatial properties. New patterns of urban spaces should be articulated. The ultimate goal is to increase the innovation and creative capacity of cities based on a new set of knowledge patterns.

The Case of Doha, Qatar: An Interrogation of a Gulf Creative City

In the past decade, Qatar has transformed itself into a major hub for numerous economic and cultural activities. Hosting a number of top-level sporting tournaments, culminating in the successful FIFA World Cup 2022 bid, is contributing in establishing Qatar and Doha as an emerging brand. Whether to counter regional economic competitors or to further tie Qatar to the economies of the world's leading countries, this brand is designed innovatively to counter a range of security concerns; in short, Qatar is diversifying its dependencies (Roberts 2015; Alraouf, 2016). Furthermore, Qatar has become attractive as a place for foreign knowledge workers and creative class to use Florida's terminology. Qatar's national vision for the year 2030 consists of basic foundations focused on the necessity of continuous social development in order to achieve a fair and safe society based on upholding human values and social welfare and aims to maintain and improve its economic standards in order to further strengthen its national economy and remain competitive, while continuing to secure and satisfy the needs of its citizens (QNV 2030). Maintaining the current growth of its urban population and fostering quality of life is seen as critical to the future development of the country, as indicated in the national development strategy 2011–2016 (QSDP, 2011).

Qatar's economy has experienced three transformations. It has been 39 years since the British left Qatar and much has changed during the last four decades. Hydrocarbons have replaced pearls as Qatar's main source of revenue, bringing previously unimagined wealth to the former British protectorate as White (2010) rightly argued. With a per capita income of \$83,000, second in the world, the tribesmen of Qatar are building a new future for their country. In 2005, Qatar Investment Authority (QIA) was established with a vision to reinvesting oil and gas revenues and building a diversified international asset portfolio. According to financial analysis done by RGE Monitor New York, Qatar has around \$75bn worth of investments outside the country.

Strategically, Qatar has been on a multibillion spending spree to acquire assets across the globe. Yet, the country's leaders fully acknowledge the importance of development from within. So, while Qatar is spending a fortune on foreign shores, it is not forgetting to invest at

homeland. As part of this development the face of Doha will change immeasurably over the coming years. So far, Doha is a more successful example in incorporating knowledge within the city. As clearly reflected in its future vision, Qatar's rulers acknowledged the shift towards a post oil paradigm (QNV 2030). More significantly, realized the global competition between cities around the world. Hence, acknowledge that in the context of international competition, new strategies for development have to emerge. Undoubtedly, architecture and urbanism are excellent tools that help cities create its niche in the global competition. Doha, while investing in positioning itself on the map of world emerging economies, was alert to use architecture and urbanism as a manifestation of a new era of planning and urban development (Alraouf, 2013; 2016).

During the last decade, Qatar adopted a new vision in holistic development which was crystallized in the doctrinal document Qatar Vision 2030. It is structured around huge investments in education, science, and research. In other words, the knowledge economy was explicitly declared as the selected economic platform for the country's future. While Doha's position is radically different from cities like Manama and Dubai when it comes to oil and Gas reserves, Qatar leaders were convinced that the post-oil paradigm is becoming a reality. Hence, moving from an industrial economy to a knowledge-based economy is a global and inevitable transformation that requires understanding and better engagement. To pave the way for this process to be implemented, a previous effort was made. In 1995, Sh. Hamad authorized the establishment of Qatar Foundation (QF). Qatar Foundation is a comprehensive and dynamic knowledge structure which includes all level of educational services from basic to university education. More importantly, QF accommodates creativity and innovation forums, a leadership academy, a sports academy, research centers, intellectual debates and state of the art conference facilities. For the sake of this paper, I will focus on some specific projects from within Qatar foundations. These projects are education city and science and technology oasis. I will use the two projects with other projects from outside QF to evaluate Qatar's effort to construct its identity as a knowledge and creative city within the Gulf's emerging urbanism.

The Vision, the Mission and the Adopted Strategies

In this part I will discuss three main strategies adopted by the country's leaders to create a new identity for Qatar amid the Gulf States. Roberts (2015) argues that rarely has a state changed its character so completely in so short a period of time.

Extended Global Investment Arm

Oil and gas reserves have made Qatar one of the most rapidly growing economies in the world. Qatar became the world's top liquefied natural gas (LNG) exporter in 2007. Qatar's copious supplies of (LNG) allowed its small population to enjoy being one of the world wealthiest countries and have the globe's highest per capita income. Fascinatingly, Qatar is trying hard to diversify its economy and its future vision named Qatar 2030 is forecasting an economy based on knowledge and creativity rather than soon to be depleted natural carbon resources. Qatar changed the classical slogan of different Gulf States known as earn locally, spend globally into earn locally, invest globally. The traditional method of international investment was based on moving oil revenues to foreign banks and stocks. Qatar is paving a new route by focusing on substantial global investment. Qatar pays close attention to the diversification of its economy. Although the oil and gas related sectors still constitute the majority of state revenues, varying yearly from about 50 to 70 percent, diversification is high on the agenda. As a good example of this sensitivity, the country's Sovereign Wealth Fund (SWF), the Qatar Investment Authority (QIA), valued at approximately US \$115 billion at the end of 2012, "does not invest in the Qatari energy sector" (Gray, 2013, p. 105). In light of this, Gray claims that QIA "was created either primarily or partly as a deliberate strategy of the Emir toward balancing out the fluctuations in energy rents and diversifying the economy" (Gray, 2013, p. 107).

Political Credibility: A new Global Mediator.

Qatar is, as Kamrava (2013), explains a "tiny giant": although severely lacking in most measures of state power, it is highly influential in diplomatic, cultural, and economic spheres. In the process of reinventing itself as a potential Arab super power, Qatar focuses on gaining global credibility. The Gulf State tries to build a niche as conflict mediator within the Middle East and Africa. Using a combination of its financial power and its increasing diplomatic credibility, Doha is winning global respect as an able negotiator. Financed by gas exports, Qatar diversified its foreign relations to include Iran and Israel, and carved a leading role in international mediation (Roberts, 2015). Currently, Qatar is successfully building a reputation as the mediator of choice in regional and international conflicts. Qatar gained political credibility among Arab and foreign states alike. It has endeavored to cut a unique profile as a diplomatic mediator and peace negotiator in recent years, intermingling in conflicts from Lebanon to Yemen and Darfur and most recently, the Arab spring countries. Qatar's prominent role in the Arab Spring follows a similar pattern, yet the gamble it is taking in supporting elected presidents and people's choices proved to be of a high cost. Qatar used the Arab Uprisings as an opportunity to seize rather than a challenge to be contained (Ulrichsen, 2014). The state's strategy was to achieve regional

and global prominence. Qatar has a palpable desire to be a trendsetter at the forefront in all domains, whether it is education, media or diplomacy (Farha, 2010, The Gulf). Therefore, the Amir is expected to continue to give priority to mediation efforts, boosting Qatar's standing diplomatic circles. Qatar's effective use of its subtle power, Kamrava (2013) argues, challenges how we understand the role of small states in the global system. Qatar's diplomatic triumph is a result of clear vision that Doha is the ideal environment for regional conflict resolutions and constructive negotiations. Kamrava (2013), points to the changing nature of power in international arena in general and its utilization by Qatar in particular, labeling the new form of power that Qatar has carved out "subtle power".

Branding Qatar via Doha's Emerging Knowledge-based Urbanism

Architecture, urbanism and planning are used, as will be explained in the coming sections, to prepare the country for the post-carbon era. Such preparation includes creating the environment which would attract knowledge workers and creative people from around the world to settle in Qatar. On a planning level, the new blueprint for the urban development of Qatar titled "Qatar National Development Framework (QNDF)" is the outcome of Qatar's urban planning department and its focus group envisioning Qatar National Master Plan (QNMP). The main pillars of the framework suggest a new form of urbanism for Qatar articulated around planning for sustainable growth, compacted settlements, transit oriented urban development, walkability, mixed use urban centers and positive public realm. Such new planning principles aim at transforming Qatari cities and municipalities into people friendly places and spaces and create the attractive environment which speaks to knowledge and creative workers considering Doha and other Qatari cities as their new homes. For instance, enhancing walkability within the West Bay development is considered as a catalyst to transform the area from a composition of isolated towers and skyscrapers into a network of activities which would enhance social integration, walkability, public real and urban connectivity.

More significantly, according to QNDF and all municipal spatial development plans, Qatari cities are planned to accommodate a number of mixed use urban centers. The centers go all the way from the level of the neighborhood to the level of the whole city. All centers provide the needed community services and facilities including open and green spaces. To enhance the sense of walkability, the centers are designed around either a metro station or a public bus node to emphasize the transit oriented development strategy adopted in all of Qatar. Additionally, the National Spatial Strategy (2032) and Metropolitan Doha Plan (2032) are providing a future

vision for the Qatari Capital. The vision is founded on a multi-centered approach to urban development. Metropolitan Doha contains three capital city centers include Downtown Doha, Airport City and West Bay. The three centers are characterized by mixed use development which can guarantee vibrant, attractive and sophisticated public realm. Also, numbers of sustainable patterns of development are introduced including bicycles and water buses and taxis. All of these policies and strategies substantiate QNDF's main aim to provide an excellent spatial strategy which provides sustainable urban living for locals and expatriates.

Another crucial point related to the qualitative understanding of Qatar's future population. QNV 2030 asserts the value of attracting knowledge workers to reside in Doha. To better cope with the conditions of establishing knowledge economy, the vision suggests revisiting the country's demographic structure. While the current population is approaching 2.5 million, the vision is estimating around the same number for 2030. The rationale as explained in the vision, stems from the fact that Qatar's population will experience qualitative and not quantitative change. At least 800,000 construction and infrastructure workers will leave the country by 2019/2020 when most of the mega projects are finalized. This 35% of the total population will be replaced by knowledge workers and creative class members to occupy position in education, research, innovation, arts, banking, services and all other aspects of knowledge-based development. On the levels of architecture and urbanism, two main categories can be observed within the boundaries of Doha, as the main channels for articulating the new urban brand. Knowledge-based Urban Development (KBUD) is the first category. The balanced combination between local and global urbanism is the second.

Knowledge-based Urban Development (KBUD)

Qatar underwent a radical transformation to go beyond the typical image of a Gulf city relying on presumably endless assets of oil and gas. Significant investment has been made in knowledge-based urban development in the country during the last decade. Architectural and urban evidences of the new trend towards knowledge based urbanism can be observed around Doha include iconic projects like Education City, Qatar Science and Technology Park, National Library, Qatar National Museum (QNM), and Museum of Islamic Art (MIA).

To learn more about these projects, I would start with the two iconic museums MIA and QNM as they are both helping in envisioning Doha as a new arts capital in the Middle East. MIA opened its door to visitors in December 2008. Inspired by the geometry of Ibn Tulun Mosque in the heart

of Islamic Cairo, the museum, which was designed by prominent architect I.M. Pei, is a contemporary representation of generative architecture produced from applying three dimensional geometrical complexities. Qatar Museums (QM) which constructs the umbrella underneath MIA and other museums are covered, has its own cultural development strategy for Qatar. Subsequently, constructing museums would substantiate Qatar's vision for Doha as an emerging knowledge city amid other Gulf Cities. Marking the next stage of its program to develop Qatar into a hub of culture and communications for the Gulf region and the world, the Qatar Museums (QM) revealed its plans for the new National Museum of Qatar, as expressed in a striking and evocative design by Pritzker Prize-winning architect Jean Nouvel. The project is also seen as manifestation of knowledge based urban development trend in Doha and other Qatari cities. Unlike the MIA that was situated on a man-made island in the bay, the QNM is at the south end of Doha's Corniche, QNM will be located on a 1.5 million-square-foot site where the old museum is in the city's heart. Unlike Pei with the MIA who looked to architecture of Muslim communities for inspiration, Nouvel looked locally to the actual site, environment and adjacent Gulf coast. The organic design allowed the new museum to literally embrace the old museum and intensify its value, emphasizing the appreciation of the old heritage. The masses of the new museum articulated around the old one give a message of integration and appreciation rather than separation and discontinuity between old and new. Precisely, the form of the desert rose, a unique feature of the Gulf coast, made a huge impact on the architect's quest for a local natural element to be reinterpreted geometrically to provide the formal composition of the museum.

A move towards being a regional center for education, knowledge and culture is the new aspired sense of identity for Qatar. The two museums, MIA and QNM, are designed and planned to engage the community in various activities some of which transcend the typical role of the museum as a mere container of art works. The rationale here is related to the necessity of confronting the fact of limited museums in the Gulf. The urban scenarios suggested by the design of the two museums allow people to be attracted via unique amenities like the open park at MIA with its regular concerts, bazaars and recreational activities for families of locals and expatriates alike.

Another keystone in the vision of Qatar as a platform for KBUD is manifested in projects related to the culture of education, research and knowledge dissemination. Education City (EC) is creating a culture of research and knowledge which is located in a unique campus on the

outskirts of Doha. EC hosts branch campuses of some of the world's leading universities, as well as numerous other educational and research institutions. EC is envisioned as a hub for the generation of new knowledge: a place that provides researchers with world-class facilities, a pool of well-trained graduates, the chance to collaborate with like-minded people, and the opportunity to transfer ideas into real-world applications. To be confident that EC is playing its social role within Doha, a deliberate effort is geared towards the internal and external integration of EC with greater Doha. To achieve this goal some strategies were suggested including the borderless campus, inviting local community to use the city's facilities, providing new amenities which speak to the needs of the surrounding community and the residents of Qatar as a whole². On the same path, Qatar's Science and Technology Park (QSTP) aims at turning Doha into a vibrant science and technology hub and attracting and retaining highly skilled employees are outlined in the Qatar Strategic Plan 2030. QSTP was established to provide the ideal environment to develop and market hi-tech intensive innovations and products and for providing services and locations with international standards for global companies to incubate new technological projects. The fact that QSTP is located close to EC's top universities adds a positive element particularly when it comes to research collaboration, innovation, and creativity.

Embracing Local Heritage and Global Urbanism.

A well balanced mixture of local and global approaches in developing Doha's architecture and urbanism highlights the emerging urbanity of the city. While the Waterfront's development is characterized with icons and signatures from the top architects of the world, a good number of projects which preserve, conserve and promote local culture and architectural heritage can be observed. To substantiate my point of view regarding the importance of local architecture and urbanism, I will provide a short analysis of some projects which substantiate this trend of development. One interesting project which brings people together to enjoy leisure time and also confront cultural and knowledge experiences is The Cultural Village (Katara). Katara, Qatar's cultural village is situated on Doha's eastern coast at West Bay, near the Qatar International Exhibition Center. Katara's concept is to create an environment suitable for nurturing and activating the cultural and innovative activities in the country; to be a cultural hub and meeting place for the educated and creative; to raise public cultural awareness through

² I do serve as a member of the advisory board formed by Education City's "Capital Projects", the technical arm of the city to provide insights into the continuous process of integrating education city with the rest of Doha.

festivals, exhibitions, forums and other cultural events; to conduct researches and studies relevant to the objectives and activities of Katara; and to invest in the buildings and facilities.

Another unique example is Souq Waqif was originally a weekly market for local Bedouins. The souq acquired its name "Waqif," which means "standing" in English because merchants stood up to peddle their goods. Coinciding with the emerging of modern Qatar, the souk developed to expand in space and activities. The Souq recent renovation is considered one of the most successful projects which took place within Doha in the last decade. It has become one of Doha's most popular sites. After renovation, Souq Waqif becomes a showcase of traditional architecture, handicrafts and folk art. The Souq evokes the feeling of traditional Qatar heritage. The successful renovation highlights the nobility and wisdom behind the region's traditional architecture in the face of modern construction devoid of any cultural identity. This traditional experience made Souk Waqif imperative and the prime place to visit for locals, expatriates and tourists alike. Souq Waqif was nominated for prestigious Aga Khan Award for Architecture in the 2010 cycle. It has been described as a revitalization project, a unique architectural revival of one of the most important heritage sites in Doha aimed to reverse the dilapidation of the historic structures and remove inappropriate alterations and additions.

Concluding Remarks

As people and capital move more freely around the world, people will have the option to choose which area to live. This creates competition among global cities. Qatar is using the design and planning of the built environment to disseminate a positive message and to create a global and regional brand promoting the quality of life expected in its cities. Contemporary Qatari cities are being designed to attract knowledgeable and entrepreneurial people from around the globe to their locals so that the state may benefit socially and economically from the ideas, goods and services provided by such people. Doha has gained global significance through the growth of knowledge economy related projects. The city's new urban development and its spatial qualities contribute to the global attractiveness of Doha for knowledge economy investments, firms and people. Such urbanism fulfills the requirements of Knowledge workers coming to the city from literally every spot of the globe anticipating an attractive smooth quality of life which would foster their creativity and innovation.

Knowledge-based urban development should be perceived by Gulf cities as the most appropriate answer for their quest to overpass the oil economy era and moving vigorously

towards post-oil one. A large part of the motivation behind the projects is clearly the desire to establish Qatar as both a tourist destination and as an ideal place where knowledge workers might be prepared to relocate. Making global and knowledge workers happy by innovating and creating might be the new definition of 21st century urban knowledge and creative city. Qatar acknowledged culture as a main catalyst for a new era of development. Knowledge based society as Qatar national vision suggests, considers culture as a crucial asset that should be preserved. Knowledge economy and the commitment towards transforming Doha into a creative and knowledge city govern every step the Qatar government is taking to shape the future of its Capital city, Doha. Hence, the government emphasizes the importance to embrace Qatari culture and identity, ensuring that development will not have a negative impact on culture and social norms. Looking at the major measures taken by the government, Qatar's path looks optimistic in terms of ensuring that economic development will not compromise its culture.

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Understanding Variables for Contextual Re-generation of Urban Areas

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Abstract: *The current shift in the outlook of urban planning in India is towards SMART cities, and the focus is on designing economically competitive global cities ignoring local natural inclinations and synergy between culture, economy and spatial patterns. However, to arrive at suitable contextual planning guidelines, there is a need to quantitatively define different physical aspects of city which would likely effect its cognitive image. Thus, the aim of this study is to see how spatial pattern and functional distribution effects city's cognitive image. The objective of the paper is to propose a conceptual framework to assess the effect of urban spatial form and configuration on cognitive image of the city. All the factors effecting a city's cognitive image, obtained from literature study, has been broadly classified into three indices, accessibility, physical chaos and activity chaos to derive the latent variable, 'entropy' of the city. Then, a quantitative framework has been proposed to identify how the cognition of a place varies with respect to these indices.*

1. Introduction:

The current shift in the outlook of urban planning in India is towards SMART cities, and the focus is on designing economically competitive global cities ignoring local natural inclinations. While designing a city, we generally try to meet the goals, mainly regarding the hardware, i.e. housing, infrastructure needs and economic motivations. However, context development objectives are generally overlooked. As a result, we end up with similar looking cities with rows of buildings and structures just packed in the space according to need without any 'image' to make the city inviting or livable. In the face of growing Urbanisation, the primary aim is at maximising the accomodation potential of the city. The people residing there do not identify with the city and the 'sense of belonging' slowly dissuades leading to ego-centric community. As a result, the inhabitants do not 'give back' to the city.

It is often argued that, the people and the kind of activity happening in the city, gives the city its identity and culture. Thus, its image would develop organically with passage of time. But the major difference between the evolution of old cities and new cities is that, even the physical form of the old city had developed organically which does not happen in new cities. Any type of activity or human interaction needs a particular type of physical space, and when this physical space itself cannot develop organically, the development of the culture or the image of the city becomes less flexible. For example, for a vibrant street culture to sustain, the city needs to make provision for the volumetric cultural space (i.e. physical place like wide footpaths to include vendors, shops and sitting areas and competitive economic space) along the roads. Without such provisions, development of the vibrant street culture is likely

not possible and in turn inherently impedes walkability. Also, The socio-economic fabric of the city does not only depends on the social and economic layers of the city, but also on the physical configuration and the context of the space.

Therefore, it is imperative for the new generation city planners to study the synergy between culture, economy and spatial patterns. This inter-dependency needs to be reflected in new city planning agendas. To arrive at a suitable neo city planning agendas and guidelines which includes contextual oriented development, there is a need to define and quantitatively measure the different physical aspects of the city which would likely effect the cognitive image of the city. The aim of this study is see how spatial pattern and functional distribution of the city effects its cognitive image.

The objective of the paper is:

- To identify and define the urban form factors that effects the cognitive image of the place.
- To propose a conceptual framework for quantitatively measuring these factors.
- To arrive at contextual planning framework for Urban Regeneration

The following sections of this paper are organized as follows. The next section of this paper presents a literature review on research directions regarding image of the city, measuring urban form and effect of urban form on image of the city. The next section of the paper deals with the concepts and definitions of the factors used in the conceptual framework. The subsequent sections deals with the conceptual framework and proposed methodology to measure the factors.

2. Literature review:

Understanding the effect of the image of the place on human behaviour and interaction becomes an important aspect of research in urban planning. Multiple disciplines have approached this issue from their respective perspective. However, no study exist in an integrated manner. Moreover, multiple disciplines uses different jargons which are either unfamiliar or too complex to be integrated in the policy administrative process. Various empirical studies have observed that the mobility pattern of a city depends not only on metric distance, but also on the city configuration and cognitive image (Noulas, et. al, 2012). Hillier (1993), in his concept of Space Syntax Analysis, have tried to quantify the network characteristics of urban street network and its effect on human movement. Many researchers have tried to incorporate the city configuration factors like land use mix, density, etc., into space syntax concept to arrive at a integrated framework to quantify the city structure and form (Ye, 2012). Cognitive science being a multi-disciplinary field, it has been dealt separately by various researchers with varied research themes and some disjointed studies have been carried out to establish the relationship between the cognitive image of the city and route and mode choice in a city (De Nadai, M., et. al., 2016, Downs, R.M., et. al., 1973, Hillier, B., et. al., 1993). Most of the studies used either indicators of urban configuration or network topology. In his research, Ye(2014) has tried to combine all the factors to provide a more holistic measure.

Measuring image of the city has always been a critical aspect in urban planning. There has been various theories to qualitatively describe the cognitive effects of a space design on its

users. Lynch (1960), in his book "Image of the City", forwarded the concept of Imageability. He argued,

..that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, colour, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment.

He put forth five elements of city design which affects the cognitive image of the city, namely, path (vibrancy, continuity, gradient, width), edges (boundaries, barriers, breaks), district (well defined character, homogeneous), nodes (junctions, strategic foci, interaction) and landmarks (uniqueness, contrast, symbolic). Various factors, such as levels of scale, strong centers, boundaries, alternating repetition, positive space, good shape, local symmetries, deep interlock and ambiguity, contrast, gradients, roughness, echoes, voids, simplicity and inner calm, and not separateness, (Alexander, C., et.al. 1977), pedestrianisation, diversity, etc. (Jacobs, J., 1961) have been identified by various authors, as factors of the city structure that effects the image of the city directly and thus, effects human behavior. On a more psychological and social need basis, factors like livability, character, connection, mobility, personal freedom, and diversity have been identified as the factors responsible for image building of a place (Smith, T. et. al., 1997). In the paper (Smith, T. et. al., 1997), the authors conclude that a walkable community, outdoor amenities, lots of seating, barrier free, and open space areas in residential areas are the most dominating physical design elements that generates desirable community quality. The concept of 'Phenomenology' is also used to qualitatively define a 'place'. Phenomenology is an approach that concentrates on the study of consciousness and the objects of direct experience, it prioritizes how we see over what we see. (Seamon, D. 2000, 2007).

A phenomenological theory of planning procedure would encourage planners to note what objects in their communities have meaning, and how different frames of reference give different meanings to each object. Phenomenological planning may involve seeing a house not as a "merely technological construction, but dwelling; not merely homogeneous and mathematized space, but place; not merely planetary raw material, but environment" (Seamon, D. 2000, 2007).

Another concept which deals with the emotional and sociological texture of a space, is the concept of Placemaking. Placemaking is an approach to design public spaces based on people's choice and their active participation. The "intrinsic-ness" of a place makes it unique. (Jana, et.al, 2015)

Most of the methods described above involve descriptive research, matrix development and qualitative analyses. But, there is a need to quantify the factors for including these image building concepts into main line planning methods and guidelines. In the paper, Arabacioglu (2010), argues that,

Creating a mathematical model of architectural space with concrete results will offer many possibilities for design process in analyzing spatial organization, independently from in architect's experience and intuitions.

This quality of space has been defined by the authors which includes mainly with three factors, namely, transparency, stress and distance. The authors present a fuzzy inference system based spatial analysis model for spatial analysis for architectural design which can be later translated in city public space analysis.

2.1 Capturing people's perception:

The major hindrance in such type of researches is the absence of an efficient system to capture peoples' 'likings and preferences'. The most common method of obtaining user preference is through questionnaire surveys. But, the basic disadvantage of such surveys are that they capture the users' preference as stated and not as revealed. Stated preference can be socially prejudiced and biased. Various attempts have been made to capture human preferences through drawings, video graphic, narrative survey, etc. The recent studies on cognitive image of a city uses crowd-sourced, location based social network data to capture human responses to a particular place. In the paper (Wakamiya, S., et. al., 2012), the attempt was to exploit crowd-sourced location-based life logs for generating a socio-cognitive map. For the purpose, the authors measure socio-cognitive distance among urban clusters based on human mobility data from Twitter logins to represent accessibility of urban areas based on crowd's movement. From the frequency of movement, the authors tried to find out the cognitive distance explained by the following equation.

$$\text{CogDist}(c_i, c_j) = w_1 * \text{EucDist}(c_i, c_j) + w_2 * \text{ExpDist}(c_i, c_j) \dots \dots \dots (1)$$

(w₁+w₂=1.0, w₁, w₂ >=0)

$$\text{ExpDist}(c_i, c_j) = 1 / (\# \text{MovSeg}(c_i, c_j) + 1) \dots \dots \dots (2)$$

where, CogDist, EucDist and ExpDist, calculate distances between urban clusters (c_i, c_j) in terms of cognitive, physical, and experiential, respectively. Specifically, the function CogDist is calculated by EucDist and ExpDist. The function EucDist calculates normalized Euclid distance between urban clusters, and the function ExpDist calculates normalized experiential distance between them based on the quantity of crowd's movements given by a function #MovSeg which counts the number of moving segments between the clusters. The values computed by EucDist and ExpDist are weighted based on given values, w₁ and w₂, respectively. (Wakamiya, et. al., 2012)

While measuring behaviour, the focus has been mostly on travelers. The network and cognitive characteristics are mostly overlooked. Though these behaviour based studies tried to establish the possible relationship between form, behaviour and cognition, they are mostly done on very disaggregated level by considering only one aspect of the concerned issues. Most of the studies fail to consider the traditional factors while studying these new factors. A holistic study is needed to see the extent of effect of network and cognitive factors on travel behaviour and land use propensity. Moreover, quantification of cognitive factors yet remains a big challenge.

From the above discussion, three main factors affecting the image of a place could be grouped into three categories, physical form of the place (2-dimensional as well as 3-

dimensional), the physical and function hierarchy of the place with respect to the entire city or the region and human interaction of the city. All the factors, derived from the literature study can be grouped into the above three categories (see Figure 1). Thus, it could be safely assumed that, the three group of variables, urban form, physical and functional hierarchy and human interaction, can be seen as the variables affecting the image of the place. These three characteristics of a place taken together describes the **entropy** of the place.

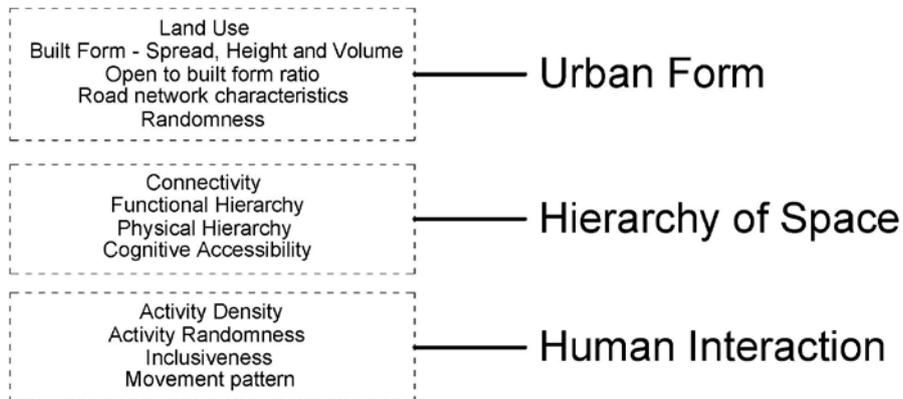


Figure 1: Grouping of all the variables effecting the 'image of the city'

2.2 Concepts and definitions:

Some of the methods of measuring the above mentioned variables described below:

2.2.1 Space syntax analysis:

The term space syntax encompasses a set of theories and techniques for the analysis of spatial configurations. It was conceived by Bill Hillier, Julienne Hanson and colleagues at The Bartlett, University College London in the late 1970s to early 1980s as a tool to help urban planners simulate the likely social effects of their designs. The three basic conception of space in the space syntax analysis are Convex space, Axial space and Isovist space. Convex space is a space where no line between any two of its points crosses the perimeter. Axial space or an axial line is a straight line ("sight line"), possible to follow on foot. Isovist space is the total area that can be viewed from a point.

This concept of space is developed into maps like Convex maps, Axial maps and Isovist maps. These concepts of space and maps are applied on the road network of a city for 'Analysis'. The concepts of social network analysis is applied to 'measure' the road network. Some of the measures can be connectivity, integration, control, choice, centrality measures, etc. Connectivity measures the number of immediate neighbours that are directly connected to a space. Integration is a static global measure. It describes the average depth of a space to all other spaces in the system. The spaces of a system can be ranked from the most integrated to the most segregated. This is also known as the global-integration analysis or integration radius-n analysis. However, an analysis can also be restricted at a lower depth of connectivity. For example, in an integration radius-3 analysis, only the units that are three depths away are considered in order to determine local integrations describing how each unit is accessible from all other units that fall within the restricted radius boundary (radius-3 in this case). Control value is a dynamic local measure. It measures the degree to which a space controls access to its immediate neighbours taking into account the number of alternative

connections that each of these neighbours has. Global choice is a dynamic global measure of the “flow” through a space. A space has a strong choice value when many of the shortest paths, connecting all spaces to all spaces of a system, passes through it. Lastly, centrality measures like closeness and betweenness can also be used to measure a road network.

2.2.2 Volumetric density - Space matrix method

Building density and various building types has been represented simultaneously using the spacematrix method. The whole built environment can be divided into various categories having various combination of FSI (Floor Space Index), GSI (Ground Space Index) and building height. This helps to quantify such variables as intensity, compactness, non-built space, and building height, and thereby differentiate urban form efficiently (Berghauser, et. al., 2007, Rådberg, 1996). FSI gives an indication of an area’s built intensity or plot ratio. GSI indicates the building coverage or ground-floor area. The spacematrix method also divides building types into low-rise, mid-rise and high-rise, based on the number of floors. It also separates buildings into point type, strip type, and block type based on construction forms.

2.2.3 Land-use mix:

The MXI is a method used to quantify the degree of land-use mixture (Hoek, 2009). It measures the extent of functional multi-use. Figure 2 shows the interrelationships of the three major land-use categories. Each corner of the triangle represents the mono-use and as we move towards the center it represents multifunctional space. By setting up various categories depending upon the percentage mixture, we could classify the area accordingly.

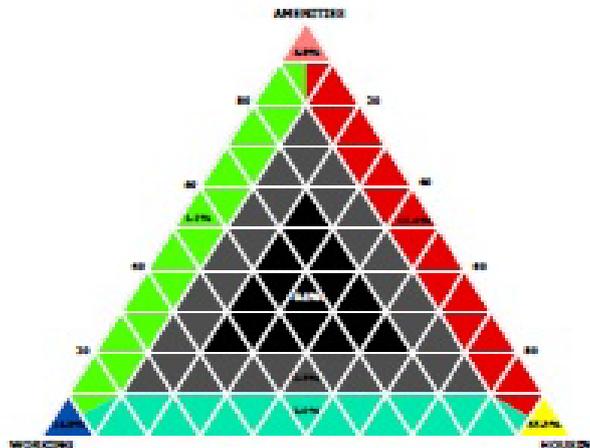


Figure 2: MXI guidelines for categorize urban form (Ye, 2012)

2.2.4 Activity Density:

The activity density is a measure of the density of any activities characteristic of that place. For measuring activity density, any indicators could be used, for example, footfall, electricity usage, the internet connections, or social network check-ins, etc. The authors of the paper (De Nadai, M., et. al., 2016)

2.2.5 Other Measurements borrowed from different disciplines:

Sky-view factor:

The sky view factor is the ratio between radiation received by a planar surface and that from the entire hemispheric radiating. This factor can be used in the analysis of urban public spaces as a measurement of the openness of the public spaces and the amount of radiation that place receives.

Brownian motion:

Brownian motion is the random motion of particles suspended in a fluid (a liquid or a gas) resulting from their collision with the quick atoms or molecules in the gas or liquid. This concept of motion is equated to human mobility to find out the chaos in motion, treating the place a giant container. More the movement, more is the chaos and thus more are the conflicts, especially in the situation of a developing country with high heterogeneity of mode of movements.

Fractal Analysis:

Fractal geometry is defined as the same type of geometrical elements found at an infinite number of scales. The occurrence of the similar element asserts the existence of a hierarchical structure. Repetition of elements have always considered aesthetically pleasing, yet too much of repetition would result to monotony and lack of identity. Sometimes though, this particular repetitive element itself becomes the identity of the place.

3. The conceptual framework:

A conceptual framework has been proposed to identify how the cognition of a place varies with respect to these indices. It is the function of this 'entropy' that provides the place its image. A place devoid of any chaos and which is not at all vibrant becomes dull and unsafe, and thus, does not attract people. But, obviously there would be a threshold of this entropy, after which the place becomes too much disorderly(chaotic) thus repel people (see Figure 3). After quantifying inhabitants' perception of the image of the place, captured through user perception surveys and other methods, it can be compared with the city entropy index.

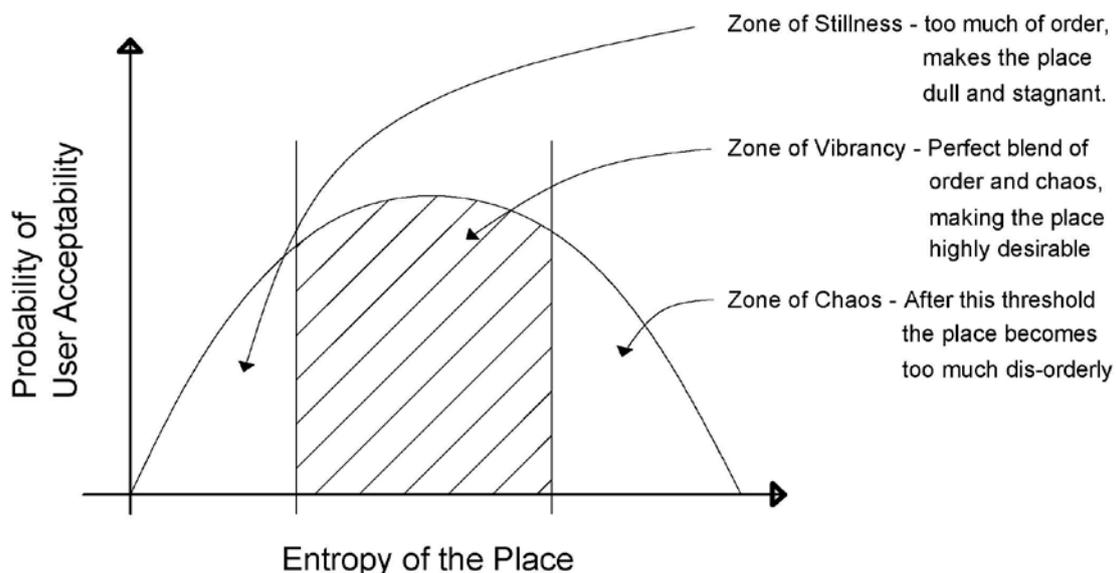


Figure 3: Variation of user acceptance with entropy.

The entropy index can be defined as the latent variable explaining the attractiveness and randomness of the city. of the place. This latent variable can be measured using the three observed variables, Urban form, Hierarchy of spaces and Human interaction. For the ease of mathematical representation of these factors, they are re-grouped according to their similarity of measurement technique. The entire framework has been explained in the following figure.

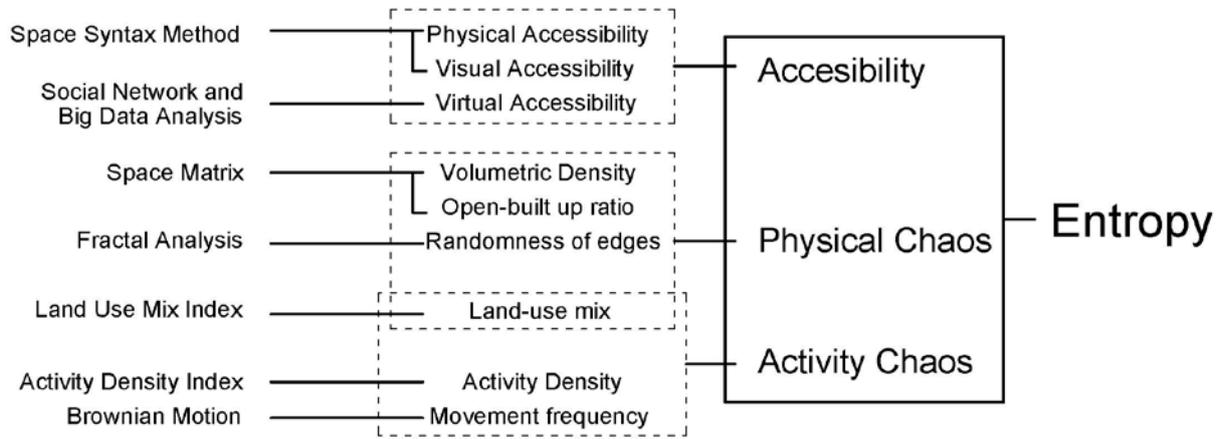


Figure 4: Conceptual framework

The factor accessibility is again measured with three factors, physical, visual and cognitive accessibility. The physical accessibility is defined as the ease of access to that place from the other parts of the city. This accessibility would depend on its connectivity to the rest of the city's network and also connectivity in terms of availability of proper modes of transport. To measure the two-dimensional configuration of the city, or the network characteristics, space syntax measures like betweenness, connectivity, reach, etc has been proposed. The visual accessibility of the place is measured through isovist polygons and the extent of the place being visible is measured. Here, cognitive accessibility is defined as the virtual closeness of the place in relative to the entire city. This closeness could be very different to the actual physical closeness owing to the place's importance and image that makes people assume it to be closer than it actually is. It is argued that a place with no randomness tends to become boring. But, also, a place with high randomness becomes chaotic and undesirable. Activity chaos is measured through activity density and chaos in movement is measured using concepts of Brownian motion. The physical chaos is measured using factors like land use mix, roughness of the edges (measured using fractal analysis), the three dimensional characteristics of the city and how lively and pleasant a place is. (building height variation, density, sky-view factor of the street, etc.)

4. Applicability and Discussion:

For any given place, the entropy index can be calculated as per the above mentioned framework and plotted along with the captured user perception of the image of the place. The results would yield the threshold for vibrancy and chaos that represented the desirable level for a thriving public place. These results would serve as a guideline to the urban planners and designers to plan the city according to the inhabitants' aspirations. These results could be assumed to be uniform, with very little variations, across a homogenous region (region having similar cultural, political, socio-economical and physiological setup). The results would help planners to identify the area needing immediate attention and formulate appropriate policies for urban regeneration.

The most important point to note here, would be that the desirable thresholds of the entropy of a place would greatly vary with change in culture, socio-economic conditions and climatic conditions. Thus, coming up with any particular number would not be possible. Each and every place would yield different results and the agendas for regeneration of the place should be arrived at accordingly. Thus, with varying context, these results would differ, but the applicability of the framework remains universal.

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UN-Habitat s Rapid Planning Studio: A Case Study of Integrated Planning for City tensions in Africa

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Abstract

Beneath the global trend toward 70% urbanization at mid-century lie geographically strongly differentiated urban growth dynamics. In particular medium-sized cities in the developing world are set to undergo a period of dramatic growth. Local municipalities often fail to plan in advance and at scale for the expected population increase due to both a centralized administrative environment and low institutional capacities at local level. The failure to provide, or facilitate the provision of, adequately serviced land contributes to growth in form of informal settlements. If plans are created, they often fail to take into consideration the needed financing and are drafted to legal requirements out of step with reality and not conducive to the needs of compact urban centers. These and other shortcomings result in a lack of plan implementation and call for a much-needed change in contemporary planning practice.

To make planning processes more implementable, an integrated, trans-sectoral approach is necessary. In response, UN-Habitat, the UN agency mandated to promote sustainable urban development, proposes three operational enablers: urban planning & design, urban legislation, and urban finance & economy (the *Three-Pronged Approach* or *3PA*). This approach supports the implementation of Sustainable Development Goal 11 (“make cities inclusive, safe, resilient and sustainable”), and the objectives and principles of the New Urban Agenda. The authors, representing the agency, have been involved in translating this approach into a workshop for plan development and implementation of city extensions called the *Rapid Planning Studio RPS*. The workshop is a simulation of a full planning process in an intense three-day format tailored to technical municipal staff.

As practitioners involved in supporting municipalities in the formulation of urban extension plans, we are concerned with tools and methods aimed at overcoming the implementation deficiency of Sub-Saharan African planning realities. The introduced *RPS* is conceptualised to be one such tool and the *3PA* to be one such method. In this paper, we aim at identifying systemic hindrances, misconceptions and shortcoming of current planning practice extrapolated from first-hand experience in conducting the workshop in six countries and twenty-five cities over the last four years.

A number of key lessons emerged, among which are: (1) although planning is as much a political as a technical exercise, planners often perform their duties without precise policy directions. (2) Local planning authorities lack sufficient capacities to supervise subcontracted plan development. (3) Plans rarely acknowledge the rapidity of urban growth and related issues of tenure and informality. (4) Cities tend to allocate insufficient land to public space, relying too often on expropriation to acquire it. (5) Cities lack mechanisms to capitalize on increased land value generated by public investment. (6) Regulations on plot coverage and setbacks (and lack thereof) rarely allow for compact development and its benefits. (7) The concept of incremental implementation in phases is not sufficiently understood.

Despite widespread implementation of the *RPS*, the findings of this case study cannot be generalized without caution. The workshop is currently designed to train planners only in the field of city extensions. Although comparable findings might be expected in other areas of urban intervention - city infill, transformation, slum upgrading, etc. - this remains to be confirmed.

1. Introduction

Behind the global trend towards 70% urbanisation by mid-century lie significant regional differences in urban growth rates. For example, due to increased natality and rural-to-urban migration, Africa's urban population is projected to triple, reaching 1.3 billion in 2050 (UN DESA, 2015). Medium-sized citiesⁱ in Sub-Saharan Africa are among those most rapidly urbanising. Within this reality, medium-sized cities in the region are not only the fastest growing but also, due to an array of issues, the least equipped to cope with the consequences (UN-Habitat, 2009). Specifically, these issues include a heavily centralised administrative environments (Llop, 2015), widespread poverty, and low institutional capacities at the local level (UN-Habitat, 2010). As a result, municipalities often fail to plan in advance and to scale for projected urban growth. Inevitably this contributes to sprawling informal settlements: an everyday reality for currently 62% of urban dwellers in Sub-Saharan Africa (UN-Habitat, 2013a).ⁱⁱ Living conditions in most informal settlements pose enormous challenges to both policy-makers and inhabitants.

The pace of urban growth, along with negative environments it often produces has tempted the view of urbanisation as a threat to be curbed. Failed attempts aside, such a view foregoes the opportunity to harness the immense transformative potential of urban settings. Coinciding roughly with the Habitat II conference 1996 in Istanbul, urbanisation began to be seen as precondition to basic service access, increased possibilities in education and health as well as an overall higher quality of life. Further, broad challenges such as climate change and poverty cannot be meaningfully addressed without a renewed focus on—and embrace of—the urbanisation process (The World Bank, 2013). Cities are also economic powerhouses, generating a significant part of a country's gross domestic productⁱⁱⁱ (McKinsey, 2011; The World Bank, 2013). In fact, productivity and personal income level tend to increase with city size and density (Combes, Mayer & Thisse, 2008; Glaeser & Gottlieb, 2009). Consequently, for Sub-Saharan Africa, well-managed urbanisation holds the potential of significant and meaningful increases in economic and social prosperity.

While “the path to prosperity inevitably runs through cities” (Glaeser & Joshi-Ghani, 2013:1), not every highly urbanised country is wealthy. Certain benefits of development cannot occur without urbanisation; while urbanisation alone is not sufficient to generate these. UN-Habitat's mission is to promote good, sustainable urbanisation to generate these positive effects. The agency is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. This mandate is echoed by the 2030 Sustainable Development Agenda. UN-Habitat employs a number of instruments to foster sustainable urban development including National Urban Policies, the City Prosperity Initiative, Participatory Slum Upgrading methodology, the People's Process, Planned City Infill and Planned City Extension.

Rapid urbanisation is not the only challenge in sustainable urban development. Another issue is the regular failure of plan implementation in Sub-Saharan Africa, where planning legislation is often antiquated (UN-Habitat, 1999; Motasim, Rae & Petrella, 2010; Berrisford, 2011) and local governments face the well-nigh impossible task of funding the necessary infrastructure (UN-Habitat, 2015b). Institutional practices of colonial masterplanning and comprehensive planning, persistent until today in many developing countries (UN-Habitat, 2009), prove inadequate and ill-equipped to confront new realities of urban growth and

poverty. Their approach is too rigid for dynamic and diverse contexts, too resource-intensive for institutional and legal capacity and too expensive for governments and citizens. The outcome is two-fold: plans are not created at all or, if they are, end up on shelves. This is especially true whenever plans are developed on grounds of statutory obligation or as political projects (UN-Habitat, 2009) rather than out of developmental necessity or, even better, out of foresight. Both unfortunately and fortunately, it is precisely the institutional capacity that holds the key to a needed change in direction, a principle famously demonstrated on a larger scale by Acemoglu and Robinson (2012).

To improve municipal capabilities to plan for growth in a more implementable manner, UN-Habitat promotes three operational enablers, also referred to as the *Three-Pronged Approach* (3PA) to sustainable urban development. This methodology combines a focus on (1) sound and flexible urban planning and design, (2) enforceable and transparent urban legislative and regulatory frameworks, and (3) urban finance for affordability and cost-effectiveness. Integrating the three disciplines aids to balance crucial conflicts of sustainable development: ambitions and available resources, demands for growth and protection of the environment, the prosperity of economic development and its fair distribution to reach social objectives (Vaggione, 2013). To be clear, the 3PA, in and of itself, is not normative. Rather, it is both an analytical and a problem-solving method, embedding implementability into planning processes. This method has to be paired with principles of sustainable urban development to achieve policy objectives such as prosperity or inclusion.

An example of a didactic UN-Habitat initiative, which combines both policy principles and the 3PA to support planning, specifically city extensions, is the *Rapid Planning Studio* (RPS). The RPS format aims to strengthen municipal planning capacity by collaboratively performing a rapid version of a planning process with actionable next steps towards supplying adequate amounts of serviced land. Technical staff of participating municipalities undertake a guided city-wide urban analysis, focusing specifically on local challenges regarding planned city extensions. Participants evaluate the provision of a quality, connected street network, sufficient public space and serviced buildable plots, among other urban features; via the three focus areas of the 3PA: urban planning and design, legislative and regulatory frameworks, and finance. The objective of RPS is to harnesses the knowledge, talent and zeal of municipal technical staff to identify a context-specific, achievable process towards sustainable urban development.

As authors of the RPS methodology, we intend to reflect upon our practice of holding the workshops in six countries and twenty-five cities. Specifically, we aim to extrapolate from our experience and bring to light systemic challenges of current planning practice. The paper will proceed to review topic-framing literature, before advancing a response to above research question.

2. Literature Review

For decades, literature has consented that current planning frameworks and practices are inadequate to manage Africa's unique contexts and challenges (Rakodi, 1997; UN-Habitat, 1999, 2008; Berrisford, 2011), including the obvious issues of rapid urbanization and informality. In the region, urban plans are often drafted to legal requirements that are no longer compatible with the contemporary situation (UN-Habitat, 2013b) and rarely take into consideration the needed financing, leading to failure of plan implementation. While the

reasons for implementation deficiencies are defined by their unique context, three interrelated themes emerge in the region.

In Africa, urbanisation occurs at lower average national income levels compared to any other region (Ijjasz-Vasquez, 2015). Paired with an immense, urban growth-induced demand for new public infrastructure and -services, many local authorities face a widespread gap between spending needs and available resources (UN-Habitat, 2013b, 2015b; Palmer & Berrisford, 2015). Central governments are of little help as they continue to control the bulk of potentially lucrative funds (UN-Habitat, 2015b).^{iv} As Smoke (2015) notes, although public sector decentralisation has been widespread and popular in many developing countries, the effectiveness of fiscal decentralisation has been disappointing.^v Transfers from central governments are often irregular due to both political tensions across government levels and fear of political backlash from taxpayers.

Service delivery is undoubtedly a question of financial resources. However, governance plays an equally important role. In fact, the lack of the former can often be explained by “administrative and capacity constraints or by the absence of legal powers to raise them” (Palmer & Berrisford, 2015: vii). To complicate matters, across the region, urban planning law is outdated and still inextricably linked to colonial practices (UN-Habitat, 1999; Motasim, Rae & Petrella, 2010; Berrisford, 2011). In fact, most contemporary planning ordinances in Anglophone Africa are in some form successors of a single British model law: the Town and Country Planning Act of 1947 (UN-Habitat, 1999, 2013b) implemented by the former British Colonial Office.

For the most part, urban planning in the region is characterised by import of European models and theories and the subsequent lack of innovation and reform. One such model was the master planning or comprehensive planning approach, persistent up to today in many developing countries (UN-Habitat, 2009; DfID, 2015), often unapologetically rigid in process and top-down in nature (Lwasa & Kinuthia-Njenga, 2012). Jenkins, Smith and Wang (2007), alongside other studies, indicate major criticisms of these models: (1) a preoccupation with the plan-as-product and a consequent lack of attention to process, (2) a prioritization of spatial land-use patterns over social, economic and environmental concerns, (3) a disregard of local realities, especially of contemporary informal urbanisation and its intricacies and (4) an inadequate consideration of available financial resources and legislation.

Solving this complex web of interrelated issues requires coordination. Disjointed or lack of coordination is thus a key challenge for contemporary Africa (UN-Habitat, 1999). This is true across municipalities, scales and sectors. Therefore, urban planning is usually separated from other line-function departments within municipalities. In practice, However, spatial planning, legislation and finance are strongly intertwined, in form of both synergistic relationships and inherent contradictions. Couch (2016) gives examples of the latter: economic expansion and protection of the environment, aspirations of the individual and society, and social costs of economic activity, which are not borne by the market. If coordination is poor, and if these contradictions are not managed, they play out in form of fragmented, highly inefficient urban space (UN-Habitat, 2009). Yet, cooperation between municipal departments may not be enough: the public sector alone cannot ensure successful implementation of plans. Rather, “all parties, including the private sector and civil society organizations, need to learn from each other about how to shape future development trajectories” (UN-Habitat 2009:xxiv).

Habitat’s Three

UN-Habitat’s brand of integrated planning is called *the Three-Pronged Approach*. UN-Habitat (2015a:3) describes the components of the approach, already linking them to policy objectives, as follows:

1. *Enforceable and transparent legal framework.* The emphasis should be on the establishment of a system of rules and regulations that provide a solid and predictable long-term legal framework for urban development. Special attention should be paid to accountability, implementability and the capacity to enforce the legal framework where applicable.
2. *Sound and flexible urban planning and design.* Specific attention should be paid to the design of the common space, since it is one of the main contributors to urban value generation, with provision of appropriate street patterns and connectivity and the allocation of open spaces. Equally important is clarity in the layout of the buildable blocks and plots, including appropriate compactness and mixed economic use of the built area, in order to reduce mobility needs and service delivery costs per capita. Finally, the design should facilitate the strengthening of the social mix and interaction and the cultural aspects of the city.
3. *A financial plan for affordability and cost-effectiveness.* The successful implementation of an urban plan depends on its sound financial basis, including the ability of initial public investments to generate economic and financial benefits and to cover the running costs. Financial plans should contain a realistic income plan, including the sharing of urban value between all stakeholders, and an expenditure provision to address the requirements of the urban plan.

These components have to be considered in mutual interaction and interdependence and have normative as well as operational consequences (UN-Habitat, forthcoming). For example, regulations directly affect the provision of public space and built form through determination of distances, offsets or density limits (Mboup, 2013:51-52). The renaissance of the focus on urban design is a response to the excessive preoccupation with zoning and land-use, often leading to separation of functions and social strata. To promote compactness, density and mixed-use, it is necessary to elaborate a spatial layout, which designs the public space as well as the street network, and in consequence the blocks and plots. For density to work well, adequate public space is required. The financial dimension describes the need to plan for economic sustainability from the beginning to allow for the securing and financing of these spaces, the service infrastructure they carry and the maintenance they require, using instruments such as local taxation, central government funding, value-sharing and land-readjustment.

UN-Habitat is not alone with its call for more integrated planning. Rather, there is a welcome tendency of current aid-based urban development models to promote cross-disciplinary conceptualisations. The World Bank, for example, employs a three-dimensional urban development framework: (1) planning, (2) connecting and (3) financing. The seeming omission of legislation is relativized, however, since “for the framework of planning, connecting, and financing to work, a good governance structure is prerequisite” (2013:2). Connecting is featured prominently as “planning must allow for people and products to be mobile” (ibid.). The German *Rapid Planning* initiative shows an even stronger emphasis on mobility as it puts supply and disposal infrastructure at its centre, while seeking “to develop a rapid trans-sectoral urban planning methodology” (Steinbach et al 2015:6). Other examples include GIZ’s *Urban Nexus* approach, which aims to identify synergies between sectors and domains in its quest for sustainable urban solutions and Cities Alliance’s (2006) *City Development Strategy* (CDS) organised around the five themes of (1) livelihood, (2) environmental sustainability and energy efficiency, (3) spatial form and infrastructure, (4) financial resources and (5) governance.

Glaeser & Joshi-Ghani (2013) critique both sectorally isolated approaches as well as an overly broad, objective-based approach and propose a hybrid of these two. They argue that the former fails to successfully solve overarching issues (e.g. quality of life) while the latter fails to evaluate different disciplinary approaches (e.g. congestion charges vs. building more

roads to alleviate traffic). We like to believe that the *3PA* circumvents either shortcoming by - risking repetition - distinguishing between objectives (such as prosperity or environmental sustainability) and means to achieve those objectives (such as financing and governance). These (and other) contemporary approaches have much in common: they are implementation-oriented by considering existing realities across several domains and by being stakeholder-involving rather than merely expert-driven.

Adequate capacities to enforce urban planning regulations is lacking in many developing countries and should be given high priority (UN-Habitat, 2009). A related impediment to plan implementation is the severe under-resourcing of the planning profession in most countries (UN-Habitat, 2013b); especially municipal administrations have inadequate numbers of staff with the necessary planning capacity. Consequently, there is a need to “develop new tools and transfer knowledge across borders and sectors that promote integrative, participatory and strategic planning” (UN-Habitat, 2015a:26). We agree with Eskemose et al. (2015) that sociocultural mechanisms of guidance and facilitation are more successful and apt planning instruments than state-based land-use control practice, in particular when the state is weak.

3. Research Objective Methodology

As practitioners involved in supporting municipalities in the formulation of urban extension plans, we are concerned with tools and methods aimed at overcoming the implementation deficiency of Sub-Saharan African planning realities. The introduced Rapid Planning Studio is conceptualised to be one such tool. In this paper, we aim at identifying systemic hindrances, misconceptions and shortcoming of current planning practice extrapolated from first-hand experience in conducting the RPS workshop in six countries and twenty-five cities over the last four years.

The *Rapid Planning Studio* was developed and tested over a four-year cooperation between UN-Habitat’s Urban Planning and Design Branch, Urban Economy Branch and Urban Legislation Unit, within the frameworks of the Achieving Sustainable Urban Development Programme (ASUD) and the Kenya Municipal Programme (KMP). Originally piloted in Kisumu, Kenya in February of 2012, the *RPS* has since been held in 25 cities across Kenya, Rwanda, Ethiopia, Mozambique, Malaysia and the Philippines.^{vi}

Each *RPS* consists of an intense three-day workshop, taking place in the city of hosting municipalities. During these days, a full 6-18 months planning process - from assessment to implementation - is reproduced collaboratively. First, the city is analysed and profiled to develop informed extension scenarios. Then, a chosen extension is planned with a strong focus on public space and street layout, private space and plot layout, as well as urban design. To strengthen implementability of the plans, both analysis and planning steps are approached through the eyes of spatial design, legal frameworks, and finance (i.e. the *Three-Pronged Approach*). The results aim at achieving both increased planning capacity through knowledge transfer and an actionable draft strategy addressing sustainable development principles as well as strategic planning and budgeting recommendations at various scales and policy levels - all while employing basic and pragmatic tools.

The *RPS* is built around a set of three pedagogical principles: participants at the centre, learning by doing and peer-to-peer learning. First, each workshop asks participating municipalities to prepare and present their unique challenges in dealing with urban growth. General principles are contextualised and applied to find possible ways of addressing those. Second, participants are learning through practice. Each step of the planning process is divided into three input presentations (representing the *3PA*) and followed by an integrated

exercise, each in preparation to undergo a full, basic planning process upon completion. Third, peer-to-peer learning is fostered by bringing together practitioners with similar challenges, opportunities and potentials, thus establishing relations of professional exchange and strengthening urban development capacity.

4. Research Analysis Findings

Urban planning is arguably the most important tool that governments have at their disposal for managing rapid urban population growth, promoting social inclusion and creating economic development. For these and other reasons, planning is not purely a technical exercise but a political one. Every decision taken has implications on private property rights and on the balancing of competing private interests. Despite far-reaching political implications, planners perform their duties without precise policy directions and planning frameworks continue to be based on technical considerations without much consideration of feasibility, appropriateness and local implementation capacity. The inability of municipalities to implement plans is attributable to the fact that plans are often overly ambitious without sufficiently considering the financial and human resources needed for their implementation. Thus, financing and implementability of a plan should be considered during the planning process, not as an afterthought.

Planning is often seen as 'anti-poor' and as instrument that hardens social exclusion in cities. The widespread belief is that "in the planned city... the poor should at best be hidden or at worst swept away" (Tibaijuka, 2006). This belief is a consequence of the current approach to planning that, again, is driven by overly technical considerations and fails to take into account the realities on the ground, the income of the residents, their economic activities and means of livelihood, their transport needs and affordability, their capacity to comply with certain standards etc. The fact that urban regulations and planning requirements are not in line with the needs of the majority has contributed to a high degree of non-compliance and resulted in a loss of credibility of planning and its potential.

Indeed, a review of planning practices in RPS project countries reveals that planning is generally seen as a reactive rather than proactive exercise. Here, planning systems rely on development control, which forces local authorities to spend their time trying to control rather than to forecast need and to think creatively about the possible shape and form of their cities. Consequently, planning processes focus more on restricting growth rather than facilitating it as a means to realizing a desirable city. Despite unambiguous demographic projections, cities continue to fail at accommodating their growing populations, which, more often than not, settle informally and with little access to basic urban services. The costs of reacting to spontaneous urban growth and 'fixing' its consequences retrospectively are enormous. It is against this background, that UN-Habitat advocates proactive planning at scale (of the expected urban growth), focusing on select basic elements such as street grid and public space, which, in turn, support the incremental provision of further infrastructure when necessary resources become available.

In this context, urban legislation has an important role to play: defining conditions for access to land, infrastructure, housing and basic services; laying out rules for planning and decision making; guiding the improvement of livelihoods and living conditions by setting requirements for urban development initiatives; setting the context within which urban authorities, local governments and communities are expected to fulfil their mandate and reacting to emerging challenges. However, urban legislation has proven to be far from perfect. The experience in RPS project countries shows that urban legislation often suffers from misguided assumptions, overambitious expectations and inadequate appraisal of costs and consequences. For example, planning laws are often outdated, irrelevant and inappropriate for the contexts within which they operate. Laws that fail to make land available in pace with rapid urbanization, result in insufficient land supply, increases in land prices and expedited slum formation. Laws that are not in line with local socio-economic realities such

as urban poverty and informality result in high degrees of non-compliance, not to mention their selective application in favor of elites. Other common problems include regulatory barriers that limit opportunities in formal land markets, exacerbate inequality and discourage investments, laws with high compliance costs and laws that are not enforced and implemented. The predominance of informal structures and the prevalence of the interests of elites over the majority is proof of the failure of planning laws. It is not rare that legislation designed to protect the public from negative externalities of urban land development has been used to enhance the value of land owned by the wealthy.

Against the background of these structural deficiencies, UN-Habitat proposes a simplified approach based on the establishment of a basic system of regulations and rules that provides a solid and predictable long-term framework for urban development, adequate to real needs, real capacity and available resources. Similar to the spatial planning, municipalities are encouraged to adopt essential elements of laws that are grounded in sustainable processes and systems, and move on to more elaborated arrangements and legal instruments as governance institutions mature.

Public space enhances community cohesion, civic identity and the quality of life. The publicness it produces can lead to well-maintained and safe urban environments, making the city an attractive place to be. Having access to public spaces does not only improve the quality of life however, it is also a first step toward civic empowerment and access to political spaces. Properly designed public space not only contributes to an improved visual character of a city, but also, and more importantly, stimulates economic activities and enhances productivity. The experience derived from conducting the RPS reveals that most African countries have in place neither clear requirements for the adequate provision of sufficiently connected and well-designed public space nor legal mechanisms for its creation. On the contrary, streets, green areas and open spaces are often overlooked in the planning process, and if included, are rarely implemented. A fundamental element every planning framework should address is the possibility to obtain public space from landowners in the process of urbanization. All too often, we observe that African cities rely solely on expropriation. Expropriation, however, is not the most effective way to deliver public space: not only is it economically and politically costly, it also is frequently and rightfully challenged in courts.

Financially, the creation of public space is often seen as an investment without return. Yet, the contrary is true! Public space is one of the most effective value-generating element of urban planning. Properly designed streets and public spaces increase the value of adjacent properties and stimulate the economic productivity of the city. Cities that are successful in delivering quality public spaces have put in place mechanism to raise municipal revenues through land value sharing. These instruments allow cities to share with the landowners unearned value increments on real property.

The plot is the basic unit of urban development, a measured and recorded piece of developable land accessible from public space. Though plot and property may coincide, and often do, what defines a plot is not its property but its accessibility. Despite the fact that size, shape and orientation of plots have a number of consequences for the morphology and shape of the city, plans rarely go into the details of plotting, leaving the task to private landowners. When regulation on plot size does exist, it is often inadequate for compact urban development. Further, we observe that in many African countries the minimum plot size remains too large and thus in discordance with the need of walkable urban centres. For example, in the Nigerian State of Kogi plot size ranges between 900 and 1350 square meters. Due to a market preference to supply single-use developments and mass produced housing stock, there is a trend towards larger plots. This has a number of disadvantages ranging from lost street life and suburban homogeneity to an exclusionary effect on access to serviced land for poor households. Finally, larger plots also have negate financing implications, requiring substantially higher resources for basic infrastructure supply.

During the RPS, we propose to increase the supply of small serviced plots, affordable for the majority of individuals or groups of individuals, who are encouraged to develop the plot independently or collectively.

Productive, vibrant and socially inclusive cities need good urban design to turn their public spaces into places where people enjoy walking and spending time, that encourage social interaction and promote economic growth. However, the majority of the streets we see are infrastructural corridors primarily designed for cars - even in cities where only a small percentage of the residents can afford a car. When cities plan streets, there is a preoccupation with engineering issues, all too often neglecting social and economic considerations.

Rules and regulations guide the use and form of land occupation, prescribing what can be built where. Although it is known that economically vibrant cities benefit from street life, commercial activities, walkability, density and diversity in the uses and activities, urban regulations are often not rooted in these policy objectives. During the RPS, we observe that the most common regulations on setbacks, land use zoning and plot coverage bring about opposite effects. For example, setbacks, especially when fenced, have a negative impact on the quality of the street life and increase insecurity. Several countries in Africa have strict regulations on setbacks that buildings have to keep from the streets. While Kenya's current building code requires a 6 metres open space along the width of the building front (KEBS, 2009), the Nigerian State of Kogi requires a 15.2 metres setback for township roads. Equally, we observe that economic considerations and the impact on the local economy are not taken into account when planning. In several African countries, street vendors form a large portion of the urban workforce and contribute considerably to the urban economy. For example, national level statistics reveal that street vendors account for 15 per cent of total urban employment in South Africa (ILO & WIEGO, 2013). Despite this relevant contribution to local economic activities, urban plans normally do not take into account the needs of informal vendors. On the contrary, plan implementation has often been one of the main justifications behind street vendor evictions. Urban plans should identify and design vending or market areas to accommodate street vendors in public space rather than attempting to relocate vendors into off-street commercial spaces.

5. Research Limitations

Despite learning from a series of Rapid Planning Studios in a range of Sub-Saharan African countries, the findings of this case study cannot be generalized without caution. The workshop is currently designed to train municipal staff only in the field of city extensions. Although comparable findings might be expected in other areas of urban intervention - city infill, housing, slum upgrading, etc. - this remains to be confirmed.

6. Concluding Remarks

While planning and its original dream of serving the collective interest needs to be rediscovered and re-tuned to respond to the needs of the African majority rather than to those of its elites, efforts to establish more clearly how to counter the privatization of the city and the dismissal of the state (as custodian of the collective interest) are crucial to create the conditions for a democratic discussion on the city. One such effort is to build municipal capacity to plan in an integrated manner - within its reach, the RPS is aiming to do just that. However, it is important to further analyse how integrated and implementable planning can be achieved in the resource poor context of African cities and which interim steps may be envisaged to avoid leaving too many behind.

7. Acknowledgements

We thank the UN-Habitat institutions involved with the program, the Urban Planning and Design Branch, the Urban Economy Branch and the Urban Legislation Unit. We are grateful to our fellow workshop leaders and, most importantly, all participating municipalities.

This paper is currently under consideration for publication in the SAPI Planning Africa 2016 Conference Proceedings.

ⁱ Currently, the world's fastest growing agglomerations are medium-sized cities with 500,000 to 1 million inhabitants in Asia and Africa (UN DESA, 2015). Further, more than half of Africa's urban population resides in cities of less than 500,000 inhabitants (UN-Habitat, 2009), many of which will fall into above category in the near future.

ⁱⁱ Note that this is an average figure. Percentages differ from country to country and range from 18% in Zimbabwe to 82% in Niger (Chenal, 2016).

ⁱⁱⁱ In many African countries, cities currently generate 50-70% of national GDP (Bernard, 2015).

^{iv} Such as income tax, sales tax, business tax, property tax, and service charges.

^v See also Bahl & Linn, 1992; Shah, 1994, 2004; Prud'homme, 1995; Tanzi, 1996; Ter-Minassian, 1997; Bird & Vaillancourt, 1998; Litvack, Ahmad & Bird, 1998; Ahmad & Tanzi, 2002; Ebel & Yilmaz, 2003; Bardhan & Mookherjee, 2006; Bahl & Bird, 2008; Smoke, 2001, 2014; Bahl, Linn & Wetzel, 2013; all as cited in Smoke, 2015.

^{vi} Philippines: Iloilo, Silay, Cagayan de Oro, Zamboanga; Kenya: Kisumu, Naivasha, Nakuru, Nyeri, Embu, Thika, Machakos, Malindi, Mombasa, Kitui; Rwanda: Nyagatare, Musanze, Rubavu, Muhanga, Huye, Rusizi; Mozambique: Tete, Nampula, Nacala; Malaysia: Kuala Lumpur, participating municipalities of the region (partial RPS); Ethiopia: Adama (partial RPS)

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Main Congress Theme: The Cities we Have vs the Cities we Need

Sub-theme: (3) Envisaging Planning Theory and Practices for the next decades

A focus on Biodiversity and Ecosystem Services redefines urban planning and design

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SYNOPSIS

Urban planning and design have a significant impact on the structure, processes and dynamics of the urban landscape. Sustainable urban development requires the application of ecological and landscape ecological principles to create a green infrastructure. A conceptual landscape ecological framework will be presented that support biodiversity and ecosystem services.

1. Introduction

"Today the richness and power of ecological principles can no longer be ignored by designers or society. Serious study of ecology has become a sine qua non for effective designs and solutions" (Forman, 2013). Cities are globally the primary and most efficient and successful habitat for humans (Grimm, 2008). Cities provide the ideal habitat for a concentration of humans and provide intact habitat for other biological species such as birds, small mammals and reptiles (Wu, 2010). Since urban land-use contributes to the degradation of land, it became essential to recover land cover conditions to novel sustainable conditions, even if they are constructed and not natural (Karr, 1996). Sustainable land cover conditions signify reconstructed landscapes in terms of their continued infrastructure functionality to support and maintain ecosystem services (Schäffler *et al.*, 2013).

2. Statement: Urbanisation reduces landscape functionality

Urbanisation causes land degradation, which has a direct link with land cover change and holds serious risks for ecological sustainability (TEEB, 2011). Land cover is changed by human actions that directly affect the flow of water, nutrients, and sediment (Leopold, 1968; Arnold & Gibbons, 1996; Alberti *et al.*, 2003). The environmental problems brought about by urbanisation emphasise the fact that cities are ecologically unsustainable and are therefore unable to maintain the earth as a healthy ecosystem (Müller *et al.*, 2010).

Human activities make the landscape ecologically less functional (Odum, 1997). The manner in which humans alter and reshape the landscape by destroying natural vegetation, replacing natural structures with artificial ones and by changing landscape composition, structure and function results in the reduction of biological diversity and economic productivity (Wu & Hobbs, 2007). Modified ecosystems reduce cross-scale resilience, which is the ability of systems to absorb and adapt to shocks through renewal, reorganisation and development (Folke, 2006). Human designs lead to homogenisation and fragmentation and pose a global threat to biodiversity loss and

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environmental degradation (McKinney, 2006; Olden *et al.*, 2006; Müller *et al.*, 2010, Elmqvist *et al.*, 2013).

3. Solution: Resilient cities that deliver ecosystem services

In urban areas where humans dominate the landscape through their creation of new landscape designs, the success of these designs depends on the way ecological and landscape ecological principles and goals are fused in a spatial, multifunctional ecosystem to contribute to a dynamic urban green infrastructure that delivers ecosystem services (Pickett *et al.*, 2013). Services are delivered by urban ecosystems, which can be natural or reconstructed. Therefore, ecological design protects ecological integrity and health when new designs support and maintain ecosystem processes (Pickett *et al.*, 2013).

Ecologists should inform design by outlining ecological principles to reconnect ecosystems and to provide places for connections to occur. It became necessary to emphasise the difference between sustainability and resilience since these are separate ideas with different consequences in urban development (Derissen *et al.*, 2011). Sustainability is an innovative norm that creates unity between present and future generations by maintaining the balance between development and nature (Wu, 2010, Chen & Wu, 2009). Sustainability is a three-way interaction that links the environment, the socioeconomic aspects of inhabitants and urban design (Pickett *et al.*, 2013).

Resilience is a descriptive concept, describing the capacity of an ecosystem to respond to change after disturbance without changing its basic state or identity (Walker *et al.*, 2004). Resilience is a characteristic of an urban ecosystem to recover (Walker *et al.*, 2004) and requires an understanding of the management of socioecological systems to engage people with the world of dynamic and adaptive ecosystems. Urban resilience is the potential of ecosystems to combine biodiversity, tight feedbacks, social capital, modularity, and to acknowledge slow variables, thresholds and innovation (Walker *et al.*, 2004).

Human designs change the ability of systems to absorb shocks and ecological design creates an opportunity for innovation by relocating design to create a sustainable urban green infrastructure (Folke, 2006). Designed cities can achieve the goal of urban sustainability by supporting and maintaining a green infrastructure network that creates ecological value by delivering services and by building resilience to adapt and avoid future risks (Wu, 2008).

4. Goal: City planning and design that supports ecosystem services

The aim is not to prevent change but to design sustainable cities that maintain ecological processes that can adjust through renewal, reorganisation and adaptation to a new norm with continued ecosystem service supply (Pickett, *et al.*, 2013).

5. Methodology

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5.1. *Recognition of Biodiversity and Ecosystem Services*

The Economics of Ecosystems and Biodiversity is a global United Nations initiative and draw attention to the global economic benefits of biodiversity (TEEB, 2010). During the World Environmental Day speech in 2015, the United Nations Secretary-General, Ban Ki-Moon, encouraged all small individual actions to generate an exponential positive impact on the planet (UN, 2015).

Ecosystem service benefits are freely available to humans from natural resources but are unfortunately, poorly appreciated (TEEB, 2010). Because the urban environment is inevitably disturbed, it is vital that urban designers apply an ecological understanding to protect ecosystem services through their designs (Larson, et al., 2013). "Design as restoration in practice" implies that recovery is in fact integral to the design of ecosystems (Larson, et al., 2013). The focus on ecosystem services provides a new way of thinking about ecological design as the design of ecosystems (Van der Ryn & Stuart, 2007).

The Millennium Ecosystem Assessment (MEA) was called for by the United Nations to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being. The MEA has defined four categories of ecosystem services namely; provisioning, regulating, cultural and supporting services to maintain the abovementioned services and to deliver services such as primary production, nutrient cycling and pollination. Ecosystem services are closely interlinked and involve various aspects of the same biological processes (primary production, photosynthesis, nutrient services, recycling and water cycling) (UN, 2005).

5.2. *Integrated landscape ecological planning and design approach*

In order to support biodiversity and ecosystem services on a global level, landscape goals and objectives on a local level must first be achieved. The landscape ecological framework in Table 5.2.1 is proposed to guide planners and designers to create sustainable sites and ecological value.

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Table 5.2.1: A Landscape Ecological Framework: To guide planners and designers to create sustainable sites

Landscape ecological objective	Design objective
1. Heterogeneity of land	Minimise human intervention and support only the (natural) primary succession process and to activate the seed bank
2. Habitat diversity	Recover and create habitats
3. Sustain landscape dynamics	Create, support and maintain multi-functionality and activate seed bank germination
4. Manage landscape changes	Reduce impact of changes on all scales and to support and maintain multifunctionality
5. Sustain soil stability	Activate soil processes and seed bank germination to increase presence of biota
6. Sustain fresh and ground water	Conserve and improve water quality and prevent pollution of water
7. Capture and radiation of energy	Capture heat and prevent loss of energy
8. Governance and mitigation of human impacts	Ensure responsible, accountable, fair and transparent management
9. Sustain human health and well-being	Support, maintain and preserve ecological identity and health

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5.3. *Monitoring of ecological performance*

A need has been identified for a tool to monitor ecological performance and to express recovery success. A new index was developed to measure the ecological condition of natural or urban sites of any size universally and to express the score as a percentage.

The present ecological condition of site indicators is benchmarked against a reference condition to indicate ecological integrity and health. The reference condition can be either a pristine condition or a newly defined end-goal condition, referred to as a reconstructed best practice condition. The local natural vegetation type of a biome denotes the benchmark for a specific location.

The index is made up by 44 ecological indicators to calculate a relative index value for the ecological condition of a specific site. A standard survey sheet guides the assessor for consistency. The index was tested in practice.

6. Case study

A site in an urban nature reserve, the Faerie Glen Nature Reserve in Pretoria, South Africa, was randomly selected to test the index. The project site along the Moreleta stream, an urban stream was disturbed by upgrading the urban infrastructure of the municipal outfall sewer. An assessment was done to evaluate the site condition by evaluating the 44 ecological indicators. The site condition was measured and an ecological score of 13% achieved. The result was considered poor, and imitated extreme, and severe modification. The result confirms that even though the principles and specifications of the standard environmental management plan were set and technically followed, the goals of ecosystem protection were not met. The green value gap was confirmed in practice between the alleged success claimed by the developer and the scientifically calculated performance score.

7. Results

Opportunities to advance ecological sustainability were not understood by the developer. For example, the seedbank was not recovered to its full potential, erosion took place due to ploughing and planting against the contour line, alien invasive plants were present and highly sensitive habitat was destroyed along the river banks by establishing *Pennisetum clandestinum*, an invasive grass species as cheap way to stabilise it. Seeding with an exotic grass species, *Eragrostis teff*, contributed to the loss of ecological integrity of the seed bank. Alternative pathways for the public visiting the Nature Reserve were not considered during construction and no alternative routes were created, causing unnecessary erosion.

8. Conclusions

Ecological sustainability focuses on the application of ecological principles to justify modifications to the environment to meet the human needs of present and future generations. Sustainability can only be achieved with goal-orientated and responsible decision-making practices in place to manage anthropogenic modifications of the environment and to justify economic wealth and human well-being. The application of sound scientific knowledge is needed to set a standard for the use of natural

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resources responsibly. In practice, it means that one cannot manage what one cannot measure.

In conclusion, tools are needed to assist ecologists and designers, and other interested parties worldwide, to manage, and protect the ecological integrity and health of the world, as we know it. A standard to express ecological condition have become a prerequisite for sustainable planning theory and to link theory and practice.

Finally, think global, act local.

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