ISOCARP
REVIEW 15

PLANNING FOR METROPOLITAN AREA

ISOCARP


ISOCARP

ISOCARP
Knowledge for Better Cities

REVIEW 15

Editors
Editor-in-Chief: Małgorzata Hanzl,
Board Member of ISOCARP, Publications
Editor: Jim Reilly, United States
Associate Editor: Mahak Agrawal, India

Graphic Designer
Ricardo Moura, Portugal

ISBN: 978-90-75524-628

Isocarp Review 15 Cover Picture Credit,
Bernardus Djonoputro, 2019

Colophon image is courtesy of
Arif Gandapurnama

Order online at: www.isocarp.org

The city of Jakarta, Indonesia, is the location
of the 55th ISOCARP Congress, 2019

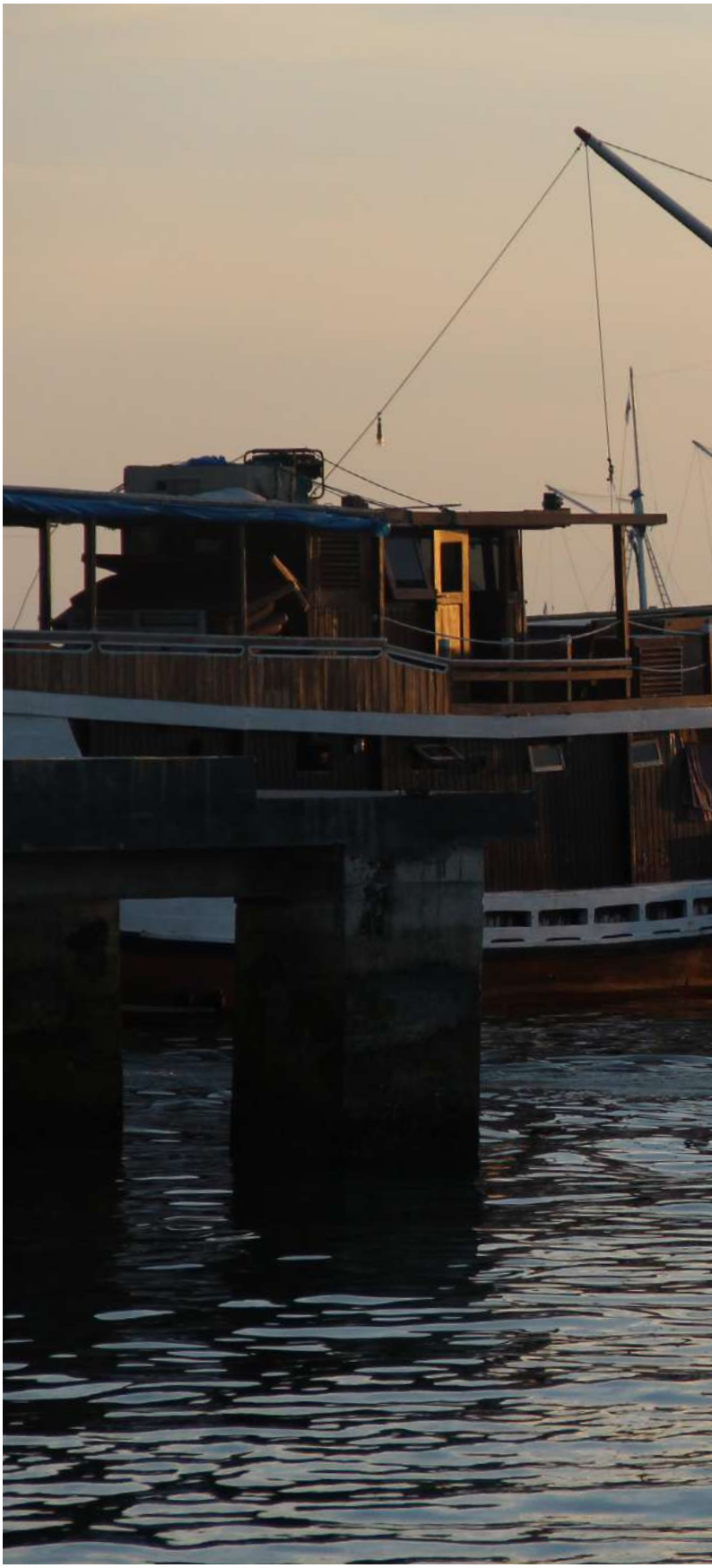


TABLE OF CONTENTS

WELCOME TO REVIEW 15

ISOCARP PRESIDENT'S FOREWORD

MARTIN DUBBELING
ISOCARP PRESIDENT 2018-2021

More than before, cities and especially agglomerations of cities will be the engines of the global economy. At the same time, climate change, emerging new technologies, increasing (domestic and trans border) migration, and growing inequality urgently demand solutions at the scale of cities. Cities and their planners need to rethink and innovate the way people live, work, and recreate in cities; how they produce and consume food, water, energy, and every day products; and how they make cities attractive, socially inclusive, healthy, accessible, green, safe, liveable, and competitive. This is addressed in the widely accepted Sustainable Development Goals and the New Urban Agenda.

Cities and metropolises play a crucial role in implementing the Sustainable Development Goals, which address both the hardware and the software of cities. As there is no other discipline that has the overview and capacity to implement the Sustainable Development Goals, we as city and regional planners have a profound responsibility to insure that cities and metropolises become more liveable, inclusive, and sustainable.

We are a worldwide, member-led network association of urban and regional planners congregating and working under the motto "Knowledge for Better Cities". We arrange a wide array of activities for, and with, our members such as publications, workshops, awards, and training programmes. This learning network is the greatest asset of ISOCARP. Our members meet, connect, get to know each other, learn from each other, and support each other with ideas through the exchange of knowledge and experience. Every year members of the extensive ISOCARP network meet at our annual congress.

At our annual World Planning Congresses, ISOCARP members, partners and congress delegates present their projects, cases, and research of the past

year and participate in technical tours, special sessions, workshops and paper presentations. This year´s theme "Beyond the Metropolis" evokes the complex and daring challenges for our present and future cities. I am excited that Jakarta, the second largest agglomeration on earth, has taken on the courageous responsibility to put the future of its metropolis on the agenda and will host the 55th ISOCARP Congress.

ISOCARP congresses are first and foremost a meeting place of our members - all planning professionals - working in academia, for cities and regions, as well as for local and international consultancies and institutions. The 55th ISOCARP Congress in Jakarta aims to become an event where planners, developers, politicians and NGOs meet and discuss the future of urban resilience of agglomerations for Jakarta and beyond.

Regional and urban planning is practised at different scales and time horizons. Planning an integrated system of metro lines in cities can take many years, even decades, before they are built and in operation. At the same time, we see pressing issues, like climate change and energy transition, have a great effect and need to be addressed on a local scale on very short notice. In my experience, planners have become members of ISOCARP because they want to share their knowledge and experiences with others and because they want to learn from planners from other cities and regions. We are a global network and the meeting place for planners. When we mobilise our network, we can become a global community of practise and provide added value to our members and to the cities, communities, universities and companies they work for.

This year we celebrate the 15th edition of ISOCARP's annual Review. It is the living proof of the vitality and inclusiveness of our global network of everyone who is involved in making better cities. The Review is a platform that is open for members and ISOCARP supporters. The themes of our annual World Planning Congresses and Reviews always have been forward looking, always exploring new approaches and topics in our discipline. To speak for myself as a practitioner in urban planning and design, publishing articles about the topics that interest me in previous Reviews, and reading the work and research of my colleagues, is one of the activities and achievements that engage me and bind me to ISOCARP.

This and past Reviews could not be published without the commitment, professionalism, and dedication of the authors and the editors. My sincere gratitude and appreciation to our editors Jim Reilly, Mahak Agrawal, Ricardo Moura, and to Malgorzata Hanzl, the Board Member of ISOCARP, in charge of publications.

EDITORS' FOREWORD

Welcome to the ISOCARP Review 15, Planning for Metropolitan Areas. In this edition we are proud to present 19 articles organized into four sections: Metropolitan Plans and Tools; Planning Practices; Environmental Planning Projects; and, Noteworthy Plans. We also have a much-expanded ISOCARP activities section which includes summaries of Society activities during the past year. We report on two Young Planner Professionals Workshops, six Urban Planning Advisory Team (UPAT) workshops and the ISOCARP Excellence awards. Also included is a book review of the winner of the 2018 Gerd Albers publication award.

We continue to reach out to planners from around the world and publish the wonderful and varied work they are doing. For the first time, we have stories about planning projects in each of the main Continents except for Antarctica: three from North America; two from South America; two from Australia/Oceanic; three from Africa; four from Asia; and, three from Europe. Two other articles reference planning projects in several continents. Our coverage clearly demonstrates that ISOCARP is the premier international planning organization and that the ISOCARP Review delivers articles about noteworthy real planning projects worldwide. Our articles record planning efforts in resource-rich and poor places and present how the focus of planning changes from place to place.

In our first section- Metropolitan Plans and Tools, our articles describe the successful regional planning efforts underway for the New York, Greater Sydney and Metropolitan Doha areas. We even include an article about the disappointing results from the State of New Jersey's (USA) multi-year effort to plan for more equitable regional land uses. This article is especially interesting as it provides insights into political, social, judicial and historic causes behind the general failure of regional planning in the USA. The Nature Conservancy then provides an assessment of countrywide regional plans and their effectiveness to preserve the Amazon Rain Forest. Next, we are treated to an expert's opinion of regional tools

needed to manage metropolitan areas. Finally, we are provided with a very interesting article about the growth history and growth issues of the Jakarta region.

Authors in our section on Planning Practices ask whether and how Asian Cities should develop an indigenous design language for their emerging cites, whether Italian landscape preservation planning might be considered for application to Russia, and, whether the French certification program for historic neighborhoods should be applied to other countries. We are provided with insights into the need for strategic planning and case studies of how to augment local staff to accomplish these plans. Lastly, we learn about Indonesia's efforts to alleviate slums.

We present two Environmental Planning projects. There is a fascinating overview of efforts to use dredge material to develop sustainable urbanization in delta areas. The second article describes a small town's effort to redevelop a contaminated site for private market housing and recreation.

As always, we are pleased to present Noteworthy Plans. We learn about Quito's effort to achieve food sustainability. We present three articles from Africa, each intent on improving wellbeing. Each of these articles is especially important as they document the difficulties of developing viable plans in the face of resource constraints. Our last article examines if Smart technology has improved planning participation in villages near Jakarta, Indonesia.

As usual, the stars of this publication are the authors of our articles. Please take the time to read about them in our "About the Authors" section.

We hope you enjoy reading the Review and find our collection of articles interesting and useful in your daily practices.

JAKARTA:
THE INDONESIAN MEGACITY

HENDRICUS ANDY SIMARMATA AND BERNARDUS DJONOPUTRO
ON BEHALF OF THE JAKARTA LOCAL ORGANIZING COMMITTEE

INTRODUCTION

From a canal city of Batavia in the early 19th century, Jakarta has transformed into the largest metropolitan in Southeast Asia. With resident population of more than 10.2 million and peak working hours population of more than 18 million citizens, Jakarta has grown to be one of the region's major business and commercial hub, featuring displays of hundreds of designers' skyscrapers and a significant crowd of business and social activities. For many Indonesian, Jakarta is the capital that offers opportunities, but at the same time presented many challenges, such as traffic congestion, flooding, pollution, and lack of clean water. A variety of upmarket restaurants as well as side streets delights offer a delicious array of cuisine, a warm society, and the tropical climate of Jakarta are a few examples of why Jakarta is an attractive destination to visit. Envisioned to be a global service city, the journey of modern Jakarta has progressed because of the significant improvement of the transportation system, affordable housing, and environmental infrastructures. This might be a delightful opportunity to indulge in the atmosphere of the striving megacity Jakarta.

Figure 1: The Welcoming Statue – Bundaran HI Jakarta (Photo credit: Simarmata, 2018)

CURRENT SITUATION

GLOBALIZING CITY

Jakarta's importance in the region's geo-politics has transformed the city. It has become an international diplomatic center and host to the ASEAN Secretariat as well as a global center of business and economy and home of numerous global companies and organizations. We can easily find international office buildings in the CBD of Sudirman-Casablanca-Kuningan area and alongside TB Simatupang corridor in the southern part of Jakarta. The city is home to four Unicorn companies alongside one of Asia's best performing stock exchange with a growing list of listed multi-national companies. International and national food restaurants, supported by vibrant hang-out places for expatriates, are spread across shopping malls and in particular suburbs and districts, such as Jaksa Street, Kemang, Senopati, Kelapa Gading, Pluit. The presence of many international schools, its English-speaking working environment, and its endless number of international conferences and exhibitions venues are just a few of facilities which an international audience might be looking for, in Jakarta. Known before as the 'most hidden

secret of Asia' and home of thousands of expatriates, Jakarta embraces international communities to stay, work and enjoy the city.

The development of the Golden Triangle CBD – a new style commercial zone - in Thamrin-Sudirman corridor is also a strategy to accommodate international investment in high-rise mega-blocks; making Jakarta one of the most competitive among 'global cities'. Jakarta links in a functional system built around transportation, telecommunications, services, and finance. A parade of tall buildings, one after the other, fill the major streets. They house the offices of Indonesian and multi-national corporations.

Within the capital region of Jakarta's government area, codes allow high-plot ratio in certain business areas with the result that more new office buildings are built with a total floor area of 80,000- 100,000 sq. m or even larger. These sizeable buildings contribute to the 5.5% annual office space supply growth from 2018 to 2021. The on-going MRT construction should allow the Sudirman submarket to further dominate the market. More future office projects are scheduled to be located here, despite the fact that this is already the largest submarket. Apart from the supply, the market is further anticipating additional office buildings planned to be completed between 2022 and 2023.

Jakarta is Indonesia's major logistic center, with the Tanjung Priok port as the largest container port in the country. The port plays a significant role in distributing more than half of the country's externally traded goods both for national and international trading. As the busiest port in the country, especially after the New Priok Container Terminal 1 (NPCT1) operated last September, providing an annual additional 1.5 million total equivalent unit (TEU) capacity boost for imports and exports. International traffic is increasing by 5.4 million TEUs. It is expected that the expansion of Tanjung Priok can increase the level of services, although it is not easy to compete with the Port of Singapore that can handle 30 million TEUs of containers in a year.

URBANIZATION

The rapid urbanization of Jakarta and its peri-urban has made Jakarta an obese city. The 60 km-radial development demonstrates the massive urban expansion and merges the surrounding towns and cities into one mega-urban system. Jakarta is the nucleus of the metropolitan area, while the peri-urban areas of Tangerang and South Tangerang City (2 million inhabitants), Bekasi City and Bekasi district (2 million), Depok and Bogor city (2 million inhabitants) serve as bedroom communities for workers in the city center. On an average day, the travel time to the city center takes about 60 minutes.

Figure 2: Jakarta's main corridor (photo credit: Simarmata, 2018)

The role of three freeways stretching from Jakarta to the peripheries - the Jagorawi toll road, the Jakarta-Cikampek toll road, and the Jakarta-Merak toll in the early 1990s (Henderson and Kuncoro, 1996) - is very significant in triggering the sub-urbanization. The development of private industrial zone in the peripheries naturally followed the construction of these highways. The size of these industrial area ranges from 50 to 1,800 hectares and on average the size is about 500 hectares. Major industrial centers are located in Cikupa-Balaraja of Tangerang Regency and Cikarang of Bekasi Regency. The industrial center of Cikarang, with a total industrial land area of nearly 6,000 hectares is the largest planned industrial center in Southeast Asia (Hudalah and Firman, 2012).

Following the industrialization, residential areas overgrew, driven by automobile-accessible areas with various high-quality amenities such as modern golf courses. High-income families in the central city also moved from the city in search of better living quality (Goldblum and Wong, 2000). The high cost of houses and the need for automobiles restricted low-income families from the suburban housing market. In addition, the new town development accelerates

sub-urbanization. Initiated by a collaborative project of Bumi Serpong Damai in the early 1980s, there are at least 15 new towns at present that have come up in the peri-urban Jakarta. The first new town of Bumi Serpong Damai was planned for an eventual population of 600,000 in a total area of 6,000 hectares; a project developed by several private developers and led by the extensive private developer – the Ciputra Group. In a number of these new towns, the State Housing Provider Agency (Perumnas) joined with private developers in the quest to provide housing for low and moderate-income families. Within ten years, 20 new towns emerged in the megacity of Jakarta and converted 16.6 thousand hectares of rural land

Known as Jabodetabek region, this megacity Jakarta becomes one of the most massive urbanization phenomena in the world. With the on-going development of high-speed train that serves Jakarta-Bandung connectivity, by the time it is completed, it is expected that by 2022 the mega-urban region of Jakarta-Bandung will cover more than 35 million population. Therefore, when discussing Jakarta, we must always consider the framework of the Greater Jakarta Metropolitan area and the upcoming mega-urban region of Jakarta-Bandung.

MRT AND PUBLIC TRANSPORT SERVICES

Like many Asian cities, Jakarta also struggle in fulfilling the provision of needed infrastructure and in shifting the usage of private vehicles to public transportation modes. After a long wait of almost 30 years, Jakarta now has operated its first 18 km Mass Rapid Transportation (MRT) line that serves the south to the central Jakarta and will be continued to the north part of Jakarta. The presence of MRT is a key momentum for Jakarta to transform the urban mobility pattern. Following the MRT, the East-Central connectivity is also being served by the L(ight)RT, which is expected to operate by 2022. Jakarta also has 11 B(us) RT corridors. In addition, the preparation of feeder system is being extensively implemented including acquisition of direct services, and the on-going implementation of single passenger card.

Whilst managing public transport system is a key task for the Jakarta government, residents of Jakarta are experiencing a major shift in lifestyle with the onset of hail-riding online transportation system, both cars and motorcycles. The service is available across the megacity, spanning almost all places and locations. The significant growth of the online transportation system has given birth to the unicorn company, Gojek. Although unprecedented, Jakarta expects the synergy between public transport and the online transportation to provide better services for urban mobility in Jakarta.

Figure 3: MRT Tunnels (Photo credits: Simarmata, 2018)

JAKARTA HISTORIC OLD TOWN

As a city from the colonial time, Jakarta is home for some well-kept old heritage buildings. The area of Old Town Jakarta is about 1.3 square kilometers in the north and west Jakarta, especially *Pinangsia, Taman Sari, Roa Malaka,* and *Tambora*. In the past, it is the area of Old Batavia that started as a port development to serve spice trading and commerce and was surrounded by fort walls and canals to reduce the flood hazards. The Chinatown known as Glodok is also a part of *Kota Tua*. Beautiful old baroque and some art deco buildings can be found around the Old Batavia at locations such as the Fine Art and Ceramic Museum, Main River, Luar Batang Mosques, Maritime and Menara Syahbandar museum, Fish Market, Sunda Kelapa Port, Wayang Museum, and some Temples and Churches. Most of these structures are in good condition and open to the public. In addition, there are revitalized buildings, such as Bank Indonesia, Bank Mandiri, Jakarta Post Office, and the Jakarta Kota Station.

The Revitalization program started in 2005 with the first pilot project, Taman Fatahillah. It was later followed by the "Jakarta Old Town Reborn" project in 2014, a public-private partnership project, that involves Government of DKI Jakarta Province, State-owned Enterprises, and private sectors actors. Many of the heritage buildings were then restored, e.g., Taman Fatahillah Square, Post Office, etc. The placemaking efforts of Old Town Jakarta still is hampered by issues such as

Figure 4. Old Town Jakarta
(Photo credit: Maylina, 2019)

informalities and existing street vendors and hawkers. Retrieving the history of Batavia through walkable space would be an intriguing factor that would invite more tourists to come. Jakarta Old Town is a must-see place that offers a line of Dutch-architectural buildings, a walk down memory lane with various type of museums, and different kinds of public festivals.

PARK AND RECREATIONAL

Although they cover only 10 per cent of 661.5 km^2 of total Jakarta area, the city parks are still notable in several places. The National Monument park, in the North-central part of the city, plays a role to anchor the Presidential Palace and number of other central government offices. Other important parks include: The Gelora Bung Karno sports complex park located in the South-central Jakarta; Ragunan Zoo park and Setu Babakan, a natural lake with traditional Betawi houses, in the South Jakarta; PIK Mangrove park in the Northwest of Jakarta; and Cijantung Urban Forest as a part of Military Complex in the Southeast of Jakarta. They remain as green open space that formed the natural landscape of Jakarta. Improving nature and bringing the natural habitat back to the park has been a major undertaking for the Jakarta government in its efforts to make the air cleaner.

The blue open space is also an essential element of Jakarta urban space. Beside flood control infrastructures, blue open space is also expected to provide recreational and natural habitat services. However, the remained blue spaces (such as Pluit Lake, Sunter Lake, Rio-rio Lake, Setu Lembang, Rawa Indah Ci-

bubur, and Setu Babakan) are under pressure from the massive urbanization. There are 13 main rivers running through Jakarta, plus a few artificial canals that formed the city's water structures, which have a poor quality of water. Restoring the ecological value and preserving those blue spaces should be the primary Jakarta's homework.

In addition, increasing the quantity and quality of green and blue open spaces is one of the Jakarta government's core programs intended to improve the environmental quality of urban space and enhance the social interaction of the citizens. In the last five years, the Government of DKI Jakarta launched the neighborhood scale parks known as RPTRA (Bahasa acronym for an integrated child-friendly public space). In 2018, the RPTRA reached 290 spaces distributed across 267 sub-districts. Only recently the Jakarta government launched a collective progressive park project, named Taman Maju Bersama. Greening Jakarta also involves green building movement and expanding the tiny park in various communities, naturalization of existing rivers and rain water capture through biophilic holes across the city.

THOUSAND ISLANDS THE HIDDEN GEMS

Many visitors only know Jakarta of the mainland but Jakarta Bay, an easy one-hour boat trip, will get us to a group of small islands named as "Kepulauan Seribu" or a thousand group of islands. Kepulauan Seribu offers various marine tourism spots, such as diving and snorkeling activities, fishing and resort stays, local culinary taste, and water sport activities. This area consists of 342 islands - only 11 small islands are developed and inhabited by 22,000 inhabitants. Bidadari Island, Tidung Island, and Pramuka Island are just a few examples of a famous-tourist destination of Kepulauan Seribu. Most of the area is a national sea park home to preserve biodiversity of its 342 reef platforms and associated coastal species, including 54 sea biota species, 144 species of fish, and 17 species of coastal birds.

Jakarta Bay also contains three artificial reclaimed islands. Although they are still controversial amongst politicians and planners, the development of these islands has changed the path of future development of Jakarta Bay. The reclamation program was introduced in 1995 when it was approved under a Presidential Decree and later adopted into the Jakarta Long Term Spatial Plan. Three reclaimed islands and their connectivity to the mainland of Jakarta through the bridge is yet to complete. Amidst all the controversies, the Government of DKI Jakarta has put a halt to 14 other proposed reclamation of islands. However, the reclamation of these islands has changed the image and spatial forms of North Jakarta.

Figure 5. Sea scenery from Pramuka Island (Photo credit: Prasetyo, 2014)

TRADITIONAL MARKETS, LOCAL FOODS, AND ART GALLERY SHOPS

The presence of traditional wet markets is a typical feature in Asian cities. They open throughout the day and traded variety of local commodities to fulfill the daily needs of the Jakarta people. Coming from surrounding countryside, trader agglomerate to create informal space under some casual arrangements and regulations. The price bargaining and negotiation is the unique character of these traditional markets. In order to increase the competitiveness of the traditional market, the government intends to improve the quality of market space and to strengthen the management.

Indonesian local cuisine is a must try for foreign visitors. Most of the traditional dishes from various Indonesia region are available in Jakarta. The food festival comes every year to celebrate the abundance of Indonesian food. Nasi goreng is one of the most popular viands since Barack Obama visited Indonesia. The other favorite foods are Rendang, Gado-gado, Tahu Tempe, and Soto.

The Jakarta gastronomic scene is probably one of the best kept secrets in the region. Upmarket international restaurant can easily be found all over the city. A few areas, such Kemang, Senopati, Pantai Indah Kapuk, Kelapa Gading, have turned to become vibrant spots full of hip and quality restaurants.

Jakarta also offers some places that display the greatness of Indonesian artists. We can find art in galleries and shops located in malls and certain stores. Fashion is an important part of Jakarta's society, and Batik becomes one of the most popular outfits for daily practice. The growing creative industries have a significant role in leveraging the expansive Indonesian art products. Jakarta is the best front window for seeking those creative works.

THE DUALISM OF MODERN HOUSING AND *KAMPUNG KOTA*

Like any other modern global cities, new high-rise apartments dominate in Jakarta. The availability of affordable housing is the primary concern due to expensive land price and the operational costs for a high-rise building. For the lower economic groups, self-built housing is still the primary option. But since available land is limited, the housing is a typically dense, semi-permanent, and has an irregular pattern. Dwellers and immigrants often use their local knowledge of building construction from several regions in Indonesia, hence we can find various type of those houses in the urban villages, called kampungs. It is estimated that Jakarta has more than 600 kampungs that are linked to the poverty pockets in the city (Simarmata, 2018). The Kampung is not only the place for local people of Jakarta they also house an influx of migrants from other parts of the nation, particularly from poor regions of Java Island. Poverty in rural areas of Java becomes a factor that pushed people from rural areas to urban ones. There is an inextricable link between the rapid urbanization in Jakarta and rural poverty in Java and other islands in Indonesia.

For the high-income group, the display of luxurious townhouse complex and real estate is not uncommon in Jakarta. Numerous mixed-use superblocks are rising in Jakarta. The combination of a shopping malls, residential, hospital, and school is the major trend. This inward looking, high density, mixed use development at the block scale has changed the urban structure of Jakarta. The affluent middle-class group raised in Indonesia is the primary market for this property development.

FUTURE PLANNING OF JAKARTA

There are two statutory plans that defined Jakarta's plan. First, RPJP/MD (long- and mid-term development planning). The RPJMD is a translation of the vision and mission of the elected Governor. The other planning document-RTRW which is the spatial planning masterplan, makes explicit future spatial structure for a horizon of 20-years. However, to implement block-scale development, the RTRW should be detailed in in accordance with the requirements of the Detailed Spatial Planning and Zoning Regulation, which provides more technical urban spatial and design guidelines.

SUSTAINABLY RESILIENT JAKARTA

Jakarta has started planning for natural disaster and slow-onset changes, such as flooding, land subsidence, the environmental impacts of air and water pollution; traffic congestion, logistic delay, and the impact of housing shortages

on poverty, social tension, and politics. Preparing Jakarta to be ready for any unexpected turbulence is critical to Jakarta master planning. Jakarta plans to reduce the land subsidence and coastal flood by promoting the development of a sea wall, promoting the use of retention ponds, and river naturalization. Increasing the proportion of green and blue open space is also included, along with green building, low carbon transportation, environment improvement, including recovery.

INCLUSIVE AND JUST JAKARTA

Equal access to jobs, basic services, social rights, etc. are imbedded in the development vision. On-going programs are conducted to implement this vision. For instance, Community action planning is expected to give more space for local people, to discuss their needs, and plan for the future direction of their neighborhoods. A zero-down payment program has been started to provide affordable houses for low-income groups. Building group-friendly infrastructures for diffable citizens is a continuous program in ensuring inclusiveness. Avoiding displacement is also a part of the government efforts to get justice for local people is controversial support for the urban poor is undeniable.

BOGOR, A RAFFLES LEGACY

The city of Bogor is famous for its large botanical garden called Kebun Raya Bogor. It is also where the presidential palace is located. The history of Bogor, which was once named Buitenzorg during the colonial period, is very rich. Situated about 54 kilometers south of the Indonesian capital city of Jakarta, Bogor used to be a small sized city stretching for only 21.56 square kilometers. Today Bogor total area is approximately 118.5 square kilometers.

Bogor dates to an Indonesian kingdom called Pakuan Pajajaran that existed from 1030 to 1579. One of the most popular and powerful of its kings was Sri Baginda Maharaja or Prabu Siliwangi. In the reign of Prabu Siliwangi, Pakuan was claimed to be the capital city of Pajajaran on June 3, 1482 and from that moment on, the people started to celebrate the anniversary of Bogor annually.

In 1745, during the occupation period, a Dutch colonial administrator for the Dutch East India Company (known as VOC), Baron van Imhoff, who was also the Governor General of the Dutch East Indies, built a palace resort. The palace in Bogor, which used to house the Governor General in 1808, is now called Istana Bogor, which is regarded as one of the official presidential palaces in the country.

The internationally renowned botanical garden 'Kebun Raya Bogor' was built by Thomas Stamford Raffles, who was a Governor General during the British

Figure 6. Neighborhood parks in Bogor (Photo credit: Dimastanto, 2017)

occupation period. Built in the early 19th century, Kebun Raya Bogor is not only the largest botanical garden but also the oldest botanical garden in South East Asia. Thomas Raffles successfully renovated Istana Bogor and used part of its land to build Kebun Raya Bogor, a classic English style garden. He and his wife Olivia Mariamne Raffles spent a lot of time there. He even built the Lady Raffles Monument in the garden and made the garden more beautiful by having white spotted deer live and roam free throughout the garden.

Bogor has developed rapidly and become one of the most visited destinations in West Java province. The city features numerous attractions, such as Mekarsari Fruit Garden, Nangka Waterfall and of course, Kebun Raya Bogor, and a selection of restaurants that appeal to those who are fond of taking the delectable culinary journeys (Tenissa Tjahyono, Global Indonesian Voices)

WELCOME TO JAKARTA-BOGOR

Jakarta today is coping with the societal and urban challenges of how to plan for the impacts of climate change, increasing commercialization, and disruptive technologies. Democratization, regional geopolitics and the presence of new major economies, are shaping how cities are governed, planned, and managed. We have already have an example from one of our suburban cities, Bogor, which is experiencing rapid urbanization that is increasing the development pressure onto its hilly ecological landscape. Envisioned to be a garden city, Bogor's development needs to deal with the tension of land use conversion, the backlog of housing and basic services provision, and the emergence of public transport services.

Planning professionals need to constantly keep up and adopt new thoughts in order to be able to cope with these changes. Contemporary urban issues and changes in scale, are now shaping a new paradigm of planning for the future. The constant pressure to avoid expulsions of people and to side for the group at

the bottom of the pyramid is taking centre stage, as tens of millions of citizens are becoming a new generation of urban residents.

Jakarta and its greater surrounding area, the second largest agglomeration in the world, hosts many alarming phenomena such as inundation, sea water rise, waste generation, as well as massive land grabbing and inequality. Sitting in the middle of the ring of fire, this country of 17,000 islands around the equator, is going through a significant transformation.

At the same time, the one trillion-dollar economy Indonesia is gearing up to become the future powerhouse and growth center of the region. With a growing middle class and overall urban population in the next two decades, the momentum is right for planners to shape the future.

Together with our supporting partners, The Ministry of Agrarian and Spatial Planning, Ministry of National Development Planning, Ministry of Public Works and Housing, the City of Jakarta and Bogor and the Governor of West Java, we are proud to extend a warm invitation to ISOCARP planners, thought leaders and stakeholders to come to Jakarta and Bogor, and to exchange ideas on how we can take up the above challenges. We are planning to have series of interactive sessions, field trips and forums to get to the bottom of the issues, as well as series of side events to enjoy this beautiful paradise in the heart of the equator."

Welcome to beautiful Indonesia!


Indonesia

PLANNING FOR METROPOLIS

BEYOND THE METROPOLIS

TOM WRIGHT

Regional Plan Association (RPA) is a research, planning and advocacy non-profit that develops and promotes ideas for a more equitable, healthy and prosperous New York metropolitan region. To guide its work, RPA conducts research on transportation, land use, housing, good governance and the environment, and advises cities, communities and public agencies. In addition, every generation it releases a long-term vision that informs major policy and infrastructure recommendations for the region.

The nearly 100-year-old organization has published three previous regional plans – in the 1920s, the 1960s and the 1990s. These reports have dramatically shaped the area's growth and advocated for the infrastructure and quality of life investments that now support its economic vibrancy. Major recommendations implemented from past regional plans include constructing the regional highway network; instituting the Metropolitan Transit Authority's (MTA) first long-range capital plan; creating regional economic hubs in the Jamaica and Queens sections of New York City and in Stamford, Connecticut; developing a new business district on the far West Side of Manhattan; and, the protection of open space including the creation of Palisades Interstate Park, Gateway National Recreation Area and Governors Island.

Figure 1: RPA's Fourth Regional Plan provides both a vision and specific recommendations to promote growth that brings shared prosperity, equity, improved health, and sustainability for the region.

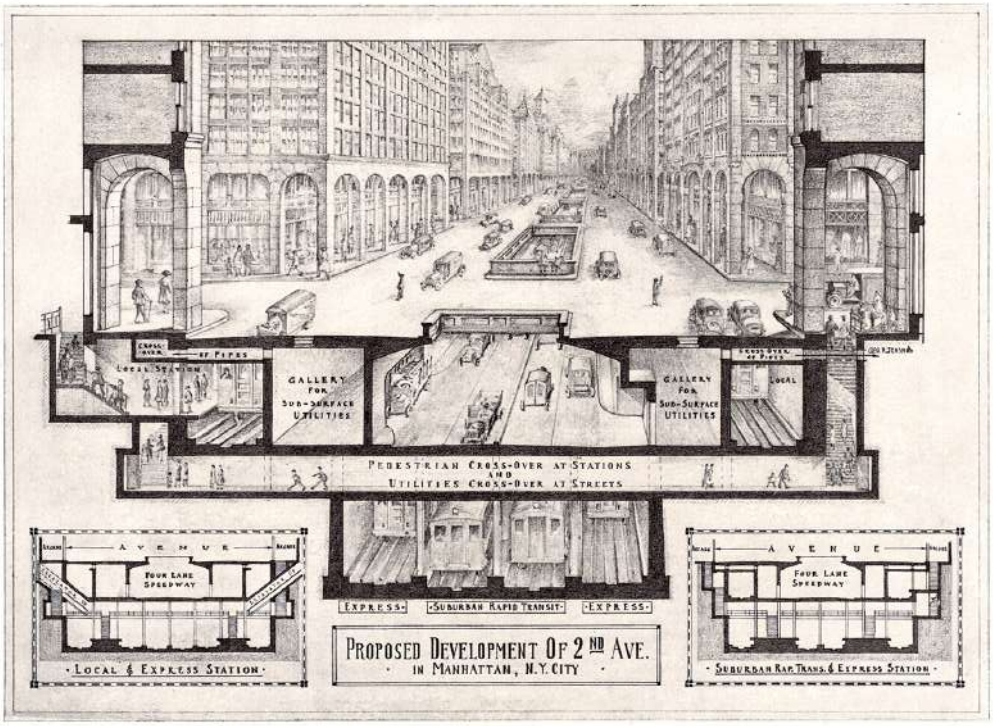


Figure 2: RPA's first regional plan provided the blueprint for the transportation and open space networks we take for granted today.

Figure 3: It's 2040, and a national park has been created in the Meadowlands, once a largely underappreciated industrial landscape and transit crossroads. (Credit: ORG Permanent Modernity for RPA)

In November 2017, RPA released a new long-term strategic plan for the New York-New Jersey-Connecticut Metropolitan Area. The Fourth Regional Plan was the product of five years of research and public engagement, with a wide range of stakeholders participating in the planning effort—from community members and civic organizations to business groups and public officials. Ultimately, the core values that drive this new plan are: to achieve greater equity, shared prosperity, better health, and long-term sustainability. Those values shape the plan's recommendations about reforming public institutions, modernizing transportation, providing affordable housing and addressing the challenges of climate change.

FRAGILE SUCCESS

Before discussing the Fourth Plan's recommendations, it is important to understand where the New York metropolitan region is and how we got here. Over the last generation, the region has seen sweeping change, much of it for the better. The economy is thriving. After the deep recession of the late 1980s and early 1990s, and the financial crisis of 2008–2009, the tri-state area bounced back. More people chose to live, work, and visit here. New York City is now one of the safest big cities in the nation. Public health and quality of life have improved dramatically.

But this recent economic success is not guaranteed, and past development trends teach us that growth alone does not always benefit everyone. Those in the middle-income range have fewer good job opportunities and chances to climb the economic ladder. There is greater income inequality in the region than elsewhere in the country. More people live in poverty today than a generation ago.

For the bottom three-fifths of households, it has been worse. Incomes have stagnated since 2000. While household incomes have plateaued, housing costs have risen sharply and are taking a larger share of household budgets. For many people, discretionary income cannot cover critical expenses such as health care, college, child care, and food.

These dual crises of stagnant wages and rising costs are exacerbated by a legacy of discrimination in housing, transportation, education, and other policies that limit opportunities for low-income residents and people of color. Although the tri-state region is one of the most diverse in the country, it is also one of the most segregated.

Changing growth patterns within the region have put new strains on city housing markets and suburban economies. In the second half of the 20th century, suburbs grew quickly. Cities were left behind, and struggled with growing unemployment, poverty, and crime. Over the last two decades, that trend has reversed,

Figure 4: Trees, green roofs, and other vegetation can help cool urban communities by deflecting radiation from the sun and releasing moisture into the atmosphere (Credit: Only If + One Architecture for RPA)

as people and jobs returned to New York and other well-positioned cities.

But for many towns, villages, and rural communities, this reversal has resulted in fewer local jobs, an aging population, and a smaller tax base. And many older, industrial cities are still struggling to grow their economies.

Even for New York and other growing cities, the return of jobs and people has presented new challenges: rising real estate prices and rents, families displaced by unaffordable housing, and neighborhoods that longtime residents no longer recognize as their own. This growth has also put additional pressure on the region's aging infrastructure, including subways and roads.

THE WAY FORWARD

It doesn't have to be this way. Metropolitan regions around the world are taking on these problems by: investing in neighborhoods and business districts; building modern infrastructure that increases capacity, improves resilience, and boosts economic competitiveness; and, adopting innovative solutions to protect coastal areas.

There are many actions that local and state governments can take to improve the lives of the region's current and future residents. In envisioning what this future should look like, RPA and our partners in the creation of the Fourth Regional Plan came to identify four core values that should serve as a foundation for the region and should guide the development of the plan's recommendations. The four values are:

- Equity: Individuals of all races, incomes, ages, genders, and other social identities have equal opportunities to live full, healthy, and productive lives.
- Health: Everyone deserves the opportunity to live the healthiest life possible, regardless of who they are or where they live.
- Prosperity: The standard of living should rise for everyone.
- Sustainability: The region's health and prosperity depend on a life-sustaining natural environment that will nurture both current and future generations.

THE PLAN'S RECOMMENDATIONS

The Fourth Regional Plan details 61 recommendations to make our region more equitable, healthy, sustainable, and prosperous. They are organized into four broad "actions":

First, institutional reform. Solving the region's existential challenges will require public officials and citizens to reassess fundamental assumptions about public institutions. It takes too long and costs too much to fix our region's deteriorating infrastructure. Housing policies, local land-use practices, and tax structures are inefficient and reinforce inequality and segregation. And truly addressing the growing threat of climate change requires investments far more ambitious and strategic than we have made so far. Some of the recommendations include:

- Increase civic engagement at the local level and make planning and development more inclusive, predictable, and efficient.
- Establish a Three-State Regional Coastal Commission to manage and fund coastal resilience projects.
- Reform regional transportation authorities and reduce the costs of building new transit projects.

Second, the region needs to invest in both maintenance and new construction of our transportation infrastructure. Some improvements are relatively quick and inexpensive, such as redesigning our streets to accommodate walking, biking, and buses. But new large-scale projects to modernize and extend the subways, regional rail, airports, and seaports are also necessary. These in-

Figure 5:A street in Midtown Manhattan in 2040, as envisioned by the Fourth Regional Plan

Figure 6: A street in Midtown Manhattan today

Figure 7: A commuter rail station in Long Island in 2040, as envisioned by the Fourth Regional Plan

Figure 8: A commuter rail station in Long Island today

Figure 9: A New York City subway station in 2040, as envisioned by the Fourth Regional Plan

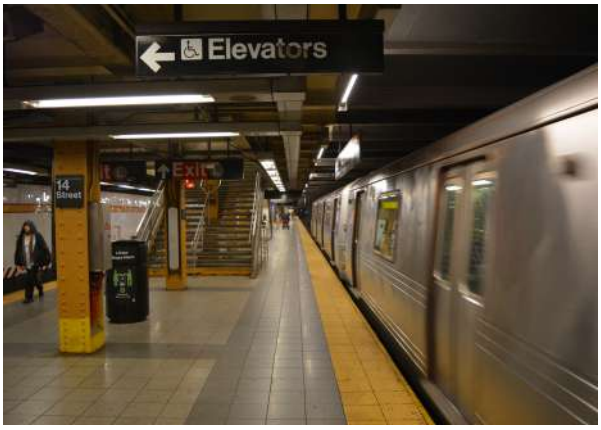


Figure 10: A New York City Subway station today.

vestments will have far-reaching and positive effects on land use, settlement patterns, public health, goods movement, the economy, and the environment. Some of the plan's transportation recommendations include:

- Levy charges and tolls to manage traffic, including a congestion charge in Manhattan and on highways throughout the region, to reduce congestion, free up road space for goods delivery and other uses, and generate revenue for roads and transit.
- Modernize New York City subways, with a modern signaling systems as a top priority, and expand network into dense neighborhoods, particularly low-income areas.
- Create a unified, integrated regional rail system and expand regional rail, into a seamless regional transit system, including the T-REX proposal.
- Design streets for people and create more public space to prioritize walking, biking, transit, and goods deliveries over private cars.

Third, we must face the reality that climate change is already transforming the region and accelerate efforts to adapt. Today, more than a million people and 650,000 jobs are at risk from flooding, along with critical infrastructure such as power plants, rail yards, and water-treatment facilities. By 2050, nearly two million people and one million jobs would be threatened. We must adapt our coastal communities and, in some cases, transition away from the most endangered areas. We will also need to invest in green infrastructure in our cities to mitigate the urban heat-island effect, reduce stormwater runoff and sewer overflows, and improve the health and well-being of residents.

And finally, affordability. The region needs quality housing for all income levels in places that have good transit service. It must also invest in smaller cities and downtowns to boost economic opportunities throughout the region. Housing costs must come down with additional housing construction in mixed-use mixed-income communities, and more strategic use of subsidy programs. Efforts to curb displacement and homelessness must be more effective.

FROM PLAN TO IMPLEMENTATION

The Fourth Regional Plan looks ahead to the next generation, allowing us to set our sights high and not be constrained by current political dynamics. But we know a generation is too long to wait for many of the region's most pressing challenges, and so the fourth plan is also a document to inform short-term advocacy efforts.

Since the launch of the Fourth Regional Plan, many of RPA's recommendations, priorities and key issues have gained significant ground, including a few legislative wins.

TRANSPORTATION

The Fourth Plan contains a series of recommendations to create a more dynamic, customer-oriented transportation system.

One of these recommendations is enacting congestion pricing, a policy that RPA has been advocating for since the Third Regional Plan in the mid-1990s. Congestion pricing is a proposal to place a fee on driving in the densest, most congested part of the region, specifically, Manhattan south of 60th Street.

In March of this year, New York became the first state in the country to pass congestion pricing. Congestion pricing will be used to raise funds for New York's beleaguered transit system while reducing congestion, improving health, and rationalize an otherwise flawed tolling scheme that contributes to more traffic, especially in certain neighborhoods next to free bridges. Now, many stakeholders and policymakers are working towards implementing the system over the next two years.

Under the new administration of Governor Ned Lamont, Connecticut has also been moving towards tolling highways, another RPA recommendation.

Figure 11: We must accelerate efforts to both adapt to climate change and reduce the region's contribution to this global problem (Credit: PORT + Range for RPA)

There are other ideas to be implemented in the near-term such as repairing and modernizing the subway system. And there are ideas that will take a full generation or more to realize, including an ambitious unification and expansion of the regional rail system and major expansions of JFK and Newark airports. Specifically:

- New York City Transit's Fast Forward Plan largely mirrored RPA's recommendations to rebuild the subways; in particular, the organization called for expediting the installation of Communications Based Train Control (CBTC), improving bus service and creating longer work windows to allow transit workers to complete projects more quickly and cost-effectively.
- JFK Airport will be getting a major overhaul and expansion thanks to Governor Cuomo; additional revenue from streamlining operations and increased activity could help raise the funds needed to make a new runway possible, which RPA called for in its fourth regional plan. And Newark Mayor Baraka embraced RPA's recommendations for Newark Airport and RPA is now working with local communities in Newark to help them capture the benefits of airport investment.

ENVIRONMENT/SUSTAINABILITY

The Fourth Plan contains a series of recommendations to rise to the challenge of climate change, aimed at both slowing its pace and simultaneously helping the region adapt to the new realities of to rising seas and increased storms. These recommendations took on a new sense of urgency with the recent Intergovernmental Panel on Climate Change (IPCC) and National Climate Assessment reports. These recommendations also look to make our communities greener and healthier places to live. This includes adapting coastal communities to permanent and periodic flooding; strategically protecting open space with the most potential to absorb carbon dioxide and stormwater; planting more trees and vegetation in urban neighborhoods at risk of extreme heat; upgrading water and sewer infrastructure; and modernizing and greening the energy grid.

The Plan recommends that New Jersey rejoin the Regional Greenhouse Gas Initiative (RGGI) and that the region expand the carbon market beyond just transportation to slow CO2 production and help pay for these and other improvements. In the past year several of the environmental recommendations have started to come to light:

- Governor Murphy has initiated the process for New Jersey to rejoin the Regional Greenhouse Gas Initiative (RGGI), the region's market-based program to reduce greenhouse gas emissions, and has committed to 100% clean energy by 2050. Governor Murphy has also set the nation's most ambitious targets

for offshore wind production -- 3.5 gigawatts by 2030. The state is currently seeking bids for the first 1100 megawatts towards this goal.

- In Connecticut, former Governor Malloy signed legislation last year setting a target for reducing greenhouse gases by 45% by 2030 and increasing the state's renewable portfolio standard to 40%; adopt projections of nearly two feet of sea level rise by 2050 into statutory references and require state projects in the coastal boundary to reflect those projections; create a shared clean energy program for low- and moderate-income customers; create 'successor' programs to provide sustainable growth of renewables across the commercial, industrial and residential programs in Connecticut; and revise net metering; among other initiatives.
- In 2018, the New York State Energy and Research Development Agency (NYSERDA) released its first roadmap for advancing offshore wind development, and New York State put out a bid for 800 megawatts of offshore wind power towards Governor Cuomo's goal of 2.4 gigawatts by 2030. New York State is planning for its first offshore wind farm to be built in 2020.
- With the support of New York State, New York City and New Jersey, the Army Corps of Engineers commenced a multi-year study to consider the benefits and impacts of surge barriers and other constructed resilience measures in and around New York harbor, including a potential regional surge barrier. The Hudson River Foundation and NY-NJ Harbor Estuary Program commissioned a preliminary evaluation of the potential influence that large barriers could have on the Hudson River Estuary.
- The Trust for Public Land and New York Bicycling Coalition have adopted RPA's alignment presented in the Fourth Plan in their efforts to extend New York's Empire State Trail across Long Island. The groups have overseen a feasibility study and are engaging stakeholders.

AFFORDABILITY

The Fourth Plan contains a series of recommendations to make the region more affordable for all. Many of the recommendations in this area explore innovative ways to create more housing at all price points, especially more affordable housing, and protect existing affordable housing and the people that depend on it. The plan also lays out recommendations to encourage diversified job growth in cities and downtowns throughout the region, while maintaining New York City's position as a leading global city and economic powerhouse that offers opportunities for all. In the past year several of the affordability recommendations have started to come to light:

Figure 12: The Fourth Regional Plan calls for a Tri-State Trail Network to link the region's most beautiful parks and landscapes, from the Catskills and Pinelands to the beaches of Jersey and Long Island. (Credit: PORT + Range for RPA)

Figure 13: We need complete communities that are healthy, welcoming, and enjoyable places to live – and affordable (ORG Permanent Modernity for RPA)

- New York City Mayor De Blasio's administration is piloting the legalization of accessory dwelling units as RPA recommended in creating more housing without new construction.
- RPA recommended creating more affordable housing in communities across the region and this past year the Village of Great Neck Plaza passed an inclusionary zoning ordinance on the basis of an RPA report, Jersey City voted to create an inclusionary zoning study and the City of Newark's inclusionary zoning law (that was passed before the plan was released) went into effect.
- RPA also recommended strengthening protections against displacement and last year both New York City and the City of Ossining adopted legislation to this effect.
- The City of New York has created commissions to look at reforms to the current property tax structure which is irrational and inequitable and charter reform which has lead to some early reforms to make planning more inclusive.
- RPA launched an Anchor Opportunity Network connecting anchor institutions with local municipalities and community stakeholders to drive equitable economic growth and community well-being across the region.

WHAT'S NEXT?

Regional Plan Association will build on the partnerships it has created through the development process for this plan to ensure its recommendations are debated, refined, and ultimately implemented. The continued success of the region and all of its residents depends on it.

Illustrations:

Birds eye view of the National Park in the Meadowlands

Rendering of a suburban train station: Before and after 4RP map

Rendering of a midtown street: Before and after

Rendering of a subway station: before and after

How was the Fourth Regional Plan developed?

RPA began work on the Fourth Regional Plan by speaking with residents and experts and aggregating data. RPA's report "Fragile Success," published in 2014, assessed and documented the region's challenges: affordability, climate change, infrastructure, and governance.

Utilizing detailed land-use data and intricate econometric models, RPA then documented the region's built form, quantified population and employment trends, and extrapolated future growth scenarios. RPA compared these scenarios and presented an optimal growth pattern that would achieve several benchmarks of success. This aspirational scenario guided recommendations developed for the Fourth Regional Plan.

Throughout the process, RPA staff worked with hundreds of experts in housing, transportation, land use, and environmental issues—from the region and beyond. And we received regular feedback over the years at nearly 200 meetings and forums, where we held discussions with some 4,000 people.

RPA staff also engaged in deep, multi-year collaborations with community-based organizations, which represent more than 50,000 low-income residents and people of color. These partnerships helped RPA staff hear a wide range of perspectives on affordability, jobs, transportation, and environmental justice, and enabled us to stay connected at the grassroots level—no easy task in a region with 23 million residents.

STATE PLANNING
NEW JERSEY STYLE (1986-2018)

MARTIN A. BIERBAUM

A view from Highlands, New Jersey of Sandy Hook Bay, Sandy Hook, with the New York City skyline in the distance
Picture credits: Dan Century (2010).

INTRODUCTION

More than three decades ago, the State of New Jersey embarked upon an ambitious State Planning effort. Despite years of effort, the New Jersey State Development and Redevelopment Plan (State Plan) has fallen short of its original ambitious intentions except for two brief periods (1998-2001; 2002-2003). This disappointing experience occurred despite the New Jersey Supreme Court's demonstrated appreciation for the private and public forces shaping metropolitan growth, the legislatively established cabinet-level State Planning Commission (SPC), a legislatively prescribed consensus-building planning process, and efforts to build upon earlier State Planning efforts. For much of the past decade the State Plan and its process have been largely dormant, although just recently there have been murmurings of resurrecting it in some unspecified pared back form.

The reasons for the State Plan's setbacks are multiple and entangled. They include New Jersey's home rule tradition, the importance of local property tax revenues to fund local governments, the State's degree of metropolitan jurisdictional fragmentation, its toxic social and economic inequalities, lack of consistent political leadership and the numerous disruptions that the State Planning process experienced. This article examines the planning context, origins, structure, process, politics and uneven implementation effort of the State Planning effort.

NEW JERSEY'S STATE PLANNING CONTEXT

New Jersey is located on the east coast of the United States in the mid-Atlantic region. It is part of a peninsula, bordered on the north and east by the state of New York, including the length of New York City across the Hudson River. Much of New Jersey's east and southeast are Atlantic Ocean coastline that stretch from Sandy Hook in the north to Cape May in the south. To the west the State is bordered by the Delaware River and Bay with the States of Pennsylvania and Delaware located to the west and southwest across those water bodies.

Much of New Jersey is densely populated coastal plain with more sparsely populated sections of low mountains[1] in its northwest corner. It is the fourth smallest State by land area, but the eleventh most populous State with nearly 9 million residents making it the most densely populated State (1,210 people per square mile) in the United States[2]. It is a wealthy State, where median household income is $72,222 (2015), fifth highest in the USA[3], while its median family income is $87,389 (2012). New Jersey is often thought of as an urban State, but most of its residents live in small suburban municipalities.[4]

Reportedly, Ben Franklin[5] who was one of the founders of the United States, characterized New Jersey as "a keg tapped at both ends." The ends even today

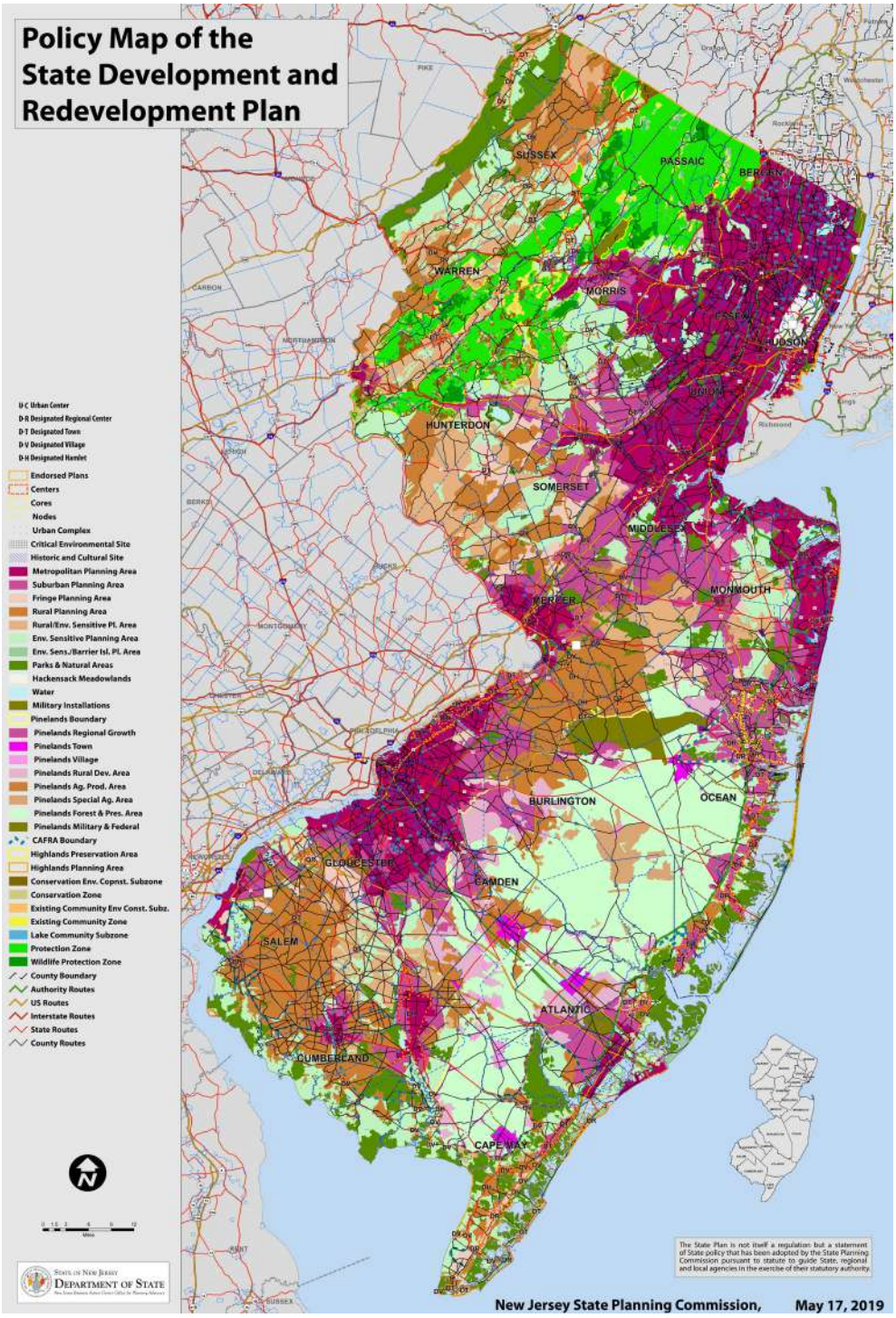


Figure 1: Policy map of the New Jersey State Development and Redevelopment Plan- 2001, updated in May 2019. (Credits: New Jersey State Planning Commission)

remain New York City and Philadelphia. Currently, the State lies entirely within the combined statistical metropolitan areas of those two large cities. The State's economy, politics and media markets are heavily influenced by those large urban centers located just beyond its borders.

New Jersey's economy was once so dominated by agriculture that the State was referred to as the "garden State" – a sobriquet still in use. However, during the second half of the 19th century, it underwent a major industrial transformation. Manufacturing industries concentrated in a half-dozen of the State's largest cities which then absorbed large numbers of immigrants, first from northern Europe and later from southern and eastern Europe.

In the 20th century, large numbers of African-Americans moved from southern rural to northern urban areas, including New Jersey's cities. They were pushed by a search for escape from the south's oppressive racism and declining employment opportunities resulting from rapid agricultural mechanisation. They were also pulled by expanding employment opportunities in the more industrial north and west. This sizable demographic shift was subsequently dubbed "The Great Migration" [6] (1916 to 1970). This migration accelerated during and immediately after World War II.

After World War II, New Jersey's political geography was again transformed. Investment in housing production lagged throughout the Great Depression (1929 - 1939) and World War II (1939 – 1945). After the war, depleted and deteriorated housing stock collided with pent-up housing demand propelled by returning veterans and a dramatic rise in household formation. The "baby-boomers" arrived!

Transportation and communication improvements combined with an expanding economy accelerated centrifugal movement from the State's older industrial urban centers to its developing suburbs. This suburbanizing trend was reinforced by Federal government policies that included subsidizing suburban single-family homeownership (and excluding many older urban neighborhoods from qualifying for government loan guarantees) and the direct funding of infrastructure investments such as the interstate highway system as well as water and sewer utilities.[7]

To counter the urban decline, Federal policy funded urban renewal programs, however, manufacturing, which had served as New Jersey's urban economic base for the past century, was in a state of decline due to obsolescence and disinvestment. As manufacturing employment declined, other service-related urban employment also shrank. The misfortune of the State's cities was simultaneously affected by exogenous forces such as regional, national and global demographic and economic trends that fell far beyond the urban centers' ability to reverse.

As poorer African-Americans and a smaller number of Latinos moved to New Jersey's once bustling urban centers, white residents began a dizzying rush to the State's suburbs as part of the demographic shift characterized as "white flight." Joined with the "Great Migration," this phenomenon was recognized as a "dual migration," emblematic not only of fundamental demographic and economic shifts, but also an important social values indicator. [8]

By the mid-1960s, much of New Jersey had become an emergent urban prototype typical of what would occur in other United States metropolitan areas. Urban growth spilled out beyond boundaries of developed cities and towns with urban economic functions and cultural life relocating to the suburbs. Increasingly suburbia was less connected and subsidiary to the New Jersey's industrial urban centers.[9] The suburbs became richer and had more property tax revenue to spend on amenities while the cities became poorer and increasingly unable to fund municipal services, despite financial aid from both the State and Federal Governments that provided little match for private sector disinvestment. Today, New Jersey's major current economic drivers are pharmaceuticals and life sciences, financial services, information technology, logistics and transportation. To a large extent, these new economic drivers emanate from suburban locations.

HOME RULE

Most of New Jersey's land is privately owned, a situation that has been true for centuries. Land ownership was at one time also a prerequisite to voting rights. As voters transformed sparsely settled areas they often petitioned the State to establish local government jurisdictions with the right to levy taxes to pay for local public services. These local jurisdictions also gained the right to regulate land development within their respective municipal boundaries.

The proliferation of these local government units was not always efficient nor rational. Currently, New Jersey has no unincorporated land. Consequently, New Jersey not only has a high population density, it also has an extraordinarily high density of governmental units including 21 counties, 565 municipalities, and more than 600 school districts[10].

The State enacted several acts during the first third of the 20th century that consolidated the legislative grants of municipal regulatory powers. In 1947, New Jersey adopted a new State constitution, which continued to favor municipal land-use controls. Counties and municipalities were expected to cooperate, but the balance of power remained tipped in favor of municipal decision-making.

FEDERAL AND STATE PLANNING EFFORTS

Federal initiative spurred a more prominent State Planning effort by providing economic relief and planning direction during the Great Depression. The National Resources Planning Board was established in 1933. Its mission included launching State Planning offices to engage in natural resource planning. The federal government provided New Jersey and other States with funding, technical assistance and staff support. In response, New Jersey enacted its own State Planning Act in 1934[11] to establish a State Planning board. It conducted studies focused on natural resource inventories and public infrastructure investments. It distributed annual reports. [12] It provided data and technical assistance to local jurisdictions. But during World War II, the National Resources Planning Board was defunded and eventually eliminated. Federal efforts to encourage State or local planning were not renewed until the 1950s.

In 1950, State government produced a State development plan that sketched major infrastructure investments such as the New Jersey Turnpike, Garden State Parkway and others related to water and recreational uses. Unlike previous state plans that concentrated on natural resources, this development plan was designed to be an infrastructure policy statement rather than a State master plan. It identified needs and ways to meet them[13].

THE FORMAL ESTABLISHMENT OF LOCAL PLANNING

In 1954, state planning was augmented by an expanding grants administration function as a portion of the 1954 Federal Urban Renewal Act which charged state governments with distributing planning grants to jurisdictions with less than 25,000 people. The funds were used to cover the costs of municipal master plan and zoning ordinance writing. Little State guidance was provided.

Municipalities used these funds to devise plans and enact ordinances that were locally oriented and heavily influenced by local fiscal pressures. New development was expected to generate enough revenue to pay for any additional expense that it might spawn. As the economy expanded, developing municipalities employed their land-use regulations to more carefully manage the type and pace of development they desired. They typically targeted more affluent population segments to optimize municipal fiscal impacts and exclude less desirable land-uses including affordable multi-family housing. Instead, many suburban municipalities insisted upon large lot sizes for single-family homes, consciously creating a specific community character.

AWARENESS OF THE EMERGING URBANIZING PROBLEM

Older urban centers and inner ring suburbs were placed at fiscal disadvantage, unable to attract more revenue generating and less cost-inducing land-uses. Developing suburbs were in more advantageous situations as they could choose more lucrative land-uses while excluding those that were likely to generate additional public expense. These newer suburbs emerged as big winners as this metropolitan game was played. No centralized plan was necessary with the evolution of this decentralized pattern of metropolitan growth.

By the mid-1960s, after less than a quarter of a century of this post World War II development pattern, the social costs of this arrangement became more obvious, at least to some. Racial unrest rocked New Jersey's once bustling industrial engines, underscoring the social chasm that had opened between New Jersey's cities and suburbs.[14] The state government's Division of State and Regional Planning, operating within a recently established Department of Community Affairs (DCA), tried to respond. It turned to basic planning functions –collecting, managing, distributing data, writing reports, and providing technical assistance mainly related to housing and urban redevelopment with only a couple of notable exceptions.[15]

In 1972, Governor William T. Cahill (1970-1974) appointed a cabinet-level State Planning Taskforce. Governor Cahill issued two strong special housing messages to the legislature in 1971 and 1972 decrying the effects of exclusionary zoning. He called for voluntary compliance by the State's suburban municipalities to provide more affordable housing.[16] The Cahill Taskforce findings were presented two years later to incoming Governor Brendan Byrne (1974-1982). Among its recommendations was the establishment of a permanent cabinet-level State Planning Council.

Simultaneously, updated Federal 701 grant eligibility requirements mandated the development of a State level Planning document to guide federal funding. The Division of State and Regional Planning responded by producing a State Development Guide Plan (Guide Plan). While work on it moved forward, the New Jersey Supreme Court intervened with its Mt. Laurel I[17] decision in 1975.

THE JUDICIAL IMPETUS TO NEW JERSEY STATE PLANNING

With Mt. Laurel I and Mt. Laurel II, contemporary New Jersey State planning history began. The New Jersey Supreme Court consciously intervened to upset the balance of forces that had shaped metropolitan growth. Planning would no longer be dominated by local self-interest or federal initiative. Instead, the state government would play a significant part, with an important role taken by New Jersey's judiciary, and at least initially a focus on suburban exclusion-

ary zoning, affordable housing opportunity and regional equity.[18]

The Mount Laurel story began in 1969 when an African American woman, Ethel Lawrence, who lived in a rural, predominantly minority section of Mount Laurel Township, organized a group to build low-income multi-family housing. The proposed development was incompatible with Mount Laurel's existing local land-use regulations. The Township refused to alter its zoning. As a result, a lawsuit was filed by the Southern Burlington County National Association for the Advancement of Colored People (NAACP) on behalf of Mrs. Lawrence against the Township.

In 1975, in Mount Laurel I, and again in Mount Laurel II in 1983, the New Jersey Supreme Court pointed to the harsh reality of municipal land-use regulation and the apparent institutional incapacity of the State government's political branches to address it. The Court conveyed an unambiguous message that the municipal power to zone, employed as a means to exclude, was no longer acceptable. The Court's reasoning included the toxic social implications and detrimental fiscal impacts that resulted from the mismatch between local tax revenues and public service demands caused by the still evolving metropolitan arrangement. Its remedial recipe was three-fold: 1) to broaden the meaning of "general welfare;" 2) to reduce regional social inequities by requiring developing suburban municipalities to create low- and moderate-income housing opportunities; and 3) to forge a public/private marriage to provide an effective enforcement tool labelled the "builders' remedy. This tool invited builders to challenge local zoning ordinances that failed to provide reasonable opportunities for affordable housing for low – and moderate – income populations.

The Court posed a vision that seemed at odds with the one held by many, if not most State residents. The Supreme Court remained respectful of the State government's political branches by extending an invitation to have them participate in resolving this social planning problem. For local jurisdictions, the Supreme Court emphasized the importance of sound planning principles. It did not expect affordable housing allocations to be built in farm fields or on environmentally sensitive lands. Instead, housing allocations were to consider sound planning principles as provided by the Guide Plan that was to be updated on a periodic basis. [19]

The institutional conundrum confronting the Supreme Court was that neither the State government's political branches nor its municipalities were sufficiently disposed to satisfactorily remedy the State's predicament absent judicial mandate. It was unclear which government branch would do what. There was bound to be continued resistance. How would the legislature respond to the

Court's constitutional mandate? What administrative mechanisms would the executive branch devise in response to the legislation? The prospects were intriguing, largely uncharted, but likely to be controversial. Relying upon the Guide Plan to chaperon municipal housing allocations at minimum required a major repurposing.

THE BEGINNING OF THE STATE PLAN

After expressing outrage and his resistance to the Mt. Laurel decisions, Governor Tom Kean (1982-1990) directed his special counsel to convene a "State Plan Ad Hoc Committee" to chart a novel course.[20] The Committee's members agreed that resolving State planning issues by concentrating on exclusionary zoning and affordable housing, was a too narrow focus. Instead, the Committee agreed to an expansive vision with far-reaching planning goals. Two bills were enacted to comply with the Court's constitutional mandate to serve as a more municipally acceptable alternative to the court-imposed remedy. [21]

First, the legislature enacted the New Jersey Fair Housing Act[22] (August 1985), which created the Council on Affordable Housing (COAH), comprised of 12 gubernatorial appointees confirmed by the senate.[23] COAH's functions included defining housing regions, estimating the regional need for low- and moderate-income housing, allocating fair share numbers of affordable housing to municipalities, and reviewing municipal plans on ways that they proposed to absorb municipal obligations. If a submitted municipal plan attained COAH certification, it gained legal protection for a specified period of repose (6 years).

Second, the legislature enacted the New Jersey State Planning Act[24] (January 1986). It created a 17-member bipartisan State Planning Commission (SPC) comprised of a governor's office representative, six cabinet members, bipartisan county and municipal representatives, and public members drawn from stakeholder organizations. The SPC was charged with devising the State Plan and an accompanying Infrastructure Needs Assessment (INA), both to be completed within eighteen-months.

COAH and the SPC were expected to coordinate activities to achieve the Court's mandate. While COAH was to concentrate on regional fair share municipal allocations, the SPC was to focus on the State government level but also interfacing with the State's 21 counties and more than 500 municipalities to develop population, employment and housing projections, identify suitable locations to accommodate those projections, and prepare an infrastructure needs assessment (INA).

The legislature also acted to shrewdly shield local prerogatives. Its solution avoided changes to the New Jersey Municipal Land Use Law[25] that was enacted

in 1976. Municipal mandates were kept to a minimum. For example, although municipalities were required to include compatible land-use and housing elements in their master plans, the State Planning Act did not require municipalities to have their respective master plans comply with the State Plan. The State Planning Act also accepted the existing set of jurisdictions and inter-governmental relationships among them. No new authorities were created.

Furthermore, it is noteworthy that while in theory a clear and constructive relationship between the State Planning Act and implementation of the Mount Laurel doctrine might have been expected, there is reason to question whether the State Planning Act was actually intended to advance the Mount Laurel Doctrine or if its purpose was to undermine its spirit. Doubts about the purpose of the planning process arose because in addition to taking a considerable amount of time, it was likely to result in a State Plan that would dilute the New Jersey Supreme Court's initial purpose of socially integrating New Jersey's suburbs. [26]

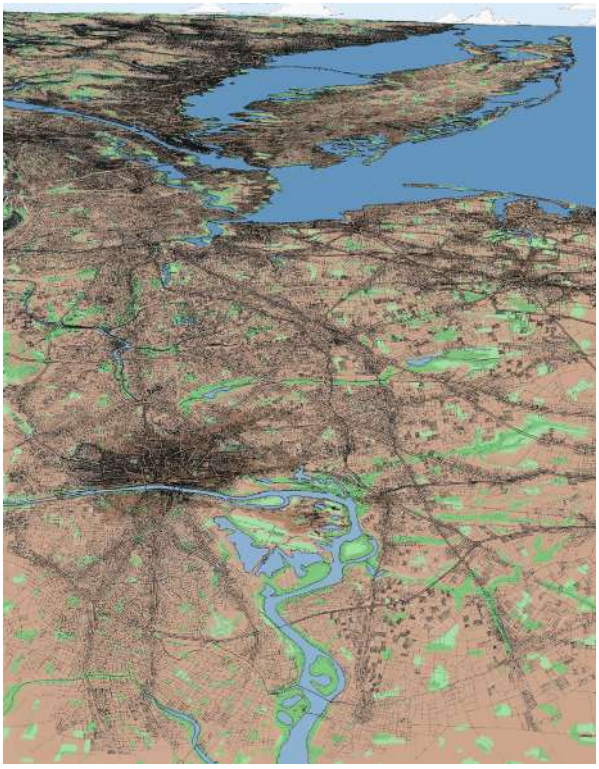
THE STATE PLAN PROCESS

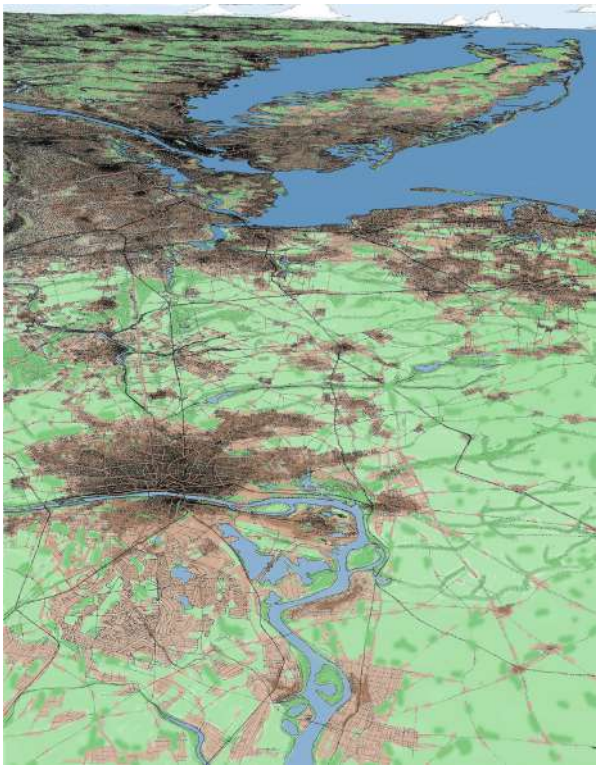
In proposing a way to develop the State Plan, the Ad Hoc Committee agreed upon a labor intensive, consensus-building process that would gain the support of the New Jersey League of Municipalities (NJLOM), an Ad Hoc Committee major player. The planning process was dubbed "cross-acceptance." It was intended to be highly interactive and cooperative, even if not entirely collaborative.

This idea was incorporated in the State Planning Act. The term "cross-acceptance" was defined as "a process of comparison of planning policies among governmental levels with the purpose of attaining compatibility between local, county and State Plans." That process required that the SPC negotiate with each county planning board, which in turn convened and negotiated with its respective municipal planning boards. The "cross-acceptance" process would yield lists of "consistencies" and "inconsistencies" that would undergo additional negotiation in efforts to reduce persistent differences among the plans.

The cross-acceptance process required multiple phases, numerous public hearings, monthly SPC meetings and periodic reviews every three years. The process was guaranteed to fuel controversy. Conversations that might have been perfunctory in planners' back offices about demographic trends, employment opportunities, or affordable housing locations were likely to become volatile when taking place in multiple public forums at which objectors would frequently outnumber supporters.

After publicly releasing two preliminary iterations in 1987 and 1988, the SPC released a three-volume Preliminary Plan in January 1989 as the official basis for





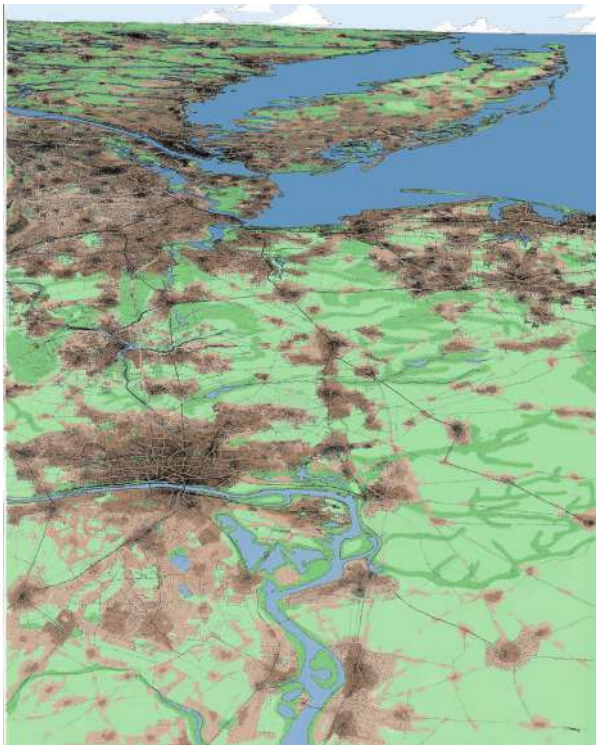


Figure 2 (top left): A view of the New Jersey region, extending from Burlington County, N.J. and Bucks County, Pa., to Hartford and New Haven, Conn., with the Delaware River in the foreground left and Long Island Sound in the upper right. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 3 (top right): New Jersey region trend development, where new developments continues to sprawl and the region experiences expansion of low-density, automobile dependent, single-use development. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 4 (bottom): New Jersey region State Plan Development, where the region reinvests in its existing centers and creates new centers with distinct identities and a balance of housing, employment and open space. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

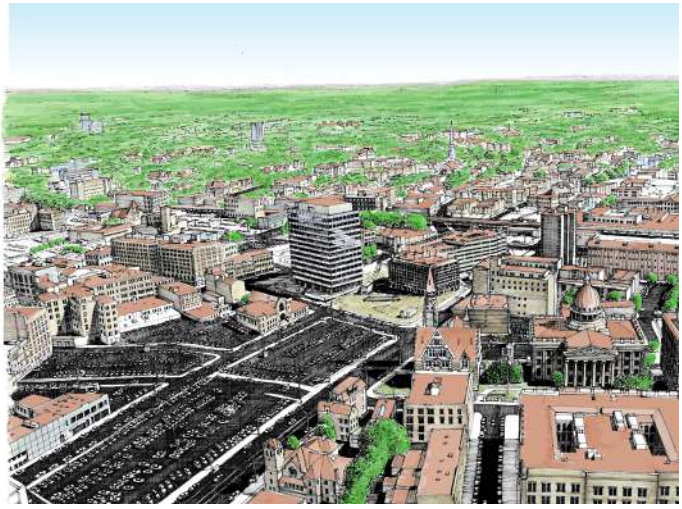
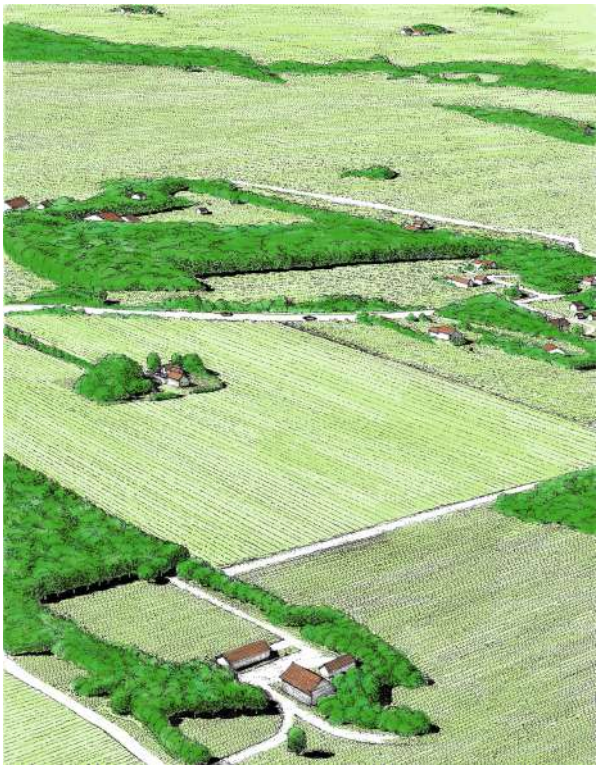
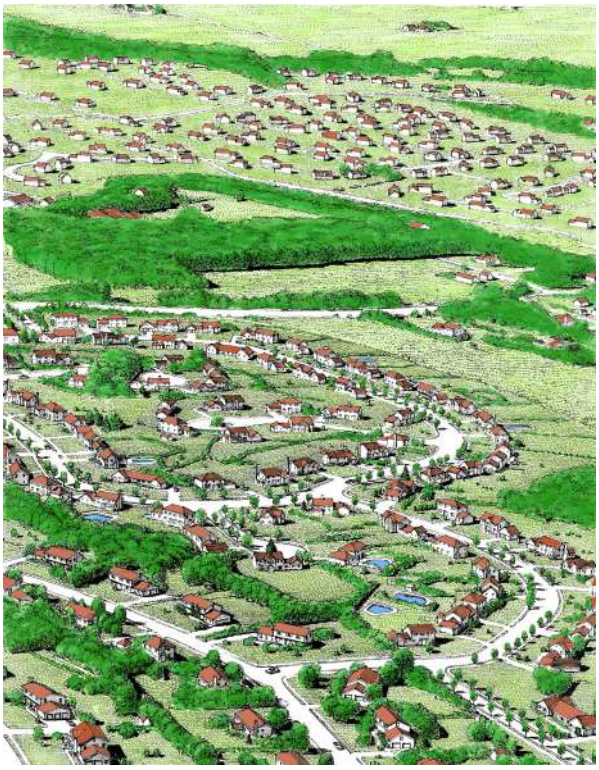


Figure 5: Urban Centre before proposed development, suffering from disinvestment and inappropriate development, compromised historic buildings, difficulties to walk and drive by due to cars and surface parking. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 6: Urban Centre trend development, where in need of ratables, the urban centre accepts suburban-style development and the city loses its diverse mix of uses and becomes an automobile-oriented urban office park which does not benefit from transit service. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 7: Urban Centre Plan Development, where an eclectic blend of new buildings—many incorporating green features—are designed to fit within the traditional urban pattern. Building location and design reflect the traditional character of the city. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)





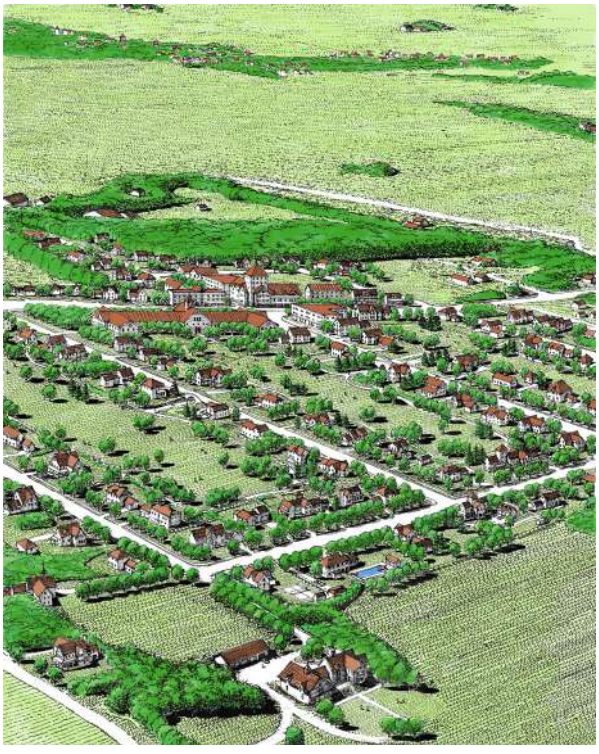


Figure 8 (top left): Rapidly developing suburban fringe of New Jersey before proposed development where some of the state's best farmland had been expected to remain in agricultural production. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 9 (top right): Rapidly developing suburban fringe trend development, where suburban development overwhelms the farmland, open lands and natural landscape. Rigid zoning codes create homogenous tracts of single-family homes, shopping centers, office parks. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

Figure 10 (bottom): Rapidly developing suburban fringe plan development, whereby new development occurs by using innovative design leading to less automobile-dependent, environmentally sensitive development, including attractive new buildings and public spaces. (Picture Credits: Regional Plan Association/ Dodson Associates 1991)

the cross-acceptance process. It underwent two years of extensive scrutiny with considerable pushing back and forth. The resulting Interim State Plan underwent a third-party impact assessment provided by a Rutgers University academic team. [27] In June 1992, the SPC approved the first final State Plan.

The State Planning Act characterized the State Plan as "an adequate response to judicial mandates respecting housing for low- and moderate-income persons..." The legislative findings also pointed to the importance of sound planning to "prevent sprawl and to promote suitable use of land..." In addition, it directed that the State Plan address issues affecting beneficial growth, environmental quality, cost-effective delivery of infrastructure and other public services, intergovernmental coordination, quality of community life, urban redevelopment in addition to meeting judicially mandated affordable housing allocation requirements.

The State Plan stressed the importance of directing growth to already developed **urban and suburban areas** that were presumed to have adequate infrastructure capacity. New growth that might spill out into the countryside without adequate infrastructure capacity was to be phased in over time, coordinated with appropriate infrastructure investments. Future development in rural agricultural and environmentally sensitive areas was to be limited and directed

Figure 11: Lambertville is an example of a once tired, working class Delaware River town that has been revitalized in ways consistent with the State Plan's vision. (Credits: Gary Toth)

Figure 12, 13, 14: Washington Township Town Center. This is a new town that was built in ways consistent with the State Plan's vision. Conflicts among state departments provided a spark for the development of a bureaucratic change management strategy, a state department cross-acceptance process, to facilitate the State Plan's implementation. (Credits: Gary Toth)

through innovative design to compact centers and clustered developments.

The State Plan settled on the concept of "Communities of Place" to convey its unifying vision. The concept connoted locations that provided a sense of identity as an alternative to sprawl. It fit with the SPC's aspirational intent, an attractive alternative to sprawl that the SPC perceived to be land wasteful, aesthetically displeasing, too automobile-dependent, and socially polarizing - a landscape largely consisting of single-use residential subdivisions, shopping malls, office parks and commercial highway strips. Instead, "Communities of Place" suggested compact, mixed-use, walkable, and more environmentally sensitive development. "Communities of Place" were to be achieved by new construction and

retrofitting the existing landscape. It included a growth management structure operating through a system of delineated "planning areas" -- "metropolitan," "suburban," "fringe," "rural," and "environmentally sensitive." The arrangement also included a center hierarchy: "urban centers," "regional centers," "town centers," "villages," and "hamlets."

The SPC also expected to transform what had become conventional local planning practice. The cross-acceptance process was expected to encourage community dialogue to re-think existing land-use regulations. By using build-out analyses, the SPC hoped to raise municipal awareness as local jurisdictions began to comprehend existing land-use regulation implications. In the best cases a community visioning process would emerge inviting developers to contribute to that vision rather than drive the development process on a site-by-site basis.

Consistent with earlier State Planning efforts, the State Plan delineated ecological regions based on explicit criteria. [28] Policies were tailored to meet objectives for each of those categories, too. Classifying municipalities or portions of them became a major aspect of this planning exercise. Two main data streams nourished the comparison -- cross-acceptance and the infrastructure needs assessment.

Sixteen Statewide strategies with policies organized under those strategies were devised to reflect State government departments' best practices. These strategies and policies were expected to guide State government policies and programs but operating in ways compatible with the State Plan's planning areas and center hierarchy.

Adhering to the State Plan was regarded as a significant growth management advance. No longer would municipalities rely on zoning alone. The cross-acceptance process would facilitate coordination and integration, matching land-use regulations with capital facilities planning among different levels of government and across departments on each level. It also provided an additional means to ground-proof data. The legislative requirement to review, revise and re-adopt the State Plan on a three-year cycle promised a regularly updated and continuous planning process.

THE UNEXPECTED PUBLIC RESPONSE

The reactions to the State Plan were unexpected as the State's politics interpreted the planning process. For example, urban public officials, often members of minority groups and at first expected to be major State Plan beneficiaries, showed little, if any, interest in it. They feared that regional thinking might dilute their urban political base. In addition, plan benefits appeared too elusive and

long-range. Urban public officials were preoccupied with managing crises, not thinking about a plan with a 20-year horizon. Their issues were primarily property tax reform, public safety and educational issues, none of which was directly addressed by the plan. Too often, infrastructure was also lacking. They viewed the State Plan as an impractical luxury, at best a futile distraction.

Developing suburbs were largely satisfied with the existing nature of suburban development. They believed that they were living the "American Dream." Suburban officials rejected the suburban sprawl critique. Participation in the cross-acceptance process was perceived as another costly State-imposed mandate. The immediate effects of affordable housing allocations were of greater concern, sapping planning board time and energy. COAH's activities were viewed as State intrusions to local autonomy and threats to the preservation of their community character. Affordable housing was often associated with detrimental fiscal impacts, unwanted racial integration, environmental degradation and increased traffic congestion. The idea that the SPC and COAH were established as municipally preferable alternatives to the judicially imposed solutions quickly faded from municipal memory.

Instead, the focus of much State Plan activity moved to the metropolitan periphery where property owners expected to continue to benefit from appreciating land values as rural municipalities urbanized. Farmers, other large landowners, and developers were disturbed that Plan implementation might mean diminished land values, due to plan-induced limited capacity for new growth. These interests were prepared to resist. It was on the metropolitan periphery that the State Plan battle was joined.

As the cross-acceptance process passed through this political-geographic prism, it seemed as though State Planning was drawn away from the New Jersey Supreme Court's early intentions. Relations between the SPC and COAH frayed as their respective missions diverged. A memorandum of understanding (MOU) drafted during their early histories became irrelevant. Eventually, the two agencies barely communicated, although for a time they shared the same floor within a single state government office building.

IMPLEMENTATION — THE MISSING PIECE

Despite the State Planning Act's wide mandate and extensive detail, it was curiously quiet on implementation. This absence reflected a lack of consensus on the appropriate implementation path to take. As one State Planner observed, "Someone needed to say that 'we have a plan; now let's focus on it and figure out how to do it.' But that never happened. In fact, it is difficult to understand how

something like that could ever happen in State government." [29]

In 1993, a year after the Final State Plan was approved, Governor Jim Florio (1990-1994) issued Executive Order #114,[30] calling on State departments to consider the Plan when adopting policies, regulations, and functional plans. Unfortunately, this vague gubernatorial pronouncement was too little too late especially when issued by a lame duck governor. While OSP provided technical assistance and facilitated communications with State departments, an undeniable asymmetry persisted as the State Plan was only advisory while State department policies had the backing of enforceable regulation.

State implementation presumed that State government would invest in public infrastructure and programs to create the incentives and disincentives to encourage local jurisdictions to conform to the State Plan. Despite initial OSP forays, implementation successes were "spotty". Implementation required reconciling State Plan provisions with State department missions and their respective plans. None of this work was undertaken given OSP's limited resources and its primary focus on State Plan development.

Six State departments were represented on the SPC. Their representatives participated in the State Plan's cross-acceptance process. They voted on the State Plan's interim and final approvals. Yet, department representatives were typically political appointees with limited knowledge of department programs. They were rarely de-briefed leaving departments with only sparse, if any knowledge of the State Plan's vision and its intricate detail.

OSP staff acknowledged State departments' importance, but were frustrated by encountered resistance. The OSP Director was unclear on the ways to employ limited resources in relating to those much larger organizations. SPC's authority remained unclear given the State Plan's advisory status. Departments' reactions to the State Plan reinforced an OSP tendency to turn inward, to concentrate on its relationships with local jurisdictions, and to complicate its own processes in ways that fueled county and municipal ire without supplementing local jurisdiction benefits for participating in the process.

At the municipal level, OSP staff-driven discussions with the SPC led to the refinement of the "center designation" process and the creation of a "plan endorsement" certification process. "Center designation" boundaries were considered "soft" urban boundaries as their delineations were largely defined only by sewer service mapping. A more refined center designation mapping protocol was subsequently developed.

The 'plan endorsement' process was an expanded process reflecting an attempt to better understand the interplay between centers and environs, but of-

ten at a cost of more extensive conditions and added municipal expense. Both approaches required OSP staff reviews and presentations to the SPC's Plan Implementation Sub-committee (PIC). The process provided a goal-directed, problem-solving forum to promote coordination among different government levels. It strengthened local planning capacity where it was lacking. Eventually, approximately 60% of the State's then 567 municipalities received either "center designation" or "plan endorsement."

DISAPPOINTMENT RESULTING FROM THE LACK OF LONG-TERM POLITICAL SUPPORT

State Plan development and implementation took time, much more than any single gubernatorial administration allowed. Implementation was hampered not only by the initial limited attention and resources devoted to it, but also by the disruptions of successive political cycles.

Plan implementation could be effective if, and when, it became a gubernatorial priority as demonstrated briefly during Governor Christine T. Whitman's second term (1998-2001). Governor Whitman demonstrated that an important aspect of the implementation process was dependent on a hefty combination of gubernatorial embrace and leadership. She talked about the prospect of the State's build-out with urgency. She understood that plan implementation would not happen by exhortation, alone, even if voiced from the highest State government levels.

Governor Whitman appointed a new SPC chairman, who urged moving public meetings from Trenton to locations throughout the State to gain wider public support. Whitman supported a second cross-acceptance process. She succeeded in efforts to enact a bond issue to underwrite the acquisition costs for farmland, open space, and cultural resources. She signed an executive order to slow wastewater extensions into rural areas. She pressured the Department of Environmental Protection (DEP) to align coastal development rules with the State Plan.

Through administrative reorganization, Whitman expanded the DCA Commissioner's authority, moving the SPC to DCA from Treasury. State Plan implementation refocused attention on housing and urban redevelopment while land was acquired on the metropolitan periphery by DEP and the Department of Agriculture (DOA). Contaminated site clean-ups were in part shifted from DEP to a DCA-led Brownfields Taskforce changing the emphasis from site remediation to redevelopment. The New Jersey Redevelopment Authority (NJRA) was moved from the Commerce Commission to DCA. An Urban Coordinating Council (UCC)

was added to improve coordination of State department activities in cities and chaired by the DCA Commissioner. These changes augmented the DCA Commissioner's authority as chair of the New Jersey Housing Mortgage Finance Agency (NJHMFA) and COAH. In addition, State Plan consistent urban policy initiatives were launched from DCA including an Urban Rehabilitation Code, a faith-based initiative that enlisted African-American churches to promote participation in state programs, and subsidized mortgages for university employees residing in host cities.

The governor authorized a bureaucratic re-engineering/process improvement initiative which operated within and across the six State departments represented on the SPC. This initiative included State Plan internal marketing, training, and guidance for front-line department staffs. Strategic points of intervention were identified. State Plan-related performance measures were devised. Model projects were showcased and marketed. Department plans were compared and reconciled with the State Plan. This process served as a cross-acceptance-like process for State departments, something that the SPC had long urged. Among organizational accomplishments were the development of an Agricultural Smart Growth Plan, a Treasury facilities siting policy, a DEP "sector permit" for distressed coastal municipalities, and a dozen transportation-related projects including special attention to urban gateways, scenic by-ways, and transit-oriented developments.[31]

Simultaneously, OSP launched a "Mayor's Institute" to assist mayors in urban problem-solving using the State Plan in collaboration with the Regional Planning Association (RPA) and the Princeton University School of Architecture. DCA also funded a Community Development Institute (CDI) at Rutgers University to enhance urban officials' planning capacity.

Last, the Whitman administration persuaded the legislature to provide $6 million over two years for Smart Growth Planning grants, administered by OSP to local jurisdictions. Unlike earlier "no strings" planning grants, these grants included conditions to promote State Plan-compatible planning. They advanced State Plan strategies among local jurisdictions, especially boosting regional center efforts that were benefiting from changing market conditions. The grants were employed to support the implementation of evolving concepts such as "smart growth," "new urbanism" and "sustainable development" that were consistent with the State Plan's "communities of place" concept. [32]

Between 1995 and 1999, with the Governor's encouragement, the SPC also conducted its second cross-acceptance process resulting in the development of a revised State Plan. Local resistance during the second cross-acceptance pro-

cess eased as local jurisdictions accommodated to what became cross-acceptance routine. Improved information technology made a significant difference by improving communications among government levels and across departments. In addition, OSP engaged in sophisticated computer modeling and digitized mapping. The process culminated in a second Final State Plan approval in March 2001.

Unfortunately, this State Plan momentum stalled just before the second Final State Plan was approved when Governor Whitman resigned ten months early to assume the post of administrator with the U.S. Environmental Protection Agency (U.S. EPA). As preparations were being made to smooth the transition to the next administration during a ten-month interregnum, no new State Plan-related initiatives were launched.

THE STATE PLAN'S DOWNWARD TAILSPIN

The succeeding gubernatorial administration attempted to build upon what remained of State Plan momentum. Governor James E. McGreevey (2002-2004), wanted to redirect attention from the metropolitan periphery to urban centers to provide additional benefits to his urban constituents. He declared a "war on sprawl," identified himself as the State's "smart growth" governor and changed OSP's name to the Office of Smart Growth (OSG). Governor McGreevey established a cabinet-level Smart Growth Council. He also directed the State attorney-general to defend municipalities in lawsuits where developers challenged smart growth principles.

The McGreevey administration, however, rapidly unraveled over personal scandal. After two years the Governor resigned. Persistent squabbling among cabinet members about smart growth issues in the absence of gubernatorial leadership thwarted continued forward momentum.

Most damaging to the State Plan at the time, the DEP commissioner established an Office of Sustainability to rival SPC efforts by DEP bureaucratic fiat. He authorized a DEP policy map as an alternative to the State Plan Policy Map. Unlike the State Plan Policy Map, which resulted from two cross-acceptance processes, DEP consulted with no one. Its "Blueprint for Intelligent Growth" or "BIG Map" was posted on the DEP website and declared to be a guide reflective of DEP's regulatory authority.

The BIG Map was a caricature of the State Plan Policy Map, which had evolved over 15 years and two cross-acceptance processes. The BIG map instead represented a top-down view of New Jersey reality, a reflection of DEP's regulatory process, that was bound to spur controversy. It appeared to impose Statewide

zoning fulfilling the worst fears of the State Plan's early critics. Years of painstaking effort at trust-building within the State Plan framework was destroyed within a matter of weeks. Distinctions between State Plan recommendations based upon a consensus-building planning process and DEP bureaucratically imposed regulations were obliterated.

After widespread public outcry, the Governor ordered the BIG Map's removal from the DEP website. Earlier efforts to address the once pressing issues of affordable housing and metropolitan growth also seemed to have been dealt a near fatal blow. After this damage was done, most municipalities no longer wanted to participate in State Planning activities citing the lack of good faith on the part of state government.[33]

STATE PLAN UPDATE

In the years since the demise of the BIG Map and the collateral damage it caused, the State Plan continued to suffer from gubernatorial neglect and abuse. A third limited State Plan iteration was attempted in 2008, without a full-blown cross-acceptance process and the State Plan Policy map. Some of the State Plan implementation process work continued at a reduced bureaucratic level within and across state departments.

Affordable housing suffered debilitating blows during this time, beginning with the McGreevey administration that failed in its effort to modify the nature of affordable housing allocations through the re-adoption of a new set of rules. Both Governor McGreevey and his DCA Commissioner were former mayors of suburban municipalities. Each had earlier encounters with COAH that left them unfavorably disposed. Once in state positions, they proved hostile to COAH's mission and interfered with its efforts.

The situation was further complicated by the bursting housing bubble and foreclosure crisis that struck New Jersey in 2007-2008 during the administration of Governor Jon Corzine (2006-2010). While most municipalities were skeptical about COAH's role, once the housing market collapsed, and despite the efforts of a new DCA Commissioner, who had formerly been a state legislator and urban mayor, developers were less interested in constructing affordable housing and consequently lost their enthusiasm for COAH. [34]

Corzine's successor, Governor Chris Christie's (2010-2018) had little interest in advancing either State Plan or COAH missions. More generally, the public mood seemed to change. Increasingly outspoken fiscally conservative advocates would occasionally appear at SPC frequently denouncing State Plan and COAH efforts.

Governor Christie announced a preference for a different kind of State Plan,

one that would be less comprehensive. He urged moving forward with a strategic plan that would dispense with cross-acceptance and eliminate the policy map.[35] He changed the name of the Office from OSG to the Office of Planning Advocacy (OPA), reporting to his lieutenant governor. Christie attacked COAH, undermining its functioning in multiple ways. He resisted judicial direction. Unsurprisingly, Christie also chose to ignore the State Planning Act, while his lieutenant governor publicly dismissed its latest iteration. State Planning staff was reduced and redirected to work on the emergency management projects. The SPC continued to meet only occasionally and was riddled with vacancies.

Consequently, the second State Plan adopted in 2001 remains the only official State Plan in force to guide the State's future growth. It is nearly two decades old. The current Governor is exploring a State Plan resurrection, but has made no commitment. It remains unclear how such a resurrection might be defined. Meanwhile, numerous municipalities that previously attained center designation or plan endorsement are facing impending expiration of these certifications. The OPA has been reduced to three full-time staff positions and lacks sufficient staff to manage the process.[36]

FINAL REFLECTIONS

The State Plan was an ambitious undertaking, growing first from two thoughtful but controversial New Jersey Supreme Court decisions intended to remove the invisible barriers of the State's suburban exclusion of affordable housing and thereby modify the nature of the State's logic of metropolitan growth. The judicial decisions spurred legislative enactments which in turn spawned executive branch administrative actions. An extended intergovernmental dialogue ensued, at times painful, often arduous, obviously lengthy, and with more than a few unexpected twists and turns. In retrospect, the results have been mixed, with more than a few positive results, but falling far short of the New Jersey Supreme Court's ambitious intentions.

COAH and its process claim credit for approximately 60,000 - 70,000 affordable housing units that were constructed and/or renovated over three decades that might not have otherwise been possible, given the general unpopularity of suburban affordable housing.[37] These numbers of affordable housing were constructed or renovated despite deliberate efforts to blunt the impact of the Mount Laurel Doctrine throughout [38]. Yet the agency was reduced and eventually eliminated by successive gubernatorial administrations' actions over the past two decades. Finally, a non-profit housing advocacy organization with New Jersey Supreme Court approval currently functions in its place [39]. Nevertheless, the

Mount Laurel decisions have been appropriately credited with positioning New Jersey as a national pioneer in the area of assessing statewide housing needs and municipal allocations. The court cases also provided an impetus, however temporary, to New Jersey's State planning efforts and for a very short time established the State as a "smart growth" leader.

The State Plan's development and implementation created forums for robust dialogue. The cross-acceptance process along with plan endorsement improved policy coordination and problem-solving among government levels and across departments on each government level. The State Plan process disseminated novel planning concepts with varying degrees of success. "Smart Growth Planning Grants" strengthened local planning. The implementation of a substantial list of State Plan-compatible projects is also evidence of success. It validated, and in other instances affirmatively guided, regional centers' revitalization, demonstrating the strength of a once dubious urban market. Yet, for the past decade, the State Plan and its associated processes have just limped along.

The severity of New Jersey's state level planning challenges perhaps diminished the chances of complete success from the outset, especially when compared to other State Planning initiatives[40]. Yet, the many State Plan -related achievements point to the ways that State government, even in the absence of more profound reform, can overcome many of the challenges. Gubernatorial leadership articulating a compelling vision, creating a sense of urgency, setting meaningful goals and assisting in developing strategy was critical. Yet, the brevity of those productive periods in New Jersey's modern State planning history also underscores the undeniable difficulties in arranging and maintaining the necessary alignment of forces on multiple fronts over an extended period of time.

Was there another way, perhaps more dispassionate or reasonable and less exhaustive, to achieve the New Jersey Supreme Court's objectives? Could sound planning principles through the development and implementation of the State Plan have been more effectively reconciled with the New Jersey Supreme Court's affordable housing social equity objectives? What were the missed opportunities? What if the SPC insisted on building planning capacity by engaging in data collection, management and dissemination to better inform public decision-makers and the public-at-large? What if more time had been spent on identifying social trends, providing incisive analyses, presenting prescient forecasts and alternative scenarios rather than concentrating on the development of a plan through an exhaustive planning process that prescribed a single end-State, even one as forward-looking and attractive as "communities of place?"

None of these opportunities could have been easily entertained given the

plan's historic context, judicial mandates, political constraints and resource limitations. Perhaps the most profound lesson that might be drawn from New Jersey's judicially impelled State planning experience is that in the absence of fundamental reform involving weakening local government prerogatives, achieving jurisdictional consolidation, reducing reliance on local property taxes, ameliorating the State's regional social and economic disparities, any future state planning attempts will again test state planners' mettle. For even a modicum of success, future State planners will require thoughtful and consistent gubernatorial leadership to offset the underlying institutional constraints, shifting priorities, and numerous disruptions that are still bound to be encountered.

An appreciation to James Reilly, a former Office of State Planning colleague (1987-1991), who urged me to write this article and edited it after it was written. The author also acknowledges Dr. Lauren Bierbaum, Senior Research Associate, The CREDO Institute, Stanford University, Dr. David Listokin, Professor, The Edward J. Bloustein School of Planning and Public Policy, Rutgers University, Herbert Simmens, former Executive Director of the Office of State Planning, Sean Thompson, former Acting Director, Council on Affordable Housing, N.J. Department of Community Affairs and Steven Karp, Public Policy Analyst, N.J. Office of Planning Advocacy for comments they made on early drafts of this article. The author is also thankful to Steven Karp and Gary Toth, Acting Director of the Project for Public Spaces (PPS), Tom Wright, Executive Director, Regional Plan Association, for providing graphics. He is also grateful for his wife- Joan Bierbaum's persistent encouragement in writing the article.

Endnotes

1 Appalachian highlands and piedmont

2 By comparison, the United States population density is just 92.6 people per square mile.

3 https://en.wikipedia.org/wiki/List_of_U.S._States_and_territories_by_income

4 See Kirp, D., Dwyer, J.P., Rosenthal, L.A., Our Town: Race, Housing and the Soul of Suburbia, Rutgers University Press, New Brunswick, N.J.,1995 where the authors state the following: "New Jersey is described as the most suburbanized state in the nation. That is another way of saying that it is the most municipally fragmented State in the nation." At page 23.

5 See: https://en.wikipedia.org/wiki/Benjamin_Franklin

6 See Wilkerson, I., The Warmth of Other Suns: The Epic Story of America's Great Migration, Vintage Books, N.Y., 2011; also see Harrigan, J.J., Political Change in the Metropolis, 3nd edition, Little, Brown & Company, Boston, 1985.

7 See Rothstein, R., The Color of Law: A Forgotten History of How Our Government Segregated America, Liveright Publishing Company, New York, 2017.

8 See discussion in Harrigan, J.J., Political Change in the Metropolis: 3rd edition, Little, Brown & Company, Boston, 1985, pp. 33-37. Also see Haar, C.M., Suburbs Under Siege: Race, Space, and Audacious Judges, Princeton University, Press, Princeton, N.J., 1996, pp. xi-xiv. For an especially insightful analysis of the development of New Jersey's suburbs in the post-World War II period see Cohen, L., A Consumers' Republic: The Politics of Mass Consumption in Post-War America, Vintage Books, New York, 2003;

9 Stansfield, C.A., A Geography of New Jersey: The City in the Garden, 2nd ed., Rutgers University Press, New Brunswick, N.J.,1983.

10 See an extensive discussion of this situation, Karcher, A.J., New Jersey's Multiple Municipal Madness, Rutgers University Press, New Brunswick, N.J., 1998. Karcher pointed out that local control is tantamount to a religion in New

Jersey, although he urged that "we are not simple prisoners of our past." At page 221.

11 New Jersey State Planning Act (1934), Laws of 1934, Chapter 178, R.S. 52:21-1 to 52:21-11.

12 New Jersey State Planning Annual Reviews (1935,1936). Also see Madden, J.A. "The Framework for Planning in New Jersey," unpublished, circa 1980.

13 N.J. State Development Plan (1950); Also see description by Madden, J.A., in "The Framework for Planning in New Jersey," unpublished, circa 1980.

14 See the U.S. Riot Commission Report: The Report of the National Advisory Commission on Civil Disorders, Chairman Otto Kerner, Governor of Illinois, Bantam Books, N.Y., 1968. There were parallel State investigations documenting the causes of the urban social unrest at the time. See for example "The Governor's Select Commission on Civil Disorders," or "Lilley Report," February 1968.

15 During this time period, the Division of State and Regional Planning was also involved in researching and writing reports related to the establishment of two important regional entities: The N.J. Pinelands and the Hackensack Meadowlands. Also see, Madden, J.A., in "The Framework for Planning in New Jersey," unpublished, circa 1980.

16 Governor William T. Cahill, "A Blueprint for Housing," (1971); "New Horizons in Housing," (1972). Governor Cahill pointed to the importance of expanding the definition of the New Jersey Constitution's "general welfare" clause which was later achieved by the Mt. Laurel I,II decisions.

17 Southern Burlington County v. Mount Laurel Township, 67 N.J. 174 (1975) (Mount Laurel I). In Mt. Laurel I, the New Jersey Supreme Court held that if a developing community regulates land uses, it must use its delegated zoning power so as to afford a realistic opportunity for the construction of its fair share of the present and prospective regional need for low- and moderate-income housing. Southern Burlington County NAACP v. Mount Laurel Township, 92 N.J. 158, 238 (1983) (Mt Laurel II), the Supreme Court expanded the Mount Laurel doctrine to all municipalities, rather than just developing ones. The New Jersey Supreme Court referenced the Division of State and Regional Planning's "State Development Guide Plan" (SDGP) to identify which areas of the State were growth areas and in which areas growth was to be limited or discouraged. The decisions went into extensive detail as to the way municipalities were to meet its Mount Laurel obligation. However, the most powerful vehicle that the New Jersey Supreme Court pointed was the creation of the "builders' remedy" essentially the court granted authorization to build affordable housing conferred by a judge where a developer succeeded in challenging local zoning. The Court's decision concluded with a strong invitation for action by the State legislature. It is also noteworthy that the New Jersey Supreme Court avoided any discussion of race in its decisions instead focusing on exclusionary zoning and the lack of affordable housing." Holmes, R.C., "Southern Burlington County NAACP v. Township of Mount Laurel (1975): Establish a Right to Affordable Housing Throughout the State by Confronting the Inequality Demon," in Tractenberg, P., ed., Courting Justice: Ten New Jersey Cases
That Shook the Nation, Rutgers University Press, New Brunswick, N.J., 2013, at page 45, Robert Holmes writes "... I had to try to understand and explain why the New Jersey Supreme Court at least on the surface appeared to focus only on economic discrimination and not on racial segregation and racial injustice in spite of the racial composition of the plaintiff group, the racially taunt environment of the time, and the obvious relevance of race to the issues before the justices.".

18 See De Grove, J. M., Land Growth & Politics, American Planning Association, Chicago, 1984.

19 See especially Chapter XII in Haar, C.M. Suburbs Under Siege: Race, Space and Audacious Judges, Princeton University Press, Princeton, N.J., 1996 on role of planning and judges as social innovators.

20 For a discussion of the reaction of the Governor Kean and his efforts to "rein in" the New Jersey Supreme Court Justices see Kirp, D.L., Dwyer, .J.P., Rosenthal, L.A., Our Town, Race, Housing, and the Soul of Suburbia, Rutgers University Press, New Brunswick, N.J., 1995, especially Chapter 6 entitled "The Politics of No," pp. 112-136.

21 Interview with Sam Hamill, State Plan Ad Hoc Committee Member, former Director of Middlesex, Somerset, Mercer County Regional Planning Organization (MSM), December 22,2010.

22 New Jersey Fair Housing Act, N.J.S.A. 52:27D-301 et seq.

23 The composition of COAH was structured to include substantial local representation; the housing subsidy program expected to be tied to the Fair Housing Act was reduced; and the fair-share obligation to municipalities would

be lightened by a system of credits and bonuses and by prescribing an extended phase-in period. See Kirp, D., Dwyer, J.P., Rosenthal, L.A., Our Town: Race, Housing and the Soul of Suburbia, Rutgers University Press, New Brunswick, N.J.,1995, at page 126.

24 New Jersey State Planning Act, N.J.S.A. 52:18A-196 et seq.

25 New Jersey Municipal Land Use Law, N.J.S.A. 40:55 D-1 et seq.

26 Holmes, R.C., "Southern Burlington County NAACP v. Township of Mount Laurel (1975): Establishing a Right to Affordable Housing Throughout the State by Confronting the Inequality Demon," in Tractenberg, P.L., ed., Courting Justice: Ten New Jersey Cases that Shook the Nation, Rutgers University Press, New Brunswick, N.J., 2013, pp.64-65.

27 Dr. Robert Burchell and his teams at the Edward J. Bloustein School of Planning and Policy, Rutgers University, were contracted to do three impact assessments on three different State Plans in 1991, 2000l and 2008. Each study compared the impacts of trend vs. plan scenarios with respect to the legislatively prescribed parameters. The impact assessment was in response to an amendment to the State Planning Act. Burchell et al found in each assessment that plan scenarios had advantages over the trend scenarios.

28 The Division of State and Regional Planning had earlier discussions of State Plans that included these characteristics. Also see, Bebout, J. and Grele, R.G., Where Cities Meet: The Urbanization of New Jersey, Van Nostrand Press, Princeton, N.J., 1964.

29 Interview with William Purdie, OSP Area Planning Manager, June 4, 2003.

30 E.O 114, Governor James Florio, January 12, 1993.

31 The approach employed was one of "communities of practice," engaging in team-building within each of the six State departments represented on the State Planning Commission. The author led a small team of facilitators for several years engaged in this practice. See Wenger, E.C., and Snyder, W.M., "Communities of Practice: The Organizational Frontier" The Harvard Business Review (January-February 2000), pp. 139-145; Wenger, E., Communities of Practice: Learning, Meaning and Identity, Cambridge University Press, Cambridge, U.K., 1998. This approach was evaluated by a third party Rutgers University team reported in a document entitled "Understanding the Tensions Associated With, Within and Across Department State Plan Implementation: A Document for Dialogue," by Clayton P. Alderfer, Mark Weiner, Jennifer Cyr, unpublished, a Report of the Rutgers University Center for Applied Psychology. The author was the leader of the State Plan Implementation Team leading this initiative (1998-2001).

32 In addition to major redevelopment taking place in Hudson County municipalities Hoboken and Jersey City, regional centers, often county seats with rail connections such as Morristown, Somerville and New Brunswick reflected this trend. Other smaller New Jersey municipalities, e.g., Princeton Borough, Cranford, Summit, Westfield, Maplewood, Red Bank, etc. also demonstrated the benefits of transit-oriented development. In South Jersey, revitalization of Collingswood was noteworthy. The State Plan validated this trend underscoring the emergence and strengthening of new urbanist lifestyles. For additional explanation of the changing metropolitan settlement dynamic see Hughes, J.W., 33 Steven Karp, OPA Project Specialist Interviews and e-mail correspondence, April-May 2019.

34 The author acting as an external consultant and under the direction of the Governor's Office and the Office of Smart Growth was enlisted to make amendments to the Second Final State Development and Redevelopment Plan absent a third cross-acceptance process (2008-2009). These changes included additions with respect to energy policy and climate change. However, the SPC decided to postpone approval until a new administration was installed. The new administration rejected the Corzine State Plan for a new scaled back more focused strategic effort. No subsequent State Plan was submitted to the SPC for its approval by the Christie administration..

35 Draft State Strategic Plan, March 2012.

36 Marty Bierbaum, Doria, J., former N.J. Department of Community Affairs Commissioner, former Mayor of Bayonne, N.J., former Speaker of the New Jersey State Assembly; and former N.J. State Senator. September 24, 2010. Thompson, S., Acting director of the Council on Affordable Housing, former staff member of the Council on Affordable Housing, November 22, 2010; and interviews and e-mail correspondence July 2018-May 2019.

37 In March 2011, the DCA reported that since the FHA was enacted, there had been 109,556 proposed affordable units of which 60,242 had been constructed. An additional estimated 25,034 units had been proposed for rehabilitation with approximately 14,854 units completed. These totals exclude units that were built as a result of builders'

remedy lawsuits and not under direct COAH supervision.

38 See Holmes, R.C., "South Burlington County NAACP v. Township of Mount Laurel (1975): Establishing a Right to Affordable Housing Throughout the State by Confronting the Inequality Demon," in Tractenberg, P., Courting Justice: Ten New Jersey Cases that Shook the Nation, Rutgers University Press, New Brunswick, N.J., 2013, see pp. 65-67,"The Implementation Story is not all Bad.

39 Sean Thompson, former COAH acting director, interviews and e-mail correspondence, July 2018-May2019. On March 10, 2015, the New Jersey Supreme Court divested COAH of jurisdiction of municipal housing plans. Towns must now petition the lower court for approval of their housing plans. Builders, developers and other interested parties may intervene in such proceedings, which are known as declaratory judgment actions. On February 9, 2010, Governor Chris Christie suspended COAH and appointed a committee in preparation to dismantle it. The Supreme Court ruled that it was not within his power "to abolish independent agencies that were created by legislative action". It also ordered COAH to come up with new regulations regarding the development of affordable housing. COAH passed new guidelines on May 1, 2014. In October 2014 the COAH Board failed to meet the deadline set by the Supreme Court for establishing new Third Round guidelines, when the board voted, 3–3, to adopt the proposal. In the absence of action by the State, the New Jersey Supreme Court ruled in March 2015, that determination of affordable housing obligations would be administered by the court.

40 For comparisons with other State Planning initiatives during this period, see De Grove, J.M., Planning, Policy and Politics: Smart Growth and the States, Lincoln Institute of Land Policy, Cambridge, Mass., 2005; and more recently Knaap, G., Nedovic-Budic, Z., Carbonell, A., eds., Planning for States and Nation-States in the US and Europe, Lincoln Land Institute of Land Policy, Cambridge, Mass., 2015. De Grove's more recent treatment is more extensive than his previous work done 20 years earlier in 1984. More extensive treatment of the New Jersey State Plan by this author can be found at "The New Jersey State Planning Experience: From Ambitious Vision to Implementation Quagmire to Goal Redefinition," Chapter 4, in Gerrit-Jan Knaap, Zorica Nedovic-Budic, and Armando Carbonell, editors, Planning for States and Nation-States in the U.S. and Europe, Lincoln Institute of Land Policy, Cambridge, Mass., 2015, pp 131-184 and the Commentary that follows by Popper, F., pp. 185-188.

AN ASSESSMENT OF TERRITORIAL PLANNING: FINDINGS AND RECOMMENDATIONS FOR ADDRESSING LARGE-SCALE INFRASTRUCTURE DEVELOPMENT IN THE AMAZON

BRUCE MCKENNEY, SARA MASCOLA, ANA CRISTINA BARROS, KAREN OLIVEIRA, LUIS DAVALOS[1]

Tapajós River Basin. Photo credit: Fernando Lessa

INTRODUCTION

Large-scale infrastructure development threatens to transform the Amazon, with up to $70 billion in planned project investments to begin by 2020[2]. Transportation, energy, and mining projects are among the top threats[3]. This infrastructure development could lead to the loss of half of the remaining Amazonian forest and cause social and cultural impacts associated with in-migration, the weakening of local governance and rights, and reduced access to natural resources[4].

As a result, there is growing recognition that infrastructure development must change in Latin America, and especially in the Amazon. The aim is to move beyond sector and national economic goals to a more integrated and inclusive development model[5] that improves participation, transparency, and environmental and social considerations. Drivers for this ***sustainable infrastructure movement*** include the need to close the infrastructure investment gap, break the long cycle of infrastructure project-related conflicts, and meet national commitments for climate, forests, biodiversity, the rights of indigenous peoples, and sustainable development. The movement also envisions integrated territorial development that supports local priorities, rights, and ways of life.

To advance this vision, large-scale planning is needed which considers socio-economic, cultural, and environmental conditions and priorities at a territorial scale, with the objective of informing decisions for sustainable development, land-use, natural resource management, and conservation. Territorial plans have the potential to improve infrastructure development in the Amazon by guiding decision-making in ways that support multiple objectives and interests and which address risks and impacts.

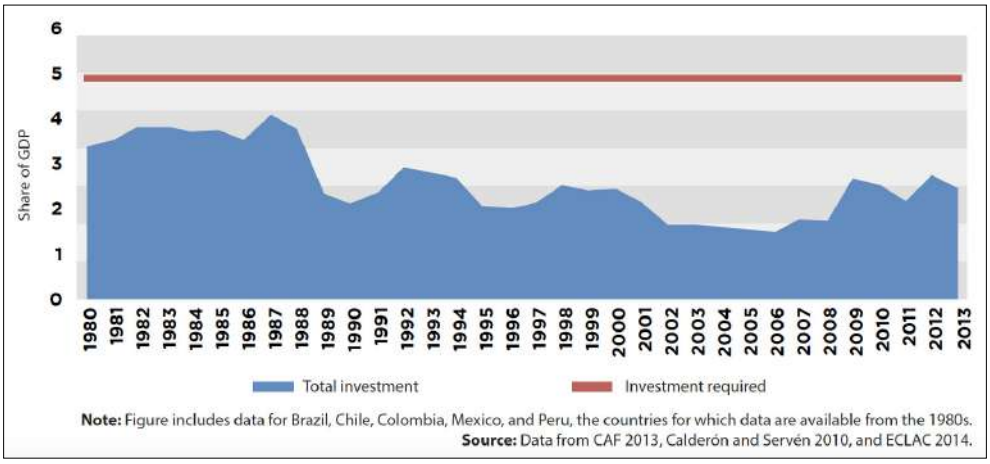


Figure 1: Annual investment in infrastructure in Latin America and the Caribbean 1980-2013

PURPOSE, SCOPE, AND METHODS

The purpose of this study is to assess the effectiveness of territorial planning to address infrastructure threats and to make recommendations for how it can influence infrastructure development in the Amazon[6]. We considered challenges and opportunities for territorial planning to guide infrastructure planning, improve project selection and design, and reduce environmental, social, and cultural impacts.

The scope of the study centered on development in the two countries with the largest amount of land cover in the Amazon Basin – Brazil (64 percent) and Peru (10 percent) – with case studies for the Tapajós Basin of Brazil and the Marañón Basin of Peru. Our methods included literature and policy reviews, stakeholder interviews, a survey in Brazil, two workshops in the Marañón Basin, two workshops in the Tapajós Basin, and engagement with an advisory group for guidance and review. In Tapajós, we considered the top infrastructure sector threats to the basin and assessed related planning processes and opportunities. In Marañón, we reviewed the approaches, challenges, and effectiveness of selected territorial planning instruments.

CASE STUDY: TERRITORIAL PLANNING ASSESSMENT IN THE TAPAJÓS BASIN

The Tapajós Basin is a large region about the size of France (492,000 km2) that spans the Cerrado (i.e., tropical savannah) and Amazon rainforest biomes of Brazil. It has 61 municipalities and a population of over 2 million people. It is home to vast tropical forests, rich biodiversity, numerous indigenous groups, and a river system that flows into the Amazon river. The Tapajós River is the only remaining tributary on the southern bank of the Amazon River that has not been dammed for large-scale hydropower.

Considered one of the great economic development frontiers of the Amazon, the Basin is under tremendous infrastructure development pressure. Projects includes a series of large dams that are planned to exploit the Basin's enormous potential for hydropower but could also flood indigenous lands and protected areas, as well as have significant environmental impacts downstream. Additionally, an agricultural transportation corridor is being developed to export agricultural commodities through the "Northern Exit" of the Amazon River.

While 40 percent of the Basin is protected by a mosaic of conservation units and indigenous lands, weak governance and high levels of poverty make the region, and its people, highly vulnerable to the environmental and social impacts of large-scale infrastructure development. The cumulative impacts of hydropower, transportation, and mining projects could transform the Basin over the next decade (Figure 2).

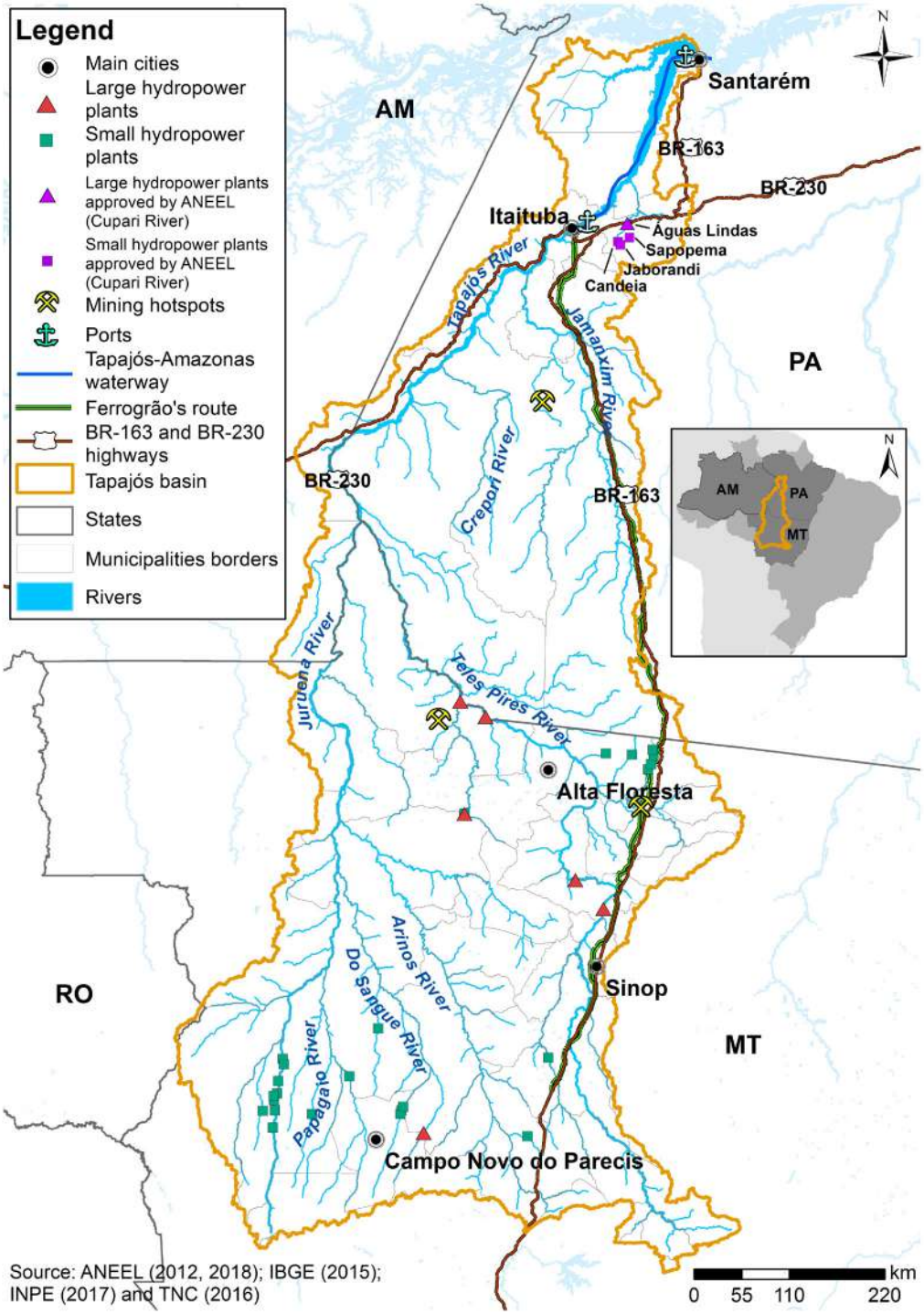


Figure 2: Main transportation, hydropower and mining projects in the Tapajos basin

DEVELOPMENT PLANS IN THE NORTHERN EXIT AGRICULTURE TRANSPORTATION CORRIDOR

In the early 2000s, agricultural expansion made the Cerrado region of Mato Grosso the largest soy producing region in Brazil. As a result, pressure increased to develop a "Northern Exit" to enable soy to be exported through the Tapajós Basin. The initial focus was on paving the BR-163 highway as a priority of the Avança Brasil ("Forward Brazil") program and establishing the first port for export in the city of Santarém at the mouth of the Tapajós River (where it meets the Amazon River). Since then transshipment terminals (truck to barge) have been developed with others planned. In addition, there are plans to develop the Ferrogrão railway, which will run alongside the BR-163 highway.

We assessed the planning processes of the main transportation corridor projects (BR-163 highway, Ferrogrão railway, and ports and waterways), with a focus on opportunities to update and expand on the approach of the Sustainable BR-163 Plan so that it addresses the full suite of transportation projects planned for the Tapajós Basin.

BOX 1 · Integration of territorial priorities in infrastructure planning: Sustainable BR-163 Plan

The BR-163 highway runs approximately 1800 km from Cuiabá, in the heart of soy production, to the Santarém port on the Amazon River. In the early 2000s, the Avança Brasil program to pave the BR-163 raised concerns among civil society organizations and local movements due to the historic strong correlation between road development and deforestation. These groups came together in a participatory process for development planning that in 2006 produced the Sustainable BR-163 Plan. The plan advocated for development without deforestation, setting out a broad set of demands for the recognition of land tenure rights, forest conservation, and incentives for sustainable production. It was partially implemented, with the federal government creating more than 8 million hectares in Conservation Units to protect the forest. Although other elements of the plan were not implemented, it represents a milestone in building a joint and participatory agenda to address social and environmental impacts of major infrastructure projects.

BR-163 HIGHWAY

As summarized in Box 1, the Sustainable BR-163 Plan was developed in 2006 through a participatory process to address concerns about the highway's potential socio-economic and environmental impacts. The plan was partially implemented, with the federal government protecting more than 8 million hectares of forest in Conservation Units. Although licensing to pave different sections of the BR-163 highway was approved over a decade ago, adequate investment for the highway project has not materialized. Currently, paving occurs periodically, led by the Army's engineering program. However, paving the BR-163 remains a goal, with a public-private concession process currently underway. The resumption of the project brings with it an opportunity (and expectation by civil society

and local groups) to update the Sustainable BR-163 Plan. This is important to ensure it reflects current territorial priorities, considers the cumulative threats to the region from transportation, energy, and mining projects, and has legal requirements for implementing the sustainability plan.

FERROGRÃO RAILWAY

The Ferrogrão is a planned 1,000 km railway that will run alongside the BR-163 highway, connecting the north-central part of Mato Grosso to the lower portion of the Tapajós River in the city of Itaituba in the state of Pará. The railway is expected to help transport 25 percent of national grain production (about 60 million tons), which will significantly reduce the current trucking of grains to ports in the south and southeast of the country. It is a key priority of the top agricultural companies in the region and government infrastructure investment plans.

Planning for the Ferrogrão project has come under criticism due to a lack of public consultation, which is required under a public-private concession model. Although four public hearings were held, indigenous groups were denied their right to a specific consultation, raising the potential for a legal battle. The order and timing of government procedures also could be a problem. While project proponents support conducting indigenous consultations and developing cumulative impact studies (i.e., Strategic Environmental Assessment), these actions are proposed to be done after auctioning the project[7]. This is seen by environmentalists and the Federal Prosecutor's Office as an inadequate approach because, after the auction, the scope for adjusting or rejecting the project will be reduced significantly. Therefore, the government has indicated that an environmental impact assessment should be carried out by the Federal Government's Logistics Planning Company (EPL) as an input for the auction process. However, the scope of this environmental impact assessment does not currently include a cumulative impacts assessment for the transportation corridor.

Due to the concerns about the Ferrogrão railway planning process, there are several opportunities to reform it. These include: (1) collaborating with the Federal Public Prosecutor's office to propose guidelines for indigenous consultation in the project preparation and design process; (2) exploring the potential for development a Strategic Environmental Assessment prior to the auction process; (3) assessing the potential efficacy and implementation of zero-deforestation commitments for transportation infrastructure; and, (4) collaborating with EPL to develop a new structure of cost reimbursement for feasibility studies, project design, and environment impact assessment studies to incentivize completion prior to the auction process.

PORTS AND WATERWAYS

Ports and waterways are being planned and developed without broader logistics planning that considers environmental and social impacts within the Tapajós Basin. New ports are licensed at a state-level on a project-by-project basis. Waterway transport on the Tapajós River and the Amazon River takes place without environmental licensing.

Although planning and regulatory levers may be limited for addressing port and waterway impacts, public pressure can be effective in addressing these infrastructure threats. For example, conflict over the development of the Santarém port contributed to the establishment of a soybean moratorium in July 2006. This included a commitment by traders and consumers to not buy soybeans associated with deforestation in the Amazon and the creation of the Rural Environmental Registry (CAR), a tool that allows the verification of compliance with the Brazilian forest code, which became a national law in 2012.

HYDROPOWER INVENTORY PLANNING

Brazil has an installed hydropower capacity of 100,273 MW, making up 64 percent of total Brazilian energy capacity and meeting more than three-quarters of the country's electricity demand in 2017. Based on hydropower inventory studies conducted from 2005 to 2011, the Tapajós Basin has a total hydropower potential of approximately 26,500 MW. This includes the Tapajós River (14,000 MW), Juruena River (8,830 MW based on 22 projects), and Teles Pires River (3,697 MW based on six projects). Of the inventoried hydropower projects, four have already been built on in the Teles Pires Basin and others are currently being licensed for the Juruena River.

Civil society's criticism of the plans for Tapajós Basin led to a partnership between the Energy Planning Company (EPE) and World Wildlife Fund (WWF) to review the inventory of planned hydropower projects and potential environmental impacts. The aim was to bring a territorial approach to hydropower sector planning. EPE and WWF developed hydropower scenarios that resulted in the withdrawal of two projects from the inventory (São Simão and Salto Augusto) because they would impact a national park. The projects were excluded from the Ten-Year Energy Expansion Plan (PDE 2026).

Two other hydropower projects in the Tapajós Basin have also recently been suspended. The proposed São Luis do Tapajós on the Tapajós River, a large-scale 8,000 MW project, had its environmental license suspended in 2016 due to deficiencies in its planning studies and environmental impact assessment, and expected impacts to the indigenous lands of the Munduruku people. Like-

wise, in 2018, the Federal and State Public Prosecutor's Offices jointly suspended the state licensing of a complex in the Rio Cupari, near Itaituba, alleging insufficient environmental studies and calling for the licensing to be carried out by the Federal agency (IBAMA) because the dams would affect federal protected areas.

Considering this history of problems with hydropower planning, major reforms are being called for that support a territorial approach. In late-2017, Brazil's Court of Auditors (TCU) published ruling 2,723/2017 requiring fundamental changes in the electricity sector planning process, with a focus on the assessment of hydropower projects. The ruling mandates that the federal government draw up a plan of action for institutionalizing a "systemic assessment, such as the Strategic Environmental Assessment (SEA)" to support improvements in planning and project selection based on "planning for the energy matrix, water use in river basins, land use, tangible and intangible assets to be preserved in view of the possible impacts caused by the construction of large hydropower dams, as well as possible alternative infrastructure projects; and also to ensure the transparency of the decision-making process, allowing the necessary involvement of society." This ruling represents a significant change in the process of hydropower planning, project feasibility studies, and the relationship to territorial and local development.

The TCU ruling requires that the new assessment approach be applied as a pilot to Hydroelectric Utilization (AHE) projects, namely São Luís and Jatobá dams - Tapajós river; Salto Augusto and São Simão dams - Juruena river. As a step towards reform, TCU's determination supports the formal review and revision of the AHE as a pilot for applying a similar process for inventories in other basins, strengthens the analysis of environmental impacts, and supports a territorial vision for the Tapajós Basin. It provides an important opportunity to revise procedures and guidance for inventory planning and feasibility studies, incorporating territorial development, environmental, and social priorities and improving participation, transparency, and monitoring processes.

However, there are also concerns about the review and revision of the AHE because the pilot includes the assessment of projects that had been suspended or removed from the inventory. These projects are the São Luis do Tapajós (suspended environmental license), and the São Simão and Salto Augusto (previously removed from the hydropower project inventory). Notably, there was no formal process involved when the São Simão and Salto Augusto projects were removed; they were simply dropped. As a result, it has been possible to add them back into the inventory with no formal process.

TAPAJÓS BASIN ASSESSMENT FINDINGS

The Tapajós Basin is under significant infrastructure development pressure. Without a better planning approach, transportation, energy, and mining projects could transform this region over the next decade, with impacts to communities, forests, and rivers. This would undercut national commitments to climate, biodiversity, indigenous rights, and sustainable development goals, and increase the potential for conflicts, investment uncertainty, higher costs, and project delays and suspensions.

There are opportunities to make the Tapajós Basin a model for a territorial approach and sustainable infrastructure development. This includes updating and expanding a sustainable development plan for addressing the threats of the agriculture transportation corridor and reforming the hydropower inventory planning process under the TCU ruling. But this is not enough. These reform efforts must also be integrated in a manner that moves infrastructure planning from a siloed project-by-project, or sector-by-sector, approach to a process that appropriately considers cumulative, multi-sector impacts in a territory and the territory's environmental, social, cultural, and local development priorities. Beyond these reforms in planning, establishing a territorial approach for the Tapajós Basin will require a new form of relationships among government, infrastructure sectors, and civil society based on greater participation, transparency and multi-stakeholder negotiated processes. This will demand the active, organized, and concerted efforts by non-governmental organizations, indigenous peoples, and rural communities.

CASE STUDY: TERRITORIAL PLANNING ASSESSMENT IN THE MARAÑÓN BASIN

Peru's Marañón River Basin is a critical landscape within the larger Amazon biome, spanning 358,000 km2 (slightly larger than Germany) and encompassing 1,400 km of river that connects the heart of the Amazon to Peru's central Andean Valley. The river network serves as a local life-line for people and wildlife. Loreto, the largest region in the Basin as well as in Peru, is the primary jurisdictional focus of our case analysis and is currently only accessible by air or small local boats. Loreto has 36 million hectares of forest cover, which is equal to 56 percent of the country's forest carbon stock. It is a region with rich cultural diversity as 32 percent of its population are members of indigenous groups. Loreto also has rich biodiversity and two large protected areas designated in the region: Pacaya-Samiria National Reserve and Santiago-Comaina Reserved Zone (which is shared with the region of Amazonas).

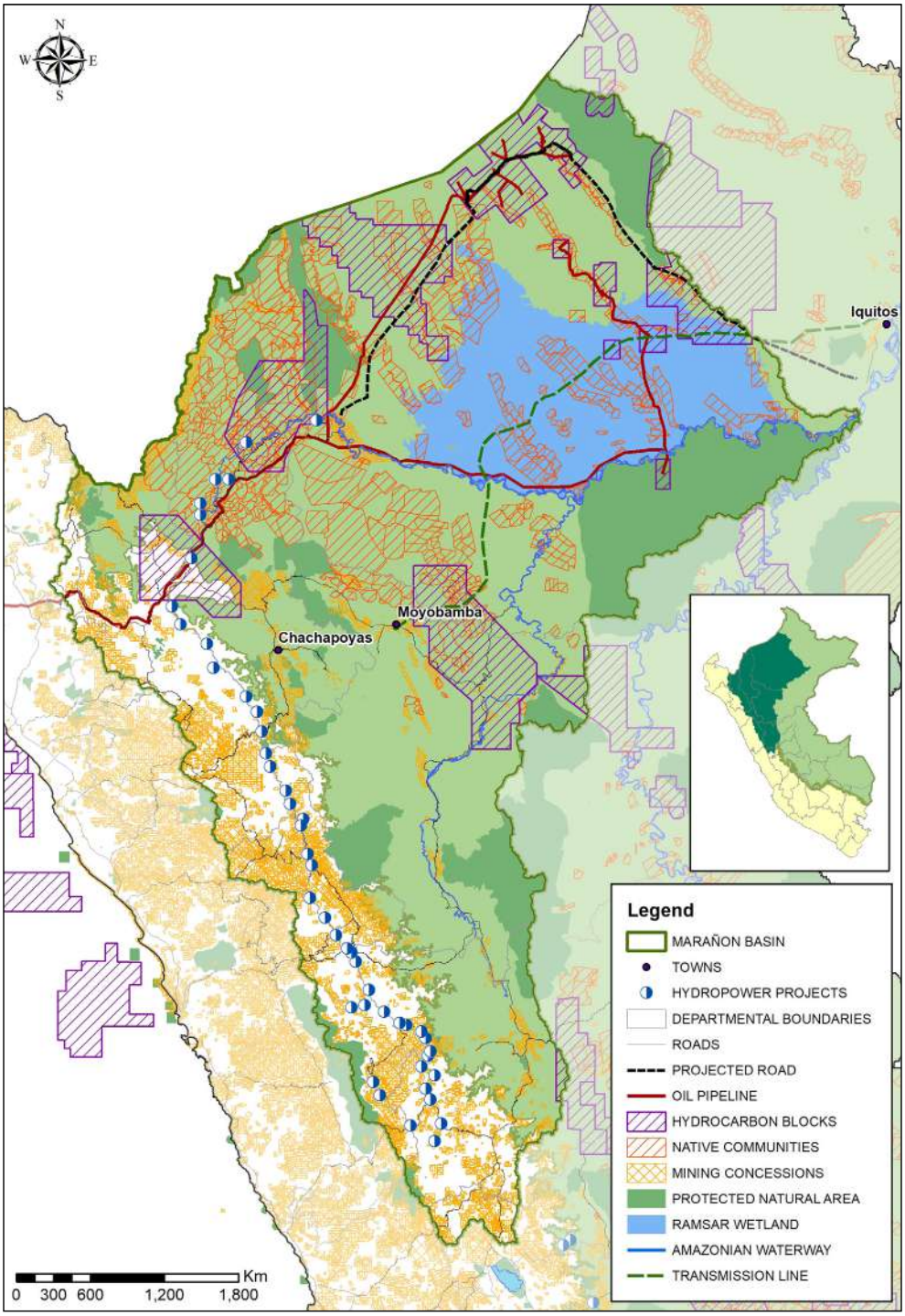


FIGURE 3: Infrastructure threats in the Marañon River

The main infrastructure development pressure in the Marañón basin is from the mining, oil and gas, and hydropower sectors (see Figure 3). The basin has also been identified as an important hydropower resource for Peru with 82 proposed hydropower projects (equal to 25,785 MW) planned in the Marañón Basin; 20 of those hydropower projects are declared projects of "national interest." As a result of development pressure and other factors, deforestation across the Basin has represented 35 percent of the total deforestation in Peru; in Loreto alone, 282,767 hectares were deforested from 2001 to 2013.

We assessed territorial planning within the Marañón Basin—with an emphasis on the region of Loreto—to better understand how those planning efforts could support improved infrastructure decision-making. Through stakeholder interviews, workshops, and desktop research, we examined the primary territorial planning instruments in the region, including land use plans, strategic environmental assessments, concerted development plans and indigenous peoples planning initiatives.

LAND-USE PLANNING TOOLS

The promotion of land-use planning (LUP) has seen advances and setbacks in Peru since it was incorporated into the Code of the Environment and Natural Resources in 1990. Since then, a range of methodologies and legal provisions have been developed to promote the appropriate use of the territory, principally through Economic Ecological Zoning (ZEE) and Territorial Plans (POT). However, in recent years the binding nature of POTs has been effectively eliminated, due to the perception that environmental regulation and LUP instruments are at odds with private investment. The process has also become increasingly complex for regional and local governments responsible for preparing land-use plans. While there is specific guidance for ZEEs and POTs, there are no general guidelines for coordinating these plans to establish and implement a territorial vision.

ZEEs are still legally required in Peru and help to orient land uses at local, provincial, and regional scales; yet it should be noted that they explicitly do not determine uses or exclusion of uses. In Loreto, ZEEs are in place for approximately 70 percent of the region. The Regional Government of Loreto (GOREL) presented a proposal to standardize existing information, complete studies for areas without them, and prepare a regional ZEE that would integrate all of this information. But this proposal was rejected by the Ministry of Economy and Finance (MEF) due to its high cost (Peruvian Soles/19M or approximately US$5.75M). Recently, only one ZEE was developed for the province of Alta Amazonas (using tax revenue from mining) with all the required studies and participatory processes required

by the Ministry of the Environment (MINAM). Other provincial municipalities such as Ramón Castilla, Requena, and Maynas started their ZEE processes through the creation of the Provincial Technical Committees, but a lack of budget has paralyzed their efforts. We found that where ZEEs have been developed, their influence is limited to providing referential information. They are perceived as diagnostic instruments that characterize land-use rather than a directive territorial plan to influence decisions. We found that in cases where national development interest conflicts with local plans, projects are carried out in the 'national interest' (e.g., IIRSA Norte, Centro and Sur; and the Manu-Purus road).

CONCERTED DEVELOPMENT PLANS

Concerted Development Plans (CDPs) are the primary planning instruments of regional and local governments. These plans can have significant influence over the use and management of a territory. Regulations require coordination of these plans across the different levels of government, from the national level to local levels.

GOREL began a process of updating its Regional Concerted Development Plan (PDRC) in 2013. This plan was eventually finalized after several interruptions due to changes of key personnel within GOREL and new guidelines by the National Center of Strategic Planning (CEPLAN), the principle planning governing body in Peru. In theory, the regional plan should connect to the national plan (Plan Bicentennial) and local CDPs. However, in practice, we found that the regional plan uses different indicators and criteria for setting objectives and goals than the national plan. We also found that very few provincial authorities participated in the process of formulating the PDRC. This was due to a lack of funding, which did not allow workshops to be held in each province during the key phases of the process and made coordination between regional and local governments difficult.

We also found that few provinces in the Loreto region have a current Provincial Concerted Development Plan (PDPC) in place. There are limited to no resources available for the necessary engagement processes and information gathering in order to update them. Except for the PDPC in the province of Requena, all the local plans were drafted before the formulation of the Bicentennial Plan and the Regional Concerted Development Plan of Loreto (leading to their disconnection from national and regional priorities and plans, as well as being outdated). Lastly, we found that the PDPC have significant methodological deficiencies in the establishment of goals and indicators, largely due to local capacity and resource challenges.

An analysis of governmental budgets identified that only a low percentage

of the concerted development plans have been implemented. The budgets of GOREL and municipalities have no direct relationship to the planning documents. Although the sequence of planning and implementation according to the CEPLAN should be: "planning – supply – budget," in practice the budget determines the prioritization of activities of the regional government, and the annual budget is based on the previous year's budget. Through workshops and interviews with planning staff, we found that budgetary decisions and distribution are often based on immediate needs and political decisions.

STRATEGIC ENVIRONMENTAL ASSESSMENT

GOREL was the first regional government to carry out a Strategic Environmental Assessment (SEA) for its PDRC. The objective of the SEA was to "incorporate the socio-environmental dimension into the process of updating the Regional Concerted Development Plan (PDRC) for decision-making in territorial management" based on Article 63 of the Regulations of the National Environmental Impact Assessment System Act (SEIA). The process was directed by the Planning, Budget and Territorial Development Management Office, the NGO Derecho Ambiente y Recursos Naturales (DAR), and the Ministry of the Environment (MINAM), and entailed a significant effort to identify the principal socio-environmental risks of the region's projects and programs as well as measures to mitigate them.

The SEA considered the strategic actions envisioned in the PDRC, as well as projects that could have significant impacts in the region, due to their scope and relevance. The aim of the SEA was to assess the cumulative impacts of proposed infrastructure projects and support the inclusion of socio-environmental considerations. As a result of the evaluation, 15 Socio-Environmental Management Programs (PGSA) were prepared that sought to implement a set of social and environmental measures to improve and/or maintain the environmental quality of the region in such a way as to avoid and mitigate highly significant socio-environmental impacts.

The formulation of the SEA contains important elements of impact assessment and mitigation that have also served as a model for national regulations, but ultimately, it is not being implemented. Although the formulation processes of the PDRC and the SEA were carried out in parallel, the content of the PGSAs (which effectively implement the actions outlined in the SEA) were not explicitly introduced in the PDRC, which would include a justification for the acquisition of the necessary budget. Presently, there is no funding available to implement any of the PGSAs, the GOREL has no implementation strategy, and only DAR is trying to raise funds for implementation.

INDIGENOUS PEOPLES

One of the primary planning tools used by indigenous peoples to determine a territorial vision and uses is the Quality of Life Plan (PCV). This instrument includes a community diagnostic and subsequent prioritization and vision setting. The Life Plan takes a territorial approach to incorporate different aspects of community development (environmental, territorial, social, economic, cultural, and political issues) and fulfills two main functions: it strengthens the community's governance and planning capabilities and allows its main development ideas to be coordinated with sources of cooperation of the State and external organizations. We found that most communities in Loreto lacked a PCV but regional indigenous organizations (CORPI-SL and ORPIO) expressed interest in promoting them within their scope of representation.

Additionally, CORPI-SL has developed an "Integral Territory" initiative, seeking to form an autonomous indigenous area for the nine indigenous peoples of the region. The initiative seeks to re-establish an integrated governance structure based on ethnic affiliation and thereby resize indigenous territories according to their ancestral occupation. In accordance, they are seeking a legislative change that recognizes the rights of use, administration, and conservation of natural resources within their territories. Each indigenous nation is taking a distinct approach concerning its intentions of sovereignty and self-government. To date, the national government has not recognized the concept and has made no formal pronouncement despite its adherence to international treaties that endorse such mechanisms.

MARAÑÓN BASIN ASSESSMENT FINDINGS

Our assessment found many challenges for the development, implementation, and effectiveness of territorial planning in the Marañón Basin. Key problems include a lack of coordination among government entities and planning mechanisms, the non-binding nature of plans, budget and capacity limitations, rolling back of environmental protection measures (with the aim of promoting greater private investment), and carrying out projects in the national interest despite conflicts with local priorities.

We found that infrastructure project financing remains directed towards supporting national development interests with deficient socio-environmental criteria. Publicly funded projects must be formulated and evaluated through the National System of Multiannual Programming and Investment Management (Invierte.pe), whose goal is to guide the use of public resources earmarked for investment in the provision of services and infrastructure. This new system seeks

to reduce the time and procedures for new investments; the new procedures include simplified preliminary assessment sheets that request less information, leaving it to the applicant's discretion to determine adverse socio-environmental impacts. This simplified process undermines the environmental assessment process and further weakens the effectiveness of territorial planning efforts designed to inform such decisions.

While efforts have been made by the government to incorporate socio-environmental considerations into planning for the territory—such as the strategic environmental assessment for the Loreto region and indigenous organization's efforts to manage their territories more holistically—to date the desired results have not been achieved. To advance territorial priorities, our assessment suggests that territorial planning could be strengthened by ensuring plans are incorporated in local and regional budgets and by engaging indigenous peoples, who may be actively seeking formal mechanisms to determine and support their territorial vision and uses. We also see the need to engage more directly in infrastructure planning processes. This includes financing mechanisms such as improving the criteria included in the new Invierte.pe, the participatory budget processes, and the MEF Incentives Program, and establishing incentives for project proponents to voluntarily consider territorial planning inputs in their project planning and design.

STUDY FINDINGS

Our assessment found that territorial planning instruments have had limited influence on infrastructure development in the Amazon. We identified the following key challenges:

1. Lack of legal mandates and insufficient political will
- Territorial plans lack legal requirements for their development and use.
- National government and industry and financial sector interests continue to play the dominant role in determining large-scale infrastructure development, overriding local priorities reflected in territorial plans.
- Implementation of territorial plans is often hampered by a lack of stakeholder buy-in, budget, and mechanisms for monitoring, enforcement, and conflict resolution.

2. Constraints due to limited resources, capacity, and information
- Lack of budget and technical staff limit the execution of planning processes, which need to extend across large remote and inaccessible areas.

- Information to support territorial plans is often unclear, unavailable, outdated, or difficult to collect, including information on land tenure, natural resource uses, and conservation values.

3. Insufficient integration with other planning processes

- Territorial plans are often developed in isolation from other planning processes. They are disconnected "vertically" from plans at other jurisdictional scales and "horizontally" from other plans relevant to territorial development. This limits buy-in, implementation, and the "shelf life" of territorial plans.
- Local communities are often not invited or do not have the resources to participate in other planning processes, especially at the provincial and regional government levels, leaving them feeling disengaged.
- Challenges for integrating planning processes are exacerbated by frequent turnover in elected officials.
- Failures in the integration of planning processes lead to conflicting and competing plans and actions, with adverse socio-environmental consequences.

STUDY RECOMMENDATIONS

Given the challenges for territorial planning and the urgency of infrastructure threats in the Amazon, we recommend advancing territorial priorities by engaging directly in the infrastructure development cycle to drive reforms within it. This requires: 1.) identifying strategic entry points for influencing infrastructure processes and decision-making; 2.) developing the necessary information, constituencies, and coalitions to support territorial priorities; and 3.) aligning these efforts with the broader principles and movement for sustainable infrastructure. We make three recommendations:

1. Engage directly in infrastructure planning processes to advance territorial priorities and drive reforms within these processes.

We recommend focusing on three components to support strategies for addressing infrastructure threats in the Amazon.

- Target the appropriate scale and infrastructure planning process.
- Identify policy and planning mechanisms to influence infrastructure decision-making.
- Develop technical inputs and stakeholder engagement strategies.

2. Strengthen the design and effectiveness of territorial plans for influencing infrastructure planning and decision-making.

We recommend three areas for improving territorial plans.

- Develop territorial plans to be actionable, within the context of the territory's political and economic drivers.
- Ensure that territorial plans have the necessary content to inform infrastructure planning processes.
- Improve the integration of territorial planning with other planning processes.

3. Advance a territorial approach for the Amazon as part of the broader movement for sustainable infrastructure and inclusive economic growth.
We recommend three actions for aligning the sustainable infrastructure agenda with a territorial approach for the Amazon.

- Build the case for a territorial approach with the private sector and government, focusing on how it adds value and lowers costs.
- Strengthen institutional support for a territorial approach by engaging government ministries responsible for infrastructure development.
- Improve regulations and financing requirements for sustainable infrastructure across the infrastructure project cycle.

Endnotes

1 We offer our thanks to the stakeholders who contributed to the findings and recommendations in the report through a survey, interviews, participatory workshops in the Tapajós and Marañón Basins, and to our advisory group for their guidance and insights. We are grateful to the Gordon and Betty Moore Foundation for its support for this assessment and report.

2 FGV EAESP and IFC. 2017. Large Scale Projects in the Amazon: Lessons learned and guidelines. Sao Paulo. March 2017.

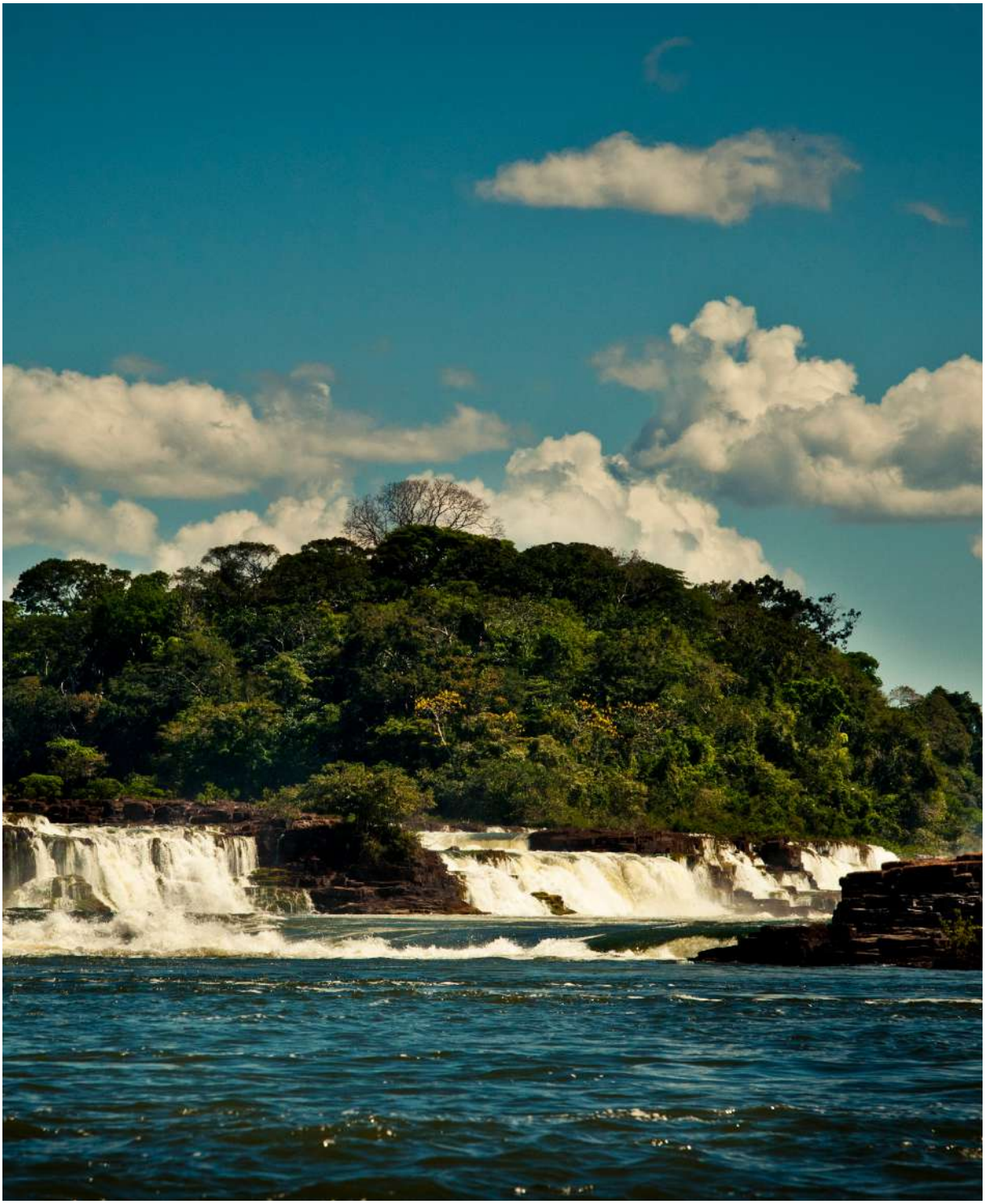
3 Red Amazonica de Informacion Socioambiental Georreferenciada (2012). Amazonía bajo presión. 68 p. Retrieved from http://raisg.socioambiental.org/system/files/AmazoniaBajoPresion_21_03_2013.pdf (p. 60); Pack, S. M., Ferreira, M. N., Krithivasan, R., Murrow, J., Bernard, E., & Mascia, M. B. (2016). Protected Area Downgrading, Downsizing, and Degazettement (PADDD) in the Amazon. Biological Conservation, 197, 32-39

4 FGV EAESP and IFC (2017). Large Scale Projects in the Amazon: Lessons learned and guidelines. Sao Paulo. March 2017; Charity, S., Dudley, N., Oliveira, D. and S. Stolton (editors). 2016. Living Amazon Report 2016: A regional approach to conservation in the Amazon. WWF Living Amazon Initiative, Brasília and Quito. (p. 32) http://www.sciencedirect.com/science/article/pii/S0006320716300386

5 FGV EAESP and IFC. 2017. Large Scale Projects in the Amazon: Lessons learned and guidelines. Sao Paulo. March 2017; Inter-American Development Bank and IDB Invest (2018). What is Sustainable Infrastructure? A Framework to Guide Sustainability across the Project Cycle. IDB Technical Note 1388; OECD. 2016. Multi-dimensional Review of Peru: Volume 2. In-depth Analysis and Recommendations, OECD Development Pathways, OECD Publishing, Paris. The New Climate Economy. 2018. Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times. The Global Commission on the Economy and Climate. http://dx.doi.org/10.1787/9789264264670-en

6 We did not assess other possible applications of territorial plans, such as for urban development.

7 For more information on auction processes in Brazil, see Lodge, M., Van Stolk, C., Batistella-Machado, J., Schweppenstedde, D., and Stepanek, D. 2017. Regulation of Logistics Infrastructure in Brazil. Rand Corporation & LSE. https://www.rand.org/pubs/research_reports/RR1992.html



Tapajós River Basin (Photo credit: Fernando Lessa)

A METROPOLIS OF THREE CITIES
THE VISION AND PLAN FOR GREATER SYDNEY

LUCY HUGHES TURNBULL AO, DR SARAH HILL

Figure 1: The vision for a connected metropolis of three cities

THE GREATER SYDNEY CONTEXT

Greater Sydney is Australia's global city; an economic powerhouse of 4.7 million people, endowed with the natural beauty of Sydney Harbour, bushland, beaches and the Blue Mountains. Greater Sydney's people have embraced this place for its opportunities and its potential.

After more than 200 years of post-colonial growth based around Sydney Harbour and the eastern region, the city had developed a structural problem where most jobs and services were in the east, while population growth was moving further and further west. The geography of the Sydney Basin limits the spatial extent of Greater Sydney, while the historic car-based suburban form significantly influenced the pattern of growth in much of the western parts of Greater Sydney. Additionally, climate differences across the Region affected growth, from the cooler eastern areas to the west which has many more hot days, low rainfall and less tree canopy cover.

This dispersed housing growth also created an imbalance in access to jobs, reinforced by the regional radial suburban rail network and by the concentration of economic activity over the past 30 years with office precincts, universities and biotech clusters to the north and south along the Eastern Economic Corridor.

Further regional challenges include an increase in the number of children, and a decline in the population of people of working age, leading to greater pressure for access to health and education services.

To resolve these issues, the Greater Sydney Commission (the Commission), was established by the New South Wales Government in 2016 and tasked with leading metropolitan planning for the Region.

A POLYCENTRIC FUTURE

After two years of extensive research, consultation, stakeholder engagement and direct conversations with more than 30,000 Sydneysiders, the Commission released the draft Greater Sydney Region Plan, *A Metropolis of Three Cities* (the Plan). At its core lay the polycentric model, which reconceptualises Greater Sydney as a metropolis, made up of three unique but interconnected cities:

- the Western Parkland City
- the Central River City
- the Eastern Harbour City.

Following further engagement on the draft plan to ensure Sydneysiders had their say, it was formally adopted as New South Wales (NSW) Government policy in March 2018.

The Greater Sydney Region Plan sets a 40-year vision (to 2056) and establish-

es a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters. It informs district and local plans and the assessment of planning proposals, assists infrastructure agencies to align their infrastructure plans to place-based outcomes, and informs the private sector and the wider community of the growth management and infrastructure investment intentions of government.

The Three Cities vision rebalances the Greater Sydney Region, bringing new thinking to land use and transport patterns to boost liveability, productivity and sustainability by spreading the benefits of growth as the city's population grows from 4.7 million in 2016 to 8 million in 2056.

Greater Sydney's existing structure – with economic activity and the transport network concentrated on the Eastern City – has served it well, yet a singular focus on one city centre cannot continue, particularly when the current city centre sits at the geographic edge, rather than at its geographic heart.

As the population of Greater Sydney grows, and with almost half of that population residing west of Parramatta (the geographic heart of Greater Sydney, 20 kilometres west of the harbourside CBD), rebalancing economic and social opportunities will leverage that growth and deliver the benefits more equally and equitably across Greater Sydney. Presently 60 per cent of Sydneysiders travel from other parts of Greater Sydney into the Eastern Harbour CBD for work, leading to congestion and extensive commute times for residents of the Central and Western Cities. The Plan aims to counteract this imbalance by leveraging the existing growth opportunities in the Central City and future growth around the Western Sydney Aerotropolis, to bring jobs closer to home for their residents.

A key plan element to affect growth redistribution is the concept of *'30-minute cities'*, which proposes that most people live within 30 minutes, by public transport, of their nearest city and centre. This public transit concept enables seven days a week access to jobs, education and health facilities, services and great places. The temporal theme exemplifies a city that operates effectively in its landscape.

Residents will have quick and easy access to jobs and essential services. Housing supply and choice will increase to meet the growing and changing needs of the community. The environment and precious resources will be protected. Importantly, infrastructure will be sequenced to support growth and delivered concurrently with new homes and jobs.

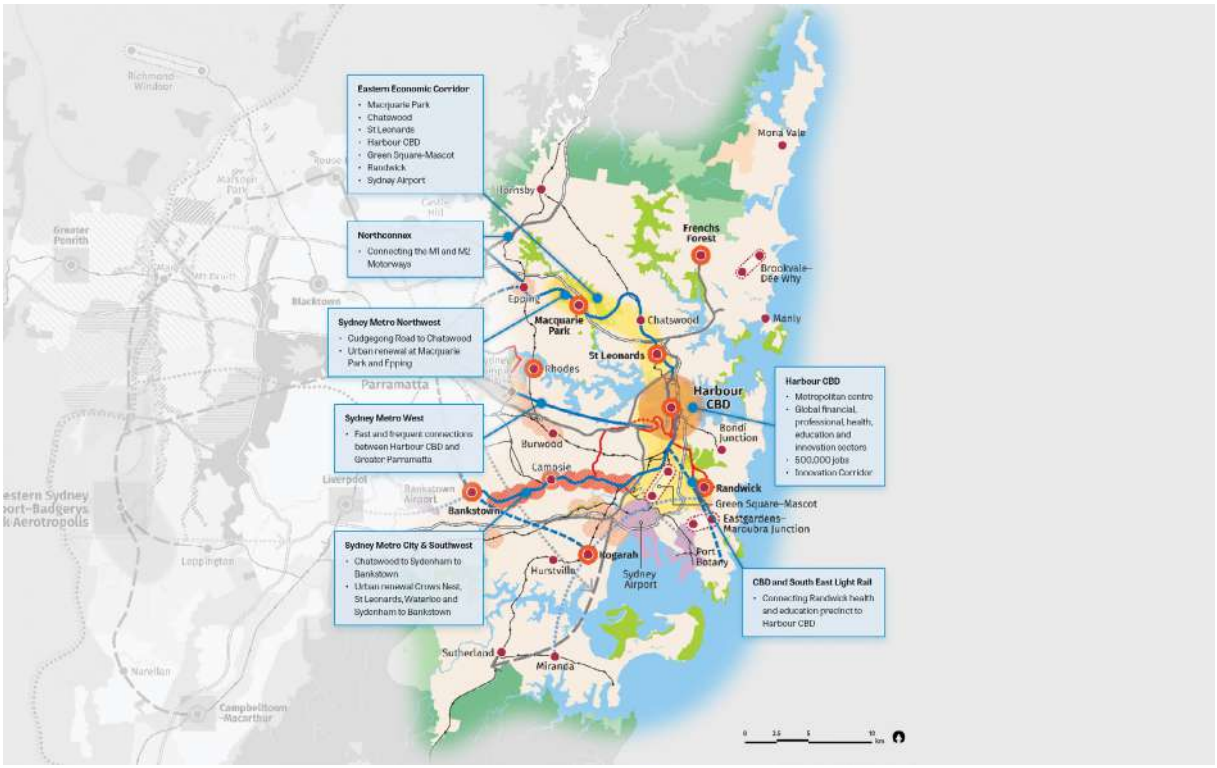
The established **Eastern Harbour City** will:

- continue to grow as Australia's global gateway, with a strong financial, professional services, health and education economy;
- see its established suburbs and transformative renewal areas continue to provide a greater choice in jobs, housing and lifestyle opportunities in a celebrated and internationally recognised environment.

The developing **Central River City,** with GPOP (Greater Parramatta and the Olympic Peninsula) at its heart, is anticipated to experience the most significant urban transformation over the next 10 to 15 years.

- By 2036, Parramatta will be one of Greater Sydney's major administrative and business centres;
- the Westmead health and education precinct will continue to grow and lead best practice in medical and education-related industries;
- the Central River City will provide a greater choice of housing, major entertainment and cultural facilities and green spaces, within enriched waterways and restored landscapes.

Figure 2: The Eastern Harbour City



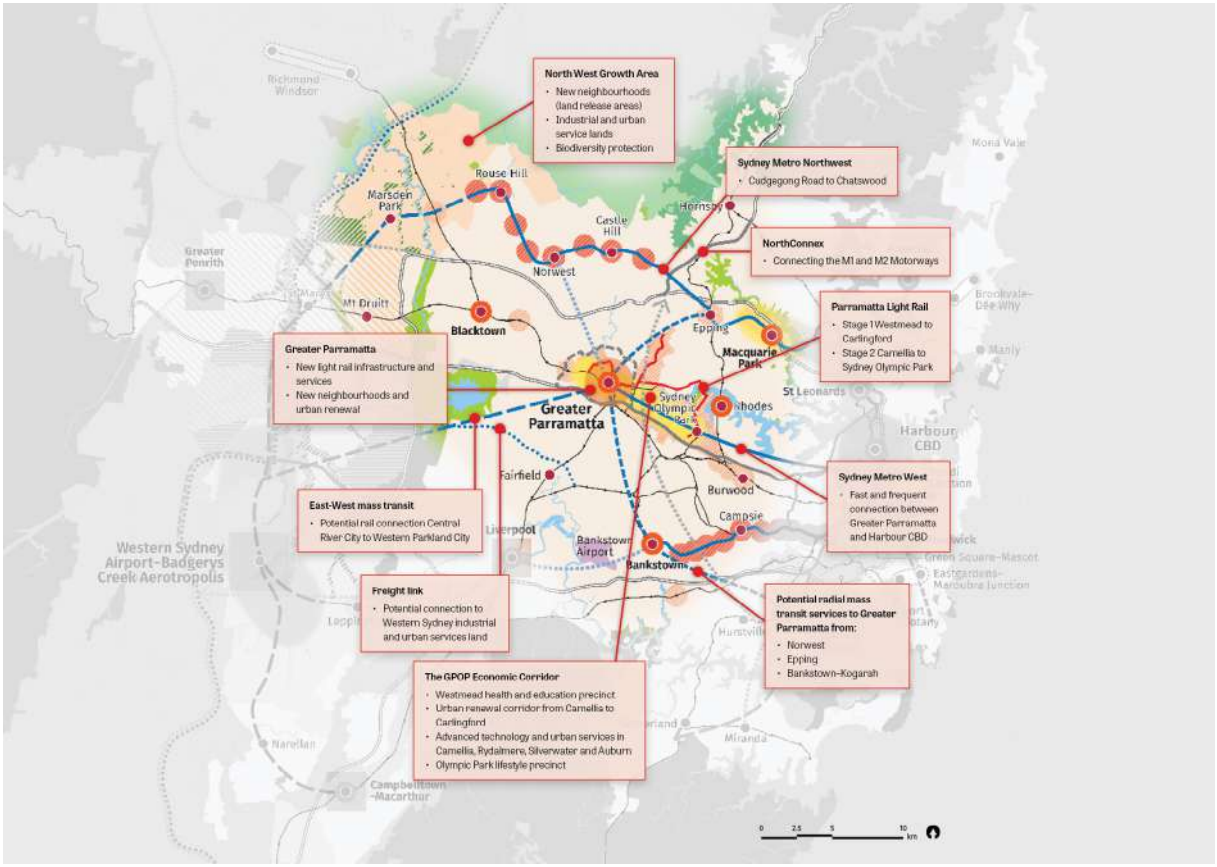


Figure 3: The Central River City

The emerging **Western Parkland City,** with Western Sydney Airport as its focus, will:

- provide the opportunity to change the shape and structure of an extensive area of Greater Sydney, creating an Aerotropolis and tourism gateway;
- experience growth of a strong economy in trade, logistics, advanced manufacturing, health, education and science and connect residents to international education facilities;
- harness growth generated by the Western Sydney airport to facilitate affordable and diverse housing, transport and social infrastructure and jobs;
- develop new neighbourhoods and centres, with urban renewal close to existing centres. Place-making will help to design neighbourhoods with fine grain fabric and human scale, supporting healthy lifestyles and connected communities.

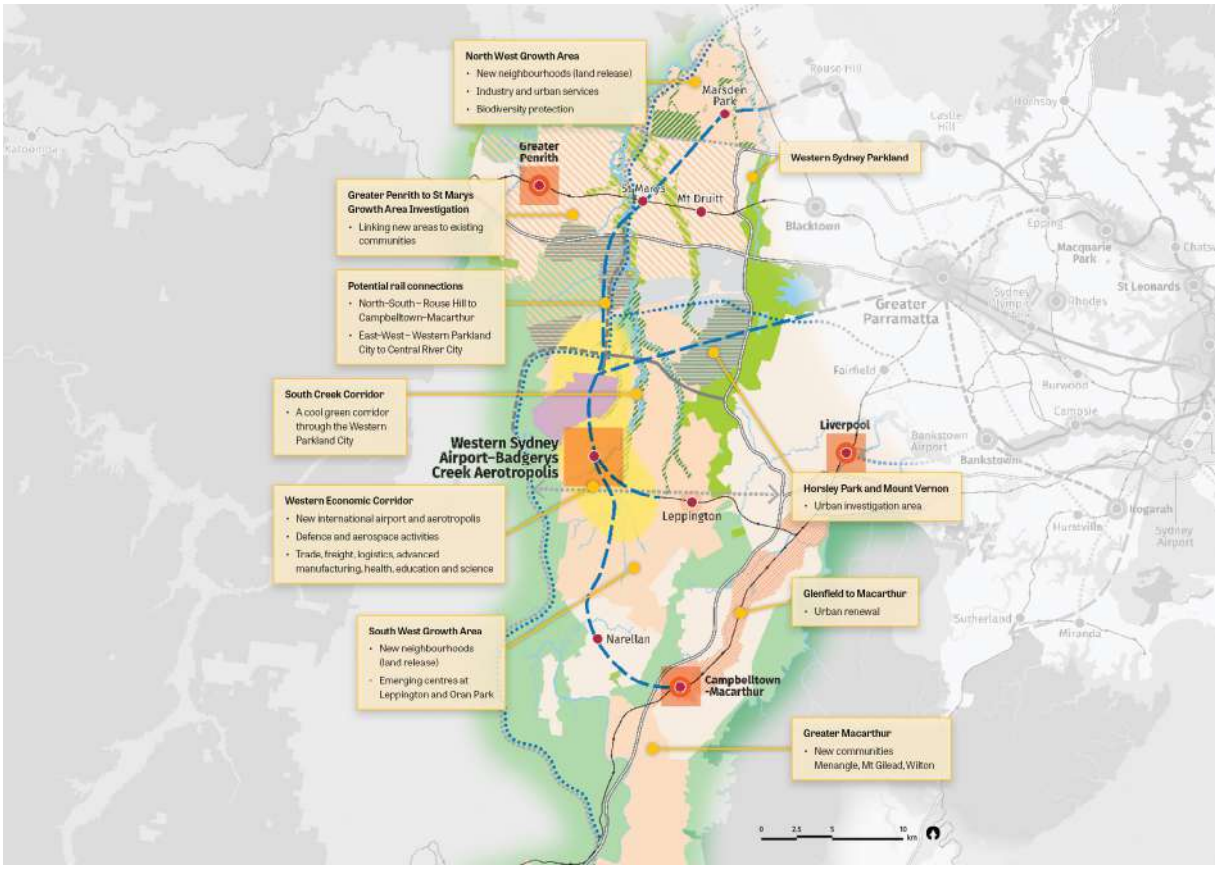


Figure 4: The Western Parkland City

Scenarios for Greater Sydney's growth were rigorously tested from the outset by the Commission along with Transport for New South Wales (NSW), Infrastructure NSW and NSW Treasury, providing a robust evidence base for the Three Cities model proposed in the Plan.

A COLLABORATIVE VISION

Central to the Commission's thinking is people. Cities that work best are designed to meet the needs and aspirations of the people who live there, while also respecting the natural environment. Therefore, collaboration with government, industry and the community is at the core of the Commission's work.

In developing the Plan, the first step for the Commission was to listen - extensive engagement was undertaken with stakeholders from across Greater Sydney to ascertain their hopes and aspirations for the future of their city.

The Commission developed four key objectives for its engagement:

- Explain the role of the Greater Sydney Commission, as a new government organisation, and how to participate/ engage with it.
- Understand the issues, needs and priorities of the (then) six districts and Greater Sydney as a whole.
- Explore innovative, effective and practical solutions, ideas and strategies to create a greater Sydney.
- Report back on what we heard and what this means for the plans and strategies we develop.

There was widespread support for the Three Cities vision as well as the 30-minute cities concept across the private and public sector, with Sydneysiders recognising the need to rebalance the Greater Sydney Region to increase opportunities and quality of life for all residents.

Local councils, the third tier of government in Australia, are predominantly responsible for implementing the Greater Sydney Region Plan at a local level through the five supporting District Plans developed by the Commission. Council support is vital to turning the Three Cities vision into a reality. Many councils from across Greater Sydney seconded staff to the Commission, to help prepare the District plans. These staff provided the Commission with the type of insights that only an embedded staff member can bring. The Commission received formal submissions from all 33 councils in the Greater Sydney Region, and this

Figure 5: Signing the Western Sydney City Deal

feedback was carefully considered and incorporated when finalising the plans.

The Plan was also created alongside Transport for NSW's (TfNSW) *Future Transport Strategy 2056* and Infrastructure NSW (INSW)'s *State Infrastructure Strategy 2018-2038*, meaning for the first time in the Region's history, land use, transport and infrastructure plans for Greater Sydney were being prepared concurrently. All three plans have the metropolis of Three Cities concept, and the aspiration for 30-minute cities, as the shared vision for Greater Sydney. This collaborative approach ensures that the plans can coexist and be implemented together, with a cross-government response to growth and infrastructure.

In addition to its comprehensive collaboration in preparing the Plan, the Commission also undertook extensive research to give it the highest chance of viability and a robust evidence base. This included examining the experiences of 10 other relevant cities to inform the thinking and choices facing Greater Sydney, with reference to a polycentric approach. These cities included London, Munich, New York, Paris, San Francisco, Seoul, Singapore, Stockholm and Toronto.

WESTERN SYDNEY CITY DEAL

Collaboration was key to realising the catalytic agreement behind the future of the Western Parkland City – the Western Sydney City Deal.

The Western Sydney City Deal is an unprecedented $20 billion-dollar agreement between the Commonwealth, State Government and the eight local councils in the Western Parkland City, which sets the investment foundation for Greater Sydney's newest 21st century city and will deliver transformative change to the Region. It commits all three levels of government to work together and contribute resources to deliver the 38 commitments within the City Deal as an integrated package driving the growth, development and place-making of the Western Parkland City.

Signed by the Prime Minister of Australia, the Premier of NSW and the eight local mayors, the City Deal is part of an integrated, collaborative approach to re-shaping Western Sydney, through coordinating land-use planning with infrastructure and service delivery.

ENGAGING GREATER SYDNEY – CO-CREATING THE VISION

The final draft version of the Greater Sydney Region Plan was unveiled after extensive consultation with stakeholders, industry, community along with state and local government. It is a product of the collaboration and consultation that have been core focuses for the Commission since its inception.

During the Commission's two-year public participation process, it engaged with more than 30,000 people and reached more than 250,000 people via social media. It was underpinned by two comprehensive engagement strategies for each major phase of the project. The role of the public was to help shape the Commission's thinking about how to deal with the challenges facing Greater Sydney in the future. The input sought during engagement varied at different stages of the Plan's development lifecycle.

PHASE 1 – PRE-PLAN PREPARATION – JULY 2016 TO OCTOBER 2016

This period of engagement took place before the Commission's Plans had been developed. The purpose of public engagement during this phase was to:

- gain feedback on how the Commission should engage with stakeholders;
- gain insights into the issues, needs and priorities of Greater Sydney; and
- develop innovative, effective and practical solutions, ideas and strategies to address the challenges and opportunities faced by Greater Sydney.

Figure 6: The Greater Sydney Commission's first engagement period – Canterbury Bankstown markets

PHASE 2 – CONCEPT TESTING AND DISTRICT PLAN EXHIBITION – NOVEMBER 2016 TO MARCH 2017

Phase 2 saw the Commission exhibit the six District Plans and the discussion document, *Towards our Greater Sydney. Towards our Greater Sydney* outlined the vision for Greater Sydney as a metropolis of three unique but connected cities. All documents had been informed by the learnings from the first phase of engagement. The Commission engaged with over 7,500 people during this period. The purpose of public engagement during this phase was to gather feedback from Sydneysiders about the Three Cities vision laid out in *Towards our Greater Sydney.* This feedback was subsequently used to inform the draft Greater Sydney Region Plan.

PHASE 3 – FINAL EXHIBITION OF DRAFT REGION PLAN AND REVISED DISTRICT PLANS – OCTOBER 2017 TO DECEMBER 2017

During the third phase of public engagement, the Commission exhibited the draft Greater Sydney Region Plan and revised District Plans. The draft Region Plan was developed following feedback on *Towards our Greater Sydney* and revisions were made to the District Plans based on engagement and submissions received during Phase 2. This phase sought to acquire a final round of feedback on the suite of plans, ahead of finalisation and adoption by the NSW Government. The Commission engaged with over 9,300 Sydneysiders during this exhibition period.

Figure 7: Greater Sydney Commission and Transport for NSW joint briefing to community on the draft plans

PHASE 4 – LAUNCH OF FINALISED REGION PLAN AND DISTRICT PLANS – JANUARY 2018 TO MARCH 2018

The final plans were launched by the NSW Government on 18 March 2018, alongside TfNSW's *Future Transport 2056* and INSW's *State Infrastructure Strategy 2018-38*. Together with TfNSW and INSW, the Commission entered a fourth phase of engagement to present the final versions of the plans and brief stakeholders on the next steps for implementation. Five joint briefings were held, attended by 485 people from across government, industry and the community. One of the briefing sessions was also live streamed and viewed by over 1,500 people.

A broad range of tools was employed by the Commission to engage with stakeholders and ensure feedback was captured from a diverse audience. Engagement was both online and in person and included briefings for government, industry and stakeholders, workshops for community members and councils, quantitative surveys, deliberative forums, Culturally and Linguistically Diverse (CALD) and youth focus groups, peak and industry roundtables and speaking engagements. The Commission's extensive online engagement included event live streams for those unable to attend in person as well as 'Live Online' engagement sessions on Facebook, Reddit and LinkedIn where Commissioners, the CEO and senior staff hosted live discussions with the public on a range of liveability, productivity and sustainability issues.

The Commission endeavoured to ensure that public participation in the development of the Region Plan was meaningful and resulted in demonstrable changes to the document that reflected the needs and wants of Sydneysiders. As an independent organisation, broad and extensive engagement with State and local government, industry and communities was critical to achieving buy-in.

In the Commission's first published engagement strategy, the organisation committed to keeping stakeholders up to date throughout the planning process to ensure transparency within the decision-making process. This included a pledge to keep stakeholders informed on who was engaged, what was heard, how participant feedback helped shape the Commission's projects and what was next in the planning and engagement process.

Fulfilling that pledge, the Commission published three Submissions and Engagement Reports and one Submissions Response Report. These reports explained, in depth, the Commission's engagement activities, who was engaged, what was heard and what the next steps were in the project and public participation process. The reports also included key issues identified through submissions and feedback and change logs demonstrating how the Commission had incorporated that feedback into the next iteration of the plans.

KEY THEMES FOR GREATER SYDNEY'S FUTURE

The Greater Sydney Region Plan is founded on four key themes;

- Infrastructure and collaboration
- Liveability;
- Productivity; and
- Sustainability.

Each of these elements is critical for creating quality planning outcomes in Greater Sydney. The themes are consistent with the those in *Directions for a Greater Sydney*, published by the Commission in July 2017. They establish the aspirations for the Region over the next 40 years and are integral to measuring the Plan's performance.

Since the release of the plans in March 2018, the Commission has transitioned from a plan-making organisation to a city-making organisation. This pivot from planning to implementation is part of the Commission's commitment to making its vision a reality.

To do so, the Commission has been collaborating across state government agencies and local councils and is proud to report that all 15 Actions within the Region Plan are underway, with further progress to be reported annually.

INFRASTRUCTURE AND COLLABORATION

As Greater Sydney grows and becomes more complex, there is a need to design better ways to support growth and deliver appropriate infrastructure in the right places. Providing adequate infrastructure to support population growth is essential to creating strong communities. This will give the community confidence that the Region is being planned and developed responsibly and sustainably. It is imperative that growth is supported by essential services, such as transport, education and health. An integrated planning approach also maximises job creation opportunities across Greater Sydney.

The key role of *A Metropolis of Three Cities* is to co-ordinate a whole-of-government approach that can provide the appropriate infrastructure in the right places to support the growth of three cities. In partnership with *Future Transport 2056* and *State Infrastructure Strategy 2018–2038*, the Plan provides the basis for this collaborative approach. This can align policy and investment directions for business and the community.

The Greater Sydney Region Plan and the District Plans introduced the concept of Collaboration Areas – a place-based, multi-stakeholder approach to solving complex urban issues. The process seeks to identify complex, place-specific issues that inhibit places from reaching their full potential.

In 2017/18 the Commission led Collaboration Areas in strategic centres across Greater Sydney - Liverpool, Greater Penrith, Camperdown-Ultimo, Randwick and Rhodes East. Stakeholder groups were chaired by the relevant District Commissioners and met regularly throughout the year to identify and resolve key issues such as transport and access, infrastructure provision, urban amenity, housing affordability and jobs growth.

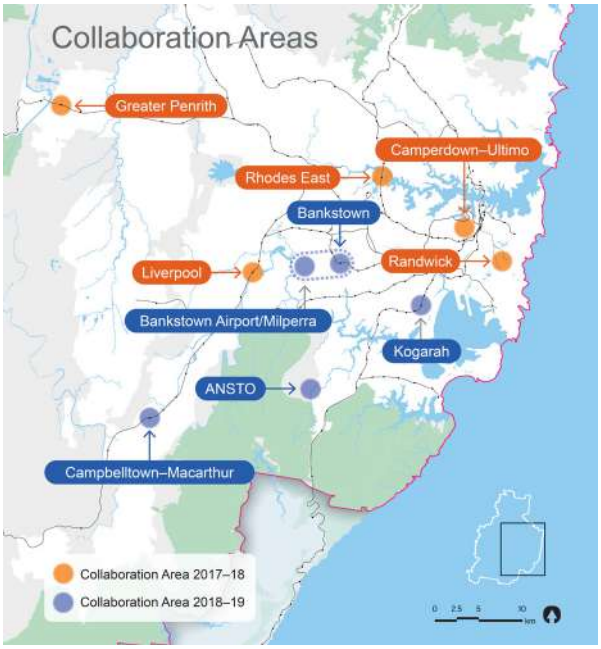


Figure 8: Collaboration Areas across Greater Sydney

Each stakeholder group produced a Place Strategy, which sets out a shared vision for the area, identifies impediments and opportunities, agrees on priorities and identifies projects and initiatives to deliver the vision. The Place Strategies will be included in future updates of the District Plans and will be implemented collaboratively by councils, state agencies, universities and other stakeholders.

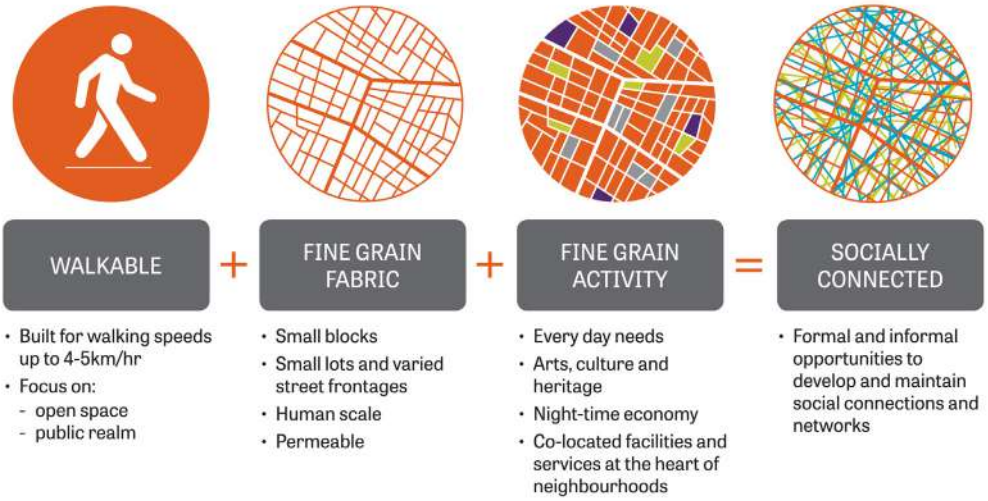


Figure 9: Fine grain, walkable places help create a liveable city

LIVEABILITY

The quality of life that residents enjoy in their neighbourhoods, work places and cities is central to liveability. Maintaining and improving liveability requires housing, infrastructure and services in the right locations to meet people's needs and enable them to stay in their neighbourhoods and with their communities as they transition through different stages of life.

Providing ongoing housing supply and a range of housing types in the right locations will create more liveable neighbourhoods and support Greater Sydney's growing population. The NSW Government has identified that 725,000 additional homes will be needed by 2036 to meet demand based on current population projections.

To inform the preparation of housing strategies by local councils, the District Plans provided housing supply targets for a 2016-21 timeframe for each local government area. These five-year targets reflected the existing development pipeline and provided a focus for infrastructure delivery.

In its recently legislated assurance role, the Commission is working closely with each of the 33 councils across Greater Sydney to ensure their Local Environmental Plans are consistent with, and implement, the Region and District Plans.

PRODUCTIVITY

Enhancing Greater Sydney's productivity, export sectors and global competitiveness will be critical to increasing the Region's economic activity to $655 billion by 2036. Achieving this will require greater choice for where development can occur to enable the required employment growth of 817,000 jobs. Careful strategic planning will guide the locations of business growth and investment and provide better freight connections, economic agglomerations and skills development.

Building on health and education strengths, growing the advanced manufacturing sector, and developing the Western Sydney Airport and surrounding Aerotropolis will be central to delivering an innovative and internationally competitive economy.

A growing city also needs to be a working city, with spaces that allow it to function, make and create. Greater Sydney's industrial and urban services sector is growing. In fact, it is the manufacturing capital of Australia with industry gross value added (GVA) of $21.5 billion and contributing 22.2 per cent of national GVA in 2015–16. Only 8 per cent of land across Greater Sydney is presently zoned for non-residential uses such as industrial and urban services but, despite this, 19 per cent of all jobs across Greater Sydney are classified as industrial.

The Commission's first thought leadership paper, *A Metropolis that Works,* highlights the economic significance of industrial and urban services lands. It makes the case for a carefully considered approach to managing these lands and, where appropriate,

protection from competing land uses such as residential. The three key principles are:

- Retain and manage: all existing industrial and urban services land should be safeguarded from competing pressures, especially residential and mixed-use zones.
- Review and manage: a review of all industrial lands to confirm their retention or transition to higher order uses (such as business parks) and prepare appropriate controls to maximise business and employment outcomes, considering the changing nature of industries in the area.
- Plan and manage: councils will be required to undertake a strategic review of industrial and employment activities across their council area as part of their review of their Local Environmental Plans, to be approved by the Commission.

The provision of sufficient industrial land, with access to markets and users across the whole metropolitan area, is integral to delivering the 30-minute city. The Commission will monitor the performance of the principles to manage industrial and urban services land, including a formal review every five years.

SUSTAINABILITY

As Greater Sydney grows, strategic planning will manage the effects of urban development to protect, restore and enhance the Region's landscapes, waterways, natural areas and open spaces. A healthy natural environment is crucial to improving liveability, creating healthy places, and mitigating the effects of climate change.

Almost 80 per cent of the Greater Sydney Region is non-urban; 53 per cent is protected natural area, around 27 per cent is metropolitan rural area, with less than 20 per cent urban area. When planning for growth, especially in our burgeoning Western Parkland City, it is imperative this planning starts with the landscape.

The South Creek Corridor will be the central green spine and structuring element of the Western Parkland City, integrating urban design and water management. The South Creek catchment is larger than Sydney Harbour and flows through one of the flattest, hottest and driest parts of Greater Sydney. Out of the 1.5 million people living in the Western Parkland City in 2056, 1.25 million of these will be living in the South Creek catchment.

South Creek and its tributaries can form the basis for cool, green and attractive urban communities by retaining more water in the landscape and integrating waterways into the design of new neighbourhoods, that also support the health and management of waterways. This requires working with the current topography and preserving, extending and restoring the creeks and riparian corridors that will become the framework for a green network. A bold and innovative approach to land use and infrastructure planning in the South Creek corridor is central to the future sustainability and liveability of the Western Parkland City.

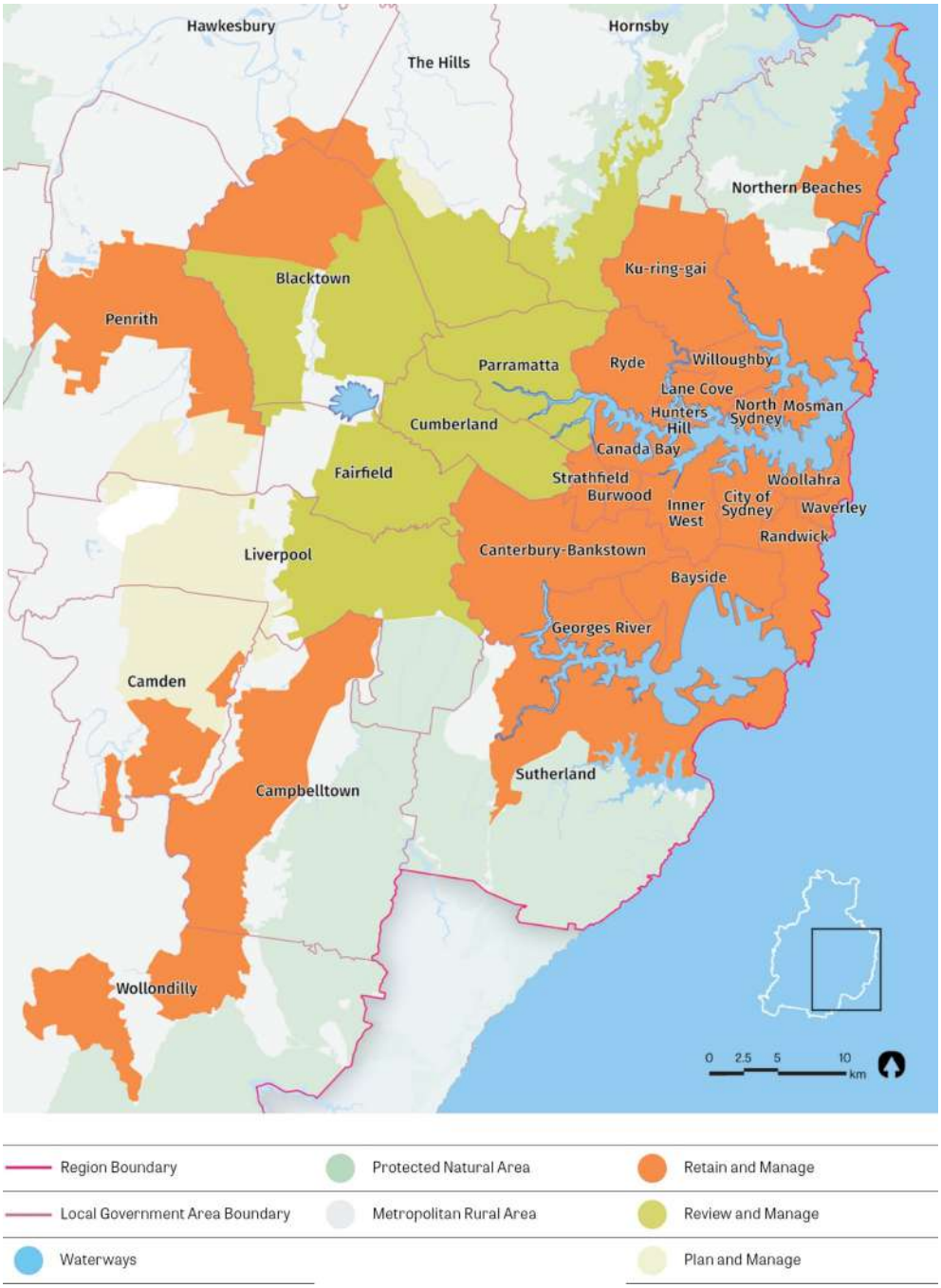


Figure 10: Approaches to planning for industrial and urban services land in existing and planned urban areas

Orientate urban systems towards the creek corridor

Create a transect of creek-oriented place types and things to do

Build a network of everyday uses within a walkable creek catchment

Provide creek connections and encourage waterfront activity

New city centre

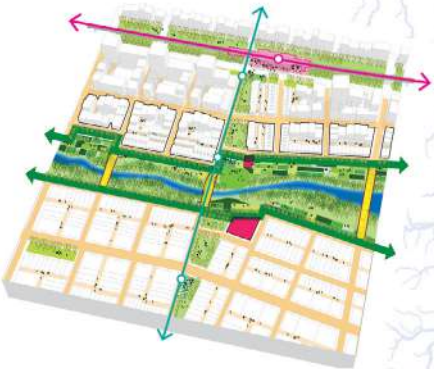
- Pedestrian-oriented promenade with active frontages
- Density and fine grain
- 300–400 metre bridge spacing
- Mass transit 1–2 blocks from creek
- Regional civic anchors
- High transport connectivity

Established suburbs

- Studios and apartments added
- Connections between streets and to creek
- Programmed activity space
- Multiple pedestrian walkways
- Shared street promenade

New inner city neighbourhood

- Fine grain residential – terraces and mid rise apartments
- 400-600 metre bridge spacing
- Mass transit 2 blocks from creek
- Local civic anchors



New business and industrial areas

- Creek-facing employment hubs
- Realigned car parking
- Recreation spaces for workers
- Accessible transit plaza
- Pedestrian only promenade

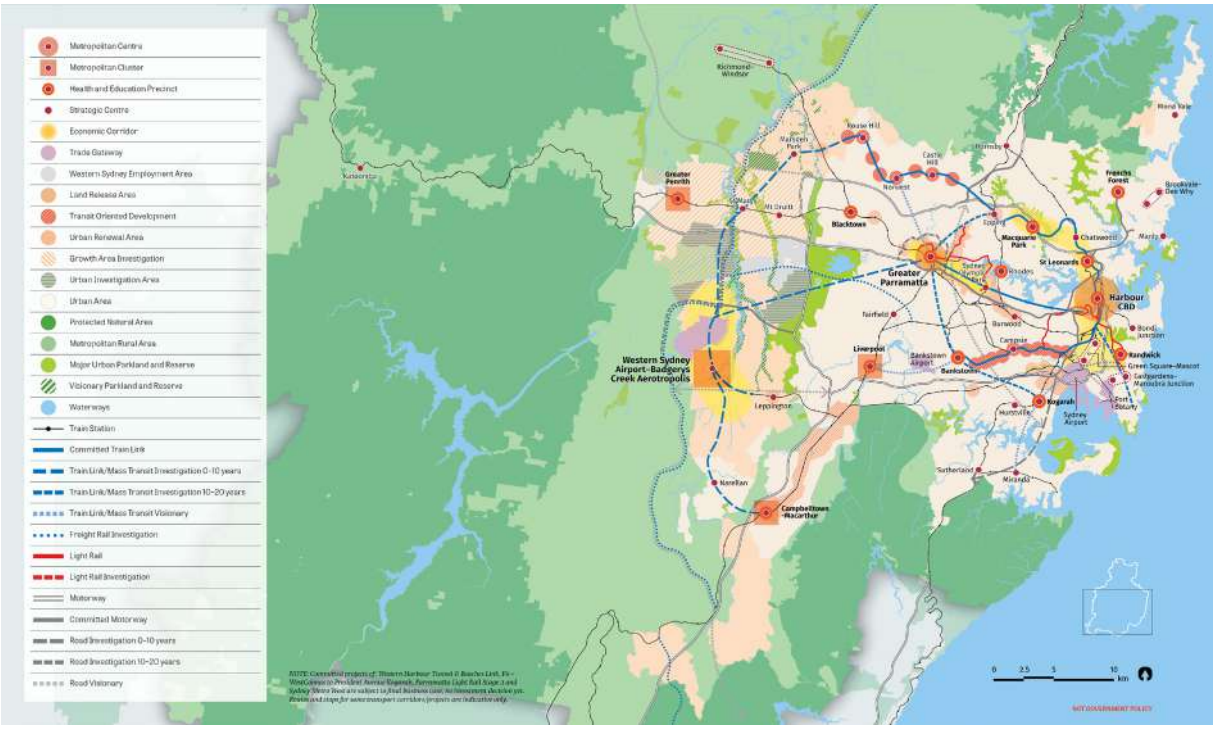
Figure 11: South Creek urban design principles

CONCLUSION

Greater Sydney has grown from the home of Aboriginal peoples to an internationally significant economic metropolis. In the past 25 years, it has grown by 1.3 million to reach 4.7 million people. Its evolution, through population growth, urbanisation and technological advances, can be traced through eight major planning strategies since 1909. The Greater Sydney Region Plan; *A Metropolis of Three Cities,* represents another quantum shift in driving Greater Sydney's future as a successful economy and one of the world's most beautiful and liveable places.

While population growth, urbanisation and technologies change, many things stay the same – the importance of well-located housing, beautiful public places, efficient transport, local infrastructure and planning that is people focused. *A Metropolis of Three Cities* continues the strong legacy of strategic metropolitan planning. It seeks to protect what people love about Greater Sydney and safeguard opportunities for future generations.

Figure 12: Structure plan for Greater Sydney



LESS IS BEAUTIFUL: TRANSFORMING METROPOLITAN DOHA INTO A GLOBAL RESILIENT URBAN VILLAGE

ALI A. ALRAOUF

Doha's evolution of skyline, 2009-14
(https://www.reddit.com/r/pics/comments/2jcbbsevolution_of_doha_the_capital_of_qatar_over_the/)

INTRODUCTION

Unprecedented oil revenues and strategic geopolitical significance unambiguously positioned Gulf countries at the nexus of spatial, political, and societal transformations. Since all Gulf countries are city-state, their contemporary portal cities act as engines of growth in the Gulf.

However, the recent urban changes in Gulf cities suggests that the patterns of urban growth, as practiced during the height of oil economy, might come to an end. The popular slogan 'If you build it, they will come' has become irrelevant given current challenges and has become a threatening future situation for Gulf cities in a post-carbon world.

Figure 1: The skyline of Doha's West Bay high rise buildings, in Doha, Qatar.
Picture credits: Robert Ghement

CONCEPTUALIZATION OF RESILIENCE

Resilience is the ability of a system, community, or society exposed to hazards to resist, absorb, accommodate to, and recover from the effects of hazards in a timely and efficient manner[1]. This concept initiated a discussion of how the definition might serve as a boundary object, with the acknowledgement that applying resilience in different contexts requires answering the following question: Resilience for whom, to what, when, where, and why?

It was also recognized that general terms and global concepts won't help in achieving any level of tangible change as long it is not coupled with a sincere attempt to fully understand the local condition and adopt the concept to the realities on the ground. In the work of great urban theorists such as Jane Jacobs, Christopher Alexander, and E. F. Schumacher, the main invitation for urban planners is to consider locality and value small actions and humble interventions.

After reviewing the scholarly literature on urban resilience, Meerow and el. (2016) concluded that the term was not well defined. Their justification was that existing definitions are inconsistent and underdeveloped with respect to the incorporation of crucial concepts found in both resilience theory and urban theory. Pizzo (2015) problematizes the introduction of the concept of resilience into the planning domain from three main starting points: 1. the nature of the events which are said to require resilience; 2. the different nuances in meaning that

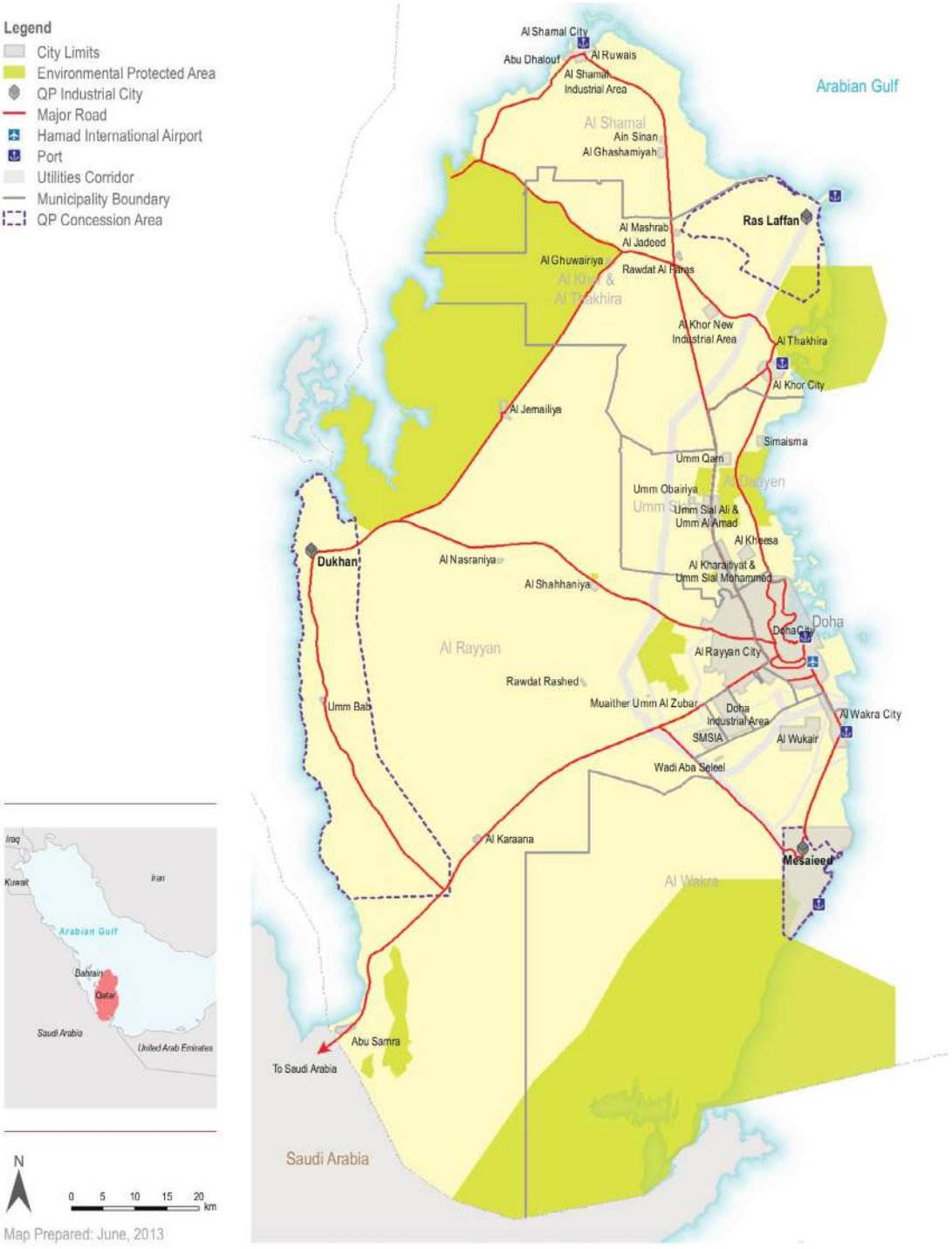


Figure 2: Contextual location of Doha in Qatar (Source:MME)

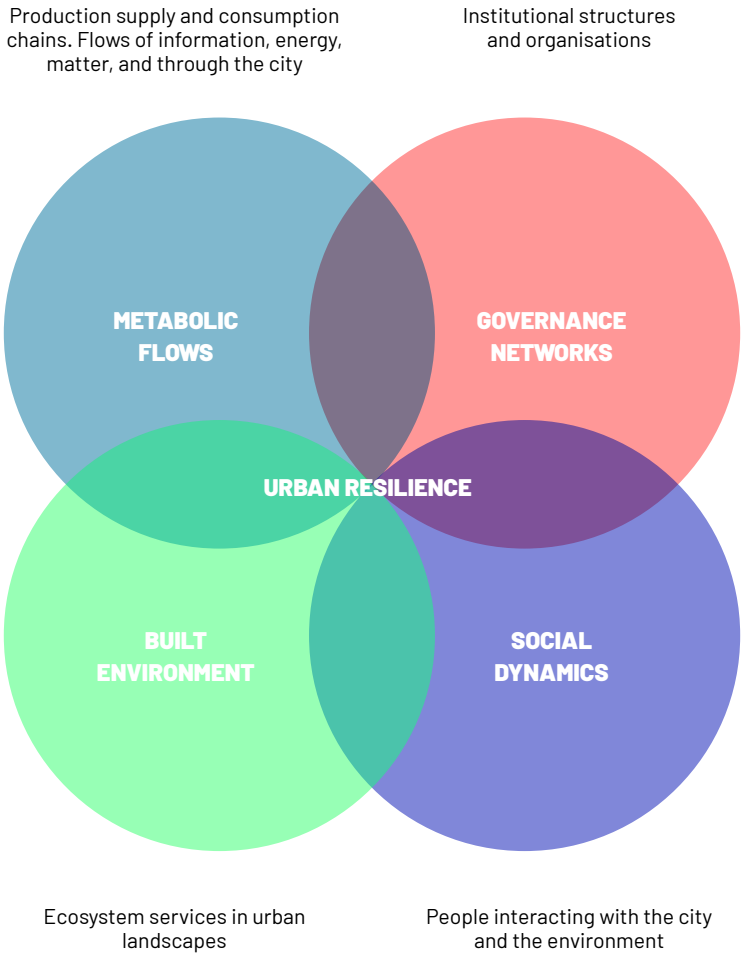


Figure 3: The holistic approach to urban resilience.

resilience assumes according to those different events, and 3. the theoretical and operational problems the concept entails. His paper argues that multiple sub-meanings are embedded within one interpretation of resilience that leave the concept open to rather large margins of ambiguity, which emerge considering its operationalization. His concept seems to fit and to be appropriate within different paradigms, planning traditions and policy frameworks. Its alleged 'neutrality' is one of the main reasons of its pervasiveness, but also noted is its ambiguity, showing latent controversial implications, which are progressively emerging in critical planning theory.

RESILIENCE IN URBANISM AND CITY PLANNING

The holistic understanding of urban resilience resonates with the UN-Habitat Sustainable Development Goals (SDG). Particularly, Goal 11 suggests the importance of creating inclusive, resilient, sustainable and safe cities.

This paper provides an overview of the development of the resilience concept in the domain of urban development and planning. Over the last two decades the concept of resilience has experienced escalating interest. However, due to a lack of consistency in defining and measuring this theoretical construct within and across disciplines, the recent explosion of literature on resilience has contributed more to confusion than clarity among researchers and policy makers. The notion of resilience is gaining increasing prominence across a diverse set of literatures on cities and climate change.

Although there is some disagreement about how to define and measure resilience, there is broad consensus that: (1) cities must become resilient to a wider range of shocks and stresses to be prepared for climate change; and, (2) efforts to foster climate change resilience must be bundled with efforts to promote urban development[2] and sustainability[3]. However, resilience has been closely associated with sustainability for more than a decade, although without precise meaning and often as an additional label attached to pre-existing research[4]. Urban resilience is a broad concept that is sometimes blurred and abstract.

Part of the effort to more clearly define the concept is to assert that Urban resilience addresses adaptation as well as mitigation. It is associated with spatial planning policy-making in the context of different levels and forms of uncertainties. Therefore, urban resilience provides a new way of framing and responding to uncertainty and vulnerability. Considering this interpretation, urban resilience offers an alternative paradigm for planning strategies.

With peak oil looming, governments in the region sought new ways to sustain their drive toward modernization without a dependence upon oil revenues. Therefore, all Gulf cities decided to plan for a radical economic diversification including investment in fields like tourism, art, education, and sports. Another shift was to focus on a new economic base founded on the rise and evolution of knowledge-based industries. It was hoped that by adopting such knowledge-based development and growth, Gulf cities would start to move into a new form of urbanity coined 'knowledge-based urban development'[5].

Figure 4: An aerial photo captured in mid-forties showing Doha's waterfront, AL Jessra Area, the cemetery and Al Khot Fort (Source: MME).

THE NARRATIVE OF QATAR: QATAR'S CONTEXT AND TERRITORIAL BACKGROUND

Qatar is a peninsula in the east of Arabian Desert. It covers an area of 11,437 km^2, has a coastline of 563 km. The country is mostly low-lying and flat stretching into the Gulf from the lands of Saudi Arabia. Until few decades ago, Qatar was dominated by nomadic people whose livelihood depended on fishing and pearling. Qatar was under the British Protectorate from the year 1916 and until it gained independence in 1971. However, the discovery of oil and gas has encouraged not only socio-economic changes, but urban and environmental changes as well. The newly acquired wealth and associated development have not come without challenges.

Since that discovery of oil and gas, the country has been going through tremendous growth in different sectors. The revenues have been used to streamline sectors such as health, construction, education, financial, and manufacturing.

Up to the mid-1960s, the majority of Doha's built environment was composed

Figure 5 & 6: Doha's Evolution from a humble traditional settlement to a metropolitan urbanity (Source: MME).

of traditional houses that represent local responses to the surrounding physical and socio-cultural conditions. During the 1970s and 1980s Doha was transformed into a modernized city as a result of extensive use of oil revenues to fund housing, infrastructure, roads and community facilities.

Since 1984 the population has grown from just under 350,000 to over 2.2 million in January 2015[6]. Qatar witnessed unprecedented overall population increase since 2010 after the declaration of the State's wining a bid to host the FIFA world cup 2022. The current population is 2.5 million, of which only around 15 percent are native Qataris. Today, the capital, Doha is home to more than 90% of the country's 2.7 million people, the majority of whom are professionals from all around the globe[7].

Qatar is currently ranked among the highest GDP capita globally. The country has continuously experienced a high level of economic growth, averaging 25.4% between the years 2004 and 2012[8]. Conditions for doing business are friendly as there is no income tax or corporate tax for domestic firms, and foreign firms are only charged a 10% corporate tax[9].

The economy in Qatar is diversified into various sectors, all of which contribute significantly towards achieving the growth of the country. Even tourism, especially in the last decade, is becoming one of the main platforms for diversifying Qatar's post-oil economy[10]. Over the past decade, Qatar has also become one of the major world producers and exporters of Liquefied Natural Gas (LNG). 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, recreational, health and educational facilities.

MOVING TOWARDS A KNOWLEDGE AND CREATIVE ECONOMY: FROM OIL TO KNOWLEDGE

Qatar has embraced the idea of developing a knowledge-based economy and successful steps have been implemented. One example of this was the founding of the Qatar Foundation in 1995 with a fund of $2 billion. By 2010 education accounted for 13% of all government expenditures. The Qatar Foundation also supports research, capacity building and open dialogue at all levels, supporting activities such as the Doha Debates and Al Jazeera television station. Al Jazeera, an overwhelmingly successful Arabic language news channel, has provided a forum for open discussion and criticism.

Another way forward was articulated through the wise insights of His Highness Sheikh Hamad Bin Khalifa Al-Thani, Father the Emir (AlAmir AlWaled). His National Vision decree[11] (QNV) set out the long-term direction for the country, to inspire its people and to develop a set of common goals related to their future.

"The National Vision aims at transforming Qatar into an advanced country by 2030, capable of sustaining its own development and providing for a high standard of living for its entire people for generations to come." (QNV, 2008).

The Qatar National Vision 2030 articulated a roadmap for the alternative future of the State over the next twenty years. The QNV 2030 is based on four supporting themes: human development; social development; economic development; and, environmental development. In order to facilitate the realization of QNV, Qatar is positioning itself as a knowledge-based society, principally in the fields of education, research, energy and technology. Qatar is determined, due to its awareness of the swiftly arrival of the post carbon era, to diversify its economy and go beyond the total reliance on oil and gas. The plan is to educate and train nationals to pave the way to a global knowledge society. This proves that the willingness to pursue the status of a knowledge and creative city exists.

In terms of the QNV, the security of the peoples' standard of living is paramount, but the government realized that this cannot be the main and only goal of a country. With the focus on its values, Qatar has to balance some further challenges: modernizing traditions while ensuring their preservation; serving the needs of this and future generations; managing the country's growth and expansion; controlling the targeted size and the quality of the expatriate labor; going a path of development that is compatible to the vision; managing the economic growth, social development and protecting the environment[12].

TOWARDS A HOLISTIC URBAN PLANNING FRAMEWORK

In December 2006, Pacific Consultants International (PCI) was contracted to assist the government to develop a Qatar National Master Plan (QNMP), which was to serve as the spatial representation of the QNV 2030. The master plan was to guide urban development for the State over the next 25 years. The QNMP considered physical development and economic, social, cultural and environmental factors and challenges to guarantee the comprehensiveness of the proposed plan. A comprehensive development scheme is the main tool that will benefit all segments of society.

Figure 7: A Diagram showing Qatar National Development Framework hierarchy and the relation with QNV 2030 (Source: QNDF, 2016, p: 10).

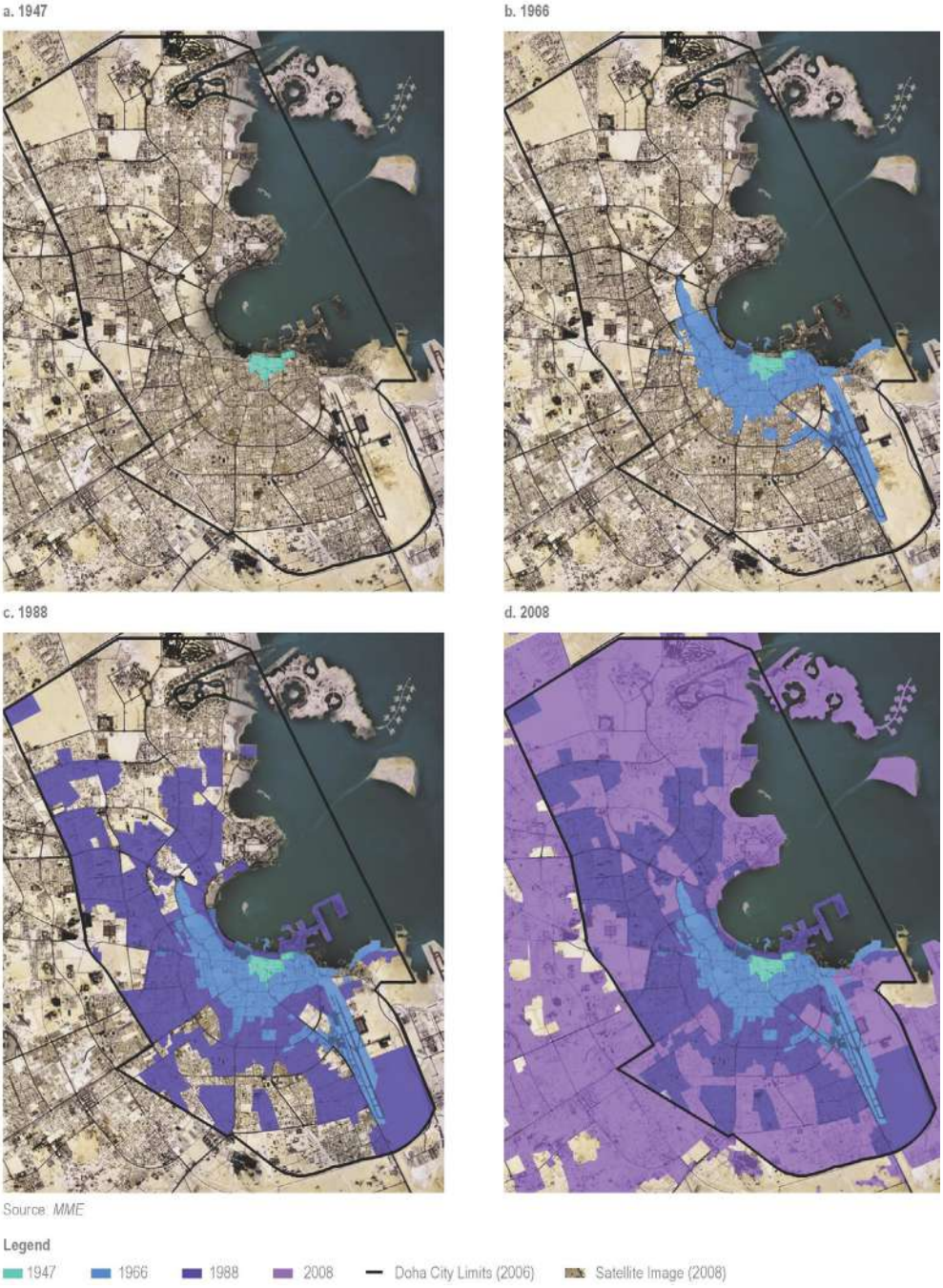


Figure 8: The highlighted area indicating the boundaries of Doha in 1947 in context with the current status of the city which is suggesting the unprecedented development within the last few decades.

On a strategic level another plan was developed, the Qatar National Development Framework (QNDF). It defines the structured process to implement the master plan. The QNDF provides the framework for managing growth, change, land use and development in Qatar to 2032. The QNDF sets the strategic framework for sustainable development and provides plans for the country, for Metropolitan Doha, and for the Municipalities that make up the nation's principal administrative structure (QNDF, 2016).

CONTESTING DOHA'S MODEL OF RESILIENCE

In this section, an analysis of the most dominant forces that challenged the development of Doha city in the last decade will be provided. Hence, all the strategies, processes and policies which were adopted by the city will be shared to illustrate the city's resilience model. Interestingly, some of these dominant forces were celebrated, for example winning the bid to host the 2022 FIFA World Cup[13], while other were a substantial shock and have created a seismic impact on the city's people, economy and development. Doha was alert for the critical need for a flexible and dynamic approach to building resilience that goes beyond risk mitigation.

Therefore, in the coming sections, three main challenges will be narrated and Doha's answer to each of them will be illustrated. Three milestones, which are representing the most alarming challenges that Doha have faced in the last decade, are analyzed in a chronological order. The analysis illustrates the wider interpretation of the challenges which require a resilient plan. The notion of city challenge is also extended as it does not imply a negative response. Cities need resilience also to deal with positive challenges facing its development and progress. Therefore, the milestones analyzed go all the way from economical threats, hosting a global event to a comprehensive blockade.

THE INEVITABILITY OF THE POST-OIL PARADIGM AND THE URBAN PLANNING

With its unprecedented financial resources, creative strategic thinking and political commitment, Qatar is constructing a new dynamic development process and an urban brand; *Dohaization*[14], which is structured upon the value of a knowledge economy and a knowledge-based urbanity.

By any measure, Qatar's growth is phenomenal. In the past decade the population has trebled, and the size of metropolitan Doha has increased fourfold. From its humble origins as fishing and pearling village, Doha has emerged as an expanding world city, where ambition and means are fueling exciting experiments in education, health, sports and culture[15].

LESS IS BEAUTIFUL: STRATEGIES TO MOVE BEYOND THE METROPOLITAN

DECONSTRUCTING THE METROPOLITAN: INTRODUCING HIERARCHICAL URBAN CENTERS

Doha's future urbanity is crystalized around the move from centric to polycentric urban planning. One of the most significant strategies adopted to deconstruct the metropolitan extended boundaries which was created during the years, is based on introducing the concept of hierarchical, vibrant and livable urban centers. The centers were planned to have certain common attributes such as: appropriate density; the distance between land uses and community needs; the diversity represented in the mixed use developments; and, the design and place making approach which would focus on public spaces, streetscapes and the ability to accommodate multiple forms of transportation. The significance of the previous attributes is manifested in the urban independence of such center in proportion with the relevant community it serves. More importantly, the use of centers facilitated the concept of transit-oriented development (TOD) and the move towards reliance on public transportation. Evidently, the future growth of Doha includes multi-urban centers. In addition to their strategic locations, the relationship of these centers to each other and to their service catchments in a hierarchy, and the mix of uses that exist or can be guided to each center in the future, are major elements of the QNDF National Spatial Strategy.

As clearly explained in the QNDF, the hierarchy of centers was identified using a sequential strategic assessment based on five key criteria:

- Level of existing population and employment density, economic investment and infrastructure.
- Level of existing Government/Municipality office and community facility provision.
- Potential accessibility to the future strategic transportation Network.
- Proximity of committed mega projects or other major Government developments including Qatari national housing schemes.
- Availability of vacant land and potential for regeneration or urban infill.

This hierarchical structure promotes mixed-use, mixed density centers and enables more efficient and equitable use of national level investment in transportation and utility infrastructure, which in combination, provide the sustainable development pattern that the QNV2030 strives to achieve[16].

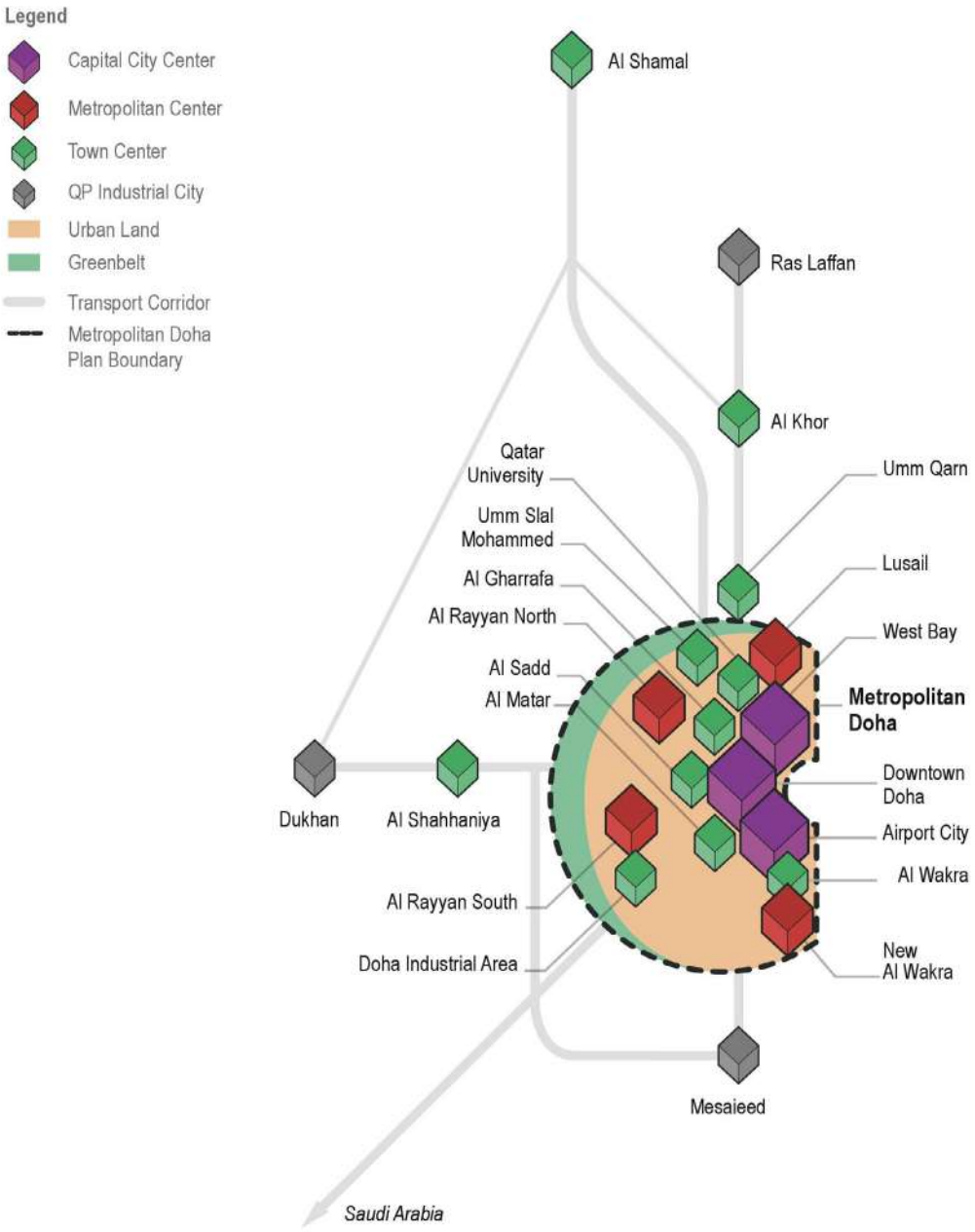


Figure 9: The Spatial Strategy Concept 2032 indicating the location and hierarchy of urban centres.

THE TRANSFORMATION FROM CAR-DEPENDENT SPRAWLED URBANITY TO TRANSIT ORIENTED DEVELOPMENT (TOD)

The Qatari society needs to move from a car-based development to a TOD urban development approach. Our adopted future plans gradually encourage the needed transformation. These policies include; Vibrant Metro Stations, Accessible Public Transportation, Streets for People not Cars, Water Transportation and Connected Bike Routes. The aim is to establish a high quality and integrated public transport network that results in a modal shift from private motor vehicles to public transport across Qatar. Additionally, radial public transit corridors are proposed to reduce private motor vehicle usage and environmental costs and promote orbital routes to aid the creation of balanced growth.

Our comprehensive plan also encourages bicycle riding. The Qatar Bicycle Master Plan suggested the proposed a Greater Doha bikeway network. Three categories of routes were suggested; green (Bicycle Paths) for recreational, blue (Cycle Tracks) for major transportation and red (Bicycle Lanes) for local transportation (see map below).

However, succeeding in the proposed transportation mode change will take a lot of encouragement. The existing form of urbanism, which was produced during the availability of lucrative oil revenues, is predominantly car-oriented urbanism. The whole process of Doha's recent development was characterized by unlimited urban sprawl and the dominance of a single-family house as the only form of housing for Qatari families. These patterns of urban growth facilitated the unprecedented investment in roads network which can connect all such scattered urbanism. Hence, singles or families, locals or expatriates consider private vehicles as the only form of transportation.

Figure 10, 11: The Future Development of Qatar's Transport System is based on introducing public transportation as the new alternative to achieve urban connectivit

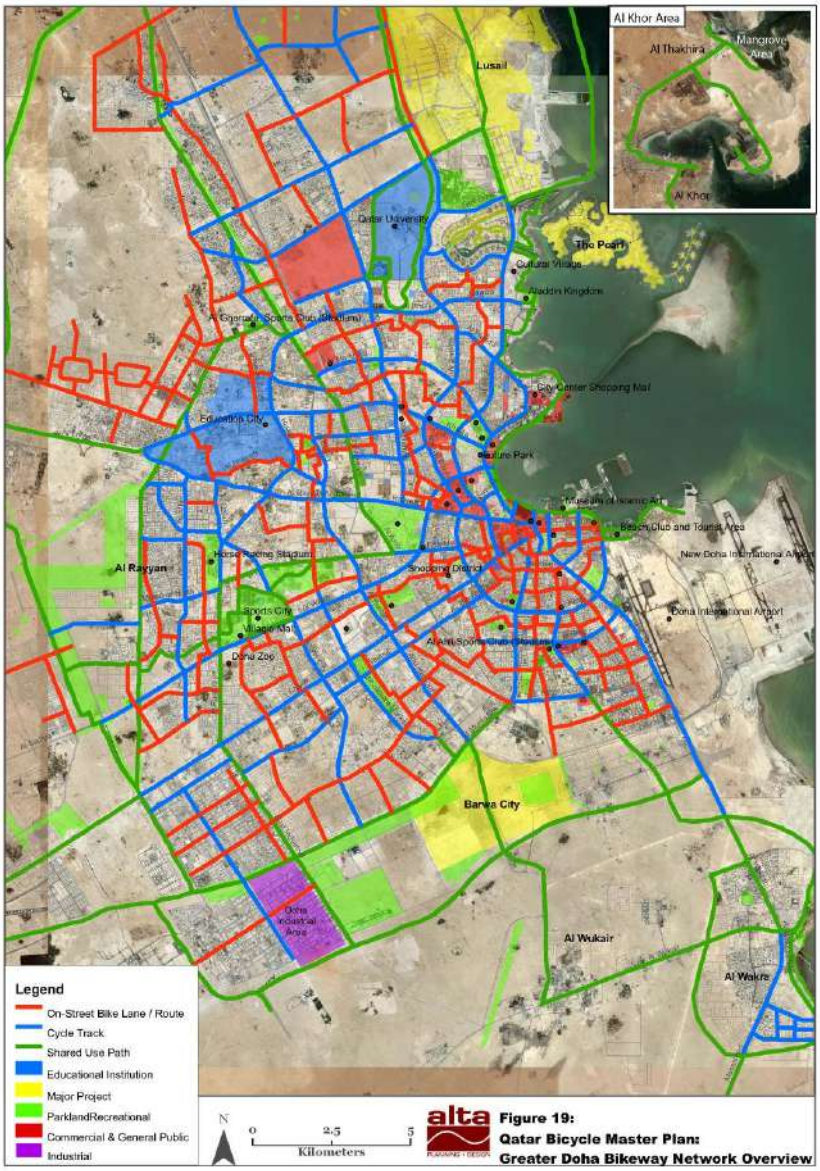


Figure 12: The Greater Doha Bicycle Network is based on three categories of Bicycle movement; Green: recreation, Blue: major street transportation and Red: local street transportation (Source: Ministry of Transportation)

While the local bus services company, Karwa, provides well-distributed routes all over the city but the availability of cars, the cheap gas, and the lack of positive culture of walkability means that people opt to use their cars in all their daily activities from going to work, dropping their kids at schools, buying groceries and recreation activities. More significantly is the social barrier towards public transportation as it becomes gradually associated with workers and low paid expatriates. Also, Qataris consider using public transportation, especially in the form of bus riding, as a social degradation and inappropriate behavior.

Figure 13: The relation between metro stations and mixed-use urban centres as a strategy to decentralize Doha and move towards small and compacted form of urbanity (Source: MME)

Figure 14: The post-oil urbanism suggests a paradigm shift towards walkability and transit-oriented development in Doha and hence Doha Metro is introduced as a main from of transportation in future Doha. (Source: MME)

With such background, the introduction of Doha's new metro will create a substantial change. The metro which is composed of four lines serving all of Doha's main employment destinations and connecting the city with the airport, universities, industrial area, cultural facilities, shopping centers and main residential areas. To encourage use by both locals and expatriate's particular effort were invested to create state of the art transportation experiences in the metro' stations, compartments and trains. The stations and trains are designed to accommodate the peculiarities of the cultural and social context of Qatar by providing privacy for families and women in designated sections of the trains.

ENCOURAGING WALKABILITY AND LIVABILITY

Walkability and Livability are two other principal values are being introduced to the city of Doha. Both values are interrelated and substantially support each other. To enhance livability, an emphasize on the social life in public space, through walking and design attention to public spaces, is becoming a priority. Public spaces -particularly lively streets and squares- among buildings enhance livability and help to animate the neighborhood. Open spaces have the role to make people passing near or stopping by and feel them welcome. Introducing the culture of walkability in Doha and doing the needed steps to have a truly walkable community, have required several actions. Among these actions are efforts to: encouraging people to walk in the city; provision of positive infrastructure which includes wide vibrant sidewalks, nodes of commercial and recreational side activities, footpaths, safe pedestrian crossings; the implementation of exciting and informative signage, creative street furniture and more importantly shaded areas resulted from landscape features like tress or artificial elements like wooden or textile pergolas.

Figure 15, 16: Suggested strategies to deal with existing road networks include rapid buses, pedestrian crossing, bicycle paths and vibrant sidewalks (Source: MME)

Figure 17, 18: Creating Pedestrian friendly environments to encourage the shift towards walkability and vibrant public spaces (Source: Msherib Properties)

Figure 19: The different levels of connectivity which allow for an integrated and not fragmented urbanism

The urban planning department in Qatar (UPD) is conducting several projects and studies to achieve these aspirations including the National Strategy for open and recreational Spaces, The National Urban Design Compendium, Streetscape Design Guidelines and National Landscape Guidelines for Vibrant Streets.

Figure 20, 21: The new cultural centres help Doha in establishing a new form of Knowledge-based Urban Development (KBUD); the case of Museum of Islamic Art and National Museum of Qatar

PROGRESS TO DATE

In a post carbon paradigm, Qatar's identity is articulated around the notions of knowledge, research and education. Qatar National Vision 2030 is a development strategy which outlines how Qatar will use the vast revenues from its hydrocarbon resources to transform itself into a modern knowledge-based economy. Within this understanding, the Doha's future was envisioned as a manifestation of the country's future vison. Hence the following actions were adhered: Engaging people in knowledge experiences, constructing an Urban Campus; a creative and inspiring urbanity and Establishing a Network of Museums, Galleries and Cultural Centers.

Currently, Doha is considered by many indicators as the most advanced city within the Middle East to adopt knowledge economy as a conceptual base for its 2030 vision. Qatar did a radical transformation to go beyond the typical image of

a Gulf city relaying on presumably endless assets of oil and gas. A move towards being a regional center for education, knowledge and culture is the new aspired sense of identity for the Gulf State. A major investment in knowledge-based urban development characterizes major projects in the country during the last five years[17]. This new identity of Qatar paved the way for a new paradigm in Doha's urbanity which can be best described as the Knowledge-based urban Development Paradigm. Qatar has become a showplace for renowned architects, several U.S. universities have established campuses there, and it will host the FIFA World Cup in 2022. The quantity and the quality of architectural and urban projects which will be added to the city's urbanity to facilitate hosting the 2022 FIFA World Cup would make Doha a unique world destination. Significantly, 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.

THE SOCIAL COHESION AS A CATALYST FOR CITY RESILIENCE

INCLUSIVE URBANISM: CITIES FOR ALL

Many scholars in the field of urbanism have highlighted the importance of the human dimension in urbanism[18] and offered insights into systematically studying environmental behavior[19] through international studies in public life[20]. Studying public life offers immense insights to urban environment professionals by bringing users back into focus when they may be overlooked in design[21]. The expected outcomes could play an essential role in achieving the needs of the visitors who are considered as tourists that would need to spend half of their day to explore the city. Baldwin and King (2018) emphasize that strong social networks and social cohesion can be more important for a community's resilience than the actual physical structures of a city. That what was exactly noticed in Doha after the activation of the blockade. More significantly, urban planning and design support these critical collective social strengths by stressing the necessity of creative spaces for all and enhance the inclusivity of the city's urbanity. In the process of realizing the goal of both sustainable and resilient development, we should see the dominant role of social factors such as urban governance in the process of urban adjustment and adaptation. The social aspect will be also addressed in the paper as Doha, similar to most Gulf cities, has a much-diversified population coming from all corners of the world.

Figure 22: The city spaces are planned to accommodate the different social groups and emphasize the social cohesion

The urban future of Doha is planned to encourage inclusivity and transcend the concept of gated development and isolated urbanism. Hence, the social and cultural diversity was perceived as an asset. Planning Places for People, The Heart of the City is for All and Inclusivity as a Fundamental Development Base for the Whole city. More significantly, the city is taking a number of measures to create better connections between expatriates and the city significantly sense of belonging and ownership which would radically help in inspiring the city's overall population of locals and expatriated to better defend the city and take a solidifying position towards realizing its future aspirations.

CONCLUSIONS

Doha's readiness for the post-oil paradigm can be perceived on three levels; strategically, urban planning and architecture. Doha is moving strategically towards a development vison articulated around the concept of a knowledge and creative economy. On an urban planning level, Doha is moving towards a compacted model of urbanism by relying on multicenter-city development to stop the unsustainable sprawl, which was the dominating pattern in the last three decades. In addition, the city is activating a solid transit-oriented development approach to consider public transportation as the main mode of transportation within the city. Finally, on the architectural level, both Qatar Green Building

Council (QGBC) and Gulf Organization for Research and Development (GORD) were established to produce, develop and monitor the implementation of green and sustainable architecture principles in the new buildings designed and built in Doha and all Qatari cities.

Our plans also call for a balanced social inclusion between major population sectors; the local citizens and working expatriates to create a sense of belonging, appreciation and recognition of mutual value and distinct roles of the country's rich human mosaic. Part of the city' success story stems from the fact that social cohesion was considered as a pillar in enhancing the resilience capabilities of the city. It describes and illustrates the ideas, tools, and tactics being used to help engaged citizens, civic leaders, and urban professionals to work together to build viable urban society.

Also, adopting the principles of sustainability and environmental compatibility as the main pillars of development for Qatar National Master Plan (QNMP). ONMP is based on a set of sustainable urban development values like transit-oriented development (TOD), sustainable urbanization, social balance and the preservation of the historical and cultural identity. More significantly, dealing schematically and planner with major cities especially Doha as a framework for knowledge-based urban development through a network of research centers, universities, museums and the knowledge forums and make it available to all sectors of society in a way which would stimulate citizen and resident alike in a balanced manner.

The Future plans of Doha as described and observing its comprehensive impact on the city dwellers and visitors, cemented a paradigm shift in Doha's urbanity. The shift is based on the success of the project to introduce qualitative changes and new perceptions about the role of the built environment, historical urban areas, mixed use development, car-free planning and knowledge based urban development. The Planning of future Doha manages to adopt comprehensive inclusivity, which made the city for all a reality in all of its connected spaces. The project successfully and sensitively activated the heart of Doha and connected its veins. It will continue as a success story, which resulted from adopting alternative planning approach, considering the environment, and more importantly allowing local communities and stakeholders to participate and gain an endless ownership.

Endnotes

1 Jha and al., 2013
2 Leichenko, 2011
3 Hence, this paper calls for a need to revisit the concept and its utility to the prosperity of cities.
4 Timon, 2014
5 Alraouf, 2018
6 Qatar Statistics Authority, 2015
7 QSA, 2015
8 World Bank, 2013
9 Almfraji, Almsafir, &Yao 2014
10 Phelps, 2013
11 Emir Decree No. 44 (2008)
12 J. Gremm et al., Transitioning Towards a Knowledge Society, 2018
13 According to Stephenson and Al-Hamarneh (2017), despite the fact that Qatar has been rapidly modernized, it has not enough developed to be considered an international tourism destination. Nevertheless, hosting mega events like the 2022 FIFA World Cup will motivate Qatar to work on developing different tourism types such as ecotourism. For this reason, Qatar has established and developed different ambitious goals of tourism development by adopting a strategy called Qatar National Tourism Sector Strategy 2030 in the year 2014.
14 The term Dohaization was coined and used for the first time in Gulf Research Meeting at Cambridge and later published in Alraouf, Ali. 2016. "Dohaization": An Emerging Interface between Knowledge, Creativity, and Gulf Urbanity. Pp.: 47-68. In Katodrytis, G. and Syed, S. Gulf Cities as Interfaces. Cambridge: Gulf Research Centre Cambridge.
15 Framherz, 2012; Jodido, 2014; Alraouf, 2016
16 QNDF, 2016 P.40
17 Alraouf, 2008; 2014
18 Jacobs, 1961; Gehl, 2013
19 Zeisel 2006
20 Whyte, 1980; Gehl, 2013
21 Gehl, 2013

References

Alraouf , Ali A. 2018. Knowledge-Based Urban Development in the Middle East. New York: IGI Global Publishing.
Alraouf, Ali. 2017. Interrogating Qatar's Urbanity as a Catalyst for Building Knowledge-Based Societies and Economies. In Bertelsen, Rasmus Gjedss; Noori, Neema; Rickli, Jean-Marc (eds.) Strategies Of Knowledge Transfer For Economic Diversification In The Arab States Of The Gulf. Pp: 53 -66. London: Gerlach Press.
Alraouf, Ali. 2016A. "Dohaization": An Emerging Interface between Knowledge, Creativity, and Gulf Urbanity. Pp.: 47-68. In Katodrytis, George and Syed, Sharmeen. Gulf Cities as Interfaces. Cambridge: Gulf Research Centre Cambridge.
Alraouf, Ali. 2016B. Museums as a Catalyst for a New Urban and Cultural Identity in Qatar Interrogating the Case of Museum of Islamic Art. In Museums in Arabia: Transnational Practices and Regional Processes.) . Exell, Karen and Wakefield, Sarina (eds.) (Ashgate: UK, 2016).
Alraouf, A. 2016. One Nation, One Myth and Two Museums Heritage, Architecture and Culture as Tools for Assembling Identity in Qatar. Representing the Nation: Heritage, Museums, National Narratives, and Identity in the Arab Gulf States, Publisher: Routledge, Editors: Pamela Erskine-Loftus, pp.79- 94.
Alraouf, A. 2015. Towards a holistic approach to sustainability: Heritage, architecture and culture as tools for assembling identity in Qatar. DOI: 10.5339/qproc.2015.qgbc.30.
Alraouf, Ali. 2012. A Tale of Two Souqs. In or Out of Place: The Paradox of Gulf Urban Diversity. Open House International Journal. Volume 37, Issue No. 2, June 2012. Pp:72-81.
Alraouf, Ali. 2008. Emerging Middle Eastern knowledge cities: the unfolding story. In Yigitcaular, T., and Koray,V., eds.

Knowledge Based Urban Development: Planning and Application in the Information Era. IGI Global Publishing.
Baldwin, Cathy and King, Robin (2018). Social Sustainability, Climate Resilience and Community-Based Urban Development: What About the People? London and New York: Routledge.
Campbell, Kelvin. 2018. ***Making Massive Small Change. Building the Urban Society we want. London: Chelsea Green Publishing.***
Coaffee, Jon and Lee, Peter. (2017). Urban Resilience: Planning for Risk, Crisis and Uncertainty. Palgrave Macmillan.
Cooke, Philip and Lazzeretti , Luciana (Eds.). 2018. The Role of Art and Culture for Regional and Urban Resilience 1st Edition. London and NY: Routledge.
Florida, R. (2012). ***The Rise of the Creative Class: Revisited***. New York, NY: Basic Books.
Fromherz, A., 2012. ***Qatar: a Modern History.*** Washington, D.C.: Georgetown University Press.
Fromherz, A. J. 2017. Qatar. The Rise to Power and Influence. London, UK, New York, NY: I. B. Tauris.
Jacobs, J. 1961. ***The Death and Life of Great American Cities.*** New York: Random House.
Jha, Abhas K.; Miner, Todd W. and Stanton-Geddes, Zuzana (eds.). (2013). Building Urban Resilience: Principles, Tools, and Practice. Washington D.D.: World Bank Publications.
Gehl, J. 2013. ***Cities for People.*** Washington, DC: Island Press.
Gray, Matthew. 2013. Qatar: Politics and the Challenges of Development. Boulder, CO: Lynne Rienner Publishers.
Kamrava, Mehran. 2013. Qatar: Small State, Big Politics. New York: Cornell University Press.
Meerow, Sara, Newell, Joshua P and Stults, Melissa. 2016. Defining urban resilience: A review. Landscape and Urban Planning. Volume 147, March 2016, Pages 38-49.
Pizzo, Barbara. (2015). Problematizing resilience: Implications for planning theory and practice. Cities, Volume 43, March 2015, Pages 133-140.
Qatar National Development Framework (QNDF). 2016. The Ministry of Municipality and Environment.
QSDP. (2011) (Qatar General Secretariat of Development Planning) National Development Strategy 2011–2016. Gulf Publishing and Printing Company, Doha, Qatar.
Qatar Statistics Authority. (2015). QSA Population. Retrieved February 22, 2015, from http://www.qsa.gov.qa/eng/populationstructure.htm
Roberts, David B. 2015. Qatar: Securing the Global Ambitions of a City-state. London: C Hurst & Co Publishers Ltd .
Timon, M. (2014).The rise of resilience: Linking resilience and sustainability in city planning. Urban ecology at The New School in New York City, New York (2014).
Gremm, J., Barth, J., Fietkiewicz, K. J., and Stock, W. G. 2018. Transitioning Towards a Knowledge Society. Qatar as a Case Study. Cham, CH: Springer Nature.

JAKARTA METROPOLITAN AREA, A PLANNED METROPOLITAN URBAN SPRAWL

BAYU WIRAWAN

JAKARTA METROPOLITAN AREA (JMA) / JABODETABEK

Developed as a center of Dutch settlement four centuries ago, Jakarta nowadays has flourished into the largest metropolitan area in South East Asia. Known locally as *Jabodetabek*, an acronym for the municipals that form the metropolitan (Jakarta - Bogor - Depok - Tangerang - Bekasi), JMA has an area of 6,800 km2 (almost the size of Randstad in the Netherlands) and is inhabited by 32 million people (World Bank, 2017). In the last half century, JMA experienced a drastic population growth. Its population increased by 11 million people just between year 2001-2017 (by comparison, Belgium has a total of 11,5 million people).

JMA is a multi-jurisdiction area that includes the Special Capital Region of Jakarta (DKI Jakarta and furthermore mentioned as Jakarta City) as a special city-province, two provinces and nine local government units at various levels. The provinces are West Java and Banten. Cities and other government units include Jakarta City and other five cities (known locally as *kota*), namely Bogor, Depok, Bekasi, Tangerang, and Tangerang Selatan; and three regencies (kabupaten) namely Bogor, Tangerang, and Bekasi. Based on this administrative and spatial location, Cox (2011) divides JMA into three layers, they are the urban core, the inner suburbs, and the outer suburbs/exurbs. The core layer is Jakarta City; the inner suburbs consists of Bogor, Depok, Bekasi, Tangerang, and Tangerang Selatan cities; and the outer suburbs/exurbs are the surrounding regencies.

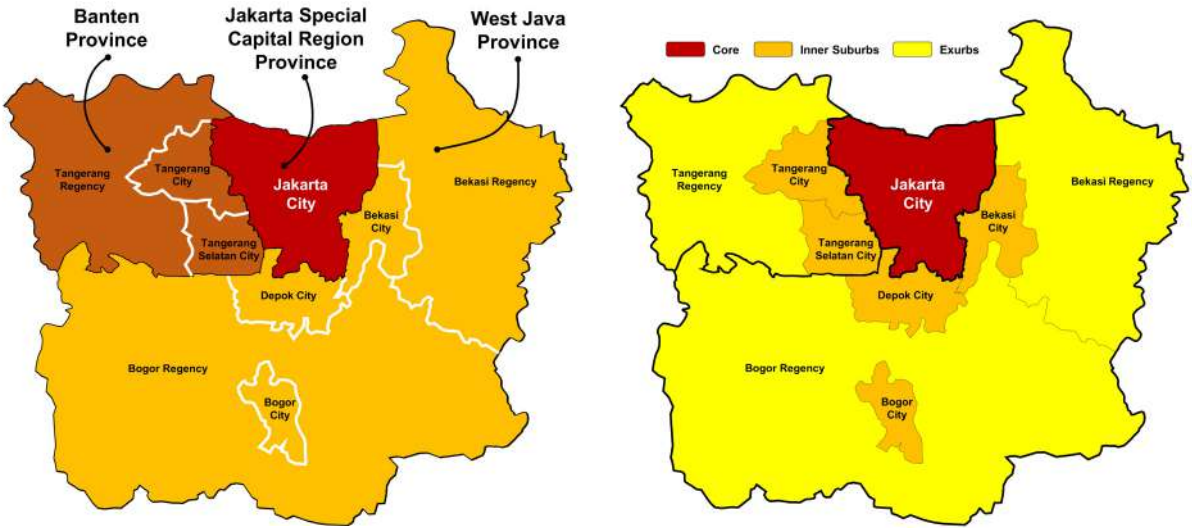


Figure 1: JMA by administrative jurisdiction (left); JMA by urban layer (right)

To understand why JMA experienced rapid urbanization, we need to know the importance of JMA for Indonesia. First, JMA is the national capital and the national political center of Indonesia, henceforth most of the national agencies are in JMA. Next, JMA serves as the national economic center. Between the years 2012-2014, almost a quarter of Indonesia's GDP came from businesses located in JMA. It is reported that 85% of Indonesia financial decisions and around 60% of national import and export activities happened in Jakarta (Government of Indonesia, 2011). Last, JMA has abundant large infrastructure, such as the busiest international airport (Soekarno Hatta International Airport), the biggest seaport (Tanjung Priok Port), and the longest interconnecting toll road in single metropolitan. It is the only metropolitan with an underground mass rapid transportation combined with urban commuter train line. It also has the biggest bus rapid transportation networks, the largest industrial areas, and so forth. All these reasons created a pull and push factor for JMA rapid urbanization.

Rapid Urbanization in JMA also shaped its spatial landscape. To accommodate this rapid urbanization, Jakarta quickly expanded to provide homes and place of work for the people. In the process, JMA experienced an urban sprawl situation despite many attempts by Indonesian authority to manage its urban development.

This article attempts to show how and why attempts to manage urban development failed in Jakarta and how those attempts became a driving factor for more urban sprawl for JMA.

PLANNING IN JAKARTA METROPOLITAN AREA

Attempts by authority to managed JMA development were embodied into several spatial plans implemented by the state government. In general, planning regimes in Indonesia are characterized into two eras. During the centralized prior to year 2000, the planning system was led by the state. In this era, local governments were required to follow state direction as local autonomy was relatively restricted. The next era began at the year 2000 and is known as the decentralized era. Preceded by a 1999 financial crisis followed by a government crisis, state government reformed its policy on local government and transitioned into a decentralized system. With this new approach, state government recognizing more local participation, accountability, and local needs in spatial plans (Rukmana, 2015). These two types of state planning also influenced JMA spatial planning in the last six decades.

The first spatial plan for JMA was coined in 1966 and known as *Rentjana Regional Metropolitan Djakarta* (Jakarta Metropolitan Regional Plan). This plan was derived from the 1965's Jakarta City Masterplan and assigned some areas around Jakarta (specifically in the southern part) as new growth centers, connected with a network of highways. The extent of this plan was based on watersheds in the west and east of Jakarta City and mountain range in the south which expanded Jakarta City up to a 65 kilometres radius (Silver, 2008). The concept was further developed into the Policy Concept of Planning Framework for Jakarta Metropolitan Region which covers the areas of City of Jakarta, City of Bogor, Regency of Bogor, Regency of Tangerang and Regency of Bekasi, thus named as Jabotabek in 70s. Furthermore, this regional policy stipulated in a Presidential Instruction in 1976, which made the plan official government policy.

The JMA plan was revised in 1983 with the Jabotabek Structure Plan, which proposed the development of small towns as urban centers around Jakarta. JMA was divided into two groups of areas. The inner ring area group consisted of cities within a radius of 15-20 km around the center of Jakarta City and was estimated to include 75% of movements towards Jakarta City. The second group was the outer ring area, which was residential centers, approximately 30-40 km from downtown Jakarta and generating 25% of shuttle movements (Soegijoko, 2016). This plan never been officially recognized because the determination process through the Presidential Regulation was never issued.

Rather than managing at the metropolitan level, state government focused on managing local level development by created two Presidential Decrees, first about spatial plan and development control for the Puncak Tourism Area and the Jakarta-Bogor-Puncak-Cianjur Corridor (1983) and second about the Puncak Area Spatial Plan (1985).

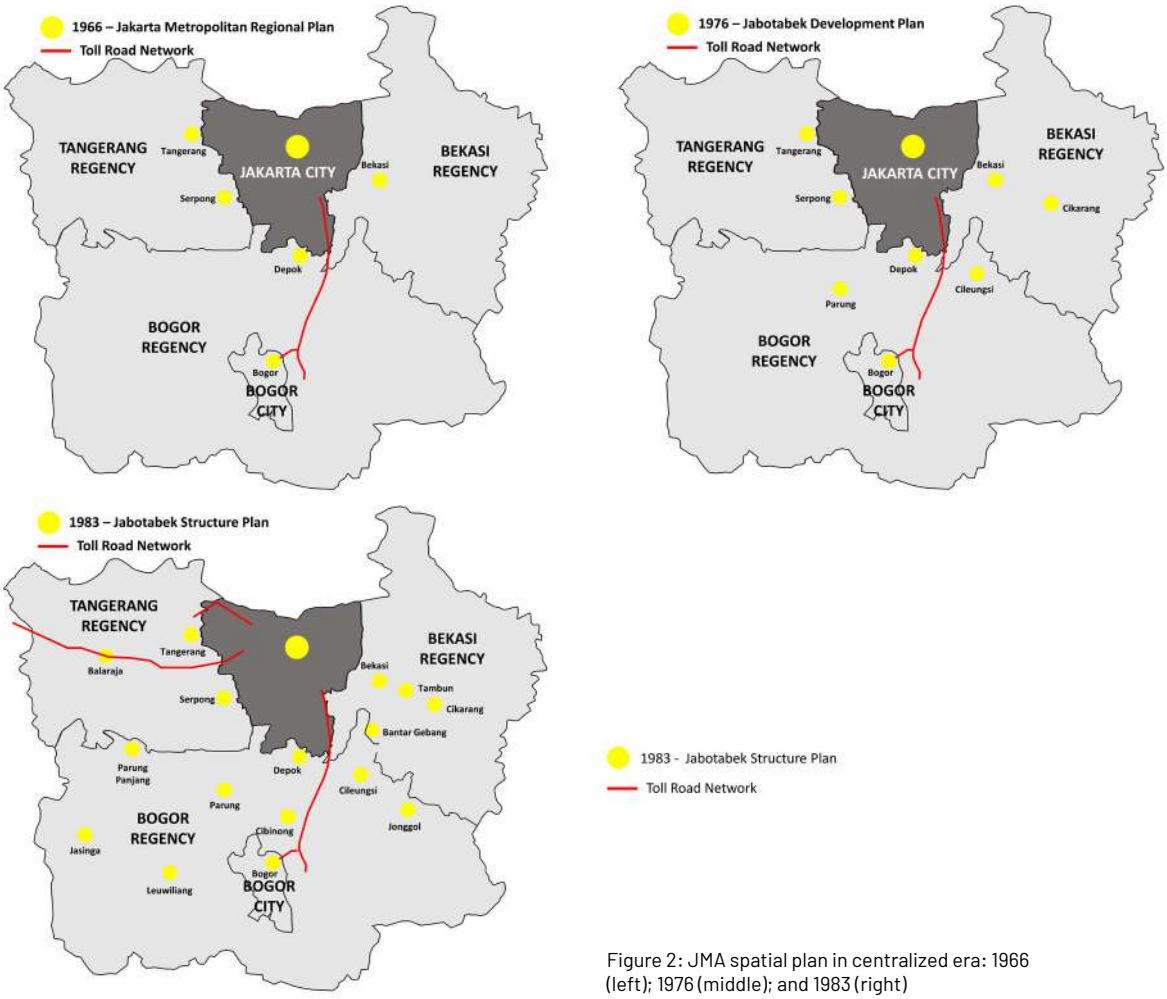


Figure 2: JMA spatial plan in centralized era: 1966 (left); 1976 (middle); and 1983 (right)

With the issuance in the 1992 of Indonesia's first spatial planning law, local government (city and regency) were mandated to develop their own local spatial plan with the added requirement that these plans insured environment protection. Despite each of five municipals (Jakarta, Bogor City, Bogor, Tangerang and Bekasi) having their own spatial plans, pressure both from urban area expansion and population migration, combined with the need for economic growth, made this plan ineffective. In addition, during the 1990's three new municipals were established in JMA. Tangerang City was established in 1993 proliferated from Tangerang Regency, then Bekasi City proliferated from the Bekasi Regency in 1997, followed by Depok City proliferated from the Bogor Regency in 1999[1]. The official establishment of these cities indicates how urban expansion was spilling over everywhere in Jakarta City.

Urban expansion in the southern part of the metro area also created environmental problem for Jakarta City. Despite having both the 1983 and 1985 Presidential Decree related to development control, frequent development on the upstream area of Ciliwung Watershed (located in the Bogor and Tangerang areas) resulted a series of impacts culminating in 1996 and 1997 as great floods in Jakarta City. State government reacted to this situation by creating a development strategy for southern Jakarta that included Tangerang, Bogor and Cianjur Regency. This plan then stipulated into a Presidential Decree and was known as the Bogor-Puncak-Cianjur (*Bopuncur*) Spatial Plan in 1999. The Bopuncur Spatial plan focused on water and land protection in the Ciliwung Watershed upstream areas and designated this area for very low-density development areas.

By 1999, Indonesia changed its government style into a decentralized system. With decentralization, local government had more autonomy to arrange its land use based on its own spatial plan. Between 2000-2005, all local governments developed new spatial plans, however they were fragmented and ignored a metropolitan development concept.

Realized the fragmented nature of local plans, the state government then created a metropolitan development guidance for JMA and the Cianjur Regency, due its function as the upstream area. This metropolitan plan, later stipulated in a Presidential Regulation in 2008, was known as the *Jabodetabekpunjur* Spatial Plan. The plan was a modification of the 1983 Structure Plan that incorporated recent JMA development. The main idea was to develop a new highway (called Jakarta Outer Ring Road 2/JORR 2) access which connected ten urban growth centers outside of Jakarta City. These new urban centers were expected to lessen Jakarta City growth burden. The plan spatially designated JMA into protected area (7.95%); buffer areas (1.12%); arable areas for built up, farm, production forest areas (90.51%); and water body (0.42%).

Indonesia decentralized spatial planning approach was strengthened with the 2007 spatial management law. This new law again mandated that each municipal revise their local spatial plan. However, this new law also encouraged local government to understand the on-going urban areas expansion phenomenon and to take into consideration neighboring municipals spatial plan. Most of local governments amended their spatial plan in 2013. One interesting point in these new local spatial plans was the recognition of the need to allocate more developable area in the spatial plan[2]. It also mandated that local plans consider environment sustainability and the state government 2008 Jabodetabekpunjur spatial plan.

The revised 2015 new plans reduced the number of urban growth centers

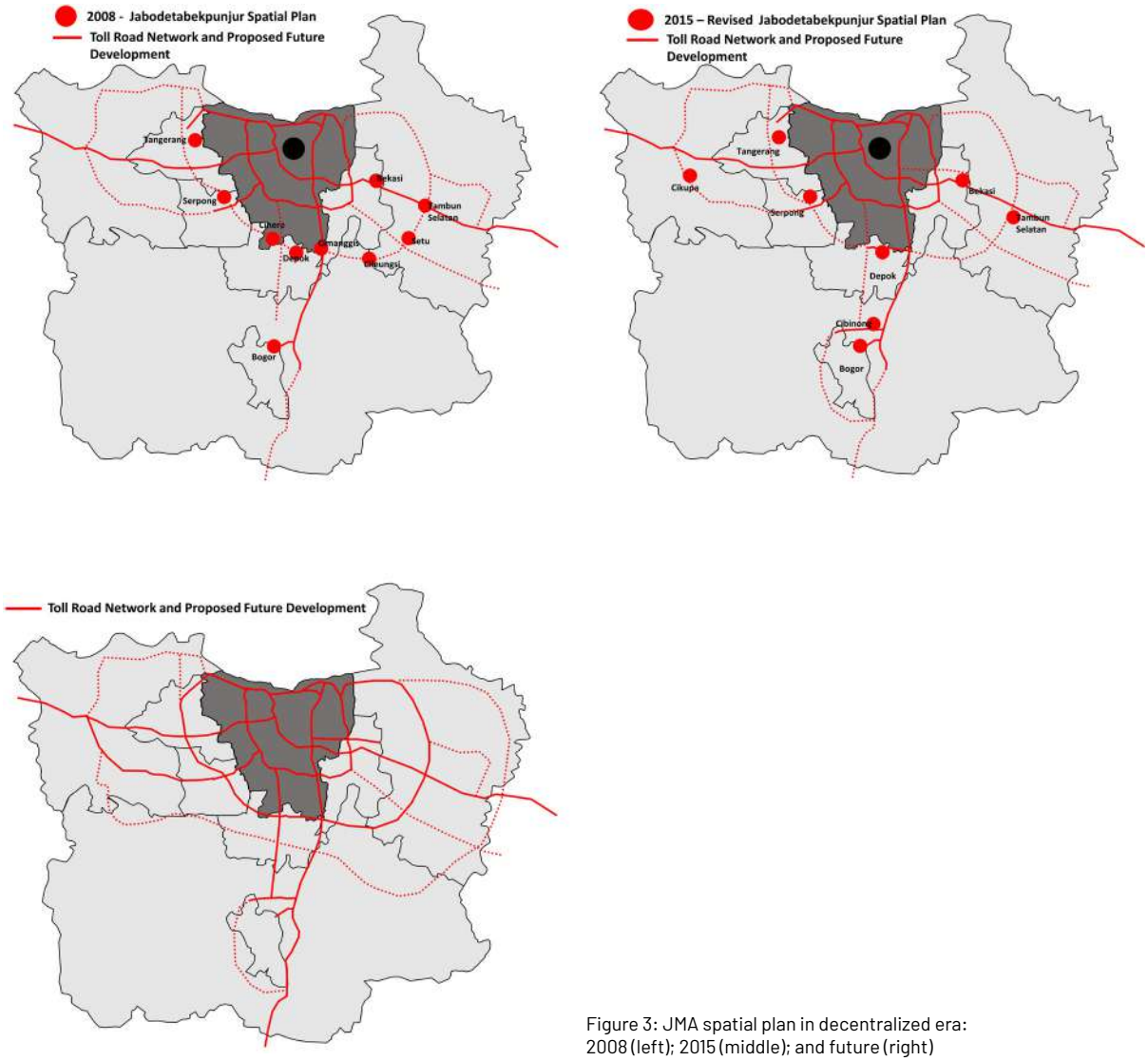


Figure 3: JMA spatial plan in decentralized era: 2008 (left); 2015 (middle); and future (right)

and allocated new urban growth to centers of each municipal. Hence there are eight urban growth centers outside Jakarta City in the new spatial plan. This new spatial also added several new toll road roads that create new access including the enhanced Bogor City toll road. These revised spatial plans have not been stipulated yet, as there already is new discourse to added new layer of toll roads in JMA (called by JORR 3).

URBAN EXPANSIONS IN JMA

Despite all the spatial planning, unplanned urban expansion characterized JMA growth in the last half century. A study by Arifien (2012) reports that until year 1972 urban built up areas only accounted for 153 kilometers square or 2.25% of JMA areas. These developments were largely concentrated within 10 kilometers of Jakarta City center and some areas around Bogor City Center. During the next decade, Jakarta City expanded, especially towards to the southern area, and extended around 15 kilometers from Jakarta City Center. Bogor City also expanded around 2 kilometers from the Bogor city center. At the same time frame, several urban built areas emerged in Tangerang areas which then became the center of Tangerang City. The completion of the Jakarta-Bogor toll road in 1978 and the Jakarta-Sunda Straits toll road (which transversed through Tangerang) connected these areas towards Jakarta City and became a pushed factor for urban development.

Between 1983 and 1992 JMA started to experience significant urban area expansion. The JMA urban built up areas is expanded five-fold into 762 kilometers square or 11.25% in 1992 (Arifien, 2012). In Jakarta City only, the need to accommodate doubled as the population rose from around 4.5 million into 7.3 million between 1972-1992 (Winarso, et al, 2015). This population growth made almost all part of Jakarta City a built-up area. A study by Armanto (2009) showed that by 1990 almost 80% Jakarta City was built up. Half of Bogor City also transformed into built-up areas by 1992. Urban expansion spilling over from Jakarta City largely affected some parts of currently Tangerang City in the west and Bekasi City in the east. Large development on the eastern part of Jakarta happened due to the completion of Jakarta-Cikampek toll road, which opened access to the eastern part of Jakarta City towards Bekasi areas.

The period 1992 to 2005 marked the era of massive urban expansion in JMA. Due to the scarce of land in Jakarta City, most of this new urban development spilled over the surrounding municipals. Absent of sound development controls (Rukmana, 2015) combined with private led property development (Winarso, et al, 2015) and land banking by private developer increased land price in Jakarta City (interview with former Head of Jakarta City Planning Agency, 2019) new development sprawled outside Jakarta City. Almost all inner suburbs around Jakarta, including Bogor City and the new established cities such as Tangerang City, Bekasi City, Depok City and later Tangerang Selatan City (in 2008), became built-up areas mostly to meet the housing needs of JMA. Massive urban expansion also happened in exurbs area, especially on the location with access to the toll road network. Many parts in Bogor, Bekasi and Tangerang Regency transformed

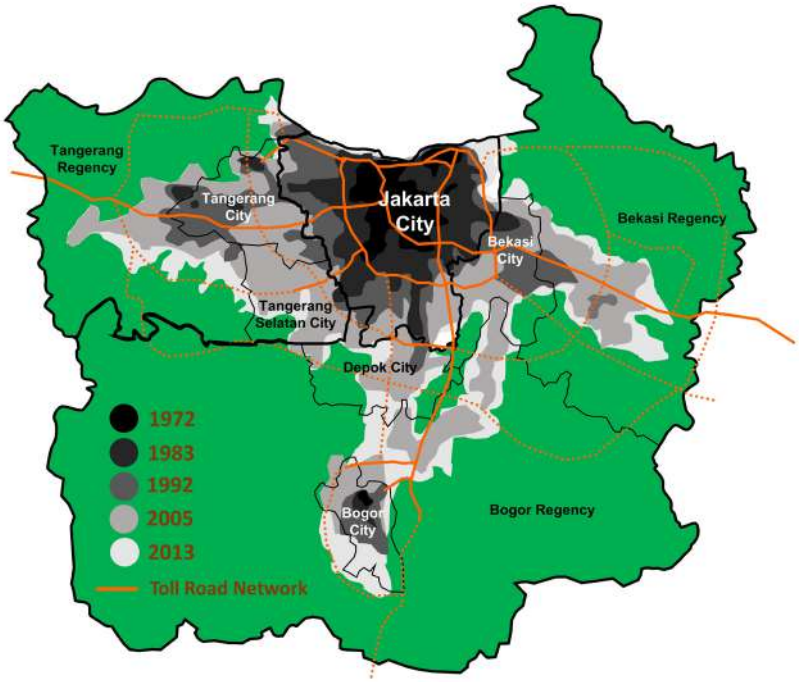


Figure 4: Dynamics of JMA urban expansion

into built-up areas, mostly for industrial areas. This situation was continued and 35.6% of JMA (2,420 kilometres square) became built-up areas by the year of 2009 (Arifien, 2012). It is estimated that by 2030, almost 4,000 kilometres square or more than half of JMA will become a built-up areas (URDI, 2019).

WHAT HAPPENED IN JMA

Sprawl in the JMA was the result of inconsistency in spatial plans, regional infrastructure development and massive migration to the Jakarta area. This situation has transformed the inner suburbs of JMA into massive continuous built up areas.

Early state-led planning was able to introduce new places to accommodate JMA growth. However, the private sector need to accommodate economic growth outstripped the ability of state efforts to controlled urban land use transformation. Further the enactment of decentralized planning proved not to be the remedy for sprawl. If anything, urban sprawl became worsened due to the fragmented local spatial plan. The latest spatial plan only focused on designated new urban growth

center and efforts to connect them with road networks. Discourse related to development control was not well covered in the latest spatial plan. Henceforth the spatial plan became more of the tool to accommodate growth and less concerned as a tool to control growth, especially in the prone areas.

Expansion of the toll road network also exacerbated JMA urban sprawl. The toll road network always had its special place in the spatial plan. Started in the latest 70's, toll road become the main backbone of urban mobility. We have shown that urban sprawl began mostly in the areas with toll road access. JMA needs to expand its toll networks but must combined them with better mobility strategies to ward off urban sprawl.

JMA attractiveness as a center of most everything in Indonesia makes it as a prime destination of national migration. In order to accommodate the resulting urbanization process, JMA needs to change its style of urban development. Urban development in JMA (and Indonesia) relies heavily on conventional development. The idea of compact urban areas development is relatively strange especially in the mind of local government. Some areas already tried to make use of compact development style however this only happened in the large private-led development areas accommodating only the richest who can afford this development. Meanwhile, compact development by the public sector is mostly located in the fringe area that do not have a good mobility access.

CONCLUDING REMARKS

Sprawl in JMA is organically induced by its own spatial plan. The designation of new urban center that have good toll road access, without restraining land consumption, will encourage more continuous urban sprawl in JMA along with its never-ending urbanization. This obesity needs to be stop through of a diet of land. Some keys aspect to this diet can be achieved through cessation of massive land expansion or prioritizing urban growth boundary in the spatial planning process.

Endnotes

1 The establishment of Depok City in 1999 also changed the Jabotabek accronym into Jabodetabek.

2 Interview between the author and some local government officials in 2016 concluded that local government felt that the 2008 Jabodetabekpunjur Spatial Plan were not enough to accommodate the need for municipals urban growth

References

Arifien, Y., 2012, Patterns of spatial transformation in the Jabodetabek region
spatial. PhD Dissertation. Bogor: Bogor Agricultural University

Armanto, D., 2009, Pattern of DKI Jakarta Land Cover Change 1960-2005 (in Indonesian). Undegraduate Thesis. Depok: University of Indonesia.

Cox, W., 2011, The evolving urban form: Jakarta (Jabotabek), Newgeography, 31 May

Government of Indonesia, 2011, The Masterplan for Acceleration and Expansion of Indonesia's Economic Development.

Rukmana, D., 2015, The Change and Transformation of Indonesian Spatial Planning after
Suharto's New Order Regime: The Case of the Jakarta Metropolitan Area. ***International Planning Studies***

Silver, C., 2008, Planning the megacity: Jakarta in the twentieth century. London and New York: Routledge

Soegijoko, B.T., 1996, Jabotabek and Globalization. In ***Emerging World Cities in Pacific Asia*** [Editor: Fu-chen Lo dan Yue-man Yeung]. United Nations University Press

URDI, 2019, Jakarta city expansion and water resource structure (in Indonesian). Presentation. In ***Jakarta Structure Resilience Discussion,*** held by IAP, March 21st.

Winarso, H., Hudalah, D., and Firman, T., 2015, Peri Urban transformation in the Jakarta metropolitan area. In ***Habitat International,*** Vol. 49, pp. 221-229.

World Bank, 2017, East Asia's changing urban landscape: measuring a decade of spatial growth (Vol. 2). Washington, DC: The World Bank.

INNOVATIVE TOOLS FOR MANAGING THE METROPOLIS

ERIC HUYBRECHTS

Dubai looking for a new metropolitan paradigm. Photo E. Huybrechts, 2018

THE AGE OF METROPOLIS

Today half of all urban dwellers live in one of the 1,200 cities with more than 500,000 inhabitants[1]. Every year, 20 cities are reaching the threshold of 500,000 inhabitants. Five hundred and eighty metropolises[2] of more than one million inhabitants accommodate 1,880 million inhabitants (42% of the world urban population) and will host 500 million more inhabitants by 2030. Thirty-three megapolises of more than 10 million inhabitants accommodate 12.6% of the world urban population. In 2030, it is expected that there will be 41 megapolises. Megalopolis or City regions are expanding along the Pearl river, the North-East USA, the European Blue banana, the Ganges river corridor, and the Tokyo/Osaka corridor with its population of more than 50 million inhabitants. City regions, megapolises and metropolises are the main features of the human settlements of the 21st century. We are facing the Metropolitan age[3].

The next decades will see large increase of urban population. The way they expand changes analytic categories: the urban and rural dichotomy doesn't work when regular seasonal population flows from rural to urban areas as workers transit each day from villages and scattered development around urban agglomerations to participate to the economic development of metropolises. The urban population spans municipal delineations to converge with functional and economic interests. As a result, the existing administrative systems don't fit with a permanent metropolitan expansion due to population and economic changes. As metropolitan areas are the engine of growth of the countries, their management become one of the main challenge of governments to foster socio-economic growth.

Metropolitan areas are the nodes of the globalization process of the economy. They concentrate headquarters of global firms, capital assets, highly educated people, industry, and innovation. They are also the main consumer and job markets. The four global metropolises, which contain most of the larger firm headquarters, are still leading the economic world (New York, Tokyo, Paris and London). But others are challenging their global position including Beijing, Boston, Chicago, Istanbul, Lagos, Los Angeles, Mexico City, Mumbai, New Delhi, Osaka, Shanghai, Singapore, Hong Kong, Sao Paolo or Seoul. Some of them have a GDP higher than many countries[4]. A global system of metropolis occurs. Networks of metropolises are active for the recognition of their concerns[5].

The current urbanization pattern generates new social, economic and political challenges and has impacts on natural resources, natural risks and climate change. New concepts are necessary for managing their development. A wider approach based on a territorial concept is necessary. An interdependent operat-

Figure 1: Riyadh, the endless city. Photo E. Huybrechts, 2018

ing system of governance, infrastructure, land use, economic and socio-cultural systems should be aligned to support a transformative shift to territorial development, a multilevel government and actor approaches. It should be based on partnerships, a more decentralized and participatory shape, with the support of national and regional governments. Cooperation, inter relations, integration, territorial cohesion are key concepts to transform the governance system previously based on a top-down approach. The challenge is huge given the resistance of traditional patterns of governments.

The effect of the financialization of the economy is more prominent in metropolitan areas. Large investments, supported by finance assets, are made in city centers, central business districts, gated communities, city water fronts and new towns. These investments can be more optimistic than warranted by the local real estate markets. The result is an over-speculation, sometimes without relation to the real needs for employments and housing. Such specu-

The Montreal Declaration of Metropolis Association emphasized the need to:

- provide a clear legal and institutional framework for metropolitan governance based on the principles of democracy, local autonomy and subsidiarity;
- promote a new partnership with other levels of government to strengthen metropolitan governance mechanisms and implement financing mechanisms adapted to metropolitan challenges;
- develop integrated participatory planning to promote compact and mixed use, ensure sustainable mobility and environmental sustainability to fight climate change and ensure resilience;
- promote inclusive policies for housing, social services, gender equality and cultural heritage, with the aim of creating a healthy environment for all.

lation increases the prices of the land and real estate, evicting inhabitants from well-equipped central areas to sub-equipped suburbs without jobs. One of the main challenges of the metropolises should be to better balance the economic growth efficiency with social and spatial inclusiveness, to achieve resilience during socio-economic and environmental crisis. Tools should be adapted to regulate land and real estate markets to achieve metropolitan affordability. Several such tools exist [6], but they don't tackle the structural reasons for the effect of the financialization of cities economy.

Metropolitan areas are facing huge challenges. Their position in the international competition should be supported through high quality of utilities and facilities. To provide these requires huge investments and the capacity to coordinate large urban and infrastructure projects in dense areas with conflictual interests on land, accessibility, quality of life. These important projects cannot be achieved by fragmented local authorities. Their costs and size require stabile institutions that supersede the mandates of elected representatives. Also, national governments generally have not been able to manage these complex projects and provide adequate local representations. Specific governance should intertwine local, regional and national government, and representative of the civil society and the private sector.

The complexity of the metropolitan areas requires specific governance systems that address different areas including economic development, water management, mobility, real estate markets, flooding or energy. For example, water resource management which cover large water basin to regulate pollution, water provision and manage flooding would be different than the 'urban functional areas' based on an economic and mobility approach, such as defined by the Organization for Economic Co-operation and Development (OECD). Other sectors as sewage or energy also cover different areas. Managing metropolitan areas

should cross different sectors with their related scales and governance systems.

So, the question becomes 'what governance system to establish for managing metropolitan areas'? What process for building the metropolitan governance? How to manage changes due to metropolitan expansion, institutional reforms and new risks facing climate change, socio-economic crisis and destabilization of the international relations? That are the main challenges for managing metropolitan areas in an efficient and representative manner.

NEW CHALLENGES FOR PLANNING

The management of the large scale of cities is a main challenge for city and regional planners. The content of the planning documents cannot be the same as the traditional 'detailed development control regulations' or 'master plans'. The role of Metropolitan planning becomes more strategic, devoted to providing a vision to a large array of actors, while city planning is devoted to more closely defining development and guiding its implementation. City development is mainly financed by the private sector, but a strong relationship should be shared between public administrations at the different tier levels, the private sector and the citizens to build a common vision for future developments. Strategic documents covering different scales should take into consideration the subsidiarity principle, the share of competencies between the different levels. Therefore, the content of the city strategic documents should be adapted to each legal, administrative and socio-economic context. When decentralization occurs, the tool for metropolitan planning should be strongly revised.

Climate change triggers a strong change in planning concepts. The reduction of GHS[7] emission induces an opposite approach regarding mobility in cities. From approaches emphasizing larger capacity for speed and access to new urbanization, the dominant new concept is less mobility but with more accessibility near and inside of existing urbanization. Urban renewal is the top priority when fighting urban sprawl. Urban mix and social mix are key objectives instead of separated zoning. Green and Blue grids are reaching high priority for managing flooding and heat waves. The Compact city concept requires new tools and process to focus on urban renewal with the urban owners and the citizens, fostering more participation. Tactical urbanism is one of the tools fostering urban renewal based on culture, recreational activities and a bottom-up approach. The way to re-urbanize needs new processes.

Disruptive technologies facilitate behavior changes. E-shopping changes the logistic system inside cities and suburbs, increasing the need for mobility of goods inside the cities, and the reconsideration of the management of shop-

Figure 2: Paris, the Compact city . Photo: E. Huybrechts, 2018

ping malls. Autonomous cars are expected to make public transportation more flexible in the cities and then reduce the need for car ownership in the suburbs, offering new opportunities for reshaping public spaces and changing standards for designing the public realm. Smart grids are expected to optimize utility management. E-learning will affect the size of universities and their correlated mobility. New relationships will be established between citizens and their elected representatives, and the public administration, easing participation process and access to knowledge. The public debate will change with better informed citizens.

Informality will increase, despite the international agenda[8] regarding urban and territorial planning, because of the low capacity of planning to propose affordable access to the city. This will be especially true for a large part of the urban dwellers in developing countries[9]. The fastest urban development in the next decades will occur in South Asian and Sub Saharan African countries where institutional and financial capacities remain weak and the population poor. Few planners are working on new planning tools to make affordable cities in developing countries. Instead they are repeating the concepts devoted to real estate

speculation when the present needs should focus on incremental urbanism.

Urban renewal will become more important due to climate changes that increase disasters, financialization of the economy that generates economic bubbles and global economic crisis, and destabilization of the international order that will generates conflicts. Planning is a tool for rebuilding social links and institutions after crisis and should take a stronger position in these reconstruction processes[10]. New tools to position planning in the reconstruction of metropolitan areas should be invented.

MANAGING THE METROPOLIS

Managing metropolitan areas is complex and requires specific governance bodies. Metropolitan areas should be managed at the scale of a territorial system and include both urban and rural areas within the metro territorial system. The diversity of services requires the coordination of public and private investments and operations. The diversity within territories (especially those with dense urban areas and natural or agricultural resources, or megaprojects and scattered urban developments, or rich and productive areas compared to decayed and popular neighborhoods) requires political platforms to share challenges and prepare decisions. OECD identify four models of metropolitan governance[11]:

- A Special status of metropolitan cities with broader competences that could be compared with a **metropolitan government**. The metropolitan government authority covers more or less the metropolitan area. It is the result of a top-down decision or a merging of local governments (as is done in Moscow, Beijing, Greater Mumbai, Chongqing, Istanbul, Toronto). The idea is to find financial efficiency and economies of scale in service provision, based on larger tax base;
- An Inter municipal and multipurpose authority that could be compare to an **institutional partnership between municipalities**. It offers economies of scale but maintain the autonomy of local authorities to tax and spend;
- A **two-tier system with a supra municipal metropolitan structure** with a delegation of power for specific sectors. The metropolitan structure manages spatial planning and development and delivers certain services. Municipalities keep responsibility for education, housing, healthcare or welfare. The balance of power between the two tiers combines the benefits of consolidated government while maintaining local accountability and responsiveness;
- **Informal coordination** in a polycentric system that could be compared to a confederation of local governments without metropolitan authority or body to foster cooperation and share fiscal capacities.

Most metropolitan areas are managed by hybrid systems because of their administrative and political traditions, the specific geographies related to each sector, and the constant evolving governance challenges they are facing. The most efficient system for a metropolis is that corresponding to the acceptable sharing of competencies between actors at a moment. Constant transformations of large metropolis, with urban expansion, larger accessibility, changes in the economic development and the representative system (decentralization), require a flexible system able to adapt the multilevel governance and the multi-stakeholder dialogue to respond to new challenges.

It is necessary to implement a metropolitan governance system to manage strategic issues and those that are systemic (economic development, environment, mobility, energy, risks, large infrastructures, social and spatial inclusiveness). Such a government system takes into consideration economy of scale, efficiency, accessibility to public services and housing, local autonomy and accountability. Metropolitan governance reflects national, political and cultural traditions on territorial government. Building a process for establishing an efficient governance system can take decades.

The national legal framework is essential to foster metropolitan governance. Several countries recognize a specific status for metropolitan areas[13], but with specific definitions that are different between countries. National frameworks encompass local governments, authorities, agencies, private sector and interests. In fact, national governments play an essential role to recognize and support metropolitan challenges and governance needs. But to be efficient and representative, metropolitan governance should be collaborative and cohesive, based on co-decision and co-production processes. This requires soft power.

TERRITORIAL PLANNING FOR THE METROPOLIS

The metropolitan scale is moving permanently due to human settlement expansion, accessibility and changes in the economy's development. The 'urban functional area' is changing from time to time. It requires a flexible delineation. The different sectors and competencies to be involved in the metropolitan governance and planning areas need to be revisited as the scale changes.

With the increase of environmental concerns, landscaping methodology becomes more important in the planning processes. It needs a holistic approach which considers the landscape to be a result of the different components of a territory. The economic forces, the mobility system, the demographic trends affecting housing requirements, the environmental constraints of flooding or

Figure 3: Algiers greater mosque, to reposition the largest metropolis of the Mediterranean countries. Photo: E. Huybrechts, 2018

landslides need to be articulated for a more harmonious implementation. The principle entails organizing the territory from the non-built areas, shaping the areas by addressing water constraints, ecological corridors and visual or scenic concerns. Nature in the city should be a priority to better balance the built-up areas and pollutions by using green solutions that mitigate the effects of the urbanization and reduce risks.

But the approach needs to be more inclusive to insure sustainable development. Territorial planning is more adapted to the era where urban and rural areas are participating in the same development process. The economic functional approach is beyond its administrative limits. It needs a territorial approach that

is both urban and rural. One that provides the links between the functions, articulates territories together, coordinates the different vertical layers from national, regional and local administrations, and meshes the service sectors including health, education, water, mobility and energy.

Conventional physical planning is more of a technical tool than a platform to support a dynamic process for managing urban and territorial developments. When citizen engagement becomes important, a technocratic top-down process is no longer relevant. The huge uncertainties of the future (due to the present economic paradigm based on financial bubbles and economic crisis, climate changes and the degradation of international relations) make it difficult to adopt any scenario for the future development of cities. Planning systems need to reinforce their capacity to understand behavioral changes and be able to adapt their regulations to fast changing needs.

The Metropolitan design process should be an iterative process between urban design and planning. It is a process of valorization of the metropolitan scale through specific projects at the human scale. It makes city planning easier to appropriate by citizens. Several experiences in France (Greater Paris International competition, Aix-en-Provence) illustrate the intertwined approach of Metropolitan design applied on large metropolis.

The metropolis should be considered a product of globalization with specific artefacts that are subject to fast changes. Monuments compete with other new iconic buildings. International airports are displaced due to city expansion and strong growth of flight traffic. Shopping malls are disappearing due to e-shopping and change of behaviors. Large infrastructures are reconsidered for new shapes and functions.

The creative industry becomes a way to transform the city from within. It represents an important economic asset, for example being 9% of the employment of Paris Region. Local initiatives from citizens, with the support of private investors and sometimes the municipalities, are triggering dozens of city transformations in large metropolises as shown in Shanghai M50 or the temporary urbanism in Paris that becomes permanent. Here, culture is a tool for urban renewal, a challenge for making the compact cities.

Given the specific role of the metropolis within the globalization process, communication infrastructures are essential. It gathers together international airports, railway stations, harbors, logistic hubs, and the main connection facilities, such as exhibition centers, conference centers or central business districts, that can be considered as main landmarks in the communications network.

Real estate is becoming highly speculative due to the globalization of finance

and is shaping metropolitan areas for high-level products while excluding a large part of the population from the city centers. Metropolitan areas are bipolarizing with high-class districts and low integrated areas or slums. These products are the key artefacts of our present.

Metropolises are competing for attracting investments, headquarters and creative class. City marketing is becoming a key tool for supporting city development strategies. Marketing brands the city by highlighting its touristic features as culture, heritage, health industry, shopping and entertainment. In the present economic competition, it is essential to position large cities on the world map. The historical precincts, opera houses, main cultural facilities, large shopping malls, luxury general hospitals or leisure parks are being identified as important facilities to produce vibrant cities with cultural life and leisure and making cities more attractive.

Cities are commissioning iconic buildings as landmarks to distinguish themselves from the others, following the examples of the Eiffel Tower, the Gate of India, the Sydney Opera House, Burj Khalifa, Petronas or the Bilbao Guggenheim Museum. Starchitects are mobilized to produce extravagant designs to show their cities at the edge of the innovation. These products focus on their own design without considering the context thereby contributing to the disorientation of the urbanization.

To upgrade their positions, cities are implementing specific policies for tourism and identity that reshape their physical features and land use organization: renewal of waterfronts in Istanbul, Rio de Janeiro and Shanghai. Reuse of the commercial harbors for shopping and entertainment in Barcelona, Hamburg and Cape Town. Docklands reconversion in London and Mumbai, and even new Central Business Districts in Beirut and Tokyo. Urban renewal is a key mode of action in the globalization processes.

The scale of the metropolis supports the city expansion. The permanent structure of a metropolis is based on four basic grids comprising the physical structure of the city: Blue, Green, Grey and White grids representing the major landscape features including the geomorphology: Blue is water; Green includes green corridors and forests together with the main public spaces; Grey consists of streets, motorways, squares and railways; and, White is the key energy and telecommunication infrastructures. Several cities are producing drastic changes in these areas by reshaping their physical infrastructures. For example, Seoul transformed a highway to recover a river in the city Centre. Boston covered a major artery to provide new amenities and the Paris Regional Master Plan restructured using green corridors and urban green grids. These large grids are

the heritage backbone of the metropolis.

Metropolitan areas are both urban and rural. Their ecosystem is based on the symbiosis between the urban agglomeration and its hinterland which includes the metropolitan landscape and its biodiversity. This is an essential interrelationship to be considered for its visual and physical linkages extending from the rural areas to the core part of cities. For example, the role of rivers in connecting the city centers to the natural areas. Major efforts made by several cities to reintroduce nature in cities are, for the most part, based on riverbeds that are key linear support systems transcending different territories. Territorial management of rural areas are also being developed, based on natural and cultural heritage attributes, thereby fostering socio-economic development. For example, several regional natural parks, in France and Italy and landscape protection areas are implemented in the hinterland of metropolitan areas to enhance the quality of life at the periphery of the agglomeration and foster a socio-economic development based on cultural and natural heritage preservation and enhancement.

METRO PLANNING AGENCIES

Facing the permanent changes of city challenges, city expansion, and governance systems, it appears more important to set up technical capacities able to support decision makers, than it is to give priority to a specific model of the Metropolis. It cannot be provided by starchitects who focus on design, or by large engineering consultancies that provide high-level technical expertise, without continuity. A permanent structure devoted to metropolitan policies and strategies is necessary.

Territorial planning agencies need to be implemented to develop and share knowledge, support public debates and decision-making, monitor growth and changes based on goals and indicators with frequent revisions by feedback, define strategies and policies, engaging digital technologies for the analysis of behavioral and physical developments. Planners should play a prominent role in Metro planning, but they cannot act as individual. What is required for metropolitan development are multidisciplinary tools able to intertwin different sectors and mobilize different field for each scale.

Territorial planning agencies could have a different status from association, public administration, public owned companies. The are 50 urban planning agencies in France, 65 in Mexico State, 30 in Morocco, 19 in Algeria, 380 in the USA, 10 in Italy, dozens in India and China and all of them are nonprofit organizations. But many countries lack such organizations. Each year, 20 cities are

reaching the threshold of 500.000 inhabitants, a size that needs technical support to defining policies and strategies. Metropolitan planning agencies are an essential support for a moving metro-governance and for planning cities.

A global network of urban planning agencies was launched during the Habitat III conference in Quito (2016) and formally established in Paris in July 2017. Its main objective is to develop technical exchanges between territorial planning agencies on metropolitan issues, to support the creation of new territorial planning agencies, to lobby in the international debates and to the national and local government for strengthening the role and status of territorial agencies.

The role of planners should be better positioned in the international debates. But planners should be represented through metropolitan planning agencies to ensure the holistic approach that is the nature of the metropolis.

Endnotes

1 UN's World Urbanization Prospects, 2018, UN, New-York, 2018.

2 There are lot of debates regarding the metropolis definition. Here, we make differentiation between urban agglomeration with continuous built-up areas and the metropolitan area that is based on the human settlement system. According to the OECD 'functional urban agglomerations' and the France INSEE definition of 'aires urbaines ('urban areas'), a metropolis is an area that covers the urban agglomeration and its direct hinterland with villages and towns where 15% of inhabitants are daily commuters working inside the urban agglomeration. Here we consider cities of more than 500,000 inhabitants as metropolitan areas.

3 For a good synthesis of the territorial issues, see: Co-creating the Urban Future. The agenda of metropolises cities and territories, UCLG, 2016, Barcelona.

4 For example, the Paris metropolis GDP is equivalent to that of Saudi Arabia.

5 www.metropolis.org

6 D. Grossenbacher (ed.), N. Buchoud, The affordable metropolis initiative. A global Dialogue an Affordable housing: policy, finance, technology and shelters, Yearbook 2018, Paris/New York, December 2018, Cercle du Grand Paris, FIABCI, GAP/Habitat III.

7 Globally Harmonized System of Classification and Labelling of Chemicals. See: https://en.wikipedia.org/wiki/Globally_Harmonized_System_of_Classification_and_Labelling_of_Chemicals

8 New urban Agenda adopted by UN-Habitat in 2016. International Guidelines for urban and territorial planning adopted by UN-Habitat in 2015. https://unhabitat.org/books/international-guidelines-on-urban-and-territorial-planning-ig-utp-handbook 9 78% of the inhabitants in low developed countries lives in informal settlements.

9 78% of the inhabitants in low developed countries lives in informal settlements.

10 CURE: Culture in City Reconstruction and Recovery. Position paper. UNESCO and World Bank, 2018.

11 OECD, Governing the City, Paris, 2015.

12 Chile: 6 metropolises; Italy: 14 metropolises; Brazil: 53 metropolises, France: 22 metropolises.

PLANNING PRACTICE

BEYOND THE PLAN: THE NEED TO BUILD IN-HOUSE CAPACITY TO PLAN, DESIGN AND IMPLEMENT URBAN AND TERRITORIAL STRATEGIC SPATIAL PLANS

FRANK D'HONDT

Community based Vision Workshop Willemstad, Curacao 2017 (photo by author)

INTRODUCTION

In 2016, I was invited to co-advise the President of Afghanistan on the best way to plan and fix the fast-growing metropolis of Kabul. Once dubbed 'the Paris of the East', it had become one the most polluted and dangerous cities, especially for women and children. Upon arrival I was handed the existing multi-volume metropolitan masterplans for Old and New Kabul, prepared by overseas consultants. I immediately knew this Plan could not work.

Why not? Because in my opinion: a) the use of static masterplans is obsolete; b) the plans were drafted in an office 6,260km further away from the city; c) the foreign planners who prepared the plan are rooted in an entirely different (planning) culture; and, d) there was insufficient local leadership and planning capacity to steward the implementation and enforcement of these (over)ambitious plans.

I witnessed a similar, yet very different problem, with masterplans developed by Israel for Area C of the West Bank. These plans did not respond to the real needs of the local Palestinian communities – they were more of an obstacle than a catalyst for sustainable community development.

Only when communities were supported to plan for themselves, do things start to change.

All over the world we can observe the benefits of less sophisticated, but primarily community-driven and in-house strategic and action-oriented planning. Yet, the practice of entirely outsourcing masterplans for city-extensions or entirely new cities is far from over. For example, look at the glossy but unsustainable masterplans for New Cairo or New Yangon among others around the globe and especially in Asia.

INTEGRATED URBAN AND TERRITORIAL PLANNING: THE THEORY

The first principle of the International Guidelines on Urban and Territorial Planning (IGUTP) (UN-Habitat, 2015) is: "Urban and Territorial Planning is an integrative and participatory decision-making process that addresses competing interests and is linked to a shared vision, an overall development strategy and national, regional and local urban policies." But the IGUTP does not prescribe any planning methodology. Nor does the New Urban Agenda, approved by all UN-member states in 2017 (UN, 2017).

The IGUTP Handbook (UN-HABITAT, 2018) however distinguishes the important difference between planning products and planning processes, with the understanding that a good planning product - such as an urban policy, a vision for a city, or an urban design for a neighbourhood or street - can only come out of a

good planning process, understood as an integrative and participatory decision making process. According to IGUTP and NUA, both process and product need to deliver human habitation that is more compact, less carbon-emitting, well connected, more socially inclusive, respecting biodiversity, and more climate resilient. This will require planning systems that are better equipped to address these eminent challenges as well planners with the right values, tools and skills to support this relentless endeavour.

THE CASE FOR STRATEGIC SPATIAL PLANNING

'Strategic Spatial Planning' is widely acclaimed as a better planning methodology than the traditional master-planning approach that is still widely used - if not dominant in the planning practice.

Patsy Healey defines strategic planning as: 'a social process through which a range of people in diverse institutional relations and positions come together to design plan-making processes and develop contents and strategies for the management of spatial change' (Healey, 1997). Strategic planning is looked upon as 'self-conscious collective efforts to re-imagine a city, urban region or wider terri-

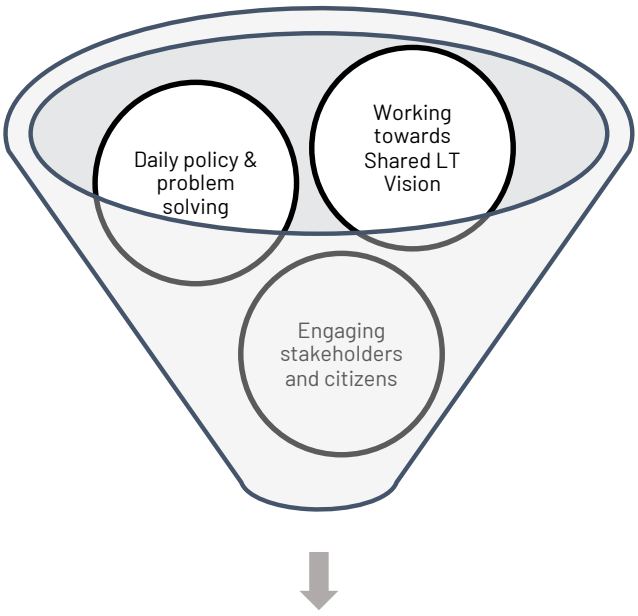


Figure 1: Strategic Planning Process (after Van den Broeck, 2004)

tory and to translate the result into priorities for area investment, conservation measures, strategic infrastructure investments and principles of land use regulation' (see HEALEY, 2000). Interpreted in this way, strategic planning deploys one of its most interesting potentials, its capacity to produce action frameworks and interpretative images capable of mobilizing people to action and, in some cases, of constructing a new governance culture (ALBRECHTS et al., 2003).

Together with Albrechts, Jef Van den Broeck advocates a multi-track strategic planning approach as illustrated in the figure above.

While the diagram is largely self-explanatory, it is important to stress that the elements leading to the plan can, and should, run in parallel. Van den Broeck et.al. developed this methodology based on several practices in both high and low-income countries and at all scales of planning, from neighbourhood, over city-level, region and even transnational. For low-income countries the methodology was readapted to localise the Agenda 21, the predecessor of the Sustainable Development Goals (SDGs) and the New Urban Agenda (see also UN-HABITAT, 2004).

While many planning approaches come and go as fashion trends, strategic spatial planning remains a robust, yet flexible, methodology overcoming perceived shortcomings of more rigid statutory and traditional top-down master planning. "The shifts from control to framing, from an extended present to becoming, from comprehensive to selective, from masterplans and land-use plans to probes of the future, strategies, projects and distributive justice, from places as containers toward many space-time geographies, all constitute not only epistemological challenges but also fundamental ontological issues" (ALBRECHTS, 2017).

However, Albrechts and other staunch advocates of strategic planning – including myself - are not blind of its actual and potential deficiencies and shortcomings:

1. Economic, political and ideological critiques draw a link between the rise of strategic spatial planning and the strengthened neoliberal political climate and questions are raised whether strategic spatial planning practices can resist the hegemonic discourses of neoliberalism (SWYNGEDOUW, 2014).
2. It can lead to questions about the 'collaborative' and 'participatory' credentials of the more interactive strategic planning approaches, resulting in frustration and 'participation tiredness', if all depends on private market corporations and their political cronies.
3. Civil society, human rights and environmental advocates can critique the state-monopoly of strategic and collaborative planning, especially when they are carried out by authoritarian and/or neoliberal governments.

4. From an implementation perspective, others ask whether practices of strategic spatial planning really follow their normative groundings and critique the lack of concern about the path dependency of the resources, and a too sequential view of the relationships between visioning, action, structure, institutions and discourse.
5. Concern is also raised about the legitimation of strategic spatial planning, the role of expertise and knowledge, and how to introduce transformative practices (ALBRECHTS, 2010).
6. Strategic planning did not yet fully embrace and integrate key aspects of urban design and placemaking. Many places increasingly desire more tangible and quick-win spatial interventions through placemaking and the more traditional urban design. This can erode a more comprehensive and long-term strategic planning (VOGELIJ, 2015).
7. Concerns also are raised about the lack of creativity and care for spatial quality that capitalizes on the sense of place (VOGELIJ, 2015).

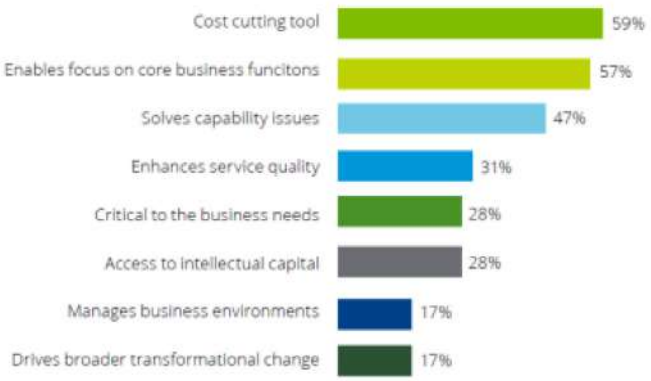


Figure 2: Motivations to Outsource, Deloitte Global Outsourcing Survey 2016[1]

IN-HOUSE VERSUS OUTSOURCING – THE IMPORTANCE OF PROPER STAFFING

The overdependency on hiring outsourced consultants to produce wholesale strategic plans (and other planning types and policy documents as well) is often justified as a method to overcome the in-house capacity gaps, often attributed to austerity policies. It can also be perceived as a pathway to deliberately privatise basic governmental functions and diverting the planning responsibility outside the democratic and political apparatus. However, there are also valuable reasons to outsource, as shown in the following diagram (Figure 2).

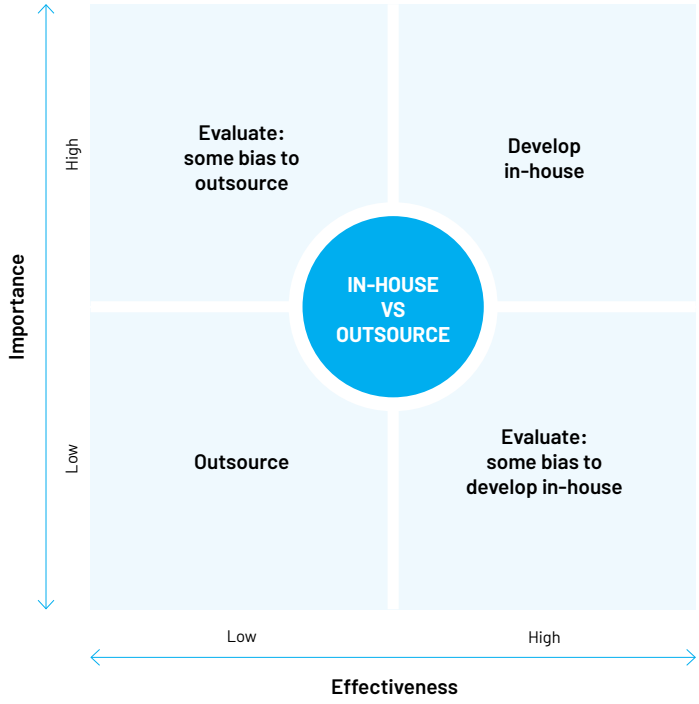


Figure 3: Matrix with In-house vs Outsource options (after SupplyChainDigest[2]).

Another approach is to augment in-house planning capacity with contractual staff members. In-sourcing could be considered as a variant of in-house with the help of external experts, whether from private or related public sector. The main difference between out- and in-sourcing is that out-sourced planning tasks are typically executed by a planning consultancy with the bulk of the work done outside the planning authority, while in-sourcing typically involves planning experts that help to execute the bulk of the work inside the planning authority. Some agencies use a hybrid mix of both approaches (see Figure 3).

On one dimension is the level of importance of a supply chain function or (planning) process to an organization (high or low); on the other dimension is the organization's competence or effectiveness at the function/process (high or low). High/high combos are reserved for in-house staff while low-low projects are outsourcing candidates. The high-low/low high combinations require more nuanced analysis, with some bias towards outsourcing functions of high importance and low competence, as it is likely you can find an outsourcer that can in fact do this important thing well. I will look at some of my personal planning practices through this additional lens.

PRACTITIONERS CASES

In the following case studies, we examine the use of exterior and interior staffing schemes to develop several Strategic Plans.

SPATIAL PLANS FOR FLANDERS, THE NETHERLANDS, BENELUX AND ITS BORDER-REGIONS

Already back in the mid-90ies, Strategic Spatial Planning was put to the test by Charles Vermeersch, Louis Albrechts and Jef Van den Broeck as the main authors – rather main directors – of the first Strategic Spatial Plan for the Flanders region in Belgium, approved by its Government in 1997.

Figure 4 shows the desired spatial structure for the Flanders region, its graphic 'business card' produced by the 'communicative/discursive' strategic planning approach. While the application and implementation of the plan faced increasing resistance and obstruction from vested interests (who sought to maintain a rather unsustainable spatial structure and land consumption), the key spatial concepts are still relevant and the plan was, and still is, regarded as a landmark technical and political document.

The plan was accomplished despite insufficient capacities and skills to break with the longstanding tradition of regulatory land-use planning. The administration could have chosen to outsource the plan, preferably to a consortium of leading academic institutions. But the leading academics wisely advised and obtained

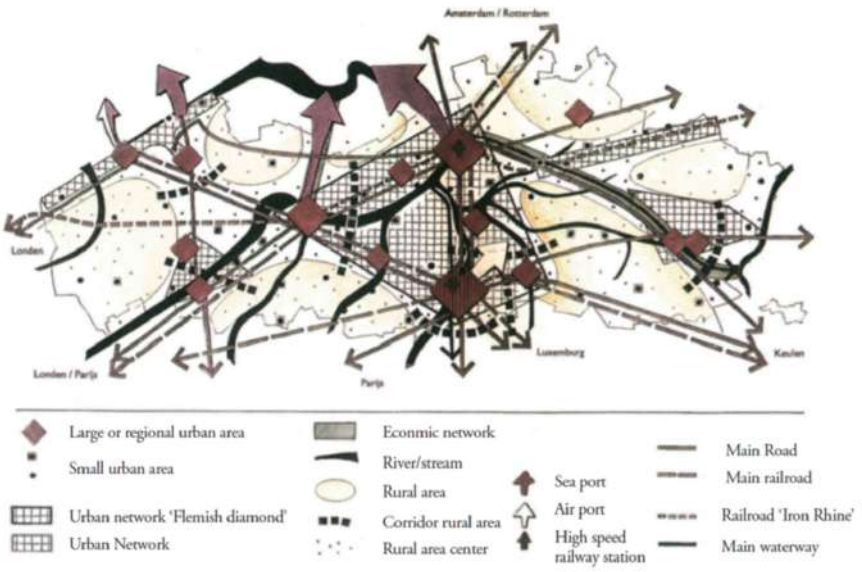


Figure 4: Desired Spatial Structure for the Flanders Region, MVG, 1997

support for an in-sourcing model, with partial outsourcing of thematic studies and the gradual build-up of in-house strategic planning capacities and skills. While this staffing strategy was largely successful at the regional level, insufficient capacity was shared with local administrations who were critical to apply and implement the regional structure plan. This perception was widely echoed by leading experts who were asked to reflect 20 years after the approval of the plan (VRP, 2017).

A Spatial Structure Plan also was done for the Benelux, the trinational/multiregional association of Belgium (and its three regions), the Netherlands and Luxemburg. With Jef van den Broeck as team leader and myself as principal administrator and facilitator, the 'Second Benelux Structural Outline' was developed in parallel with the Flemish plan and endorsed in 1997 by all five Benelux ministers responsible for spatial planning (Zonnevveld, 2004 & De Vries, 2008).

Even the worldwide respected Dutch spatial planning administrators eventually were convinced of the merits of this strategic planning approach, resulting in a unique transnational planning scheme that provided a compass for a better mutual understanding and cross-border cooperation in this dense core part of the European Union.

A similar hybrid staffing model was chosen to develop this plan. The in-house Benelux office was augmented by close cooperation with five constituent planning departments and in-sourcing with planning experts from the constituent parts of the transnational planning area. There also was limited outsourcing of thematic

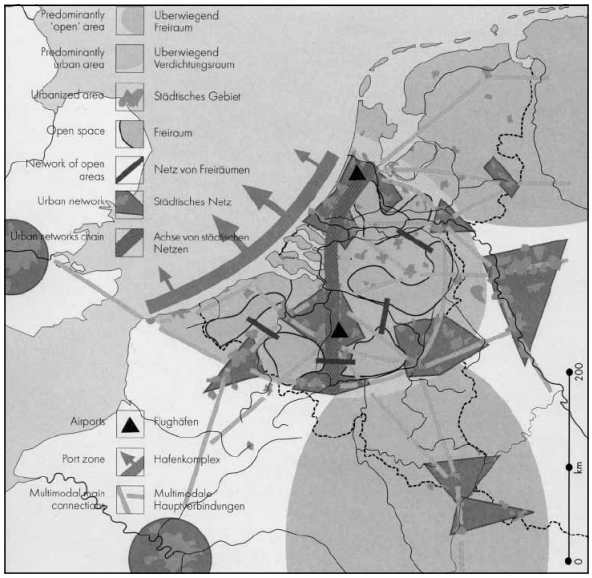


Figure 5- Envisioned spatial structure of Benelux, including a large-scale chain of urban networks and a green heart' (lower right). (Source: Secretariat-General of the Benelux Economic Union, 1996).

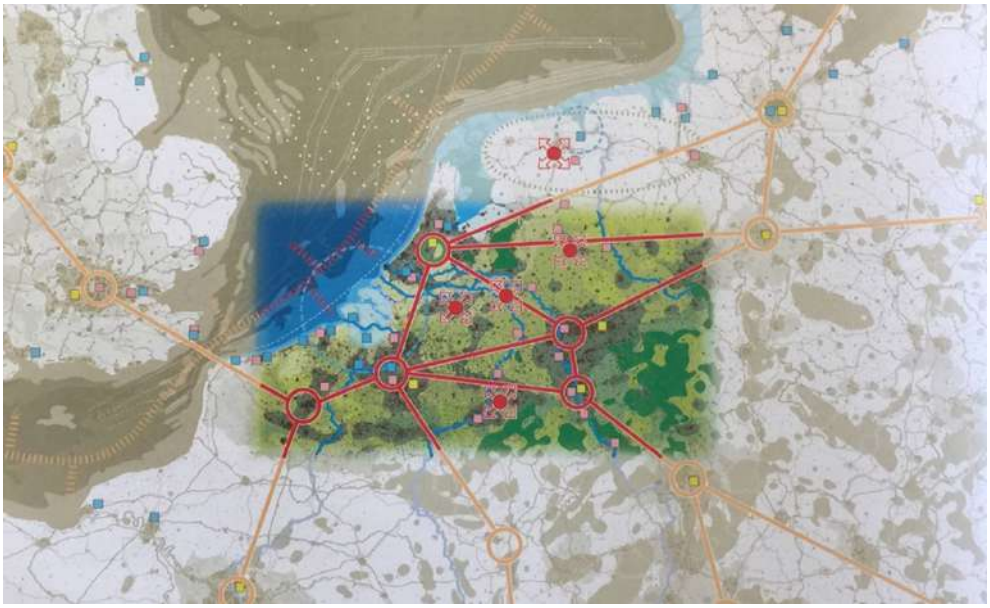


Figure 6 - Transnational Spatial Structure Map of Fifth Policy Document on Spatial Planning, MVROM, 2001

studies as input to an in-house develop integral vision. A major shortcoming however was the lack of resources and capacities to consult with stakeholders outside the five planning departments – hence the lack of support for the vision outside the inner-circle.

Thanks to visionary Dutch 'fonctionnaires' like Derek Martin[3] , the Benelux planning example contributed to the transnational and transboundary dimension of the 5th National Policy Report 2020 (MVROM, 2001).

This strategic, yet comprehensive, national plan was entirely done in-house, complemented by a series of out-sourced thematic studies. The Dutch Spatial Planning Agency could be considered as the best resourced and capacitated public planning institutions in Europe if not worldwide.

Well, that was until the finalisation of this Fifth and last Policy Document, marking the end of a post-war welfare-state-led planning era. Due to a fall of the cabinet over the Dutch responsibility in the Srebrenica tragedy, this plan never got approved by the Dutch parliament and a more right-wing government emerged after the elections. This new government dismantled the Planning Ministry and its crown-jewel Spatial Planning Agency and decentralised planning authority to regional and local level. While larger cities and most of the provinces boosted their own planning capacities, it can be argued that the tarnished Dutch governmental planning reputation never entirely recovered from the setbacks since the turn of this millennium.

The added-value of a well-resourced planning agency can be illustrated by efforts dedicated to planning beyond the own borders. The vision for the Benelux and surrounding areas of Northwest Europe would later inspire the first (and last?) 'European Spatial Development Perspective' endorsed by EU-ministers for spatial planning in Leipzig in 1999. While I actively participated in both the Benelux and European transnational planning efforts, I highly enjoyed the subsequent and more place-specific planning for all Benelux cross-border regions, most notably for the Rhine-Scheldt Delta (RSD).

This Dutch/Flanders cross-border estuary area counts more than 3.5 million inhabitants and represents the world's largest combined mainport, putting a high stress on its unique terrestrial and marine nature. I had the opportunity to facilitate a bottom-up Shared Vision based on the combined views of its most relevant stakeholders and inspired powerful stakeholders to develop their own (joint) vision, as illustrated by Figure 7. Later, this shared vision was partial implemented by improving the maritime accessibility to the inland ports and improvements to flood resilience and a nature compensation programme – through a multiyear binational project called 'ProSes' ('Project Scheldt Estuary').

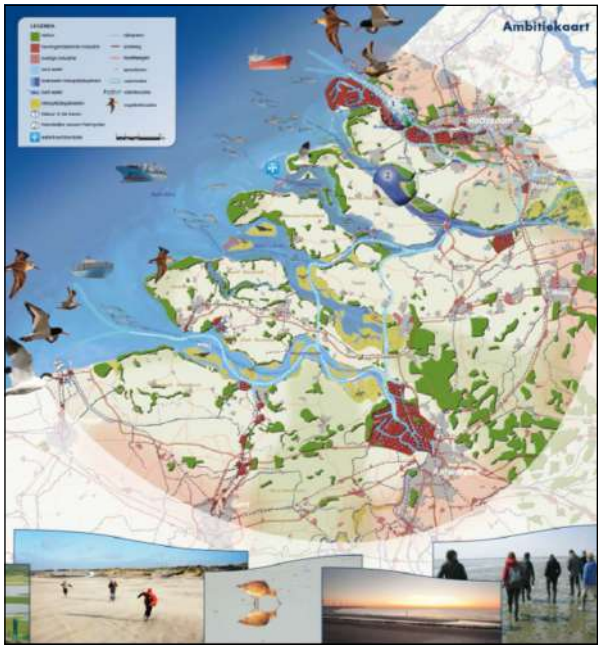


Figure 7 Delta-perspective by Port of Rotterdam and World Wide Fund

Jos Claessens, the co-director of ProSeS, summarized some lessons learned from this unique and inspiring cross-border experience (CLAESSENS):

- Sound research and joint-fact-finding is an excellent way to build trust and seek win-win situations;
- Thinking and working for the entire area instead of your own territory is essential to create win-wins across the border;
- Be transparent and communicate daily – don't ever forget the human factor in complicated planning processes.

This last observation was important. We were not really prepared to deal with the concerns and growing angriness of farmers that could lose their farmlands to widening of the riverbed and dredging to increase the cargo-accessibility. As a result, it would take many more years before real projects could be implemented – a hard lesson learned.

However, the overall experience was positive, mainly because two countries had joined efforts not by outsourcing a complicated planning process, but by creating a temporary institutional mechanism to bring together its finest people in a joint-project team working closely with the respective administrations and non-governmental partners. Reconciling economy with ecology is never easy but ProSes proved its not entirely impossible.

POST-CONFLICT PLANNING IN KOSOVO

After the violent break-up of 'planning-minded' Yugoslavia, the Kosovo-Albanian majority leadership, administered by the United Nations Mission in Kosovo (UNMIK), was faced with a new reality to plan for its own future. A young and dynamic national planning institute was created to develop an entirely new Kosovo Spatial Plan, based on the multi-stakeholder strategic spatial planning as described for the Flanders Structure Plan. The Institute for Housing and Urban Development Studies of Erasmus University Rotterdam (IHS) supported this enterprise following the in-sourcing model and building up domestic planning capacities 'on the job'.

Meanwhile, UN-Habitat, funded by Sweden, was tasked to (re)build the planning capacities at local level, with focus on all 6 regional cities – unfortunately omitting the capital city of Prishtina. Although small sized, Prishtina was considered as too complex in terms of governance, and possible out of fear after the cold-blooded and unresolved murder of the chief of the town-planning office in Prishtina, who had recently ordered illegal buildings and kiosks built in the city after the conflict to be demolished.

Figure 8a/b/c – SPK, Visioning book and Municipal Toolbox, ISP/UN-HABITAT, 2012/2015

With UNMIK's eyes on securing internal and external stability, illegal constructions and settlements were not (longer) considered a priority. As a result, conversions mushroomed all over Kosovo, resulting in irreversible damage of historic districts and cultural heritage, as well in unsustainable urban sprawl and increasing costs of urban servicing. Low salaries exposed municipal administrators to corruption and honest civil servants were unable to turn the tide and control development in a society that switched overnight from (soft) socialist to (hard) anarcho-capitalist. It took UN-Habitat (and other supportive partners) more than a decade to empower, retrain and capacitate municipal planning departments to re-establish some of the planning controls aiming at desired development embedded in Shared Visions. The method was 'advanced in-sourcing', by establishing a mixed team of one locally and one internationally recruited urban planner placed within the municipal planning departments, coordinated and supported by a UN-Habitat back-office team.

The official evaluation report 'Evaluation of the Municipal Spatial Planning Support Programme (MuSPP)' concluded: "Overall, the programme has been doing excellent pioneering work in helping Municipalities to develop a capacity to plan and to manage their development. Municipalities appreciate the support and have a good understanding of the plans. However, they still have weak ability to prepare or update new plans. Staff turnover and changes of leadership related to elections have made it difficult to build up sustainable capacity" (UN-HABITAT, 2014a).

Community visioning, pioneered in Kosovo, has since been applied in many other places all over the world. It features prominently in the UN-Habitat's 'Toolbox' to handover the legacy of 10 years MUSPP in Kosovo (UN-Habitat, 2014b) – see Figure 8c. However, what stood out then and still stand out today is the

need for a more holistic view on planning capacities and the need to properly assess, review and improve planning capacities and skills at an early stage of any meaningful planning project and process that requires more than routine handling – as any planning process should be (see also D'HONDT, 2012).

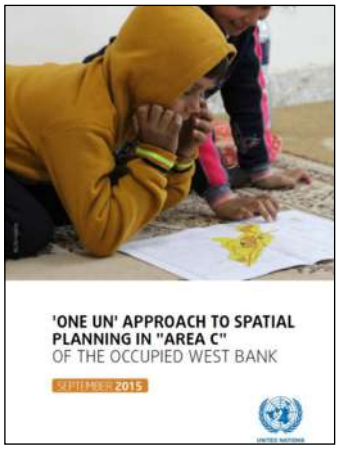
IN-CONFLICT PLANNING IN PALESTINE AND AFGHANISTAN

PALESTINE

Palestinians living in the landlocked West Bank are highly concentrated within cities under Palestinian authority, while the residual population is spread over many traditional villages in Area C of the West Bank, under nearly exclusive Israeli military control.

Between 2013 and 2016, The UN-Habitat initiated planning projects for and with the Palestinian communities in Area C. At the beginning of this project, the buzzword 'masterplans' was all over the place. During the intensive 3-year mission the discourse was shifted to development, strategic planning and placemaking.

In large part the 'masterplans' were (and still are) drafted by Palestinian plan developers (both profit and non-profit) to provide these rural communities with a static land-use plan to justify restricted but legal building activities within the perimeter. Both the plan perimeter and content need approval by the Israeli military administration, who used an extremely lengthy approval procedures including cumbersome negotiations between the plan developer (not the community!) and the military. This process resulted in a very low approval rates. And even the approved plans were often questioned, if not condemned, by the international community. Palestinian masterplans were also heavily



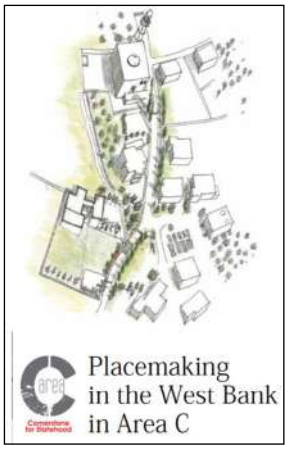


Figure 9 a/b/c: Strategic Planning efforts in Palestine

criticized for accepting the military logic of planning perimeters and other severe development restrictions.

In 2015, a small International Advisory Board (IAB) of experienced planners was convened to review a sample of the local masterplans. The IAB found that there was "a lack of transparency about criteria and procedures, and Israeli planning control has not only favoured the Israeli settlers' access to scarce water resources, but also prevented the Palestinian Authority from developing infrastructure networks through Area C to serve villages and connect towns in Areas A and B"[4].

While there was no legal alternative to these local masterplans, a strategy was developed to produce complementary regional plans to provide a more strategic development framework for remaining Palestinian communities, while more directly engaging with those highly challenged communities through 'placemaking' and 'tactical urbanism'. By engaging both the master planning developers and the Palestinian authorities overseeing those plans, an element of capacity strengthening was added.

While the local communities wholeheartedly embraced the more tangible method of placemaking (within the legal masterplan frameworks), and really enjoyed and absorbed their in-house self-planning and development capacity development, insufficient resources and convincing power was at our hand to change the minds and operating procedures of established Palestinian plan developers, Palestinian administrators and decision makers, the international community including funding donors, INGOs, as well most other UN-agencies. However, consensus among UN agencies was achieved to:

a.) develop according to 'One-UN' approach on strategic spatial planning in the West Bank (see Figure 9a);

b.) establish visioning workshops in partnership with ISOCARP for both the metropolitan areas of East Jerusalem and Gaza-city (see Figure 9b);

c.) develop the first Palestinian- made regional plans for pilot areas in the West Bank;

and, d.) implement four place-making visions and pilots (see Figure 9c).

Unfortunately, the Syrian crisis drained donor funding away from Palestine – the longest in-conflict territory since UN's existence – to neighbouring areas coping with millions of Syrian refugees. A longer-term planning support programme like Kosovo MUSPP would be required to step and scale up efforts to boost strategic and action-based planning capacities and skills among Palestinian communities and their planners.

AFGHANISTAN

Afghanistan was a mainly rural country, but it is rapidly urbanizing at one of the fastest rates worldwide. By 2060 half of the population will live in cities[5]. With increasing urbanization comes the need for adapted planning approaches to trigger and enable the desired kind of development needed to reverse vicious into virtuous cycles including extreme poverty, human rights, women and youth rights, employment, education, terrorism/insecurity, and environmental degradation.

The current National Unity Government (NUG), established in 2014 and led by President Ashraf Ghani showed strong commitment to initiate domestic urban policies and planning to harness the new urban development opportunities. UN-Habitat (extensively) supported the NUG in developing an in-house Urban National Priority Programme, including a first National Urban Policy and National Spatial Strategy (see Figure 10).

A major proposed project of the U-NPP was the Kabul Metropolitan Initiative. The point of departure was a series of masterplans developed by Japanese consultancies and funded by Japan (JAICA). These masterplans included detailed land-use plans for both Kabul city as well for a projected New Kabul City north of the existing city. They also included atypical planning items such as interior designs for future luxury apartments in the new city. Both masterplans were framed by a study for the larger metropolitan area of the Kabul valley, surrounded by high-rise mountains (see Figure 11a).

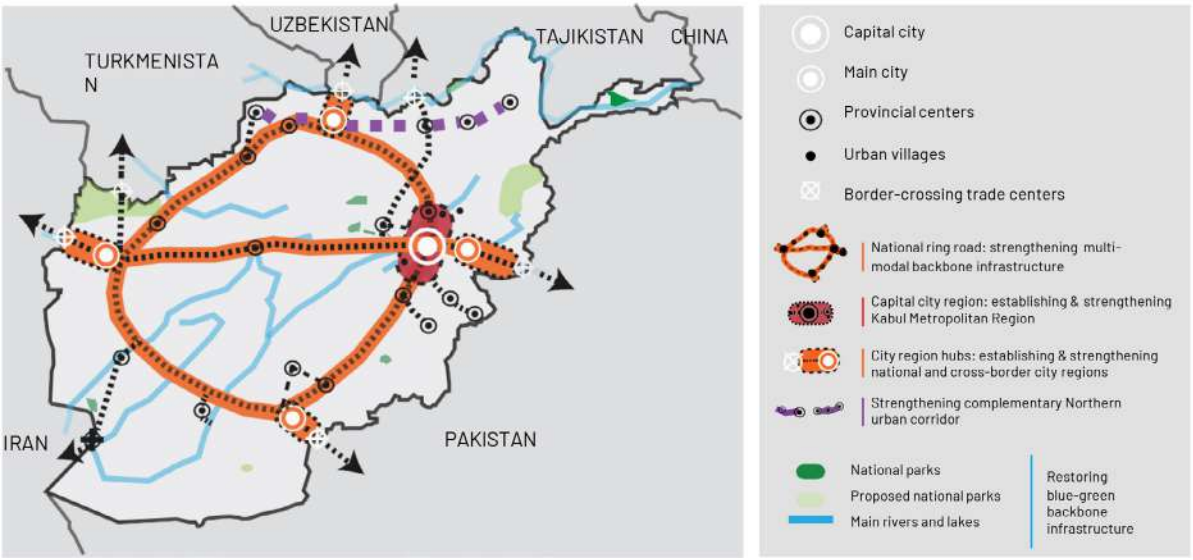


Figure 10 - Afghanistan Spatial Outline, UN-HABITAT, 2016

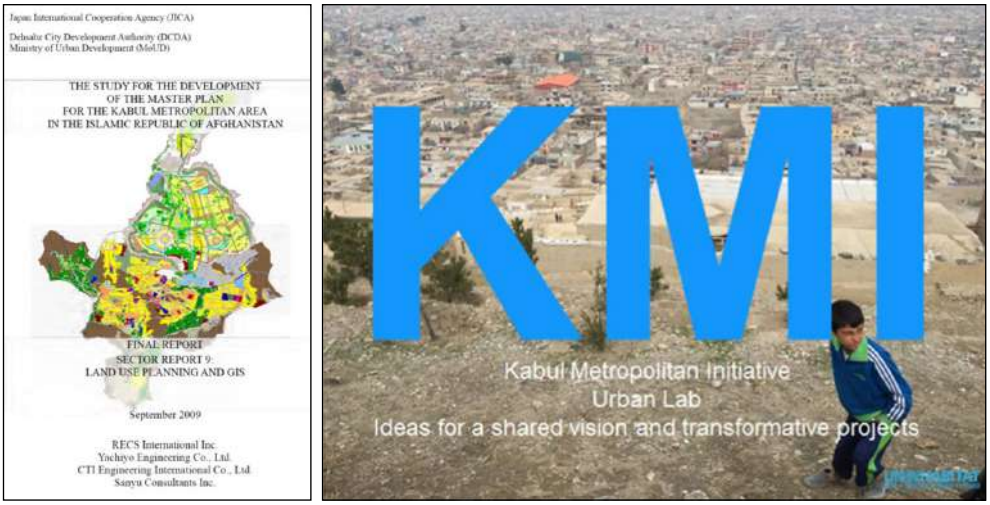


Figure 11a/b – Kabul Metropolitan Masterplan, JAICA 2009/Kabul Metropolitan Vision, UN-HABITAT, 2016

Unfortunately, these overreached the capacity of domestic planners to properly understand, let alone adequately apply and implement, these over-ambitious plans. As a result, for the past decade the masterplan for New Kabul City is still waiting for its first fancy house, while informal settlements keep mushrooming. When discussing how to address these slums, some officials stated that they cannot be legally improved as they are not included in the masterplan.

Advocating action-oriented people-centric participatory strategic planning in a master planning-minded environment sounds like blaspheme, yet the metropolitan proposal developed by a dedicated Habitat-team got an initial presidential nod. Unfortunately, the promised funds to go full swing with a multi-stakeholder in-house/insourcing planning model never kicked in and all that could be done was to further advance the initial ideas alongside the establishment of the Urban NPP.

Yet we could establish two historic meetings of the Kabul Metropolitan Forum, resulting in a joint Kabul Metropolitan Declaration. We also conducted a very first metropolitan traffic study to establish the boundaries of the daily commuting area and established a basic GIS with educational and inspiring maps. An attempt to co-organize an expert-based metropolitan visioning workshop with ISOCARP failed due to the absence of funds but a smaller workshop with UN-Habitat's Urban Lab resulted in a useful metropolitan territorial strategy of planned city extensions including the redevelopment the old city and the preservation of the blue-green ecosystem of the Kabul Valley (see Figure 11b). However, as most of the work was done by Habitat-staff, there was very little 'on-the-job' knowledge and practice transfer.

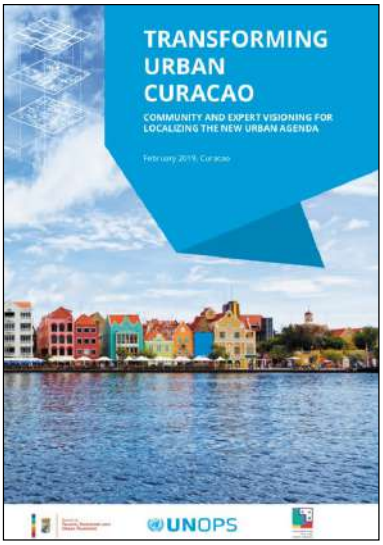
When the final report was presented back to the President and his Government, the approach received tacit approval, but the lack of real ownership fired back in a way that there was no follow up. Instead, Sasaki Associates, a Japanese consultancy that won an international design competition for the 2008 Beijing Olympics and that developed the Kuala Lumpur International Financial District Master Plan, was awarded a new masterplan for Kabul City, with minor attention for the entire city-region.

SMALL-ISLAND STATE PLANNING IN THE CARIBBEAN

Caribbean Small-island States (CSiS) present a very different world than land-locked Afghanistan, West-Bank and Kosovo. Although aggravated by increasing threats related to climate change, these are places where most people want to visit for a relaxing holiday. But also are places where many young locals are looking for better job and life opportunities elsewhere in more urbanised areas on nearby and even far-away main lands.

In 2016 UNOPS, the UN agency that is known for constructing infrastructure rather than for urban planning, was invited to prospect possibilities to link infrastructure assessment with urban policy and planning in three Dutch/English-speaking CSiS. In Curacao the project started with a government request to assess a number of roundabouts to alleviate increasing traffic congestion, and it ended with a foundation for an island-wide Urban Transformation Policy. In Saint Vincent the Prime Minster requested ideas to convert a closed airport near the capital city Kingstown, after the opening of a larger and more remote new international airport. We provided ideas that were less fancy but more realistic than the ones provided by a Canadian real-estate company, but that bird didn't fly. In Saint Lucia however, we were asked by the Prime minister to assessing a 10-year old plan for its capital city Castries, and we ended up co-drafting a new vision for the entire City-region.

Both in Curacao and Saint Lucia we worked in very close collaboration with a given ministry of the government, respectively the Curacao Ministry of Transport and Spatial Planning and the Saint Lucia Ministry of Finance and Economy. This collaboration turned out to be an interesting experience. While engaging on planning matters seems to be more favourable through cooperating with a dedicated ministry, we experienced a comparable if not more engaged commitment and dedication from a non-specialized ministry, possibly because there was less bias in the latter. Civil servants in the finance ministry were more eager to learn on-the-job skills than civil servants in a planning department. Probably it is simply easier to learn than to un-learn or re-learn how to practice sustainable urban planning.



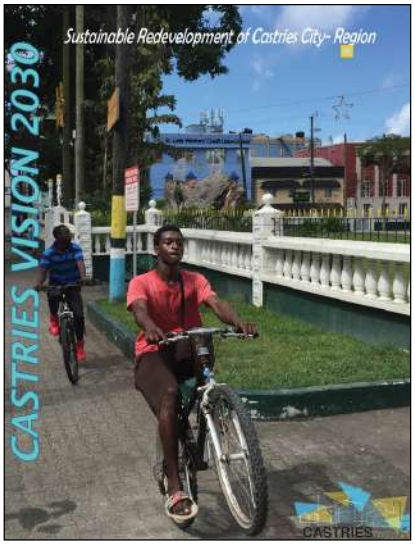


Figure 12a/b - Curacao Urban Transformation Report and Castries Vision 2030 (UNOPS, 2018/2019)

In both cases the project methodology was similar but with some meaningful differences.

In Curacao, we embarked on an effort to localise the New Urban Agenda, following a return from the Habitat III conference in Quito. Except of a small inner-circle, not many people knew about the NUA. In addition, the country just overcame a political crisis (and fall of the government) over different interpretations of the existing 25-year old land-use plan for the island (EOP). The localisation of the NUA was by some considered as a pathway to undermine the EOP, for others it could help reinforce its status. This bias ran through the entire planning process and included many hiccups that needed to be addressed in a very diplomatic way.

Thanks to the determination of the responsible Minister and the local UNOPS Support Team, meaningful results could be achieved in the end. The final report is still awaiting endorsement at the time of writing this article, but the process and content has already been shared through Curacao social media as were the results from an ISOCARP Expert-based Vision Workshop 12-16 November 2018 in Willemstad. The Expert Vision Workshop capitalized on: a.) two preceding Community-based Vision Workshops – one for urban Curacao and one for rural Curacao; b.) an Evidence Based Infrastructure Diagnosis implemented by UNOPS with support from Cambridge University; and, c.) an additional Planning Brief with a complementary urban and spatial diagnosis including a proposed new urban typology as basis for a new urban policy that would incorporate the NUA principles.

The Community-Vision workshops were entirely done in-house with tacit support by the local UNOPS Team and an external adviser. It not only empowers NUA-minded civil servants within the ministry but also civil society and un-associated residents taking part in the workshops. The final Expert-based Vision Workshop matched 4 international planners with 4 domestic planners and can be considered as on-the-job capacity building. For the minister it was a refreshing approach to think out of the box and open departmental silo's, despite lingering scepticism and resistance. It is to be seen if, and to what extent, this will affect the follow up of this temporary ministry-UNOPS collaboration. If effective it should result in a new strategic planning policy and plan to complement, or eventually replace, the outdated EOP land-use plan. It also needs to be seen if the sectoral minister will be able to leverage wider support of a multi-sectoral urban and territorial policy.

In Saint Lucia the objective was clearer; to review an existing plan for Castries. The cooperation between UNOPS and the finance ministry was, and still is, directly supervised by the prime minister, who is a multi-hotel owner and tourism-entrepreneur. The PM had a direct stake in boosting the attractiveness of a decaying capital city. Castries' core-city, just like Willemstad in Curacao, is now perceived as a ghost-city once civil servants and cruise-tourists leave after 5-6pm. With most residents now living in the sprawled outskirts of Castries, the economic basis is missing for self-regeneration while commuting traffic is in a near standstill at rush hours – an all too familiar but worrying trend all over CSiS. When quick-scanning the 10-year-old National Vision Plan for Saint Lucia and Castries, it was recognized that making a new more sustainable and people-centred vision was far better than updating an overambitious tourism-centric plan drafted by a Miami based tourism and PR specialized consultancy.

Given the very limited budget attributed to the review of the 2008 Plan, we were forced to apply a low-cost in-house strategic planning approach, resulting in a multi-stakeholder vision but NOT in a masterplan. A Castries Planning Team was composed with technicians from the most relevant departments, supported by a local UNOPS team and two external planning experts. In-house support was essential to quickly organize a series of thematic Focus Group sessions resulting in a first Castries Urban Forum. This event gathering around 70 representatives of most relevant urban stakeholders and resulting in a Stakeholder Declaration with guiding principles for the new vision.

As experts we drafted maps and narratives that were discussed multiple times with multiple audiences, resulting in a first draft Shared Vision Castries 2030, aligned with SDS 11, NUA and the IGUTP. A 5-hour long hands-on meeting with

the Prime-minister in our dedicated Planning Situation Room was at moments intense as there were initially many disagreements. Eventually we solved most of them with respect to the underlying principles. A follow-up meeting with the Castries Urban Forum resulted in a pre-endorsement of a Shared Vision, co-opted by the Steering Committee and the Mayor's Office. A final two-hour presentation to and discussion with the Cabinet of Ministers resulted in an endorsement of the Shared Vision as basis for wider public consultation. Ideally the latter would have been included in the initial planning process, but a 4-month planning period does not allow a full swing public involvement – a lesson learned. Innovative in this approach was the extensive discussions we had about the need for an implementation mechanism – a Castries Redevelopment Agency was proposed and the need for advanced capacity building within that agency to ensure domestic stewardship of the implementation process – often neglected in traditional masterplans – hence the motto used in the title of this paper – 'Beyond the Plan'.

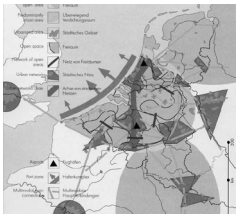
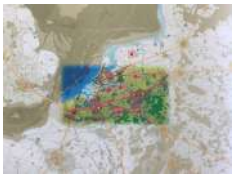
Combined lessons learned from Curacao and Saint Lucia experiences is that these small countries do not have all the capacities and skills needed for in-house planning. The resulting dependency on outsourced plans and designs is often more harmful than helpful. Temporary in-sourcing of experts through, for example, the UN or World Bank is certainly a smarter way to complement in-house capacities but too often the gains are too of a temporary nature. Hence, a more sustaining in-house/in-sourcing capacity development pathway could be explored by looking at capacity support mechanisms at the regional level of the Caribbean, perhaps a Caribbean Urban and Territorial Planning Institute under CARICOM[6] and with different language branches to better accommodate language preferences (primarily English, French, Spanish, Dutch and/or Papiamentu).

CONCLUSIONS & RECOMMENDATIONS

Table 1 below summarizes anecdotal evaluations of the selected cases to illustrate the merits and flaws of in-house strategic spatial planning during the past 25 years and across the east-west axis.

Overall, this sample of personal practice experiences illustrate the need for through-thought and carefully designed planning processes. It addresses the need to exploit the full potential of the in-house/in-sourcing strategic planning approach, adding a fifth track to the four-track model presented in the introduction.

Jan Vogelij's doctoral study[7] confirmed that effective decision-making processes for long-term developments are open, interactive collaborations towards

Plan	*Year*	*What worked out well?*	*What didn't work?*	*Why?*	*Remedy?*
Flanders Spatial Structure Plan 	*1997*	A ground-breaking 'in-house' urban/ rural territorial policy framework.	The application and implementation lost momentum and track in the 20 years upon approval.	Insufficient capacity to translate the regional vision in local vision and action.	Capacity strengthening at regional level to support in-house planning and action at local level.
Benelux Structural Outline 	*1997*	A unique transnational compass for national, regional and cross-border planning in the Benelux-delta. A source of inspiration for Europe-wide territorial planning. Successful in-sourcing.	The plan had a (too) limited national and international exposure and was ever evaluated or reviewed.	Insufficient capacity to follow up on the vision and loss of Benelux appeal in EU (despite failure of EU to produce a similar spatial plan).	In times of increasing nationalism, a capacity boost is needed to revamp transnational and cross-border planning.
Fifth Dutch Policy Document on Spatial Planning 	*2001*	For the first and last time, a national plan that looked explicitly at the transnational and cross-border context,	The plan was highly criticized for its overreach on prescribing local authorities, while the international dimension was perceived as overambitious in a EU without formal planning competences.	In times of deregulation and devolution, national territorial planning was considered unhelpful in boosting local economic development.	As long as national governments exist, they should have a national urban and territorial policy framework, but not necessarily national spatial plans. Instead, city-regional plans are more critical.
Scheldt-Estuary Development Outline 2030 (ProSes) 	*2005*	Intensive joint-fact-finding and stakeholder-based Shared Vision and some key projects were implemented (after long political bickering).	Communication with and involvement of the 'losing group' (farmers) largely failed to build a strong consensus.	Insufficient resources and political mandate/backing to involve the farming community.	In the design of complex planning processes more attention and resources is required to meet the needs for public interaction.
Kosovo municipal plans 	*2006 2016*	Unique decade-long capacity-building programme with tangible results in terms of on-the-job trainings, community visioning, approved municipal plans, placemaking designs and capital investments.	Insufficient hand-over of the built-up know-how from a local UN-Habitat team to domestic institution(s). Traditional master-planning still co-exists with strategic planning.	The support-programme did not allow to co-establish the needed institutional and educational mechanisms for proper continuation.	The Albanian Polis and Co-Plan provide solid benchmarks for further planning capacity-strengthening in Kosovo.

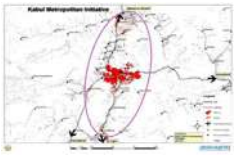
Area C Palestinian Community Plans 	*2013 2015*	A shift of thinking has been established that micro-masterplans are insufficient to enable desirable urban and territorial development in mostly deprived areas. City-wide, city-regional planning and placemaking are now seen as part of a broader strategy.	The new approach did not entirely convince all main actors including the Israeli army, the Palestinian Authority or even the international community.	A two-year period with limited budget can not achieve what was achieved with a 10-year programme in Kosovo. A fast-paced replacement rate of international experts and domestic 'support-fatigue' are also factors.	A new domestic institutional mechanism with international support to advise the Palestinian Authority on strategic planning matters would be required to establish more local trust and work on a longer time base.
Kabul Metropolitan Initiative 	*2016*	The two meetings of the Kabul Metropolitan Forum were innovative by bringing together state, provinces and municipalities around one table.	The Metropolitan Vision was too much expert-based with insufficient in-house involvement. Outsourced master planning still reigns.	Promised funds to establish a well resources in-house metro-planning team never materialized. Unlearning master planning is hard to do.	As with previous experience, a Metropolitan Planning Agency with mixed model of in-house/ in-sourcing and out-sourcing should be established to make a difference.
Castries Vision 2030 	*2019*	Adding a new Shared Vision as a bonus to the initial task to review an old plan within a 4-mont period can be considered as a planning success, including a first time ever Castries Urban Forum and Cabinet-discussion/ endorsement. Thinking ahead about the needed implementation mechanism is also a positive bonus.	Lack of time to cost-estimate and finance transformat-ional projects might fire back in the follow up phase. Tacit support by the PM/Cabinet might erode due to vested interest in status quo.	In the rush to get started, the initial project agreement did not include a follow up phase to ensure a smooth transition from visioning to project implementation. Traditional attitudes are hardwired and difficult to change.	As in previous cases a follow up and implementation mechanism is required to ensure continuation beyond the vision and plan. Such a mechanism should include on-the-job training and in-house capacity development.

Table 1 – Summary of lessons learned from strategic planning practices

new concepts applying visualizations (maps) and the related storylines of representatives of the interests that are considered relevant locally. The necessary openness of such processes requires design to be a process of group creativity in collaboration of relevant participants, not conducting design as a person-focused internal activity as done in traditional master planning. This recommended 'interactions approach' provides useful conclusions and contributes novelty to existing planning theory (VOGELIJ, 2015).

I believe that the cases presented in this paper confirm this interactive and creative approach to strategic planning, with 'in-built' learning-and training-on-the-job opportunities to strengthen in-house planning and steward wise and well managed in- and outsourcing. Let there be no misunderstanding: outsourcing is not considered as a bad practices per se, rather the wholesale outsourcing of a complex planning process with little or no capacity-transfer to the client.

Our cities and territories need good planning and management to thrive while keeping our planet healthy. Planned urbanisation and territorial development provides an avenue for sustainable social and economic development. In 'Leading Change- Delivering the New Urban Agenda through Urban and Territorial Planning', international planning experts strongly advocate engaging in urban and territorial planning processes that are strategic and participatory, with plans that are simple, clear and rapid (SALGA/UN-HABITAT, 2018). However, the high rate of urban growth far outpaces the capacity of many governments and other institutions to plan and manage this growth in a sustainable, effective and efficient manner. In the slipstream of the New Urban Agenda, many scholars have already pointed at the dangerous gap between planning expectations and planning capacities, both in numbers and quality. In her key-note speech at the 52nd ISOCARP world congress in Durban, Vanessa Watson, planning professor at Cape Town University said: "Planning is located as a central implementing tool in the Agenda, but is it an approach to planning which can achieve these very high expectations?" (WATSON, 2016). Governments, education providers and the planning community will need to step up and scale up efforts to boost the planning capacities needed for basic in-house planning. Well stewarded in/out sourcing may be needed to advance more sustainable territorial development as well to prevent a looming discredit that the planning discipline is not able to deliver on its promises as expressed by SDG11, the NUA and the IGUTP.

The IGUTP includes a recommendation to: "Design a human resource development strategy to strengthen local capacities, to be supported by other spheres of government, as appropriate; Reinforce institutional and human capacity development at the local level in the areas of planning, design, manage-

ment and monitoring, through training, exchanges of experience and expertise, knowledge transfers and organisational reviews."

In the handbook I have co-drafted to apply the IGUTP (UN-Habitat, 2018), I distinguish 'planning capacity needs' that are considered essential capacities and skills to meet the planning challenges of a certain territory. The Handbook defines 'planning capacity aspirations' as more ambitious goals on medium and long term which look beyond current needs and towards desirable planning capacities.

Capacity development needs to be planned and implemented. Typically, termed 'capacity building', it means training. However, if decision makers, managers, professionals and technicians are to operate at full capacity, they need more than just their own capabilities. They need a conductive and supportive institutional and organisational environment. Therefore, capacity building must embrace following three basic aspects[8]:

- Human resource development (HRD) - the process of equipping people with the understanding and skills, and the access to information and knowledge to perform effectively. Good HRD provides: incentives and rewards; opportunities for continuous training and retraining; clearly recognized career opportunities; and, competitive pay scales. This requires a dynamic and responsive organizational environment;
- Organizational development (OD) - the process that promotes and sustains collective activity within an organization. It is about management practices; rules and regulations; hierarchies and job descriptions – the structures and practices that shape how things get done. Particularly within central and local governments, such structures and relationships might require significant changes. However, organizational changes often depend upon institutional changes;
- Institutional development (ID): the legal and regulatory changes that must be made in order to enable organizations, institutions and agencies to enhance their capacities. It embraces such issues as the ability of local authorities to negotiate contracts and form partnerships with private companies and to enable and encourage communities to take responsibility for the management of their own neighborhoods and services. Such institutional issues generally need the political and legislative authority of national governments to bring about effective change.

Looking beyond the confines of traditional professional boundaries and state institutions, beyond attempts to micro-manage land-use and the discredited top-down, technocratic masterplans, then we can discern a new set of skills for

planning and managing urban and territorial development[9]:

- Analytical and cognitive skills: enabling planners to recognise where opportunities and constraints lie and how these relate to structures of power;
- Communication, negotiation and inclusion skills: learning to listen, question, synthesize, summarize and look for solutions;
- Strategic action skills: leadership matters and leadership skills are important in developing and sharing a territorial development vision;
- Management skills: to develop strategic plans and implement projects, to establish partnerships and manage budgets;
- Monitoring and learning skills: difficult situations cannot be turned around by old routines – monitoring and learning are essential for innovation.

Equipped with these understandings and tools, a re-thinking of planning capacity support for quality in-house planning is needed to implement the New Urban Agenda commitments.

This will need a parallel two-track approach:

- Governmental planning capacity development support to local authorities, to central level authorities and agencies and to existing governmental capacity providers; and,

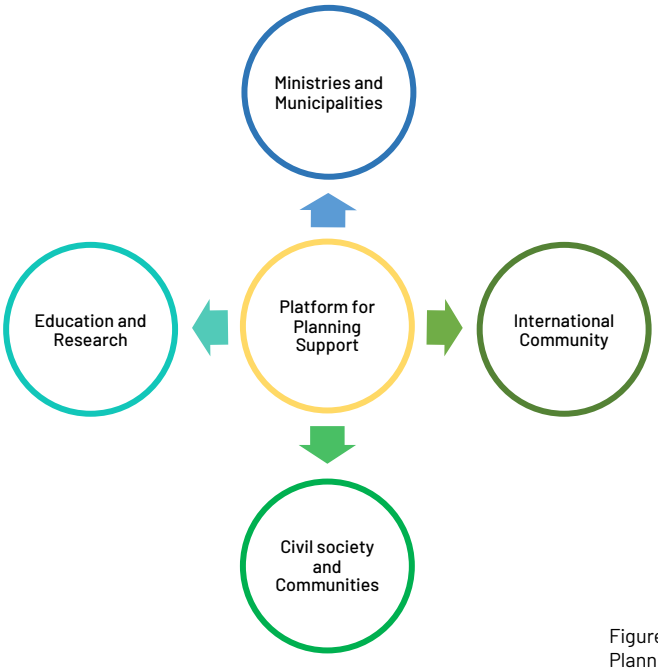


Figure 13 - Platform for Planning Capacity Support

· Non-governmental planning capacity development support: legal and planning advice and support for individuals, communities, civil society organizations, business community. This includes planning education and research, as well planning advocacy and awareness (media).

To that purpose I advocate territorial platforms (at regional, national and even transnational levels) for capacity planning and development to provide the institutional support mechanism to address the growing capacity and human capital deficit to implement the Sustainable Development and New Urban Agenda's – see Figure 13[10].

These platforms should address both governmental and non-governmental capacity needs and aspirations, as an intermediate agent between national and local governments on one hand, and civil society, business community and communities on the other hand, while interacting with and seeking occasional support from both international community and the education and research sectors.

Endnotes

1 Source: https://www.sctpos.ie/deloittes-global-outsourcing-survey-2016-reduce-costs-with-scts-helpdesk-support/

2 Source: http://www.scdigest.com/assets/FirstThoughts/10-02-05.php

3 later working for the European Commission and as director of the International Federation of Housing and Planning (IFHP)

4 UN-Habitat, 2015

5 see 'State of Afghan Cities 2015' (UN-HABITAT, 2016)

6 The Caribbean Community is an organisation of fifteen Caribbean nations and dependencies whose main objective is to promote economic integration and cooperation among its members, to ensure that the benefits of integration are equitably shared, and to coordinate foreign policy.

7 Vogelij, 2015. Jan is a life-long planning friend with over 40 years of planning practice experience distilled in this doctoral study. We once joined force as respectively president and vice-president of te European Council of Town Planners (ECTP), a European association of national and regional planning associations.

8 'Based on 'Planning Capacity Appraisal Kosovo', UN-Habitat (unpublished) and 'Making Planning Work – A guide to approaches and skills', C. Hague a/o, p.90

9 See 'Making Planning Work', op.cit., pp.14-15

10 Based on 'Capacity Planning Appraisal Kosovo' PowerPoint presentation, F. D'hondt/UN-Habitat (unpublished)

References

Albrechts, L., 'More of the same is not enough! How could strategic spatial planning be instrumental in dealing with the challenges ahead?', in Environment and Planning B: Planning and Design, 37(6): 1115–1127, 2010
Albrechts, L., 'Enhancing Creativity and Action Orientation in Planning', in The Ashgate Research Companion to Planning Theory, Conceptual Challenges for Spatial Planning', by Patsy Healey, 2016
Albrechts, L., 'Strategic Planning, Ontological and Epistemological Challenges', The Routledge Handbook of Planning Theory, 2017
BEU [Benelux Economic Union], "Ruimte voor Samenwerking - Tweede Benelux Structuurschets", 1996
Boussauw, K., 'Challenges, threats and opportunities in post-conflict urban development in Kosovo', in Habitat, 2012
Claessens, J., The Scheldt Estuary Development Project, Paper, date unknown (https://westerndredging.org/index.php/woda-conference-presentations/category/61-session-4a-dredging-project-case-studies)
De Vries, J., 'Venturing into Unknown Territory: The Preparation and Formulation of the Second Benelux Structural Outline', in European Briefings, 2008
D'hondt, F., Janssens, P., Van Den Broeck, J., 'Com-cooperation in Transnational Planning, experience-based strategy for transnational and cross-border planning'. Paper presented at the XVIth AESOP Congress, 'Planning and regional development in border regions', 2002
D'hondt, F., 'The Transitional City: Post-Conflict Kosovo and the New Charter of Athens', in Built Environment Vol.38 No 4, 2012
Hague et al., 'Making Planning Work – A guide to approaches and skills', Practical Action, 2006
Healey, P., 'Planning in relational time and space: Responding to new urban realities', in G. Bridge and S. Watson (Eds), A Companion to the City. Oxford: Blackwell, 517–530, 2000
Ibrahim A., & Domgjoni, P., 'Placemaking in Area C', in This Week in Palestine, 2015
ISOCARP, 'The Heartland of the West Bank, Spatial Visioning Reflections', West Bank UPAT Magazine, 2015
ISP [Kosova Institute for Spatial Planning], Kosova Spatial Plan, 2010
Jaica, 'Study for the Development of the Master Plan for the Kabul Metropolitan Area in the Islamic Republic of Afghanistan, 2009
MVG [Ministry of The Flemish Community], 'Ruimtelijk Structuurplan Vlaanderen', 1997
MVROM [Ministry of Housing, Spatial Planning and The Environment, The Netherlands], 'Ruimte maken, ruimte delen, Vijfde Nota Ruimtelijke Ordening, 2001
Ministry of Transport and Public Works, The Netherlands, And Ministry of The Flemish Community, Belgium, 'Langetermijnvisie Schelde-estuarium', 2001
PROSES, 'Ontwikkelingsschets 2010 Schelde-estuarium', 2005
Salga/UN-Habitat, 'Leading Change- Delivering the New Urban Agenda through Urban and Territorial Planning', 2018
Swyngedouw, E., 'Where is the political? Insurgent mobilisations and the incipient 'return of the political", in Space and Polity, 18(2): 122–136, 2014
United Nations, 'One UN Approach to Spatial Planning in Area C of the West Bank', 2015
United Nations, 'New Urban Agenda', 2017
UN-Habitat, 'Urban Trialogues, Localising Agenda 21, Visions, projects, co-productions', 2004
UN-Habitat, 'Visioning as Participatory Planning Tool, Learning from Kosovo Practices', 2012
UN-Habitat, 'Evaluation of the Municipal Spatial Planning Support Programme in Kosovo (MuSPP)', 2014a.
UN-Habitat, 'Municipal Toolbox MUSPP', 2014b
UN-Habitat, 'Spatial planning in Area C of the Israeli occupied West Bank of the Palestinian Territory, Report of an International Advisory Board', 2015a
UN-Habitat, 'International Guidelines on Urban and Territorial Planning', 2015b
UN-Habitat, 'State of Afghan Cities Report 2015', 2016a
UN-Habitat, 'National Support for Afghan Cities', Discussion Paper 3, Series 2, 2016b
UN-Habitat, Kabul Metropolitan Vision, 2016c (unpublished)
UN-Habitat, Handbook International Guidelines on Urban and Territorial Planning', 2018

Van Den Broeck, J., 'Strategic Structure Planning', in 'Urban Trialogues, Localising Agenda 21, Visions, projects, co-productions', UN-Habitat, 2004
Vogelij, J., 'Effective Strategy Making, Co-designing scenarios as a tool for effective strategic planning', Abe Delft 07, 2015.
VRP, '20 jaar Ruimtelijk Structuurplan Vlaanderen', Ruimte 33, 2017
Watson, V., 'Sustainable Development Goal 11 and the New Urban Agenda: can planning deliver?', (https://isocarp.org/activities/isocarp-annual-world-congress-2/52nd-isocarp-congress/keynote-speakers/)
Zonneveld, W., 'Multiple visioning: new ways of constructing transnational spatial visions', in 'Environment and Planning: Government and Policy', V23, pages 41-62, 2005

WHY SHOULD ASIA BUILD UNIQUE CITIES?

OLGA CHEPELIANSKAIA

Source: http://blog.gdi.manchester.ac.uk/east-asia-developmental-state-globalisation/

INTRODUCTION

A uniform way of building cities has accelerated from the mid-20th century onwards. But the question of visual identity in cities, as well as its implications on the overall urban quality of life, liveability and economic competitiveness, has not been investigated by the international development community, national and local decision-makers, urban practitioners, private sector, or the civil society. This paper aims to explore this topic by sharing work-in-progress arguments on why visual identity is critically important today, particularly for Asian cities that are at the forefront of global urbanisation.

BANGKOK HO CHI MINH MUMBAI

Anonymous skylines of Asian cities. Sources: Bangkok - Travel and leisure; Ho Chi Minh - TripSavvy; Mumbai - Skyscraper City.

ASIAN CITIES ARE RAPIDLY BECOMING UNIFORM

Asian cities face an unprecedented urbanization pressure. They hosted 0.3 billion urban dwellers in late 1950s; 2.1 billion in 2015; and are projected to host 3.3 billion by 2050. This trend came at the cost of significant vulnerabilities. As per UN-HABITAT, Asia is home to nearly 70% of the world's urban poor. Over 40% of the South Asian urban population lives in slums. Over 50% of Asian urban dwellers have no direct access to water supply and over 25% have no access to improved sanitation.

This means that the pressure to rapidly develop new infrastructure in Asian cities is tremendous. The Asian Development Bank estimates that between 2016 and 2030 over USD 26 trillion will need to be invested into infrastructure in Asia-Pacific (ADB, 2017), a significant part of which is required for cities.

Rapid urbanisation has been nurtured by a continuing migration of agricultural workers seeking urban jobs in manufacturing; information asymmetries contributing to agglomeration economies; technological developments in transport and building sectors; and, the substitution of capital for land (Kundu, 2009). Buildings to accommodate this rapid growth feature standardised construction styles, materials and a global design identity. On the ground, this reflects in little "thought-through" construction (Zukin, 2009) in Asian cities are creating more inequalities, more vulnerabilities to climate change and a loss of visual identities**.** It is becoming increasingly difficult to identify distinctive features of an Asian city and to differentiate it from other cities.

FACTORS CONTRIBUTING TO THE LOSS OF VISUAL IDENTITY IN ASIAN CITIES

RAPID URBANISATION AND HIGH-RISE DEVELOPMENTS

Source: The Possible

In this context of rapid urbanisation, several Asian cities are becoming megacities that see no alternative to high rise buildings. In 2010, only 9 of the world's megacities were in Asia. By 2025, 21 of the projected 39 megacities will be in Asia, with the biggest population growth expected to take place in new, or small to medium scale, cities in East and South Asia (Collingridge, 2014). Half of the world's 100 tallest buildings are already located in Asia-Pacific (Allen, 2014).

High rise buildings however mean limitations in terms of choice of construction materials and building forms. Indeed, due to structural considerations, buildings above 5-8 stories are essentially dependent on concrete, steel, aluminium and glass. These very materials leave a limited scope for façade variations compared to lower buildings

which may use materials such as stone, wood or mud blocks. The race to build led to little variations in architectural styles and nearly uniform glass, steel and concrete buildings across Asian cities, and cities of the Global South in general. Aside from a few landmark structures standing out in a city skyline, such as the Petronas Twin Towers in Kuala Lumpur or the Maha Nakhon tower in Bangkok, most contemporary skylines look similar in any part of the world.

WESTERN CITIES SEEN AS MODELS OF PROGRESS

In many Asian cities, new building and infrastructure designs have been inspired by models of modern Western cities dating back to 1950s and 1960s. Such tweaked perceptions of modernity led developing Asian countries to emulate the West at a hyper scale, yet in a misguided and misinformed ways. This was partly due to colonial influences and partly to media and communication channels, essentially led by Western countries until the widespread advent of digital technologies. The idea of tall buildings and car ownership was perceived as prestigious and hence aspirational for Asian urban dwellers. This resulted in modernist buildings taking over vernacular ones, grid iron layouts taking over an organic urban fabric growth with car-oriented city patterns as well as concrete and asphalt dominating the ground surfaces. Asian cities became suburbanised, motorised, westernised and globalised, especially in East and South-East Asia (Yeung, 2011).

Collage by Author. Sources Wikipedia and videoblocks.com

GLOBALISED REAL ESTATE DEVELOPMENT

Globalisation and liberal economies have created international real estate markets. Asia-Pacific accounted for 33% of the global public investable real estate and 24% of the combined global public and private institutional real estate (CBRE, 2017). Cross border investments and the race to become global cities have led real estate developers to aim at international standards and outlooks, leading to uniform identities across cities. In the early 1960s, American-Canadian urbanist Jane Jacobs criticised the 20th century modernizers who planned to rebuild all cities with right angles and straight lines. She called these homogenized superblocks and high-rise towers 'the great blight of dullness'. In pursuit of profit and competitiveness, international real estate players borrowed the latest international design and building techniques, which minimize creativity and local context tailored solutions.

Source: Shutterstock

Globalised real estate market forces the prioritization of large-scale uniform developments over a city's visual identity and the quality of its public spaces. Even historical Asian cities such as Jaipur, Hanoi or Bangkok, once famous for their unique architecture and landscape, are replacing their built environments with increasingly standardised design and materials.

GLOBALISED BUILDING CODES

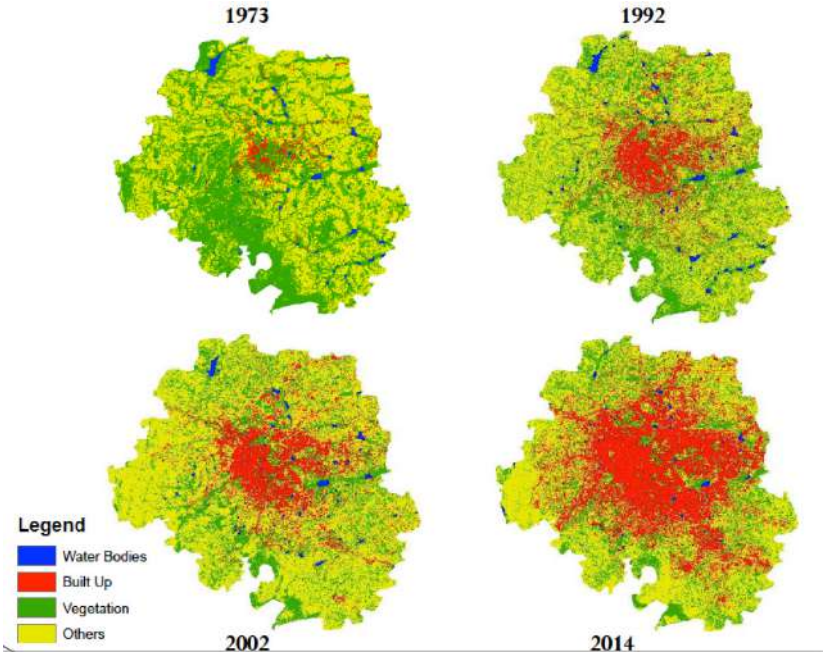
Image by Squareyards

Globalised building codes have also contributed to a homogenization of cityscapes and skylines. In an article by Cutter (2018), Vishaan Chakrabarti, a prominent architect and urban planner, commented that cities are being robbed of their individuality. He stated that "Developers, confronted with the cost of installing multiple elevators and a complicated internal infrastructure, need to spread the expenses over more apartments – leading to bigger buildings."

Indeed, real estate firms find it easier and more cost effective to enter markets with standardized building code requirements. The desire for consistency and performance optimisation, particularly in the building sector, has pushed authorities to endorse or adopt universal codes and standards whenever available (Knox & Pain, 2010). For example, an array of codes has been published by the International Code Council (ICC), a non-for-profit organization dedicated to developing a single set of national and international model construction codes (including standardized zoning). Such internationalization of codes provides an attractive blueprint to authorities lacking requisite technical and financial resources to develop their own codes. Markets, in their turn, prioritise maximizing sellable areas and floor area ratio (FAR). Altogether, this leads to the characterless multi-storey concrete structures, become common across Asian cities, a major cause of the absence of distinct visual features.

HEAVY NEGATIVE CONSEQUENCES OF BUILDING UNIFORM

Negative consequences related to this gradual loss of visual identity go far beyond a cultural loss. They compromise urban sustainability, economic prosperity and quality of life. Indeed, urban natural ecosystems are heavily affected by the current rapid urbanisation process. Standardised materials and construction styles often are unsuitable for specific local contexts and generate high carbon footprints. This type of development leads to climate vulnerabilities; to cities losing their economic competitiveness; and, to citizens' physical and emotional discomfort with their built environment, which severely affects their physical and mental health.



Land use and land cover change in Bangalore, India; Source: Hungry Cities Partnership, Bangalore; Available at http://hungrycities.net/city/bangalore-india/ [Accessed on 29June, 2019]

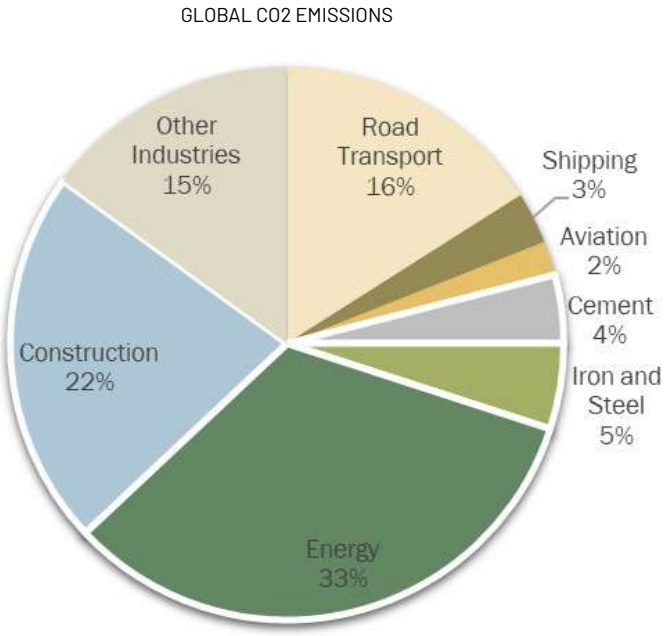
COMPROMISED SUSTAINABILITY AND CLIMATE RESILIENCE

(A) LOSS OF NATURAL ECOSYSTEMS

Most Asian cities in developing countries are losing their unique natural ecosystems both in their urban and peri-urban areas as a result of rapid urbanisation. This standardized way of designing regularly spaced high rise towers, car-oriented patterns requiring large spans of land for parking and roads, land use divided into rigid functional zones coupled with unplanned city expansions has led to massive encroachments over water bodies and green areas, water pollution, and even the flattening of hillsides. To mention few examples, Songdo in South Korea, Gurgaon in India, Beijing in China, or Kuala Lumpur in Malaysia possess many of these characteristics (Burdett, 2018).

Little attention is paid to preserving the natural landscape or to adapting buildings to the local climate. Loss of natural ecosystems makes cities simultaneously prone to floods, heat waves, droughts and scarcity of natural resources. Recent flooding incidents in numerous Asian cities have demonstrated the extent of damages such an approach has produced. For example, Bangalore and Chennai respectively lost 80% and 90% of their water bodies in the last four decades (Anon., 2016). Bangalore regularly has faced severe floods since 2000 and the massive 2015 flood in Chennai caused an estimated damage of USD 2.2 billion.

Apart from their environmental benefits, natural ecosystems make an important part of the public realm. Singapore's Bishan-Ang Mo Kio Park is a concrete drain channel converted into a long natural river that meanders through the park to increase its flood water carrying capacity. The park integrates three playgrounds, restaurants and open green spaces making it a popular nearby residents' choice for recreational activities (National Parks Board, n.d.). Bishan Park is only one of Singapore's series of green spaces that contribute to its identity as a 'City in a Garden'. Blue and green urban elements offer a platform for human interaction and place-making, which we cannot afford to lose.



Global CO2 emissions by industry (Image by Author)

(B) HIGH CARBON FOOTPRINTS

Today's conventional materials and construction techniques have significantly higher carbon footprints compared to vernacular architectural approaches which, by definition, were deeply anchored into the local context. Standardised materials and construction techniques are, on the contrary, often unsuitable to the local geographic context, which leads to a higher embodied and operational energy consumption, and hence higher greenhouse gas (GHG) emissions.

As per the International Energy Agency (IEA) (2019), buildings account for over a third of the global final energy demand. Conventional building materials such

as concrete, steel or aluminium have highest embodied energy[1]. The manufacturing of materials such as crude steel, aluminium, copper, cement or glass alone represents 25% of the current global final energy demand and 20% of global CO2 emissions (UN Environment & International Energy Agency, 2017). Building with uniform materials hence actively contributes to the buildings' share of 40% of the world energy consumption and nearly a third of GHG emissions (Holland, 2018). The Paris Agreement can hardly be met without bringing these figures down.

Similar problems apply to the operational energy of buildings made with standardized materials. For example, glass skylines, seen as symbols of progress, have been designed with little thought of the climate in which they are located or the environmental impact they might generate. According to the 2003 Commercial Building Energy Consumption Survey (CBECS), 70% of energy used in commercial buildings derives from the lighting and HVAC systems (Payette, 2015). Performance of both these systems is directly related to the design and performance of the building envelope. Glazed facades lead to higher heating and cooling loads as well as glare and thermal comfort challenges.

Despite these environmental concerns, real estate and construction materials market trends point towards a continuously increasing consumption of these construction materials across Asia. China, for example, used more cement between 2011 and 2013 than the United Stated over the entire 20th century (Swanson, 2015). Together, Indonesia, Vietnam and Thailand account for about 75% of the total cement consumption in South-East Asia. These countries also have the highest urbanisation rates in the region (World Cement, 2012). Asia-Pacific equally holds the largest share in the global construction glass market: 61% in terms of value in 2015. In developing countries such as China, India, Malaysia or Thailand, consumption of construction glass is steadily increasing. Indeed, Asia-Pacific is expected to witness the highest glass consumption growth in the construction sector between 2016 and 2022 (P&S Market Research, 2016).

Finally, buildings made with conventional construction materials have proved to have a short life span. According to a recent colloquium at the Getty Center, the average life span of a traditionally built building (masonry and wood) is at least twice the lifespan of a modernist buildings (reinforced concrete and glass curtain wall): 120 years versus 60 years (Donnelly, 2015).

Instead of adding a valuable layer to a city's legacy, new constructions essentially create deteriorating environments that are expensive to maintain and quickly run out of 'fashion'. The international architecture and urban development community needs to rapidly question the current approach to avoid a severe compromise on world's sustainability and climate resilience.

LOSS OF ECONOMIC COMPETITIVENESS

The loss of economic competitiveness comes from a decrease of tourism opportunities and a decrease of quality of life, an essential element of a location's choice for talented and qualified individuals and business investors.

(A) COMPROMISED TOURISM OPPORTUNITIES

In a globalised world, city branding has become an emerging agent of urban socio-economic development. Such branding usually is founded on the visual image that integrates historical and cultural icons with new landmark buildings (Rehan, 2014) and offers unique urban realm and skyline. A branding strategy aims at conferring to a city an image and a cultural significance that generate an economic value (Seisdedos & Vagionne, 2005). Several now famous cities have successfully used their cultural assets to bring in numerous visitors (Masjutina, 2016). Often, these assets are observed to be vernacular architecture and heritage buildings for a simple reason: such buildings combine beauty, uniqueness and human scale. These are more praiseworthy when combined in a harmonious urban fabric versus standalone buildings.

Verona, Italy, receives 750,000 visitors per year. Architectural monuments ranging from Roman and Middle Age to Austro-Hungarian Empire are major components of its unique cultural heritage and are a major element in the brand of the city (Masjutina, 2016). Verona is a visually stunning city that offers an immersive experience well beyond landmark monuments. Italy's visionary National Policy on Heritage Conservation, developed in the 1960s, contributed to this success. Law number 765 of 1967 – The Conservation of the Cultural Heritage of Monuments and Sites through Town Planning Act – requires every municipality to draw up an urban land use master plan that divides the city into historical and non-historical areas with separate planning bylaws for the two categories. This helped Verona protect its original urban structure and nurture its heritage architecture despite significant damages during World War II.

Piazza delle Erbe (Market square), Verona, Italy. (Source: Traveller, Available at http://www.traveller.com.au/italy-verona-the-northern-italian-town-that-captivated-shakespeare-h1azk8 [Accessed 29 June 2019])

Cities all over the world are promoting themselves as desirable destinations to investors, tourists, and prospective residents. In cities such as Paris, Rome, Barcelona or Singapore, one can see that the success of these cities is not a product of a sole skilful marketing strategy. These cities are already clearly identifiable by their socio-cultural and physical character. The uniqueness of these elements is crucial to providing a sustainable competitive advantage over other cities and in creating city brand equity (Muratovski, n.d.).

(B) COMPROMISED ECONOMIC COMPETITIVENESS

Cities have been driving productivity and growth throughout history and will continue to play an essential role in their respective provinces' and country's economic competitiveness. However, with the advent of the digital revolution and globalised economies, remote work opportunities may soon lead cities to compete over retaining business investors and intellectual capital (JLL & the Business of Cities, 2015). People are now able to attend schools and universities virtually, manage banking and shopping services online and event consult doctors remotely. This clearly means that qualified individuals are more and more likely to settle in cities that offer quality of life, which makes it essential for a city to offer such an environment if it wants to remain economically competitive and prosperous.

ALTERED PHYSICAL AND MENTAL HEALTH

Urban natural ecosystems are an essential element of a city's visual identity and help to preserve citizens' physical and mental health. The World Health Organization (n.d.) recommends cities offer a minimum of 9 sq. meters of green space per capita to facilitate good mental and physical health for its citizens. Most Asian cities lag far behind this quota.

Preserved ecosystems also provide open green spaces for recreation and enhance a city's visual identity and image. Singapore's vast network of green and blue spaces, with over 700 community gardens, led the city to be internationally recognised as a City in a Garden (Song, 2015). Its Gardens by the Bay and Singapore Botanic Gardens are an important part of its vibrant and engaging cityscape (National Parks Board, 2019).

Visual identity and urban design of a city also affect people's mental health, even though they might not always be conscious of it. Professor Colin Ellard researched the psychological impact of urban design at the University of Waterloo, Canada. To demonstrate the impact of building facades on people's psychological state, he conducted experiments by walking people in front of different types of facades and measuring their cortisol levels. The study found out that a complex and inter-

Singapore Botanical Garden (Top) and Bishan-Ang Mo Kio Park (Bottom)
Source: Photo by Author and Ramboll Studio Dreiseitl, Available at https://www.asla.org/2016awards/169669.html

esting building façade affects people in a positive way. Conversely, it affects them negatively if the façade is monotonous. When the surveyed group walked past a long, smoked-glass frontage store in Lower Manhattan, their arousal and mood states took a dive, according to the wristband readings and on-the-spot emotion surveys. The same group reported feeling lively and engaged when they passed along active facades higher in visual complexity (Bond, 2017).

In his essay titled, "Streets with no game," Ellard (2015) cites Jan Gehl, a renowned Danish urbanist, who believes that an engaging and connecting city street must be designed so that the average walker, moving at a rate of about 5km per hour, sees an interesting new site about once every five seconds**.** This is simply not possible in a car oriented, uniformly built city. Even when pedestrian paths are provided along roads, they may not be used because the speed of adjacent cars is too high and/or because facades are uniform, closed and not interactive.

"At a psychological level, these constructions fail us because we are biologically disposed to favour locations defined by complexity, interest, and the passing of messages of one kind or another." (Ellard, 2015).

To retain its wellbeing quotient, the city needs to offer human scale and connecting architecture to its citizens.

ALTERED LIVEABILITY

Cities today compete with each other on liveability indexes**,** which takes into account a number of factors such as urban quality of life, safety, walkability, public transport, cultural and natural environments. Tan Szue Hann, architect, urban planner and head of sustainability at the leading industrial consulting firm Surbana Jurong, said: 'A liveable city requires good, sustainable infrastructure, architecture and engineering; a stable economy; opportunities to thrive in various fields; and robust policies for sustainable and resilient living. It would also preserve and promote health and wellness for its inhabitants.' The Economist Intelligence Unit's ranking of the world's most liveable cities does not feature a single Asian city in the top 10. Four Asian cities – Tokyo, Osaka, Singapore and Hong Kong - feature in the top 50 (Ang, 2018).

The world's most liveable cities (Top 50) as per the EIU, Image by Author

For a citizen, a liveable city needs to provide a sense of belonging and have a distinct identity the citizen connects to and shares with their fellow citizens (Dubbeling, 2011). Improving liveability means enhancing a city's identity and making it attractive to its inhabitants, visitors, businesses, developers and investors. Enhancing urban liveability is about making the most of a city's inherent advantages and, often, the key lies in natural and cultural heritage.

Some Asian cities have recognised this link between liveability and visual identity and are taking necessary legislative and planning measures to make improvements. Other Asian cities might wish to draw conclusions from their neighbours' efforts and leapfrog the uniform urban development phase.

Seoul, Korea, Cheonggye Stream: once covered by an elevated highway [Image by: Kimmo Räisänen], [Accessed 2nd July 2019]. Available at http://www.cityclock.org/removing-urban-highways/#.XRtRQegzbDc

Cities in selected Gulf countries such as Bahrain, Qatar or the United Arab Emirates are actively exploring new urbanism strategies to build unique visual identities in order to diversify their economic activities and maintain business attractiveness in an up-coming post-oil economy. These countries are increasingly investing in urban regeneration projects through heritage core revivals, waterfront developments and new architecture inspired by local culture and traditions. Increased political support to such interventions indicates that the Gulf region is gradually shifting from uniform steel, concrete and glass high rises to building unique cities (Ricca, 2018).

Architecture is becoming a major factor of liveability and branding in Gulf cities. Recent interventions such as Souq Waqif in Doha, Al Bastakia in Dubai or Royal Opera House in Muscat are directly inspired from features of Islamic heritage (Wiedmann & Salama, 2013). Msheireb Downtown Doha is a regeneration project that revives the old commercial district with a new architectural language that is modern yet builds on traditional Qatari architecture. As a result, its design, spaces and proportions respond to the local climate. The strategic objective of the Msheireb project is to transform Doha's urban development pattern from a car dependent, energy intensive high rise model to a sustainable, human scale and context tailored approach (Scharfenort, 2013). In Dubai, the conservation and reconstruction of historic neighbourhoods is giving residents an urban historic depth previously unrecognised, favouring the integration of different ethnic communities while contributing to the tourism development of the city (Ricca, 2018).

Souq Waqif, Doha, Qatar, Source Travel Bunny

Analysing such examples, one may argue that urban planning, design and architecture in the Gulf have reached a turning point in which West-inspired master plans and high rises are gradually getting replaced by context tailored city visions based on economic diversification, unique identities and improved liveability strategies (United Nations, Department of Economic and Social Affairs, Population Division, 2014).

'While until recently the Gulf urban development process was dominated by a conceptual framework based on engineer-driven plans modifying the natural landscape to adapt it to human needs, and by major land reclamations and out-of-scale infrastructure projects (highways, artificial islands and deep-water harbours), recent examples prove that a radical evolution is now taking place and that heritage and culture are indeed contributing to the creation of a new vision for the Gulf cities of the 21st century." (Ricca, 2018)

The local history and morphological imprints of Qatari traditions

The Msheireb masterplan grid draws references from the historic street pattern that connects well with the wider existing city fabric

Chengdu, China; Bangkok market; Bangkok riverfront (Left to right)

CONCLUSION

There is a clear need for new models of urbanism as the world's population is on the verge of increasing by two billion inhabitants in the next three decades. The fundamental goal of city design must be to improve the lives of people. This means creating fulfilling, enriching, and sustainable ways for residents to live, work and thrive. Building unique is a pathway to achieving this goal in the long run. The success of addressing the challenge of disappearing visual identities will define how well cities will be able to cope with environmental, economic and social challenges of tomorrow.

The cities of the future need to develop and incorporate an indigenous local design language, one which takes advantage of local materials and traditional design elements. These new cities should take advantage of energy efficient materials and new technologies. They should provide blue and green infrastructure to enhance the liability of city residents.

The window of opportunity to act upon the challenge is closing. The World Bank estimates that over 60% of the infrastructure the world will see in 2030 is yet to be built, and a large part of it will be built in Asia. Once in place, this infrastructure will lock Asian cities into a living pattern for decades. The coming ten years are hence critical and will determine how sustainable, climate resilient, economically prosperous, socially inclusive and vibrant Asian cities will be in the 21st century.

Bibliography

Wiedmann, F. & Salama, A. F., 2013. ***Demystifying Doha: On Architecture and Urbanism in an Emerging City.*** Surrey: Ashgate Publishing.

Zukin, S., 2009. Destination Culture: How Globalization makes all Cities Look the Same. ***Inaugural Working Paper Series,*** 1(1), pp. 3-26.

Collingridge, V., 2014. The rise and rise of the Asian megacity (and why 'metacities' are the next big thing). ***Post Magazine***, 15 June.

Allen, K., 2014. Asia-Pacific takes top place for property investment. ***Financial Times***, 12 June.

Yeung, Y.-m., 2011. Rethinking Asian cities and urbanization: four transformations in four decades. ***Asian Geographer,*** 28(1), pp. 65-83.

CBRE, 2017. ***Globalization and Real Estate: Where next?*** [Online]
Available at: https://www.cbre.es/~/media/cbre/countryspain/documents/research/golbal/globalization%20and%20real%20estate.pdf

Cutter, C., 2018. ***An architect explains why so many cities now look depressingly similar.*** [Online]
Available at: https://www.linkedin.com/pulse/architect-explains-why-so-many-cities-now-look-similar-chip-cutter/

Burdett, R., 2018. ***Flexible Urbanisms | Barcelona Metropolis.*** [Online]
Available at: https://www.barcelona.cat/metropolis/en/contents/flexible-urbanisms

National Parks Board, n.d. ***Bishan-Ang Mo Kio Park.*** [Online]
Available at: https://www.nparks.gov.sg/gardens-parks-and-nature/parks-and-nature-reserves/bishan---ang-mo-kio-park

International Energy Agency, 2019. ***Buildings.*** [Online]
Available at: https://www.iea.org/tcep/buildings/

Holland, O., 2018. Are architects turning their backs on glass skyscrapers? ***CNN Style***, 25 January.

Payette, 2015. ***Energy Efficiency + The All-Glass Building.*** [Online]
Available at: https://www.payette.com/in-the-news/energy-efficiency-the-all-glass-building/

Swanson, A., 2015. How did China use more cement between 2011 and 2013 than the US used in the entire 20th century? ***The Independent***, 25 March.

World Cement, 2012. Evolution of the Southeast Asian cement market. ***World Cement***, 28 March.

P&S Market Research, 2016. ***Global Construction Glass Market Size, Share, Development, Growth and Demand Forecast to 2022 - Industry Insights by Type.*** [Online]
Available at: https://www.psmarketresearch.com/market-analysis/construction-glass-market

Donnelly, B., 2015. ***The life expectancy of buildings.*** [Online]
Available at: https://brandondonnelly.com/2015/09/06/the-life-expectancy-of-buildings/

Rehan, R. M., 2014. Urban branding as an effective sustainability tool in urban development. ***HBRC Journal,*** 10(2), pp. 222-230.

Seisdedos, G. & Vagionne, P., 2005. The city branding processes: the case of Madrid. ***41st ISOCARP Congress,*** pp. 1-10.

Muratovski, G., n.d. ***Pt 1: A Critical Reflection on City Branding – The City as a Brand | Design Online.*** [Online]
Available at: http://designonline.org.au/pt-1-a-critical-reflection-on-city-branding-the-city-as-a-brand/

JLL & the Business of Cities, 2015. ***Globalisation and Competition: The New World of Cities.*** [Online]
Available at: http://europe-re.com/uploads/europe/report_attachments/jll-new-world-of-cities-globalisation-and-competition-2015-20151216123239.pdf

UN Environment & International Energy Agency, 2017. ***Towards a zero-emission, efficient, and resilient buildings and construction sector: Global Status Report 2017.*** [Online]
Available at: https://www.worldgbc.org/sites/default/files/UNEP%20188_GABC_en%20(web).pdf

Kundu, A., 2009. Exclusionary Urbanisation in Asia: A Macro Overview. ***Economic & Political Weekly,*** 44(48), pp. 48-48.

Song, K. B., 2015. ***Liveable and Sustainable Cities: Common Challenges, Shared Solutions. World Cities Summit 2014,*** Singapore: Centre for Liveable Cities and Urban Redevelopment Authority.

World Health Organization, n.d. ***Urban green spaces.*** [Online]

Available at: https://www.who.int/sustainable-development/cities/health-risks/urban-green-space/en/
National Parks Board, 2019. ***Biophilic City in a Garden.*** [Online]
Available at: https://www.nparks.gov.sg/about-us/city-in-a-garden
Bond, M., 2017. The hidden ways that architecture affects how you feel. ***BBC***, 6 June.
Ellard, C., 2015. ***Streets with no game.*** [Online]
Available at: https://aeon.co/essays/why-boring-streets-make-pedestrians-stressed-and-unhappy
Thadani, D., 2018. ***City dreams | CNU.*** [Online]
Available at: https://www.cnu.org/publicsquare/2018/08/24/city-dreams
Ricca, S., 2018. ***Urban Heritage in the Arabian Peninsula, the Experiences of Jeddah and Dubai.*** [Online]
Available at: https://docs.wixstatic.com/ugd/a2733e_993c75d6ed26485ea95e21bd8e320cf7.pdf
Scharfenort, N., 2013. In Focus n° 1: LargeScale Urban Regeneration: A New "Heart" for Doha. ***Arabian Humanities.***
United Nations, Department of Economic and Social Affairs, Population Division, 2014. ***World Urbanization Prospect: The 2014 Revision, Highlights,*** s.l.: s.n.
Ang, Z., 2018. How can Asia's sweltering cities be made more liveable? ***Eco-Business***, 10 April.
Dubbeling, M., 2011. ***Inspirational Values for Liveable Cities | Connecting Cities.*** [Online]
Available at: http://www.connectingcities.eu/inspirational-values-for-liveable-cities/
Asian Development Bank, 2017. ***Meeting Asia's Infrastructure Needs,*** Manila: Asian Development Bank.
Masjutina, S., 2016. Branding Cities Through History and Culture: Example Verona and Cannes. ***The Place Brand Observer***, 20 September.
Knox, P. L. & Pain, K., 2010. Globalization, neoliberalism and international homogeneity in architecture and urban development. ***Informationen zur Raumentwicklung,*** 5(6), pp. 417-428.
Anon., 2016. Bengaluru has lost 79% of its water bodies: Study. ***Times of India***, 3 March.

LABEL ÉCOQUARTIER
FRENCH PROGRAM TO CERTIFY ECO- NEIGHBORHOODS. A ROAD TO FOLLOW?

MONIKA TROJANOWSKA

THE LABEL ÉCOQUARTIER[1] PROGRAM

ÉcoQuartier is a French national public program to evaluate and certify eco-neighborhoods. It was created by the French Ministry of Ecology, Sustainable Development and Energy (Ministère de l'Ecologie, du Développement Durable, et de l'Energie) in 2012. The major aim of the *ÉcoQuartier* program is to promote good examples and encourage sustainable urban development projects.

To begin the certification program, first, a community needs to sign the Charter of *ÉcoQuartier* which contains the following 20 commitments, structured into four dimensions [2]:

A. APPROACH AND PROCESS	
Commitment 1	Ensure the projects respond to the needs of all by relying on resources and constraints of the territory.
Commitment 2	Formalize and implement a participatory process and an extended governance with citizen mobilization
Commitment 3	Integrate the financial dimension throughout the project in a global cost approach
Commitment 4	Consider the users' practices and the constraints of the managers throughout the project
Commitment 5	Implement at all stages of the project and in use, assessment and continuous improvement processes

B. LIVING ENVIRONMENT AND USES	
Commitment 6	Work first and foremost on the existing city and propose adapted urban forms to fight against urban sprawl
Commitment 7	Implement the conditions of living together and solidarity
Commitment 8	Create a safe living environment that responds to major health issues, including air quality
Commitment 9	Implementing urban, landscape and architectural quality
Commitment 10	Enhancing heritage (natural and built), history and identity of the site

C.TERRITORIAL DEVELOPMENT	
Commitment 11	Contributing to local economic development, balanced and supportive
Commitment 12	Promoting diversity of functions and their proximity
Commitment 13	Optimize use of resources and develop local channels and short circuits
Commitment 14	Promote active modes, public transport and alternative mobility offers
Commitment 15	Fostering digital transition to smart city

D. ENVIRONMENT AND CLIMATE	
Commitment 16	Promote urban planning to anticipate and adapt to risks and climate change
Commitment 17	Aim for energy sobriety and diversification of resources for the benefit of renewable energies and recovery
Commitment 18	Limit the production of waste, develop and consolidate recovery and recycling channels in a logic of circular economy
Commitment 19	Preserving the water resource and ensuring a qualitative and economical management of it
Commitment 20	Preserving and valuing biodiversity, soils and natural environments

After signing the Charter, the community becomes a member of the *Éco-Quartier Club* and is entitled to professional help in preparing the documents required in the certification process. Today over 900 French communities are members of 'Club *ÉcoQuartier*'.

The following are the common features of *ÉcoQuartier* projects which are evaluated by the program:

- physical and build environment: larger dimensions of green public space, sustainable management of water and environment, risk prevention and management, climate change adaptation and protection of biodiversity.
- social conditions: includes attempts to consolidate social capital (e.g. different age groups), social housing, and live together
- human perceptions: protection of cultural environment, architectural quality, public spaces quality, walkability, universal accessibility, functional diversity, mixed-use development, larger urban density, urban renewal of large housing project [1, 4, 5].

Project evaluation is based on specific objectives and indicators. Every project is evaluated by three experts (national, local and external) and at least one of them must visit the local site. The *ÉcoQuartier* label is delivered in four stages: 1.) project stage, 2.) under construction, 3.) delivered, and, 4.) confirmed [2].

Finally, when a sustainable project is completed and inhabited, it is evaluated again and, if appropriate, it receives the certificate *ÉcoQuartier*. This certificate is a State guarantee that the requisites of sustainable development were satisfied, and the final results are acceptable.

EXAMPLE OF CERTIFIED SUSTAINABLE PROJECTS

Over sixty-eight eco-neighborhoods have received the stage three certificate. The majority of them are located in the vicinities of Paris, although the program has spread through all the country, even to territories in the far west, like Martinique or Guadeloupe. The city of Paris uses this tool to evaluate new urban projects as it insures a good environmental performance.

The following are a sample of projects located in the greater Paris area.

ZAC BAUCICAUT, PARIS

Baucicaut is a tiny eco-neighborhood, of approximately 3 hectares, in the 15th District in Paris. The site consists of houses and the former Baucicaut Hospital, built at the end of 19th century in compliance with modern hygienist movement ideas. Initially, the hospital was composed of small pavilions surrounded by open green yards, but over time the green yards turned into parking lots. At the end of 2000, all health care activities were transferred to the new Georges-Pompidou European Hospital.

Fig. 1-4. ZAC Baucicaut, Paris, photo: Monika Trojanowska

Today this eco-neighbourhood is a diversified enclave, in contrast with its immediate surroundings. The mixed-use development includes a wide variety of housing, including social housing, controlled rent, home ownership, and a social residence for migrant workers. A business incubator and businesses occupy one of the old pavilions of the rehabilitated hospital, while a cultural center and a home for disabled adults find space on the ground floor of separate buildings. Short Film Agency occupies part of one building, along with social housing.

It is a rigorous organization of blocks of steady colors and natural materials. It creates a sort of historic continuity that preserves the original character of the neighborhood.

The sustainable urban project in this neighborhood forwards the themes of energy, rainwater management, biodiversity, sustainable development and social inclusion. The outer walls and windows were improved to increase thermal performance, maximize solar gain in winter, and limit summer overheating. Hot water is provided by solar panels and the entire neighborhood is connected to the District Heating Network. Rainwater infiltration is accomplished using green roofs and public spaces design. Finally, the choice of landscape species favored regional plants [6].

Fig. 5-8. ZAC Fréquel-Fontarabie, Paris, photo: Monika Trojanowska

ZAC FREQUEL-FONTARABIE, PARIS

The Fréquel-Fontarabie neighbourhood is a 1hectare island in the 20th Arrondissement (borough) of Paris. It was the focus of a renewal project whose goals were to eradicate the unhealthy housing in Paris and to build new playgrounds dedicated to early childhood. This tiny operation presents a concerted coherence between urban and environmental approaches. Particular attention was put to limiting the energy consumption by using building orientation, solar and photovoltaic panels, geothermal energy and simply monitoring of energy consumption.

The neighbourhood is organised around a garden, part of which is public and another associative. The plan for the eco-neighbourhood included the creation of high-quality pedestrian paths and local meeting points, like cafes and services [7].

ZAC CLAUDE BERNARDE

This development is part of a 200 hectare urban project (Paris Nord Est), which associates the City of Paris and the Plaine Commune urban community. Within this larger urban project, ZAC Claude Bernarde is located in Paris' 19th arrondissement, between the Macdonald Boulevard and the ring road. Its 14.6 hectare area

Fig. 9-12. ZAC Claude Bernarde, Paris, photo: Monika Trojanowska

is characterised by transport infrastructure (ring road, railway networks and Canal Saint Denis). It connects existing housing areas in the towns of Saint Denis, Aubervilliers and Pantin. It also connects and integrates, in its perimeter, the banks of the canal and the "linear forest" - an ecological reserve of green spaces that provides structure to this new urban district.

This eco-district's first ambition is to restore the continuity between the circulation of the transportation and ecological corridor. This eco-neighbourhood is located near the tramway T3 and the future station of the RER E Rosa Parks.

The program for the ZAC Claude Bernard also includes over 100,000 m² of residential floor area with large percentage devoted to social housing [8].

SEGUIN RIVES DE SEINE, BOULOGNE-BILLANCOURT

The major goal of this 74-hectare eco-neighbourhood project was the brownfield renewal and reconversion of the former Renault industrial plants in the municipality of Boulogne-Billancourt. The site was divided into smaller project area with the design of each awarded to well-known architects, such as Jean Nouvel, Norman Foster, Dominique Perrault and others. The resulting new housing district covers the territory of the Rives de Seine and Seguin Island. It

Fig. 13-16. ZAC Seguin Rives de Seine, Boulogne-Billancourt, photo: Monika Trojanowska

comprises three major sectors: Seguin Island, ZAC Trapèze, and the older district of Pont de Sèvres.

ZAC Trapèze is a lively neighbourhood with a mix of housing, offices, shops and many facilities including: four kindergartens, an elementary school, a high school, social and a medical care facility. The construction of this part of the district testifies to the success of the environmental approach put in place at the origin of the project. Many international companies have located their offices within this district, including Team, Texas Instrument, and Carrefour Management [10].

IVRY, ZAC DE PLATEAU

This project is a good example a of large urban housing renewal project. It envisioned the construction of new housing units (half of them social housing), offices, shops and services as well as the construction of public open green spaces and playgrounds for children.

The new eco-neighbourhood was designed to meet the verbalised needs of local inhabitants. The ambition was to create a pleasant neighbourhood through the provision of new public facilities (nursery, school, college), while facilitating commuting on foot and by bike with new pedestrian and bike paths. A new shop-

Fig. 17-20. ZAC de Plateau, Ivry, photo: Monika Trojanowska

ping centre and cultural centre for the young were also delivered. The Ministry of Budget has been accommodated in one of new ecologically friendly buildings.

There also was room for architectural innovation. The residents were encouraged to follow the evolution of the neighbourhood through the creation of a temporary experimental architecture installed on the site [11].

ZAC DOCKS DE SAINT-OUEN

This 100 hectare project is located in a former industrial brownfield on the banks of the Seine at the edge of Saint-Ouen's historical centre, at the gates of Paris. The major goals included: innovations in urban planning; production of affordable housing with high quality public spaces; limited and shared public parking; sustainable district heating; the use of renewable energies; and, rainwater and biodiversity management and pneumatic waste collection. The project aims to develop an exemplary and innovative neighbourhood in terms of urban, environmental and architectural quality, functional and social diversity and density.

The landscape is a fundamental element in the coherence and articulation of the Docks de Saint-Ouen ZAC. The densely planted block centers are extended from the protruding low roofs with hanging gardens. The centre of the new de-

Fig. 21-24. ZAC Docks de Saint-Ouen, photo: Monika Trojanowska

velopment is a 12 hectares urban public park at the edge of the Seine river. The park was imagined as alternating spaces for nature and gardens for the public. It offers different kinds of conviviality and experiences due to the generosity of its spaces. Inside the park sunken surfaces gather rain water, highway run off and floodwater from the Seine. The park is a huge reservoir that filters water and uses it to irrigate the plantations. The ponds and filtering gardens welcome a wide range of fauna [12].

ZAC DE BAC D'ASNIERES, CLICHY-LA-GARONNE

This neighbourhood is another urban renewal project located in a previously precarious urban district, which is also isolated by transit roads, railways and infrastructure. Its development goals were the eradication of unhealthy houses, development of mixed-use residential and offices neighbourhood, and clear improvement of the ecological footprint of new construction. This new eco-neighbourhood is organised around a large central park called "Parc des Impressionistes". This new project gives pride of place to green spaces and pedestrians in the heart of the island.

The new district follows several main principles of sustainable urbanism:

Fig. 25-28. ZAC de Bac d'Asnieres, Clichy-La-Garonne, photo: Monika Trojanowska

Fig. 29-32. ZAC Les Mureaux, photo: Monika Trojanowska

- it takes advantage of landscape design, the presence of the Seine, and the new centrally located park,
- it connects to surrounding neighbourhoods with diversified residential offerings and internal services and a soft traffic network,
- it adopts common urban forms,
- it complements the facilities of the district: new school, socio-cultural equipment, sports field, public and park and a local shopping centre.

The new district offers a place of higher residential density with all the conveniences of everyday life (transport, shops, school, cultural and sports facilities). This neighbourhood is enhanced by the panoramic views beyond the park towards the Seine, as well as the changing neighbourhood which persists with its industrial heritage.

The major advantage is its grid plan which allows flexibility. The new architecture is composed of an assembly of small volumes with vertical proportions where each building is well-defined. The buildings identity is reinforced by the limited choice of applied materials: brick, wood and glass. The beauty of these materials is highlighted through the constructive simplicity providing reflection, refraction and transparency [13].

LES MUREAUX

Les Mureaux is a commune in the Yvelines district in the Île-de-France region in north-central France. It is located in the north-western suburbs of Paris, 35.9 km from the centre of Paris. Presently, the project area is a low-income neighbourhood with a higher unemployment rate than the rest of the city and the district. The Urban Renewal Project (PRU) of Les Mureaux is currently one of the largest in France. The overall budget is 409 million euros.

This large project spread over 7 neighbourhoods with 15,000 inhabitants, almost half of the population of the town. This project involves the radical transformation of disused sites into a new urban district which will be connected to the town center. The district will accommodate housing developments, public facilities and commercial activities in a new urban framework. The project also has the ultimate goal of full employment in 7 years – an experimental program called Territory Zero Unemployment.

It aims to transform large scale urban projects by giving them a new attractiveness through the revival of public spaces, diversification of the housing, the creation of local amenities - all in the perspective of a sustainable urban development.

This project hopes to take advantage of the cultural diversity (100 nationalities) present in the city of Mureaux by staging events like "immersive culinary experience" [14].

PROJECTS OVERVIEW. A ROAD TO FOLLOW?

French *ÉcoQuartier* projects are located on public land, which belongs to local authorities. Therefore, local authorities can stipulate conditions which effect the creation of *ÉcoQuartier* projects. In addition, the local authorities, which sign the Charter of *ÉcoQuartier*, are responsible for the creation and functioning of eco-neighborhoods. Private capital investment is not the major driving force behind eco-neighborhood creation.

ÉcoQuartier strive to maintain the cultural heritage of each local environment by preserving historical buildings *(ZAC Clichy Batignolles)*, street names *(ZAC Baucicaut)*, local services etc. A functional program for ÉcoQuartier includes local churches, cultural and social services, and libraries for various age groups. The development of *ÉcoQuartier* requires creating diversified functional program and adequate urban form (ranging from single house to dense urban tissue), as well as, high quality environment having minimal environmental impact.

Each building in an *ÉcoQuartier* can be designed by a different architect. Architectural diversity, apart from esthetic and functional advantages, also facilitates the creation of mental maps. This feature is especially important for memory exercise and is invaluable for elderly and differently abled. However,

this architectural variety must be limited by masterplan specifications not to create a cacophony.

ÉcoQuartier are designed to promote walking, cycling and public transportation. Several projects rely on proximity to railway and metro stations. One of the objectives of eco-neighborhoods is to *"reduce dependence on private cars"*.

The concept of *ÉcoQuartier* promotes social diversity and strives to reduce social exclusion based on health status, age, wealth, profession, religion, etc. The social inclusion in *ÉcoQuartier* relies on mixing social housing programs and private market real estate within one neighborhood. So far, the program seems to bring good results. The most common problem is the difficulty to attract private home buyers to some less favorably located eco-neighborhoods.

ÉcoQuartier projects have a larger proportion of natural open spaces comparing to traditional urban tissue - approximately one third of their urbanized surface. In France there are numerous examples of *ÉcoQuartier* designs with centrally located urban park, as was the case for all of the ecoQuartier described in this article. That type of urban planning assures proximity to green space for the densely developed neighborhoods. An idea that each apartment should have at least one window with a view of greenery is applied whenever possible within *ÉcoQuartier*.

Finally, *ÉcoQuartier* efforts have brought various sustainable solutions, such as rain water collection and recuperation for green areas maintenance, and sustainable drainage solutions (which filter and absorb rainwater and runoff from impervious surfaces, rain gardens, etc). The idea of closing the circle of urban metabolism with proper waste management and recycling is promoted by the French government's *"zero waste"* approach. It is perceived as a new responsibility to become a less-consumption oriented society. Eco-neighborhoods often reuse previously contaminated sites, or brownfields- For example, the *ÉcoQuartier* Clichy Batignolles, Paris; ZAC Gare de Rungis, Paris; *ÉcoQuartier* de Docks, Saint Ouen; ZAC Trapeze, Ile Seguin, Boulogne-Billancourt; Quartier du Port, Choisy-le-Roi, and several others.

Employment for inhabitants is one of the largest problems facing eco-neighborhoods. The proposed solutions in France included intertwining the residential and industrial areas, construction of new office space and mixed-use development. However, these solutions may not provide full employment, because some *ÉcoQuartier*s find it difficult to find tenants for commercial or office space and to attract prospective employers. Public agencies in Les Mureaux are trying to attract potential employers and implement the zero-unemployment policy. However, those goals are difficult to achieve.

It might be too early to evaluate the long-term impact of this program. However, the observation of habits of use of *ÉcoQuartier*s public spaces and the ecological engagement of their inhabitants lead to conclusion that this certification program has brought satisfactory results. Therefore, it is worthy to consider the implementation of national certification programs in other countries, as well.

Endnote

1 The term "ÉcoQuartier" - is a contraction of the two French words "quartier" and "écologique" (ecological neighbourhood).

References

[1] Lefevre P., Sabard M. Les écoQuartiers. L'avenir de la ville durable. Editions Apogee
[2] Ministere du Logement et de l'Habitat durable 2016 Label ÉcoQuartier :Une nouvelle étape pour l'avenir durable de nos territoires. Rapport coordonné par Alain JUND, Vice-président de l'Eurométropole de Strasbourg, à l'attention de Mme Emmanuelle COSSE, Ministre du Logement et de l'Habitat durable, sur le renouvellement du label ÉcoQuartier. 17 novembre 2016, http://www.cohesion-territoires.gouv.fr/IMG/pdf/ok-bat_5-12-2016-_rapport_jund__ecoquartier-48_pages.pdf, retrived – May 2018
[3] Ministere du Logement et de l'Habitat durable, Dossier de labelisation ÉcoQuartier http://www.eco-quartiers.fr/#!/fr/les-cles/les-outils-de-l-amenageur/, retrived - May 2018
[4] Souami T. ÉcoQuartiers, secrets de fabrication. Analyse critique d'examples europeens, Paris, editions Les Carnets de l'info, 2009
[5] Souami T. ÉcoQuartiers et urbanisme durable in: Problemes politiques et sociaux No 981, fevrier 2011
[6] https://www.construction21.org/maroc/city/fr/boucicaut-eco-district.html retrived - May 2018
[7] https://www.paris.fr/services-et-infos-pratiques/urbanisme-et-architecture/projets-urbains-et-architecturaux/quartier-frequel-fontarabie-20e-2531 retrived - May 2018
[8] https://www.construction21.org/france/city/fr/zac-claude-bernard.html retrived - May 2018
[9] https://api-site.paris.fr/images/85944 retrived - May 2018
[10] http://www.eco-quartiers.fr/#!/fr/espace-infos/etudes-de-cas/ile-seguin-rives-de-seine-16/ retrived - May 2018
[11] http://www.grandparisamenagement.fr/operation/zac-du-plateau/
[12] http://docks-saintouen.fr/ retrived - May 2018
[13] http://www.sem-92.fr/projets/clichy-quartier-bac-d-asnieres.html
[14] https://kaizen-magazine.com/article/ecoquartier-mureaux-mieux-vivre-ensemble/ retrived - May 2018

LANDSCAPE MANAGEMENT IN ITALY
OPPORTUNITIES FOR RUSSIA

OLGA MAXIMOVA

Figure 1: Agricultural landscape near Ostia Antica, Lazio region, Italy.

INTRODUCTION

Landscapes belong and are special to everyone. Their perceptions, qualities, values for everyday life and well-being, and their impact on the future are undeniable. However, intensive territorial transformations: physical, visual, social, economic, ecosystem and cultural, are everywhere the causes and the consequences of catastrophic changes of the landscape. It is thus imperative to be equipped with adequate methods and instruments to manage landscapes. As professional planners, we need to ensure that urban or/and regional planning tools to resist chaotic development and fragmentation of landscapes exist and are being utilised.

This article[1] reports how the European Landscape Convention[2] was adapted to Italy and how it was incorporated into the Italian legal system. It describes the development of regional planning system as well as management innovations, to elaborate general planning instrument (regional landscape plan) and identification of principles and tools for producing the basic model. We then briefly discuss how the European Landscape Convention is applicable to Russia.

DEVELOPMENT OF A NEW LANDSCAPE PRESERVATION AND MANAGEMENT PARADIGM.

The European Landscape Convention (Florence, 2000) is a result of international collaboration within the framework of the Council of Europe. It establishes landscape as 'an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognized as being of outstanding beauty as well as everyday areas' and defined 'landscape' to mean an area, as perceived by people, whose character is the result of the actions and interactions of natural and/or human factors. Everything is landscape, urban or rural, damaged or natural, ordinary or outstanding.

The Convention is an economic tool. At the international level of its legal framework 'an area, as perceived by people' the landscape is presented as 'a resource favourable to economic activity'. It provides an enabling environment for several opportunities of development and cooperation, but also creates several risks. The Convention imposes obligations for its ratifying parties, among them the obligation 'to recognize landscapes in law as an essential component of people's surroundings'. It mandates that transformations are carried out across systems of legislation, territorial planning, and management- all of which influence development economics. Its fundamental concepts form a basic framework of action, encompassing: 'landscape', 'landscape policy', 'landscape quality objective', 'landscape protection', 'landscape management' and 'landscape planning'. It requires that efforts to the preservation and management of the landscape

Figure 2: Rome, Lazio region, Italy.

establish new implementation principles and measures into their existing legal and planning systems.

The secondary objectives of the Convention express the vital needs of European society to respect their culture and place in a global context. “Aware that the landscape contributes to the formation of local cultures and that it is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity”[3], it addresses such global processes as the problem of the sustainability of local culture and identity in a global society. It also creates a link across landscapes between the European cultural and natural heritage and the local population, thus protecting the 'identity' of the local population. It recognizes that changes in the habitat and the changes of landscape transform our communities and their cultures.

IMPLEMENTATION IN ITALY

Italy ratified the European Landscape Convention on May 4, 2006. Since then it has developed, and continues to develop, mechanisms to integrate the Convention into the- Italian legal framework, system of territorial management, and system of territorial and landscape planning. The Italian example is of practical interest to those States which have not yet accepted the Convention or elaborated its instruments for implementation.

Figure 3 (top): Agricultural landscape near Ostia Antica, Lazio region, Italy.

Figure 4 (bottom): Canale Monterano, Lazio region, Italy.

Figure 5: Ceri, Lazio region, Italy

At national level, this integration is achieved by the Code of Cultural Heritage and Landscape (DECRETO LEGISLATIVO 22 gennaio 2004, n. 42 - Codice dei beni culturali e del paesaggio[4]).The Code is an integrated document applicable throughout Italy, which defines the process to include the interests of the field concerning the cultural heritage in general, the objects of cultural heritage and landscape heritage, and their administrative regulations. It defines that the Ministry of Cultural Goods, Activities and Tourism (Ministero dei beni e delle attività culturali e del turismo) has the controlling powers on cultural heritage.

This Code introduced the basic concepts for landscape management: landscape, cultural heritage, landscape values, cultural values, protection, and enhancement. In keeping with the Convention, it determines that the landscape is perceived by people and defines how the landscape should be perceived, contemplated and interpreted. It calls for landscapes at a human scale. It requires that definitions of the term 'landscape', and its derivatives, should take into consideration the development of human life, including changes in economic activities, ecological and social situations in the evolutionary process. It envisions landscape as a dynamic matter.

The goals of the Code can be structured in three groups: introducing the basic concepts for the governance of cultural heritage; cataloguing and recognizing national cultural heritage; and, establishing regulations for use and responsible bodies. The goals represent the general measures for the governance of cultural heritage, where the main concept is the enhancement of national culture through the protection and enhancement of the cultural heritage of the Nation (Art. 1, c. 2).

The Code has introduced a new type of Italian regional plan- Landscape plan (apart the regions that have autonomy in this matter) with the main objective that the territory should be adequately known, safeguarded, planned and managed. It establishes the need to consider the different values expressed by the different contexts that it constitutes. It envisions multiple Italian territories, with

Figure 6: Agricultural landscape near Ostia Antica, Tiber river, Lazio region, Italy.

different values expressed by the different contexts, which all together represent the landscape of the Nation, with its diversity and complexity.

The Code and the Landscape Plan are the main tools of a multilevel governance to realize the landscape policy, where the development of culture and the memory of the national community and the territory have been put at the focus of the 'landscape quality objective'.

VALORISATION OF LANDSCAPE.

The Code created a new form of landscape plan, wherein it is mandatory for landscape regional plan, or urban-territorial plan, to be considerate of specific landscape values. The priority for these plans is the protection and enhancement of the region's cultural and landscape heritage thereby achieving that national strategy of 'valorisation'. There are four conceptual functions of enhancement according to protection to be achieved in these plans: to promote the cultural development; to certify properties and areas; to promote public use of the land-

scape; and, to create new landscape values. This planning effort represents the new integrated concept to safeguard and protection the territory, to use the land, to develop the territory, to build a new landscape and a new city, for Italy to follow as a result of the Code. The protection and enhancement together form the principles to activate concepts of the legal framework of the Code and to management the Italian territories.

Landscape plans have priority above other types of plans, in terms of prescribing and prognostic importance. They introduce the concept of landscape areas ('ambiti') as the characteristic areas representing a clearly expressed territory and distinguishing it from others. The criteria for identifying the landscape areas are defined by the landscape plan, therefore the identification of such areas is the result integrated research and design considerations to identify unique features. For each landscape area, prescriptions and requirements for different use or functions are defined with attention to specific themes of conservation, rehabilitation, protection, and urban development guidelines. This ensures that the Convention's insistence of adequate quality objectives for the landscape are realised. Application of the landscape requirements and elaboration of the methodology for its application represent the important challenges to achieve through the plan.

Italian landscape planning has been applied in twenty regions. Based on this observation four regional landscape plans were selected for comparison: The Regional Territorial Landscape Plan (PTPR[5]) of the Lazio Region (adopted 2007), Territorial Direction Plan with Value of the Landscape Plan (PIT[6]) of the Tuscany Region (approved Integration Act 2015), the Regional Landscape Territorial Plan (PPTR[7]) of the Apulia Region (approved 2015), and the Regional Landscape Plan (PPR[8]) of Piedmont (approved 2017).

A methodology was developed to analyse these plans on 10 criteria: normative documents for reference; types of elaborated materials of plans; strategies and goals system of the plans; specific landscape quality objectives for landscape areas; system of territorial structures; areas and other territorial units / elements of the landscape; criteria for identifying the landscape areas; area division structures; typologies of schemes for landscape areas programs, guidelines, and other elaborates materials of the plan. For each criterion an effective, preferable model has been identified.

Assessment indicates that each plan developed its own language to define landscape areas. The criteria for identification of landscape areas, while different, are based on a similar approach which considered historical and cultural, morphological, ecosystem and environmental, settlement structures and per-

Figure 7: Landscape areas. Regional Landscape Territorial Plan (PTPR) of Lazio Region.
Source: http://www.regione.lazio.it/rl_urbanistica/?vw=contenutiElenco&id=8

ception based criterions. However, the structure and typology of landscape areas system in the plans are different. They were defined by their diversity and identity of every landscape, territory and its unique characters.

The Regional Landscape Territorial Plan (PTPR) of Lazio Region identified 2 cross cutting systems: geography based- systems structuring the territory of Lazio (physical and hydro characteristics) and landscape based- the landscape configuration systems. These landscape systems identified three landscape groups: a system of natural landscapes, a system of agricultural landscapes, and, a system of human settlements landscapes. Inside every group typological variations of landscapes were identified, which fulfilled the role of 'landscape areas'. In total, there were 12 landscape areas.

Also, two '*areas with specific characteristics*' were identified: areas of recover and enhancement of the landscape; and, areas of visual points. Also 'areas of landscape continuity' are identified, representing a connecting element between different types of landscapes or landscape areas, which includes areas where landscapes interact.

The Territorial Direction Plan (PIT) of Tuscany Region identified 20 landscape areas. These areas generally followed groups of municipal boundaries[9] to improve

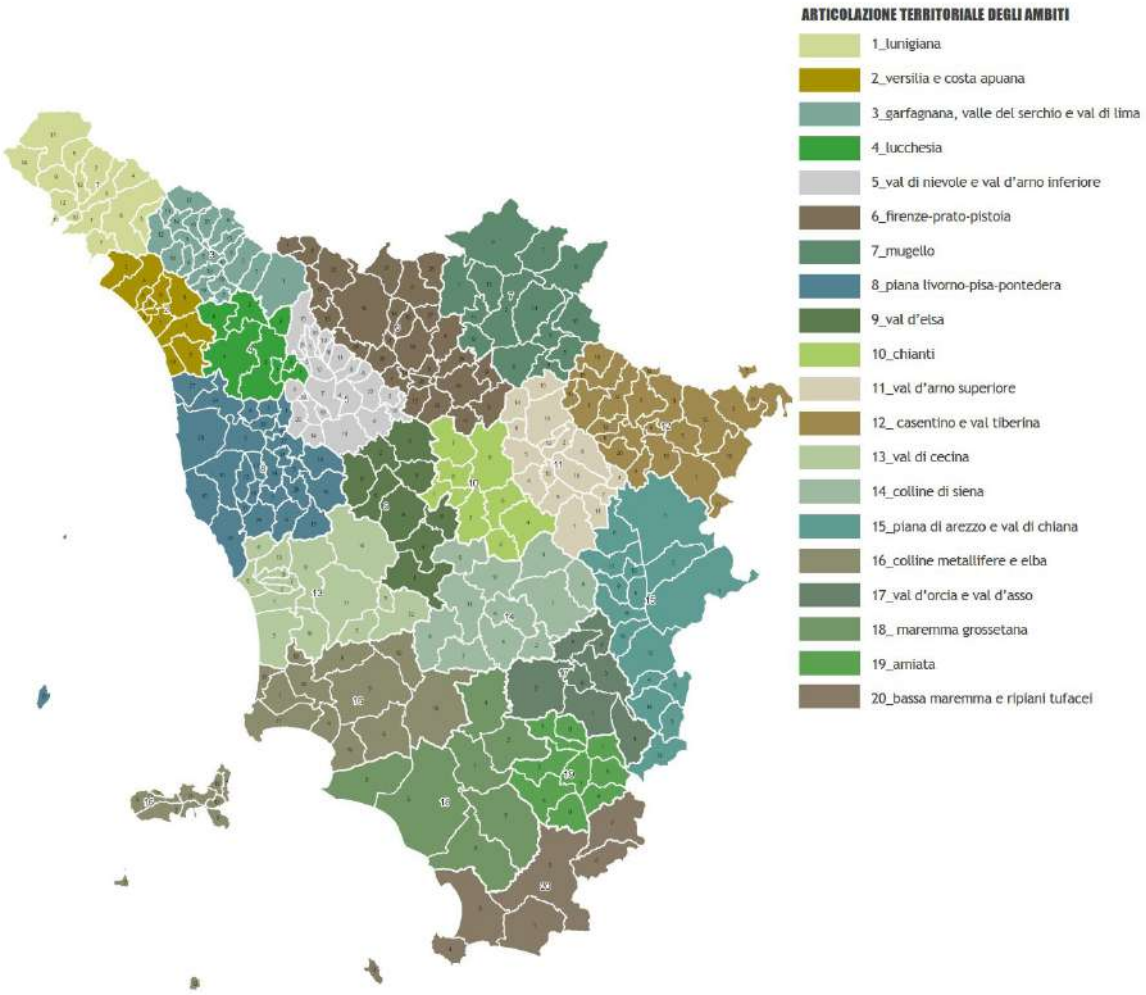


Figure 8: Landscape areas. Territorial Direction Plan (PIT) of Tuscany Region.
Source: http://www.regione.toscana.it/-/piano-di-indirizzo-territoriale-con-valenza-di-piano-paesaggistico

the effectiveness of territorial identification and in recognition of the sense of belonging to local community policies. One landscape, Castelnuovo Berardenga, was dictated by its particular spatial (not municipal boundary) configuration.

The Regional Territorial Landscape Plan (PPTR) of Apulia Region identified 11 landscape areas. Each landscape area is divided into territorial and landscape figures (the minimum unit of landscape). In this plan, a territorial figure means an area recognized by its specific morphological and typological characters that persist in the process of historical stratification of the different cycles. A total of 38 territorial figures were identified.

The Regional Landscape Plan (PPR) of Piedmont identified 76 landscape are-

Figure 9: Landscape areas. Territorial Direction Plan (PIT) of Tuscany Region.
Source: http://www.regione.toscana.it/-/piano-di-indirizzo-territoriale-con-valenza-di-piano-paesaggistico

as. These landscape areas can be aggregated into 12 macro areas, which in turn are aggregated into 7 general categories. In the same time, each landscape area is divided into 535 landscape units (UP) of nine different types. Each type has the dominant component of the landscape or the presence of multiple components (natural, rural, urban) with the specification of its condition.

We found that these four plans have non-homogeneous structures and types of elaborated materials. Each plan has elaborated its own language of interpretation to the addresses of the European Landscape Convention and the norms in the Code of Cultural Heritage and Landscape. The priority for all the decisions made in the plans are the protection and enhancement of cultural heritage and landscape.

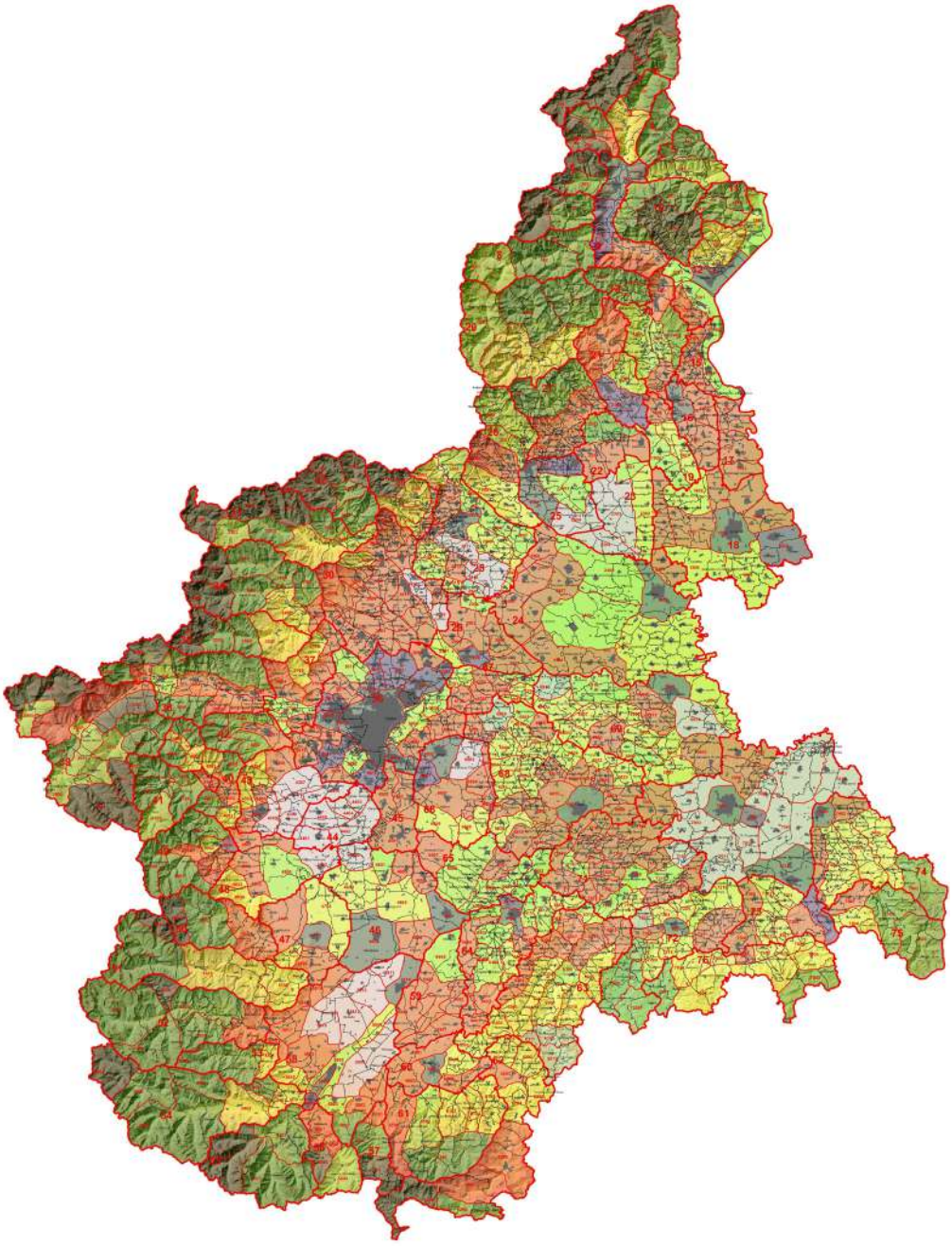


Figure 10: Landscape areas. Regional Landscape Plan (PPR) of Piedmont Region. Source: https://www.regione.piemonte.it/web/temi/ambiente-territorio/paesaggio/piano-paesaggistico-regionale-ppr

Figure 11: Irkutsk, Russia.

CAN THE CONCEPT OF 'LANDSCAPE' BE APPLIED TO THE RUSSIAN FEDERATION?

To date the Russian Federation has not signed the European Landscape Convention and, consequently, does not implement it. But it is completely involved in global processes. It has its own urban planning system and its own system of ecological and environmental legislation. Planners are aware of the same general global problems such as the fragmentation of landscape, chaotic development, weak programmatic aspect, disappearance of small town and villages, but intensive development of the large cities.

The framework of the Russian laws and planning system have been analysed more specifically on the concept of 'landscape' and related concepts, to define where and how they can be modified to include the European Landscape Convention ideas. The term 'landscape' is not defined in the legal documents, but presented as a natural landscape, or a cultural landscape, or a place of interest, or a natural complex, and so on.

The (former) Steering Committee for Cultural Heritage and Landscape (CDPATEP) of the European Council published the document 'Landscape policies–synthesis document' based on landscape policies provided by the Member States of the European Council. Two critical questions amongst the plethora of questions highlighted by this document are: "How is the term 'landscape' defined in your language?", and, 'Is there a legal definition of the term 'landscape'?".

These questions reflect the permanent and indissoluble links between environment, language and culture.

About twenty representatives answered these questions offering a complex and mixed picture of official diversity. From the comparison we can identify 2 types of answers: the first type is based on definitions and native (autochthonous) words, while the second on definitions and words of foreign origin, borrowed nature of which has scientific or legislative significance. Analysing these definitions based on linguistic groups, it is evident that the roots of similar words are found in each group, and at the same time their meaning is not always similar.

In the Russian language the term 'landscape' (rus. "ландшафт"), derived from the German 'landschaft', is not the autochthonous word. There is also the etymological concept of the 'space' in a different way, that is 'prostranstvo' (rus. «пространство»). In the Italian language 'paesaggio' ('landscape') has the colors of the different senses and feelings, as well as 'taste' ('paesano'). It is a concept with many layers, like the Mediterranean climate's ability to cover everything with its humidity. Each of the two concepts, 'prostranstvo' and 'landscape', include the ability of moving- around, between and within. The concept of 'prostranstvo' does not directly correspond to 'space', because the concept of 'space' is relative to the concept of 'closed', whereas the concept of 'prostranstvo' is more related to the concept of 'open'.

This is indicative of difficulties in identifying 'landscape' in general and direct analogies in different languages and cultures. Therefore, it is difficult to apply international documents in the field of 'landscape' in a homogeneous way. It is necessary for each country to create its language for 'landscape' with customised local tools.

Should the basic model of application of the ELC, as demonstrated through our review of the Italian landscape planning experience, be added to the basic planning model in Russia, the following actions would be required:

1. More detailed evaluation of risks, weaknesses and strengths with the possibility of advantages and benefits.
2. Transformation of the structure of the normative - hypothesis of two possible scenarios. To apply the Italian method which was declined in Russia case, it is imperative to illustrate the necessity of implementing the addresses of the Convention:
   - through the elaboration of a single Code to manage all the assets, areas, objects of protection;
   - or, integration of the ELC principles to the various laws through each document which is related to environment, territory, cultural heritage and landscape.

3. Introduce the term 'landscape' in legislative frameworks with a clear definition.
4. Application of the Convention's addresses to all normative documents. Application of the basic concepts of the Constitution to preserve nature, environment and to preserve the historical and cultural heritage.
5. Enhance the concept of 'landscape' for planning.
6. Develop landscape planning as a basis for spatial planning.
7. Develop the methodology to elaborate the Landscape Plan (basic model).

Endnotes

1 The paper presents some results of PhD thesis of author "The Landscape: Comparison Between Italy and Russia. The General Values for Legislative and Planning Instrumentation" supported by the Erasmus Mundus Action 2 Programme of the European Union.

I would like to express my sincere thanks to my tutors Dr. Prof. Arch. Pier Paolo Balbo, Dr. Prof.Arch. Elio Trusiani for valuable and constructive suggestions during the planning and development of this research work.

2 Europe, Council Of, European landscape convention, Florence, 2000.

3 Ibid.

4 D.Lgs 22 gennaio 2004, n. 42 - Codice dei beni culturali e del paesaggio.

5 http://www.regione.lazio.it/rl_urbanistica/?vw=contenutiElenco&id=8

6 http://www.regione.toscana.it/-/piano-di-indirizzo-territoriale-con-valenza-di-piano-paesaggistico

7 https://www.paesaggiopuglia.it/pptr/atlante-del-patrimonio.html

8 https://www.regione.piemonte.it/web/temi/ambiente-territorio/paesaggio/piano-paesaggistico-regionale-ppr

9 In Tuscany Region there are 279 municipalities.

References

Amorosino, S., Introduzione al diritto del paesaggio, Ed. Laterza, Bari, 2010.

Barbati C., Cammelli M., Sciullo G., Diritto e gestione dei beni culturali, Il mulino, Bologna, 2011.

Cartei, G. F., Codice dei beni culturali e del paesaggio e Convenzione europea: un raffronto, in: Aedon, 3, 2008: 0-0 / URL: https://www.rivisteweb.it/doi/10.7390/28463.

Casini, L., La valorizzazione del paesaggio, in: Rivista Trimestrale di Diritto Pubblico 64, 2, 2014: pp. 385-396.

Landscape 10, ELC in Action, Experience Before and After, Ed. IFLA, 2011.

Lanzani A. I Paesaggi italiani. Meltemi Editore srl, 2003.

MIBACT. Pianificazione paesaggistica – Quadro sinottico, a cura del Servizio IV della DG PBAAC, Direttore del Servizio IV: Roberto Banchini, Novembre 2014.

MIBACT. Pianificazione paesaggistica – Quadro sinottico, a cura del Servizio IV della DG PBAAC, Direttore del Servizio IV: Roberto Banchini, Ottobre 2015.

Priore, R., No people, no landscape. La Convenzione europea del paesaggio: luci e ombre nel processo di attuazione in Italia, Angeli, Milano, 2009.

Sandulli, M. A., Codice dei beni culturali e del paesaggio, Giuffrè Editore, Milano, 2012.

Trusiani E., a cura di. Pianificazione paesaggistica: Questioni e contributi di ricerca. Gamgemi Editore, 2015.

Voghera, A., After the European landscape convention. Volume 1 di Territorio, pianificazione, ambiente, Alinea Editrice, Firenze, 2011.

CITIES FOR MARGINAL COMMUNITY: LESSON LEARNED FROM INDONESIA'S SLUM ALLEVIATION PROGRAM

ADHAMASKI PANGERAN, RIDZKI JANUAR AKBAR

INTRODUCTION

Slum settlement areas still haunting cities across Indonesia. Some slums are created because the poor cannot afford or access housing from the formal housing market (UN-Habitat, 2008). These low-income people choose to live in places close to income-earning activities, located near the commercial centers, in order to cut transportation cost. However, houses in those strategic places are expensive. Therefore, the poor are forced to choose the unwanted low-priced sites and areas, such as riverbanks or railways. Such settlements usually lack decent infrastructure, services, and security of tenure. Another form of slum occurs in neighborhoods which were once in good condition but have deteriorated. In these neighborhoods, the increasing population causing overcrowding (UN-Habitat, 2008). Such settlements in Indonesia are referred to as "Kampung".

Residents often choose to live in slum settlement because it is affordable, yet close to their place of work (Pangkerego & Zulkaidi, 2014). For inhabitants, the slum settlements are more than a place for living; it is also a place to make a living as they often utilize their house as a workplace to sell goods to their neighbors.

The population of big cities in Indonesia is increasing rapidly. In 2035, it is projected that 66.6% of all Indonesian will be living in urban areas (PPN/Bappenas, 2015). This circumstance leads to socio-economic and cultural shifts and changes. Moreover, it has an impact on national and urban policies, including housing and settlement sectors. With this rapid population growth, the Government of Indonesia has developed a slum alleviation policy, which includes slum upgrading and slum prevention in the form of *Kota Tanpa Kumuh,* or "City without Slum", (KOTAKU) Program. The program was designed to support the achievement of the Indonesia Mid-Term National Development Plan to provide sustainable, affordable, and adequate housing. Moreover, since 2017 The Government of Indonesia has enacted and implemented Presidential Decree 59/2017 on the Implementation in Achieving Sustainable Development Goals (SDGs) in Indonesia.

Being the responsible party in slum settlement problem across the nation, several local governments, including the Government of Jakarta, have developed the slum alleviation program in their areas. The Government of Jakarta has various experiences in alleviating slum since 1969. The approaches have changed along with the changes of the Governor of Jakarta. For example, in 2013, the Government of Jakarta, under the leadership of Joko Widodo, launched *Kampung Deret* Program or (KDP) as an on-site slum upgrading approach. In 2015, the then-governor Basuki Tjahja Purnama, implemented a different approach when he relocated slum settlements from the main riverbanks to prevent flood-

ing during the rainy season. Later in 2018, the Government of Jakarta, under the new-elected Governor Anies Baswedan, developed the Community Action Plan (CAP) Program to invite community participation in developing their neighborhoods.

Based on the various slum alleviation programs in Jakarta, both conducted by the National Government of Indonesia and the Government of Jakarta, this paper tries to examine the lesson learned from the slum alleviation program in Jakarta, including the success factors and challenges in implementing slum alleviation program in Jakarta

INFORMAL SETTLEMENT IN INDONESIA AND RELATED POLICIES

SLUM ISSUES IN JAKARTA FROM THE NATIONAL CONTEXT

Jakarta, as the capital city of Indonesia, holds some pivotal roles for the country as well as the region. The city is the center of Indonesian national government, transportation system, and the heart of some activities such as economy, education, healthcare, culture, and tourism. As a result, Jakarta has experienced rapid population growth, whether migration from other areas of Indonesia or from natural growth. According to the Indonesian Central Bureau of Statistics or BPS (2016), the rate of population growth in Jakarta during 2000-2010 was 1.41%, and in 2010 the population in Jakarta reached 9,607,787 with a density of 14,506 people/km2, making Jakarta the densest province in Indonesia.

According to BPS DKI Jakarta (2013), there are 223 *RW Kumuh* (slum neighborhoods) in Jakarta. However the data does not include another 64 slum settlements located on riverbanks or next to highways (Irawaty, 2013). According to the Bappeda Jakarta Province (2013) Regional Mid-Term Development Plan or RPJMD 2013-2017, solving the slum problem has become a priority program for Jakarta Province. The second mission is to: "To make Jakarta free from chronic problems such as traffic jams, floods, slums, garbage, and others".

Since 2016, The National Government of Indonesia has developed a World Bank funded national slum upgrading program called KOTAKU (*Kota Tanpa Kumuh*) or "City without Slums" which focuses on the 269 cities in Indonesia. KOTAKU is trying to solve the slum issues, based on several indicators stipulated in the Ministerial Regulation from the Ministry of Public Works and Housing (MPWH) Number 2/2016. The indicators are houses condition, neighborhood roads, drinking water service, drainage, sanitation facility, waste management, and fire protection. Based on those indicators, the government of Jakarta enacted (2013) a decree related to conditions in 115 slum village (*kelurahan*) in Jakarta. Therefore, the KOTAKU program planned to implement the slum upgrading pro-

gram in those 115 slum villages or 1003.01 Hectares. Meanwhile, the remaining 146 villages will receive a slum prevention program.

If we breakdown the slum condition in Jakarta, 40% of slums are due to building irregularity, and 89% of slum are prone to fire disaster as we can see in the Table 1. In order to participate in the KOTAKU program, the government and the communities in Jakarta developed slum alleviation planning documents, the RP2KPKP (*Rencana Pencegahan dan Peningkatan Kualitas Permukiman Kumuh Perkotaan*) or the Urban Slum Prevention and Upgrading Plan and RPLP (*Rencana Penataan Lingkungan Permukiman*) or the Settlement Plan, respectively. The RP2KPKPs has been formulated in 6 administrative cities in Jakarta, meanwhile the RPLP has been formulated by the whole 261 villages.

Table 1 Slum Indicators of Jakarta

Slum indicators	*Slum Condition of Jakarta*
Houses Condition	40% of the houses are built irregularly 9% of the houses has inadequate physical condition, includes roof, floor, and wall
Neighbourhood Road	22% of slum has inadequate neighbourhood road
Drainage	26% of the drainage are in the bad condition
Drinking Water	14% of the community does not consume the minimum standard 60 L of water/ person/day
Sanitation	5% of the houses has no adequate toilet which connected with the septic tank 87% of the sanitation networks mixed with the drainage
Waste Management	22% of domestic waste transported to the temporary/final disposal less than twice a week
Fire Protection	89% of slum has no fire protection facilities

Source: General Directorate of Cipta Karya, Ministry of Public Works and Housing, 2017

In 2015 there was a multinational agreement under the United Nations called Sustainable Development Goals (SDGs), which contains strategies and actions to address global issues, including poverty, disparity, and climate change. Housing and settlement issues are addressed in Goal 6: Ensure availability and sustainable management of water and sanitation for all; and Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable. The Government of Indonesia has acted on this initiative by enforcing Presidential Decree 59/2017 on the Implementation in Achieving Sustainable Development Goals (SDGs) in Indonesia. Furthermore, the Government of Indonesia is trying to integrate the concept of SDGs in to the new 2019-2024 National Mid Term Development Plan.

There are several indicators adopted by the Government of Indonesia to measure adequate housing, such as the durability of housing, sufficiency of living area, access to safe water, and access to sanitation. The houses are consid-

Figure 1: Slum Area in Penjaringan, Jakarta. Source: Private Documentation, 2018

ered adequate if they achieve all the indicators. Meanwhile, if a house does not reach one or more indicators, it is considered as inadequate housing. In addition, the Government of Indonesia put more indicators as added information, including security of tenure and affordability (Bappenas, 2019). If the KOTAKU indicators measure the output of the development, the SDGs indicators measure the outcome of the development. However, MPWH and the Ministry of National Development Planning (Bappenas) are trying to integrate both indicators to support each other to achieve a city without a slum issue.

According to the SDGs indicators for adequate housing only 24.87% households in Jakarta are living in adequate housing, although when we see each indicator, each is higher than the cumulative one as shown in the Chart 1.

HISTORICAL SLUM ALLEVIATION PROGRAM IN JAKARTA

There have three main phases of national policies and strategies which together can be viewed as part of Indonesia's evolving approach to alleviating urban poverty and slum settlement (Jones, 2017). The first was the highly successful *Kampung Improvement Program* (KIP) initiated in Jakarta in 1969 under the administration of respected Governor Jakarta Ali Sadikin and funded by the World Bank and the Jakarta City Administration itself. The KIP placed strong emphasis on the provision of basic physical infrastructure such as water supply, sanitation systems, footpaths, drainage, and public amenities such as open space, street lighting and health clinics (Tunas & Peresthu, 2010). The World Bank estimates over 18,000 hectares of kampungs received some form of improvement with

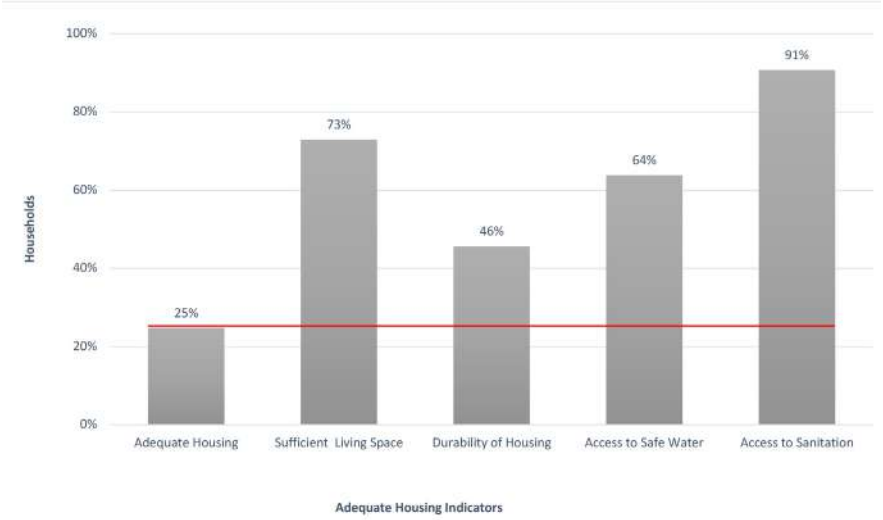


Figure 2: Adequate Housing Indicators of DKI Jakarta 2018. Source: Bappenas, 2019

some 7 million urban poor positively impacted by the year 2000 (The World Bank, 2003). While there was negligible participation in the initial stages of KIP by civil society and NGOs (Kuswartojo, 2019), subsequent iterations became a model for slum improvement in many Indonesian cities including Surabaya and Bandung. The citywide program has been attributed to be a major driver in improving kampung living conditions during and following the formal KIP period of 1969–1999 (Reerink & Gelder, 2010).

Building on lessons learned from the KIP, the second phase came into play from the late 1980s to the early 1990s and aimed to integrate physical changes with social and economic improvements. However, the advent of the 1997 Asian financial and monetary crisis led the government to develop a third phase of programs to cater with the rapid rise in poverty. This included the JPS *Jaring Pengaman Sosial* (Social Safety Net) and P2KP Program *Pengentasan Kemiskinan Perkotaan* (Urban Poverty Alleviation Program), the latter focusing on housing programs promoting informal and community-based housing arrangements. These programs incorporated a combination of livelihood improvements and a suite of social, economic and physical improvements primarily targeted at kampungs. These programs were adopted as part of the National Medium-Term Development Plan 2004–2009 (Minnery, et al., 2013).

Ultimately, the Asian financial crises in 1997 lead to a change in government and to a new era of *Reformasi* (reform) that dismantled the authoritarian political structure by establishing a more pluralistic and accountable system of government. There also was a significant reform of government functions and

responsibilities and a change from centralized to decentralized government thus creating a greater role of local governments and making housing policies more locally managed as well.

The Housing and Settlement Areas Law 1/2011 reflects the new system of government in Indonesia, particularly the new decentralization laws and the enthusiasm of the Indonesian people for a more transparent and accountable system of government. The law provides a legal framework to advance housing provision for low-income residents (Mungkasa, 2013). It stipulates a housing subsidy and assistance for low-income residents whereby the government is required to assist low-income residents through tax incentives, insurance permits, the provision of land and public utilities, and land title registrations.

The law stipulates that provincial and local governments have a greater level of responsibility for housing provision than does the central government (Mungkasa, 2013). For example, provincial and local governments are responsible for collecting housing data, empowering housing stakeholders, and coordinating the use of environment-friendly technology and design. Additionally, the law provides policies for slum areas, with provincial and local governments required to identify and delineate such areas, prevent their expansion, and upgrade residents' quality of life. According to Article 97 of the Law, the upgrading of slum areas includes restoration, revitalization, and resettlement of slum areas

Later, the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah/RPJM*) 2014 – 2019 prioritized the development of housing and settlements for households that fell within the 40% lowest income range (Bappenas, 2014). Slum eradication was selected as the first national housing development priority by aiming for zero slums by 2019. In this setting, *kampung* and slum upgrading has been consistently prioritized by utilizing several development and management schemes. These include the provision of mortgage facilities for low-income households, the integration of housing with social-net support facilities, community-based in-situ slum upgrading programs, and the building of low or high rise attached apartments.

As a result of the Housing and Settlement Areas Law, In 2012 Jakarta Province started the first housing program initiated by a local government in Indonesia called The *Kampung Deret Program* (KDP) (Rukmana, 2018). The idea of KDP was initiated during the 2012 Gubernatorial Election when candidates made various promises to and agreements with members of the Urban Poor Consortium (UPC)/ *Jaringan Rakyat Miskin Kota* (JRMK). The candidates promised to involve members of the urban poor in planning, executing, and monitoring three key governance issues: spatial planning, formulation of the local budget, and the

development program. Second, they promised "fulfilment and protection of citizens' rights". Specifically, they promised to legalize all *kampung* and to provide ownership certificates to people who had been residing on land for more than 20 years, if the status of that land was not disputed. They also said they would pursue kampung renovation rather than eviction. Third, they promised to protect actors in the informal economy such as street vendors, fishers, and traditional market traders. The contract was a brief one-page document, expressed in sweeping terms, but it was widely publicized in poor *kampung*s.

When these candidates won the election and commenced administration power in 2012, the local government started the KDP program. The program is designed as a green neighborhood concept with organized infrastructure applied to improve the quality of slum neighborhoods. This concept can be identified as land readjustment as well, because it tries to decrease housing density and create more space for better quality of housing, infrastructure services and public facilities. The implementation of KDP is based on the Governor Regulation No. 64/2013 about Housing Improvement Assistance in Slum through Kampung Upgrading, even the term KDP did not appear in this regulation. The program has three primary objectives, as follows:

1. Creating healthy, clean, and appropriate settlements by the improvement of shelter and neighborhood area;
2. Increasing participation and responsibility of the individuals, families, and society on the importance of livable settlement; and
3. Improving the quality of life of individual, family, and community in a sustainable manner corresponding to the local spatial plan

To implement the KDP Program, The Jakarta government provided a grant for housing improvement with a budget of 54 million rupiah (approx. US$ 4,500) for each housing unit or 1,5 million rupiah (approx. US$ 125) per meter square of land, disbursed in three phases (40% - 40% - 20%) to the beneficiaries. If the program recipient's house was larger than 36 m^2 or the housing construction cost was more than 54 million rupiah; the beneficiary of the program was responsible for paying the remaining cost of the housing construction

The housing improvement was conducted in two ways. It built new side attached house units for squatter settlements without land ownership and it provided housing renovation for existing slum settlements with legal land ownership. Both methods tried to achieve adequate housing status based on the provision of private sanitation, ventilation, and a bathroom, bedroom, and living room. In addition, these settlements were provided with infra-

Figure 3: Kampung Deret Program in Petogogan, Jakarta. Source: Kompas.com (Nadia Zahra), 2014

structure services funded by local budget including the construction of roads and footpaths, drains, streetlights, water pipe (hydrant), safe drinking water channel, communal septic tank and garbage bin. The implementation of KDP collaborated three difference policy actors (local governments, private sectors, and community).

The first and best-known of the KDP Program was in *Kampung* Petogogan. Begun in April 2014, 123 homes in Petogogan were renovated with funding from the Jakarta budget. From the physical planning perspective, the project was considered a success, creating a healthier environment with public facilities such as water installations and open space for a children's playing ground (Dewi, 2014).

From other examples, the beneficiaries of the *Kampung Deret* Program in Kapuk, West Jakarta also expressed their satisfaction with their successfully improved kampung, labeling it a vast improvement from their previous *kampung*. Previously it was prone to flooding every wet season from the nearby Angke River. After the completion of the *Kampung Deret* Program, the houses in Kapuk, West Jakarta were higher than the river so the areas would no longer be inundated in heavy rains (Rukmana, 2018).

However, the implementation of the KDP program in 2013 was not entirely successful. The Jakarta Finance and Development Supervisor Agency (BPKP) found that some of the projected areas in KDP were on disputed land and some others were located on State land that was planned for public purposes such as green open spaces. Furthermore, the Audit Board of the Republic of Indonesia (BPK) argued that KDP implementation lacked supervision. As consequences, in 2015, the Governor of Jakarta postponed and removed KDP from the local budget plan. In the absence of the policy, the city government started to attract private sector development through their CSR (corporate social responsibility) participating in the second version of the KDP (Nurdiansyah, 2018)

Figure 4: Current Condition of KDP Program in Petogogan. Source: Tirto.id (Andrey Gromico), 2016

Figure 5: Kampung Petogogan after KDP Program. Source: Kumparan.com (Marcia Audita), 2017

In 2014, there was a change in the political circumstances in Jakarta following an election. The Jakarta Government explained that the local government could not apply the on-site upgrading program to houses located on the riverbanks or public roads because of the land status issue. The Jakarta Government claims that the land belongs to it and that the slum settlement occupies it illegally. Therefore, for the settlements located on riverbanks, the government focused on relocating them to rental apartments for low income families (Akbar, 2016).

THE COMMUNITY ACTION PLAN JAKARTA

A populist policy for slum area continued in Jakarta provinces in the 2017 Gubernatorial Election. Again, candidates made a political contract with several slum organization like UPC/JRMK. In contrast with prior administration political contracts these promises proposed the idea of "build without evicting".

In seeking cooperation with the candidates, the UPC/JRMK housing activists, learning from their past experiences with broken political contracts. They wanted to come up with a binding agreement. In addition, they wanted the agree-

ment to be detailed, unlike that of 2012, which had been couched in general terms. Finally, they wanted an agreement that would embody, as directly as possible, the concrete demands of the urban communities where they conducted advocacy work (Savirani & Aspinall, 2017).

To bring about such a contract, the activists worked at three levels. At the beginning, UPC/JRMK team compiled demands from the communities. After that they asked an expert team to draft the agreement and negotiation with representatives of the Gubernatorial campaign. And the last is the production of this process: a political contract. On 8 April 2017, or 11 days before the gubernatorial vote, the candidates and representatives of 31 *kampung* communities signed the political contract. The agreement obliged the 31 *kampung* signatories to secure first-place victories for the candidates in 125 voting stations in 31 locations, spread across eight precincts (*kelurahan*) and six subdistricts (*kecamatan*). In return, the candidates promised that, if elected, they would fulfill the 46 listed points, each of which had been devised through the iterative process by the expert team. Most of the 46 points listed are very specific such as affordable housing for poor people, land legalization, granted use rights (*hak pakai*) land use and spatial planning changes.

It also committed the candidates to establishing a General Local Public Service Unit (BLUD, Badan Layanan Umum Daerah) to work on land security for the poor and to enforce the points in the agreement. The BLUD was part of the movement's long-term strategy: through it, the activists wanted to institutionalize an anti-evictions policy and spread it to other kampung in Jakarta over the long term.

Jump to the result of the Governor general election, candidates won by a significant margin. After assuming office, they created a slum alleviation program named the Community Action Plan (CAP) program. As a political driven policy,

Figure 6: Planning Process of CAP Program. Source: Hardja Moekti Consultant, 2018

the CAP program is a supposedly collaborative program between the city's administration and residents, for a lack of communication between its hired consulting firms and residents. The first policy to undertake the implementation of CAP is based on the Gubernatorial Decree No. 878 Year 2018 on village management. Signed on May 21st, 2018, the regulation earmarked 21 of the city's kampungs for renewal by the administration using the regional budget. The 21 list of kampung as stipulated in the Gubernatorial Decree, accommodated the political contract with UPC/JRMK communities with several combination of kampung.

The second policy is the Governor Regulation No. 90 Year 2018 on The Integrated Settlement Upgrading, signed on August 29th, 2018. By this second regulation it has emphasized two primary objectives, as follows:

1. Providing legal certainty in the implementation of the integrated, collaborative, and sustainable settlement upgrading.
2. The legal certainty which mentioned in the first point is used to achieve the adequate housing needs and security of tenure for the *kampung* community, which ensure the rights of the community to live, enjoy, and/or own a house in accordance with the law and regulation, the improvement of housing service, and the fulfilment of the public facilities.

To implement the Program, The Jakarta government divided the program into five major activities:

1. Determining the location and priorities
2. Community Action Plan
3. Collaborative Implementation Program
4. Management and Community Engagement
5. Monitoring, Evaluation, and Reporting

Technocratically, to achieve the goals of on The Jakarta 2017 – 2022 Mid-Term Regional Development Plan, the location is determined based on the data of the slum neighborhood area from the Central Bureau of Statistics (Bappeda DKI Jakarta, 2017). Then the local mayor gives a recommendation to Jakarta Housing and Settlement Agency.

The Community Action Plan itself is formulated through several steps, including preparation, survey, issues identification, arranging data and fact, analysis, composing the concept, arranging the action plan, and finally designing the detailed engineering design. These processes are conducted by the consultant hired by the Jakarta Housing and Settlement Agency, along with the local community.

The Collaborative Implementation Program is the construction of Community Action Plan. It is constructed by the acting agency and local community. The

local community plays important roles by maintaining the built settlement independently and sustainably. The main difference between the CAP program with the KDP program is, in CAP the program is developed according to the initial plan. The CAP Program differentiates each slum characteristic using indicators from the Central Bureau of Statistics. Therefore, a difference approach is used in every settlement.

Management and Community Engagement means that people are responsible for maintaining physical quality by self-help and sustainability. If community does not have the capacity to maintain physical quality, then the local government has an obligation to maintain.

The final process is monitoring and evaluation. This task is performed by the Secretary of the Assistant of Development and Environment of the Jakarta City. It requires that monitoring every three months to evaluating The Integrated Settlement Upgrading program.

However, based on the implementation of CAP Program in the first year, CAP Program is heavily dependent on the capacity of the program consultant to solve the slum issues. As a result, residents then criticize the CAP Program as the Consultant Action Plan, rather than Community Action Plan (The Jakarta Post, 2019). One of the main failures is because the consultant focused on making the design without taking into account the resident's wishes (The Jakarta Post, 2018).

From our observation, there are three main reasons why the program failed to achieve high expectations. First, the consultant has at least three main responsibilities for three to four months. The first one is bridging a lack communication between the Jakarta bureaucrat with residents, and inter-agencies of the Jakarta Government. The second main responsibility is finding and designing the slum program's solution. And the last one is conducting the detail engineering design (DED) for achieving the physical planning.

The second reason is because there is a misconception between the community and the Governor regarding the outcome of the program. Theoretically, the program needs a community to act as an informal planner or adapter, to understand the lifeworld cycle and to center the planning process on people (Simarmata, 2018). Consequently, the planning process needs a multiyear project designed to understand the phenomenon in the daily life of the people. In contrast, the design of the CAP program is physical planning biased.

The last reason is because only the Jakarta Housing and Settlement Agency is actively involved with upgrading settlement. Other agencies, particularly those responsible for non-physical development, such as The Cooperative and SMEs Agency and The Social Agency, are not obliged to the Collaborative Implementa-

tion Program, which makes it bias to physical development aspect only.

With the settlement upgrading program conducted by the Government of Jakarta along with slum alleviation focus developed by the National Government of Indonesia, provide an opportunity for the Government of Jakarta to maximize all the potential they have, by integrating all the program to achieve slum alleviation. However, since 2018, the KOTAKU Program stopped its implementation in Jakarta. The main reason why KOTAKU Program stopped is because CAP Program, as a genuine program from The Jakarta Government, was started. So now the only settlement upgrading program in Jakarta is only the CAP. The further section will analyze the implementation of CAP in supporting the achievement of the SDGs Goal 6 and 11.

DISCUSSION ON SLUM ALLEVIATION INITIATIVE IN JAKARTA

SUPPORTING FACTORS IN SLUM ALLEVIATION PROGRAM

When we see the slum alleviation program implemented in Jakarta, there are lessons to be learned about the preparation, planning, implementation, and the monitoring and evaluation phases.

Jakarta, the capital of Indonesia, is one of the local governments who executes slum upgrading program in the local level. With the long history, nowadays Jakarta implement the Community Action Plan (CAP) which allows community participation in the whole process. The initiative taken by the Government of Jakarta is a progressive step as the local government knows the most about the slum condition in their region. However, the slum upgrading initiative should be integrated with the national policy to achieve the SDGs indicators especially Goal 6 and Goal 11. There should be a collaborative action between the Local Government of Jakarta with the National Government to align the project output of CAP with the national outcomes of adequate housing according to the SDGs.

It is also important to adjust the operational definition used by the CAP and the National Government of Indonesia.

CHALLENGES IN IMPLEMENTING SLUM ALLEVIATION PROGRAM

There are some challenges that should be addressed including the institutional arrangement, advocacy planning, and capacity building for stakeholders in the National Government and the Regional Government.

INSTITUTIONAL ARRANGEMENTS

From the national government's perspective, slum alleviation needs involvement from various stakeholders, whether from the national and regional government.

From the national government, the stakeholders are the MPWH, Bappenas, the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (ATR/BPN), Central Bureau of Statistics (BPS), and the Ministry of Home Affairs (MOHA). Moreover, it is important for the local government to be the leader for the slum alleviation program. However, program implementation often ignores the involvement from the local government. Although in the initial phase, the local government developed the decree related to the slum area in their region, the slum alleviation implementation is not in line with the city level development plan as it is directly managed from the national government to the local instruments.

Furthermore, according to the Regional Government Act number 23/2014, there are division of the responsibility between the national government and the local government regarding slum alleviation initiative and housing provision. The city governments are responsible to solve slum area below 10 hectares, meanwhile the provincial governments are responsible to solve the slum area between 10 and 15 hectares and to provide housing for the low-income people. The act often create uncertainty for the local government to develop housing and settlement improvement program. However, some local governments use poverty reduction as a justification to conduct the housing and settlement improvement program.

LAND TENURE

Of the various obstacles to a successful slum upgrading program, the issue of land tenure is by far the most pervasive. The three categories of land tenure in Indonesian kampungs are formal, semiformal and informal (Reerink & Gelder, 2010). Kampung dwellers with formal land tenure have a property title to their land acknowledged by Law 5/1960 Basic Agrarian Law, the primary Indonesian land law. Yet semiformal land tenure is still common in Indonesian kampungs. During the colonial period, kampung dwellers could apply their own traditional/ customary law to land, entitling them to semiformal and formal land tenure. However, most of Jakarta's kampung dwellers occupy the land with informal land tenure. Indonesian *kampungs* are the result of dwellers occupying vacant land which other have established private rights, or where the state owns the land rights. The majority of the informal housing sector in Indonesian cities consists of kampungs without formal land tenure. However, most housing units in the kampungs are structurally unsafe and/or located in unhealthy and vulnerable areas such as riverbanks (Monkkonen, 2013).

As is mentioned above, the key factor of the KDP Program failed because of the complicated land tenure problem in Petogogan. Indeed, even if the KDP Pro-

gram was successful in physical upgrading, but it is still unsustainable because of land tenure issues.

In contrast, the KOTAKU Program requires security of tenure for the *kampungs,* meaning that only *kampungs* with security of tenure will receive the program. The *kampungs* which meet the requirement will be upgraded based on the slum indicators. However, this approach neglects the *kampungs* without the security of tenure. Due to the questionable land status, the government program cannot intervene the upgrading settlement in such areas. The KOTAKU Program does not have the component to assist the community to achieve security of tenure so far. Therefore, the KOTAKU Program cannot reach the slum settlement located in riverbanks, beside railways, and other uncertain land status.

PROGRAM APPROACHES

Slum upgrading has been carried out using different approaches (Winarso, 2016). One with focus on improving physical condition, legalized land tenure, another stressing the important participatory in the upgrading, and others experience arguing socio economic improvement is important elements to be added in the slum upgrading. Thailands's Baan Makong Program shows that the network and the ability of the poor to design to meet their need is the key factor for the success of the program. Another experience argued that the Egyptian participatory approach will work soundly if there is cooperation between local government and active civil society. It is acknowledged that employment creation is important in slum upgrading project.

The KDP Program in Jakarta is focused on improving the physical condition of slum areas. On the other hand, the CAP Program tries to achieve economic and physical value-added benefit even if the program is still more bias to physical planning aspect.

In contrast to Jakarta's slum alleviation program, the KOTAKU program emphasized on collaborative approach and physical aspect, based on the slum indicators by The Minister of Public Works and Public Housing as explained before. However, the most favorite aspects to develop are neighborhood road and drainage, instead of the aspects prioritized in SDGs, namely water and sanitation. Developing road and drainage is the simplest and most tangible approach in slum upgrading. Meanwhile providing water and sanitation network needs more time as well as coordination with the wider stakeholders, such as water provider enterprises. Furthermore, the KOTAKU Program cannot renovate the houses, as it is the responsibility of other department in the MPWH, which is the General Directorate of Housing Provision. In order to solve this institutional arrangement issues, the

Figure 7: Kotaku Program in Lampung Province. Source: Lampung News (Anton Nugroz), 2019

General Directorate of Housing Provision conduct the house renovation program in the settlement which receive the KOTAKU Program.

But still, until now, most various slum upgrading program in Indonesia focus on physical upgrading because in three different major indicators for housing and slums, most of indicator defined by The Minister of Public Works and Public Housing, Central Bureau of Statistics, and the World Bank, are formulated from physical circumstances. As is described in the Table 1 Slum Indicators of Jakarta, most of aspect defined from physical aspect.

POLITICAL WILL AND LEADERSHIP

Political will and leadership play a pivotal role for the success of slum alleviation program. As is observed particularly in Jakarta province, the KDP Program and the CAP Program were born from political force from communities. Indeed, both program could be called as bottom-up program. The urban poor activists and community members involved and learned from the broken promises of 2012 and approached a new concrete political contract in 2017.

Political will and common interest among the governor, urban poor activists, and community should transform government official, which would allow for communities to voice their opinions and to make their own decisions, would result in a more sustainable slum reduction process.

Political will includes appropriate and strong policy pronouncements emanating from the most senior levels of government. While there are very few governments that do not make tacit public commitments to deal with poverty and appalling living conditions, results often ultimately depend on explicit time-bound commitments to improve the living conditions of the urban poor.

The success of slum alleviation program largely lies in complementary government reform, the presence of strong local organizations or community and the full inclusion of all stakeholders, all of which are to some extent achievable.

CAPACITY BUILDING OF STAKEHOLDERS

The departments of housing and settlement in provincial and city government were developed in 2017. Meaning that they are new department in each regional government. At the national level there are many stakeholders that are involved in the slum alleviation initiative. However, every stakeholder has their own perspective regarding the slum alleviation program. In order to address the issue, Bappenas leads the advocacy and capacity building program to every stakeholder. The advocacy approach is developed in order to mainstream the SDGs indicators which integrated by the RPJMN 2019-2024 to the partners in national level as well as the local governments.

Meanwhile, the capacity building is developed from mapping the capacity from each regional government. Later, the material was formulated according to the needs of the regional government. Bappenas has conducted the capacity building event twice in 2017, in Makassar for the regional government in the eastern part of Indonesia and in Bogor for the regional governments in the western part of Indonesia. The material delivered in that capacity building event starting from housing and settlement issues, SDGs Goal 6.1, 6.2, and 11.1 indicators, as well as program management related to slum upgrading approach.

CONCLUSIONS AND SOME BROAD POLICY SUGGESTIONS

Urban slum issues in big cities across Indonesia exists because of the inaccessibility to an adequate housing and basic infrastructure services, in which self-help incremental settlement areas have been formed with and without legality. Several initiatives have been tried to tackle the problem. But no silver-bullet to solve the chronic-issues.

Some broadening policies needs to be addressed. Slum is associated with poverty, then slum upgrading program should be integrated with poverty alleviation program. The success of the program could not only be seen from the physical improvement, but also from the non-physical aspect such as an income improvement of dwellers and social harmony in living among citizen, and the sustainability of the program which requires an institutional arrangements and well-designed program approach.

Based on the previous discussion, several recommendations can be obtained for future implementation of the slum upgrading policy in big cities in Indonesia as a recommendation for another study in overcoming the urban slum, which are:

1. The acting agency at national/local government should be careful in the selection of the slum upgrading project, it must not stand on disputed land and/or land for public purposes such as green open spaces or riparian. The gov-

ernment also needs to integrate the slum upgrading program into the formal and legal system, providing the security of land tenure necessary for informal residents. This security is not always achieved by giving *kampung* dwellers legal title to the land they occupy (Rukmana, 2018).

2. Collaboration is a key to success. There needs to be a collaboration between central government, local governments, communities, and even donor agencies such as World Bank (WB) and Asian Development Bank (ADB) is essential. As has been learned from KOTAKU Program implementation, effective collaboration between central government, local governments and communities is critical for ensuring smooth program execution and accountability. However, local government should be in the driving seat. Housing and settlement issues have been delegated to local governments in Indonesia by The Housing and Settlement Areas Law 1/2011 which stipulates that provincial and local governments have a greater level of responsibility and authority for housing provision than the central government. Leadership of local government matters to the success of the program. Learn from the planning process of the CAP and Kotaku Program, the local government should give a direct command in planning process. Neither consultant in the CAP Program nor National Government in executing the KOTAKU Program.
3. Program approach play a pivotal role for the success of the program. Developing a comprehensive program design which focuses on physical and non-physical aspect. Slum upgrading should be integrated with poverty alleviation program.
4. Political will also matters for the government to plan and execute the program. As we can learn from the beginning of the KDP and CAP Program, both programs starts from the political forces of poor people. In democracy circumstances, bottom-up planning process is a resources-full step forward in solving any problem. It is everyone's task to let people believe that democracy works for the people.
5. Finally, the National Government of Indonesia needs to execute agrarian reform and reform their one size fits all-policy for urban land policies and taxes to ease poor people access to land and provide adequate and legal housing in big cities.

References

Akbar, R. J. (2016). The Achievement of Social Justice Concept in the Displacement of Kampung Pulo, Jakarta Province.

Bappeda DKI Jakarta. (2013). ***Mid Term Development Planning of Jakarta Province 2013-2017.*** DKI Jakarta: Bappeda DKI Jakarta.

Bappeda DKI Jakarta. (2017). ***Mid Term Development Planning of Jakarta Province 2017 - 2022.*** DKI Jakarta: Bappeda.

Bappenas. (2014). ***The National Medium-Term Development Plan.*** Jakarta: Bappenas.

Bappenas. (2019). ***Panduan Perhitungan Indikator Rumah Layak Huni Sesuai SDGs.*** Jakarta: Bappenas.

BPS DKI Jakarta. (2013). ***Evaluasi Rukun Warga (RW) Kumuh DKI Jakarta 2013.*** Jakarta: BPS DKI Jakarta.

BPS Indonesia. (2016). ***Statistical Yearbook of indonesia 2016.*** Jakarta: BPS-Statictisc Indonesia.

Dewi, S. W. (2014, 4 April). ***First Kampung "Deret" inaugurated***. Retrieved from Jakarta Post: https://www.thejakartapost.com/news/2014/04/04/first-kampung-deret-inaugurated.html

Direktorat Jenderal Cipta Karya, Kementerian PUPR. (2017). ***Profil Kota Tanpa Kumuh Provinsi DKI Jakarta.*** DKI Jakarta: KOTAKU.

Irawaty, D. T. (2013, January 20). ***Banjir dan Relokasi : Balada Warga Miskin Jakarta.*** Retrieved July 23, 2016, from http://rujak.org/2013/01/banjir-dan-relokasi-balada-warga-miskin-jakarta/

Jones, P. (2017). Formalizing the Informal: Understanding the Position of Informal Settlements and Slums in Sustainable Urbanization Policies and Strategies in Bandung, Indonesia. ***Sustainablity***.

Kuswartojo, T. (2019). ***Kaca Benggala: Perkembangan Habitat manusia di Indonesia.*** Bandung: Ukara Lawang Buwana.

Minnery, J., Argo, T., Winarso, H., Hau, D., Veneracion, C., Forbes, D., & Iraphne, C. (2013). Slum upgrading and urban governance: Case studies in three South East Asian cities. ***Habitat International***, 162-169.

Monkkonen, P. (2013). Urban land-use regulations and housing markets in developing countries: Evidence from Indonesia on the importance of enforcement. ***Land Use Policy***, 255-264.

Mungkasa, O. (2013). ***Catatan Kritis tentang Hunian Berimbang.*** Jakarta: The Housing and Urban Development Institute.

Nurdiansyah, A. (2018). Urban Slum Upgrading Policy in Jakarta (Case Study: Kampung Deret Program Implementation). ***The Indonesian Journal of Planning and Development***, 19-31.

Pangkerego, G. E., & Zulkaidi, D. (2014). ***Perancangan Kembali Kawasan Perumahan Kampung Pulo di Tepi Sungai Ciliwung Provinsi DKI Jakarta.*** Bandung: Bandung Institute of Technology.

PPN/Bappenas, K. (2015). ***Indonesia: Peta jalan Menuju Reformasi Kebijakan Perumahan.*** Jakarta: Kementerian PPN/Bappenas.

Reerink, G., & Gelder, J.-L. V. (2010). Land titling, perceived tenure security, and housing consolidation in the kampongs of Bandung, Indonesia. ***Habitat International***, 78-85.

Rukmana, D. (2018). Upgrading Housing Settlement for the Urban Poor in Indonesia: An Analysis of the Kampung Deret Program. In B. Grant, C. Y. Liu, & L. Ye, ***Metropolitan Governance in Asia and the Pasific Rim: Borders, Challenges, Futures*** (pp. 75-94). Berlin: Springer.

Savirani, A., & Aspinall, E. (2017). Adversarial Linkages: The Urban Poor and Electoral Politics in Jakarta. ***Journal of Current Southeast Asian Affairs***, 3-34.

Simarmata, H. A. (2018). ***Phenomenology in Adaptation Planning: An Empirical Study of Flood-affected People in Kampung Muara Baru Jakarta.*** Singapore: Springer Nature.

The Jakarta Post. (2018, September 6). ***The Jakarta Post***. Retrieved from Evicted Bukit Duri residents not involved in community action plan: https://www.thejakartapost.com/news/2018/09/06/evicted-bukit-duri-residents-not-involved-in-community-action-plan.html

The Jakarta Post. (2019, February 4). ***Residents criticize Anies' 'Consultant Action Plan'***. Retrieved from The Jakarta Post: https://www.thejakartapost.com/news/2019/02/04/residents-criticize-anies-consultant-action-plan.html

The World Bank. (2003). ***Cities in Transition: Urban Sector Review in an Era of Decentralization in Indonesia.*** Washington DC: World Bank.

Tunas, D., & Peresthu, A. (2010). The self-help housing in Indonesia: The only option for the poor? ***Habitat International***, 315-322.

UN-Habitat. (2008). ***Housing the Poor in Asian Cities, Quick Guide 2: Low Income Housing.*** Bangkok: UNESCAP.

Winarso, H. (2016). ***Three Generations Of Slum Upgrading Programs: Lessons From Bandung, Indonesia.*** Bandung: Pusat Penelitian Infrastruktur dan Kewilayahan, Institut Teknologi Bandung.

ENVIRONMENTAL PLANNING PROJECTS

SEDIMENT AS A BOOSTER FOR LIVEABLE URBANIZED DELTAS

PETER VAN VEELEN

Delta landscapes are formed when sediment deposition balances or exceeds erosion caused by wind, waves, or tides. The resulting estuarine natural features, such as marshes, mangrove forests and vegetated mud flats, accelerate this process by increasing the capacity to capture and store sediment. Natural delta landscapes thus show a remarkable resilience to changing conditions, such as a rising sea level and more extreme storm conditions.

This ability to grow with sea level rise, however, requires both enough space for delta landscapes to expand and sufficient incoming sediment. Unfortunately, these requirements are lacking in most urbanized and urbanizing delta areas due to the development of buildings, infrastructure, other land use changes, and the construction of dams and embankments. As a result, the floodable areas in deltas have become dramatically smaller, and in some cases disappear altogether. Mud and sand carried in the river are no longer being deposited on land or captured in the wetlands, causing land subsidence and further degradation of existing wetland areas

Additionally, the amount of sediment carried by the river is, in many cases, disrupted by upstream land use changes, notably the construction of hydro dams, the channelling of rivers, and the mining of sand for construction purposes. Globally, a sharp decrease in the inflow of sediment from the upstream rivers is observed.

Delta landscapes such as the Mississippi Delta are disappearing at an astonishing rate: a football field-sized of wetlands vanishes into open water every 100 minutes[1]. Another example is San Francisco Bay, where it is estimated that in the last 150 years approximately 90% of San Francisco Bay's tidal wetlands have been lost or seriously degraded[2] and sediment scarcity seems to be, among other reasons, one of the dominant causes. Even relatively pristine deltas, such as the Mekong Delta, now show the first signs of unsustainable development patterns associated with sediment scarcity.

On top of this is the fact that urbanizing deltas are also big consumers of sediment. There is a growing demand for sand. It serves as a resource for construction material; landfill to compensate for land subsidence or for use in land reclamation projects; and, for coastal nourishments and flood protection. As a result of rapid economic growth, particularly in Asia, sand is becoming a rare resource. Mining volumes greatly exceed the natural renewal rates. Sand is often mined within quarries and riverbeds, however a shift to marine and coastal mining has occurred due to the decline of inland resources (UNEP, 2014). The growing demand for marine and coastal sand conflicts with the sediment need of the natural delta.

Ultimately, the massive losses of salt marshes, wet lands and mangroves, which in turn causes erosion and the depletion and destruction of coastal habitats, results in the loss of livelihoods of coastal communities and affects the flood safety of large metropolitan areas. This is particularly problematic when cities in deltas must cope with risks arising from climate change. Such changes mostly affect the poor and most vulnerable coastal communities. Almost all urbanized deltas face challenges in maintaining ecological systems during rapid urbanization and suffer from problems as a result of sediment deficiency.

TOWARDS A CIRCULAR SEDIMENT MANAGEMENT IN DELTAS

Dredging, to maintain ports and waterways and to clean up silted waterways and canals, produces large streams of sediment. In the Port of Rotterdam more than 10 million m^3 of sediment is dredged annually and even more is removed by special projects, such as deepening the river to create access for larger ships. Although not published by the industry, the annual dredged volumes in ports around the globe are immense. In most cases the dredged sediment is deposited at a designated location out at sea, or, when contaminated, stored in dumpsites. What is frequently missed is the opportunity to use the clean portion of the sediment as a resource for urban development, coastal nourishment, or to replenish natural areas that faces land loss.

It is becoming clear that sediment is a precious material that requires careful management and that a sustainable development of urbanized deltas increasingly depends on the ability to capture, store and re-use flows of sediment.

How can sediment management in deltas become circular? First, short term efforts should be undertaken to avoid the over-production of sediment and dredge. For example, the development and use of improved riverbed data can allow for more targeted dredging. Also, the development of alternative construction materials[3] and urban development projects, which require less sand, should be undertaken. As transportation costs are the main cost component, one of the promising solutions is to re-use dredged sediment as close as possible from the source, for example for waterfront revitalization and wetland restoration projects. Globally, coastal and delta cities are increasingly transforming former port sites into new dense residential areas and are reclaiming the shoreline for public access and residential uses. Improving water quality, reducing flood risk, and restoring river and coastal ecosystems are essential preconditions for waterfront revitalization.

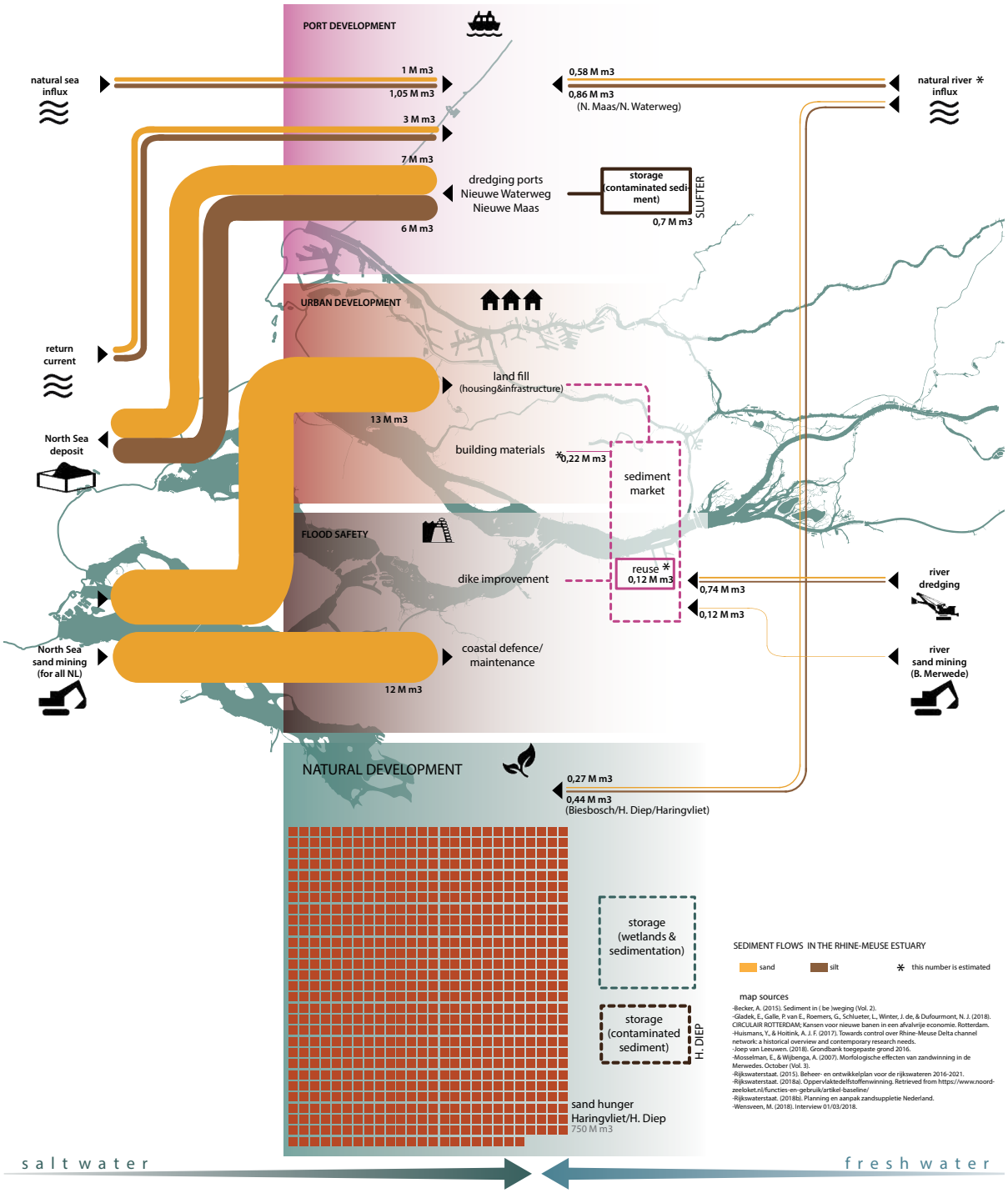


Figure 1: Natural and anthropogenic flows of sediment in the Rhine-Meuse Estuary (Picture courtesy of Building with Sediment Lab)

LIVING LAB BUILDING WITH SEDIMENT IN THE RHINE-MEUSE ESTUARY

To answer questions about the beneficial use of sediment, the Port of Rotterdam, the World Wild Life Fund, the cities of Rotterdam and Dordrecht, three Dutch universities and several engineering and urban design companies, combined forces to create a Living Lab called "Building with Sediment".

In the Port of Rotterdam more than 10 million m^3 of sediment is dredged annually and more than 13 million m^3 of sand is mined at sea for urban development and sand nourishments for coastal flood protection (Figure 1). These volumes are expected to increase in the coming decades because of sea level rise, changes in port logistics, and further urban development. The lab focuses on the challenge to re-use these large volumes of dredged sediment for beneficial uses in the urban context. We also study how this material can be made successful, in terms of hydro-morphological and ecological functioning, governance, and provision of ecosystem services.

The lab collaborates with two regional wetland restoration projects in the former estuary of the Haringvliet and within the urban river front area of Rotterdam.

The Rhine-Meuse Estuary is a complex network of tidal rivers that transports sand and mud. It is located in the region of the metropolitan area of Rotterdam and Dordrecht, including the port of Rotterdam (Figure 2). The Haringvliet dam, constructed as part of the Delta Works storm surge protection system, now largely blocks the influx of sandy sediment and salty water from the sea into the estuary. This sediment deficit is leading to shore erosion, wetland degradation and loss of biodiversity.

Our work in the Rhine-Meuse Estuary has wider application as this same process of shore line erosion is taking place in all closed, or semi-closed, former sea arms in the Dutch Delta. Moreover, sediment deficits in the smaller rivers (Dordtse Kil, Spui and Oude Maas) causes erosion of riverbed, leading to stability risks of adjacent dikes and bridges.

Due to the reduction of the tide, after the damming of the estuary, approximately 1,850 ha of the 13,700 ha of the intertidal area became permanently dry or permanently under water (Wijsman, et al., 2018). As a result, the acreage of the estuarine that benefits from regular tidal flooding has dramatically reduced. To compensate for the loss of floodable land, major investments have been made to restore estuarine natural areas. Under the Delta Nature program, of the Province of South Holland, twenty-one wetland areas have been newly developed and restored, with a total area of approximately 2000 hectares (Figure. 2). While these

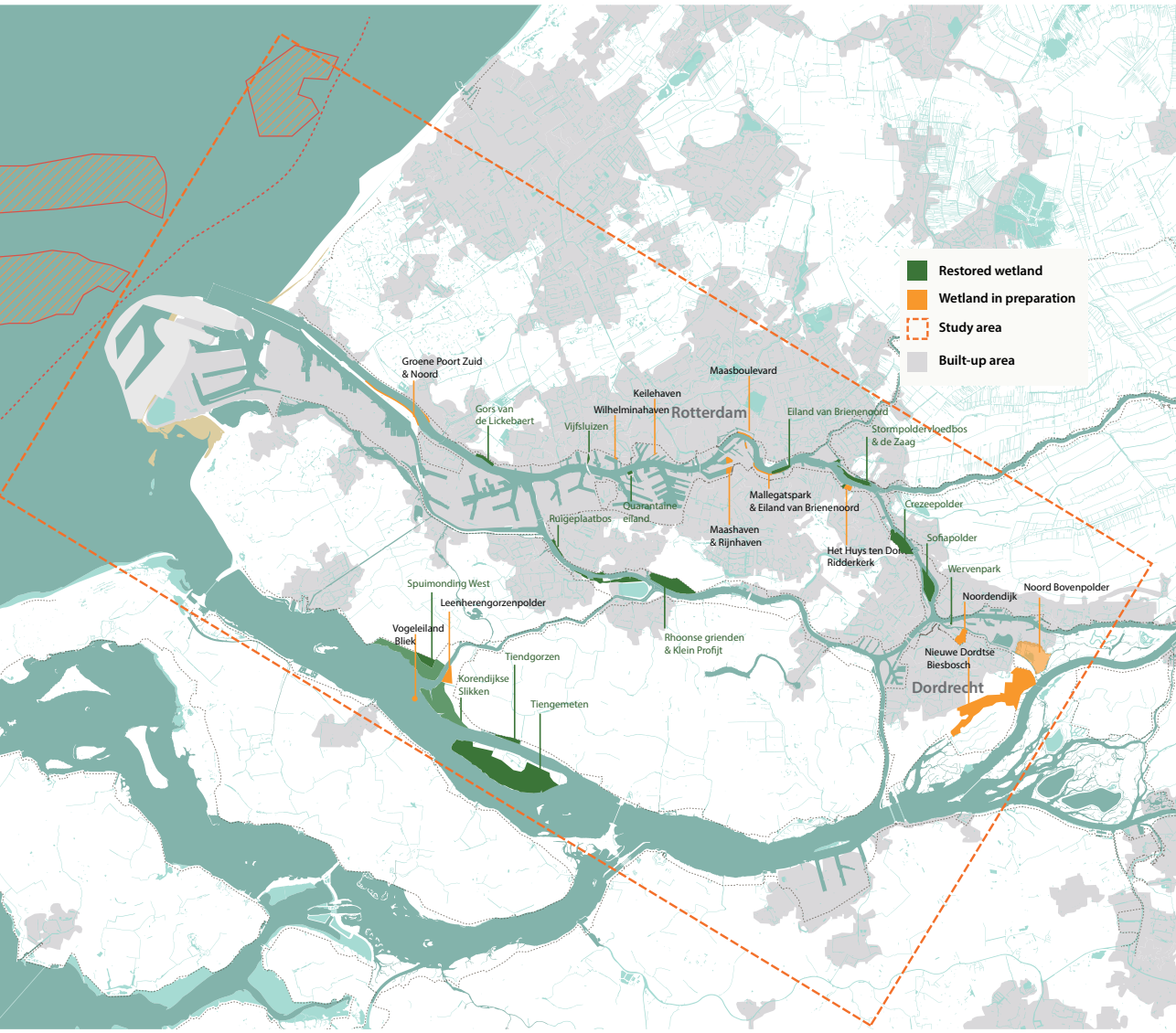


Figure 2: Wetland restoration projects in the Rhine-Meuse Estuary
(Picture courtesy of Building with Sediment Lab)

investments in estuarine nature have been important for improving biodiversity and creating new recreational facilities, they did not provide an answer to the underlying problem of sediment deficiency.

Various stakeholders now argue that the only option is to restore the natural delta dynamics by removing the dams and opening the estuaries to, once again, allow the sea to bring in sediment. The idea behind this "open arms approach" is, that by completely or partially removing the dams and barriers, the natural sedimentation processes in the estuary will be restored and the delta enabled to grow with sea level rise. However, recent research shows that the partial opening of the Haringvliet dam will have no effect on the sediment balance in the area because sand hardly pass through the dam and the hydrodynamic energy will remain too small for effective sediment distribution (Wijsman, et al., 2018). And sea level rise largely cancels out any positive effects. The new consensus is that the best approach is to maintain estuarine natural processes by combining the strategy of "controlled tide" (by partly opening the Haringvliet dam and other dams in the delta) with a program of sand nourishments to enlarge the intertidal zone. This also creates more opportunities for recreation and ecotourism.

On September 2018, the Haringvliet locks were opened during high tide and low water discharge from the river Rhine. As a result, seawater again penetrates the Haringvliet and salinized the western part of the former estuary. This more natural transition between fresh-salt water helps migratory fish such as salmon and sea trout to pass through the locks towards their spawning areas upstream. As a result, the World Wildlife Fund and their partners recently created a new island for migratory fish and birds, for which sediment from nearby constructions sites was used (Figure 3).

RIVER AS TIDAL PARK PROGRAM

In the urban area of the Rhine-Meuse estuary a range of small-scale pilot projects have been carried out re-using sediment to develop intertidal river parks and restoration natural areas thereby seizing the opportunities offered by urban renovation and relocation of industrial and port activities. These projects are part of a regional *River as Tidal Park program*, in which the Rotterdam Port Authority, the Ministry of Water Ways and Public Works (Rijkswaterstaat), and the cities of Rotterdam and Dordrecht collaborate with a network of nature conservation agencies and engineering firms. The main objectives are to increase the natural and recreational values of the river by creating several tidal parks from Hoek van Holland to Dordrecht. The program encompasses both tidal park projects as urban wetland restoration projects, as well as nature education programs.

Figure 3: Creation of island for migratory birds and fish in the Haringvliet, for which sediment is used from nearby construction sites. (Picture courtesy Michiel Rotgans/WWF)

The program connects different objectives of the partners. For the Ministry of Water Ways and Public Works, the program is one of the ways to improve the ecological status of the Rhine-Meuse Estuary by providing regulatory ecosystem services, in compliance with the European Water Framework Directive. The cities of Rotterdam and Dordrecht see these tidal parks as high-quality elements of cityscapes that restore nature and improve spatial quality, thus providing cultural ecosystem services. For the Rotterdam Port Authority, tidal parks constitute one of the ways to re-use sediment that is produced by large scale dredging activities to reduce their CO_2 footprint. Some tidal parks have already been completed, more than 12 tidal parks (totalling about 60 ha) are under development, and some tidal parks are still in the planning phase (see Figure 2).

MAASHAVEN

One of the most appealing projects is the creation of tidal parks in the Maashaven and Rijnhaven. These former port basins are being developing into high-density residential areas with accompanying green space and recreation areas. The recent rearranging of berths, previously used for inland shipping, creates new opportunities to use the water for developing a tidal park and improving waterfront accessibility.

The ecological quality of the port basin is low, mostly because the considerable water depth blocking sunlight from reach the bottom, and because of a heritage of contaminated sediment that accumulated in the basins from past industrial use. To resolve this depth and pollution problem, the Port Authority of Rotterdam uses clean sediment from regular riverbed dredging to fill and clean the bottom of the basin. A total more than 600,000 m3 of sand will be used to create a park and wetland in the Maashaven (Figure 4).

In the next phase, a tidal park including a wetland zone and beach is planned. A key question is how to design a land-water transition zone that provides the perfect conditions for estuariene ecosystems, while also providing the functional requirements for recreation, navigation, water discharge capacity and safety in a way that is resistant to extreme conditions. The Maashaven serves as a testing site for other tidal park design in other port basins.

Another example of mud flat restoration project is the Green Port project at Rozenburg (Figure 5). Here, a new wetland is being created along the banks of the canalised part of the river Meuse, using groins and breakwaters to provide protection against strong currents and waves. This brackish environment is important as a shelter for fish and birds that migrate upstream, such as salmon and sturgeon. For the constructing of the breakwaters, surplus building material and sediment is used, such as the concrete foundation of old parking meters from the city of Rotterdam.

Figure 4 (Top): former Maashaven and Rijnhaven ports transform into residential high density waterfront areas (Picture courtesy Port of Rotterdam).

Fig 5 (Bottom): 600.000 m^3 of dredged sand from the port will be used to create a tidal park and wetland in the Maashaven. (Picture Courtesy of the City of Rotterdam / design: De Urbanisten)

NEXT STEPS

The examples shown in this article illustrates the potential of using sediment for nature restoration and waterfront development, both in urban and natural contexts. Imitating delta-forming processes, by using dredged sediment and combining it with nature-based solutions, seems to be the most promising and most feasible method to restore estuarine nature in urban contexts.

The main challenge with these promising sediments re-using projects is that they have not been embedded into integrated delta management or urban development strategies. Also, the volumes of sediment that are re-used within these projects is not enough to make a difference at the estuary scale. The challenge is to move from these single piloting projects to large scale re-uses of sediment. New approaches need to be developed which couple sustainable sediment management with nature development, urban waterfront revitalization and flood risk management both at the local and the metropolitan level. An interesting question is whether the approach of the "River as Tidal Park program" can be scaled-up to a size that fits the sediment flows in the Rhine-Meuse estuary. What happens if the sediment management of the delta is taken as the starting point for the sustainable development of the delta?

To achieve sustainable sediment management on a metropolitan scale there are several major challenges include the dynamic mismatch between the supply and demand, the mismatch in type of sediment (sand or silt), and the mismatch in the quality of the sediment. In particular, the problem of timing is critical. Transport and temporary storage of sediment is costly and we need to design areas that allow for large-scale storage of sediment, perhaps ones providing interim benefits for recreational uses. We also need to develop new forms of governance, collaboration and business models, including maybe the economic valuation of sediment. Finally, we need to develop knowledge on the ecosystem services that are provided by sediment. For example, can dyke reinforcement be postponed by using sediment to create natural foreshores and how do we offset the costs and benefits of the various stakeholders?

Endnotes

1 http://mississippiriverdelta.org

2 https://baykeeper.org/our-work/wetland-conservation-and-protection

3 Sediment can be used as raw material for the construction industry, although upgrading sediment to higher-quality material is still financially unprofitable and consumes a lot of energy.

Figure 6: A new mud flat landscape arises at the Groene Poort in the port of Rotterdam by using breakwaters to provide protection against strong currents and waves (source: Ark Nature Development)

References

UNEP (2014), Sand, rarer than one thinks, UNEP Global Environmental Alert Service note, March 2014. http://wedocs.unep.org/bitstream/handle/20.500.11822/8665/GEAS_Mar2014_Sand_Mining.pdf?sequence=3&isAllowed=y

Wijsman, Jeroen, Vincent Escaravage, Ymkje Huismans, Arno Nolte, Remi van der Wijk, Zheng Bing Wang en Tom Ysebaert (2018) Potenties voor herstel getijdenatuur in het Haringvliet, Hollands Diep en de Biesbosch, Wageningen Marine Research rapport C008/18, Yerseke, Delft, 31 januari 2018

RESILIENT APPROACH TO EAST PARCEL RIVERFRONT REDEVELOPMENT PLAN SLEEPY HOLLOW, NY

ABHIJEET SHRIVASTAVA, ALYSSA CURRAN, DANIEL BRIAR

East Parcel Redevelopment, Sleepy Hollow, NY (Source – WSP USA)

The Village of Sleepy Hollow, New York is implementing a suite of green infrastructure and resiliency projects on the former site of the General Motors assembly plant, which has been vacant since the 1990s. Once employing 12,000 workers, the abandonment of General Motors (GM) left a significant impact on the local economy and eroded the downtown customer base. To fill this void in the heart of the city, Sleepy Hollow looked to give the low-lying, impervious brownfield site a new purpose: to re-emerge as a hub of economic activity, history, recreation, diversity, mobility and culture, serving its own citizens, residents of adjacent communities and tourists from both near and far.

The 97-acre site was divided into two projects. The first was a billion-dollar, 67-acre, private market residential project now called "Edge on the Hudson". The second project was undertaken with the support from the Downtown Revitalization Initiative (DRI) capitalizes on significant investment by the Sleepy Hollow Local Development Corporation (LDC) into the 29-acre remaining portion of the site called 'East Parcel'. East Parcel is to be owned by the LDC for the benefit of the community.

THE SITE – EAST PARCEL RIVERFRONT REDEVELOPMENT

The East Parcel site is bordered by DeVries Park and Pocantico River to the north, Philipsburg Manor—a restored early 18th-century grist mill and manor house — to the northeast, the tidal portion of Hudson River and Metro-North rail line to the west, Barnhart Park and residential properties to the south-southeast, and Beekman Avenue to the south. The community's vision for the East Parcel site is development of an active and passive recreational space, a new public works facility, recreational ball fields and a community center.

To support the public and private sector investment, the Village of Sleepy Hollow developed a clear vision for the future of the downtown, set goals and strategies to implement the catalytic project, formed a local stakeholder committee, and demonstrated united leadership to leverage the DRI plan. Sleepy Hollow has a once-in-a-lifetime opportunity to dramatically expand the local economy and improve the quality of life through East Parcel redevelopment, though not without its challenges. The site also faces major physical, logistical and environmental challenges.

Its riverfront location introduces major threats from riverine and coastal flooding. According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Program, the entire site is within the 100-year floodplain and it is estimated that some portions of the East Parcel will require elevating by as much as 17 feet to comply with the floodplain management ordinance.

Figure 1: An Aerial Perspective (looking West) – Neighborhood context map, East Parcel, Sleepy Hollow, NY (Source – WSP USA)

Though Metro-North rail lines run along the west edge, the site maintains limited connectivity through the new 67-acre DRI development, Edge-on-Hudson[1] residential project, and untapped linkages to surrounding assets. As East Parcel re-establishes itself as a downtown destination and gains relevance both locally and at a state level, the site's interconnectivity to proximate resources and to New York City (just 30 miles south) will link residents, businesses and visitors to new amenities, historic and natural resources, and economic opportunities through improved infrastructure, placemaking and transit-oriented development.

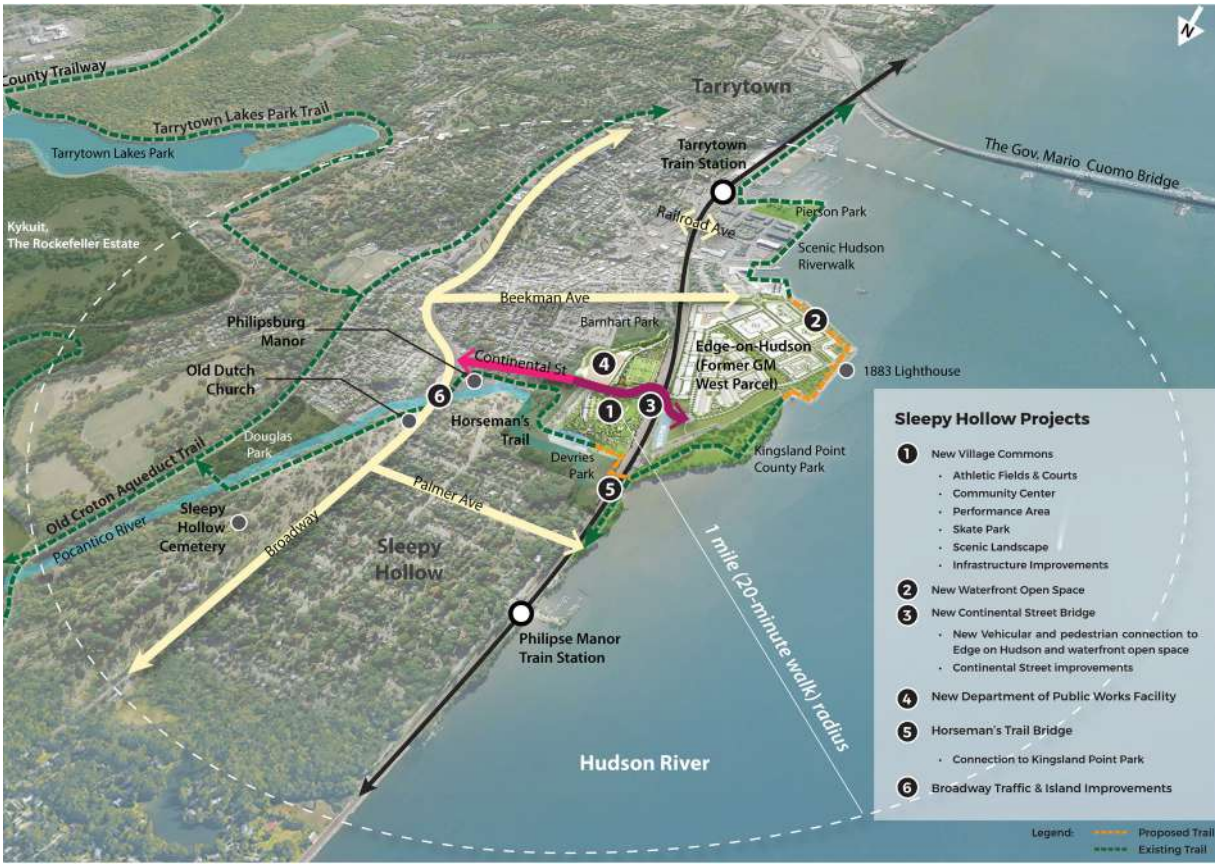


Figure 2: Project Map - East Parcel Redevelopment, Sleepy Hollow, NY (Source – WSP USA)

INTEGRATED APPROACH TO FLOOD MITIGATION + CLIMATE RESILIENCE

Flood modeling, bathymetric survey, and hydraulic and coastal analyses were performed to understand existing site conditions and sea level rise projections on East Parcel out to 2080, to evaluate current and future risks and impacts. The Pocantico River watershed was delineated, mapped and modeled using high-resolution terrain data and up-to-date environmental data. Precipitation data and climate change projections were used to compute flow hydrographs for current and future flood events of varying intensity. Following the determination of the hydrographs, a hydraulic model was constructed encompassing the site and its upstream and downstream areas. To address the climate change risk on site, the ClimAID report developed by the New York State Energy Research and Development Authority (NYSERDA) was used to design the project for 100 years.

Figure 3: East Parcel Redevelopment, Sleepy Hollow, NY (Source – WSP USA)

The HEC-RES 2D model enabled the project team to determine the flood extent and to evaluate climate change risk at the project site in support of the Environmental Impact Statement (EIS). The results of the analysis indicated a significant reduction in the 100-year base flood elevation of up to 4-feet, potentially leading to the development of a FEMA Letter of Map Revision (LOMR), which will be addressed in future project phases. The project team was initially responsible for the support of the preparation of the Final Environmental Impact Statement (FEIS) and has subsequently advanced the first of several phases of design, which includes utility infrastructure and geotechnical ground improvement program.

These assessments laid the groundwork for developing flood resilient measures designed to respond to both nuisance and extreme events, while also delivering clear benefits to multiple communities. As part of re-imagining the flood-prone area, a collection of green infrastructure improvements was designed to serve multiple purposes including stormwater management, educational programming, recreational opportunities and cultural preservation.

The project team, led by WSP USA, took a holistic approach in re-imagining

the flood-prone area and designing a collection of infrastructure improvements that serve multiple purposes and help respond to extreme events. The plan raises the existing Department of Public Works facilities out of the floodplain; incorporates pervious pavement in the parking lot and a great lawn area designed to be flooded, as well as a multi-purpose athletic field and large bioswale designed to retain stormwater; and includes a terraced community center with civic plaza that also serves as an emergency response center. The plan insured that the site's developments would meet National Flood Insurance Program requirements.

PROMOTING ENHANCED CONNECTIVITY + VIBRANCY

Roadway connectivity was evaluated to understand the existing and potential local network and circulation into and out of the project site. A traffic impact analysis used conservative methodology and traffic mitigation to address identified issues and generate solutions, including new pedestrian and bike path connections to sites north and south. The vision for the redeveloped of East Parcel, with its extensive recreation facilities and art installations, promoted the incorporation of a multi-use trail system to make it readily accessible for pedestrians from all parts of the Village and, via RiverWalk, residents across the County. It is anticipated these facilities will become a magnet for people who want to settle in a connected, mixed-used development community hub.

The East Parcel Concept Plan includes the construction of a bridge over the Metro-North Railroad tracks that would serve to extend Continental Street and link the East Parcel to the west side of the tracks, including Edge-on-Hudson. The realignment of the Continental Street Bridge overpass to West Parcel stitched the site together into the larger urban fabric while the interior street promotes internal site circulation. The bridge would afford pedestrian and vehicular access, replacing a dilapidated pedestrian walkway that is currently unusable. Creative planning for use of the underpass includes potential artist studio and display space, multi-use pedestrian paths and more, to promote a stronger identity and vibrancy across the site.

Moving forward, the civil infrastructure experts on the project team will advance designs for bridge architecture and incorporate landscape elements to include native plants that promote sustainability by reducing outdoor water consumption.

Figure 4: Concept Site Plan for the East Parcel Redevelopment, Sleepy Hollow, NY (Source – WSP USA)

THE POWER OF ONE: BENEFITS OF A MULTIDISCIPLINARY TEAM

The strength of the East Parcel redevelopment project resulted from the project team's cross-cutting areas of expertise that extended across geographic scales and discipline boundaries. The professional team performed services as a singular unit, including urban planning and project visioning, hydrology and hydraulic studies, geotechnical investigations, civil and structural design, utility and critical infrastructure design, and construction management for the project. They also supported the Local Development Corporation's funding applications and helped the client group achieve envisioned goals and outcomes.

The Sleepy Hollow East Parcel Riverfront Redevelopment plan underscores the value of organizing around key elements – revitalization, climate resilience, and connectivity in the case of East Parcel – and aligns with the project team's mission of creating resilient cities through a multidisciplinary approach. An example of well-leveraged public and private investment, East Parcel demonstrates the ability of a Village to transform an outdated site into a civic amenity

Figure 5: Concept Visualization - Continental Street Bridge over Metro-North Railroad, Sleepy Hollow, NY (Source – WSP USA)

by assessing risks and vulnerabilities; taking a multi-disciplinary approach to site planning; designing transit-oriented development to complement existing and planned land uses; and ultimately maintaining the character and quality of life of a cherished historic district while establishing a more sustainable trajectory into the future.

Endnotes

1 See: https://www.edgeonhudson.com/

NOTEWORTHY PLANS

QUITO'S RESILIENT AGRIFOOD SYSTEM

DAVID JÁCOME-PÓLIT, DENISSE PAREDES, ALAIN SANTANDREU, ALEXANDRA RODRÍGUEZ DUEÑAS, NATALY PINTO

Figure 1: 85% of urban and peri-urban farmers of Quito are women, they provide organic and healthy produce to the city. (Photo credits: AGRUPAR)

INTRODUCTION

The right to food is recognized as one of the fundamental human rights within the global framework for sustainable development and it is embedded in different agendas. In order to promote prosperity and quality of life for all, the Right to the City, recognized in the New Urban Agenda signed in Quito, promotes ensuring that all inhabitants, both present and future generations, without discrimination of any kind, can create cities and human settlements, that are just, safe, healthy, accessible, affordable, resilient and sustainable. Furthermore, the Milan Urban Food Policy Pact recognizes that rural-urban connections, tied to land use planning and territorial governance, can provide for a balanced exchange of resources (goods, people and knowledge) to prevent their depletion and enhance ecosystems recovery and use of renewable energies.

Within these frameworks, the Resilience Strategy of the Metropolitan District of Quito (released in October 2017) proposed building urban resilience with several actions, among them, placing food economy as one of the main pillars. As a result, a Multi-Actor Platform, called the Agri-Food Pact of Quito (PAQ) was assembled consisting of members from the private and public sectors, academia, civic society organizations, and cooperation agencies. This group proposed the signing of an Agri-food Letter of Quito, in October 2018 and worked on a sustainability plan for the Eco-Agrifood system of Quito as an input to the city's food policy.

Today the city of Quito is dependent, vulnerable and diverse. Dependent because there is a large gap between what it produces and consumes, if we consider the total production and consumption. Vulnerable due to three factors: 1) risks of natural and anthropic hazards that could impact almost all of its territory, especially the most disadvantaged areas, 2) lack of awareness, preparation and the absence of actions to reduce risk, and, 3) concentration of supply goods in two opposite points of entry in the city that, in turn, connect with large areas of the country that are highly vulnerable in terms of food production. Diverse because the food situation differs significantly in its territory (north, center, south, or west) in relation to availability, accessibility and consumption (inequality), and because its territory (rural-urban divide) and social relations are heterogeneous in terms of their capacity for food resilience.

The present approach understands the city as a series of complex systems where, what we named the "Eco-Agrifood System" has a fundamental role. In fact, as the city evolved, its requirement for food has been incorporated into the urban development pattern in response to a wealth of rules and regulations, social associations, and human and natural capital that enables food provision.

Under these circumstances, this article is part of an ongoing work that identifies the main agents of the Eco-Agrifood System of Quito and its vulnerabilities and strengths from a systemic point of view. The analysis takes into account the factors that contribute to food security and to its natural and anthropogenic threats. It also recognizes the characteristics of the population that exacerbate vulnerabilities, in addition to factors such as climate change that amplify threats. As a result of this analysis, general strategies are proposed to form a comprehensive food resilience plan for the city of Quito.

CONTEXT

In general terms, it could be said that sustainable development and resilience reinforce each other. The more we take care of the environment, that is, if we do not cross "the planetary limits within which we hope that humanity can operate safely"[1], the world will be less turbulent. This balance between sustainability and resilience is displayed by agriculture. Balance is needed in farming activities which include: nitrogen and phosphorus overload[2], CO_2 emissions, the consumption of 70% of all fresh water extracted from the ground, shared responsibility for 60% of all biodiversity losses, and, land degradation on a large scale[3]. In turn, it is estimated that agriculture provides employment to around 1,500 million people, including farmers (small and large), landless workers, relatives and migrants (legal and illegal).

Figure 2: Amidst mountains and valleys, Quito Metropolitan District, Ecuador's capital, is near a 3 million people population. (Photo credits: Municipality of Quito)

Although the system produces enough food and calories to feed all of the people on the planet[4], 800 million people suffer from hunger. This could be explained by inefficiencies in the production processes, by inequality in terms of food access, especially for the most disadvantaged, and by food waste. The Food and Agriculture Organization of the United Nations (FAO) estimates that 6% of global food losses occur in Latin America and the Caribbean[5]. This is equivalent to 15% of the food available in the region, even though 47 million people in the region still suffer from hunger.

In Ecuador a study[6] found that although food security has improved during the last decade, the country is not self-sufficient in food production, and in some cases the population's access to food is limited. Agriculture remains the major employer in Ecuador, and an especially important source of jobs for women[7], however its importance is beginning to decline.

At the same time, the energy, water and food nexus is of particular importance. The consumptive use of water for agricultural purposes accounts for 80% of the used flow, followed by domestic (13%) and industrial (7%) use. Meanwhile 53% of the total surface flow is required for generation of hydroelectricity. Hydroelectric generation is the greatest non-consumptive user of use water[8]. The balance between consumptive and non-consumptive demands create a high level of uncertainty regarding the availability of this resource in the future.

These global, regional and national scenarios set important challenges for the future of food security in Quito. Food security is fundamental for economic development due to the role of nutrition in healthy growth and the development of human capital[9]. This is especially true in Quito which has a potential demographic bonus, where working age population exceeds the number of dependents. In the future, the population group between 0 and 17 years old will be the one with the least grow, while the population group that will grow the most in number and proportion will be between 45 and 64 years old. Not taking advantage of this opportunity could mean a deeper chronic social stress, reinforcing socio-economic vulnerability.

From the perspective of urban growth, socio-economic vulnerability can mean the creation and augmentation of risk. Socio-economic levels define the quality of living conditions and affect the resilience of human settlements when facing natural disasters[10]. In these settlements social and spatial inequalities are concentrated: insufficient living space in quantity, quality and safety, unsafe land tenure, deficient access to basic services[11], an increased complexity for the collection of urban solid waste[12], and, in turn, high food insecurity and low food diversity[13].

METHODOLOGY

The efforts to strengthen the Eco-Agrifood system face various challenges arisen mainly from its own complexity, its dependence on the environment and services provided, its importance to human health, its contribution to labor and development, and, its handling along the Eco-Agrifood chain. These challenges are magnified by the dynamism of the system over time and by spatial factors determined by its location in a territory facing multiple risks derived from natural and anthropic threats. In order to propose effective strengthening strategies, the study presents a comprehensive analysis of the Eco-Agrifood chain with a systems perspective that allows the identification of key agents, connections, vulnerabilities and threats.

FOOD SECURITY IN QUITO'S CONTEXT – COMPLEX SYSTEMS AND SYSTEMS THINKING

Arnold & Wade (2015) argue that Systems Thinking a "system of thinking about systems" can be a useful tool to visualize and understand the complexity of our food network. Although, systems thinking does not yet have the required importance in educational systems[14], its benefits and practical utility has been acknowledged[15]. According to the Merriam-Webster dictionary, a system is defined as "a regularly interacting or interdependent group of items forming a unified whole"[16]. Aristotle contributes to the definition of systems thinking as the ability to think of a system as something greater than just its parts or the sum of them[17], Following this line of reasoning, it is evident that systemic thinking uses the same logic as a system, as argued by Arnold & Wade (2015), who also affirm that "systemic thinking is a set of synergistic analytical skills that are used to improve the ability to identify and understand systems, predict their behaviors and design modifications to produce the desired effects. These skills work together as a system."

Systemic thinking encompasses three elements: 1.) Agents, in this case with attributable characteristics, 2.) Connections or interconnections which define the way in which agents are related and/or feed from each other, and 3.) A function, purpose or goal[18]. Often, the latter is a crucial determinant of system's behavior[19]. On the other hand, "understanding of interconnections"[20], and the need to "consider and use multiple perspectives"[21] is key in the construction of a system when using descriptive information[22]. This is because problems must be analyzed and understood from a wide range of perspectives, based on appropriate concepts and assessments in order to be critically evaluated[23].

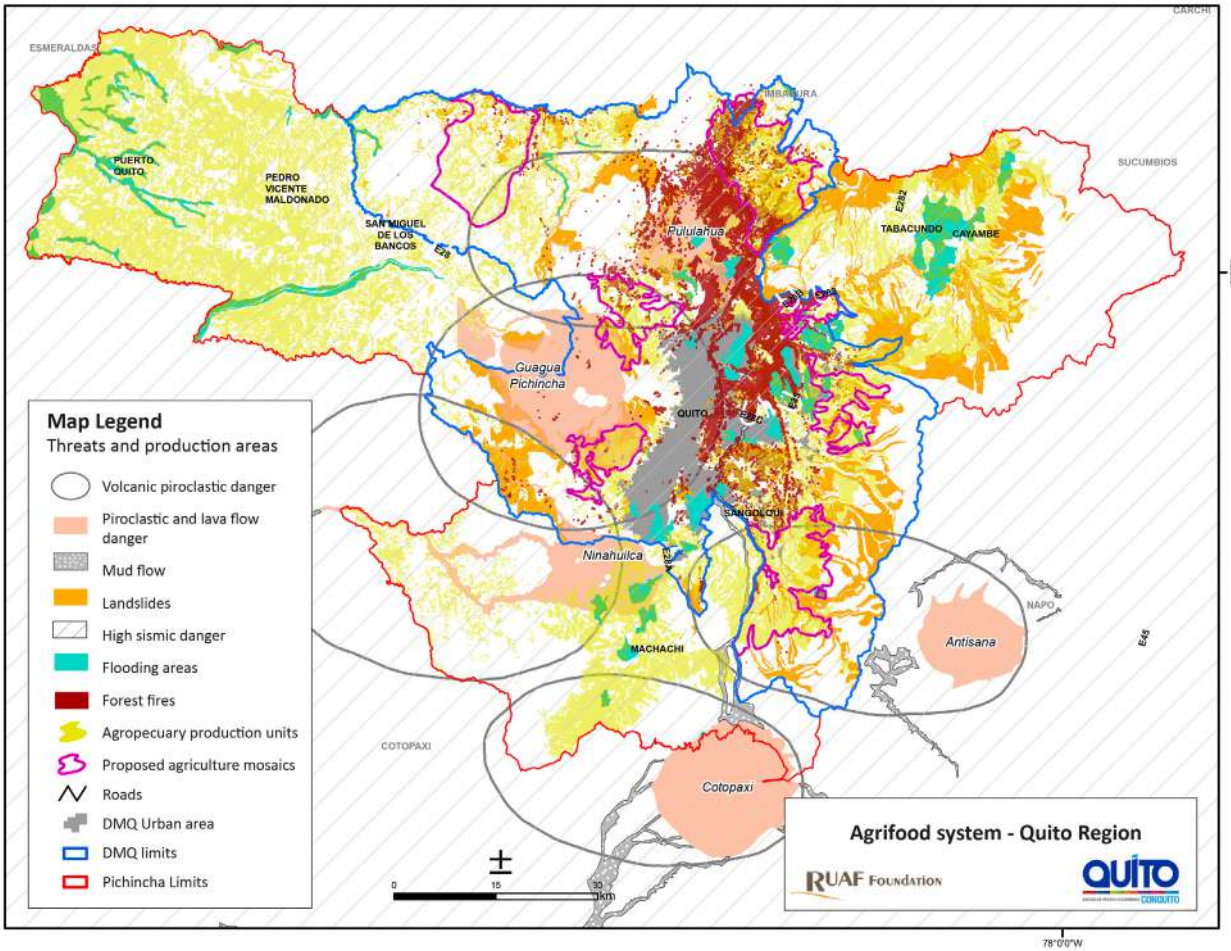


Figure 3: Quito-Region is a territory where natural threats, production and urban development are intertwined. To better understand the agrifood system these factors, as well as socioeconomic, politic and environmental factors, need to be considered. (Credits: María Cristina Cruz – RUAF Foundation)

Stave and Hopper (2007) identify seven key characteristics of systemic thinking: first is the recognition of interconnections, second is identification of feedback loops, third pertains to understanding of the dynamic behavior of the system, fourth relates to differentiating types of variables and flows, the fifth is the use of conceptual models, the sixth focuses on creation of simulation models, and, the seventh emphasizes on testing of policies and behavior. Through the proposed methodological approach, and with food security as the goal of the system analysis, the first 6 points are addressed. The seventh point can be addressed when designing the different programs and projects that derive from the possible strategies proposed in this work.

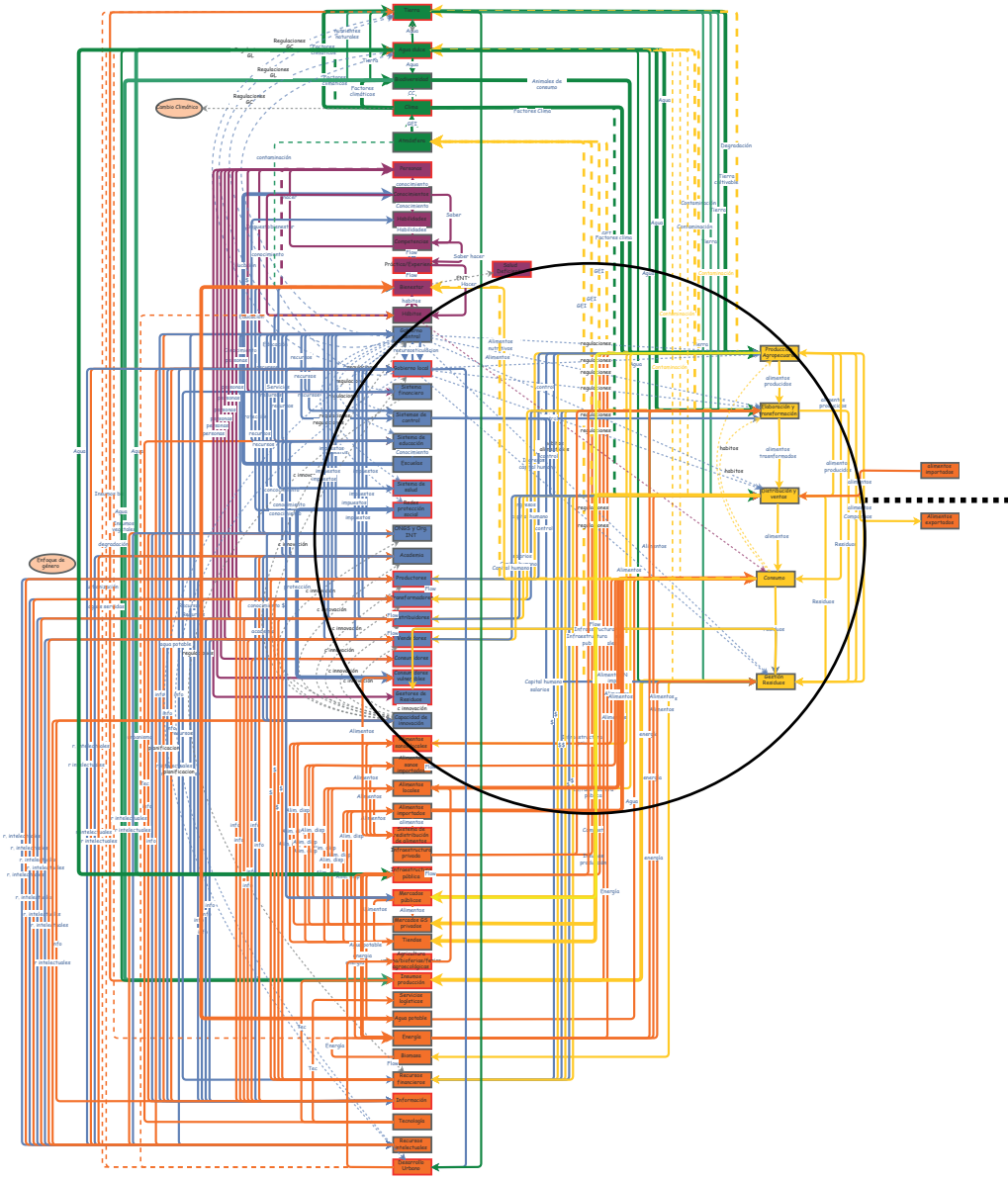


Figure 4a: Quito's Eco-Agrifood system was mapped using an open source software. Natural, Human, Social and Produced Capitals related to the system were identified and connected to the different links of the Agrifood chain. Connections, interactions, feedbacks and flows can be identified. Credits: Authors

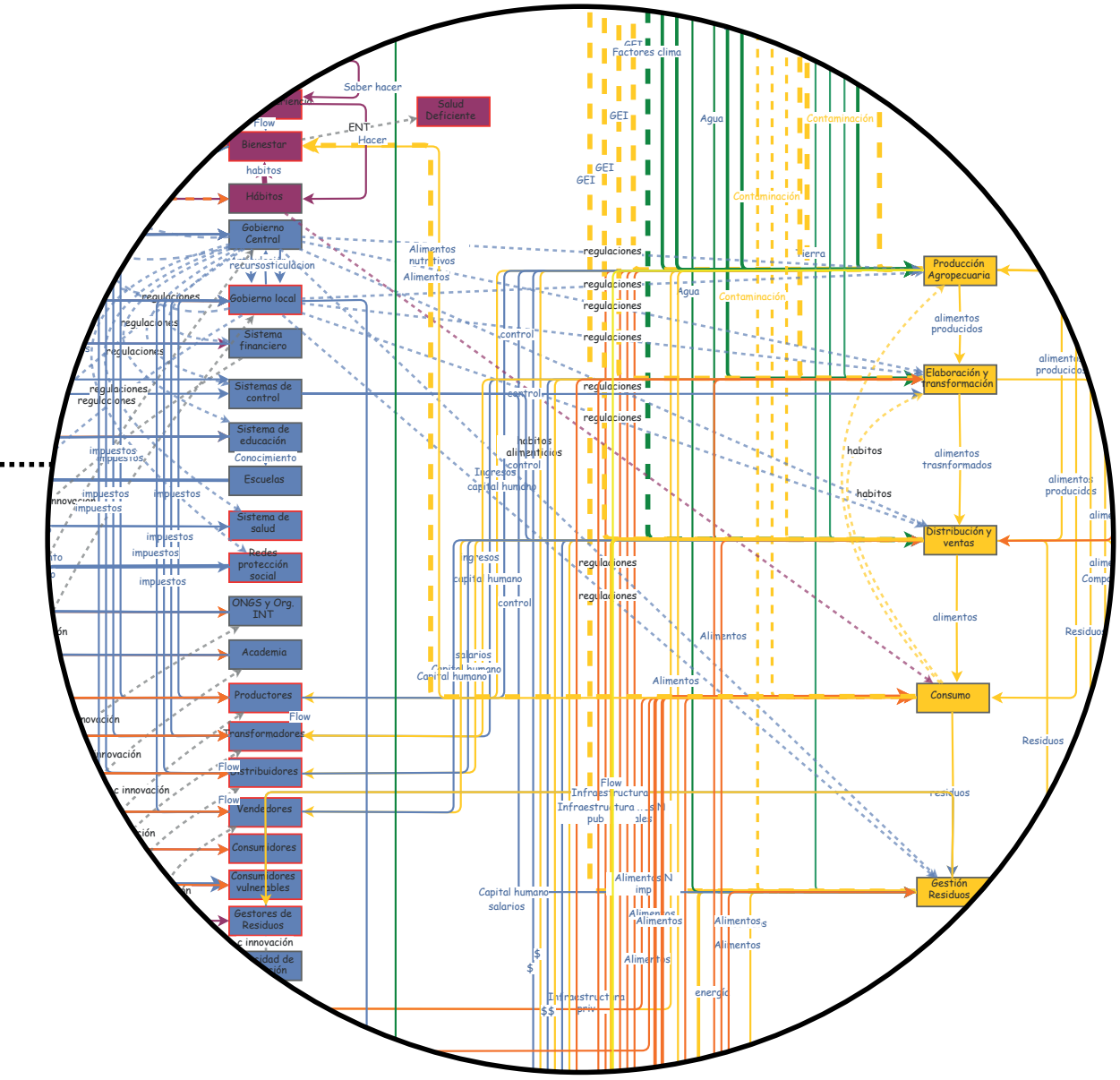


Figure 4b: Detail mapping of Quito's Eco-Agrifood system from Figure 4a

In order to understand the Eco-Agrifood system, the following steps were followed to construct a model. The model serves as a navigation chart to design strategies to strengthen the system:

Bibliographic review

Establishing the framework	*Considerations*
• Identification of sources of information, data and studies about Quito's Agrifood system • Consultation with experts and system organizations or individuals (including urban and peri urban producers all members of the PAQ) through meetings and workshops. • Review of studies and literature on systems thinking, complex systems, agri-food system analysis methods, preparation, resilience and climate change adaptation.	• The study benefited from Quito's Agri-Food Strategy diagnosis and knowledge of experts in the field. • The focus was mainly on sources that address food and its management from a systemic perspective.

Understanding the system operation

Understanding the system	*Understanding interconnections*	*Considerations*
• Based on workshops and semi-structured interviews. The objective was to understand the system holistically, considering all its agents, subsystems, links and capitals[24].	• Workshops and semi-structured interviews aim to gain knowledge and the ability to understand vulnerabilities, relationships and interdependencies between the agents of the system, as well as the results of these interactions. (These conditions help identify the points of change of a system, that is to say, those points that if approached in an adequate way, will generate changes in the whole system).	• Considering multiple perspectives (system experts and organizations or individuals) allows a better understanding of the system from different points of view[25]. • Understanding the system without getting tangled in detail[26]. • Tolerance to ambiguity and uncertainty[27]. • Interviews on broad and varied topics[28]. • Experienced interviewees [29].

System modeling

Drawing the system	*Considerations*
• Use of a simulation tool for modeling dynamic systems based on agents. • The tool allows to represent the system and gather information about its functioning. • The system is organized based on the different capitals (Natural, Human, Social and Produced) required for the operation of the system and its role in each link of the agri-food chain. • Agent-based modeling allows to granularly separate the details if necessary.	• The web-based tool used is Insight Maker. • The tool does not need downloads or add-ons. • The tool allows network collaboration. • Insight Maker is an open source tool.

System vulnerability		
Food security	*Weaknesses, threats and critical agents*	*Considerations*
• The contribution to food security of each link in the agri-food chain is determined and evaluated on a framework based on the dimensions of food security: accessibility, availability, adequate use and stability in time. This allows to identify vulnerable agents and critical nodes within the system.	• Evaluates the weaknesses of certain links and/or agents within the agri-food system regarding the factors that contribute to food security. • Describes the natural and non-natural threats that can affect the stability of the agri-food system or by link. • Establishes the critical components that need to be addressed to strengthen the link from the most critical agents.	• Weaknesses are addressed based on a framework that evaluates the functioning of the food system with universal food security as the result of its proper functioning[30], which related to the human right to food. • How well the system operates before a crisis influences the resilience of a system after a crisis. [31]. • Natural and non-natural threats are established by Quito's Preliminary Resilience Assessment. • Critical agents for the proper functioning of a link are identified with experts.

System analysis		
Examining the system	*Examining the behavior*	*Considerations*
• Establishes rules to determine agents and connections that later allow proposing the route to achieve the proposed changes. • Determines the critical agents, their connections and the quality of those connections. • Identifies the agents or critical links in which an action has major impact • Determines the scope of the proposed strategies	• Evaluates possible actions and their impact in the system by amplitude and magnitude.	• The rules to determine the impact of an action on agents and connections consider inputs and outputs, control over agents, contribution or inhibition of a flow, relevance of the agent in the system (based on expert criteria).

Recommendations and strengthening strategies		
Recommendations	*Strategies*	*Considerations*
• Based on the analysis and vulnerability evaluation of the system, recommended actions to strengthen are provided.	• Describes experiences in other cities that can contribute to the strengthening of the system.	• Recommendations include expert's contributions. • Strategies arise from the initial literature review and other relevant sources.

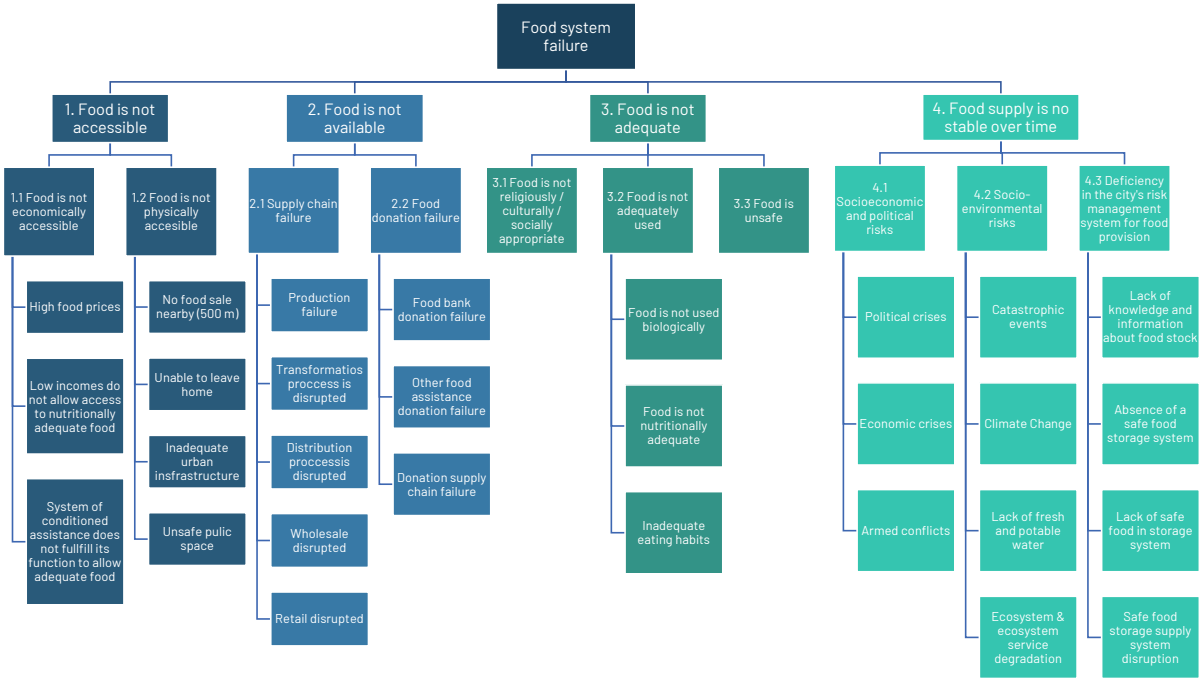


Figure 5: Quito's Food Security Evaluation Framework, based on the Baltimore System Resilience Advisory Report's framework. (Credit: Authors)

FOOD SECURITY AND QUITO'S AGRIFOOD CHAIN.

It is impossible to consider an isolated food system. Quito's Eco-Agrifood system is deeply intertwined with other urban and rural systems. Therefore the crises that affect any of these other areas can affect the food security of the city's residents, while the strengthening of the agents in these systems can guarantee the continuous functioning of the city's food system and its response to crisis. The recommendations derived from this work focus mainly on the food system, but other systems may need to be addressed, such as mobility or waste collection.

PRODUCTION

Production is key for food security in relation to all its dimensions, especially when considering the food system failure factors of:

1.1 food is not economically accessible,
2.1 supply chain failure,
3.3 food is not safe,
4.1 socio-economic and political risks, and,
4.2 socio-environmental risks.

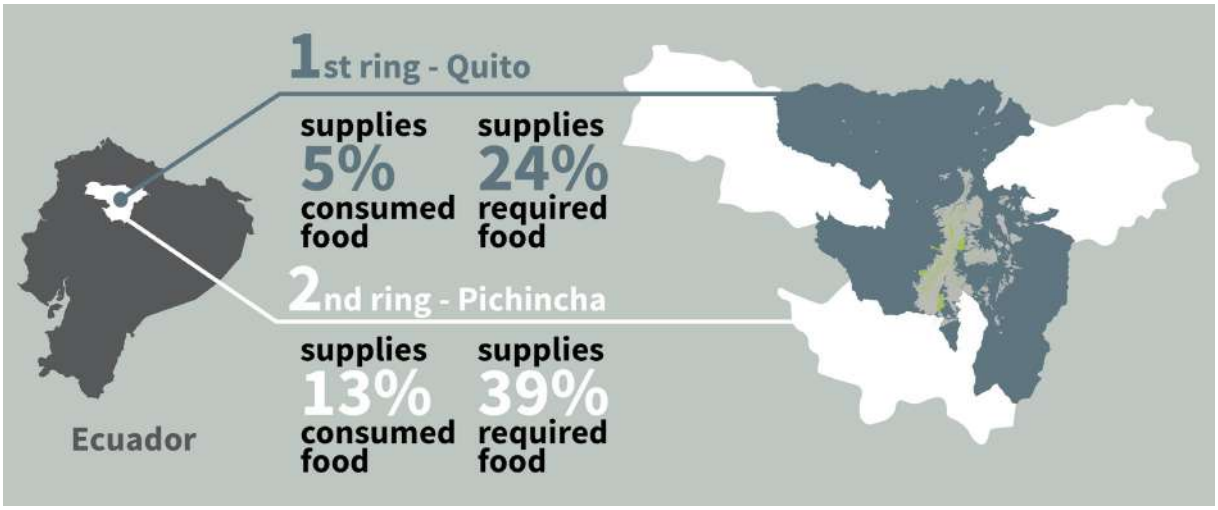


Figure 6: To better understand the ability of the city to self supply its own food, Quito has been divided in three rings: Ring 1 (423,074 hectares) corresponds to the Metropolitan District of Quito, ring 2 (953,600 hectares) includes the Province of Pichincha, the third ring is composed of 12 surrounding provinces. (Credits: Authors)

Food resilience relies on the ability of the city to supply its own food. Based on the tool developed by RUAF Foundation and FAO to assess the city region food system, Quito has two concentric rings. Ring 1 (423,074 hectares) supplies 5% of the total food requirement and corresponds lands within the Metropolitan District of Quito. Ring 2 (953,600 hectares) supplies 12.7% of the food requirement and corresponds to lands in the Province of Pichincha. Ring 1 and 2 also supply 26% and 36% of the requirements of five important items of the local diet[32]: cereals, fruits, vegetables and tubers and dairy. Despite this local production, the city of Quito requires food from the rest of the country's provinces. Fortunately, they manage to produce food to satisfy their own requirements and food surpluses to supply the country's large urban centers. In addition, food comes from imports (legal and illegal) from other countries.

However, the agricultural efforts in the Quito region are inefficient. Thirty-six percent of the production area is overutilized or underutilized, and only 23% of the cultivated land has access to water for irrigation[33]. Access to credit (public and private), the lack of land legalization, especially in rural areas, and vulnerable road infrastructure are factors that impede the growth of production. Also, the city's urban sprawl reduces land with available for farmers.

In the future climate change will diminish the quality of food as a result of higher sugar content in grains and fruits, and a decrease in the protein content in cereals and legumes[34]. The dependence on certain supplies from international trade[35], could affect local food prices to the detriment of the most vulnera-

Figure 7: The Participatory Urban Farming Project of the city-AGRUPAR, guides farmers for the implementation of organic production farms. In occasions this includes raising of small animals, food processing and the sale of surpluses through BioFerias. (Photo credits: AGRUPAR)

ble[36]. On the upside, there are currently more than 1,400 urban and peri-urban farms that engage more than 4,500 people each year in self-production activities linked to the local program AGRUPAR (Participatory Urban Agriculture). This ample network mainly supports women heads of household (84%) and their families, as they can access local, healthy, fair and diverse foods.

TRANSFORMATION

The following key factors for transformation were identified in context of food system failure:

2.1 supply chain failure,
3.3 food is not safe, and,
4.2 socioenvironmental risks.

Vulnerability in the transformation stage is the result of several issues including: the lack of proper control systems and regulations that result in products of dubious quality being marketed in the streets and stores of the city, and technological, technical and infrastructure issues that prevent artisanal industry to grow.

The food manufacturing industry of Quito region is important for the local and national food supply. In 2016 the city housed around 36.6% of manufactured food sales, 30.6% of total registered jobs and 9.5% of the country's total food manufacturing companies[37]. However, the participation of these sectors in the Gross Added Value of Quito is marginal[38]. In terms of job provision in the city, the service sector contributes 48.3% of employment, within which 7% comes from lodging and food activities[39]. A small number of companies hold a large share of the market and turnover in the food processing industry. This is particularly true in the meat, bread, grain based and dairy sectors. For each of these sectors, no more than 5 large companies account for over 80% of the sales[40]. About the distribution of food processing industries, these are mainly located in the Tumbaco and Quitumbe sectors[41] in the northeast and south of the city, respectively. Finally, poor food preparation practices are relevant, since most offerings in public markets do not comply with food safety requirements.

DISTRIBUTION AND SALES

Food distribution and sales are of special importance to food security in relation to all main components of the four dimensions of food security. The greatest challenge is city access. Fifty-three percent of the food enters through the Panamericana Sur Expressway, and 24% enters through the north entrance of the city. These roads are highly vulnerable to a ranging set of threats, from political manifestations, to natural threats such as seismic, volcanic and landslides derived from climatic events.

On the other hand, food supply density is not proportional to population density. The Metropolitan District of Quito has a heterogeneously distributed population, and public and private responses manage to supply the local demand for food with different levels of quality and safety. However, the supplies of food to be distributed through food assistance programs (food bank or community kitchens) do not respond to the logic of vulnerable population distribution in the territory. The supply of processed and other foods with little nutritional value is distributed heterogeneously in the city creating food swamps[42] in highly populated areas, such as the surroundings of the Central University of Ecuador, the northern center of the city, or on Michelena Street, the core of informal commerce in the south of Quito.

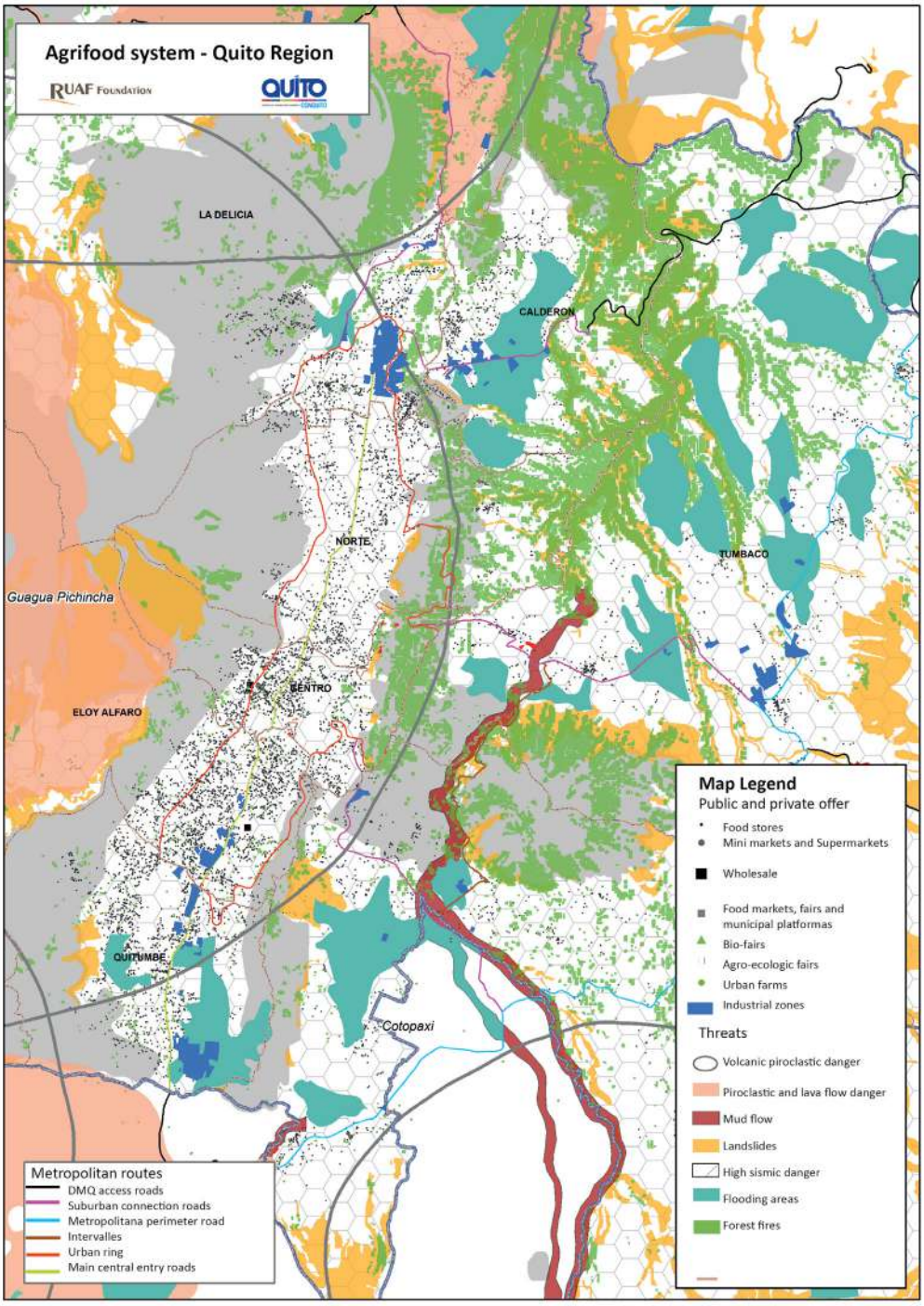


Figure 8: Public and private food offer are distributed in a multi-threat territory. The type of offer does vary considerably in the area. (Credits: María Cristina Cruz – RUAF Foundation)

Figure 9: Around 63% of children under 5 years old present problems of malnutrition in Quito. (Photo credits: Municipality of Quito)

CONSUMPTION

The consumption link of the chain has an important influence over the following factors of food security dimensions:

1.1 food is not economically accessible,
1.2 food is not physically accessible,
2.2 food donation failure,
3.1 food is not religiously/culturally/socially appropriate,
3.2 food is not adequately used, and,
4.2 socio-environmental risks.

Food accessibility is linked to the difficulty of people / households to access food that satisfies basic needs and contributes to a quality diet. Problems with food accessibility are associated with problems of per capita income. The incidence of poverty, meaning the inability to procure adequate basic needs, for the study area was 29.7% in ring 1 and 33.5% within ring 2. The fact that the basic food basket cost exceeds the minimum wage means that 1.5 million people live with food insecurity. Supply chains with high levels of intermediation affects

food prices and hinders affordability. Oddly, poor eating habits, especially the consumption of highly processed food, have produced a rapid increase of overweight and obesity in coexistence with high rates of delay in size and micronutrient deficiency[43]. In this sense, the approach that addresses only the provision of food and neglects access to sustainable and balanced diets for all must be reformed. The quality of urban infrastructure also makes it difficult to access food. Finally, there are areas in the city, such as Calderón in the northeast, that grow at an accelerated rate and have a large population, where its inhabitants must travel up to 2km or more to access food outlets in extreme weather conditions, without adequate physical conditions and / or public transportation.

FOOD WASTE

Finally, this analysis showed even though food waste currently does not have a highly relevant contribution to food security in the city, it might require the development of an integral food waste management strategy. In 2015, the Metropolitan District of Quito produced an average of 2,037 tons per day, of which 57% was organic waste. Part of this waste is contributed by 54 municipal markets and fairs, which produce approximately 70 tons of waste per day. Coverage in terms of waste collection is provided to 96.5% of the population. At the same time, approximately 930 metric tons of food per week is lost due to lack of adequate storage in the wholesale market, where most goes to landfills, degrading the soil and emitting greenhouse gases.

Nevertheless, the Quito's Food Bank recovers and redistributes an average of 5,000 kilos per week (vegetables: 78%, fruits: 6%, meat: 11%, flours, dry grains: 5%) of food still fit for human consumption for the most vulnerable population of the city. The program supports 485 families and a total of 9,637 beneficiaries.

To complement the municipal efforts to mitigate these negative impacts, a strategy based on the concept of the circular economy is needed.

STRATEGIES

Food production is one of the most important drivers of change on the planet[44]. The problem of food waste is doubly damaging in two dimensions: environmental and socioeconomic. An important number of authorized reports have requested fundamental changes in the agrifood systems[45], with the aim to develop a more sustainable and more equitable food systems. In this sense, the development and implementation of systemic strategies, involving institutional, social, ecosystem, environmental, financial and technical capacity components[46] to deal with these changes is critical to achieve proper functionality of the sys-

Figure 10: Farmers of the Metropolitan District of Quito. (Photo credits: AGRUPAR)

tem, making sure that it also responds properly to catastrophic events, in general, and as a way to adapt to climate change, in particular.

Although there are different frameworks and approaches, a general tendency is to study the following aspects: urban vulnerability[47], rural community[48], vulnerability of rural farmers[49] and vulnerability by economic sectors[50]. Efforts in these areas could have dramatic impacts on the resilience of the global food system, with important contributions to local agri-food systems.

For the city of Quito and its Eco-Agrifood System the task in the coming years is to feed a mostly urban population of almost 3.5 million by 2040 and to achieve the four dimensions of food security[51]. The system needs to provide healthy foods, transforming the system for the benefit of the planet and the future of its inhabitants, and to do so in such a way that interactions between rural and urban economies, communities and landscapes[52] are constructed. And we must do this in such a manner that efforts are not compromised by external events that may affect these systems.

As a general rule it was decided that any effort must include: first, the perspectives of gender equity and social justice along the food chain, second, link

human nutrition policies to agricultural production policies, third, promote localized and well distributed networks of food points and waste management, fourth, increase the use of ecological processes rather than external inputs for crop production and food processing, where research, development and innovation play an important role, fifth, strengthen knowledge and awareness among the population on the importance of healthy eating, especially amongst children, encourage better eating habits and work on responsible consumption to improve the understanding of the advantages of preferring local, healthy, fair, fresh and diverse foods, sixth, redesign and implement strategies to avoid food waste and to recover and restore products, components, and materials to avoid the demands of new ones from nature, and, seventh, improve and retrofit road infrastructure and buildings, that must include participatory strategies with communities and relevant actors. Summing up, improving socio-ecological links and fostering adaptive capacity are essential to cope with short-term volatility and longer-term global change pressures[53].

Within a defined repertoire of strategies, the present delivery addresses two important challenges and presents suited solutions: the first is increasing and improving local production, and the second is establishing a system of provision, supply and stock of food to ensure proper functioning of the system in normal times, as in moments of catastrophic events.

The first solution, in the context of more sustainable practices in the social, economic and environmental dimensions, requires a higher yield and a general increase in food and agricultural production where the Metropolitan District of Quito has allotted land. The following strategies were identified:

1.) promote agricultural practices that improve food security, eradicates hunger and is economically viable while conserving land, water, plant and animal genetic resources, biodiversity and ecosystems

2.) guarantee safe and equitable access for women and men without any discrimination to natural resources, particularly land, water and biodiversity, as well as the sustainable use of them

3.) promote sustainable production chains that prefer cleaner production strategies, with a more inclusive commercialization and that shorten the gaps between the rural and urban sectors

4.) support national research systems, public universities and research institutes, as well as the promotion of technology transfer, the exchange of knowledge and practices, promote a significant increase in research and development in agriculture, especially for small food producers and other agents involved in the food value chain

5.) facilitate access to financial and risk management instruments, such as innovative insurance systems, as well as climate and financial risk management mechanisms
6.) integrating the food approach to waste management to reduce losses and waste.

For the second solution, the key is to understand the need to develop an efficient supply system to guarantee the quality of the distributed food in a timely effective way and at a reasonable cost for the buyer[54]. The idea is to create food hubs[55], or areas of food concentration, to solve the dysfunctions of local food distribution. The development of food hubs has emerged as a key strategy for the expansion of local and regional markets[56]. The main objective is to shortening distribution chains and take advantage of the wholesale, retail, and other means of food distribution, including those that offer to the most needed. This opportunity is also used to increase the presence of urban farmers within the city limits and advise everyone involved in the production and marketing of their products to improve their services[57].

The proposal establishes two levels of action, where the proper functioning of the first level ensures the short term provision of healthy foods and the ability to continue this provision, even during difficult times. The first level is made up of three subsystems. The first subsystem consists of wholesale and retail public markets, small local stores, agroecological fairs, and the distribution system of food to the most needed located in the consolidated urban area. This subsystem must increase its coverage and efficiency in the distribution of food, in addition to increasing its autonomy in terms of production, supply and food stock. This is important because, as mentioned, the city is highly dependent on a vulnerable road infrastructure to stock up on food. The second subsystem consists of urban farms, which has the objective of strengthening the production and existing local supply of organic products. This subsystem requires improvements in the legal frameworks of land regulation to encourage and increase agricultural production in the public and private urban areas. The third subsystem of urban food transport, seeks to serve the last mile and offer delivery service in the urban area, especially where there is not enough offer in proximity of healthy foods. The last subsystem made up of private markets, supermarkets, retailers and food services, such as restaurants, hotels, cafeterias, institutional and corporate canteens, as well as sometimes specialized retailers to supply companies, are regarded as a complement of the food offer, while offering and additional aid in difficult times.

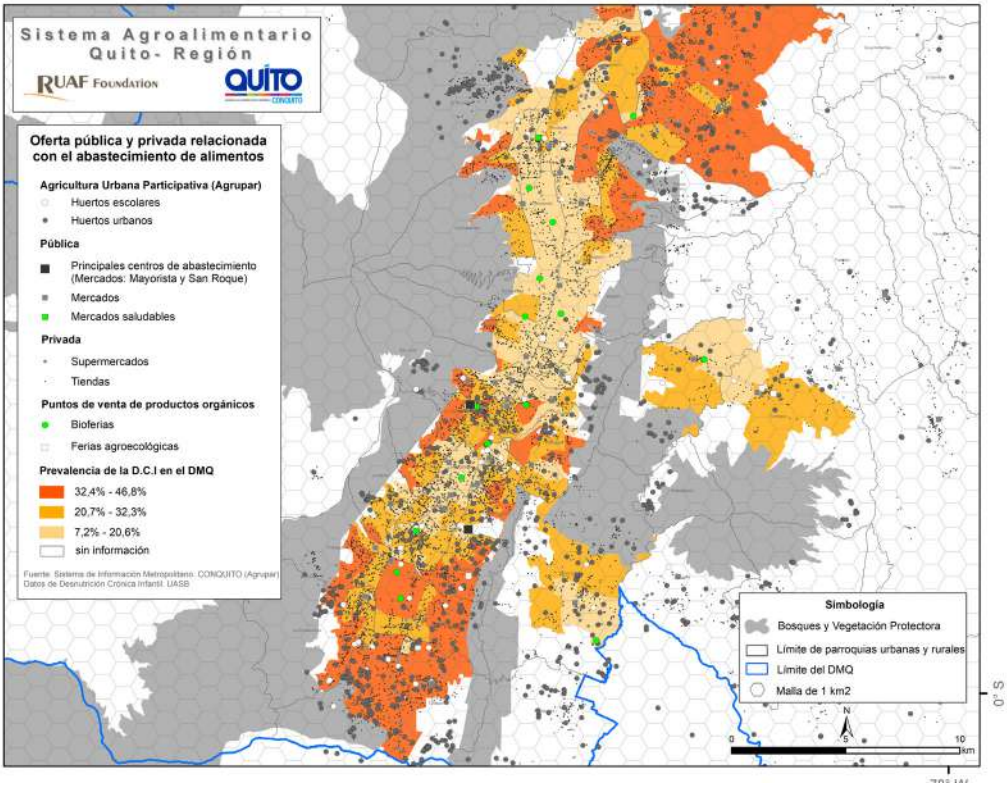


Figure 11: Proposed location of Food Hubs. Credits: Authors

The second level considers peri-urban and rural agriculture, which are dependent on the road infrastructure for the provision of food. This level benefits from the strategies established in the first solution. The second level should be ready to provide food when the first ceases to be able, in case the city is isolated.

Endnotes

1 Rockström et al, 2009
2 Rockström and Klum, 2015 in TEEB, 2018
3 TEEB, 2018, Vermeulen et al, 2012, Jägerskog, A. (Ed.), 2012 in Swinburn et al, 2019
4 TEEB, 2018
5 Benítez, 2019
6 Aguirre et al, 2018
7 FAO, 2017
8 Cela, 2012
9 Kimani-Murage et al, 2014
10 Fothergill and Peek, 2004
11 Beardsley and Werthmann, 2008
12 Hettiarachchi et al, 2018
13 Battersby and Crush, 2014 in Swinburn et al, 2019
14 Arnold & Wade, 2015

15 TEEB, 2018, Swinburn et al, 2019, Biehl et al, 2017
16 Merriam-Webster online dictionary, 2019
17 Behl & Ferreira, 2014
18 Meadows, 2008
19 Meadows, 2008 in Arnold & Wade, 2015
20 Sterman, 2000, Webster, 2014
21 Webster, 2014; Stave and Hopper, 2007
22 Frampton et al, 2005
23 Frampton et al, 2005
24 Behl and Ferreira, 2014
25 Ibid
26 Ibid
27 Frank, 2010
28 Davidz and Nightingale, 2008
29 Ibid
30 Biehl et al, 2017
31 Martin-Breen and Anderies, 2011
32 Does not include rice, wheat, fish or sugar
33 in Ecuador, transient crops use a greater amount of fertilizers and pesticides than permanent crops, 78.24% and 50.03 respectively (INEC, 2016)
34 DaMatta et al, 2010 in Magrin et al, 2014
35 Hertel et al. 2010 en Magrin et al, 2014
36 von Braun, 2007 in Magrin et al, 2014
37 MDMQ, 2015
38 Ibid
39 Ibid
40 Arrazola et al, 2016
41 MDMQ, 2015
42 communities flooded with unhealthy, highly processed, low-nutrient food combined with disproportionate advertising for unhealthy food
43 refined carbohydrates predominate, low consumption of fruits and vegetables, as well as legumes and fiber, high oil consumption palm, milk and whole cheese, all contribute to the consumption of saturated fats
44 Rockström and Klum, 2015 in TEEB, 2018
45 Hawkes, 2017, IPES-Food, 2017, HLPE, 2017, Haddad, 2016, Rockström et al, 2016, De Schutter et al, 2015, Fan and Rue, 2017, Ottersen et al, 2014, Whitmee et al, 2015 in Swinburn et al, 2019
46 see Chapter 14 in Magrin et al, 2014
47 for example, Hardoy and Pandiella, 2009, Heinrichs and Krellenberg, 2011
48 McSweeney and Coomes, 2011; Ravera et al., 2011
49 Oft, 2010
50 see Section 27.3 in Magrin et al, 2014
51 Pinstrup-Andersen, 1999
52 Forster and Escudero, 2014
53 Whalen and Zeuli, 2017
54 Severson & Schmit, 2015
55 see Stott, Lee & Nichols 2014
56 Anselm, 2013
57 Leman et al., 2012

Bibliography

Aguirre, N., Barnes, C., Ordonez, M., Ruales, J. (2018). Food and Nutrition Security in Ecuador. CHALLENGES AND OPPORTUNITIES FOR FOOD AND NUTRITION SECURITY IN THE AMERICAS: THE VIEW OF THE ACADEMIES OF SCIENCES. Access: https://www.researchgate.net/publication/323177833_Food_and_Nutrition_Security_in_Ecuador. In 2019-03-08.

Anselm, M. E. (2013). Exploring the Rationale for and Role of Public Financing for Food Hubs, Master thesis, Oregon state University.

Arnold, R. D., & Wade, J. P. (2015). A definition of systems thinking: a systems approach. Procedia Computer Science, 44, 669-678.

Arrazola, I., Pinto, N., Renckens, J., Ballesteros, H., & Hollenstein, P. (August de 2016). The role of the private actors in the Quito Metropolitan District food system, with a focus on large processing and retail. Obtenido de https://www.ruaf.org/sites/default/files/Role%20of%20private%20sector%20in%20the%20Quito%20city%20region%20food%20system-final.pdf

Beardsley, J., & Werthmann, C. (2008). Improving Informal Settlements. Harvard Design Magazine Spring, 31-34.

Behl, D. V., & Ferreira, S. (2014). Systems thinking: An analysis of key factors and relationships. Procedia Computer Science, 36, 104-109.

Battersby, J., & Crush, J. (2014, June). Africa's urban food deserts. In Urban Forum (Vol. 25, No. 2, pp. 143-151). Springer Netherlands.

Benítez, R. O. FAO. (2019). Losses and food waste in Latin America and the Caribbean. FAO Regional Office for Latin America and the Caribbean. Acceso por: http://www.fao.org/americas/noticias/ver/en/c/239392/, En 2019-03-08.

Biehl, E., Buzogany, S., Huang, A., Chodur, G., & Neff, R. (2017). Baltimore Food System Resilience Advisory Report.

Cela, J. (2012). Diagnóstico de las estadísticas del agua en ecuador. DIAGNÓSTICO DE LA INFORMACIÓN ESTADÍSTICA DEL AGUA. CEPAL.

Davidz, H. L., & Nightingale, D. J. (2008). Enabling systems thinking to accelerate the development of senior systems engineers. Systems Engineering, 11(1), 1-14.

DaMatta, F.M., A. Grandis, B.C. Arenque, and M.S. Buckeridge, 2010: Impacts of climate changes on crop physiology and food quality. Food Research International, 43(7), 1814-1823.

De Schutter, O., Yambi, O., Agarwal, B., Fischler, C., Gliessman, S., Herren, H., ... & Leach, M. (2015). The new science of sustainable food systems: overcoming barriers to food system reform. International Panel of Experts on Sustainable Food Systems. Disponible en: http://www. fao. org/agroecology/database/detail/en/c/453669.

Fan, S., Cho, E. E., & Rue, C. (2017). Food security and nutrition in an urbanizing world: A synthesis of the 2017 Global Food Policy Report. China Agricultural Economic Review, 9(2), 162-168.

FAO. (2017). The future of Food and Agriculture, trends and challenges. Obtenido de http://www.fao.org/3/a-i6583e.pdf

Forster, T., & Escudero, A. G. (2014). City Regions as Landscapes for People Food and Nature (p. 62). Washington, USA: EcoAgriculture Partners.

Fothergill, A. and L.A. Peek. 2004. Poverty and disasters in the United States: A review of recent sociological findings. Natural Hazards 32(1): 89–110.

Frank, M. (2010). Assessing the interest for systems engineering positions and other engineering positions' required capacity for engineering systems thinking (CEST). Systems Engineering, 13(2), 161-174.

Frampton, K., Carroll, J. M., & Thom, J. A. (2005). What capabilities do IT architects say they need. 10th United Kingdom Academy for Information Systems (UKAIS) Proceedings.

Haddad, L., Hawkes, C., Waage, J., Webb, P., Godfray, C., & Toulmin, C. (2016). Food systems and diets: Facing the challenges of the 21st century.

Hardoy, J. and G. Pandiella, 2009: Urban poverty and vulnerability to climate change in Latin America. Environment and Urbanization, 21(1), 203-224.

Hawkes, C. (2017). Global nutrition report 2017: Nourishing the SDGs. Development Initiatives.

Heinrichs, D. and K. Krellenberg, 2011: Chapter 23: Climate adaptation strategies: evidence from Latin American

city-regions. In: Resilient Cities: Cities and Adaptation to Climate Change. Proceedings of the Global Forum 2010 [Otto-Zimmermann, K. (ed.)]. Local Sustainability Vol. 1, Springer, New York, NY, USA, pp. 223-230.
Hertel, T.W., M.B. Burke, and D.B. Lobell, 2010: The poverty implications of climate induced crop yield changes by 2030. Global Environmental Change, 20(4), 577-585.
Hettiarachchi, H., Ryu, S., Caucci, S., & Silva, R. (2018). Municipal Solid Waste Management in Latin America and the Caribbean: Issues and Potential Solutions from the Governance Perspective. Recycling, 3(2), 19.
HLPE. (2017). Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.
INEC. (2016). Información Ambiental en la Agricultura 2016. Retrived from: http://www.ecuadorencifras.gob.ec/documentos/web-inec/Encuestas_Ambientales/Informacion_ambiental_en_la_agricultura/2016/PRESENTACION_AGRO_AMBIENTE_2016.pdf
IPES-Food. (2017). Unravelling the Food–Health Nexus: Addressing practices, political economy, and power relations to build healthier food systems. The Global Alliance for the Future of Food and IPES-Food.
Jägerskog, A. (Ed.). (2012). Feeding a thirsty world: Challenges and opportunities for a water and food secure future. Stockholm International Water Institute
Kimani-Murage, E.W., Schofield, L., Wekesah, F. et al. (2014). J Urban Health 91: 1098. https://doi.org/10.1007/s11524-014-9894-3.
Leman, T. Feenestra, G. & Visher, D. (2012). A Practitioner's Guide to Resources and Publications on Food Hubs and Values-Based Supply Chains: A Literature Review, Sustainable Agriculture Research and Education Program , Agricultural Sustainability Institute, University of California, Davis p. 18.
Martin-Breen, P. & Anderies, J.M. (2011) Resilience: A Literature Review (Rockefeller Foundation, New York).
Magrin, G., C. Gay García, D. Cruz Choque, J.C. Giménez, A.R. Moreno, G.J. Nagy, C. Nobre, and A. Villamizar, 2007a: Latin America. In: Climate Change 2007a: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 581-615.
McSweeney, K. and O.T. Coomes, 2011: Climate-related disaster opens a window of opportunity for rural poor in northeastern Honduras. Proceedings of the National Academy of Sciences of the United States of America, 108(13), 5203-5208.
Meadows, D. H. (2008). Thinking in Systems: A Primer. White River Junction, VT: Chelsea Green Publishing.
MDMQ. (2015). Plan Metropolitano de Desarrollo y Ordenamiento Territorial 2015-2025. Municipio del Distrito Metropolitano de Quito.
Morin, E. (2007). La cabeza bien puesta (Trad. Paula Mahler). Buenos Aires, Argentina: Ediciones Buena Visión.
Oft, P. (2010). Micro-Finance Instruments Can Contribute to Build Resilience: A Case Study of Coping and Adaptation Strategies to Climate-Related Shocks in Piura, Peru. Graduate Research Series: PhD Dissertation, Publication Series of UNUEHS Vol. 2, United Nations University Institute for Environment and Human Security (UNU-EHS), Bonn, Germany, 157 pp.
Ottersen, O. P., Dasgupta, J., Blouin, C., Buss, P., Chongsuvivatwong, V., Frenk, J., ... & Leaning, J. (2014). The political origins of health inequity: prospects for change. The Lancet, 383(9917), 630-667.
Pinstrup-Andersen, P. Food Sec. (2009) 1: 5. https://doi.org/10.1007/s12571-008-0002-y.
Ravera, F., D. Tarrason, and Simelton E. (2011). Envisioning adaptive strategies to change: participatory scenarios for agropastoral semiarid systems in Nicaragua. Ecology and Society, 16(1), 20, www.ecologyandsociety.org/vol16/iss1/art20/.
Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E., ... & Nykvist, B. (2009). Planetary boundaries: exploring the safe operating space for humanity. Ecology and society, 14(2).
Rockström, J., & Klum, M. (2015). Big world, small planet: abundance within planetary boundaries. Yale University Press.
Rockström, J., Stordalen, G. A., & Horton, R. (2016). Acting in the anthropocene: the EAT–Lancet commission. The

Lancet, 387(10036), 2364-2365.
Severson, R. M., & Schmit, T. M. (2015). Building success of food hubs through the cooperative experience: A case study perspective. Charles H. Dyson School of Applied Economics and Management, College of Agriculture and Life Sciences, Cornell University.
Stave, K., & Hopper, M. (2007, July). What constitutes systems thinking? A proposed taxonomy. In 25th International Conference of the System Dynamics Society.
Sterman, J. D. (2000). Business dynamics: systems thinking and modeling for a complex world (No. HD30. 2 S7835 2000).
Stott, D. Lee, E. & Nichols, E. (2014). Feasibility Study. Small/Medium Farm Product Distribution In the Lower Mainland. Part 1: Requirements for a Local Food Distribution System, enpBC and refbc.
Swinburn, B. A., Kraak, V. I., Allender, S., Atkins, V. J., Baker, P. I., Bogard, J. R., ... & Ezzati, M. (2019). The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report. Lancet (London, England).
TEEB (2018). TEEB for Agriculture & Food: Scientific and Economic Foundations. Geneva: UN Environment. ISBN: 978-92-807-3702-8.
Vermeulen, S. J., Campbell, B. M., & Ingram, J. S. (2012). Climate change and food systems. Annual review of environment and resources, 37, 195-222.
von Braun, J., 2007: The World Food Situation: New Driving Forces and Required Actions. International Food Policy Research Institute (IFPRI), Washington, DC, USA, 18 pp.
Webster, F. (2014). Theories of the information society. Routledge.
Webster. (2019). http://www.merriam-webster.com/dictionary/understanding, accessed 28.02.2019.
Whalen, R. y Zeuli, K. (Enero 23, 2017). Resilient Cities Require Resilient Food Systems. The Rockefeller Foundation. Access: https://www.rockefellerfoundation.org/blog/resilient-cities-require-resilient-food-systems/, in 28.02.2019.
Whitmee, S., Haines, A., Beyrer, C., Boltz, F., Capon, A. G., de Souza Dias, B. F., ... & Horton, R. (2015). Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. The Lancet, 386(10007), 1973-2028.
WFP, (2019). Programa Mundial de Alimentos. Access: http://es.wfp.org/que-es-seguridad-alimentaria, en 28.02.2019.


19
Remolacha
18
Frutales
CAMA
17

SUSTAINABLE DEVELOPMENT, PLANNING AND POVERTY ALLEVIATION

JEAN-CLAUDE BOLAY, ÉLÉONORE LABATTUT

Figure 1: Montes Claros, Brazil (Photo J-C Bolay, 2018)

URBAN COMPLEXITY: GROWING CITIES IN DEVELOPING COUNTRIES, GROWING ISSUES?

The Global South is currently experiencing strong urbanization, both in terms of urban population increases and urbanized land developed. In 2018, the world population reached nearly 7.6 billion, of which 4.2 billion lived in urban areas and 3.4 billion lived in rural ones. According to UN-Habitat, 3.2 billion urban inhabitants live in South countries. During the next decades, ninety percent of the urbanization process will take place in Asia and Africa.

In parallel, cultural references are changing lifestyles and the social and economic integration of the growing urban population, where one billion - or nearly a third of the total urban population - live in slums. Urban poverty is therefore an endemic problem that has not yet been solved, despite the many initiatives taken by the public and private sectors.

To better grasp these problems, we will discuss two distinct issues that have guided our many years of work. These issues could be described as two of the founding elements for urban planning designed to create sustainable, inclusive cities.

The first is urban poverty. Simply knowing that a third of urban dwellers in South countries are poor and daily live in material and economic precarity, very much calls into question the work we do as urban development professionals. We must start thinking of urban planning as a way of fighting poverty.

The second is the focus on small and medium-sized cities, hundreds if not thousands of which (depending on the country) play a decisive role, as half of the world's urban population lives in cities which house 10,000 to 500,000 inhabitants and these cities serve as regional centers for a multitude of public services. Often unknown outside of their regions, these intermediate cities face enormous challenges, particularly in South countries which have the highest population growth rate.

URBAN PLANNING IN THE GLOBAL SOUTH, OCCUPATIONAL HAZARDS

Many critics have voiced their opinion that planning does not fully addresses the integration issues faced by a large proportion of the population. Be it in Koudougou in West Africa, Chau Doc in the Vietnamese Mekong Plain, Montes Claros in Brazil or Nuevo de Julio in the Argentinian pampas (example that we will develop further in this text), the issue of greatest concern to planners is "How can we beautify cities and make them more attractive to city dwellers and investors," not "What can we do to reduce poverty and better integrate poor people living in precarious conditions?" While not diametrically opposed, the thinking behind

Figure 2: Koudougou, Burkina Faso (Photo by J-C Bolay, 2014)

these two questions is nonetheless divergent. The former avoids delving too deeply into societal complexity and instead seeks technical solutions to improve the city's functionality (infrastructures, networks, communication routes, equipment, etc.), too often forgetting the universal need for accessibility (i.e. for the poor as well). The second makes citizens the focus by recognizing the fact that integrating people socially, economically and culturally fosters sustainable, inclusive urban development. In this sense, urban planning in South cities is too often incomplete at the spatial level, as experts only focus on specific parts of the territory and typically abandon poor, poorly-regulated and outlying neighborhoods. This approach is also poorly adapted socio-economically speaking, as it tends to focus on business districts and the "select" areas that privileged social actors invest in, based on their financial status, relationship to power or even community or ethnicity.

Based on a comparative study of nine South cities, Devas (2001) concluded that the standards established for infrastructure, facilities and buildings were completely unsuited to the conditions of the poor but formed a perfectly workable system of regulation by individuals with economic and/or political power. This is largely because methodological and technical debates are dominated by Europe and North America practices which take Western cities - whose characteristics radically differ from those of developing countries - as their point

Figure 3: Chau Doc, Vietnam (Photo by J-C Bolay, 2018)

of reference and as experimental sites (Edensor & Jayne, 2012). Reproducing these recipes in different urban contexts is simply nonsensical and can only offer ineffective solutions. The management of public facilities and services is a good example. Today, the privatization of the latter is a major trend. Hence, the profitability of urban investments and their management takes precedence over their "universality."

In many South countries and Western countries as well, the management of basic sectors such as water, energy, transportation, culture and public spaces (to name only the most obvious) is now in the hands of private companies. It is perfectly valid and healthy to worry about the balance of public finances. However, it is untenable to do so at the expense of the working classes, whose economic conditions impede their access to a whole range of amenities and services by making charges for services exceed the spending capacity of modest income households. Therefore, the question is who decides on urban investment priorities, based on which criteria and for whose benefit[1]?

For Watson (2009), demographic and territorial growth in South cities inevitably leads to a concentration of poverty and social, economic and spatial inequalities. Urban planning as applied in many developing countries cannot anticipate or solve the multitude of intertwined problems, between the local needs of each family, community and neighborhood, and the production of planning based on

the entire urban territory (but with inexplicit priorities) by specialists.

As the saying goes, "We only lend to the rich." In South cities, the poor know this better than anyone else. Putting aside the social and economic repercussions of urban development, it is normal for companies (public and private) to favor individuals, social groups and, by extension, areas of those city they know will provide a return on their investments. However, they quickly forget that this short-term profitability reinforces social segregation and the fragmenting of the urban territory between rich and poor, and developed and marginalized areas. Though the costs of this are not immediately discernable, they are in the medium and long term. How? Firstly, creating more and more poor neighborhoods that are in turn neglected by the authorities increases insecurity, both real and perceived. Wealthy neighborhoods are equally marginalized and isolated, with gated communities hidden behind walls and protected by private police. The environmental costs also are very high, with some parts of the city lacking basic sanitation infrastructure. Natural resources (water, soil and air) are contaminated and impact the health of inhabitants. Again, it is the poor who suffer the most. More indirectly, however, it is society that pays the price as public schools and hospitals are reserved for families without sufficient means, savings or social security, while clinics and private schools' welcome well-to-do families.

And yet, statistics have long shown that the most dynamic, innovative, richest companies are those that invest in these "social" sectors that benefit all citizens. We must therefore bear in mind the idea of the common good, of going beyond individual dynamics and begin rethinking urban planning in a vision of shared urbanity (harmony between the natural/built environment, fighting poverty by favoring social integration, etc.). Though this is feasible and already exists, it is far from being the rule in South cities. Thus, we must reverse the current logic and redefine the priorities of planning.

LESSONS? LEARNING FROM WHAT EXISTS AND BY DOING BETTER

With this urban context of insecurity and uncertainty about the future of these small and medium-sized cities, we can speak of "poor cities," not only because many citizens actually live on the edge of poverty but also because the urban authorities cannot afford the investments needed to improve daily life for residents. Reversing this trend would involve changing urban planning by moving away from development models that were designed to comply with standards and rules in completely different contexts (i.e. Western countries) and established by specialists with little to no knowledge of the Global South. The major risk here is marginalizing the poor living informally in the most underserved

Figure 4-7: "Ciudad Nueva" neighborhood, Nueve de Julio, Argentina (photos by Teo Vexina Wilkinson, CODEV, 2017)

Figure 8: Nueve de Julio, Argentina (Photo J-C Bolay, 2018)

neighborhoods. However, it is also an extraordinary opportunity to think about the future based on what exists, taking into account the actual financial and social resources of these cities, to design and implement urban planning that fights against poverty, and to invest in facilities with a sustainable impact on the poor's living conditions.

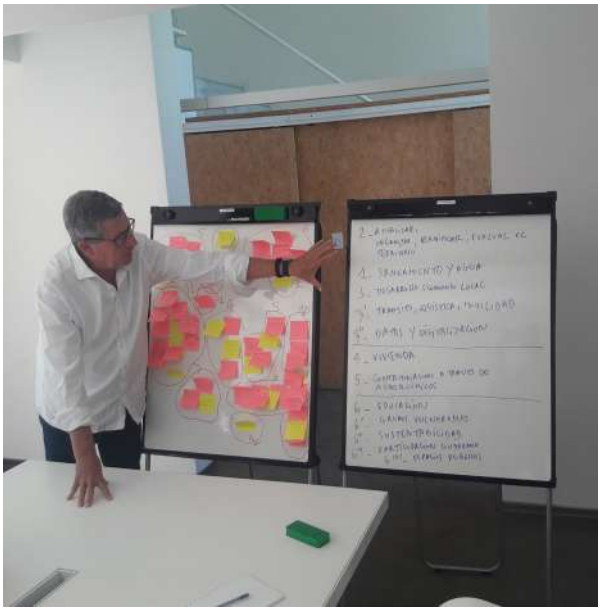
Urban planning in developing and emerging countries must be entirely rethought. The essential point, which is too often overlooked, is to start from a participatory diagnosis in which the reality of the city is examined in its various dimensions (demographic, spatial, infrastructural, economic, social and environmental), thus allowing all stakeholders to find their place. This cartographic, documentary and anthropological information should serve as a database that can then be uploaded with real-time information, thus facilitating the monitoring of "urban development" and a collaborative, up-to-date decision-making process. In parallel remains the question of establishing priorities in terms of lacking infrastructure, standards, rules and plans that are tailored to the context, the needs identified by specialists, requests from different social actors, and internal and outside financial resources. Two principles should guide this process. The first is that urban investments should be used to fight poverty either directly or indirectly. The second is a global vision to guide the specific actions in the short, medium and long terms. These precepts can only be applied if the framework conditions are respected as local and regional governments must

have the human competencies and financial resources available that will enable them to act. This is not impossible if the political will is there and is considered legitimate by the population. This inevitably involves consultation frameworks that will open a dialogue between representatives of the population, public administration, political powers, industry professionals and other special interest groups (private sector; social, religious, and political groups; NGOs; etc.).

THE CITY IS FULL OF DECISION MAKERS, SO LET'S TRAIN THEM TO BE GOOD URBAN PLANNERS

Training, communication and dialogue play a key role in planning and they should do the same in implementation. Here, too, there is room for innovation, starting with social practices and human dynamics outside of the formal context at the local and regional levels. When the indispensable technical know-how of urban and business experts is absent inhabitants are forced to take matters into their own hands and wind up doing the job (building homes, community facilities, better managing their neighborhoods, etc.) themselves, sometimes with poor results. The collaboration of all citizens should be neither overlooked nor set aside, for they are the very heart and soul of a participatory process that includes not only consultation, but conception and action as well. Rather, these forces can be incorporated into the planning process, where they can be useful in the implementation of collective decisions.

igure 9, 10: Workshop in Pehuajo, Argentina (Photo J-C Bolay & E. Labattut, 2019)



Communication is also a key issue. How to learn from other cities via the Internet and increasingly frequent global exchanges on urban matters? As Campbell (2012) explains, we learn from both near and far, and no longer unilaterally from North to South but also from South to South and South to North.

FROM RESEARCH TO IMPLEMENTATION: A COLLABORATION WITH A NETWORK OF ARGENTINIAN MEDIUM-SIZED CITIES

The best example of such an approach is what we currently share with the "Colegio de Arquitectos[2]" in District 7 of the province of Buenos Aires in Argentina, where we have created an urban planning training program for professionals in 15 intermediate cities in the northern part of the province. This program is in line with SDGs (sustainable development goals) and their role in the urban context, as defined by Objective 11 "Sustainable cities and communities"[3].

The project was based on an initial collaborative project between the Municipality of Nueve de Julio – a city of 37,000 inhabitants located 260 km from the capital, Buenos Aires - and the CODEV (Center for Cooperation and Development, Ecole Polytechnique Fédérale de Lausanne, Switzerland). The collaboration helped us to better identify training needs and to determine the appropriate methods.

The first project phase assumed that the urban planning tools available to the municipality were not adapted to the urban and social needs/reality. We found that the city's planning department possesses little data nor did it have an up-

Figure 11, 12: Workshop in Pehuajo, Argentina (Photo J-C Bolay & E. Labattut, 2019)

Figure 13: Localization of Nueve de Julio, Buenos Aires Province, Argentina.

dated plan of the networks or a mapping department. These departments were also understaffed. In 2018, Municipality of Nueve de Julio had a single urban planning unit with only two architects. The reference planning document was a zoning plan, a non-versatile urban planning tool that does not convey a project or a vision of the city's development.

Based on these observations, a collaboration agreement was established between the city of Nueve de Julio and the CODEV, with the central question: how to create a GIS (Geographic Information System) tool with limited resources? Both parties agreed that the priority was for the municipality to ensure the production and management of data in order to gain a better understanding of the territory while creating a common tool that would facilitate work between the various municipal services. Among the main findings were:

- A lack of human and material resources for urban planning at the municipal level;
- The lack of a unifying project for the city in terms of urban and territorial planning beyond the urban code (zoning plan);
- Incomplete urban data scattered among the various municipal services;
- A need to include more urban actors, namely residents but also service providers such as the service cooperative, the university sector, etc.

The municipality of Nueve de Julio agreed to develop human resources in the department and the need to invest in material and technological resources. In

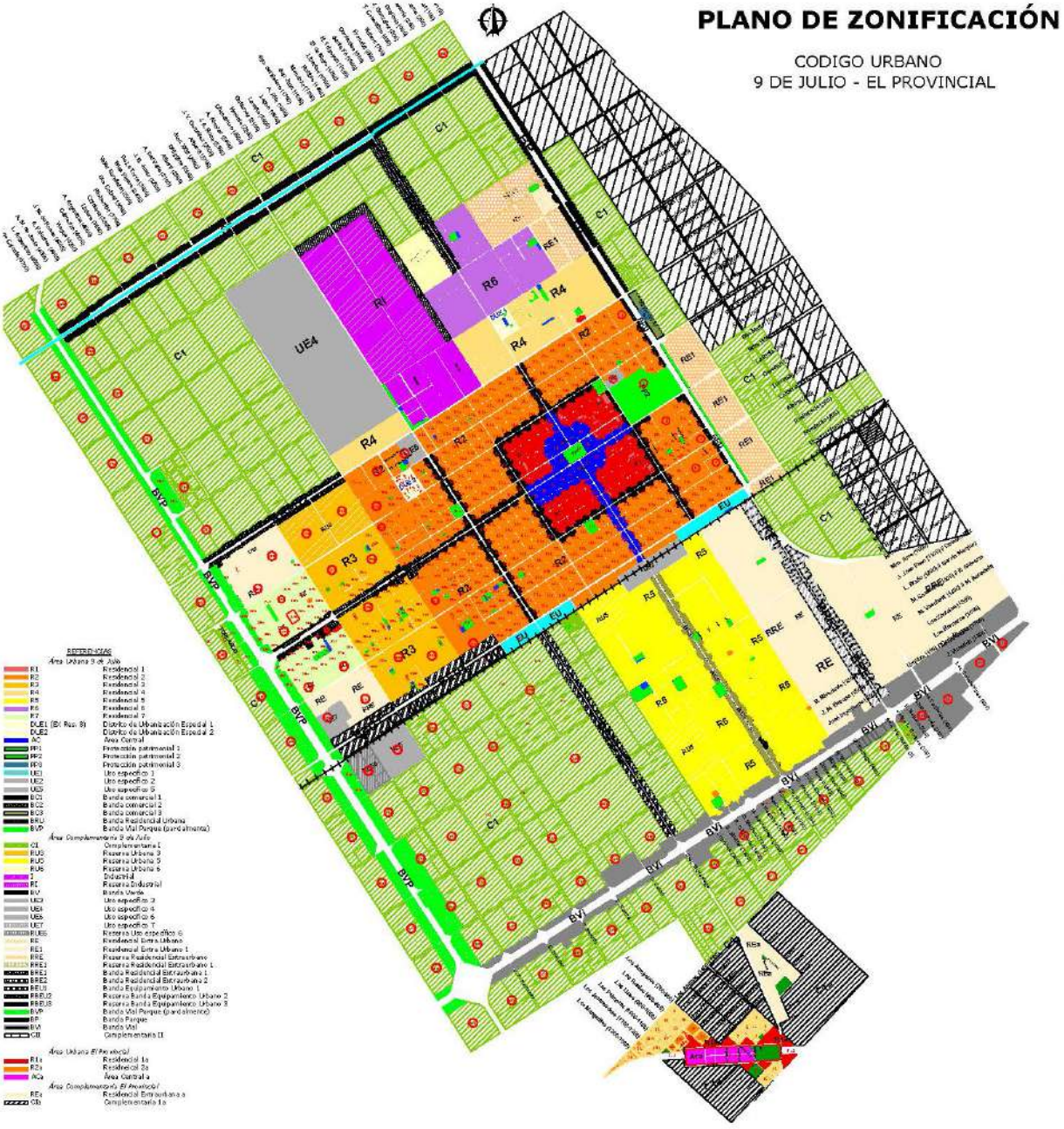


Figure 14: Existing zoning plan of Nueve de Julio, Argentina, 2018

turn, the CODEV agreed to support its effort on planning data acquisition.

A list of 35 essential GIS layers was developed along with an inventory of the availability of this basic data within the municipality (Cortat, 2017). These 35 layers were ranked in order of priority from 1 to 3 depending on their importance (1 being of the highest importance, 2 of medium importance and 3 of minor importance). A synthesis of this work showed that a certain amount of data already existed, even if it sometimes appeared in an inappropriate file format, was not digitized, nor had it been updated to fully reflect actual conditions. The conclusion was that half of the basic data existed and the other half needed to be collected.

Three priority actions were then proposed to the municipal planning department: (1) to start building an initial database with existing data after digitizing and converting it to the appropriate formats; (2) to prioritize by assessing the benefits and viability of each production or acquisition of an additional dataset; and (3) to work in collaboration with other actors in order to obtain as much data as possible.

It quickly became clear that setting up data collection, even minimally, would prove difficult for the municipality's urban planning department, which has neither the staff, nor the equipment, nor strong political support from the mayor. To circumvent these issues, the partners envisaged refocusing the project on the Ciudad Nueva neighborhood – an area of 10,000 inhabitants living in precarious living - by developing a participatory citizen mapping process to demonstrate that a lack of financial and human resources could be overcome using simple, inexpensive technologies. But by late 2018, this proposal had run up against political blockage and the project ended in a stalemate.

The second phase aimed to work with a network of cities in the Northern part of the province of Buenos Aires to overcome such local political blockages. In early 2019, the CODEV launched this phase along with the "Colegio de Arquitectos (CAPBA)," an important and recognized institution in Argentina that is present throughout the country thanks to regional and district representation. The Colegio de Arquitectos of District 7 (CAPBA D7) set up a network of cities, the "Red de Desarrollo Urbano Pampeano (ReDUP)," which comprised 15 cities of less than 50,000 inhabitants including Nueve de Julio.

A first seminar helped highlight the fact that the problems in Nueve de Julio (unplanned urban development, lack of data, inappropriate planning tools, etc.) were common to all the cities in the network. The CAPBA D7 and the CODEV thus established a research agreement in December 2018 to overcome political blockages at the local level and provide technical support to municipal staff. We deemed this approach to be in line with the network's general ob-

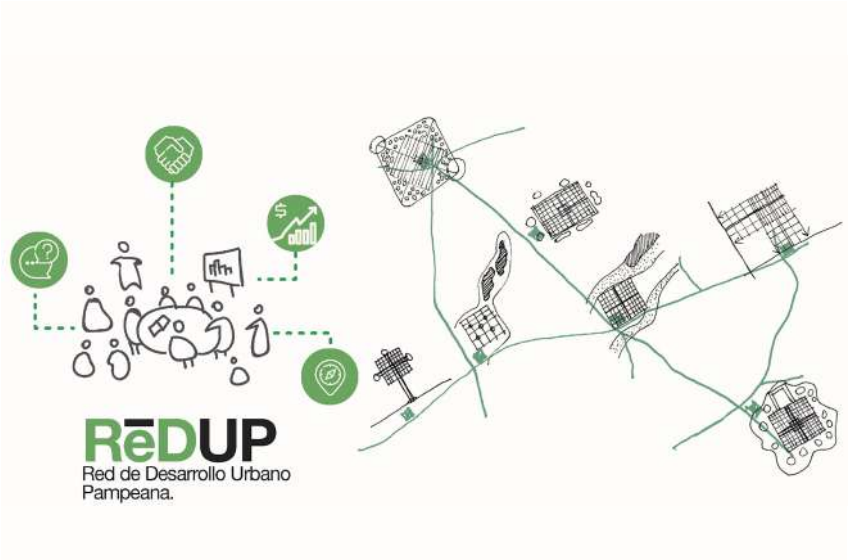


Figure 15, 16: Flyer for workshop in Pehuajo-2019, Pampeana Urban Development Network (Source: CAPBA D7)

jectives of promoting knowledge sharing and experimentation at the regional level, pooling resources and developing appropriate tools and training for municipal technicians.

This new project phase, which ends in December 2019, will allow for a regional diagnosis of the priorities of each city and establish their need of urban planning and GIS capability. Additional working seminars with municipal technicians, planned for March 2019 and September 2019, will be used to draw up specifications for the construction of a GIS platform that is adapted to the needs of the network of cities as well as for the implementation of a training program, supported by the Colegio and by provincial and national institutional partners who have since joined the initiative.

CONCLUSION: BETWEEN CRISES AND URBAN STRATEGY, THE CHALLENGES OF PLANNING

Urban planning is not an end in itself: it is a human and technological way to anticipate the future and act in a coherent, responsible way to guarantee urban and peri-urban residents' well-being. To address the real problems that urban inhabitants and authorities face, planning must create collective infrastructures and access to services that aim to reduce poverty and develop a more inclusive city with better organization, for it to be environmentally, socially and economically sustainable.

Our conceptual thinking on the need to quickly find innovative ways to design and develop urban planning in South cities is reinforced by our fieldwork ex-

Figure 17, 18: Pehuajo, Argentina (Photo E. Labattut, 2019)

perience as well as the local and regional collaborations that have been set up.

Today we are at a turning point. Having spent a considerable amount of time studying its practical application in extremely divergent African, Latin American and Asian cities, we have now moved into this new training and local capacity-building phase for urban and regional planning.

At the end of a first seminar that brought together municipal technicians from nearly 15 intermediate cities in the province of Buenos Aires, Argentina, some useful lessons were learned for the remainder of the process.

First, in order to define priorities for each city, a shared diagnosis must be established as a first step. This should not only be based on analyses by urban experts - municipal technicians and professionals – but should also include other stakeholder groups. To implement it, cities must have data and analyses at their disposal to observe the major phenomena and dynamics at work in their territory, at the environmental, economic, social and urban levels. But analyzing territories based on data would require a significant change in the municipal work culture, including new skills for technicians, integrating new tools and developing new approaches to interdisciplinary collaboration.

Secondly, for most of these technical experts, planning is first and foremost a task to be managed between planners, engineers and computer scientists. Other communal or regional services - social, health, environmental or cultural - are there to provide data that the former can then process and analyze. Municipal technicians' request is therefore primarily technocratic: to provide them

with databases and computer platforms that they can then share, geotag and analyze. This hierarchy of responsibilities and tasks implicitly extends to other urban actors (inhabitants, lobby groups, social or economic groups).

At this stage, however, citizen participation is still an abstraction. We still have a lot of work to do together to prove that this dialogue between all interested parties is not intended to minimize the work of technicians or their skills, but rather to enrich the database based on social demands. Above all, it should serve to boost urban management by taking collective responsibility for this "common good," this shared urbanity and living environment that is supported and respected by all.

The field work carried out during recent years in small and medium-sized cities in Burkina Faso, Brazil and Argentina is helping us to attract the attention of specialists and decision makers to intermediate cities that, though they are home to half of the world's urban population, are little studied. All these small and medium-sized cities face various forms of precarity, with relatively large poor populations, local governments that lack both the financial means to invest in solving the problems they face and the human resources to initiate and manage an efficient planning process. In most of these cities, the governments are still not open to democratic participation processes and do little to incorporate social demands into their development plans.

Based on this analysis, we consider it is imperative to reinvent urban planning as part of a more participatory process that meets the expectations of citizens with more realistic criteria.

This process involves different phases: an analysis phase grounded in the identification of urban investments needed to improve the city; consideration of social demands; a realistic assessment of the financial resources available (municipal budgets, taxes, public/international grants, public-private partnerships), and; a continuous dialogue between urban actors to determine the urban priorities for the coming years.

This protocol shall serve as a basis for the training program initiated in Argentina for urban actors in small and medium-sized cities, which we hope to later extend to other the South countries.

Endnotes

1 This issue become more acute if cost recovery financing is implemented for capital investments.

2 Colegio de Arquitectos de la Provincia de Buenos Aires, distrito 7: ReDUP (Red de Desarrollo Urbano Pampanea) http://www.capbad7.com.ar/default.aspx

3 https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html

Figure 19: Pehuajo, Argentina (Photo J-C Bolay, 2019)

References

Bolay, J-C. and Kern, A. (2019). Intermediate Cities. In The Wiley Blackwell Encyclopedia of Urban and Regional Studies, A. M. Orum (Ed.). doi: 10.1002/9781118568446.eurs0163

Bolay, J.-C. (2018) Planning the Intermediate City, or How to Do Better with Little: The Case of the City of Nueve de Julio, Argentina. ***Current Urban Studies***, 06(03), pp.366-400. DOI: 10.4236/cus.2018.63020

Bolay, J.-C. (2016) Prosperity and Social Inequalities: Montes Claros, How to Plan an Intermediary City in Brazil. ***Current Urban Studies***, 4, ***2,*** 175-194. http://dx.doi.org/10.4236/cus.2016.42013.

Bolay, J.-C. (2015) Urban Planning in Africa: Which Alternative for Poor Cities? The case of Koudougou in Burkina Faso. ***Current Urban Studies***, vol. 3, num. 4, p. 413-431. doi:10.4236/cus.2015.34033.

Campbell, T. (2012) ***Beyond smart cities. How cities network, learn, and innovate***. London, New York: Earthscan.

Cortat, J. (2018) Stratégie d'implantation d'un outil SIG pour de petites villes dans les pays du Sud. Etude de faisabilité : 9 de Julio, Argentine. Lausanne: CODEV EPFL.

Devas, N. (2001) Does city governance matter for the urban poor?, ***International Planning Studies***, 6(4), 393–408.

Endensor, T., Jayne, M. (2012) ***Urban Theory Beyond the West. A World of Cities***. London, New York: Routledge.

Parnell, S., Robinson, J. (2012) (Re)theorising cities from the global south: looking beyond neoliberalism, ***Urban Geography***, 33(4), 593-617.

Robinson, J. (2006) ***Ordinary Cities: Between Modernity and Development***. London: Routledge.

United Nations, Department of Economic and Social Affairs, Population Division (2014) ***World Urbanization Prospects: The 2014 Revision, Highlights***. New York: United Nations. https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.Pdf. Accessed 23 April 2018.

Watson, V (2009) Seeing from the South: Refocusing Urban Planning on the Globe's Central Issues, ***Urban Studies,*** 2009 (46), 2259-2275.

FROM SMART TO RESPONSIVE URBAN SYSTEMS: SUPPLEMENTING SOCIAL INFRASTRUCTURE IN KAMPUNGS[1]

DEVISARI TUNAS, STEPHEN CAIRNS,
ZUZANA DRILLET, LAKSMI DARMOYONO

Bandung Command Centre (Credits: Future Cities Laboratory)

Bandung has been an enthusiastic early adopter of smart city technologies in Indonesia. As such it has quickly transformed the way the city is managed, governed and administered. The speed and enthusiasm by which smart technologies have been adopted in the city has also meant that many potentials of smart technologies have been only partially realised.

This paper focuses on the success of such technologies not only to be 'smart', but also to support a more responsive and inclusive approach to urban planning in rapidly developing cities such as Bandung. The responsive approach emphasizes the ability of the 'smart city' to engage citizens in the development of viable city solutions. However, the degree of 'smart' city responsiveness and inclusiveness often remains an insufficiently addressed question. We examine this issue by focusing on the kampung (informal) settlement form in Bandung, where the majority of the city's population resides.

BANDUNG CONTEXT

Bandung is the capital city of West Java province and the third most populous city in Indonesia after Jakarta and Surabaya. It has a population of approximately 2.5 million (BPS DKI Jakarta 2015; BPS Surabaya, 2015; BPS Bandung, 2018) who occupy a total area of approximately 167 km². It is known as a 'creative city' due to the strong role that culture, education, technology, and creative industries play in the local economy.

Bandung's population has grown from around 300,000 in the early 1900s. Nowadays, the city is integrated with the Bandung Metropolitan Area (BMA), known as Bandung Raya, an urban agglomeration which comprises Bandung City, Cimahi City, Bandung regency, and West Bandung regency. The area covers close to 3,500 km² and supports a total population of around 8.5 million.

Historically, and even today, manufacturing constitutes one of the largest economic sectors in Bandung and has a strong basis in textile and apparel industries (BPS Bandung 2016). More recently the city has become known for its emerging high-tech industry. Bandung's high-skill-based and creative industries are supported by a large higher education sector, with around 115 licensed academic institutes (Kopertis Wilayah IV), supporting a combined student population of close to 250,000. Highly regarded IT and design schools (at the Institut Teknologi Bandung, or ITB, for example), and a host of arts and culture institutions, support Bandung's reputation as one of the most creative and entrepreneurial cities in Indonesia. Thousands of new businesses emerge annually in the city, closely following and often leading, regional and global business trends (Tan 2015).

Figure 1, 2: Bandung city from above (Credits: R Tamin)

The historical appeal and contemporary economic vibrancy of Bandung has become an opportunity and a challenge. Over the past two or three decades, the city's proximity to Jakarta has increasingly found it assimilated, albeit unevenly, into an unplanned extended metropolitan region with a total population of over 40 million people that stretches from the north coast of Java through the mountain passes to the Bandung basin. The gradual improvement of transportation infrastructure across this region, such as toll roads, an international airport, and rail network have significantly deepened Bandung's integration into this emerging region.

Figure 3: Cinema Park in Bandung city (Credits: Shau)

Figure 4: Colonial district in Bandung (Credits: Future Cities Laboratory)

The historical appeal of the city, which included its mild climate, creative culture, reputable educational institutions and well-paying jobs, drew migrants, students, investors and tourists to the city. This influx helps drive the city economy and its growth, as well as severely challenging the city's carrying capacity, straining existing infrastructure and planning systems. Evidence for this can be seen daily in the traffic-clogged streets, sub-standard kampungs and inadequate waste management. Several authors have pointed to the "persistence of urban poverty, low standards of public health and physical fabric of kampungs, allied with income inequality" as the benefits of economic growth are concentrated into wealthy pockets of the city (Tadjoeddin 2016).

BANDUNG SMART CITY PROGRAMS

Of all Indonesian cities, Bandung was quickest to develop its own smart city initiatives. For example, it had already been nominated as a finalist in the 2015 International Smart City award at a time when many other cities were just beginning to adopt smart city vocabulary and concepts in their development thinking and policy documents.

Bandung became an early adopter by localizing global smart city principles, approaches and technologies. That is, general principles were leveraged to address specific urban challenges of the city. This localizing of the global smart city also meant embedding it in local political and commercial interests. The number of industry players, such as IBM, Siemens and Accenture, sharply increased their presence in Indonesia, capturing lucrative opportunities by offering a myriad of smart city products and services.

At the same time, the term 'smart city' was widely adopted in many municipal

political campaigns in the country. The 'Bandung Smart City' slogan was a prominent part of a successful mayoral campaign of 2013. Subsequently, following a five-year stint in office, the "Bandung Smart City" mayor was elected to the governorship of West Java (a region with a population of close to 50 million people for which Bandung is the capital city), in a campaign that foregrounded his successes with smart city applications in Bandung. That campaign sought to expand smart principles and technologies from a city to a territorial level, thereby promoting a 'smart province' concept.

Bandung's leveraging on global smart city agents to achieve its local objectives was evident as early as 2014. At that time the city sought the assistance of the Japanese government to develop at centralized urban data observatory that came be known as the Bandung Command Centre (Perdana, 2014). Then, in 2015, the Norwegian government complemented the Command Centre with a specialist social media analytics software (Perdana, 2015). Later, in 2017 the French government funded a sustainable smart city study in Bandung (Dendi Ramdhani, 2017). The World Bank, Asian Development Bank and Japan Smart Community Alliance (JSCA) are among other international agencies who also offered technical assistance for the development of Bandung smart city initiatives. Each of these engagements brought international industry partners, such as IBM and Siemens. In this way, Bandung established a compelling format that combined local planning priorities with the interests and agendas of multilateral development banks, foreign aid agencies and industry players, that other municipal authorities in Indonesia emulate.

Bandung's smart city approach saw the development of a vast range of different kinds of technology, platforms and applications by different agencies. Numerous smart technologies were developed by local and national governments and applied in the general areas of urban governance, city administration, and spatial planning. They were also applied to more specific areas such as public health, neighborhood safety, traffic management, and poverty alleviation. Some initiatives, such as the SIRA E-budgeting platform and the Mantra database, focused on city administrators to help them optimize their everyday work. Others, such as the participatory planning platform E-musrenbang, and the reporting apps Gampil, and Lapor!, were designed for the citizens to better access public services and encourage civic participation in the process of urban planning and management. These various platforms and apps were initiated in different ways by different agencies, some by the central or the local government, and others by city departments and agencies which sought to compete by creating their own, such Si Petruk or Emergency Call 113, which were developed by the spatial

Figure 5-7: Bandung Command Centre (Credits: Future Cities Laboratory)

planning and fire departments respectively. Some were promoted by international agencies, and others were initiated by prominent industry players, while still others were grassroots initiatives emerging from the thriving ICT start-up scene in the city.

Bandung's smart city approach has been consciously informed by an aspiration for heightened involvement of citizens in the city's planning and management. This has involved specific efforts to increase transparency and efficiency of municipal governance along with more inclusive planning. This aspiration chimes with a number of policies adopted at national level in which local involvement in urban planning process has been supported through such mechanisms as Musrenbang (Musyawarah Rencana Pembangunan) (public development planning deliberations), which was subsequently digitally enhanced as E-musrenbang. The Musrenbang mechanism sought to increase public participation in the process of city planning, by providing opportunities for citizens, through their community leaders, to propose neighborhood projects. These typically

ranged from modest infrastructure improvements, such as lighting for public areas, to capacity building programs.

E-musrenbang, was subsequently supplemented by a range of other more specific smart city apps driven by the active start-up scene in Bandung, which brought the possibility of civic participations to another level. Citizens were now able to report on various problems such as potholes, floods, fire and criminal activities, and to assess the effectiveness of the city administration with the press of a smartphone button. Some of these technologies, especially those which are integrated with the formal city database systems such as Lapor!, became particularly effective.

SMART CITY IN THE INFORMAL SETTLEMENTS

During a public presentation in the 2018 World City Summit in Singapore, a representative from Bandung city announced that more than ninety percent of the city population participate, or actively use, their smart city technologies. This statistic, while impressive, is a partial indicator only. It tends to reflect the participation of higher-educated, middle-class and young population segments, particularly those that have no difficulty in accessing smart city technologies. Those communities who are economically disadvantaged, most of whom live in self-built and often informal kampungs, tend to be under-represented in that statistic.

The precise proportion of the urban population who live in the kampungs is difficult to determine in any precise way, however the Bandung Medium Term Plan report estimated that in 2012 approximately 70% of the settlements in the city was classified as 'kumuh' or 'slum' in Indonesian (RPJMD 2014-2019 Bandung). It is also important to note that only some kampungs fulfill the UN Habitat definition of slum (UN Habitat 2014) as they vary widely in physical and socio-economic terms, with some being generally acknowledged as respectable and viable neighborhoods.

We elected to focus our smart city research on the kampungs of Bandung, as this is where the majority of the city's residents live. With this focus, we hoped to understand what relevance smart city principles, approaches and technologies had for the mainstream of Bandung's population, and what kinds of technological adjustments or policy adaptations would be required to better serve them. Specifically, we investigated the current levels of engagement with the city's smart city platforms and, where those levels were low, to identify barriers to fuller engagement. Related to this, we were also interested in the potential of smart approaches and technologies to better communicate resident's needs, concerns and aspirations, be that economic precarity, ill-health, environmental quality or

Figure 8, 9, 10: Kampung Dago Pojok viewed from different perspectives

safety. The research involved field studies in three Bandung kampungs: Kampung Sablon, Kampung Lokomotif, and Kampung Kreatif Dago Pojok. It was structured as a two-year engagement under the Asian Development Bank's (ADB) Future Cities Program. The field research involved surveys, interviews and focus group discussions with the support of local NGO (Riset Indie). Around 120 residents across the three kampungs participated in the survey.

Three kampungs were selected to sample different kinds of Bandung kampung in terms of official standards for socio-economic profile, access to utilities (water, electricity and waste management) and physical condition. Kampung Sablon is classified as a high-density settlement, with good access to electricity, but with limited access to clean water. The kampung was known for its robust cottage industrial base in screen-printing, and its innovative use of e-marketing and regional supply chains to expand existing markets. Many of the kampung residents are involved in the screen-printing industry in one way or another (printing, tailoring garments, design, marketing, equipment maintenance and repair), and with associated downstream income, the neighborhood economy is seen to be in good shape.

Kampung Kreatif Dago Pojok is classified as a mid-density settlement and is known for its green spaces and expertise in urban farming. It has good access to electricity. Clean water provision however is still an issue with many residents still relying on open wells for their primary water supply. The settlement dates to the colonial era, when it was known as a centre for stonemasonry. More recently, it was officially dubbed a 'creative kampung', by municipal authorities to recognize and promote the emergence of art and craft activity there. While the kampung has seen a rise in tourist numbers, there is little evidence of engagement with the internet or e-marketing activities that were evident in Kampung Sablon.

Kampung Lokomotif is classified as a high-density settlement and it has the lowest socio-economic profile amongst the three we studied. It is located in a marginal area alongside a busy railway track close to the centre of the city. With limited open space and an ineffective drainage system, the environmental quality of this kampung is extremely poor. The neighborhood economy is precarious, with most residents not in formal employment, some in part-time service work for local offices, and others supporting in-situ convenience stalls.

The findings from the focus group discussions conducted in the three kampungs show that, in general, very few inhabitants were involved in the smart city civic participation platforms. Some of the residents were not aware of the e-musrenbang program. This despite the fact that community leaders are given

Figure 11, 12, 13: Kampung Lokomotif viewed from different perspectives

direct access to the e-musrenbang digital platform, and are tasked with engaging the local community, to solicit and articulate local project ideas, and to find consensus on the ones to be formally submitted through the platform. The low awareness of the program amongst residents suggests a basic communication gap in all three kampungs.

The survey shows that a high percentage of kampung residents own smartphones, and within that 55 percent have internet connections in their smartphones. However, the data also shows that most are used for communications (16%) (i.e. WhatsApp applications) or to access social media (42%) (i.e Facebook) or for entertainment (i.e. YouTube). Only 12 percent of users connect to the internet for work/e-commerce and business purposes, although as noted during the interviews, the support of e-commerce in the kampungs would be potentially very welcomed.

Almost nobody reported that they used their smartphones to access the available civic participation apps in Bandung. When asked about their preferred way to communicate their concerns and aspirations in relation to their city and neighborhood, almost all (76%) prefer to speak face to face with the local community leaders. This finding was further confirmed during the focus group discussion in the kampungs.

The preference for direct face-to-face communication with neighborhood leaders raises important questions regarding the role of smart technologies at grassroots levels. While municipal planners are well aware of the importance of grassroots engagement, and of the possibilities for smart technology to facilitate that engagement, there remain questions regarding the capacity of those technologies to articulate social practices and preferences. Considering the heavy reliance on the local leaders to communicate and solve kampung problems, the existing smart city applications may not sufficiently respond to the need of this segment of the population. In short, the current smart city program, with its numerous technology and applications may not be local nor responsive enough.

THE ROLE OF SOCIAL INFRASTRUCTURES IN THE SUCCESS OF SMART CITY

The current administrative and social organization in the kampung, which is based on neighborhood and community grouping (Rukun Warga or RW and Rukun Tetangga or RT), has served as the backbone of the grassroots urban governance since the late colonial era (Surianingrat, 1976). Each RT and RW has their own community leaders who are democratically elected. These leaders are normally selected from respected members of the community who agree to

allocate their time and effort to help manage neighborhood functions and to co-ordinate responses to local concerns. In the situation where public services and provisions are limited, communities are often forced to self-organize. For example to provide their own waste collection or, in the extreme case, source their own clean water. The local community leaders therefore have a significant social and political responsibility in the community.

Given their significant role in the neighborhood, local community leaders are instrumental to the success of the e-musrenbang program. Specifically, they serve as the only point of entry to the platform – each being assigned a unique username and password. They are also responsible for organizing meetings in the kampung whereby the community (normally represented by selected representatives) gather to discuss and decide on the three requests that can be submitted through the platform.

While this process is democratic in principle, it is subject to local biases which stem from a host of practical issues, beginning with who is informed about the meetings, and who is invited, who participates and who is heard at those meetings. Given the many, often conflicting interests and needs to be managed in such forums, this can be a fraught process. The introduction of the e-musrenbang technology does not always facilitate the process. Many neighborhood leaders are not well-versed with the technology and how it functions, and often seek help informally from available sources, such as local high-school students who have some familiarity with ICT. These intermediary actors can become indispensable in the functioning of the smart city at local levels, and as such, can also play an under-acknowledged and unduly influential role in community decision-making.

Many of the citizen participation apps that have developed in Bandung could supplement the formal platforms, such as e-musrenbang, by providing alternative channels for community members to articulate their views. However, our study shows that these kinds of inter-platform linkage remain an under-developed and their potentials under-realized. The government platforms and privately developed apps are not yet well coordinated nor inter-operable (although initiatives in this area are being studied (See: https://sitaruna.cityplan.id and http://lakip.bandung.go.id). Furthermore, a large proportion of kampung residents simply do not use the apps or platforms that are available, perhaps due to digital illiteracy or simple unwillingness to try applications that are regarded as complicated. As we have seen, simply talking face-to-face with their community leaders, however effective or ineffective that might be, remains the more obvious option.

As we noted younger, high-school age members of the kampungs can have an under-acknowledged and unduly significant role in community decision-making. In addition, many discussion groups respondents regarded this demographic as a source of neighborhood nuisance, considering it to be a focus for drop-out trouble-makers. Many respondents used their neighborhood planning voice to urge the government to develop specific programs to address this perceived problem. At the same time observed that this age-group already plays an important in the development of the responsive possibilities for smart city technology at grassroots levels. Most were knowledgeable and keen to facilitate the research we conducted, introducing researchers to community members, to explore the neighbourhood and articulate issues pertinent to the their local kampungs. This tech savvy group can bridge the participation gaps in the kampungs.

OPPORTUNITIES AND RECOMMENDATIONS

Findings from the study reveal several issues with the existing 'smart' system that may stem from the unresponsiveness of the system towards the local social contexts.

First, the existing formal participatory-planning platform, e-musrenbang, often unintentionally excludes certain resident groups in the kampungs we studied. As we have noted, there are a number of incompatibilities between community consultation practices and smart technical systems at the local level, such that existing biases in decision-making can remain unaddressed. As such, not all community members are aware of, nor are their representatives able to gain access to the benefits of the e-musrenbang submission process.

Second, while the booming number of privately developed apps in Bandung offer alternative avenues for the residents to voice their concerns and aspirations, very few kampung residents currently use them. This lack of use is not necessarily a technical matter, as most of the residents interviewed have smartphones and reliable internet access. As noted, most of the residents use their phones for other purposes, and, despite a certain circumspection regarding its effectiveness or otherwise, prefer to talk face-to-face with kampung leaders.

The study also reveals some opportunities for the development of responsive technologies in the kampungs. As in many cities in Indonesia, the durability and resilience of kampungs can be attributed to local social infrastructure. As such, the development of a more 'responsive', rather than mere 'smart city' will necessarily involve prioritizing this social fact. In this regard, three aspects of social infrastructures need to be foregrounded: the significance of community support groups (through RW and RT); the role of community leaders; and, the potential

of the kampung youth. Many governmental participatory planning related applications often bypass the social actors, as demonstrated by the individual self-reporting apps. This might work perfectly for some, however, in the case where there is a heavy reliance on social support from the leaders and neighbors, and limited ICT literacy, this may be a challenge. This suggests the necessity of thinking on intermediary and complementary socio-technical interfaces.

Acknowledgement: Riset Indie - Bandung

Endnotes

1 This article discusses the outcomes of the 'Kampung Smart Systems' project that was carried out by an interdisciplinary research team from the Future Cities Laboratory (FCL) in Bandung under the auspices of Asian Development Bank's Future Cities Program. In this project the research team worked with the city of Bandung to leverage upon emerging smart technologies to develop responsive and inclusive urban planning policies and practices.

References

Bandung Municipality (2014) RPJMD 2014-2019 Kota Bandung. Available from http://perpustakaan.bappenas.go.id/lontar/file?file=digital/131420-[_Konten_]-Konten%20C9283.pdf. Accessed on 28 February 2019.

BPS Kota Bandung (2015) Kota Bandung Dalam Angka 2015. Badan Pusat Statistik Kota Bandung.

BPS Kota Bandung (2016) Kota Bandung Dalam Angka 2016. Badan Pusat Statistik Kota Bandung.

BPS Kota Bandung (2018) Kota Bandung Dalam Angka 2018. Badan Pusat Statistik Kota Bandung.

BPS DKI Jakarta (2015). Statistik Daerah Provinsi DKI Jakarta 2015. Badan Pusat Statistik DKI Jakarta.

BPS Kota Surabaya (2015) Informasi Data Pokok Kota Surabaya 2015. Badan Pusat Statistik Kota Surabaya.

Future Cities Laboratory and ADB (2018) Bandung Smart Systems. ADB Project Report. Future Cities Laboratory, Singapore

Perdana, Putra Prima (2014) Sepakat, Jepang Akan Bantu Bandung Jadi "Smart City". Available from https://regional.kompas.com/read/2014/12/05/17184381/Sepakat.Jepang.Akan.Bantu.Bandung.Jadi.Smart.City. Available from In Kompas Kompas, 5 December 2014. Accessed on 24 January 2019.

Perdana, Putra Prima (2015) "Bicara soal Investasi, Dubes Norwegia Sumbangkan "Software" Baru untuk Bandung". Available from https://regional.kompas.com/read/2015/03/13/14000491/Bicara.soal.Investasi.Dubes.Norwegia.Sumbangkan.Software.Baru.untuk.Bandung. In Kompas 13 May 2015. Accessed on 24 January 2019

Ramdhani, Dendi (2017) Ridwan Kamil Sebut Perancis Negara yang Paling Baik Hati. Available from https://regional.kompas.com/read/2017/02/01/13281141/ridwan.kamil.sebut.perancis.negara.yang.paling.baik.hati. In Kompas, 2 January 2017. Accessed on 24 January 2019.

Surianingrat, Bayu (1976) Pemerintahan dan administrasi desa. Yayasan Beringin Korpri Unit Departemen Dalam Negeri, Indonesia.

Tadjoeddin, Mohammad Zulfan (2016) Earnings, productivity and inequality in Indonesia, The Economic and Labour Relations Review 27(2): 248-71.

Tan Wee Kwang (2015) Bandung Smart Cities. Enterprise Innovation. Available from https://www.enterpriseinnovation.net/article/bandungs-smart-city-initiatives-246675038. Accessed on 7 December 2017.

UN-Habitat (2015). Issue Paper on Informal Settlement, United Nation Conference on Housing and Sustainable Urban Development, New York, 31 May 2015. United Nation.

EXPLORING NEW HORIZONS FOR YOUTH WELLBEING AND PUBLIC SPACE IN SIERRA LEONE

NINA FREDSLUND OTTOSEN, GREGOR HELMUT MEWS

LOVABLE CITY CONCEPT

Since the advent of urban development, people have been abandoning their traditional rural lives and heading to cities with the dream to achieve greater economic and civic independence. However, this dream is difficult to attain. Social connections need to be re-established; access to jobs, services, affordable housing needs to be secured; and, distinct places made accessible- to achieve a level of comfort termed 'urban livability'. This term refers to ways of sustaining a productive and meaningful human existence that integrates physical and social well-being parameters (Asia-Pacific Economic Cooperation 2015). It also implies a direct connection with health. Physical and social well-being are core pillars of health, defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO 2006).

However, for too many people, urban livability remains out of reach as they struggle to unfold their own full potential to be productive members of an urban society. Under the pressure of pure necessity, people seek ways to cater to their basic needs, whilst the concept of 'urban livability' remains a quality reserved for resource-rich minorities and remains unattainable for most others.

But there is a paradigm that can enable a meaningful human existence which is available to all people - the concept of 'urban lovability'. The concept can be defined as a positive, voluntary, and intrinsic feeling, or compassionate affection, turned into an actuality. It uplifts the individual as well as the collective human spirit as part of everyday life, offers an inclusive approach to our collective state of human existence, and can improve subjective well-being with a sense of immediacy. By linking everyday life experiences with the concept of 'urban lovability', collective human existence becomes meaningful. The following provides an example of a project to translate this concept and turn theory into action.

THE CONTEXT OF SIERRA LEONE

Sierra Leone is a country in which urbanization is putting pressure on cities to accommodate a growing number of, especially young residents. Located in the Sub-Saharan region of Africa's west coast, Sierra Leone inhabits 7.5 million people (The World Bank 2019 (1)), out of which more than half live on less than US$1.90 per day (UNDP 2018). The country suffers from a lack of employment opportunities, a poor education and health systems, the threat of recurring flooding and natural disasters, and epidemics such as cholera and ebola.

Unhealthy and unsustainable urban environments pose a serious threat to many Sierra Leoneans, with 75% of the urban population living in slum areas in 2014 (The World Bank 2019 (2)). The physical environment can be extremely

Figure 1: Community field in Funkia, Freetown (Image credits: Nina Fredslund Ottosen)

harsh in these slums. Lack of proper sanitation creates epidemics, lack of street lights fosters crime, and a run-down environment resonates with community fraction rather than coherence.

The impact of the physical environment cannot be down-played when working in Sierra Leone's fragile urban areas. The lack of creative spaces where youth can learn, be active, have fun, and hang out kills creativity - the fabrics of dreams. The need for such space is echoed in the Sustainable Development Goal 11 (Sustainable Cities and Communities), which includes universal access to green, safe and inclusive public spaces as one of the core targets, and in the New Urban Agenda in conjunction with the Sustainable Development Goals 3: Good Health and Wellbeing, and 17: Strong Partnerships for the Goals - working in the nexus of wellbeing, community empowerment and public space in informal settlements.

YOUTH IN URBAN SPACE

Sierra Leone youths, which are officially defined as members of the age group 15-35 by the Government of Sierra Leone 2003, make up almost 40 % of the total population (UNDP 2018). They are also the most urbanized population group, making up 44% of the urban population (Statistics Sierra Leone 2017). Also, in Sierra Leone, there is a stigma around youth. Neighborhoods with large

concentration of young people are often thought to be unstable and filled with violence. Young people in Sierra Leone also lack political influence, even though people under 35 made up 58% of the voting age population in 2018 (Restless Development 2018, p. 6).

Currently, access to safe and inclusive public spaces in cities is very limited, and is a largely overlooked aspect of urban development in the country. In particular, youth's lack of access to public spaces is conceived as an alarming trend in relation to their overall well-being, as the individual living conditions of many young people are poor and their needs for active recreation and socialization remain unfulfilled.

Consequently, it is important to develop mechanisms for youth to participate in shaping Sierra Leone's future society, to make this society inclusive for all, and to recognize young people as valuable resources, and active citizens.

Therefore, this project explores a novel pathway to create and improve the quality, safety and inclusiveness of spaces within urban communities. We seek to provide youths with an innovative tool to promote meaningful participation that directly improves the well-being of individual people, and consequently their entire community. A key focus of the project is to make urban environments more supportive of its young residents and to create public urban spaces that are informed by, and accommodate, the dreams and vision of the youth.

CREATING SPACE FOR YOUNG PEOPLE IN URBAN SIERRA LEONE

Our project, called 'Creating space for young people in urban Sierra Leone', is a cross sectoral partnership between: the Danish NGO, Dreamtown; the Australian organization, Urban Synergies Group; the Sierra Leonean NGO, Youth Dream Centre Sierra; the University of Makeni; and, the University of Canberra, Health Research Institute. The project is funded by the Danish Civil Society in Development (CISU). The project overall aims to co-design public spaces as targeted interventions with the intent to generate ownership and participation for Sierra Leone's youth.

To give a brief overview of the project, it is divided into four main phases: the research phase; the dream collection phase; the space development phase; and, the advocacy phase.

In the research phase, we designed, tested and applied a digital survey to measure youth wellbeing in nine communities across Freetown, Makeni, and Kono. The survey was developed and adapted by our academic partner institutions to measure the progress of the intervention and to identify the most dominant youth wellbeing indicators, and their relationship to interventions in public space.

PROJECT CHANGE PROCESS

Figure 2: Project change process (Credits: Daniella Mews)

In the dream collection phase, we identified youth visions for public space in the nine target communities. This was done to give the young people ownership of the process and enforce their right to influence how their community spaces look. We developed a tool to collect young people's dreams for public space which was used in all of the communities. This tool is inspired by the concept of 'urban lovability', which, "fused with other data, can cut through numbers to provide more direct, relevant information that could guide urban planning and policymaking by identifying a city's assets through the eyes of its people" (Freeman et al. 2016).

Based on the dreams for public spaces that are identified in the dream collection phase, the young people in the communities continue to realize some of the dreams - developing them into actual public spaces - in partnership with local community-based organizations (CBOs). In the space development phase, these CBOs will stay true to the dreams that the spaces are based on and involve community youth in the implementation.

Finally, in the advocacy phase, the project partners will engage in activities that advocate for youth access to physical public spaces in the city and youth spaces to participate in decision making processes - engaging local duty bearers and improving their perspectives on the role of young people as active residents, and the importance of conducive public spaces for young people in slums.

A COUNTRY SPECIFIC DEFINITION FOR PUBLIC SPACE

We initially had to gain an understanding of how public space - the space between buildings - is perceived locally. With 'public space' being a novel concept to frame urban development projects in Sierra Leone, it was important to create ownership of the concept at a community level to ensure that everyone involved identifies with the approach and agrees on the qualities that desired in the creation of public spaces. Through this project, a country specific definition for public space has been co-created with project partners and community youth that will help to implement tangible space-making-interventions.

The definition is: "A public space is a space available to people of all ages where they can meet every day socially and comfortably. These spaces are safe, accessible, free of costs, inclusive, free of discrimination, enjoyable and encourage idea sharing. Such spaces contribute to our collective wellbeing".

Unlike place-making practices that focus on interventions in a physical place, our approach is consciously framed around the term 'space' as it expands boundary conditions beyond physical space into the mental space. The process of establishing a culturally sensitive working definition of public space becomes an

Figure 3: Co-designed definition of public space (Credits: Nina Fredslund Ottosen, Daniella Mews)

important predisposition to the improvement of physical conditions as well as a non-formal education tool aimed to empower local youth. Furthermore, it enables, in a practical sense, the possibility for interventions related to movement networks, such as the installation of street lights within an entire settlement. Our definition also is used as a tool, to reflect with the youth in the communities about their environment and to discuss how they interact with space - public and nonpublic - around them.

THE DREAM COLLECTION TOOL: COLLECTING YOUTH DREAMS FOR PUBLIC SPACES

The dream collection phase aims to uncover vulnerable young people's priorities, visions, and dreams for/in the city. This is where, in line with the concept of 'urban lovability', the project looks for the perceptions of the young residents to inform the creation and improvement of the public spaces in their community. Here, we are looking at the aspects of the city which cannot be assessed by numbers alone.

As part of this approach, a tool was developed to practically capture and reflect on the dreams about public space that youth have in the target communities. The tool is designed as a reflective three-day exercise (2-3 hours per day) with youth in each community. It is important (as far as possible) that the same group of youth is maintained throughout the three days so there is a coherence in learning and development of the space dreams. It is also important that all steps of the process are well documented, and the notes and drawings from different exercises are photographed[1].

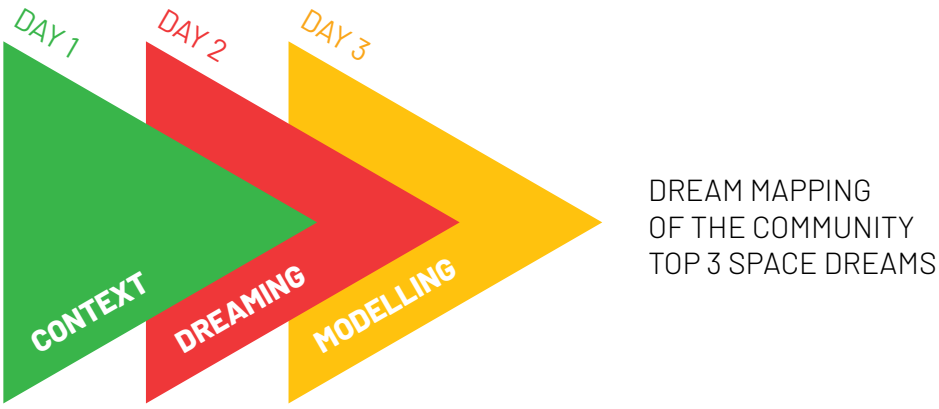


Figure 4: Dream collection process (Credits: Daniella Mews)

Figure 5: Community mapping in Funkia, Freetown (Image credited: Youth Dream Centre Sierra Leone)

DAY 1: CONTEXT

On the first day of the dream collection, we zoom in on the specific community which is engaged. The first step, after introducing the project and its partners, is to dive into an introduction of the concept of 'public space'. We take our point of departure in our co-designed definition for public space mentioned previously, and reflect with the community youth to validate and adjust the definition. Through this process the youth get a better understanding and a sense of ownership of the public space concept. It also opens their minds in preparation for the next step of Day 1: Community Mapping.

Through a collaborative exploration of their community as a context, the youth carry out a cognitive community mapping exercise, which helps to identify public spaces that are already available in the community. This exercise tells us something about how young people interact with their community space and what they prioritize a particular space. The participating youth are divided into groups (group size depending on the turnout, but maximum 6-7 per group) and draw or model (depending on the materials available) out their community and identifying the location and kind of public spaces that are available to them. Their sketches, or models, are then presented to all, and a joint reflection takes place through a discussion about whether the spaces identified in the community mapping match the conceptual questions: Are they accessible to all? Are they inclusive?

Are they free of costs? Can you access the space at all times? This part of the tool inspires the young people to look at their community in a new light and makes them aware of the difference between the public and the private spheres.

DAY 2: DREAMING

The second day of the dream collection phase is all about dreaming! We move from Day 1's focus on what already is, to what could be. The first step of Day 2 is to repeat the definition of public space to keep people focused on the qualities that are important to get from space.

The young people then get some time to identify their individual dreams for public spaces in the community - no limits yet - all dreams are welcome! Some dreams might be too big to actualize within the scope of the project at this stage. However, the overall process is designed in a way that mitigates false expectations and keeps the youth focused to find tangible and joyful solutions for public spaces which are possible to implement at the community level.

These individual dreams are gathered and youth groups work together to place all the dreams on a 'Fun Factor' scale: How much fun would the spaces be if they were developed? Would they put a smile on people's faces? This exercise is ideally facilitated with one person from the organization or project in each of the groups to assist. Then each group picks the three dreams with the highest fun factor before the next step of the exercise.

This process is the development of the high/low impact and effort scale. The groups have to place their top three dreams on this scale to determine the impact the space could have in the community and the effort required to develop it. While the fun factor scale makes sure that the space ideas would spark joy in the community, the high/low impact and effort scale sorts out the dreams that

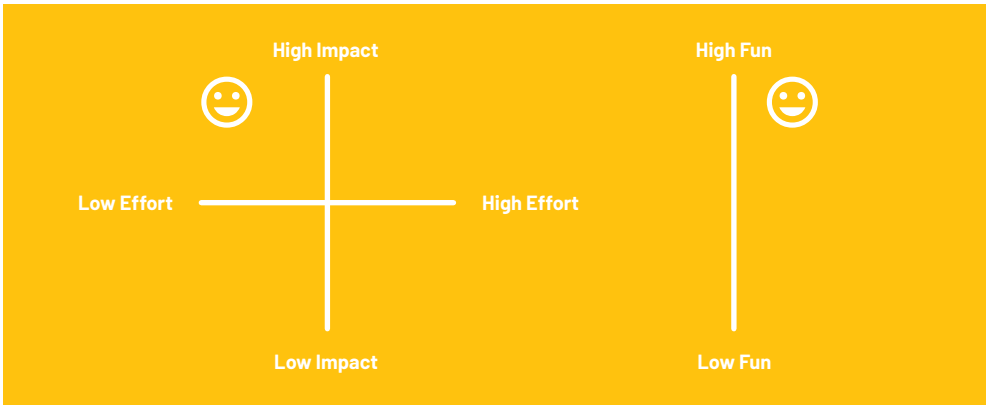


Figure 6: High/low fun and effort scale (Credits: Daniella Mews)

Figure 7: Plotting dreams on fun scale in Funkia, Freetown (Credits: Nina Fredslund Ottosen)

would require too much effort or would not make a sufficient impact compared to the resources required to develop the space. In the end, each group picks the one idea which they believe to have the greatest impact with the lowest effort. This optimal idea is presented. Then there is collective voting where everyone votes for their favorite space dream.

DAY 3: MODELLING

Modeling starts with a collective reflection on the feedback from other community members. Do people agree that the space ideas would benefit the community? Is it realistic to develop the space? Is there already any obvious location where the space could be developed? After these reflections, where critique from the community is taken into consideration, the youth are divided into three groups- each of which is responsible for one of the top three spaces that were voted for on Day 2. Each of the three groups is tasked to articulate the dream in a creative way - by drawing out the space, building models from recycled local materials, doing performance art, etc. Anything goes, as long as they can communicate the space dream to the other groups.

Each group then presents their model of the space to all as well as to local community-based organizations (CBOs, that have been invited beforehand to join on Day 3). All are engaged in an exercise with the groups to evaluate the feasibility of

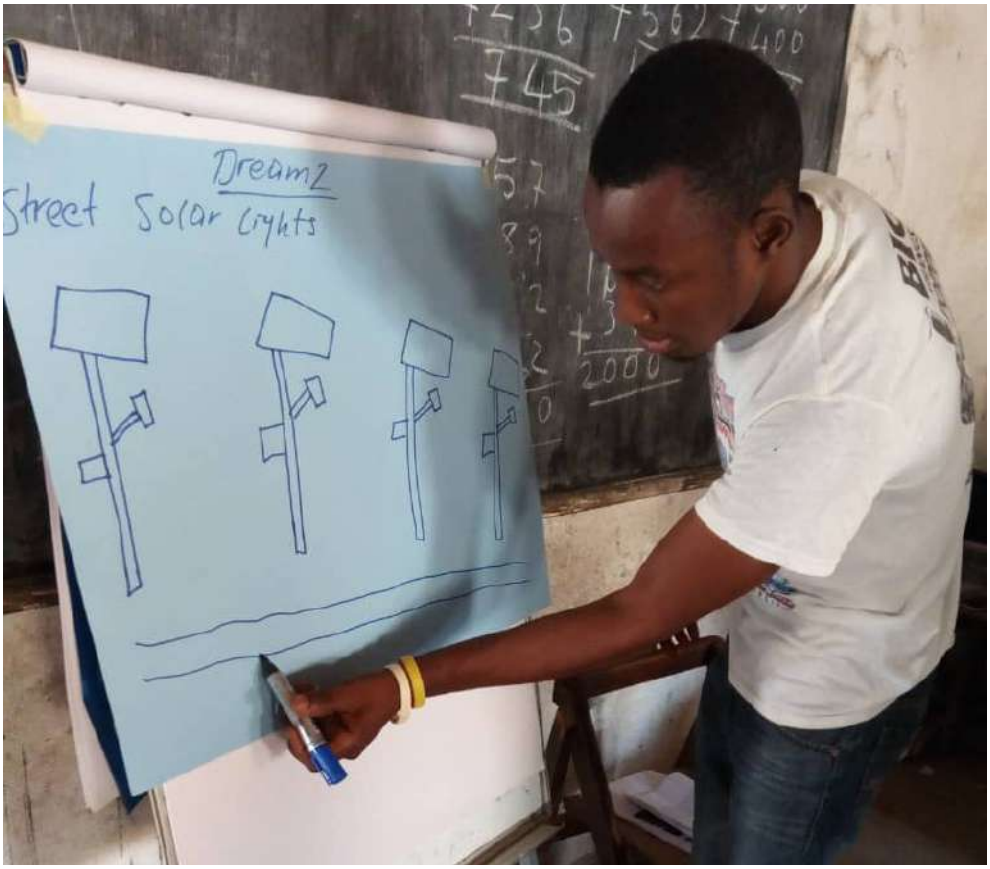


Figure 8: Plotting dreams on fun scale in Funkia, Freetown (Credits: Nina Fredslund Ottosen)

From Dream to Project Idea (Template of Questioning)

1. Describe your dream (in a few words)?
2. Who will benefit from the dream?
3. How can you make the space inclusive?
4. What resources will be required to develop the space?
5. List potential partners for realising the dream?
6. How long will it take to implement the dream?
7. How will the space become sustainable?

Figure 9: From Dream to Project Idea (Credit: Nina Fredslund Ottosen)

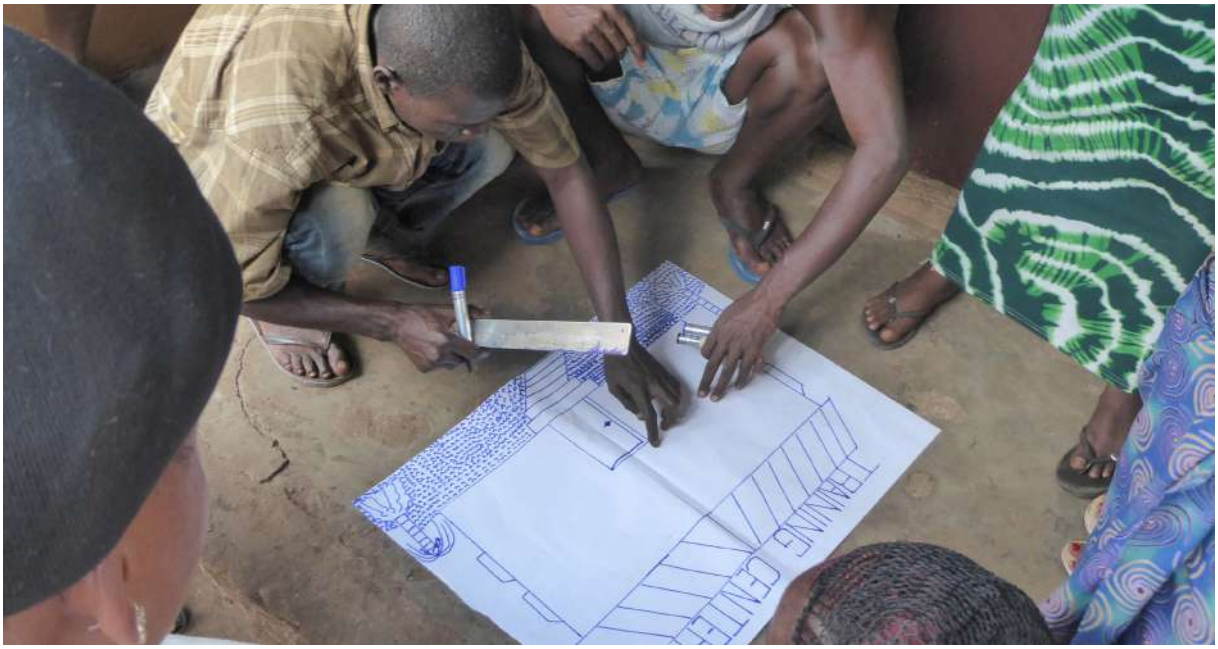


Figure 10 (top): Training center as public space dream – initial idea (high effort)

Figure 11 (bottom): Training center as public space dream – adjusted idea (low effort)
(Credits: Nina Fredslund Ottosen)

the dream in accordance to the questions outlined in the textbox (Figure 9).

The results of this discussion are written out, collected, and used as initial project outlines of the spaces that will be realized with the CBOs, as lead partners at the community level. Therefore, dreams that are eventually selected by the community youth are used to inform the development of concrete public space interventions in the next phase of the project - the space development phase. Other than a concrete dream mapping of the community's top three space dreams, the process also allows for a broader identification of youth priorities for public space - priorities that can be used to advocate for more focus on the space for young people in urban environments.

Fun and physical exercises are an important part of the three-day process, to keep everyone motivated and active. Creating a comfortable and joyful environment is important to establish a safe sanctuary where young people can speak up freely and receive a feeling of adding value. In the context of the project communities in Sierra Leone, the daily activities are limited to two hours per day because many young people will be engaged in different work during the day.

EXPERIENCE TO DATE

From our experiences in Freetown, the benefits of the approach are compelling and have already proven to be effective. Our process enables participants with non-formal education to participate and enables ownership. One of the key transformational benefits of the dream collection tool is that through the different exercises and workgroups, the dreams (which are sometimes rather big in terms of resources required and very focused on buildings) go from being immediate and unprocessed ideas to becoming implementable visions for public spaces that can be actualized at community level and create a high impact with low effort.

To mention a few illustrative examples of public space dreams that have come out of the project's dream collections so far, these include gym/training area, solar light solutions, public trees and parks, public book exchange, peace gardens, football fields, local cinemas, and youth community and recreation centers. Some of these spaces are envisioned keeping in mind the existing structures that are empty or unfinished and left unused. Utilizing existing physical spaces as a basis for the actualization of the young people's space dreams is an important strategy to be able to keep costs down and, at the same time, it sends a strong signal if community stakeholders come together and decide to prioritize the wishes of the youth by making such structures available to the project.

Figure 12: Exemplar dream concept of the Funkia community in Freetown (Credits: Gregor Helmut Mews)

Figure 13: Visualisation of public space improvements suggested by youth in Funkia, Freetown - improvements through streetlights, furniture, shelter, and gym equipment.

Figure 14 (top): Group presentations in Funkia, Freetown (Nina Fredslund Ottosen)

Figure 15 (bottom): Nina and Greg with Mohammed Mansaray, Chairman in Funkia, Freetown (Daniella Mews)

FUTURE STEPS: PLANNED SPACE INTERVENTIONS

The project is currently work in progress. The approach of the project is built on a core hypothesis that the wellbeing of young people living in slums is, to a large extent, dependent on the socio-political and physical spaces which surround them. Therefore, the dreams that the young people have shared through the dream collections will now be brought to the space development phase of the project.

Project plans will be made based on the project idea write-ups from the dream collection in collaboration with the local CBOs, which is central to pass on the ownership of the space development to the community. Engaging the CBOs in the implementation of the space projects is also a strategy to strengthen their capacity in project management and advocacy work, as they will be participating in trainings throughout the implementation phase. Realizing that it is important to keep the ownership created among the youth through the dream collection and in the community, it will be a condition that the youth are able to take part in the actual implementation of the space dream, in collaboration with the CBOs.

Some of the benefits of the project's approach to public space making are the cost-effectiveness, potential of upscaling and replication, and the delivery of a paradigm shift that explores a new horizon beyond the livability paradigm, ensuring that no one is left behind. The dream collection tool is one of the key-instruments purposefully developed to put the concept of urban lovability into operation and to enable tangible community driven and owned actions in space that lie very close to the hearts of the youth with a sense of immediacy. Linking the project's research data on youth wellbeing and engagement of young people at the community level in public space-making interventions, we look forward to continuing to explore the links between youth wellbeing and access to public space in the context of urban Sierra Leone.

Endnotes

1 The dream collection was tested together with Dreamtown, Urban Synergies Group, and YDC-SL in Funkia community in January 2019. In this test of the tool, a total of 43 youth participated, which made for six groups. The remaining dream collections in the other eight target communities took place in February and March 2019 and are facilitated by the project team from Youth Dream Centre Sierra Leone.

References

APEC. 2015. Building better cities: competitive, sustainable and livable metropolises. In: Eco Summit, Philippines. Accessible under: https://www.pwc.com/sg/en/publications/assets/apec-build-better-cities.pdf.

Freeman, C. G., Gray, F., and Novacevski, M. 2016. Lovability: restoring liveability's human face. Available at: https://theconversation.com/lovability-restoring-liveabilitys-human-face-67627.

Government of Sierra Leone. 2003. Sierra Leone National Youth Policy.

Restless Development. 2018. The State of the Youth: Sierra Leone 2018. Freetown: Restless Development.

Statistics Sierra Leone (SSL). 2017. Sierra Leone 2015 Population and Housing Census - Thematic Report on Children, Adolescents and Youth.

The World Bank. 2019 (1). Sierra Leone, The World Bank, viewed 7 February 2019, https://data.worldbank.org/country/sierra-leone.

The World Bank. 2019 (2). Population living in slums (% of urban population), The World Bank, viewed 7 February 2019, https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS.

UNDP. 2018. UNDP Sierra Leone 2017 Annual Report. Freetown: UNDP Sierra Leone.

World Health Organisation (WHO). 2006. Constitution of the World Health Organisation. Retrieved from: http://www.who.int/governance/eb/who_constitution_en.pdf.

TOWARDS A SMART-CULTURAL PERI-URBAN COMMUNITY
THE CASE OF KYEBI, GHANA

ALEXANDER BOAKYE MARFUL, JOSEPH AGYEI DANQUAH, DANIEL DUAH, REXFORD ASSASIE OPPONG

The world is becoming more urbanised with over 60% of the total population forecast to live in cities by 2050. This comes with complex challenges in the efficient management of cities. Also, peri-urban landscapes, that transition between cities and rural areas, have become focal points for interventions to make these zones resilient and sustainable. Countries in sub Saharan Africa (SSA) are struggling to effectively mitigate the effects in the context of UN Agenda 2030 of sustainable development goals.

For example, Ghana is experiencing rapid urbanisation in major towns such as Kyebi, the capital of the Akyem Abuakwa State, due to factors such as decentralisation, developmental projects, industrialisation, and democracy.

Kyebi is developing into a city because of its strategic location, history, and the recent mining of its rich mineral deposits[1]. To develop Kyebi successfully, a concerted effort has been undertaken to develop a holistic master plan that would make the future community smart, resilient and sustainable. The plan studies sought to unearth the potential of the Kyebi community and propose alternative physical and structural plans for the peri urban landscape.

A mixed method approach was adopted for the study. First a comprehensive literature study on cultural, resilience and smart city concepts was accomplished. Then a two week survey was conducted in Kyebi and its surroundings. The data collated formed the basis of creating scenarios for future development. The study revealed three key catalysts for future development: 1. The unique cultural history of the city; 2. The enormous gold and bauxite deposits; and, 3. the potential for industrialisation and human capital development. The study recommended that Kyebi be developed into a smart cultural city.

INTRODUCTION

Recent decades have seen unprecedented changes in cities through technological advancements in information and communication technology (ICT). The changes are not exclusive to developed countries but also found in emerging economies, where they impact the physical and spatial planning dynamics of cities. A reason why many cities are embracing technology to manage and efficiently plan is to solve the rather complex challenges posed by the rapid urbanisation of such environments. Concepts and ideas such as smart cities, resilient cities, sustainable cities, intelligent cities, etc. are planning strategies adopted by cities of today. Google scholar records shows that 'smart city' and 'sustainable city' are the two most researched terms on their academic search engine (Google scholar, 2019)

The UN agenda 2030 and African Agenda 2063 emphasise how growth, in terms of spatial expansion, will significantly influence the future African urban

landscape and its ability to achieve the targets of the two agendas (Ostor et al., 2015; UN News Centre, 2015) along with a set of bold new Global Goals, which Secretary-General Ban Ki-moon hailed as a universal, integrated and transformative vision for a better world. "The new agenda is a promise by leaders to all people everywhere. It is an agenda for people, to end poverty in all its forms – an agenda for the planet, our common home," declared Mr. Ban as he opened the UN Sustainable Development Summit. The UN chief's address came ahead of the Assembly's formal adoption of the new framework, Transforming Our World: the 2030 Agenda for Sustainable Development, which is composed of 17 goals and 169 targets to wipe out poverty, fight inequality and tackle climate over the next 15 years. The Goals aim to build on the work of the historic Millennium Development Goals (MDGs. Indeed Africa's population is projected at 1.3 billion, representing 21% of the world population by 2050 (Van Noorloos & Kloosterboer, 2018; UN DESA, 2014).

In Ghana and sub-Sahara Africa (SSA) rapid growth is not only manifested in mega cities, such as Lagos or Nairobi, but in smaller towns and cities. It has been noted by the World Bank that whilst all regions had a steady growth in urbanisation, it was faster in the smaller cities. It acknowledged that from 2000-2010 the number of smaller and medium cities with populations of 20,000-50,000 and 50,000-100,000 had quadrupled (World Bank, 2017). The growing phenomenon of this urbanisation trend comes with its associated peri-urban landscapes which most often are the buffer zones for these cities. These areas serve as agrarian lands, green-ecological belts as well as protected areas.

However the growth pressure on these smaller cities makes them potential zones for disaster due to the absence of planning and institutional integration. (Van Noorloos & Kloosterboer, 2018). In developing countries such Ghana, the peri-urbanisation is characterised by: 1.) a changing economic structure; 2.) a shift from agrarian to manufacturing employment; 3.) Rapid population growth; and, 4.) changes in spatial development patterns and rising land costs (Kourtit, K., Deakin, M., Caragliu, A., Del Bo, C., Nijkamp, P., Lombardi, P., & Giordano, 2013)

HISTORICAL BACKGROUND

Kyebi is both the capital of the state of Akyem Abuakwa and the home of the Abuakwa South Municipal Assembly, which serves the eastern region of Ghana (Figure 1). It is a mineral rich town located in the Atiwa mountain range at an altitude of 318m and has a population of about 12,000 people as of 2013. The total population of the Abuakwa South Municipality is about 168,000 people (Ghana Statistical Service, 2012).

The people of Akyem are migrants from the Adansi people of the Ashanti kingdom[2], who fled from Asante's rule following the death of the Asante King. Fearing the wrath of the Asante in the aftermath, they migrated southward and settled in their current place due to reasons of fertile lands, water and security (Wikipedia, 2019).The modern Akyem consists of three sub divisions namely Akwamu, Kotoku and Bosome, with Akyem Abuakwa accounting for more than fifty percent of the western half of the eastern region of Ghana (Addo-Fening, 2018).

The state itself has evolved through a three-tier distinct historical phases – Adanse phase, Banso phase and Kyebi phase. Historians attribute the first two phases to myths of obscurity as told by oral traditions dating back from the 16th and 17th century when they had settled in earlier towns of Adanse. The Banso phase saw the migration of Asona settlements from Adanse to the inland settlement as Akwamu with their capital stationed at Banso. It was during period that a unitary confederation was established, ruled by a monarch by the middle of the 17th century. The Kyebi phase saw the expansion and integration of the Akyem Abuakwa with the Akwamu, and the capital was relocated to the present day Kyebi due to security (found in the Atewa mountain range) and administrative (as the central location of the state) reasons. Thus historians such as J.B. Danquah dates the foundation of Kyebi to the 1770's (J.B.Danquah, 1928, Addo-Fening, 2018).

Akyem Abuakwa has an outstanding place in the public affairs of the gold coast colony during the 18th and 19th centuries. It was referred as the 'shining star' of the governed states of the gold coast (Ghana), and a favourite destination for colonial officials. There they conferred with the then chief Ofori Atta, considered by the colonial government as the greatest leader and statesman. It was recognized as a place of rest due to its location, climate and importance and noted for its rich gold and bauxite deposits (the state has arguably one of the richest gold deposits in the country). It served as an important slave trade and commercial route for the colonial government. Its land also has the richest soils for agricultural purposes (Muller, 1968).

METHODOLOGY

The study primarily involved a mixed method mixing qualitative and quantitative approaches. A cases study of Kyebi, and its surrounding towns, was conducted for two weeks in November 2018. A pre survey workshop was organized for participating third year students of architecture at Kwame Nkrumah University of Science and Technology, Kumasi. The workshop's purpose was to orientate them on the work involved. In all, eighty three students, four

assistants and four lecturers took part in the workshop and survey. Six groups were created for easy collection of data themed under the following sub groups: socioeconomic, physical infrastructure, ecology and environment, urban design and morphology and community service. Data collection technique such as interviews, series of formal meetings, physical and aerial surveys and photography were used.

Data collected was analysed, reported and synthesized into the following scenarios: 1.) A smart city; 2.) A resilient city; and, 3). A cultural city. Engagement with local and municipal authorities continued throughout the entire process. The outcome of the study is a proposed draft structural plan for the future of Kyebi and its surrounding towns.

RESULTS AND DISCUSSIONS

CURRENT STATE OF THE COMMUNITY

Kyebi community has been elevated to a municipal status by a legislative instrument establishing it in 2008. Kyebi is the administrative capital of the municipality and together with the three surrounding communities make up about 20% of the entire 117,000 population within the municipality. It is a community with a rich cultural and historical antecedents deeply embedded in the historical development of Ghana.

It is a ten minute drive from the main Kumasi Accra road at Bunso Junction.

SOCIO ECONOMIC CHARACTERISTICS

The socio economic characteristics of the communities do not deviate much from the municipal level but as compared to the regional and the national levels it offers some variance. For example, whilst the population growth rate of 2.1 is the same, the urban population within the municipality is high compared to regional and national of 43.4 and 50.9 respectively, but relatively lower than the municipal average. Figure 2 presents basic socio-economic data within the communities. The disability ratio is higher than the regional and municipal average. The presence of the school for the blind which has over 200 students accounts for this rise.

The people are predominantly crop and animal farmers. Other economic activities include small scale industrial works such as carpentry, baking, mining, etc. The survey revealed a self-employable population ratio of 60%, with 84% of the activities taking place in permanent structures. These structures are dotted along the highway that forms the spine of the community taking advantage of commuters and accessibility to transport.

Figure 1: An aerial map of Kyebi as seen from Google Earth. Source: Google earth 2019

Characteristic Features	Kyebi and surrounding towns	Municipal	Regional	National
Population	26,200	117,000	2,427,570	29,970,000
Pop. Growth Rate	2.1	2.1	2.1	2.2
Sex Ratio	96.0	96.0	96.1	95.2
Urban Population	52.0	59.9	43.4	50.9
Household Size	4.0	4.0	4.1	4.4
Disability ratio	3.9	3.7	3.6	3.0
Literacy Rate	76.2	75.6	56.6	71.5
Employment Rate	66.5	65.9	64.0	98
Poverty Rate	18.3	20.2	21.7	24%

Figure 2: Basic socio economic statistics of Kyebi and surrounding towns
Source: world population review, 2019, GSS report 2017, GSS population and housing census 2010, Field survey 2018

Figure 3: Major economic activities on the major arterial routes in Kyebi. Source: Field survey 2018

Figure 4 and 5 show the market place and inhabitants drying cocoa beans in a suburb of Kyebi called Asikaam, respectively.

Figure 6: An aerial view of Kyebi and surrounding towns. Source: Field survey, 2018

PHYSICAL INFRASTRUCTURE

The Kyebi Township used to be a popular thoroughfare for the Kumasi –Accra highway, linking the capital city to the second largest city in the Ashanti region. But the redirection of the highway a few years ago made popularity and growth redundant as avenues for growth and income generation activities stalled. However, it still maintains its rich history of the birthplace of many statesmen and the learned class. An aerial view of the Kyebi Township is seen in Figure 6.

PUBLIC AND UTILITY SERVICES AND ADMINISTRATION

Kyebi consists of 5 zonal councils, 26 unit committees, and one constituency. The municipal chief executive presides over a 34 member assembly, whose members serving as the core administrative channel for projecting and advancing the agenda of the government. It has most of the basic physical infrastructure elements in urban centres. It boasts of very good road surfaces as compared to most urban centres with an ongoing first-class road under construction.

However, the absence of street lights on parts of the street makes night use of the streets challenging. There is a proposal from the municipal assembly to install street lights on the remaining streets. There exist many public schools with few private schools, but lack of maintenance and negligence has made many of the school structures very obsolete and unfit for purpose. This has had negative effect on pupil and student populations in these schools making it difficult to attract prospective pupils and students. The community also has the district hospital which is a very important health facility within the municipality.

Almost all properties rely on electricity from the national grid and about 1% and 5% augment this with solar energy and generators respectively. The community is about 92% accessible by mobile telephones. The connectivity reception is good for all the telecom providers, especially MTN and Vodafone. There is a water treatment plant at Kyebi which taps water from the Brim River to serve to the community. An overhead storage tank also provides a buffer in case of a fault or repair of the plant. Other sources of portable water include the boreholes, wells and direct from the streams.

The community looks generally clean along the main streets and their surroundings. However, a look at the outskirts and pockets between buildings shows lack of proper waste disposal for the community. The upsurge of plastic waste together with the illegal dumping activity is causing local flash floods,

which hitherto was absent within the community. Majority of residents dispose waste in open spaces, open drains and bushes as indicated in Figure 7. There is little or no provision made for persons with disability though there exists an educational institution for the visually impaired. This was evident in both the buildings both public and private as well as open spaces and transport.

Figure 7: A chart showing methods of waste disposal within the communities. Source: Field survey, 2018

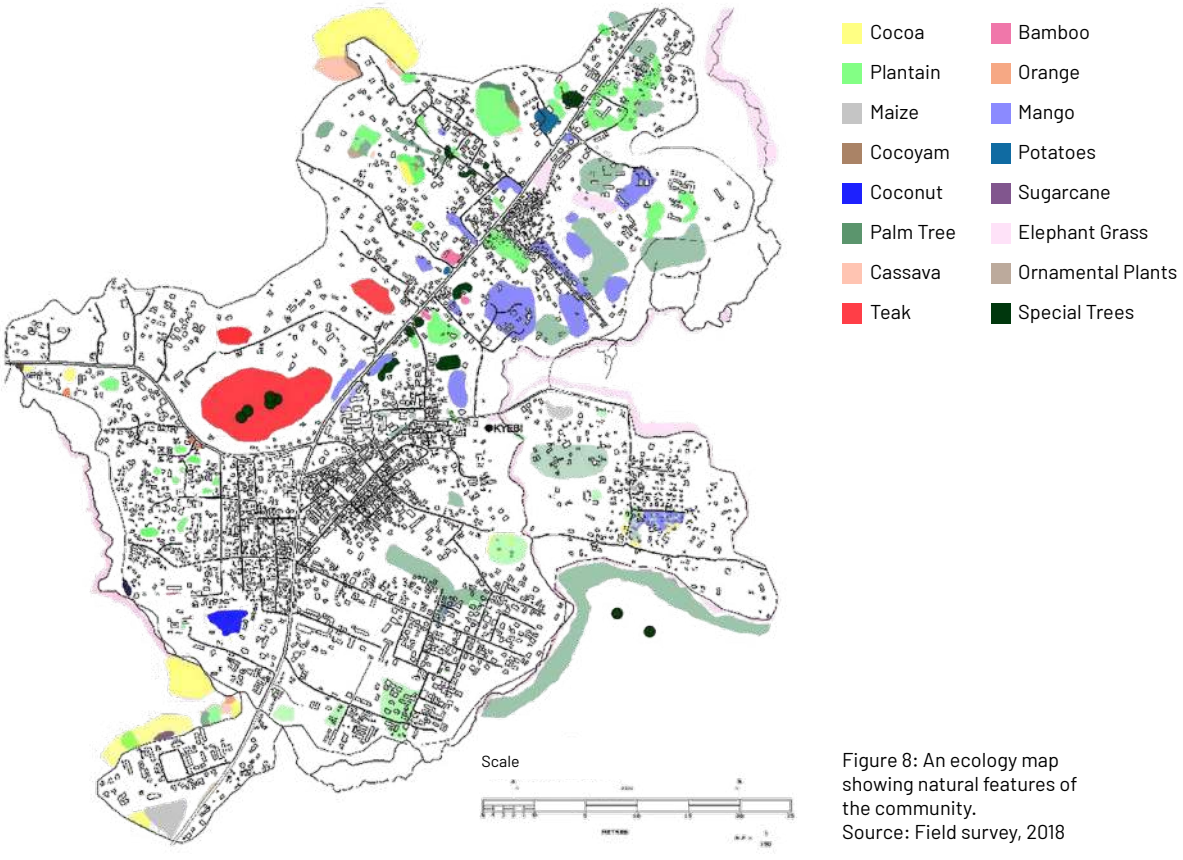


Figure 8: An ecology map showing natural features of the community.
Source: Field survey, 2018

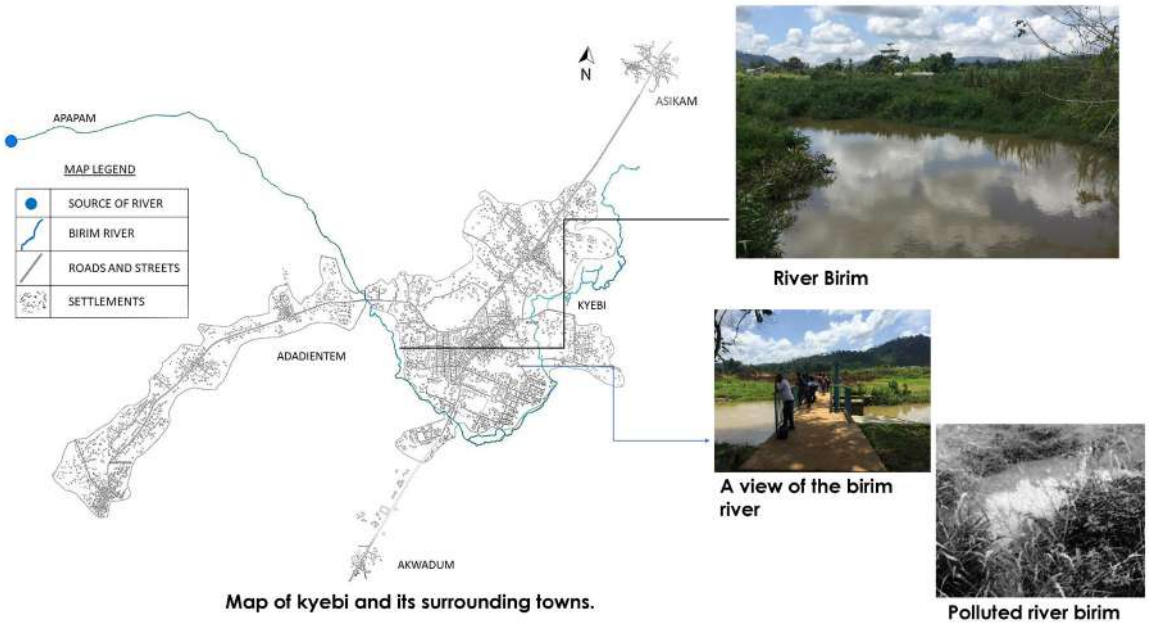


Figure 9: A map showing the flow of the Birim River through the communities. Source: Field survey, 2018

Figure 10 and 11: Aspects of the community along the peripheries of the settlement bounding the forest reserve degraded by illegal surface mining. Source: Field survey , 2018

ECOLOGY AND ENVIRONMENT

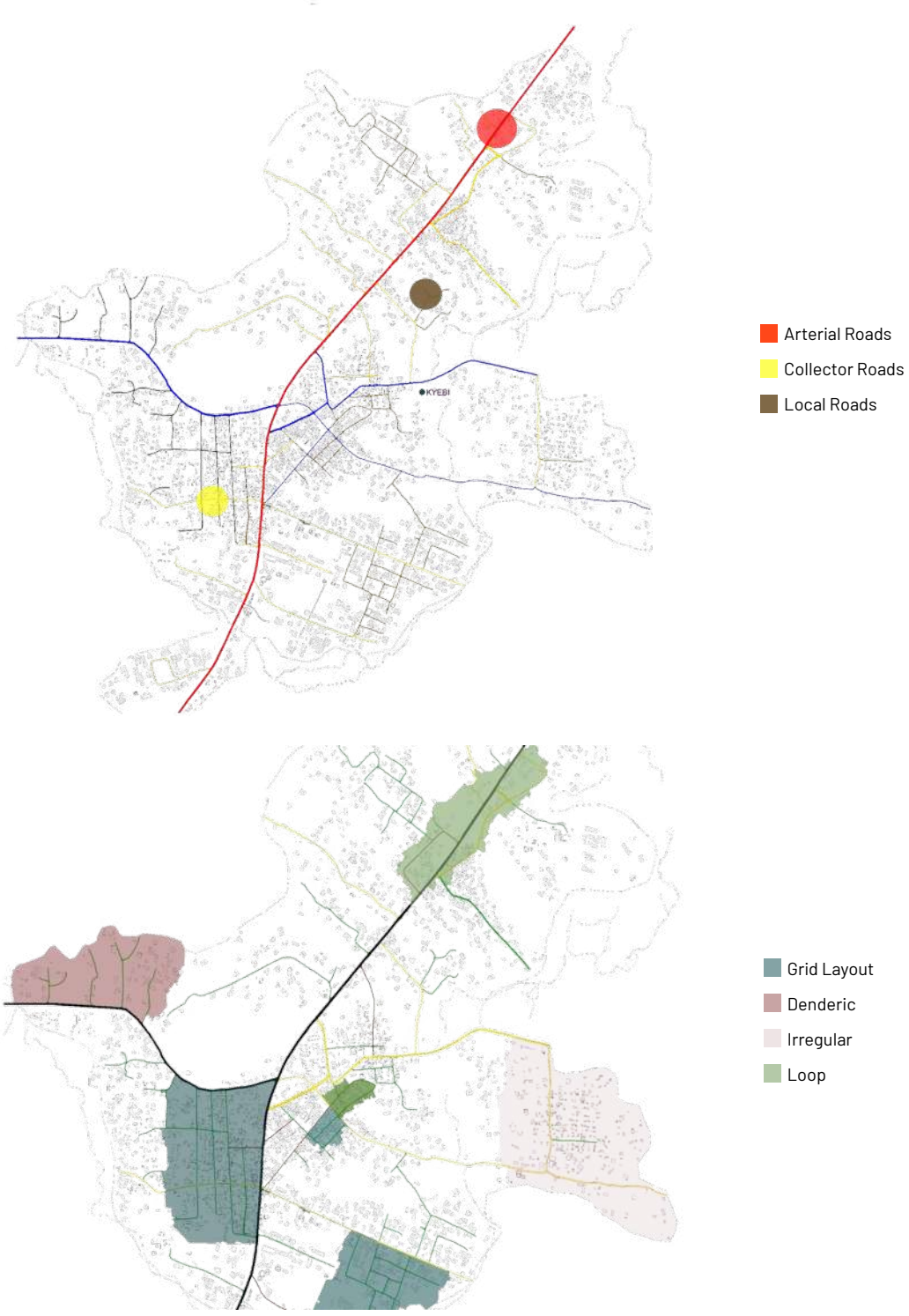
Kyebi and its environs have a very rich natural environment. The presence of the protected forest reserve serving as its boundaries provide a serene micro climate of coolness amid the rainforest and is a habitat for many species. Figure 8 shows the ecological map of Kyebi with the diverse flora within the municipality. These are prevalent in the open spaces and the new town settlements but few in the old settlement.

The landscape is characterised by undulating hilly slopes on mountain ranges between 240 and 300 meters above sea level with soil composition of a silt and clay loamy types. Over 50% of the land area is covered in various vegetation types. Rain falls most parts of the year giving the Birim River a boost as the main source of water supply for the municipality as seen in figure 9.0

The land is fertile for agriculture activities such cash crops like cocoa. The predominant occupation of the municipality as farming. The rich mineral resource base of the land has been protected for years mostly wthin the forest reserve on the Atewa[3] mountain range. However recent activities of illegal surface mining at the fringes of the municipality as well as in the protected forest reserve is threatening the ecological footprint of Kyebi. The presence of illegal mining popularly called 'galamsey' has also destroyed portions of the green cover and the birim river water now requires treatment for use as a source of portable water. (see figure 10.0 and 11.0)

These exposed mining pits have been filled with rain water and poses a death traps for residents.

Figures 12 and 13: Views of urban layout forms within the town centre, Source: field survey, 2018



Figures 14 and 15: Views of urban layout forms within the town centre. Source: field survey, 2018

URBAN DESIGN

The urban landscape exhibit four different forms: Dendric, Grid iron, Irregular and Loop, as seen in figures 12.0 to 15.0. An aerial view of the various sectors gives the visual character which are defined by the road networks and the roof forms.

The chief is the custodian of all lands under his jurisdiction except for agricultural lands which are owned by families and the forest reserve owned by the government. A housing allocation committee sees to the proper planning and allocation of plot or lots to prospective builders at a cost currently between 800 to 2,000 US dollars for residential and commercial activities respectively. Average plot area is 8,000 sq. feet (100ft by 80ft)

The street character is that of a commercial nerve for the community as over 90 percent of all commercial activities are sited along the major roads. These roads are classified into arterial routes or collectors. The absence of signage, crossings, seating, pedestrian routes, accessible paths and street naming makes the roads partly effective. Though most of the roads are paved, the lack of the proper markings make it dangerous for them to be shared by pedestrians and vehicles. Also, the drainage system along the streets are open and often filled with solid waste.

There exist over twenty sites which are potential historical heritage sites and for tourism. It spans across the past and the present times. These are serving as cultural and political edifices showing traces and relics of the past as far back as colonisation of the Abuakwa state. Two landmark buildings are the chief's palace and the municipal chief executive's residence (figure 16 and 17). The latter used to be the administration and residence of the colonial representative of the governor, and later used by missionaries. Other notable landmarks of historical importance include: the old Presbyterian church and the belfry dating back in the 18th century; the old court house; the burial grounds for Ghana's

Figures 16 and 17: Views of chiefs palace and colonial residence within Kyebi respectively.
Source: field survey, 2018

prime minister Dr. J.B Danquah and Sir William Ofori Atta, one of the founding fathers of Ghana's independence from colonial rule; the Kyebi secondary school as the oldest school in the eastern region; and, the school for the deaf.

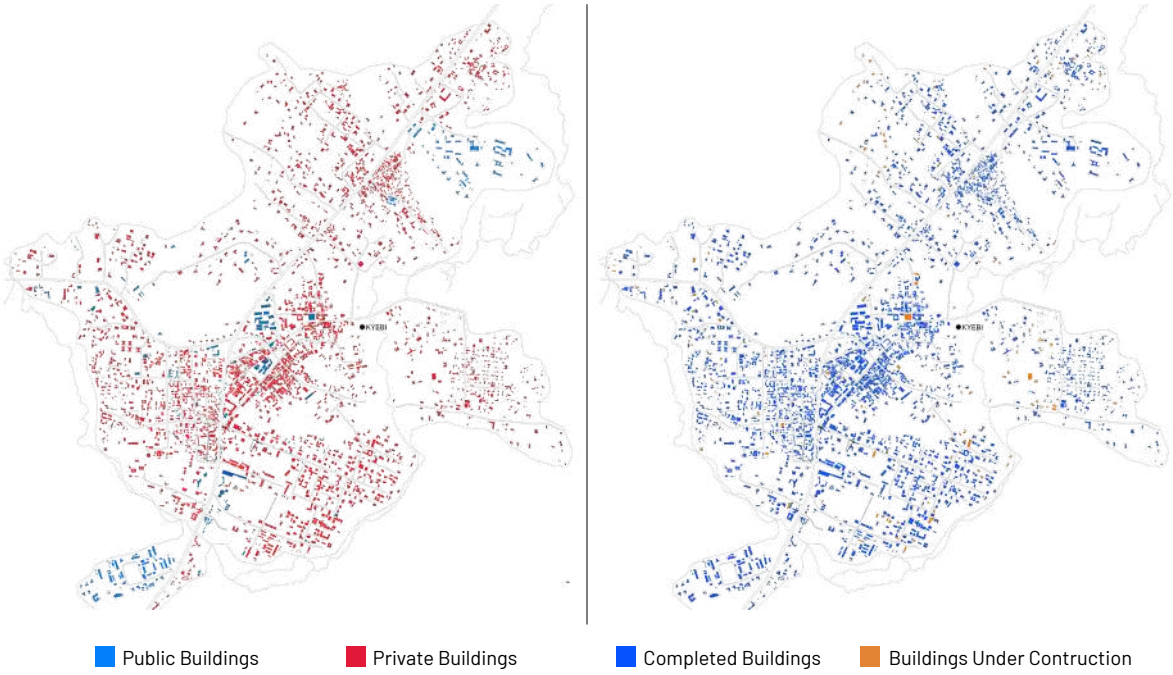
MORPHOLOGY AND COMMUNITY SERVICES

The character of the settlement depicts the mix of the relics of the colonial architecture and settlement planning in the grid iron form and nucleated settlement in an irregular cluster of houses.

The master plan of the town is yet to be updated. (see figure 20.0) The former was used strategically as a form of protection in the olden days. Most building forms are rectilinear and courtyard forms with 95% of the buildings classified as single storey. Concrete and sandcrete are the two most dominant building materials with gable roofs in post and beam construction. The town has been classified into zones with peculiar characters as shown in Figure 19. Zones that are denser can be seen in Akooko, and the Chiefs palace areas which serves as the old town.

Housing densities ranges from 18.2 dwelling units/acre to 8.4 dwelling units/acre at Kyebi and Adadientem respectively. Buildings are spaced between 2.5 meters to 4.5 meters. Population and housing densities decreases as one moves away from town centre towards the peripheries. Emerging settlements are still clustered around main streets, which are also the locations for newer landmarks such as the community library, the new courthouse and the community centre as seen in figure 18.

Figure 18: an aerial drone image of new landmarks springing along the main road- community centre, community library and new courthouse. Source: field survey, 2018.



Figures 19 and 20: maps showing public/private buildings and completed/uncompleted buildings in Kyebi.
Source: field survey, 2018

Open spaces mostly consist of public facilities, mostly classified as educational facilities. Notable open spaces included the durbar grounds in front of the chief's palace, the funeral grounds and the newly constructed football park behind the community library. Other characteristic features are the open spaces which serves as buffer along the major road through the town. These have been encroached with kiosks and temporal structures used for commercial activities.

Most buildings have their longer sides with openings oriented in the north-south direction, which is an indication of conscious design and planning for passive and cross-ventilation. Population density averages 23 persons per kilometre.

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT) ANALYSIS

The study summarized the SWOT analysis (indicated in Figure 23) which reveals a huge potential of internal strengths and external opportunities for the urban future of Kyebi. It is also realised that the few internal weaknesses and external threats must be holistically tackled using both the traditional approach (through the engagement of the chief and his subjects) and the political approach (through proper political direction from the government).

INTERNAL FACTORS

Strengths	**Weaknesses**
The chief as a unifying symbol of the state The chief as the custodian of all lands within the Abuakwa state The rich cultural and political history of the people An array of renowned statesmen and politicians as citizens Rich ecological footprints of the town and its surrounding Rich natural resources The Kyebi town as a seat of the administration for both the municipality and the Abuakwa state is a catalyst for development	Lack of employment and job opportunities is resulting in youth migration Lack of a cohesive resilient plan for the community presents a clear danger for future shocks
Opportunities	**Threats**
Government commercialisation of its mineral resources Potential Positive influence of notable statesmen (e.g. the president, finance minister, and works and housing minister) in physical and policy developments Selected as one of the proposed small and medium city development projects for Ghana by the world bank Has a huge potential to be preserved as a resilient cultural smart city	Over exploitation of its mineral resources by prospectors might lead to forest reserve degradation Attraction of the unregulated small scale miners will lead to land degradation Influx of people due to mineral find will lead to high cost of living due to land grabbing, cost of food and accommodation

EXTERNAL FACTORS

Figure 21: SWOT Analysis of existing data on Kyebi. Source: Authors construct, 2018

PROPOSALS FOR SMART CULTURAL CITY

Kyebi as the capital of the Abuakwa state and a municipal capital is seen as a fast-emerging city due to the associated catalysts driving its growth into the foreseeable future. These catalysts are: 1.) the exploration and mining of its rich natural resource of gold and bauxite: 2.) commercialisation of the economy: and, 3.) the community as a municipal capital of Abuakwa. These factors will bring about population surge as new economic ventures will spring up bringing along people from within and outside the country to live in the city. This poses a challenge to the effective management of the community as pressure will be brought on resources such as land and utilities. A holistic approach to the

master planning of the community will help preserve and promote the culture and future sustainable development of the Abuakwa state. A look at the existing data puts Kyebi as a strong cultural city that will inevitably be moving towards a small to medium smart city. This is possible due to its high level of education and its location with respect to major cities.

The city as a smart cultural city will benefit as Musterd and Ostendorf state

> *'Cities, which want to be innovative, to flourish and to offer wealth and employment to its inhabitants, feel that they have to adopt to arenas in which knowledge and creativity can develop. Culture is often added to this arena, not just as a condition to attract the creative knowledge workers, but also as a major economic sector, intricately interwoven with other sectors of the economy"*
> Musterd S. & Ostendorf, W.J.M (2004)

The future smart cultural city of Kyebi will not only support the economy through direct and indirect job creation but spur innovation in other sectors of productivity and branding, build local capital, develop thinking skills of its citizens as well as enhance patriotism and preservation of culture. To achieve this, the following proposals have been made:

- Preservation of historic sites and monuments for tourism such as old courthouse, the religious grounds of the Presbyterian church, the residence of the colonial administration being used as MCE's residence, the burial grounds of political leaders,
- Areas with resources for creation of industries.
- Provision of new residential areas to accommodate the increasing population.
- Provide eco- tourist sites on mountainous areas.
- Provision of health, educational and industrial facilities in Akwadum, Asikaam and Adadientem to prevent congestion in the inner core of Kyebi.
- Creation of facilities such as restaurants, resorts and hotels to support tourist attractions
- Creation of barrier-free built environment
- Smart management of the community through data collection, documentation and analytics using big data.

A proposed tourism map has been created which serves as both historical and cultural footprints that will seek to inform, preserve and promote the uniqueness of the Abuakwa State.

Figures 22 and 23: Initial Planning of proposed actions. Source: Authors construct, 2018.

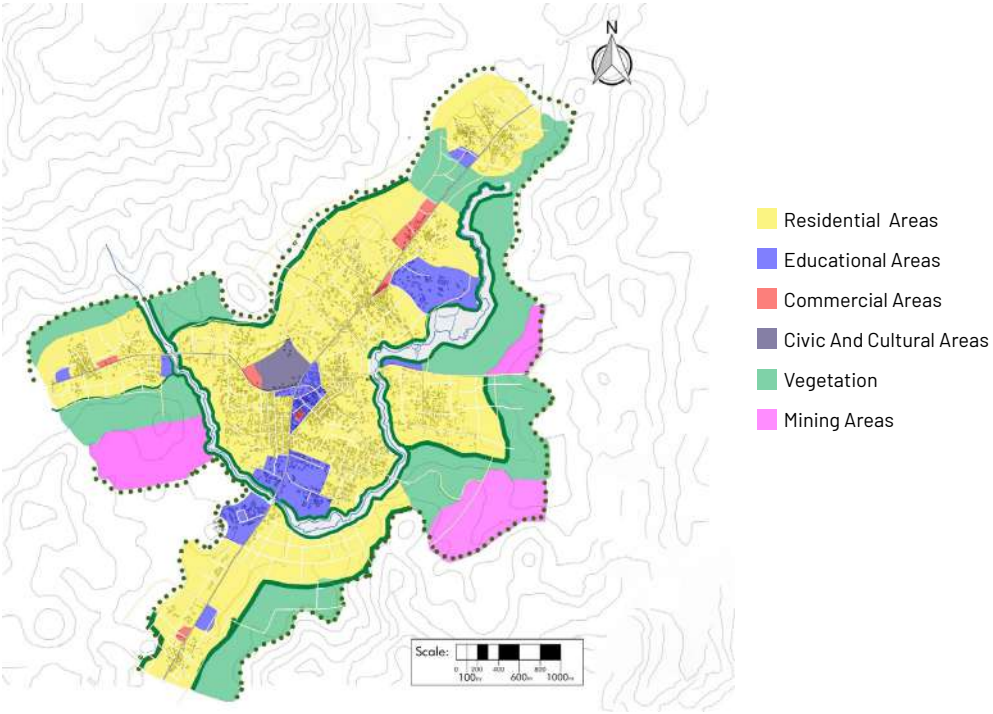


Figure 24: A draft structural plan for Kyebi and its environs as a smart cultural city. Source: Field survey 2018.

CONCLUSION AND RECOMMENDATIONS

The study concludes that:

- Kyebi township is gradually growing into a medium city
- Kyebi exhibits a strong inclination to cultural heritage
- The proposed commercialisation of its gold and bauxite presents both threats and opportunities which calls for a comprehensive structural plan for the sustainable development of the community.

Some of the major projects and recommendations include:

1. The creation of a craft centre
2. The creation of a cultural training school
3. The preservation of Ahenbrono and the chief palace zones as historical sites that needs preservation
4. The creation of extractive industries in gold and bauxite to add value to the raw minerals
5. Creation of a historical /cultural footpath through the old town to link historical landmarks
6. Creation of an eco-tourism park to take advantage partly of the forest reserve to experience the rich flora and fauna of the communities
7. Creation of alternative Smart transportation networks such as the rail transport to link Kyebi to Accra, Kumasi and Koforidua.
8. Creation of ICT hub as an incubation center for software development and maintenance.
9. A digital campus for research and continuous professional education of artificial intelligence and digital solutions
10. An Industrial park with provisions for exhibitions, research and innovations
11. An events center to host conferences on ICT for development as well as digital and cultural interface exploration.

With the aforementioned, it is envisioned that the various stakeholders will mainstream this vision of a smart cultural city in a systematic master plan implementation that will serve as a blueprint for emerging small and medium cities in Ghana and the sub-region.

---

1 This has led to challenges of illegal mining and land degradation.

2 Dating as far back as 1400 AD.

3 also spelled Atima

References:

Abuakwa South Municipal Assembly, (2018). Town and District Planning office of the Abuakwa South Municipal office at Kyebi, Ghana.

Addo- Fening, Robert, (2018). Akyem Abuakwa- 1700-1943; from Ofori Panin to Sir Ofori Atta. Published by Department of History, Norwegian University of Science and Technology, N-7491, Trondheim, and Norway.3rd Edition. August 2018.

Ghana Statistical Service. (2012). 2010 Population and Housing Census. Ghana Statistical Service, 1–117. https://doi.org/10.1371/journal.pone.0104053

Danquah, J.B. (1928) Akim Abuakwa Handbook. pp 22

Kourtit, K., Deakin, M., Caragliu, A., Del Bo, C., Nijkamp, P., Lombardi, P., & Giordano, S. (2013). Smart Cities: Governing, Modelling and Analysing the Transition - Google Books. Retrieved November 10, 2018, from https://books.google.com.gh/books?hl=en&lr=&id=_QOCAAAAQBAJ&oi=fnd&pg=PA196&dq=29.%09Kourtit,+K.,+Deakin,+M.,+Caragliu,+A.,+Del+Bo,+C.,+Nijkamp,+P.,+Lombardi,+P.,+%26+Giordano,+S.+(2013).+11+An+Advanced+Triple+Helix+Network+Framework+for+Smart+Cities+Perf

Mustend S ., Ostendorf W.J.M.(2004) Creative Cultural Knowledge Cities- Perspectives And Planning Strategies; Journal of Built Environment, Pp 189-193.

Ostor, A. J. K., Wang, C., Kalabic, J., Chen, N., Wassenberg, S., Garg, V., & Van den Bosch, F. (2015). Africa Agenda 2063. African Union Commission, 4(1), 97–97. https://doi.org/10.1007/s40744-017-0065-3

UN News Centre. (2015). UN adopts new Global Goals, charting sustainable development for people and planet by 2030. United Nations Department of Economic and Social Affairs. https://doi.org/10.1080/02513625.2015.1038080

Van Noorloos, F., & Kloosterboer, M. (2018). Africa's new cities: The contested future of urbanisation. Urban Studies, 55(6), 1223–1241. https://doi.org/10.1177/0042098017700574

World Bank. (2017). PROGRAM-FOR-RESULTS INFORMATION DOCUMENT (PID) CONCEPT STAGE (Report No.: PIDC118305). World Bank, 0141375, 10. Retrieved from http://documents.worldbank.org/curated/en/892811502460553089/pdf/118305-REVISED-PID-Concept-Stage-Program-Information-Document-PID-P162446-2017-08-08.pdf

World Population Review (2019) http://worldpopulationreview.com/countries/ ghana-population/ accessed on 5th april , 2019.

ISOCARP ACTIVITIES AND AWARDS

YOUNG PLANNING PROFESSIONALS' WORKSHOPS

Figure 1: Setting up for the exhibit at 54th ISOCARP Congress, Bodø, Norway, 2018

Two Young Planning Professionals' Workshops were offered in 2018 as part of the 54th ISOCARP World Planning Congress, one in Bodø (27 September – 1 October) and the other in Kristiansand (24-29 September), Norway. Both workshops were structured to respond to a very timely and challenging vision of "Cool Planning".

NEW KRISTIANSAND

Figure 2: Aerial view of Kristiansand (Picture credits: Sembo.ie)

The New Kristiansand workshop addressed a very timely and complex urban challenge as Kristiansand is in the process of amalgamation with two neighboring municipalities of Søgne and Songdalen. The new municipality 'New Kristiansand' will be operational on January 1, 2020.

Seventeen Young Planning Professionals from ISOCARP and fifty-five master students from the Norwegian University of Life Science (NMBU) in Ås[1], explored the different characteristics and identities of the three municipalities, the transportation, and the communications advantages of the merger as a basis for developing a polycentric city. The guiding strategic principles included a major focus on environmental, economic and social sustainability, climate change and adaptation. Responding to these fundamentals, the workshop results were structured under 5 main themes: Regional sustainability; Regional dynamics; Sustainable mobility and connectivity; Identity; and, Placemaking.

The full report is available at ISOCARP website[2].

BODØ

Figure 3: Bodø view from Moloen (Picture credits: John Echlin)

Bodø is part of the landscape and region called Salten, which comprises nine municipalities. Though a small municipality, Bodø is a dynamic city, where nearly 85% of the population is living in the urban development area. With an approximate population density of 2500 persons per square kilometer, Bodø is Norway's fifth most densely populated urban center, ahead of the larger cities of Bergen, Kristiansand and Drammen.

In 2014, the City Council adopted an overall strategic plan named 'Bodø 2030'. The plan envisages Bodø as an attractive capital in the North by 2030. It also identifies six different, interconnected focus areas, one of which is sustainable city development. The plan also presents planners with an opportunity to reimagine Bodø's urban future and functionality, to rethink connectivity and transport modalities to and from the airport.

Since 2015, the City Council of Bodø has approved numerous ambitious plans, while attracting developers and boosting the city's construction industry. Plans

for new or improved transportation networks, new development areas, expansion of the city core and redevelopment of the waterfront, are in talks. In 2016, another proposal was put forth by Avinor and other transport agencies to relocate Bodø airport to the south of the peninsula for multiple reasons. Having received a nod of approval from the City Council in February 2018, the proposed relocation will not only unlock a significant area of land for regeneration and development but will also be the biggest land-based construction project ever undertaken in northern Norway.

One of the key challenges the city council and Bodø Kommune has before it corresponds to planning for the city's growth in a changing climate while connecting the city with its abundant cultural and natural resources. In this regard, the Bodø Kommune organized and invited 21 young planners from 17 countries, to be a part of the Young Planning Professionals' workshop, having the theme of "Cool and Connected: Planning Bodø through Urban Flows".

Three different yet interconnected projects were completed by the young planners: How to connect the airport with the city; What to do with the open spaces and culture; and, What to do with the waterfront.

The Bodo Report and be found at BUZZ[3].

figure 4: YPP Bodø and Kristiansand, Norway- 2018

Endnotes

1 We would like as well to acknowledge valuable partners for the realization of the Cool planning in new Kristiansand workshop: The Department of global development and planning at the University of Agder; Kristiansand library and Kristiansand Kunsthall; Kristiansand Teateret. As well as Vest-Agder county and the ministry of Local Government and Modernisation for financial contributions. And thank you to Kath Davies, Creative Economy Manager at Kirklees Council, for inspirational talks and exchanges during our workshop.

2 https://isocarp.org/young-planning-professionals-programme/ypp-workshop-reports-publications/

3 https://issuu.com/zeynepgunay/docs/isocarp_bodo_ypps__workshop_report

AWARDS FOR EXCELLENCE 2018

A record number of seventeen noteworthy projects and plans from six countries, spread over three continents, were submitted to the ISOCARP Award for Excellence (AfE) in 2018. The Award recognizes plans in the design phase as well as projects in progress or already implemented and is open to a wide range of professionals and institutions operating in the domain of urban and regional planning. Participants are invited to submit different tools used in planners' daily practice: normative plans, strategic plans, urban projects, programmes, policies, research works, software, smart tools facilitating planners, etc. There are two categories: Grand Award and Merit Award.

The jury for AfE consisted of five experienced professional planners, including – Abdelwehab Alwehab (Iraq), Taru Jain (Australia), Stefan Netsch (Austria), Hongyang Wang (China, AfE Winner 2012), and Siniša Trkulja (Serbia) as the jury president. All jury members worked as a team to evaluate the following entries:

1. Doha City Centre Urban Regeneration: A Narrative of Activating the Heart and Connecting the Veins – Qatar
2. Gamuda Cove – China
3. Green Icons – Netherlands
4. Integral Guidelines for Urban Development for Russian Cities – Russia
5. Kunming Wanda City Urban Planning – China
6. LOCK18 Master Plan – Canada
7. "My Street" Program for Moscow streets redesign – Russia
8. Ningyang strategic development plan (2013-2030) – China
9. Northern Zone, Shougang Park, City of Beijing – China
10. Svobodny City – Russia
11. Tagus Platform – Portugal
12. Taihu Lake Region: Ecological Space Planning and Implementation – China
13. Urban Design in Enshi, China: The Win-Win of Nature, Culture and Economy in Poverty Minority Area – China
14. Wuhan East Lake Greenway Implementation Plan – China
15. Wuhan Action Plan of Tourism Development in the Yangtze & Han Riverfront – China
16. Wuhan Master Planning of Sino-French Wuhan Ecological Demonstration – China
17. Wuhan Sponge City – China

The evaluation process was difficult due to the number of entries and their overall high quality. Also considered by the jury were: geographic context of project; socio-economic and political context; people and cultural significance; challenges and issues related to the projects; themes and vision; and, the project scale which varied from national strategies to urban projects.

After careful consideration and deliberation, the judges awarded the Grand Award to two projects- coincidentally both at an urban scale, and the Merit Award to three projects- one at urban and two at regional scale.

GRAND AWARD FOR EXCELLENCE WINNERS

"MY STREET" PROGRAM FOR MOSCOW STREETS FOR MOSCOW RECREATION AND TOURISM STRATEGY – GRAND AWARD WINNER

In 2014-2017, Strelka KB provided consultancy support for the Moscow City urban renewal "My Street" programme, that is part of the Moscow government's Recreational and Tourism Strategy.

According to the programme, the entire central part of Moscow was to be transforms into a huge public space. During the period between 2014 and 2017, many streets were reconstructed with energy-efficient streetlights and trees planted. In addition, the work with historical heritage and the new life of urban spaces was carefully considered.

Based on a complex and comprehensive analysis of over 3,500 streets in Moscow, the programme provides a systematic approach dealing with a range of urban challenges. On the strategic level, the 'Guidelines for Urban Improvement' are seen as a driver of fundamental changes in the city. At the operational level, the 'Set of Design Solutions' - based on five key principles- diversity, safety, comfort, identity, and ecological performance - offers innovative instructions for implementation. As part of the Moscow Recreational and Tourism Strategy, the "My Street" is considered an example of outstanding importance for transforming the image of a historical capital for the generations to come. This project has also initiated renovation and valorisation of public spaces in other Russian cities.

Further details of "My Street" programme is available at ISOCARP website[1].

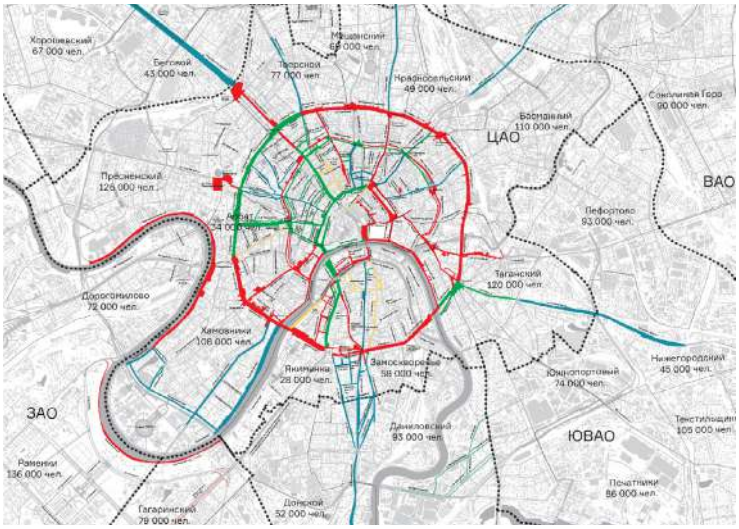


Figure 1: Scope of streets reconstructed as part of the "My Street" programme in Moscow, Russia
(Source: LLC Strelka KB, Russia)

WUHAN EAST LAKE GREENWAY IMPLEMENTATION PLAN – GRAND AWARD WINNER

Wuhan East Lake Greenway is an integral part of the public space of the region. Its 100 kilometres length runs through Wuhan's important functional areas and connect important public spaces such as universities, cultural centres, lakes, hills, and suburbs.

A core feature of the East Lake Greenway Plan is the creation of an online platform for public participation and exploring the ways for the public to contribute with their ideas. The platform was implemented to motivate more people to offer their visions and to make people real decision-makers. This concept of combining physical and digital design worlds has been recognised by the UN-Habitat as the first demonstration project for China's urban public space improvement.

Further details of the Wuhan East Lake Greenway Implementation Plan submitted by the Wuhan Land Use and Urban Spatial Planning Research Center (WLSP), China, is available at ISOCARP website[2].

Figure 2: Planning active places of the Wuhan East Lake Greenway
(Source: Wuhan Land Use and Urban Spatial Planning Research Center (WLSP), China)

MERIT AWARD FOR EXCELLENCE WINNERS

WIN-WIN OF NATURE, CULTURE AND ECONOMY IN POVERTY MINORITY AREA: URBAN DESIGN IN ENSHI, CHINA – MERIT AWARD WINNER

In response to the ecological damage and loss of minority culture caused by the pursuit of rapid economic growth in Enshi, this innovative project revises the original urban development plan and launches a series of urban design strategies to achieve a win-win situation for economic growth, natural protection and continuation of minority culture. The project considers the regional valleys as a particular characteristic in Enshi's landscape form. It thoroughly explored the study area using big data analysis, GIS topographic analysis and site surveying. The project demonstrates the valleys as not only ecologically sensitive areas that guarantee the natural run off connectivity and the biological species diversity, but also a kind of distinctive construction space for the coordinated development of urban and rural areas.

Further details of the project submitted by the Nanjing Southeast University Urban Planning and Design Institute, China, is available at ISOCARP website[3].

Figure 3: Site Plan of Enshi, China. (Source: Nanjing Southeast University Urban Planning and Design Institute, China)

TAIHU LAKE REGION: ECOLOGICAL SPACE PLANNING AND IMPLEMENTATION – MERIT AWARD WINNER

Giving the priority to eco-restoration, the plan for the Taihu Lake Region stresses integrated and inclusive solutions for economic, social, and cultural complexities and conflicts. The plan comprehensively explores the transformation model of sustainable consumption and production patterns using various mechanisms, such as regional Green Heart conservation, trans-regional coordination, multi-functional programmes, legislation, and policies. The participation of public, private and NGO sector, which occurred during the project and took into account of climate adaptation and mitigation and smart and resilient principles, clearly demonstrates the relevance of the planning approach applied.Further details of the Taihu Lake region project, submitted by the Jiangsu Provincial Department of Housing and Urban-Rural Development, Jiangsu Institute of Urban Planning and Design, Urbanisation and Urban Rural Planning Research Centre of Jiangsu and Security Support Centre for Urban Water Supply of Jiangsu, China, are available at ISOCARP website[4].

Figure 4: Taihu Lake Wuxi in Jiangsu (Image credits: Top China Travel)

NORTHERN ZONE, SHOUGANG PARK, CITY OF BEIJING – MERIT AWARD WINNER

The project focuses on the Shougang Park, which is one of the largest urban regeneration areas in China with an extremely rich industrial heritage. The revitalisation of its Northern Zone is a demonstration project, responding to the demands of the 2022 Winter Olympics in Beijing. Consequently, the innovative plan has three development pillars – first, to drive Beijing to achieve sustainability, second, to be climate resilient, and, third, to effectively respond to economic transformation.

The project encourages innovative adaptive re-uses of the industrial heritage and the adoption of sustainable and climate friendly (mitigation and adaptation) planning goals at urban district scale. It uses the 2022 Winter Olympics Games as a strategic catalyst to generate economic transformation and as a vehicle to provide accessibility of winter sports and high-quality open spaces for the people after the games.

Further details of the Northern Zone, Shougang Park project, submitted by Beijing Municipal Institute of City Planning & Design (BICP), the Shougang Group, city of Beijing and Joyful Cities Consulting Inc., is available at ISOCARP website[5].

Figure 5: The Northern District Planning of Shougang. Source: Shougang Group

Endnotes

1 https://isocarp.org/app/uploads/2018/10/01-Strelka-KB-%E2%80%93-Award-presentation-for-ISOCARP.pdf

2 https://isocarp.org/app/uploads/2018/10/02-Wuhan-East-Lake-Greenway-0914.pdf

3 https://isocarp.org/app/uploads/2018/10/03-Award-ppt-enshi-last.pdf

4 https://isocarp.org/app/uploads/2018/10/04-Taihu-Award.pdf

5 https://youtu.be/-m62s1E7Gz0

UPAT
URBAN PLANNING ADVISORY TEAM

New Hanzheng Riverside Avenue UPAT

An ISOCARP Urban Planning Advisory Team (UPAT) is an international team with five, seven or nine ISOCARP members that includes a Team Leader and a Team Rapporteur, two to four senior planners and two young planning professionals. ISOCARP is able to organise tailor made UPAT workshops for specific locations, tasks and topics and to organise fast response teams. A UPAT workshop takes five to seven days. The UPAT team presents the results to all actors and stakeholders at the last day of the workshop, writes a professional report and presents the results on a dedicated seminar on the ISOCARP annual congress.

The UPAT workshops are amongst the key activities of ISOCARP as they bring the best planning professionals together from all around the world for four to six intensive days for devising creative solutions, strategic advice or both. The ISOCARP UPAT workshops in past few years in countries like Russia, China and Mexico show that there is a strong demand for expertise and independent advice from international teams of planning and design professionals.

ISOCARP UPAT workshops are organized on demand for cities and regions all over the world. UPAT workshops provide added value in complicated situations and environments where seniority and experience as well as unbridled creativity and open-minded visions are required.

A UPAT Workshop has the potential to make a valid and crucial contribution to enhance awareness, to develop spatial policy strategies and to stimulate a set of integrated activities that would help the city or region to become more liveable, sustainable and, at the same time, generate more tenable economic activities.

The objective of this UPAT is to think 'out of the box' and to develop simple, practical and original solutions that improve the quality of life in the city or region. These solutions must be implementable and translated into reality within the next five years.

WUHAN PLACEMAKING WEEK, CHINA. DESIGN CHARETTE 7-8 DECEMBER 2018

WATERFRONT PLACEMAKING – SHAPING BETTER PUBLIC SPACES

As part of the Wuhan Placemaking Week, a team of experts recruited across ISOCARP's global network contributed to placemaking by a creative Design Charette on the development of 'New Hanzheng Riverside Avenue'. The area covers 900-meter long riverfront coastline at the confluence of Hanjiang and Yangtze rivers. Traditionally, the Hanzheng Avenue was a place of commerce and diversity at the confluence of the Yangtze and the Han rivers, gathering people from every corner of China. However, due to the urban transformation of last century, the area just became an overburdened and crowded space, with wide streets and robust dijks along the shoreline.

Launch of China Placemaking Network in Wuhan, China

The municipality's vison is to re-create an urban core, characterized by global trading, finance and tourism. The Design Charrette Team designed new strategies for intervention at the city, district and street-level, bringing back the old spirit of the two rivers and making Hanzheng a new place of meeting and exchange. The main challenges faced were related to the integration of the historical sites into the new proposed urban context, the balance between flood protection and accessible riverfront, and how the rivers and landscape could connect the new avenue with the rest of Wuhan.

During the inspiring Wuhan Placemaking Week, ISOCARP had the honors to co-organize and lead one of the Weeks' sub-themes: Waterfront Placemaking. This sub-theme focused on creating better public spaces along Wuhan waterfronts, with as a case study, a Design Charrette on the New Hang Zheng Avenue at the confluence of Han and Yangtze River.

Wuhan, like other Chinese cities, has grown at tremendous speed, especially since the country's economic rise in the past 40 years. China is entering a new phase: old functions cannot meet the requirements of new urban development and thus improving the urban public space, by means of placemaking, has become central to urban renewal. But placemaking in China is more than just beautifying cities. It is about creating new collaborations between officials, professionals, and communities.

The final presentation of the Design Charrette results began with addressing on of the burning issues in the development of public spaces – how to manage gentri-

Revitalization of the Hangzheng Avenue District, with respect to heritage

fication the right way. The next important issue discussed was how to pursue inclusive and sustainable growth strategies through placemaking. The main conclusion on these two starting points was at the same the main framework for the future development of the Hangzeng District and the New Hangzheng Avenue – create places to enhance the existing social, cultural, economic, and natural characters.

In the Hankou area, the Design Charette team identified three strategic interventions, which would ground balanced development: improve mobility, support new creative economies, and establish waterfront as a place for everyone.

Without integral measure in the wider context of the Hangzheng Avenue, there will be no efficient placemaking within the district itself. Some of these measures introduce traffic sectors for motorized traffic, others re-imagined the Quingchuan 'Rainbow' Bridge as a green link across the Han River. Other integral measures presented complex actions in terms of urban mobility, spatial connectivity, local identity and landmarking for the district.

Regarding local economic development, participants took the dense network of bulk markets, logistic centres and small businesses in Hankou as their starting point and explored how new, creative economies could supplement livelihood opportunities. Keeping Wuhan's unique identity and heritage and balancing it with the ambitions to become a world-class city can be helped by placemaking strategies. The team made an important contribution to frame waterfront placemaking in the New Hanzheng Riverside Avenue as an opportunity to utilize the rich socio-economic and cultural values in the district.

Just by scratching the surface of the diverse cultural and social assets in this area, the Design Charrette team mapped out a customized design for different urban blocks. The design reflected team's placemaking principles such as green, permeable, walkable blocks and streets. The vision does not only call for redistributing density or diversifying building typologies. It also enlarges the focus on the confluence and the river edge to include the wider neighbourhood. Consequently, the team envisioned a Wuhan Central River Park that would connect not only the local socio-economic and cultural places to the waterfront, but also both shorelines of the Hun river via the 'Rainbow Bridge', which are otherwise disconnected.

Waterfront placemaking and design strategies are most visibly at the Wuhan Central River Park, which was suggested as a new public park at the junction of the Jangtze and Hun rivers. The River Park would not only complete the Y-shaped network of urban green spaces at the left bank of the Hun River, it also integrates both riverbanks into one entity. By creative landscaping the robust dykes could be reclaimed for waterfront placemaking that respond to water-level rise without compromising on its crucial function as a flood protection. The

Design Charrette team also recommended mixed land use and permeable block design, which would lend the new business district diverse characters and allow for various activities.

And, by planning with water, rather than against, the River Park would add new urban functions to the city and Hankou would gain a distinct identity as a vibrant and attractive center of Wuhan. This vision for a River utilized landscape design to strengthen the connections between Hang Zheng District and the River Park, and create new nature-based solutions for the flood-prone riverbanks of both Han and Yangtze rivers.

Further details of the UPAT are available on ISOCARP website.

UPAT SUZHOU, CHINA. 15 – 22 NOVEMBER 2018

PANMEN-CHANGMEN NATIONAL CULTURE PARK

Between 15th and 22nd of November, ISOCARP's Urban Planning Advisory Team (UPAT) was invited to give a workshop on 'Panmen-Changmen National Culture Park' in Suzhou, which was well received by both the Chinese and the English-speaking media. Recruited across our global network, ISOCARP members shared their international expertise on urban renewal, cultural heritage, and public space with their Chinese colleagues from Jiangsu Institute of Urban Planning and Design and the Urban Planning Society of China. The UPAT team was working on the design and planning perspectives on the cultural-historical landscape of the Grand Canal, including its importance to the city of Suzhou through the famous inner-city canals and classical gardens.

At the opening seminar, titled 'Urban Canals and Waterfronts', UPAT experts presented several elucidatory cases from New York City, Copenhagen, Berlin, Seoul, Dubai and elsewhere, which illustrated six principles for waterfront planning:

1. Link land-water uses and activities
2. Preserve, connect and frame open-space
3. Optimise public shoreline access
4. Understand the shoreline environment
5. Envision specific waterfront urban form
6. Consider the changing climate

In the following days, the team applied these principles to the waterway in between Panmen and Changmen, which are two important nodes at the historic city along the Grand Canal's Jiangnan section. The goal of the workshop was to focus on the overall planning and urban design aspects of these areas – about 3 km2 – with emphasis on the historic renewal and cultural revival efforts. More specifically, participants were investigating the legacy of the Grand Canal from various points of view, including how to combine historical and cultural protections with the functions of the modern city, as well as how to position Panmen as a cultural landmark that could drive the revitalization of the wider area.

The strategies, proposed by the UPAT team, responded to three key planning challenges that they identified on site: identity, continuity and connectivity of the canal.

First, the central question to the identity of the canal was how to link its past to its future. Although the area is rich in local and national heritage sites, they are not always protected and highlighted to the public. Therefore, ISOCARP members suggested strategic interventions aiming at heritage conservation and exhibition, while adding new characters by cultural venues that host art and fashion design programs.

Second, because of its divided spaces and use, the canal cannot offer a unified experience and perception to the public, which raised the question of continuity. Creating green landscapes and on-water activities, moreover, eliminating physical and management obstacles were all solutions that the team put forward in order to establish continuous walking along the waterway.

Lastly, future development plans will have to consider how to connect the

Brainstorming for innovative Grand Canal heritage renewal strategies by the UPAT experts

canal to traditional, residential areas in the adjunct neighbourhoods. To get on with revitalisation, the advisory team recommended enhancing the entrances and accessibility of the area, opening new public spaces, and connecting pedestrian routes to create flows and a positive waterside experience for visitors and residents alike. By combining metro stations and water transport, new transport hubs could also improve the canal's connectivity.

For making the specific design vision of the Panmen section, covering 0.2 km^2, the UPAT team began withdrawing out the unique qualities of the area: its strategic position at the edge; the historic Wumen Bridge and Panmen Watergate; a sense of gateway from past to future; and being an icon of the canal culture in Suzhou. Suggested planning interventions, therefore, involved anchoring Panmen's identity in the city's canal culture, while linking people with its physical environment and increasing the opportunities for social connections. In addition, when people visit the area, they should look and feel the water, nature and culture in one overall experience.

The creation of the Grand Canal National Cultural Park coincides at a time when the demand for open space, parks, health and recreational activities of all kinds are providing new impetus for city revitalization around the world. As more and more people live in cities, the contact and benefits of being close to nature are becoming more and more remote. Providing access to nature in an urban environment can foster greater mental, physical health and wellbeing. Physical activities, recreation and sports in natural settings can be positive anecdotes to the stresses of city life. It is also a well know design factor that the presence of water in green spaces can have a calming and restorative effect. By re-envisioning the role of water in Suzhou, through reinventing the canal network as part of a continuous blue-green infrastructure and activating the resulting parks and waterways with new programs promoting physical health and mobility, the quality of living and the resiliency of the city will be significantly improved.

Further details of the UPAT are available on ISOCARP website.

URBAN VISION WORKSHOP, CURACAO. 12-16 NOVEMBER 2018

TRANSFORMING URBAN CURACAO - COMMUNITY AND EXPERTS VISIONING FOR LOCALIZING THE NEW URBAN AGENDA

During the Planning Week in Curaçao, a group of local and international planning experts – including three ISOCARP members – developed ideas for a new vision on how to localize the New Urban Agenda to the small island state. The Planning Week was a production of the Curacao Ministry of Spatial Planning and the United Nations Office for Project Services, in collaboration with the University of Curacao, ISOCARP and UN-Habitat.

The expert-based workshop was the last step of the process of adaptation of the New Urban Agenda to the local context in Curacao between 2017 and 2018. The process - with involvement of communities, citizens, stakeholders and experts - generated meaningful input for the policy making process to transform urban Curacao. The results are summarized in a report published on February 2019 and provide some clear indications to the Government of Curacao for its future spatial planning initiatives, supporting the development of resilient infrastructure on the island and generating social and economic progress. Ranging from policies to concrete projects, from urban squares to high quality public transport, the suggested interventions, eventually, contribute to an improved quality of life for the inhabitants of Curacao.

Details of the workshop can be accessed at ISOCARP website.

Transforming urban Curacao UPAT

UPAT GUANGZHOU, CHINA. 3 – 10 JUNE 2018

GUANGZHOU HISTORIC AND CULTURAL CORRIDORS

The old town of Guangzhou has a rich heritage with districts, islands, parks, waterways, buildings and a large variety of backgrounds, stories and identities. Nevertheless, many of these places are currently isolated and would require a better context and better connections. The city of Guangzhou has launched the program of 'Most Guangzhou' for its Historic and Cultural Corridors to improve the accessibility and identification of historical resources as well as the environment along the corridors. The strategy is to design a series of unique pedestrian routes that connect the most historical and traditional buildings, streets, parks and neighborhoods.

The Guangzhou Urban Planning & Design Survey Research Institute (GZPI) has invited the UPAT to collaborate in the assessment and connection of the historic urban resources of the city, accelerating the functional dispersal, optimization and upgrade along the corridors. At the same time, the other task was to improve the microclimate and environmental quality in the old town, in order to make a more sustainable community in a city with a renewed, desirable habitability.

UPAT experts working on the assessment and ideas for the Guangzhou Historic and Cultural Corridors

Further information on UPAT Guangzhou, China can be accessed at ISOCARP website.

UPAT experts working on the assessment and ideas for the Guangzhou Historic and Cultural Corridors

UPAT DURBAN, SOUTH AFRICA. 29 APRIL – 5 MAY 2018

INNER CITY FINANCIAL URBAN DEVELOPMENT MODELS AND FUNDING

The eThekwini Municipality, which Durban is part of, has adopted a Spatial Framework Plan and Regeneration Strategy to enhance and stimulate the urgently needed social and spatial transformations of the Durban Inner City, by creating a vibrant, liveable and walkable city center. The Plan was also presented in 2016 during the 52nd ISOCARP World Planning Congress.

ISOCARP was invited by the eThekwini Municipality to select a team of experts in order to support the local team in packaging parcels of government land to facilitate investments by means of Public Private Partnership and other models of cooperation. Within the 200 hectares of the Durban inner city in need of redevelopment, the task of the UPAT was to focus on two strategic precincts, assisting in the design of the implementation process and financial cooperation models for their urban transformation. The first precinct was the Centre, where the objective was to transform it in the primary civic precinct of the city, a mixed-use area with a variety of cultural facilities. The second precinct was Warwik, and the goal was to develop more residential accommodations, including affordable public housing, upgrade the quality of public spaces and preserve the vibrant character of the area.

Further information on UPAT Durban, South Africa, can be accessed at ISOCARP website.

Experts for the UPAT Durban, South Africa

UPAT NINGBO, CHINA. 15 - 21 APRIL 2018

NEW IDENTITY AND URBAN RENOVATION OF THE XINMALU HISTORICAL DISTRICT

Ningbo is one of the busiest trading ports and serves as the second Chinese harbour after Shanghai. Today and in the coming decades, Ningbo is one of the key cities in the 'One Belt, One Road' initiative that will boast international trade and cultural exchange. The Ningbo Urban Planning and Design Institute (NBPI) has invited ISOCARP to select a team of experts in order support the visioning process for the new identity and urban renovation of Ningbo's Xinmalu Historical District. The ambition of NBPI is that Xinmalu Historical District becomes an example of urban renovation and ecological restoration, improving both urban functions and living conditions, making use of potential spatial, social, cultural, ecological and economic values.

The Team dealt the concept of "living heritage", developing a set of recommendations and actions for detailed urban design improvements in Xinmalu District. The recommendations and actions fall into four different categories: strategic long-term development, the optimization of accesses and pedestrian traffic, the introduction of landscaping measures to introduce new qualities in the public spaces, and the combination of heritage architecture with new functions to boost the local economy.

Further information on UPAT Ningbo, China can be accessed at ISOCARP website.

Experts for the UPAT Ningbo, China

GERD ALBERS AWARD BOOK REVIEW
BY ANA PERIĆ

UNDERGROUND SPACES UNVEILED: PLANNING AND CREATING THE CITIES OF THE FUTURE

BY HAN ADMIRAAL AND ANTONIA CORNARO

(ICE Publishing, 210 pages, $77 Amazon.com)
This book was awarded the ISOCARP Gerd Albers Award in 2018

Faced with unprecedented environmental threat, rapid urbanisation and rising urban footprint levels and, at the same time, constantly aiming at improving the liveability indicators, cities of today must find a "modus operandi" to ensure their resilience. In reducing urban sprawl and coping with extreme density, the concept of underground space development seems an essential tool to improving the urban environment.

In their book, *Underground Spaces Unveiled: Planning and Creating the Cities of the Future,* Han Admiraal and Antonia Cornaro successfully elucidate all the challenges, opportunities and benefits of 'groundscapes' development. Revolving around the targets such as compact city form, energy efficiency and allocation of new urban functions, the authors succeed in promoting underground space as a crucial component for creating the cities of the future. They do it in a highly systematic and comprehensive manner: first, they cover not only urban planning and design, but also other aspects of underground space use like engineering, project management, economics, property issues, and geology; furthermore, the authors include a wide variety of illustrative case studies from all around the globe, to, finally, encompass historical paths, present insights and future prospects for resilient built environment.

Structured into ten chapters, the book addresses several key issues relevant

for promoting new paradigms for urban underground space. Introductory chapters place an emphasis on various types of dialogue needed between surface and subsurface, between the representatives of social action, and between humanity and nature. 'Think deep' approach, as proposed by the authors, makes clear that different underground layers call for specific policies and planning regulations, which can be formulated only in a participatory planning process. They argue that cross-disciplinary collaboration, resulting in innovative multi-use solutions, makes the underground space a true urban asset that helps secure sustainability and liveability of our cities. Finally, they contend that understanding the relationship between built and natural environment is critical to achieve sustainable urban underground development. To do so, the authors deploy a multi-dimensional approach identifying the suitability of the surface, impact on ecosystem serviced, and interaction with underground structures as key steps preceding the initiation of underground space development.

In reflecting upon the history of underground urbanism, the authors present some of the most exciting underground space projects of the 19th and 20th centuries, including the Semmering Railway, the Channel Tunnel, the Bosphorus Tunnel, the Øresund Tunnel, Haussmann's City of Light, and Le Corbusier's Plan Voisin, among others. Nevertheless, they clearly recognise the 21st century as the 'age of the underground': underground space is more than a pure urban service layer as its networks and basements are complementary to the urban functions at the surface. The authors also discuss how modern projects can be a key to achieving resilient future cities – the ones adaptable to chronic stresses and sudden shocks. By clever use of underground space, it is possible to create new blue and green areas at the ground, while simultaneously reducing urban footprint and urban heat island effect (to mitigate persistent challenges of dense urban fabric) and creating additional capacity for storm water basins, as a response to unexpected accidents.

Observed from the spatial design perspective, the authors clearly go beyond a 'conventional' use of subsurface as the service layer. To understand complexity of designing the 'groundscapes', four main principles are offered: spatial legibility, access and mobility, flow and usage, and spatial control and surveillance. Once translated into real world, these principles emphasise accessibility and the variety of urban functions, consequently making the subsurface vibrant, appealing and liveable also off-hour. Such underground spaces become a crucial part of the urban pattern, complementing and, sometimes, even completing the surface.

Of particular note, chapter 5 presents 'groundscapes' observed through the lens of the Sustainable Development Goals. The authors claim that smart use of

subsurface addresses the following goals: zero hunger; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; sustainable cities and communities; and, climate action. In practical terms, including underground space in spatial policies or strategic plans means an integration of several layers: people (social structure and behaviour, labour productivity); flows of energy, water, waste, air; buildings; public space; and, various types of infrastructure. This demands pluri-disciplinary and usually multi-sectorial approach. The authors contend that urban planning and planners facilitate the process of reconciling the perspectives of architects and designers, engineers, ecologists, geologists, and transport planners, but always 'building valued underground spaces for people'.

The authors further discuss governance of underground space, explicitly highlighting the land ownership and legal challenges, among others. As for regulating land ownership, the authors draw a parallel between surface development (limited in extending upwards) and subsurface development (limited in extending to the centre of the Earth). In terms of legal issues, the authors promote the principle of tort, whose use and interpretation is, however, highly dependent on a certain legal family. More generally, the adequate governance mechanisms for 'groundscapes' include both public and private sectors, often manifested in innovative forms of standard public-private partnership, e.g. control of business lobby groups and/or involvement of the general public and stakeholders affected by the outcomes of subsurface use. Finally, the authors wisely highlight the importance of political will that cannot be underestimated in underground projects, which usually become a symbol of a political leadership.

Written in clear language, free of jargon and technical terms, and reflecting diverse expertise of its authors, the book is accessible to a wide audience than just professional circles. The book is also directed towards decision-makers as inevitable actors in realising urban development of public interest. Moreover, by combining conceptual overview with compelling case studies, this book has the potential to raise awareness about 'groundscapes' to future generations of urban planning professionals, as well as those in related disciplines, and paves the way for advanced educational or professional development programmes. Finally, it serves as a basis for new ideas on underground space development as a mechanism for resilient urban future.

Dr. Ana Perić, educated as architect and urban planner, works as lecturer and senior researcher at the Institute for Spatial and Landscape Development of ETH Zurich. Devoted to exploring spatial planning for development, she has participated in several projects on various topics: from transnational cooperation to brownfield regeneration initiatives. Her current interests revolve around planning cultures and territorial governance in Europe.

ABOUT THE AUTHORS

AKBAR, RIDZKI JANUAR

Ridzki Januar Akbar is an Indonesian urban planner, presently working as a junior housing specialist at National Slum Upgrading Program of the Ministry of National Development Planning Indonesia, in cooperation with the World Bank. Ridzki is also the founder of Panakota, a podcast channel which focuses on the urban culture and development issue. His interests include urban planning, housing development, land management, industrial estate planning, and participatory planning

ALRAOUF, ALI A.

Prof. Ali A. Alraouf focuses on research within the domain of theory, criticism and creativity in architecture and urbanism. He was a visiting scholar at the University of California at Berkeley, USA, and has published more than 105 journals refereed papers, critical reviews, essays, in addition to books and book chapters. He has delivered lectures and presentations in over 25 countries and has also been invited to present his research works at international institutions such as the University of Oregon, Illinois Institute of Technology, Drury University, Cambridge University, University of Seoul, Malaysia International University, University of Belgrade, and American Universities in Beirut, Sharjah, Kuwait and Cairo. Alraouf is the recipient of a number of international teaching and research awards including Best Research Paper in IASTE Conference 2018 and Best Book Award by the international society of urban and regional planning in 2018. Presently, Alraouf is the Head of capacity building, training, research and development unit at the Ministry of Municipality and Environment (MME) in Qatar. He is also a visiting professor at HBK University in Qatar Education City, and the leader of Green Urbanism and Planning Group at Qatar Green Building Council (QGBC).

BARROS, ANA CRISTINA

Ana Cristina Barros has over 25 years of experience working in sustainable development in Brazil, expanding her scope of work to Latin America over the past five years. She has worked in technical and executive leadership for the non-government sector, including corporate and government relations. As The Nature Conservancy's Director for Smart Infrastructure, she provides strategic vision for regional efforts to balance development and conservation. During 2015-16, Ms. Barros served as National Secretary of Biodiversity at the Brazilian Ministry of the Environment. She holds a degree in Ecology from the Federal University of Rio de Janeiro and studied public policy at the University of Indiana.

BIERBAUM, MARTIN A.

Martin A. Bierbaum's academic background includes graduate degrees in political science, city and regional planning, and a law degree. In 1987, Dr. Bierbaum was asked to serve as Assistant Director of the New Jersey Office of State Planning. In that capacity, he was a major contributor to the State Development and Redevelopment Plan (SDRP). In 1999, Dr. Bierbaum became Special Assistant to N.J. Department of Community Affairs (DCA) commissioner, responsible for SDRP implementation. During this period, Dr. Bierbaum served as DCA representative on the State Planning Commission. In 2002, he joined the McGreevey administration's Governor's Policy Office responsible for Smart Growth. Dr. Bierbaum was founding director of the Municipal Land Use Center at The College of New Jersey (MLUC @ TCNJ) in 2004. Among his special projects at that Center was a re-write of the SDRP's third iteration. Dr. Bierbaum became Associate Director of the National Center for Smart Growth (NCSG) at the University of Maryland in July 2009. While there he consulted on Maryland's state plan. For his work on the SDRP, Dr. Bierbaum received lifetime leadership awards from the American Planning Association – N.J. Chapter (2007); and the New Jersey Planning Officials (2010). Dr. Bierbaum remains a senior fellow at the NCSG.

BOLAY, JEAN-CLAUDE

Jean-Claude Bolay is Director of the Cooperation & Development Center (CODEV) of École Polytechnique Fédérale de Lausanne or EPFL and Professor of urban development at the Faculty of Natural, Architectural and Built Environment.
By training, he is a political scientist, awarded by the the University of Lausanne. As a PhD candidate, he worked for 2 years at the Colegio de Mexico, in Mexico City (1982-83) and the Center for Latin American Studies at the University of California, Berkeley (1984). From 1986 till 1989 he was a senior staff of the Swiss Agency for Development and Cooperation working on a slum upgrading project of the World Bank and Cameroun Government- in Duala, Cameroun.
With the EPFL he has served as a leader of urban development projects in select cities of Bolivia, Argentina, Cuba, Ecuador, Vietnam, to name a few. Since 2001, he serves as the director of the cooperation at EPFL, heading a team of 25 collaborators. Jean-Claude has published more than 60 articles and edited several books on urban issues, development and scientific cooperation in developing countries. Presently, he is also working in the capacity of Director of the UNESCO Chair Technologies for Development- coordinating five International conferences on the subject.

BRIAR, DANIEL

Daniel has extensive experience in the design of roadway, intersection, rail-trail, bridge, culvert, site design, and Maintenance and Protections of Traffic (MPT) schemes. Assignments include general highway design, roadway rehabilitation, structure replacements, site layout and grading, intersection geometry and signal design, utility coordination, resident engineering, construction support services, environmental processing, and construction estimation. Daniel also maintains an intimate familiarity with all aspects of cultural resource impacts, environmental permitting and approval requirements. Experience also includes consummate proficiency of multiple design programs, while incorporating the latest AASHTO (American Association of State Highway Transportation Officials) and NYSDOT (New York State Department of Transportation) standards.

CAIRNS, STEPHEN

Stephen Cairns is an architect, writer and teacher whose work concerns with the interaction of buildings, cities and society. The geographical focus of much of his work is megacities of Asia such as Jakarta, Dhaka, Kolkata, Chengdu and Shanghai. His writing tackles theoretical aspects of urbanisation from an Asian perspective (3-dimensional cities, urban pluralism and technological convergence, urban-rural systems, kampung urbanism). His design work focusses on projects such as the 'Tropical Town', a test bed for decentralized technologies (rainwater harvesting and energy generation systems, productive landscape and mosquito traps, incremental housing types) to seed integrated development models for urbanizing Asia.
Cairns is Director of the Future Cities Laboratory (FCL) in Singapore, Professor in Architecture at ETH Zurich, and Principal Investigator of the Urban-Rural Systems research team at FCL. He authored Buildings Must Die: A Perverse View of Architecture (with Jane M. Jacobs) (MIT Press 2014), and edits the Future Cities Laboratory: Indicia series (with Devisari Tunas) (Lars Müller Press with NUS Press 2017 and 2019). His work has been widely exhibited, including at the 2016 International Architecture Biennale Rotterdam (IABR).

CHEPELIANSKAIA, OLGA

Olga Chepelianskaia is an international sustainability expert and the founder of UNICITI. She specialises in sustainable and climate resilient urban development in Asian cities, ecosystem and heritage revival, climate finance and clean energy. In her 14 years of professional engagement, she has managed 5 major international programmes, spread over 20 cities and 40 countries, and worked with 7 top international institutions, including the ADB, CDIA, Rockefeller Foundation, UNDP, UNECE, UNEP and UNESCAP.
Olga focuses on enabling Asian cities to become more vibrant, sustainable, climate resilient, economically dynamic, inclusive and culturally unique by placing their natural and cultural assets at the core of their development. Her expertise covers program management, governance and policy development, urban planning and design, stakeholder engagement, access to finance, capacity building, PR and communication. She has served as an urban planning expert in ISOCARP events such as the International Design

Charette for New Hanzheng Riverside Avenue in Wuhan, China, and the International Design Workshop on Grand Canal National Culture Park in Suzhou, China. She has also delivered talks and moderated numerous international events, including recently the World Bank's Smart Republic 2019 (Delhi, India), the 361 Degrees Designing for the Future Conference (Mumbai, India), the 2018 Placemaking Week (Wuhan, China), the 54th ISOCARP Congress (Bodø, Norway) and the 4th Global Climate Policy Conference (Sao Paulo, Brazil).

CURRAN, ALYSSA

Alyssa Curran is an Associate Consultant in WSP's Advisory Services practice in NYC, where she focuses on asset management, strategic planning, equitable and sustainable development, and climate change adaptation and resilience. Alyssa brings with her experience working in public, private, and nonprofit organizations and a passion for collaborating across sectors and industries to solve complicated challenges- especially as it relates to urban development, energy, transportation, and the environment. She holds a Master in Urban Planning degree from Harvard University and a bachelor's degree in Geography/ Environmental Studies from UCLA.

D'HONDT, FRANK

Frank D'hondt is an Athens-based urban and territorial planner from Belgium. Frank is founding member and director of the Territorial Capital Institute, a knowledge-based platform to exchange theory and praxis of integrated territorial development and placemaking, drawing upon his experiences on localizing the New Urban Agenda and the International Guidelines on Urban and Territorial Planning. Frank has worked for nearly 10 years in several low countries, working primarily on cross-border and transnational planning issues at European level. He also co-founded o2 Consult, which specializes in participatory and cross-border planning processes. Since 2005, Frank mainly works with UN-agencies outside the EU, including Kosovo, Palestine, Arab Emirates, Nepal, Afghanistan, Kenya, Somalia, China, Japan, Timor and the Caribbean, especially on national urban policy, metropolitan planning, post-conflict/disaster planning and participatory visioning and placemaking. With UN-Habitat, Frank published a book on 'Visioning as Participatory Planning Method' and drafted the handbook for the implementation

of the International Guidelines on Urban and Territorial Planning (IGUTP), of which an abridged version has been published by UN-Habitat. Frank has also served as vice-president of the European Council of Spatial Planners, founding member of the Flemish Association of Planners and currently ambassador of the International Society of City and Regional Planners (ISOCARP).

DANQUAH, JOSEPH AGYEI

Arc. Joseph Agyei Danquah is a Chartered Architect and Senior Research Scientist with fifteen years of professional experience through practice and research. He completed his Master's degree in Architecture at the Kwame Nkrumah University of Science and Technology, (KNUST) Kumasi - Ghana, Advanced Post Graduate Diploma in Shelter Design Development & Management and Development, HDM, Lund University, Sweden and Philippines. He also holds a Postgraduate Diploma in Architecture and Bachelor of Science in architecture from KNUST. He has been working for Council for Scientific and Industrial Research – Building and Road Research Institute (CSIR – BRRI) as the Head of Architecture Department. Arc. J.A. Danquah has a bias towards architecture design, practice and construction, involved in both pre and post contract building services, and places high premium sustainability, smart and efficient design and planning as well as universal design through barrier-free planning. He is currently a PhD candidate in architecture with specialisation in smart cities and barrier-free built environment at KNUST, having had an ERASMUS+ semester out at Frankfurt University of Applied Sciences, Germany.

DARMOYONO, LAKSMI

Laksmi T. D. J. W. Wardani Darmoyono is the Director of Reka Urban-Perubahan Iklim (RUPI) in Indonesia. She obtained her PhD in spatial planning from the University of Groningen, the Netherlands, and a Master's degree in urban design from the Bandung Institute of Technology, Indonesia. Currently, she is involved in various research projects on Smart Systems Development and Walkability Issue, as well as urban design projects in Indonesia. She has previously worked at several international planning firms in Asia and the Middle East. Laksmi also likes to travel, run, swim, scuba dive, and cook.

DÁVALOS, LUIS

Luis Davalos has over 20 years of experience working with indigenous peoples in the Andean Amazon on land use planning, sustainable management of natural resources, and environmental and social impact assessments and management. His expertise also includes engaging public, private sectors, civil society organizations and academia at a global scale. He joined The Nature Conservancy in 2010, where he focusses on institutional capacity building and sustainable management and conservation of natural resources on indigenous lands. He holds a degree in Anthropology from Pontifical Catholic University of Peru (PUCP), a degree in Psychoanalysis from Instituto de la Sociedad Peruana de Psychoanalysis (Institute of Peruvian Society of Psychoanalysis - SPP) and conducted post-graduate studies at Facultad Latinoamericana de Ciencias Sociales (Latin American Social Sciences Institute - FLACSO) and at Universidad Nacional Mayor de San Marcos (National University of San Marcos - UNMSM).

DJONOPUTRO, BERNARDUS

Bernardus is currently the elected President of Indonesian Association of Urban & Regional Planners. He is the founder and initiator of the Indonesian Most Liveable City Index, a bi-annual survey on the state of liveability of Indonesia cities.

In his business and professional work, Bernardus is active as an advisor to investors, corporations, bilateral agencies, as well as central and local governments in Indonesia and South East Asia region on financing, infrastructure, PPP and urban projects. He currently is a partner and executive director at Deloitte South East Asia, Infrastructure & Capital Projects.

In his 30 years of professional experience, he has worked at several senior management positions with leading global companies including American Express Bank, Ernst & Young, and PwC. He is currently a senior advisor to the governor of West Java, the largest province in Indonesia with over 45 million populations.

Bernardus currently serves as Trade Advisor in South East Asia for New Zealand's government. He is a Fellow at Salzburg Global Seminar; a leading globalization think tank and sits as Vice President of UN-affiliated EAROPH (Eastern Region Organization for Planning and Human Settlement).

DRILLET, ZUZANA

Zuzana Drillet is an environmental scientist with experience in landscape-ecology and urban greenery research. Her research interests span across different fields: urban ecosystem services, comparative ecology of cities and greenspace indicators, integrated urban planning, smart city, sustainability impact assessment and social indicators. Zuzana did her PhD in Landscape Ecology, looking at factors controlling biodiversity of grassland habitats in Slovakia. In Singapore, she worked as a research fellow at the National University of Singapore (NUS) on urban greenery indicators and policy, conducting a comparative study of five world cities. Zuzana joined Singapore-ETH Centre (ETH) in June 2017, as a coordinator for Bandung Smart Systems project, aiming to make city's smart city initiatives more inclusive for low-income settlements. In her current role, Zuzana coordinates the Ecosystem Services in Urban Landscape Project at Singapore-ETH Centre (ETH). The goal of this project is to develop new knowledge on the benefits of tropical urban ecosystems in Singapore and apply this knowledge in architectural and landscape design.

DUAH, DANIEL

Dr Daniel Duah is an Architect, Senior Lecturer and Examinations Officer of the College of Art and Built Environment, Kwame Nkrumah University of Science and Technology, Kumasi-Ghana (KNUST). He holds a PhD in Planning, Design and Construction from Michigan State University and M.Sc. Construction Management and Economics from the University of Greenwich. He was also a lecturer-in-building science at Barnfield College in Luton. In addition to teaching and research, Dr Duah is practising and a construction management consultant. He has also authored several publications in both local and international journals.

DUEÑAS, ALEXANDRA RODRÍGUEZ

Alexandra Rodríguez Dueñas is an agronomist who specializes in business administration and organic food production. She is responsible for the Participatory Urban Agriculture Project (AGRUPAR) within the Municipality of Quito - Ecuador since 2005. Alexandra also works in the capacities of vice-president of the National Committee for the Evaluation of Organic Supplies, a member of the Honor and Ethics Committee for Certification Agency in Ecuador and an SPG in Quito. She has also promoted Quito's adhesion to important global food networks such as the Milan Urban Food Policy Pact, RUAF Foundation and Cityfood Network, and supported the creation of the Multiactoral Platform "Agri-Food Pact of Quito PAQ" to promote the construction of a food policy for the city.

HILL, DR SARAH

Sarah commenced as the inaugural Chief Executive Officer of the Greater Sydney Commission in January 2016. Following extensive engagement with the community, Sarah led the organisation in developing the Commission's vision for 'a metropolis of three cities' into the Greater Sydney Region Plan and five District Plans adopted by the NSW Government in March 2018.

Previously, as the Director of Hill PDA Consulting, Sarah specialised as an economic planner with expertise in employment areas and the economics of development. Sarah also was an independent advisor to the Government on planning reform and was a member of the NSW Government's 2012 Affordable Housing Taskforce.

She has prior experience in the UK working on affordable housing strategies and the creation of a new planning authority known as the London Olympic and Paralympic Joint Planning Authority, responsible for the master-planning and approvals for the London 2012 Olympic Games and its Legacy.

A past-President of the NSW Division of the Planning Institute of Australia, 2016-17 PIA Planner of the Year and a graduate of the Australian Institute of Company Directors, Sarah has received two international planning awards including the Mayor of London's Award for Excellence and the Royal Town Planning Institute Award for Planning.

Sarah is an Adjunct Professor at the University of Technology Sydney in the Faculty of Design, Architecture and Building and in 2018 completed her Doctoral thesis on the economics of planning in NSW.

HUYBRECHTS, ERIC

Eric Huybrechts is a senior architect and urban/regional planner, member of ISOCARP (scientific council, France representative), ICOMOS (working group on Climate change and Heritage), Société Française des Urbanistes (Scientific council), and Officer of the Royal order of Sahametrey (Kingdom of Cambodia).
He is the Manager of the International affairs at the Directorate general of Paris Regional planning Agency (www.iau-idf.fr). He has developed a large experience in the field of Urban and Regional Planning as expert and team leader on Algiers, Beirut, Cairo, Damascus, Dubai, Erevan, Ethiopia, Istanbul, Kampala, Mongolia, Mumbai, Paris/Ile-de-France, Phnom Penh, Rio de Janeiro, Samarkand, Saudi Arabia, Tripoli-Libya, Al Ula. He has prepared projects at the local level, sub-metropolitan, metropolitan, regional and national scales. Recently, he was the team leader for the National Urban Development Scheme of Ethiopia (2013-2015), and for the National Spatial Strategy of Saudi Arabia (2017-2018).
He represents IAU-IdF to the World Urban Campaign of UN-Habitat, Climate Change (in charge of Territorial planning Alliance), and the global network of Metropolitan and Territorial planning agencies (MTPA). He is also managing decentralized cooperation projects with Abidjan, Beijing and Dakar. Eric also has academic experiences as a scientific researcher in the Middle-East countries, and as a lecturer in several universities across France (Paris-Sorbonne university/Paris-Diderot university, Ecole Nationale des Ponts et Chaussées) and abroad (MIT/Boston), primarily focussing on territorial planning in the Global South. He is a member of the scientific council of the Labex Dynamite (18 scientific research units focusing on Geography, History and Archeology).

JÁCOME-PÓLIT, DAVID

David Jácome-Pólit is Metropolitan Director of Resilience and Chief Resilience Officer of Quito as part of the 100 Resilient Cities initiative. David is a graduate of TU Delft with a degree of Master in Science with a double specialization in architectural engineering and technology in sustainable development. He also works in the capacity of resilience advisor for the United Nations Development Program in Quito. David is a member of the esteemed program committee for the ICLEI's Resilient Cities Congress, organized by ICLEI - Local Governments for Sustainability, and also serves as a member of the Advisory Group for the Communities and Affordable Homes Summit (US Green Building Council).

LABATTUT, ÉLÉONORE

Éléonore Labattut is working on sustainable habitat and cities projects and research works with the UNESCO chair- Technologies for Development at the Cooperation and Development Center (CODEV) at EPFL in Lausanne, Switzerland. Éléonore also works as an independent consultant within the agency ETC (www.etc-projects.eu) she created in 2010 with Simon Deprez, based out of Lisbon, Portugal. She is an architect and holds a master's degree in Geography from Paris Sorbonne. She has specialized in housing and urban post-disaster reconstruction, and in participatory urban planning methodologies. Éléonore has also served as a consultant for several international organizations including- American Red Cross, Norwegian Refugee Council, Caritas, CARE or Solidarités International.

MARFUL, ALEXANDER BOAKYE

Dr-Ing Alexander Boakye Marful is an Architect and Infrastructure Planner with ten years of professional experience. He holds a PhD in Energy Efficient City Planning and Master of Infrastructure Planning from the University of Stuttgart, Germany. Marful currently serves as a lecturer of architecture at the Kwame Nkrumah University of Science and Technology, Kumasi Ghana, and is also a principal consultant at SPAYSIS Architecture, Planning and Engineering Ltd.

He has also worked as an infrastructure planning consultant for Fichtner GmbH & Co. KG, Germany, where he was responsible for project development, master planning, analysis and management of large solar power plants financed by the World Bank, European Union, amongst other financial institutions. His portfolio also includes projects with Predios Architects and Urban Designers and Ablakwa Development Ltd in Ghana. He has a wide experience in master planning of communities, urban systems and development as well as their principles, context evaluation, regeneration strategies, and environmental & social impact assessment.

Dr.-Ing. Alexander Boakye Marful has worked in diverse geographies in the countries of Ghana, Germany, Kuwait, Uganda, Sudan, Malawi, South Africa, and the USA. His professional interests align with energy efficient community planning and development as well as green architecture.

MASCOLA, SARA

As Program Advisor on Energy and Infrastructure at The Nature Conservancy (TNC), Ms. Mascola provides technical support to advance landscape-scale planning and mitigation practices to reduce impacts from energy and infrastructure development. Her portfolio includes projects in the United States and Latin America, from launching the Great Plains Renewable Energy Initiative to researching territorial planning in the Amazon Basin, to working with the Peruvian Ministry of Environment and NGO partners on mitigation policy. Since November 2018, Ms. Mascola has been advising the growth and expansion of TNC's program in India. Ms. Mascola also co-leads TNC's Mitigation Learning Network, undertaking research to develop technical resources and guidance and maintaining a knowledge platform. Ms. Mascola joined TNC in 2011 as Corporate Engagement Coordinator, providing research on corporate practices and developing TNC's first comprehensive corporate engagement strategy. From 2007-2011, she served in Peace Corps Peru as a community-based environmental management volunteer, working with subsistence farmers to improve their environmental practices and income generating activities. She has also worked in rural India as a field naturalist in Bandhavgarh National Park, Madhya Pradesh. Ms. Mascola holds a Master's of Science in Natural Resource Management from Virginia Tech and a Bachelor of Arts in Political Science from Clemson University.

MAXIMOVA, OLGA

Olga Maximova is an architect, who received her Master's degree as at the Moscow University of Architecture, and later was part of the University for research and teaching projects.

In 2016, Olga was awarded PhD degree from the University of Rome, La Sapienza, by its Department of Planning, Design, Technology of Architecture. Her doctoral research was supported by the Erasmus Mundus Action 2 Programme of the EU. The research project as part of the programme-"The Landscape: Comparison Between Italy and Russia. The General Values for Legislative and Planning Instrumentation", explores Italian experience in landscape planning post European Landscape Convention (ELC), and focuses on the integration of the ELC into Italian legal system with development of the regional landscape planning tools.

Olga also has practical experiences in conducting international and national studios of architecture and urban planning. With her focal work on – concepts of urban and regional development, Olga has participated in preparation of concepts of urban development of cities in Russia: Moscow, Kirovsk, Yuzhno-Sakhalinsk, and Irkutsk.

MCKENNEY, BRUCE

Bruce McKenney has more than 20 years of experience working at the intersection of development and environmental challenges. He is Director for Strategic Initiatives, Energy & Infrastructure, at The Nature Conservancy (TNC), where he leads teams to reduce the environmental impacts of energy and infrastructure development and accelerate the transition to renewable energy. Prior to joining TNC in 2006, Bruce's portfolio included projects for the World Bank, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, World Wildlife Fund, World Commission on Dams, Gordon and Betty Moore Foundation, and National Parks Conservation Association. He worked as a Senior Associate at Hardner & Gullison providing technical support on biodiversity management, and as an Associate at Industrial Economics conducting regulatory and environmental economic analyses. Bruce has also worked in Cambodia for five years- for improving rural livelihoods and the environment, where he served as Director for Natural Resources and Environment at the Cambodia Development Resource Institute. Bruce holds a Master's Degree in Public Policy from Harvard University, an Honors Degree in African Studies from the University of Cape Town, and a Bachelor of Arts with Honors in Political Science from Brown University.

MEWS, GREGOR HELMUT

Gregor is dedicated to improve urban conditions worldwide through evidence-based policy and human-centred design. He holds an honorary adjunct position at University of Canberra's Centre for Research and Action in Public Health and is a published author in Germany and Australia, currently completing his PhD. Gregor has worked as an urban planner/designer worldwide and has received several research scholarships and multiple work-related awards. He is the founder and Director of the international think-and do tank Urban Synergies Group, where he provides strategic policy advice in an international context, and is also an active member of the Steering Committee of the

UN-Habitat's World Urban Campaign. Under the conceptual approach of "Right to the City", he advocated for better health and well-being outcomes at the United Nations Habitat III conference on Housing and Sustainable Urban Development, held in Quito (Ecuador) in 2016.

OLIVEIRA, KAREN

Dr. Oliveira has 15 years of professional experience in integrating natural resource management, environmental governance, social development, protected area management, infrastructure policy and environmental economics. Since 2012, Karen has served as Infrastructure Manager for The Nature Conservancy in Brazil, where she coordinates environmental compensation projects in partnership with the Ministry of Environment, as well as a Green Growth Initiative to reduce deforestation in the State of Pará, in partnership with the State Government.
In partnership with the Ministry of the Environment and with support from the World Bank, Karen has contributed in defining priority conservation areas in the Amazon. She has also advised landscape planning effort in the Tapajós Basin, a project that combined environmental governance, territorial planning and large energy and transport infrastructure development. She has also carried out advocacy work for the protected areas of the Amazon with the National Congress and federal government. Prior to joining TNC in 2012, Ms. Olivera lead social and environmental projects in Brazil, Latin America and Lusophone Africa. She holds a M. Sc. in Geology, Energy and Environmental Planning from COPPE/UFRJ and a Ph.D. in International Relations from Pontifical Catholic University of Rio de Janeiro (PUC-RJ).

OPPONG, REXFORD ASSASIE

Prof. Rexford Assasie Oppong is an Architect, Urban Planner researcher and Lecturer. He is the Dean of the International Public Office (IPO), Kwame Nkrumah University of Science and Technology, Kumasi- Ghana. He holds a PhD in Architecture from the University of Liverpool, UK, a Masters in Urban Planning and Management from the University of Rome, as well as Postgraduate Diploma in Architecture from the Kwame Nkrumah University of Science and Technology, Kumasi-Ghana. Prof. Rexford Assasie Oppong has published widely in the area of human settlements planning and manage-

ment and building construction. He is a consultant to a number of local and international organizations and institutions. Over the years he has planned, designed, supervised and completed more than a hundred projects.

OTTOSEN, NINA FREDSLUND

Nina has a Bachelor's degree in Anthropology and a Master's degree in Human Security from the Department of Anthropology at Aarhus University in Denmark. Nina has done fieldworks in Sierra Leone with a focus on the role of non-formal education and has been working with development projects in collaboration with local partners in Sierra Leone since 2016. She is now employed as Managing Director in Dreamtown, working on organisational development and project partnerships that focus on creating space for young people in urban environments.

PANGERAN, ADHAMASKI

Adhamaski Pangeran is an Indonesian urban planner and is the youngest member of the Jakarta Research Council. Adham is an active member of the Jakarta Association of Urban Planners, the Housing and Urban Development Institute, and Indonesia Real Estate Association. His interests include urban planning, housing, and economy. Adham also writes for various leading newspapers in Indonesia.

PAREDES, DENISSE

Denisse Paredes is an architect from the Pontifical Catholic University of Ecuador (2012) with a Master's degree in Landscape Architecture from the University of Pennsylvania, Philadelphia, USA (2016). Her professional experience has focused mainly on the urban landscape, resilience, sustainable development, and architecture. Denisse joined the Quito Resilient team in October 2016 as a consultant for AECOM Latin America focusing

on the construction of the city's Resilience Strategy. Currently, she is working for the Municipality of Quito in the implementation phase of the strategy, assisting in projects such as the promotion of citizen participation planning processes and the strengthening of the city's agrifood system.

PINTO, NATALY

Nataly Pinto holds a master's degree in sustainable territorial development. She has been working on the field of development in rural and urban areas for more than 10 years. She enjoys learning by doing, create networks and start synergies. Nataly is part of the Food Smart Cities International cluster at Rikolto. The cluster works with several cities around the world, to exchange good practices on food governance, inclusive business, responsible consumption and food safety.

SANTANDREU, ALAIN

Alain Santandreu is a Uruguayan-Peruvian sociologist and activist, inspirer of knowledge management processes for learning and change. He believes that another world is possible, and works together with various social organizations, governments and academic groups to achieve it. Santandreu accompanies the process of formulation and implementation of the agro-food policy of Quito-Ecuador with a focus on the city and the human right to food. He is the Executive President of ECOSAD-Peru, member of the CLACSO Working Group on participatory methodologies and associate researcher of the RUAF-Netherlands Foundation.

SHRIVASTAVA, ABHIJEET

Abhijeet Shrivastava is a designer and urban strategist working with WSP, New York. Abhijeet received his Master of Science in Architecture and Urban Design degree from

GSAPP, Columbia University in the city of New York and received his Bachelor of Architecture degree from National Institute of Technology, Bhopal, India. Abhijeet focuses on responding to complex issues, contexts, concepts for urban and regional living by articulating built environment within their geographic, natural, social, economic contexts. He has extensive experience in private consulting and public sector. As a LEED accredited professional in Neighbourhood Development, Abhijeet brings resilient approach into his practice that aims to create an intersection of urban innovation, design strategies, sustainable system solutions and space planning.

SIMARMATA, HENDRICUS ANDY

Hendricus Andy Simarmata is a professional urban planner who has 18 years of experience in research, consultancy, and advocacy in the field of sustainable urban development. For the last ten years, he has been focusing in his works on integrating climate resilience in urban planning, particularly the approaches for vulnerability and risk assessment, coastal ecosystem resilience, low carbon cities, and urban adaptation. Mr. Simarmata earned his DPhil (Ph.D.) with magna cum laude in Development Studies from University of Bonn in 2016. Post completion of his doctoral studies, Mr. Simarmata now works as a Senior Research Fellow at the Research Center for Urban and Regional Studies, Graduate School of Strategic and Global-Universitas Indonesia and has also been serving as Secretary General of Indonesian Association of Urban and Regional Planners since 2016.

TROJANOWSKA, MONIKA

Monika Trojanowska is an architect, lecturer, assistant professor at UTP- University of Science and Technology in Bydgoszcz, Poland. Her research interests include: therapeutic landscapes, eco-neighborhoods and the theory of modern architecture.

TUNAS, DEVISARI

Devisari Tunas is the Scenario Coordinator for the Archipelago Cities at the Future Cities Laboratory (FCL) of the Singapore-ETH Centre. Trained as an architect and urban planner, she obtained her PhD degree in Urbanism from Delft University of Technology, the Netherlands, and a Master's degree in 'Conservation of historic buildings and towns', and 'Social and cultural anthropology' from Katholieke Universitet Leuven, Belgium.
Devisari is currently leading an Intra-CREATE research project- Translating Smart Cities and Urban Governance. She is also co-leading several ADB and SECO-funded research projects in Indonesia- with Prof Stephen Cairns who is the lead principal investigator- which focus on the development of smart systems and a planning support tool with the aim of supporting and enabling decision makers to make better informed, integrated and inclusive planning decisions at city and metropolitan levels.
She was the Singaporean collaborator of LSE's 'Resource Urbanism' research project, co-funded by LSE Kuwait Programme. The project examined multiple aspects of whence natural resources, urban form and infrastructure affect each other and potentially lead to the establishment of divergent forms of urbanism. Prior to FCL, Devisari worked as a researcher in the Centre for Sustainable Asian Cities (National University of Singapore) and Delft University of Technology.

TURNBULL AO, LUCY HUGHES

Lucy Hughes Turnbull AO is an urbanist, businesswoman and philanthropist with a long-standing interest in cities, and technological and social innovation.
In 2015, she was appointed Chief Commissioner of the Greater Sydney Commission, tasked by the NSW state government to assist in delivering strong and effective strategic planning for the whole of metropolitan Sydney. She has been charged with leading metropolitan planning in the Greater Parramatta-Olympic Peninsula (GPOP) area.
Lucy Turnbull was the first female Lord Mayor of the City of Sydney from 2003-04 and in 2011 she became an Officer of the Order of Australia for distinguished service to the community, local government and business.
She was Deputy Chair of the COAG Reform Commission's Cities Expert Panel from 2010-12. She was Chair (2012-15) and Deputy Chair of the Committee for Sydney.
In 2012 Lucy Turnbull was awarded an honorary Doctorate of Business by the Uni-

versity of NSW, and in 2016 was appointed Adjunct Professor at the Faculty of Built Environment, University of NSW. In 2017 Lucy Turnbull was awarded an honorary Doctorate of Letters from the Western Sydney University which she received for her substantial and sustained service and contribution to the University and the Greater Western Sydney region.

VEELEN, PETER VAN

Peter van Veelen is a landscape architect and the owner of Buro Waterfront, offering specialized advice in urban planning, coastal resilience and urban climate change adaptation-wherever land and water meet. With a background in urban planning practice and scientific research, he facilitates innovation within field labs by bringing together engineering, policy and urban planning experts. He has also worked as a research coordinator on urban deltas project for the Delft University of Technology. As a senior urban planner at the City of Rotterdam, he has worked on developing climate adaptive design for the waterfront area, as part of the Rotterdam climate adaptation and resilience strategy. He has also been an active participant of design workshops on adaptive flood risk management in the Netherlands and on urbanized deltas in the New Orleans, New York, Houston, Norfolk, Ho Chi Minh City and the Volta delta of Ghana. He is a graduate of Wageningen University and holds a PhD from the Delft University of Technology, focussing on urbanism and adaptive planning for coastal waterfronts.

WIRAWAN, BAYU

Bayu Wirawan is a trained urban planner with experiences in urban development, urban governance and spatial planning. He received his bachelor degree on regional and city planning from Institut Teknologi Bandung (ITB), Indonesia in 2003. Continuing his study, he received both of his master degrees on regional and city planning from ITB, Indonesia and master degree on environment and infrastructure planning from the University of Groningen, the Netherlands in 2016. Previously he has worked in a consulting agency focused on spatial planning for 12 years, Bayu has experienced in assisting Indonesia central and local government in developing spatial plans and formulating public policy. Since 2016, Bayu has been working as a researcher in Urban and Regional Development Institute (URDI), which is a non-governmental organization based out

of Indonesia, working to promoting sustainable and inclusive development across the country. Currently, he also chairs as the Deputy Director of Program in URDI.

WRIGHT, TOM

Tom Wright is president and chief executive officer of Regional Plan Association (RPA), the nation's oldest independent metropolitan research, planning and advocacy organization. As president, Tom led the production of RPA's landmark Fourth Regional Plan, released in 2017. Before his tenure at RPA began in 2001, Tom was deputy executive director of the New Jersey Office of State Planning.

As a leading thinker on urban and regional policy, Tom is a frequent speaker, lecturer and commentator on economic growth and development, transit investment, good governance and other public policy issues. Prior to being named RPA's president in 2015, Tom was RPA's executive director. Tom has helped lead many key RPA initiatives, including the historic Civic Alliance to Rebuild Downtown New York following the Sept. 11, 2001, attacks; the campaign to create a mixed-use district at Manhattan's Hudson Yards; the protection of the New Jersey Highlands; and a vision plan for the City of Newark.

Tom has a master's in urban planning from Columbia University and a bachelor's in history and a certificate in American Studies from Princeton University.

ABOUT THE REVIEW STAFF

MAŁGORZATA HANZL

Małgorzata Hanzl holds her MArch and PhD in Architecture and Urban planning from Lodz University of Technology, Poland. She completed her MArch diploma in Lyon Ecole d'Architecture. She received her habilitation from Faculty of Architecture, Warsaw University of Technology, Poland. She practiced urban planning and urban design as well as architecture for several years before entering academia and continues serving consultancy as urban planner.

An Assistant Professor of Urban Planning in Lodz University of Technology, Poland, she also teaches in Faculty of Architecture, Warsaw University of Technology, Architecture for Society of Knowledge MArch course. She has got an extensive experience in teaching and lecturing. She maintained her Fulbright Scholarship as a Visiting Researcher in SENSEable City Laboratory MIT, Cambridge MA.

Following her research interests she has been actively involved in publishing and writing activities, cooperating with several urban planning and citizen journals and blogging. Małgorzata's main area of interest and experience refers to public participation in urban planning, internet communication, GIS, rehabilitation especially in the context of post-industrial cities, urban morphology, anthropology and culture related studies. She is an author of several journal publications and also serves as a reviewer and an advisor in scientific boards and committees.

JIM REILLY

Jim Reilly began his planning career with the award-winning firm of Wallace, McHarg, Roberts and Todd, where he worked for nine years. His major assignments included portions of the Plan for the Inner Harbor, in Baltimore, MD; and elements of the Metro Systems in Washington, DC and Baltimore, MD. Eventually Jim was a Senior Project manager for the Plans for Abuja, the New Federal Capital of Nigeria. He then started his own (but not financially successful) company developing computer programs to assess economic impacts from planned improvements. Later, he worked for over 20 years as a senior planner and regional scientist for the State of New Jersey

(USA) Office of State Planning and for the State of Maryland (USA) Department of Planning. While at these state agencies, Jim conducted statistical research about land use change and various impacts associated with change.

He is the author of numerous articles in various refereed journals as well as the author of GAMe, a computer model to predict future small area forecasts of land consumption, population, and jobs.

Jim is a disabled veteran, having served in the US Army (Reserves) Medical Corp for 25 years as well as two wars. He is the recipient of 35 medals for his service.

Jim is enjoying retirement with his wife, scuba dives, fly fishes, and travels.

MAHAK AGRAWAL

Mahak Agrawal is an urban planner, researcher from India. Currently working on the issue of sanitation deprivation and climate change response across coastal districts and north east region of India, she has served as an expert reviewer to the Second Order Draft of the IPCC Special Report on Climate Change and Land.

In different capacities, she has worked with non-profit organisations, development banks, universities and research institutes, as well as technical divisions of government-at the Centre and city level in India. Through her works, Mahak explores innovative, enduring research-guided solutions for pressing urban and regional environmental problems. She is specifically interested in climate change and urban studies investigating multi-track approach and inequalities of adaptations and transformations, development and geography, associated global challenges and human geography.

An advocate of open data for effective urban management, monitoring and response, she often provides thought leadership to the Young Academic Network of the Association of European Schools of Planning (AESOP) and the South Asia Centre at London School of Economics. In 2017, she was awarded the Prof. V.N. Prasad Best Thesis Award for best thesis in Master of Planning in India.

RICARDO MOURA

Ricardo Moura is a graphic designer based out of Porto, Portugal. He completed his bachelors in graphic design from the Art and Design College (ESAD) in Matosinhos, Porto, and later pursued a master degree in image design at the Faculty of Fine Arts of the University of Porto, where he focussed on the image and religion in a Portuguese anthropological context. He also pursued the master's course on teaching of visual arts at the University of Porto, emphasising through his works on the education processes vital to avoid visual pollution in public spaces.

Presently, he teaches diverse courses of fashion design, textile design, and visual merchandising. Since 2008, he has been teaching at the Professional Training Centre for the Textile, Clothing, Apparel and Wool Industry (CITEX/MODATEX), and since 2016, he has been an educator at the Fashion School of Porto as well. He also works on various graphic design projects for book editions, conferences and symposiums, as well as research laboratories, corporate identities, and international organisation, including: International Society of City and Regional Planners (ISOCARP), Association of European Schools of Planning (AESOP), CITEX/MODATEX, Department of Civil Engineering / Faculty of Engineering of the University of Porto (DCI/FEUP), to name a few.

Credit: Arif Gandapurnama


ISOCARP

ABOUT ISOCARP

The International Society of City and Regional Planners (ISOCARP) is a global association of experienced professional planners. It was founded in 1965 to create an international network of recognised and highly qualified planners. Today ISOCARP brings together more than 700 individual and 40 institutional members from more than 85 countries worldwide. The wealth and diversity of professional expertise, knowledge, and experience in the ISOCARP membership is unmatched in the planning field.

Although ISOCARP members work in many different fields they share a common interest in the spatial, socio-cultural, economic and environmental dimensions of urbanization. They advise key decision-makers, proposing and supporting projects for intervention in a spatial context through general or specific actions.

The objectives of ISOCARP are to improve cities and territories through planning practice, training, education and research.

ISOCARP also encourages the exchange of professional knowledge between planners, promotes the planning profession in all its forms, stimulates and improves planning research, training and education and enhances public awareness and understanding of major planning issues at a global level.

As a non-governmental organisation ISOCARP is recognized by the United Nations (UN), the United Nations Human Settlements Programme (UNHCS/UN-Habitat), and the Council of Europe. The Society also has a formal consultative status with the United Nations Education, Scientific and Cultural Organization (UNESCO). Furthermore, in 2017 ISOCARP, together with other global partners, initiated the UN-Habitat's Planners for Climate Action (P4CA). Today P4CA constitutes of organizations with over 80,000 members and contributes to the OECD National Urban Policy programme (NUPP), together with UN-Habitat and Cities Alliance.

The association 's main event is the annual **ISOCARP World Planning Congress.** Since 1965 ISOCARP Congresses have taken place in all parts of the world providing a forum to explore cutting edge topics. They always promote knowledge creation and encourage sharing within the planning profession.

The Society undertakes a robust range of professional activities.

A particular focus and commitment of ISOCARP is on young generations and facilitating knowledge for better cities with the youth. The **Young Planning Professionals (YPP)** workshops, conducted prior to the annual World Planning Congress, is a crucial component of ISOCARP's commitment of contributing to the knowledge base and improving skills of young professionals, the future leaders of our profession. The YPP Programme seeks to bring together emerging young (under the age of 35) planners from all over the world to tackle 'real-world' planning projects.

ISOCARP **Urban Planning Advisory Teams (UPATs)** assist cities and regions by offering the extensive experience and expertise of ISOCARP members to work on important local or international planning projects, programs and policy initiatives.

All ISOCARP activities are documented in **publications** such as the ISOCARP Review, Congress proceedings and special project reports. The Society also produces relevant publications for professionals such as the International Manual of Planning Practice.

ISOCARP recognizes excellence through the Society's **Awards programme.**

In response to specific requests for ISOCARP assistance with research and consulting services, ISOCARP forms **Technical Assistance Teams** consisting of members who volunteer their expertise and experience.

In 2016 ISOCARP officially established the research spin-off **ISOCARP Institute – Centre for Urban Excellence**, as the formal body for generating, documenting and disseminating knowledge for better cities. The Institute's core function is to design and deliver capacity building and continuing education programs; conduct research and promote knowledge transfer; as well as offer advice and short-term consultancy services to government, non-government and international bodies worldwide. The three main activities of the Institute – projects, research, and academy – encompass, facilitate and strengthen some of ISOCARP's core activities while expanding it by additional research and advisory projects.

ISOCARP Head Office
International Society of City and Regional Planners
Anna Klimczak, Balint Horvath, David Struik, Federico Aili, Hajo Vis, Monica Overtoom, Neeanne Cruz Balamiento

ISOCARP Institute – Centre for Urban Excellence
David Struik, Sindi Haxhija, Tjark Gall

Laan van Meerdervoort 70
2517 AN The Hague, The Netherlands

Phone: + 31-70 346-2654

isocarp@isocarp.org

www.isocarp.org

ISOCARP
Knowledge for Better Cities

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

ISBN 978-90-75524-628
9 7890 5246
ISOCARP Review 15