CityVoices

Special Edition

ASIAN PERSPECTIVES ON SUSTAINABLE URBANIZATION – VIEWS FROM PRACTITIONERS

VOL. 07 NO. 01
SPRING/SUMMER 2016

CITYNET
TOGETHER WE CAN DO MORE

CityVoices

Contents

Asian Perspectives on Sustainable Urbanization: A Message from CityNet's Secretary General

This is a momentous year for the urban community, with Habitat III providing us a once-in-twenty-year opportunity to review the scale and scope of urbanization taking place today. Currently, more than half the world's population lives in cities and the rate of urbanization is accelerating all over the developing world. The future of human kind depends how these cities decide to manage their societies, economies and environment. While some Asian cities are on the cutting edge of innovation, others are just starting to address the specific challenges associated with managing urban growth, such as handling growing slums, increased traffic congestion, and rapid pollution of land, water and air.

With the support from UNESCAP and Seoul Metropolitan Government, CityNet has the rare privilege of being in a position to capture the knowledge of leading Asian thinkers, who have developed institutional memory through decades of observation and experience. We are equally fortunate to have among our members and partners strong leaders and activists who are creating solutions to their specific, city-level problems. This special edition of our bi-annual magazine, CityVoices, is a compilation of their thoughts and local actions, and celebrates the dynamism of Asian cities.

Our CityNet members are demonstrating that every challenge can potentially lead to locally customized solutions, which can then serve as useful case studies for other cities. We have asked our contributors to submit articles that provide useful insights on some, if not all of the ten "smart growth" principles, reproduced in box 1.[1]

While some of our cities have achieved all of the above, many others have embarked on the process only recently. The articles therefore reflect a mix of solutions, some more holistic than others.

For example, Seoul Metropolitan Government, the host city of the CityNet Secretariat, used the power of technology to connect every citizen directly with the mayor's office, so that accountability, transparency and citizen participation are enshrined in city governance. Seoul's success in reducing air pollution, promoting transit-oriented development and enhancing road safety is well known. Yokohama, the host of our CityNet project office, has demonstrated how an urban economy can smartly transition when a city loses its comparative advantage as a manufacturing centre. Yokohama also launched the Y-Port brand after developing a comprehensive set of metrics, showcasing its Eco2 (economic and environmental sustainability) credentials. The Y-Port brand is now being exported through C2C partnerships, which expand business opportunities for city-based enterprises. Songdo, through the "Ubiquitous City" idea, is also showcasing its green credentials, while Singapore awards a biannual Lee Kuan Yew Prize, which has become a globally recognized marker for smart city development.

The articles in this volume are not just about cities that achieved success in all ten dimensions, but also others who have only just started to focus on smart growth. Tackling the issues of urbanization requires responsive city leadership, programs designed to engage citizens in determining local priorities, and solutions that are customized to local realities. The challenges of servicing slums and squatter settlements, providing toilets and affordable transit, and insuring access to municipal schools and health clinics keep city officials so preoccupied that they often have little time to learn from their peers.

We hope the pieces in this volume will provide a way for municipal leaders to learn about some replicable, uniquely Asian solutions. Authors were asked to keep their contributions brief to facilitate easy reading; however, we would be happy to connect anyone wishing to drill deeper into an article's topic with its author.

The first group of articles articulates three ideas that are central to Asian cities –elements of good governance, characteristics of urban poverty, and challenges faced by emerging cities in developing countries in Asia. Professors Ryokichi Hirono and Myungrae Cho describe the key ingredients of good urban governance that shaped the successful urbanization in Japan and Korea respectively. Professors Om Prakash Mathur and Anjum Altaf describe the nature of urban poverty in Asia, and how poor public transit fragments cities and blocks income opportunities for the poor. Donovan Storey, Lorenzo Santucci, and Kirtee Shah discuss the continuing challenges of urbanization in Asian cities in their respective contributions. Kalanidhi Devkota explains Nepal's local governance and accountability programs. Dr. Nurul Islam Nazem presents the link between rural and urban areas in Bangladesh. Dr. Vinay Lall writes about performance budgeting for sustainable urbanisation.

The second group of articles discusses urban solutions that were successfully implemented in Asian cities. Mary Jane Ortega describes the efforts of San Fernando, La Union, Philippines to implement a solid waste management program; Xiaotian Fu and Dr. Lijin Zhong discuss an innovative waste to energy program in Xiangyang city of Hubei province in China; Tran Huynh Vuong Hoai Vu outlines Danang's success in implementing an urban energy program that has enabled the city to not only gain energy efficiency but also save resources; Mayor Jed Patrick Mabilog of Iloilo city highlights the city's implementation of a disaster risk management program; Park Young-wook explains Seoul's smart card solutions to enhance urban mobility; Dr. Hideyuki Mori focuses the Y-Port experience in Yokohama; Thomas Eitler writes about how the city of Foshan rebranded itself to be an attractive destination for investments; Virgilio Rivera shows how Manila Water company has turned around water and sanitation services in its concession areas; Kang Hyojin highlights the importance of built environmental factors in creating safer neighbourhoods; Kim Sangbum shares the experience of restoring a landfill through development and conservation; and John Taylor proposes recommendations to address street vendor relocation.

The third group of articles handles key elements of planning and financing that enable cities to succeed. K.D. Chithrapala describes Colombo's efforts to secure full citizen engagement in the budget process; Rosmalinda Rosli and Siti Nurhayati of Seberang Perai discuss how the city is leveraging the availability of social media to engage directly with citizens; Professor Hoong-Chor Chin explains how urban planning processes can be strengthened by designing mutual learning programs that engage students from top Asian universities with city level planners; and Aldo Baietti highlights emerging opportunities for Asian cities to access green finance offered by various climate funds.

We hope these insights will help enable readers to appreciate that smart urban growth requires local solutions that address challenges that are important to citizens.

TEN SMART GROWTH PRINCIPLES

1. Promote direct urban development in areas where land is already served by existing infrastructure to avoid costly duplication of services
2. Provide a variety of housing choices, including affordable housing
3. Ensure an equitable and predictable process in land development decisions
4. Facilitate an adequate mix of transportation to promote low carbon outcomes
5. Improve environmental quality by conserving open space, farmland and sensitive land areas
6. Preserve local culture and natural environmental features in designing new development
7. Promote stakeholder collaboration and community participation
8. Design staged growth in urban fringes with compact development patterns
9. Enhance access to public and private resources for all residents
10. Revitalize existing neighbourhoods into safe and liveable communities

CityNet Secretary General delivers remarks at the opening of CityApp event in Sidoarjo, Indonesia

1 Gregory K. Ingram, Armando Carbonell, Yu-Hung Hong and Anthony Flint, Smart Growth Policies: An evaluation of Programs and Outcomes (Cambridge MA: Lincoln Institute of Land Policy, 2009)

1.

Governance, poverty and other challenges for Asia's developing cities

The Challenges of Asia's Urbanization

Asia is in an exciting phase of urbanization. In less than four years, half of Asia's population will live in cities, constituting close to 55% of the world's total urban population.

Informal settlements grows alongside rapid urbanization in Vietnam
Source: De Visu / Shutterstock.com

The United Nations predicts that much of Asia will reach the developed countries' standards of urbanization by about 2050. If "more urbanization" is an index of development then, Asia has unquestionably embarked on a "feel good" global urban trajectory.

Percentage of urban population			
	2015	2020	2050
Asia	47.6	50.5	64.4
World	53.9	56.0	67.2
Developing World	48.7	51.3	64.1

This exciting phase in Asia's urbanization is accompanied by challenges that are both complex and unprecedented. The first is that Asia's current urbanization is not the kind that Asia has experienced or is familiar with. Its make-up and quality are vastly different from what the classical textbooks on urbanization describe or what Harris-Todaro proffered.

There are two main differences. First, a significant proportion of Asia's recent urban population growth is taking place outside city boundaries. In India, 14.4% of the urban population increase shown in the 2001-2011 decade census took place outside municipal boundaries, raising a slew of questions – what is propelling the growth? Is it a result of the central cities' planning systems or an autonomous phenomenon? Who should govern and regulate such extended areas?

Secondly, Asia's recent urbanization is an interesting combination of capital-intensive, technology-driven urban growth on the one hand, and vastly informal growth on the other. How does one explain city growth that is simultaneously driven by high technology and other factors that are exogenous to countries and exist outside city control (Richard Dobbs calls this "disruptive" and says it is sowing the seeds of the Fourth Industrial Revolution), while also being patently informal, spurred in part by what has come to be known as the emerging gig economy. These divergent urbanization narratives and realities have led to rising urban inequality and different forms of marginalization and vulnerability, according to some urban analysts.

The second challenge, borne out of the region's unprecedented urbanization, is that urban policies in Asia are under extraordinary pressure. Urban policies of the 1970s and 1980s addressed issues relating to the pace of urban population growth on the one hand, and its distribution between city spaces of different dimensions on the other. Southeast Asia and parts of South Asia were experiencing high rates of urban population growth:

Southeast Asia and parts of South Asia are experiencing high rates of urban population growth, for example in Delhi, India
Source: AsiaTravel / Shutterstock.com

Bangkok, Manila, Jakarta, and Seoul grew into primate cities of wealth and power during this time. Urban policies advocated for slowing the pace and a balancing the distribution of the urban population between cities of different sizes.

In more recent times, attention has shifted to making cities contribute to economic growth and poverty reduction. The focus is now changing once again towards new goalposts that, if the United Nations' documents are any evidence, will include at the very minimum cities for prosperity, universal access to quality basic services, economic and shelter security, green growth with environmental sustainability, strengthening civil society and democratic participation, promoting innovation, knowledge and learning, and right to the city. What kind of an equation or algorithm can be written to accommodate all these new goals?

The third challenge is related to issues of governance and fiscal structures that would address the new forms of urbanization and be consistent with emerging urban policies. Asia has a long tradition of public provisioning, public financing, and public management of basic urban services. However, these traditions are undergoing a major metamorphosis.

In almost every Asian economy, cities are experimenting with alternative governance structures, which include not only city governments, but also higher tiers of government, public and quasi-public institutions, shared public-private spaces, special purpose vehicles, civil society groups, regulatory structures, and technology-driven service delivery and management. City governance is not just multilevel, requiring the participation of different tiers of government; rather, it is emerging as a multi-stakeholder responsibility. The basic textbook question in urban governance – "who should do what" – appears more confusing today than in any time in the past: cities are just muddling through, as Leo Jacobson once observed.

Financial systems at city levels across Asia are severely stressed. Few cities in Asia have adequate resources to provide and maintain urban infrastructure and services, with most being dependent on intergovernmental transfers. Given, however, the emerging economic role of cities in accelerating growth and structural transformation, new forms of financing urban infrastructures are surfacing, which include capital and debt markets, institutional financing, philanthropies, amended user charge architectures, and more recently the Ola-Uber type of financing urban infrastructures.

Is this financing profile sustainable and legitimate? What does it all add up to? It is not easy to aggregate the various strands – it is a new urbanization; there are new norms of urbanization which are being established, which are extraordinarily complex, and which point to a significant departure from the past.

The theories of urbanization have been turned topsy-turvy. The tendency to bring in band-aids to address such challenges is, at best, myopic and adding to the complex urbanization profile. Asia needs a reality-check.

AN ARTICLE BY OM PRAKASH MATHUR
Senior Fellow and Head, Urban Studies
Institute of Social Sciences, New Delhi

Fifty Years' Reflections on Urbanization in Asia — What Has and Hasn't Changed: The Case of Musashino City

¶ During Japan's rapid urbanization, Musashino City stood out for its exemplary commitment to participatory urban planning, governance, and sustainability.

Most Asian countries began modernisation during the decolonization period after 1945. Urbanization in modern Asia has proceeded much faster than in Europe and North America, and is expected to continue at its current pace for the next few decades. There are both convergences and divergences between the patterns and major issues faced by Asian and Western cities during urbanization.

Musashino City, which is located in the suburb of Tokyo Metropolitan area, shares some similarities with the urbanization pattern of other Asian cities. However, Musashino City also has unique features of citizen ownership and democratic participation in urban planning that are not frequently observed elsewhere, even in Japan.

MAJOR FACTORS ACCELERATING URBANIZATION IN JAPAN

As in other Asian countries, the expansion of economic and social infrastructures required by industrialization policy in pre-war Japan inevitably resulted in a faster pace of urbanization, to make efficient use of the limited financial and human resources available.

Unlike today's developing Asian countries, however, where the open-door policies embraced by governments accelerated the pace of urbanization associated with foreign direct investment inflows, pre-war Japan's urbanization was a relatively slow process until after WWII. Its pace was accelerated under the government's all-out efforts to undertake the Income Doubling Program in the 1960s and the Global Power Initiative in the 1970s, resulting in the emergence of three or four dozen large metropolitan cities sprawling into neighbouring rural villages. Japan's urbanization was accompanied by rising air, water and soil pollution in the absence of both strict environmental regulations and effective enforcement mechanisms until the early 1970s, as observed in the cases of Minamata and Itai-itai diseases and Yokkaichi asthma.

With the rise of the middle class and serious concern over public health, however, municipal governments began to install urban development plans to make cities safer, greener, more orderly, convenient, pleasant, efficient and liveable. It should be noted, though, that urbanization in Japan has fortunately retained some traditional values and features in urban designs, local festivals and individual lifestyles.

COMMUNITY OWNERSHIP AND PARTICIPATION IN MUSASHINO CITY

There are still too few cities in Asia that have gone beyond physical urban landscape planning into people-centred institutional development planning, adopting the principles of good urban governance.

Through the "Self-Governing Charter" (Magna Carta) initiated in 1971 by the residents and finally adopted in 1976 by the municipal government, Musashino City became one of those rare examples of good urban governance. The Musashino Magna Carta, i.e. TAPES, has constantly been adapted to citizens' demands for urban living improvement, in the context of changing economic and social conditions surrounding the city at the national and global levels.

TAPES stands for: T for Transparency, A for Accountability, 4 Ps for Policy, Planning, Participation and Partnership, 4 Es for Equity, Empowerment, Efficiency and Effectiveness, and S for Economic, Social, Environmental and Cultural Sustainability. Under TAPES, the citizens of Musashino City have committed themselves not only to making their city economically dynamic, socially equitable and inclusive, environmentally friendly and culturally vibrant, but also to networking with other like-minded cities in Japan and overseas through organizations such as NACANs and ICLEI.

Residents of Musashino City have also participated in formulating their urban development plans and programs, and monitoring and evaluation initiatives. They have now moved from the traditional input-, sector- and economy- (ISE) oriented approach to urban governance, to a strategic outcome-, process- and holistic (OPH)-oriented approach.

Unlike the traditional approach that emphasized physical landscapes, the new approach is showing municipal output/outcomes in a holistic manner, in terms of GDP growth, population mobility, industrial and employment restructuring, quality of health and education, youth and gender equality, diversity, fiscal balance, fire and disaster resilience, etc.

During the transformation process, residents of Musashino have overcome a number of political and technical hurdles, which include addressing the representativeness of the Citizen's League – an umbrella NGO composed of all NGOs operating in the city; engaging in regular consultations with the mayor and council members for citizens' benefits; reorienting the municipal officers' mind-set through constant retraining to reflect social value changes and improve technical capacity; negotiating with the central government and members of the national parliament to further decentralize decision-making authority; and collecting quantitative data and indexing policy outcomes for monitoring and evaluation.

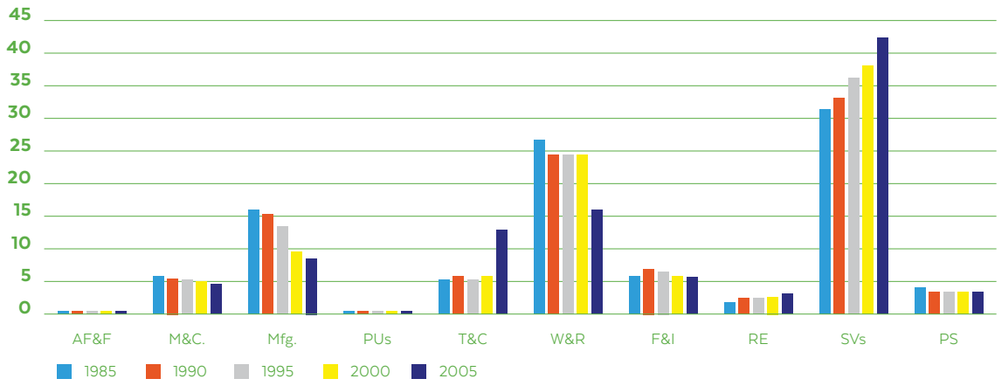
Demographic and urbanization trends in Asia and the Pacific, 1975–2025

Sources: UNDP, HDR 2002, Appendix Table 5, pp. 162-165; HDR2007/8, Appendix Table 5.

	Population (Million)			Urban Population as % of Total			
	1975	2015	2030	1975	1990	2015	2025
Developing	2,908	5,843	7,169.0	26.1	42.6	48.5	56.6
EAP	1,293.0	2,108.0	2,135.5	19.7	25.2	50.1	N.A
China	927.8	1,410.2	1,393.1	17.4	26.4	50.1	58.6
Indonesia	134.6	250.1	279.7	19.4	30.6	46.0	50.7
Malaysia	12.3	27.9	37.3	37.7	49.8	75.7	80.5
Philippines	42.0	95.9	126.3	35.6	48.6	50.4	55.4
Singapore	0.6	5.3...	6.0...	100.0	100.0	100.0	100.0
Thailand	41.1	69.9	73.3	15.1	29.4	36.2	42.2
Vietnam	48.0	94.4	101.5	18.8	20.3	33.6	40.5
South Asia	828.0	1,762	2,141.8	21.4	19.8	35.0	
India	620.7	1,258.4	1,523.5	21.3	25.6	31.7	36.6
Nepal	13.1	32.1	39.9	5.0	12.6	21.6	28.2
Pakistan	70.3	204.3	234.4	26.4	30.6	37.7	42.5
Sri Lanka	13.5	24.5	23.1	22.0	18.6	14.6	17.2
Developed *	925.0	1,209.0	1,216.9	70.4	72.0	81.2	N.A
Austraila	13.9	22.9	27.8	85.9	85.4	89.9	91.3
Japan	111.5	127.5	120.2	75.7	63.1	81.5	87.5
New Zealand	3.1	4.1	5.2	82.8	84.7	87.5	88.5
World	4,066.0	7,207.0	8,321.3	37.9	42.6	52.4	58.6

Employment by sector in Musashino City, 1985–2005

Source: Musashino Municipal Office (2012). Municipal Statistics, 2011, Table 2-2-1, p.22.



Sources: courtesy of Musashino Municipality

△ A town meeting with the Mayor of Musashino
▽ Citizen workshop on urban planning

Sources: Musashino Municipality

Source: courtesy of RKH Associate

△ In front of JR Kichijoji Station
▽ Residential garden park

CHANGING PRIORITIES IN URBAN PLANNING AND DEVELOPMENT

To respond effectively to shifting needs and requirements, the policy and planning priorities of Musashino Municipality have undergone a number of changes over the last fifty years.

Political independence in 1951, which returned the foreign occupied area to the city's administration, provided Musashino citizens with an excellent opportunity to collectively decide the physical planning of business, residential and public service facilities as well as the governance of the entire community. The foundation for a series of urban planning exercises, based on trial-and-error, was thus laid down, finally resulting in the formulation of the First Long-Term Development Plan, 1972-81.

Musashino City is now in the midst of implementing its Fifth 10-Year Development Plan and Program, 2012-2021. Underscoring the mayor's platform "In Pursuit of a Sustainable City with Citizen's Pride for the Future Generations," the city development plan is composed of as many as 52 sectoral plans, focused on four major development goals.

The first goal of this plan is to strengthen municipal self-reliance. Citizens and Civil Society Organizations (CSOs) active in the city believe in promoting decision-making authority for the people, greater self-reliance, and better economic stability and quality of life.

The second goal is to further enrich citizen's lives by providing closer access to all CSOs engaged in healthcare for the older generation, children's rights, gender equality, education, environment, disaster management, etc. in the spirit of mutual respect and support among all citizens. Diverse platforms and financial assistance are provided to CSOs to help strengthen their professional and organizational capacity and enhance interactions and cooperation to improve the quality of services for individuals and households.

The third goal is to maintain the peaceful and beautiful landscapes of residential, business and cultural zones with easy access for all citizens. Unlike most other small cities in Japan, Musashino City's population has been steadily increasing over the last few years. As younger generations move into town, Musashino City is faced with new challenges; it must determine how to respond effectively to the diverse aspirations of newcomers, whose social values and preferences are different from older, long-term residents.

The last goal is to retain clean and tasty water,

Source: courtesy of Musashino Municipality

△ Childcare center meeting
▽ Citizen's flea market in town

Sources: courtesy of Musashino Municipality

△ One of the Children's Eco Club activities in town
▽ Solid waste collection

ensure fresh air with renewable, sustainable energy use, promote greenery and garden parks rich with bio-diversity and to reduce solid waste. Citizens have so far achieved 25% of targets aimed at promoting green urban space, and reducing NO2, NO, SO2, solid waste disposal and water consumption per capita.

CO2 emissions, however, have seen a steady increase especially in the office and household sectors. The municipality must now identify the most effective regulation and market incentive mechanisms to stop this negative trend. Musashino Clean Center is installing waste power generation facilities that use waste collected in the city, and gas cogeneration facilities that use city gas as fuel. Solar electricity generation has seen a rapid expansion in both public buildings and individual households, reaching 3,266 kW in the city.

TASKS AHEAD

While improving municipal governance in Musashino city is a never-ending process, it is important to note that urban planning priorities in Musashino City have undergone remarkable changes, not only in response to, but ahead of shifts in demographic and socio-economic dynamics, business management and technological changes and people's ever-higher expectations within and outside the city for better quality of life.

Had it not been for the presence of a multitude of experts, the intensive process of stakeholder consultations, mayoral leadership and its dedicated bureaucracy, Musashino City would have never been recognized as the Most Liveable City in Japan for two consecutive decades or so. Musashino City is expected to remain a global model of urban planning and development, dedicated to enhancing the wellbeing of all residents and to promoting economic, social, environmental and cultural sustainability for the municipality, the region and the world.

AN ARTICLE BY RYOKICHI HIRONO
Professor Emeritus, Seikei University, Musashino, Japan

India's Affordable Housing and Development

¶ Founder and Director of Ahmedabad Study Action Group Kirtee Shah shares his thoughts on urbanization and its effects on India's development.

According to Kirtee Shah, South Asia's urban challenges need their own response

India's experience with urbanization is different than that of other regions, posing one of India's most difficult development challenges. By 2030, India's cities are projected to be home to another 250 million people. If the government and society—and I do not think it is the task of the government alone—fail to meet the demands of this challenge, we will suffer a setback.

To be an equitable, modern society, we cannot only talk about our ambition for close to double digit growth, which will cement our position as a global economic power. We must also ensure that our over 1,200 million people have a reasonable quality of life in their homes, villages, town and cities. Although I hate pointing it out and though programs like Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Smart Cities, Amrut, Housing for All by 2022, RAY, Make in India, etc. promise a lot, on the urban front, the country's performance has been less than inspiring.

And that is not new. When the then-Prime Minister Rajiv Gandhi set up the National Commission on Urbanization in the mid '80s, which I was privileged to be part of, the rationale was that although cities were the country's future, we were mismanaging them. And we need not go far in search of glaring underperformance now.

The case of three national "capitals" tells the story. In India's 'wealth capital', Mumbai, half of the city's 16 million inhabitants live in slums; wealth, glamour and filth exist side-by-side there. Delhi, the country's 'political capital' suffers from air quality problems, such that a leading newspaper recently declared it an unsafe place to live. In Varanasi, the country's 'religious/spiritual capital', the most revered national river is so polluted that it merited a special governmental task force and a substantial outlay of resources to clean it. Symbolic as these failure and problems are, they indicate a worrying scenario.

India's urban challenge, and in fact South Asia's urban challenge, is quite different than what we have known and handled, both qualitatively and quantitatively, elsewhere. It therefore needs its own, different - from its backyard, so to speak - response. The emphasis on finding a local, "indigenous" method is a reaction to the westward or western looking tilt we have had in our search for solutions, inspiration, images, ideas and models in designing, planning and managing our cities. Though symbolic, it is symptomatic of our attitude that we needed a Corbusier to design and plan Chandigarh, the new capital city of Punjab, immediately after independence — a genius, but not necessarily equipped to design a "people's" city.

And now Amravati, the new capital city of Andhra Pradesh, is being designed in Singapore, by Singapore-based designers and in the image of Singapore. In a globalised world, there is nothing wrong with seeking ideas, inspiration and expertise from outside. However, a new city needs an indigenous touch and a local flavour; it is nothing less than a statement of people's aspirations and a benchmark for society's progress.

URBAN ISSUES WORTH EXPLORING FURTHER

The Indian city is a work in progress. Urbanization is not only about a demographic shift, a change in the population's location, or employing a new label, talking about urban instead of rural dwellers. It is a major socio-economic-cultural transformation for the people. It is the emergence of a new society. It is a silent but critical transition. And though for some, it is a progression to upward mobility and a quantum leap to progress and prosperity, for the others, who find adjustment difficult, it is a struggle.

Think of migrants, pushed from a village to the city. Not only are they in an unknown territory and have nothing but poverty in their suitcases, they also lack the skills needed to work in the city. Poverty reduction, urban sustainability and keeping people at the centre of the development process should be priorities.

Poverty must be addressed as a priority, as it robs people of their essence and energy. The foundation of a more equitable society is set when people no longer see themselves as poor and incapacitated, and the state does not see them as a burden.

Releasing people's creativity and energy is the principle task. If cities are the engines of economic growth, they must be structured to eliminate poverty first, with its backward forward linkages, including rural poverty. A poverty-free society would make cities stronger engines of growth and more competent carriers of 'good' development. The second variable is urban sustainability. While cities occupy just 2% of the land surface, they consume 75% of the world's resources and contribute two thirds of the world's waste. Therefore, global sustainability is not possible without urban sustainability.

The need for technical and technological solutions, such as renewable energy sources to replace fossil fuels, is undeniable. However, lifestyle choices that make moderate demands on the world's resources also have a valuable role to play in achieving urban sustainability.

Finally, while pursuing urban development, it is important to keep people at the centre of the process. Typically, the emphasis of planners, authorities, financers and developers is more on the "locus" and less on the "people". Though they are interlinked, both education and practice have pushed the people part into the background. In the micro context, keeping people at the centre of development engenders a participatory design and consultative planning process. On a larger scale, it means democratization of systems and institutions, sharing authority, power and decision making and empowerment of people. However, there is a long way to go to make this vision a reality.

EXCERPT FROM AN INTERVIEW WITH
KIRTEE SHAH BY THECITYFIX
"Kirtee Shah: How Urbanization Is Affecting India's Affordable Housing and Development"

Half of Mumbai's 16 million inhabitants live in slums
Source: Jan S. / Shutterstock.com

Local Governance and Accountability Facility Program in Nepal

Nepal's Ministry of Federal Affairs and Local Development seeks to improve governance at the local level by fostering constructive cooperation, interaction and coordination between citizens and local government, and greater citizen participation in local governance processes.

One of the activities of LGAF with members of the public

Since 2008, Nepal's Ministry of Federal Affairs and Local Development (MoFALD) has been conducting a Local Governance and Community Development Program (LGCDP) to support entire local bodies (LBs), namely, districts, municipalities and village development committees (VDCs) for effective service delivery through citizen participation. The overarching goal of the LGCDP is to contribute to poverty reduction through inclusive, responsive and accountable local governance and participatory development. This program is jointly financed by the Government of Nepal and thirteen development partners under various financing arrangements. The program thus far has successfully established citizen empowerment and effective service delivery.

In the final stages of designing the LGCDP, a semi-autonomous Local Governance Accountability Facility (LGAF) was included as a support mechanism to foster positive, constructive and critical engagement of citizens and civil society with LBs and the primary units of public service delivery. LGAF is important for addressing the "downward accountability" of local authorities, which is required to match the substantial increase in financial resources made available to local government. LGAF is the key to achieving the second output of the LGCDP, which reads, "Increased capacity of citizens, communities and marginalized groups to assert their rights and hold local governments accountable".

THE ROLE OF LGAF

LGAF provides grants and capacity development assistance to Civil Society Organizations (CSOs), including Community-Based Organizations (CBOs), NGOs, media organizations and registered networks. It advocates for easier and more inclusive access to better public services and CSOs involved in monitoring public expenditure at the local level. In addition, LGAF does analytical work and provides information on best practices.

LGAF is currently operating in 66 districts in the country. It provides grants to CSOs to monitor LBs' compliance in accordance with legislative and policy requirements. CSOs that receive grants are required to carry out participatory monitoring to assess LBs compliance with legislative and policy requirements using social accountability tools.

MAIN OBJECTIVES

The objective of monitoring LBs is to increase public knowledge about LBs and local representatives' activities, provide internal information for LBs to improve their performance and work effectively with district agencies and CSOs, and help citizens and communities hold their local governments accountable. If achieved, these objectives will lead to enhanced compliance, better transparency and accountability, greater participation, and efficient delivery of public services and local governance. In addition, the monitoring is expected to support the selected LBs in establishing internal controls that comply with regulations and measure risks.

LGAF requires the CSOs to lead and undertake compliance monitoring over a three year period, subject to an annual renewable contract based on quality performance. The selected CSOs must have core competencies in good governance, downward accountability, social accountability, local governance and/or compliance monitoring.

Selected CSOs that obtain competitive grants from LGAF monitor LBs' compliance with legislative and policy requirements such as the Local Self Governance Act 1999 (LSGA), Local Self Governance Regulations 2000 (LSGR), Local Bodies Financial Administration Regulations 2007 (LBFAR), Good Governance Act 2008 (GGA), Right to Information Act 2007(RTIA), Right to Information Regulations 2008 (RTIR), Public Procurement Act 2007 (PPA), Public Procurement Regulations 2007 (PPR), and other guidelines issued under those statutes, including the Local Bodies Resource Mobilization and Management Guidelines 2012 (LBRMMG). These CSOs will be required to monitor planning, implementation and monitoring and reporting stages. They are encouraged to engage socially mobilized groups and institutions.

EXPECTED GRANT OUTPUTS

There are several results expected from the grants issued by LGAF. They are expected to enhance the capacity of the Ward Citizen Forum (WCF), which was created under the social mobilization and community development component of the LGCDP. They are also expected to help the Community Awareness Centre (CAC) and LBs to translate social accountability tools, such as public hearings, public audits and social audits, into practice. The grants also seek to increase citizen participation in planning, implementation, evaluation and monitoring, enhance the capacity of citizen groups and communities to hold their local governance actors accountable, and expand compliance monitoring initiatives to other LB units.

MONITORING, EVALUATION AND REPORTING

Following the program implementation, the selected CSOs are expected to run monitoring, evaluation and reporting procedures. These include checking whether the LBs have complied with legislative and policy requirements and thoroughly followed all applicable guidelines; and monitoring and documenting the formation, function and effectiveness of the VDC, municipality and District Development Committees (DDC), Supervision and Monitoring Committee and Monitoring and Facilitation Committee.

As public auditing is legally mandatory if the projects will be handed over to the community, CSOs must monitor whether LBs made any final payment to concerned parties without organizing a public audit, and submit the public audit report and project completion report. While organizing public audits, social audits, and public hearing to promote responsive, responsible, transparent and accountable local governance, CSOs must help select LB units adopt good governance practices. Prior to conducting the monitoring and evaluation process, CSOs need to prepare and finalise a check list, an interview schedule, a perception analysis questionnaire, and a focus group discussion (FGD) check

list. The CSOs must then vet these with the district urban governance expert and/or regional monitoring, reporting and accountability experts. They will then review key indicators relating to VDC findings. These preparations must promote participation in decision making, and provide dedicated funds for women and disadvantaged groups.

Assessment of the physical and financial aspects of programs, projects and works undertaken by the LBs in the review period, including a public audit in order to ensure quality of work, is required. CSOs conduct this assessment by visiting one third of the construction sites, with selected members of the related Supervision and Monitoring Committee, at least four times during the implementation of the grant. They then document and report their findings. CSOs are responsible for organizing one public dialogue on the state of accountability at the end of the year.

In addition, they also prepare and submit an inception report together with financial reports to LGAF Secretariat through the LGCDP regional coordination unit office. At the end of the project, CSOs develop a detailed compliance monitoring report, which is submitted to the regional monitoring, reporting and accountability expert and LGAF Secretariat. The report must discuss, among other things, the gaps and strengths of LBs in terms of compliance with legislative and policy requirements. The report also has to provide evidence of compliance and non-compliance during the planning, implementation and management phase, and the monitoring, evaluation and reporting phase.

Since the last two Nepali fiscal years (2014-15/2015-16), three Local Body Associations, Municipal Association of Nepal (MuAN), Association of District Development Committees (ADDCN), and National Association of Village Development Committee (NAVIN) have conducted CSO compliance monitoring for MoFALD. According to MoFALD, this practice is vital for quality assurance and monitoring the supply and demand for public services.

AN ARTICLE BY KALANIDHI DEVKOTA
Executive Secretary, Municipal Association of Nepal

References

1 Ministry of Local Development, "Local Governance and Community Development Programme (LGCDP), Programme Document," July 11, 2008, http://lgcdp.gov.np/phase1/home/publication/LGCDP-%20Pogramme%20Document.pdf, 27.

2 Municipal Association of Nepal (MuAN), "Local Governance And Accountability Facility, Local Governance And Community Development Programme," http://www.muannepal.org.np/activitydetail/local-governance-and-accountability-facility-local-governance-and-community-development-programme.html (accessed March 31, 2016)

3 *Municipal Association of Nepal Home Page*, http://www.muannepal.org.np/

Making Rural-Urban Links for Sustainable Urbanization in Asia: Lessons from Bangladesh

¶ **In Bangladesh, as in many Asian countries, a large proportion of the population lives in rural areas, outside the cities and towns. The dynamics of urbanization in Asia can only be understood by comprehending the economic, social and political roles that cities and towns play in catalysing rural development through the movement of people and income.**

Daily commuters return to their villages from Dhaka

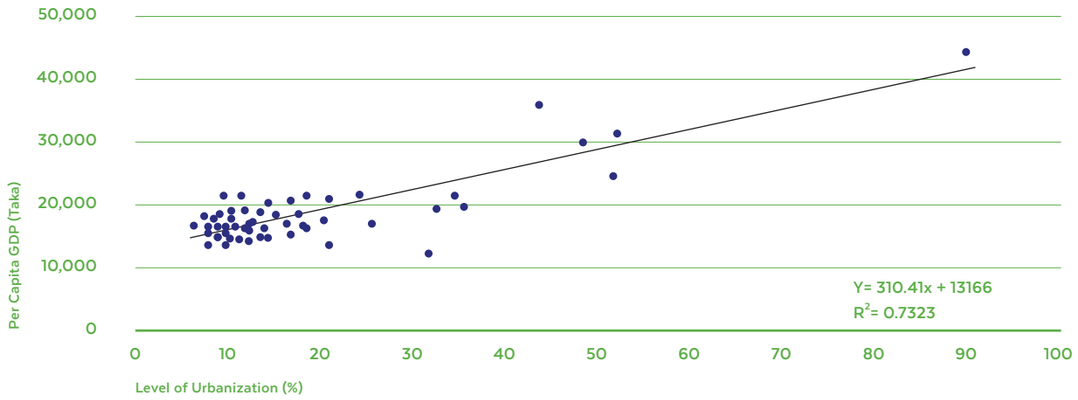
Rural-urban linkages are one of the most important issues shaping perspectives on urbanization in Asia. This has long been a subject of discourse in academic and policy making arenas. Interaction between rural and urban households becomes inevitable because most rural households try to diversify their sources of income and intra household economic activities as a strategy for coping with poverty and in times of desperation.

Some theorists explained the economies of developing countries through a notion of rural urban divide or poor linkages between rural and urban areas (Harris and Moore 1984). However, others find it difficult to use this notion as an explanation for the slow growth of developing economies. The two ends of the spectrum are actually interlinked and inseparable, and if urban areas are planned in an integrated manner with rural areas, sustainable urbanization is possible.

BANGLADESH REALITIES

In terms of population distribution in rural (72%) and urban areas (28%) (BBS 2011), Bangladesh is still a rural country, despite rapid urbanization since its independence in 1971. Traditionally, the majority of the nation's GDP, foreign exchange earnings, tax base and employment was generated by agriculture and other activities in rural areas, which were the focus of

Figure 1
Relationship between urbanization and economic development



development in various planning documents during the last four decades. But the benefits of such rural-oriented development approaches have hardly reached those living in rural areas. On the contrary, the rural biased approach has widened the gap between the rich and poor, and between rural and urban areas. The development of Bangladesh was a challenge that the country considered a "test case for development" (Faaland and Parkinson 1976). Considering the dominance of agriculture in the economy, agricultural development was almost synonymous with rural development. This apparent contradiction has led to the conclusion that rapid urbanization in Bangladesh (over 3.5% per annum, 2011) highly correlates with rural poverty. In 1972-73, the urban sector's contribution to GDP was only 25%, it increased to 38% in 1991-92, and further increased to 65% in 2010 (ADB 2010).

Figure 1 shows a good correlation between urbanization and GDP by district in Bangladesh. The districts with higher levels of urbanization show higher level of GDP per capita. This pattern can also be seen spatially in Figure 2. The increase in the level of urbanization in Bangladesh is mainly the result of rural-urban migration, landlessness, poverty, unemployment and environmental disasters such as floods, cyclones and river erosion, which serve as push factors driving people to emigrate to survive economically by reaping opportunities available in urban areas. Studies and censuses suggest that at least half of the total increase in urban population in Bangladesh is caused by rural-urban migration (Chaudhury 1983, Afsar 2000). Dhaka megacity attracts over 500,000 migrants of various forms—circular, seasonal and permanent—every year, due to its central location, accessibility and opportunities. Smaller cities and towns receive daily commuters from within their respective zones of influences and maintain very strong rural-urban links (Figure 3).

Linkages between rural households and urban centres are mainly for economic reasons and are important for coping with poverty. Even in the early 1990s, at least 55% of the rural households in one of the remotest districts, Faridpur, were linked to the urban system through employment and income (Nazem 1994). Another study (Akther 2010), which was conducted in 2009, shows that as many as 68% of households depend on income sources other than agriculture. The Labour Force Survey (2010) of the Bangladesh Bureau of Statistics (BBS) shows that only about 24.95% of the active population in the country is dependent on agriculture for their livelihoods. A substantial proportion of these households are linked with urban areas (BBS, 2013). BBS also shows that the growth of rural non agrarian establishments in the country is increasing at a faster rate (7.99% per annum) than those in urban areas (4.32%). This non-agrarian sector is a key source of employment that needs to be linked through appropriate policy supports with urban centres to enhance its efficiency and viability.

Figure 2
Urbanization and industrialization in Bangladesh

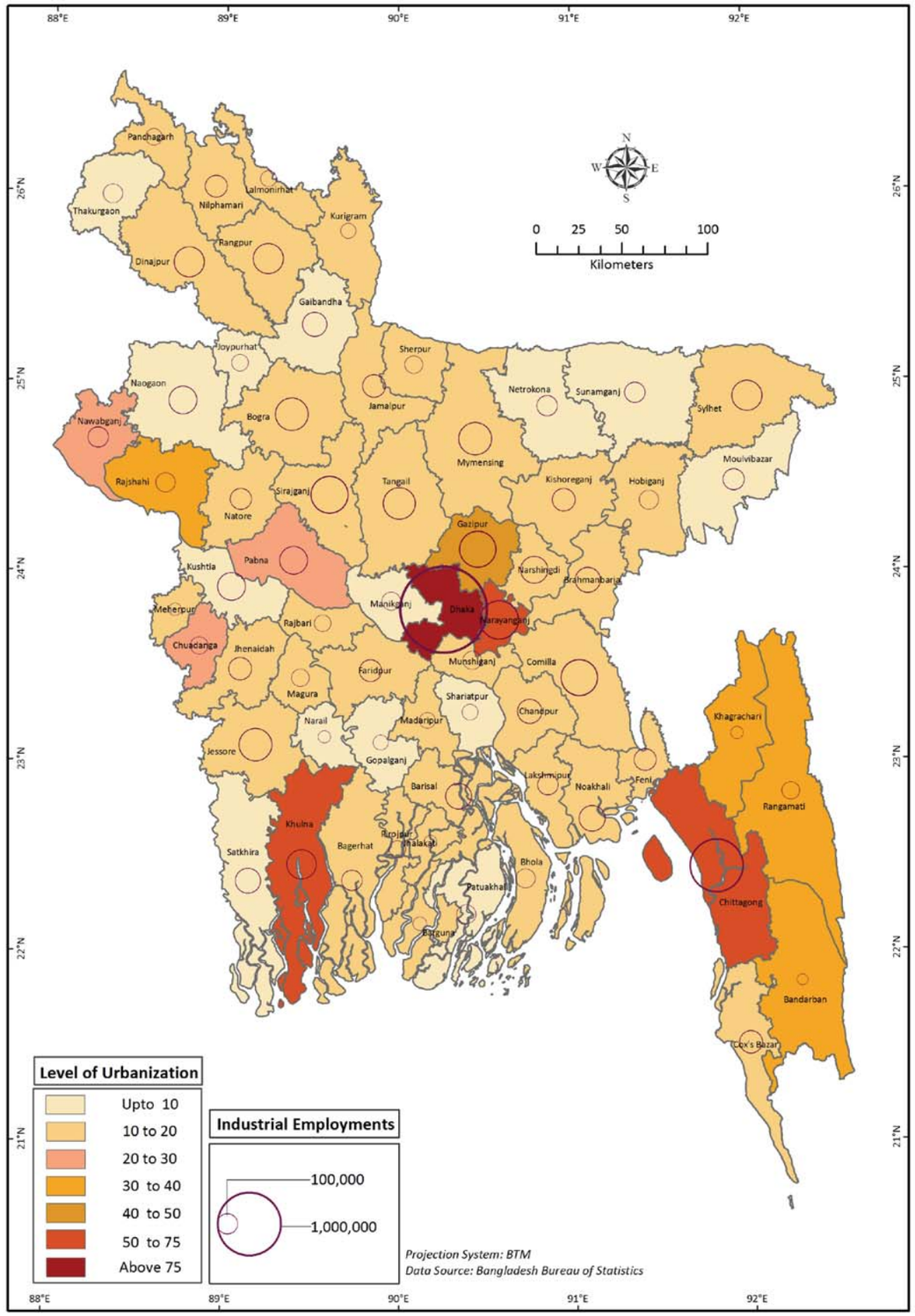
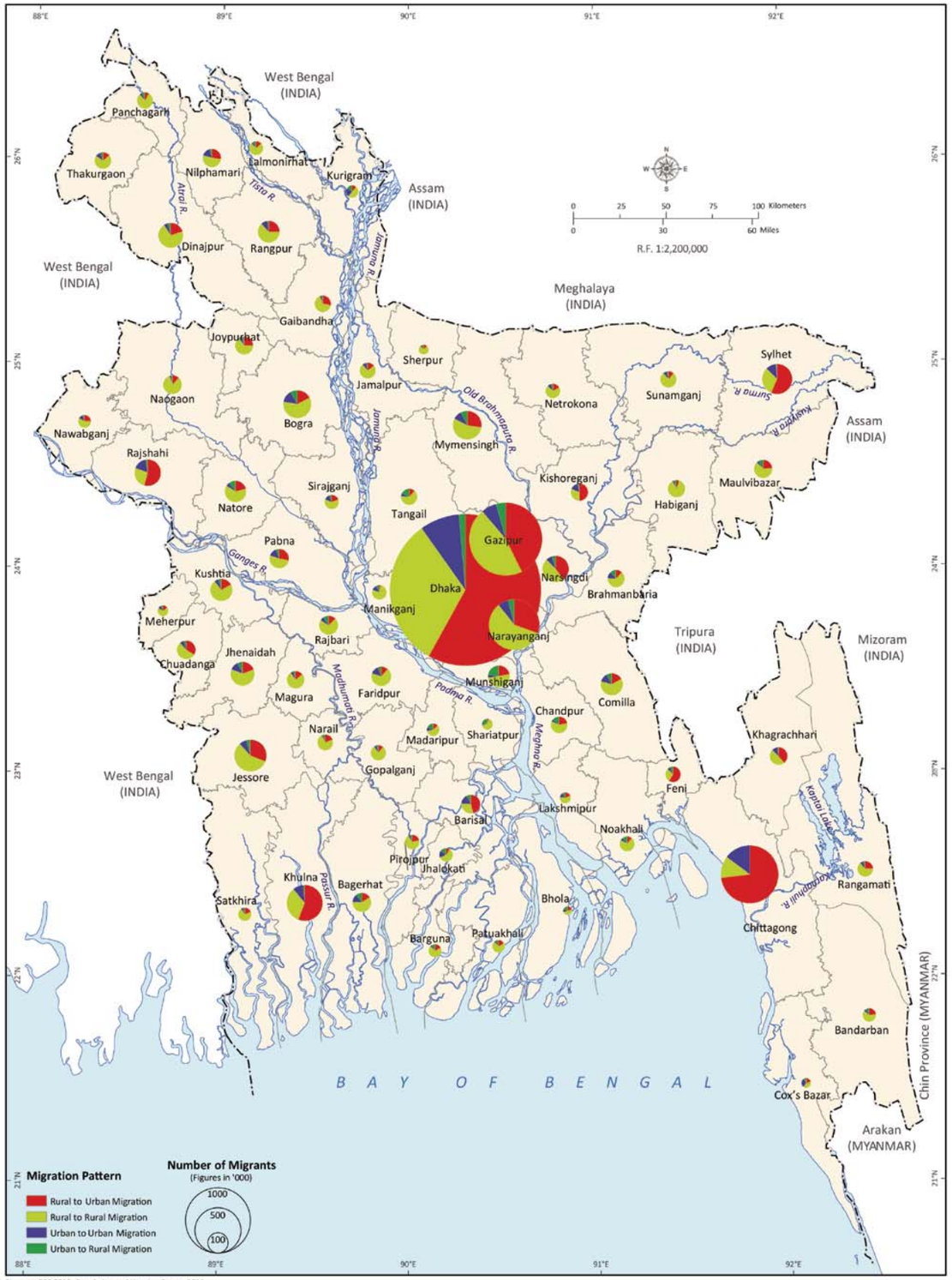


Figure 3
Bangladesh Migration Pattern 2011



Sources: BBS 2012, Population and Housing Census 2011

CHANGING POLICY CONTEXTS

Several national policies have shifted since 1971, leading to faster GDP growth rates. Between 1971 and 1975, the country followed socialist policies with an emphasis on nationalization, which was replaced by denationalization from 1975-1982. However, the shift lacked vision, and efforts at industrialization ended up being ad-hoc. The third phase supported structural adjustment, while addressing the failures of the denationalization efforts (1982-1990). The economy was then revamped to support export-oriented growth. These policies were followed by trade liberalization in the fourth phase (1991-95), when the economy was opened to global markets to attract foreign investment by removing institutional and regulatory constraints. The economy of the country gradually moved towards a free market system that supports private sector-led development (ADB, 2010).

The above policy shifts have qualitatively changed urbanization patterns, despite the fact that until 2005 Bangladesh didn't have any policy on urbanization. The National Report on Human Settlements (1976) prepared for UN-Habitat conference (Vancouver 1976) suggested a shift from rural-focused development to considering urban and rural areas together by integrating small and medium sized towns for balanced spatial development. The recommendation was to keep these towns within manageable sizes. However, it was never adopted as a policy, and rural urban integration thus remained elusive.

Thanks to the initiative of Local Government Engineering Department (LGED), a National Urban Sector policy was drafted in 2005 (but has not yet been adopted). This recognizes that urbanization in Bangladesh is dominated by two cities, Dhaka and Chittagong, absorbing nearly half of the urban population in the country. These two cities are the primary destinations for rural migrants, who populate unplanned low income communities that lack basic service facilities. The policy calls for balanced urbanization by integrating small and medium sized towns with rural areas.

CONCLUSIONS

There is a substantial gap between theoretical knowledge and empirical evidence with regard to rural-urban linkages and their benefits. The realities in Bangladesh show that such linkages are beneficial for rural people. The share of poor households' income that comes from urban centres is very crucial for their survival, although the rich both in rural and urban areas are the major beneficiary of linkages.

Urbanization in Bangladesh will continue to be influenced by prevailing rural conditions and the rural-urban migration flow is likely to continue towards larger cities. In such a context, economic integration between rural and urban areas will depend on national economic policies. The linkages between rural and urban areas are generated through a variety of processes, the most important of which is the income flow from urban centres and other non-agricultural activities to rural households to alleviate widespread poverty in villages.

AN ARTICLE BY NURUL ISLAM NAZEM
Centre for Urban Studies, Dhaka

References

1 ADB (2010) *City Cluster Economic Development: Bangladesh Case Study*, Manila: Asian Development Bank, AusAID and Centre for Urban Studies (CUS)
2 Afsar, R. (2000) *Rural Urban Migration in Bangladesh: Causes, Consequences and Challenges*, Dhaka: University Press Ltd.
3 Akther, H. (2011) "Rural-Urban Linkages in Feni District" (Bangladesh), M. Phil Thesis, Dhaka: Department of Geography and Environment, University of Dhaka
4 BBS (2011) *Labour Force Survey 2010*, Dhaka: Bangladesh Bureau of Statistics.
5 BBS (2013) *Economic Census 2013*, Dhaka: Bangladesh Bureau of Statistics.
6 Chaudhury, R. H. (1983) *Migration, Mobility and Income Distribution: Some Evidence from Bangladesh*, Urban and Regional Policy Analysis in Developing Countries, London: Gower
7 Faaland, J. and Parkinson, J. R. (1976) Bangladesh: A Test Case of Development, Dhaka: C. Hurst & Co. and University Press Ltd.
8 Harris, J. and Moore, M. (1984) *Development and Rural-Urban Divide*, London: Frank Cass
9 Moore, M. (1984) "Political Economy of Rural-Urban Divide: 1967-1988", in Harriss, J. and Moore, M. (eds.) *Development and Rural-Urban Divide*, London: Frank Cass
10 Nazem, M.N. (1994) "Rural-Urban Interaction in Bangladesh: A Study of Linkages between Villages and Small Urban Centres", Ph D Thesis, University of Durham, UK.

Metropolitan Labour Markets and Urban Productivity

¶ Urban productivity is determined by a number of variables, including population size and urban sprawl. With effective infrastructure investment, cities can enable more workers to access available jobs, creating integrated labour markets and increasing urban productivity.

Traffic situation in Lahore
Source: Asianet-Pakistan / Shutterstock.com

From an economic perspective, the concept of a metropolitan area is related to the existence of an integrated labour market. If the labour market extends beyond the municipal boundaries of a city, it becomes part of a metropolitan labour market.

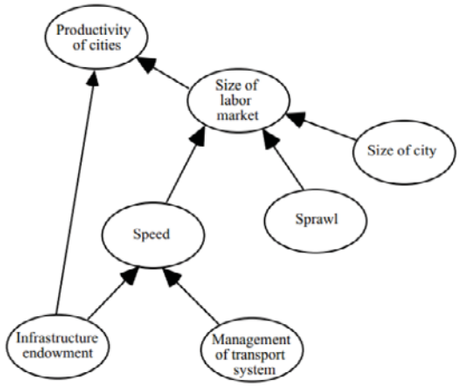
Metropolitan labour markets are important because output per worker increases with the size of the labour market; increased population density leads to a higher number of economic interactions per unit of area.

However, the population size of a city is only one determinant of its productivity. The other critical determinant is urban sprawl, which takes into account how far jobs and residences are located from one another, and the speed of transport, which influences access to jobs. The speed itself is a product of the transport system and infrastructure investment management. In this framework, one key objective for an urban area is to increase the size of the labour market, which becomes a useful indicator to measure policy effectiveness for increasing urban productivity.

One measure of the 'effective size' of a labour market is the average number of jobs available to city residents within a travel time of 60 minutes, using a mode of transportation available to the majority.

Research suggests that the agglomeration effects on labour productivity die out almost completely beyond the one-hour commute boundary. Studies show that 100% of the total jobs in cities like Los Angeles, Chicago, District of Columbia and Atlanta are accessible to every worker within a one-hour commute, i.e. these cities have fully integrated labour markets. This high access, despite the well-known sprawl of these cities, is due to a combination of high-speed public transit (DC, Chicago) or reliance on the personal automobile for commuting (LA, Atlanta).

One would expect the effective size of the labour market to be smaller in South Asian countries, where not all workers will be able to access every job easily, because high-speed public transit is limited and most households do not own motorized transport. This matters from a policy perspective since without an integrated labour market a city does not benefit from its large population size but only bears all the well-known disadvantages. In effect, a city with fragmented labour market is really a set of smaller cities adjacent to each other. To access a higher paying job in a non-overlapping labour market, a worker would need to relocate.



Factors Explaining Productivity of Cities
Source: Prud'homme, R. 1997. Urban Transport and Economic Development. Revue Region & Developpement, [online] 5. Available at: http://region-developpement.univtln.fr/en/pdf/R5/R5_Prudhomme.pdf

THE CASE OF LAHORE

This hypothesis was tested in the 40th largest city in the world, Lahore, which has a metropolitan population of 9 million. We limited ourselves to one aspect of the size of the labour market – access to the presently existing number of jobs – leaving aside the equally important employment creation aspect, which aims to increase the total number of available jobs.

Formal estimation of the average number of jobs that can be reached by the typical worker in one hour requires sophisticated modelling and a rich data source. With sparse data and budget constraints, a proxy measure can be used – the population that can access a particular node in the city within a one-hour commute as a proportion of the total city population.

Taking Lahore city centre as the relevant node we first measured access to it from three small cities within a 30 mile radius of Lahore. We found none within a one-hour commuting distance from Lahore using public transport. Hence, Lahore does not have a metropolitan labour market. We then investigated the labour market within the municipal boundary of Lahore. Using the main industrial and service sector hubs and residential housing concentrations as relevant nodes, we confirmed that the Lahore labour market is highly fragmented.

Workers return home in an overloaded bus in Jhansi province, India
Source: Boris Stroujko / Shutterstock.com

POTENTIAL SOLUTIONS TO THE FRAGMENTED LABOUR MARKETS

Increasing the economic productivity of Lahore requires the integration of its fragmented labour markets. A time-bound target would require strategic investments in high-speed public transit and improved traffic management along particularly congested corridors. The unambiguously measurable indicators of effective labour market size would allow progress to be easily monitored over time.

Such an intervention would simultaneously augment the metropolitan labour market, since our study revealed that the commuting time from the neighbouring small cities to the municipal boundary of Lahore was well within 60 minutes. The main delays occurred in the segments connecting the municipal boundary to the city centre.

Our study showed that the prevalent policy of road investments does not support labour market integration; rather it enables the affluent to move out to less dense suburbs and commute back on new roads using private automobiles further congesting city centres. The mobility of the lower-income majority within the dense quadrants of the city continues to worsen. The perverse outcome is that while the area of some one-hour commute circles increases over time, their population densities drop significantly.

Such an infrastructure investment strategy caters to the convenience of the affluent and does virtually nothing for economic growth. It promotes a rapid increase in the number of private vehicles and prevents the city from staying ahead of the demand for road space. A strategy that is focused on urban economic growth needs to reorient itself to infrastructure and traffic management investments that positively impact the speed of movement in the dense areas themselves, rather than in facilitating access to the dense areas.

A UNIQUE APPROACH FOR SOUTH ASIAN CITIES

While the focus should be on high-speed public transit in dense areas of cities, we do not recommend emulating developed cities by extending the network outside municipal boundaries (e.g. as in Washington, D.C., where outlying cities within 30 miles are a part of the metro-rail system). This is because the wage differential for the majority of workers between the outlying locations and the primary city is not sufficient to cover the incremental transport costs.

This conclusion raises the much bigger question of whether South Asian cities at their present levels of economic development and per-capita incomes should aspire to be compact or connected. This issue has not received adequate attention and real estate imperatives have caused most cities to spread out (sprawl) without adequate connectivity. They have become automobile-centric cities, even though less than 10% of their households own automobiles and compensating investment in public transport has been insufficient.

While it is too late for cities of the size of Lahore to undo their sprawl, the question should be taken seriously for smaller cities that are urbanizing rapidly, but still have time for intelligent spatial design interventions.

While recent investments in Bus Rapid Transit are ostensibly moving in the right direction (the completed BRT line in Lahore increased the size of the contiguous labour market by about a third), the orientation must be reassessed in the context of the compactness versus connectedness debate, necessitated by ability to pay realities. This would force much needed attention to issue of land use efficiency and how to enhance it using planning tools such as Floor Area Ratios, Transferable Development Rights, and Urban Growth Boundaries. These tools are currently not being leveraged at all in the urban planning of most cities in South Asia.

AN ARTICLE BY MIR ANJUM ALTAF
Vice-President and Provost
Habib University, Karachi
Formerly, Professor of Economics and Dean, School of Humanities and Social Sciences
Lahore University of Management Sciences, Lahore
Tel: (92-300) 8440 851

Performance Budgeting for Sustainable Urbanization

¶ Urbanization within the United Nation's Sustainable Development Goals framework requires a shift in city government policy and approach, and performance budgeting will play a critical role in supporting this change.

Asian cities have developed innovative urban planning approaches, but they are lacking in the area of budgeting and program management. In fact, within municipal government these functions operate in distinct silos, with little coordination and convergence in their activities.

The present operational system at the city level needs to be reformed to instil sustainability in the urbanization process. First, cities should examine the key distinction between an output deliverable and outcome deliverable. Urban sustainability cannot be ensured only through the attainment of outputs; outputs must serve as the base to generate lasting outcomes. Sustainability is secured only when there is a definite impact on city government operation and the lives of citizens.

Performance budgeting can instil sustainability in city outcomes through a performance-oriented integrated system of program monitoring, evaluation, urban planning and budgeting.

THE TRADITIONAL APPROACH

The traditional approach to city planning, budgeting and program management has been output-oriented. A few specific output deliverables are identified for each of the three operational functions. Planning seeks to basically improve service coverage; budgeting seeks to mobilize funds and monitor expenditure on the planned projects, as per the approved budget lines (without considering the results of the expenditure); and program management monitors program implementation with respect to time and cost schedules, and assesses whether the output deliverables have been obtained. Invariably, field-level results are rarely used in the city planning and budgeting processes.

The traditional monitoring and evaluation system does not seek to assess the causative factors for the project's failure or success; its focus is restricted to assessing the utilization of the allocated budget and attainment of target outputs.

DISTINCTION BETWEEN OUTPUT AND OUTCOME

A city program's output is restricted to improving the population's access to a specific service, and assessment is directed towards measuring the increase in coverage over a specific period. If sanitation coverage for the population has increased from X% of population to 2 X%, that is an indicator of success. Operational challenges relating to service regularity and quality are not taken into account and neither is a decline in coverage at a later point in time.

In sharp contrast, outcomes instil sustainability, as maintaining an outcome requires the output flow to be continuous, and more significantly, bring about a change in the recipient's quality of life and the city's economy. While access to a specific quantum of water may be the required output, its outcome, for example, will improve the quality of life and lower the level of water-borne diseases. As such, operationally, while increasing the water output can be attained by the water department on its own, to improve water outcomes, a partnership is required between the water, health and other departments. Cross-departmental collaboration is one of the critical missing pieces for many city governments seeking to ensure sustainability in the urbanization process.

PERFORMANCE BUDGETING

Operationally, the lack of partnership between functions and departments becomes a major roadblock to delivering outcomes. Developing and sustaining forward and backward linkages among departments is a critical necessity and performance budgeting can play an important role in building these linkages.

Traditionally, performance budgeting has been used to cut budgetary allocations when proposed deliverables (largely outputs) are not attained. No attempt is made to assess the causative factors of the failure to attain the targets. Research in Society for Development Studies - a not-for-profit autonomous research, training and consultancy institution under the Societies Registration Act of India - has revealed that often failures are caused by deficient planning: some activity that is critical for success is not considered and included first in the city plan and then in the city budget, which is based on items included in the approved city plan. Hence no budgetary allocation is provided to fund the activities that could address these causative factors.

Outputs are the first product of a typical operational system at the city level. Most key output targets relate to basic service coverage for things like water, sanitation, transport and health, among others. Sustainability of coverage, in terms of regularity and quality of service, is not necessarily a component of the coverage goal. This is the first inadequacy of the output-oriented system of urban planning.

While the first stage output can be attained through the efforts of a single department within the city government, the final outcomes have to be based on maintaining the outputs and taking the process further.

This requires an integrated system of outcome-oriented urban planning, budgeting and program management. Performance budgeting has to go beyond reducing budgetary allocations when desired output or outcome results are not attained, to actually assessing the causative factors of failures. Then the city must allocate additional budgetary resources to address these causative factors the following year. The monitoring and evaluation program has to provide details about causative factors to the urban planning team and once these new items are included in the new urban plan, the budgetary team can provide the budgetary allocation to address the causative factors.

Thus, an integrated system of partnership between the urban planning, budgeting and program management teams is critically necessary for obtaining sustainable outcomes in the processes of urbanization.

AN ARTICLE BY DR. VINAY D. LALL
Society for Development Studies (SDS)
http://www.sdsindia.org/

Seoul City's Work towards Progressive Governance

¶ Mayor Park Won Soon of Seoul sees a crucial role for citizens in making city policies, and has launched several people-centred initiatives to channel public interest.

Mayor Park encourages dialogues with the public
Source: Seoul Metropolitan Government

Seoul's government was focused on physical growth for almost 10 years, under the leadership of two consecutive mayors, from 2002-2011. In this context, civic activist Park Won Soon's victory in the mayoral election in 2011 represented a dramatic shift, bringing progressive governance that emphazises citizen participation into focus. Mayor Park included civil society directly in government work through two landmark changes in municipal administration: substituting the economy-centred development agenda with a people-centred living welfare agenda, and replacing the rule-driven bureaucratic governance of statism with democratic governance based on civicism. The former aspect is epitomized as 'agenda innovation', while the latter is a form of 'governance innovation'.

Innovation in people-centred governance is based on a civicist philosophy that respects civil society for social harmony and progress, where citizens serve as the principal agents of municipal governance.

Agenda innovation and governance innovation are two axes of the municipal reform wrought under the leadership of Mayor Park. His attempt at progressive municipal reform is comparable to the reformist municipal movement in Japan during the late 1960s and 1970s. Like the Koreans, the Japanese conducted reform along two axes of agenda revolution and grassroots participation. Both movements have a similar background, in which middle class voters endorsed post-developmental policy agendas that promote non-material well-being in addition to the economic growth prioritized by previous administrations. They also advocated for democratization of municipal governance through grass roots empowerment.

The philosophy of civicism prioritizes people's well-being over economic growth, people prosperity over place prosperity, welfare provision over mega urban development, and democratic governance over bureaucratic governance. Stimulated by civil society, these experiments have turned Seoul Metropolitan Government toward progressive city governance.

Cheongchaek or Listening Policy Debate with the Mayor of Seoul
Source: Seoul Metropolitan Government

TOWARDS A PEOPLE-CENTRED CITY

The central idea of a progressive city is to 'bring people back to the centre', which was not a focus for former governments that prioritized economic growth. The progressiveness of a city is directly related to citizen engagement. Inclusivity is essential for city dwellers to be actively engaged in daily social activities and local governance. Mayor Park adopted this vision to transform Seoul into a city for and by the citizens, which means that citizens are at the centre of Seoul City governance.

Mayor Park has a unique principle, 'every citizen is a mayor,' which suggests that his authority derives from the people and civil society, instead of the state. He has appointed several 'citizen mayors', and welcomes the public to his office by hosting a series of public visit and various meetings. He regularly runs an onsite mayor's office, moving around Seoul to engage local communities to solve specific issues they face. Several government positions, focused on community design, communication and social innovation, are occupied by "civilian officials" recruited from a pool of citizens. Instead of being passive policy consumers, citizens are charged with providing public services, bringing to governance the perspective of Seoul residents.

PUBLIC DIALOGUE

Unlike previous administrations, the Park administration organizes dialogues between the mayor and people, as well as among people to increase residents' direct engagement in policy making. This idea of a 'human city' can be understood as a Korean variant of a progressive city, which includes 'Listening-Policy' sessions, where policymakers—including Mayor Park—listen to and discuss citizens' policy propositions face-to-face. Public dialogues can take the form of a deliberative meeting moderated by narrators, a round table for in-depth discussion on a specific topic, a consensus conference to gain public support for key initiatives, a citizens' open convention to build consensus, and policy fair to directly convey policies to citizens for information and feedback.

As of 2014, an estimated total of 100,000 people had engaged in such social innovation projects, highlighting issues and guiding policy direction and action. This was a remarkable achievement for Mayor Park's first term(October 2011-June 2014).

Citizens' participation was also bolstered when Mayor Park introduced the 3 Year Visionary Plan for Municipal Administration three months after his inauguration. The plan contained 337 items, shaped by a policy advisory group, to promote people-centred governance. The group consisted mostly of progressive young citizens, such as civil society activists and their associated professionals.

Diverse governance bodies, consisting of citizens committees, were set up to strive for more extensive public participation. Between 2011 when Mayor Park came into office and mid-2014, 47 citizen committees were formed, all founded on city ordinances and commissioned to implement Mayor Park's campaign pledge projects such as One Less Nuclear Plant, the social economy, and participatory budgeting. Unlike previous governments, all citizen committees under Mayor Park's administration are empowered, enabling citizens to exercise their right to actively participate in city government.

Two of the most outstanding examples of this initiative are Citizen Planning Board for '2030 Seoul Plan' and Citizen Committee on Participatory Budgeting. A number of intermediary organizations to mediate between the public and the private sectors have also been established, in the form of partnership organizations such as the Supporting Centre for Social Economy and Supporting Centre for Community Regeneration, whose operations are entrusted to citizens with the duty to support grassroots social innovation for a human city.

AN ARTICLE BY MYUNG-RAE CHO, D.PHIL.
Professor of Urban and Regional Planning
Dankook University, Korea
myungraecho@naver.com

Towards a Sustainable Future through Meaningful Partnership: Reflections on the Outcomes of the 6th Asia-Pacific Urban Forum

¶ Cities in Asia and the Pacific stand at a crossroads. The way they develop in the following decades will have a profound impact on the sustainable development of the region, and of the world.

Cities in the Asia Pacific region already host over 2 billion people, representing over 50% of the world's urban population. Another 600 million will join the ranks of urban dwellers by 2030. Rapid urbanization presents challenges but also tremendous opportunities to drive the transition to sustainability in the region.[1]

Cities in the region need to lead the way in charting a sustainable future for their people and the planet, including by implementing key global commitments such as the 2030 Agenda for Sustainable Development, the outcomes of the recent climate change negotiations in Paris, and the New Urban Agenda to be adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in October.

The importance of cities for global sustainable development was recognized through the inclusion of a dedicated sustainable development goal in the 2030 Agenda for Sustainable Development, Goal 11 (make cities inclusive, safe, resilient and sustainable). However cities will be central to the implementation of the whole 2030 Agenda for Sustainable Development, as the lion's share of the goals and targets will require action at the local level.

Cities will also be at the forefront of efforts to combat climate change. Cities are responsible for 71-76% of global CO2 emissions.[2] They are also highly vulnerable to the impacts of climate change, especially in the Asia-Pacific region. The key role of cities in addressing climate change was prominently highlighted at the landmark twenty-first Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement explicitly acknowledged the role of non-Party stakeholders, including cities and other sub-national authorities, and encouraged them to scale up their efforts and support actions to reduce emissions, build resilience and decrease vulnerability to the adverse effects of climate change.[3]

Cities will again be at the centre stage during global development deliberations in October this year at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), to be held in Quito, Ecuador, on 17-20 October 2016. Twenty years after Habitat II in Istanbul, Habitat III will be the first global summit following the adoption of the 2030 Agenda for Sustainable Development and will provide a unique opportunity to discuss the important challenge of how human settlements are planned and managed in order to fulfil their role as drivers of sustainable development. The third and final session of the Preparatory Committee of Habitat III will be held in

Panoramic view of Zhenyuan, China
Photo by Peng Junhua

1. Governance, poverty and other challenges for Asia's developing cities

Surabaya, Indonesia, on 25-27 July 2016 and will provide a great opportunity for national and local governments in the Asia-Pacific to showcase the opportunities that urbanization offers and to provide leadership to global discussions.

Cities in the region are already leading the transition to sustainability, often ahead of national governments. For example, cities led the way to the Paris climate change negotiations with a host of pledges and commitments, such as the Compact of Mayors, the world's largest cooperative effort among mayors and city officials to reduce greenhouse gas emissions, track progress and prepare for the impacts of climate change. More than 400 of the world's leading cities have already signed the Compact, including 64 from Asia and the Pacific.

However, local governments alone cannot tackle the challenge; success will require broad-based partnerships with a number of key stakeholders, including other levels of government, civil society, the private sector, and academia. A people-centred approach will also be essential to guide the transformation of cities and human settlements in Asia and the Pacific.

These were among the key conclusions of the 6th Asia-Pacific Urban Forum (APUF-6) and the Habitat III Regional Meeting for Asia Pacific, held back-to-back in Jakarta in October 2015. APUF-6, convened by ESCAP in collaboration with the Government of Indonesia and over 30 regional partners, was attended by more than 900 participants and served as a multi-stakeholder regional platform for participants to share best practices in critical and emerging urban development issues. The Forum's 'Jakarta Call for Action' on sustainable, inclusive and resilient urban development provided a set of recommendations to turn the promise of sustainable urban development in the Asia-Pacific region into reality.[4]

Local governments are invested with a growing degree of responsibility, which in most cases has not been matched with the required financial resources, or legal mandates and capacities. The APUF-6 Jakarta Call for Action advocates for a more balanced distribution of responsibility between the different levels of government concerned with managing urban areas and surrounding towns. While national governments play an important role, including in creating an effective legal framework, partnerships should be based on the principle of subsidiarity and better accommodate local government and community needs.

Therefore, to achieve implementation of the 2030 Agenda for Sustainable Development and the outcomes of Habitat III, it is essential to re-focus attention on building effective partnerships that span different levels of government, as well as private sector and civil society. A people-centred urban future is integral to the transformation of cities and human settlements in the Asian and Pacific region. This requires a radical shift in the way cities are conceived, planned and developed, with people, particularly women and youth, as well as marginalized and vulnerable groups, seen as change agents.

The Jakarta Call for Action recognized that progressive national legislation and policy; innovative financing mechanisms; the use of technology for barrier-free information access and greater engagement in decision-making; and a stronger, more united and representative civil society are critical enabling factors in realizing people-centred cities.

Habitat III and its PrepCom 3 in Surabaya provide another opportunity to bring stakeholders together to develop a shared vision and strategy and focus on implementation through meaningful partnerships. Let cities be in the driver's seat for the transition to sustainable development in Asia and the Pacific.

AN ARTICLE BY DONOVAN STOREY & LORENZO SANTUCCI
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
Rajadamnern Nok Avenue - 10200 Bangkok, Thailand
E-mail: storey@un.org

Endnote:

1. United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and United Nations Human Settlements Program (UN-Habitat), 2015, "State of Asian and Pacific Cities 2015", http://www.unescap.org/resources/state-asian-and-pacific-cities-2015-urban-transformations-shifting-quantity-quality
2. Intergovernmental Panel on Climate Change (IPCC), 2014, "IPCC Fifth Assessment Report", http://www.ipcc.ch/report/ar5/
3. FCCC/CP/2015/L.9/Rev.1
4. APUF-6 Jakarta Call for Action http://www.unescap.org/events/apuf6

Commuters at rush hour in Kolkata, India
Photo by Kibae Park / ESCAP

Boys in Thai village
Photo by innervisionArt

From the right: H.E. Mr. Basuki Hadimuljono, Minister of Public Works and Housing of Indonesia, Dr. Shamshad Akhtar, Under-Secretary-General of the United Nations and Executive Secretary of ESCAP, Ms. Mary-Jane C. Ortega, Chair of APUF-6 and H.E.Sadat Mansoor Naderi, Minister of Urban Development Affairs, Afghanistan, officially open APUF-6, Jakarta, Indonesia
Photo by ESCAP

1. Governance, poverty and other challenges for Asia's developing cities

2.

Successful urban solutions implemented in Asian cities

Converting Sludge to Energy in Xiangyang, China

¶ World Resources Institute studied a pilot project in the city of Xiangyang to convert sludge to energy, which successfully delivered environmental, energy and economic benefits.

△ Before project implementation: Sludge was piled up at the project site
▽ After project implementation: Trees were planted with biochar produced from the plant

Rapid urbanization in China has generated substantial quantities of liquid wastes in municipalities, and along with it massive investments in wastewater conveyance and disposal. This increased the need for wastewater treatment plants (WWTPs) to treat the generated wastewater and has led to a significant volume of sludge, as the by-product of the treatment process. It is estimated that China's municipal wastewater treatment plants produced over 30 million tons of sludge (80% water content) by 2015, making it not just a local downstream environmental problem, but also an important global environmental opportunity to capture significant amounts of greenhouse gas emissions generated through the process.

Finding effective and sustainable solutions for sludge disposal is a challenge faced by all countries that witnessed rapid urbanization. Cities in OECD countries have invested in various technologies aimed at recycling sludge into compost, energy and biochar. One method involves 'capturing' various by-products of the anaerobic digestion process before they end up polluting the land, water and atmosphere.

Xiangyang City in Hubei Province is perhaps the first city in a developing country to test out this process by investing in a "high temperature thermal hydrolysis + highly concentrated anaerobic digestion + methane capture and utilization" pathway through which co-digested sludge and kitchen waste was rendered harmless to the local, regional and global environment. In fact, the analysis of this Xiangyang project indicates that the economic benefits to the local community are significant, as the project design harmonizes the interests of the city government, the investor and the financier.

Xiangyang's practice shows how a mid-sized city in China has successfully accomplished multidimensional goals of treating sludge, while generating renewable energy and recovering resources through a cost effective green treatment process. The World Resources Institute (WRI) was invited to independently review the energy, environmental and economic benefits of the Xiangyang case. WRI summarized Xiangyang's experience and provided insights on how other cities in China and in other developing countries facing similar challenges can sustainably address their sludge disposal problems.

ENVIRONMENTAL, ENERGY AND ECONOMIC BENEFITS

The project in Xiangyang supports the environment by producing struvite from sediment and anaerobic ammonium oxidation (Annamox), which can

△ Kitchen waste collected at a restaurant
○ Kitchen waste collection truck
▽ Kitchen waste treatment at the project site
▷ Trees planted with biochar

After project implementation in Xiangyang

be applied to soil and used as a fertiliser for crops. The project is designed to recover 96% nitrogen (N) and 98% phosphorous (P) into biochar. Applying biochar when planting trees can serve as a climate change mitigation tool because of its potential to increase long term soil carbon pools and reduce greenhouse emissions.

In addition to the environmental benefit, this project also provides energy benefits. An estimated 227,000 tons of sludge and kitchen waste can be co-digested with 13,000 tons of CO2e ('carbon dioxide equivalent' or greenhouse gas) emissions during the 21-year contractual period of the project's operation. Compared to other means of waste management, like using landfills and incineration, the project may reduce 800,000 tons and 220,000 tons of CO2e emission respectively.

The project produces 55-60 tons (40% water content) of biochar daily. If the biochar is used for planting trees, 432,000 saplings and 800,000 m^2 of land will be needed to consume the biochar produced in two years (one sapling can consume 100 kilograms of biochar soil). According to the estimation of life cycle analysis, the carbon sink capacity of trees planted will reach 751,000 tons during the 21 years of the project's operation period.

The project received support from the municipal government. It provides economic benefits through low-interest loans that were made available by international financial organizations and the Export-Import Bank of China.

This "government-bank-enterprise" partnership was key in working out long term contractual agreements that ensured a harmonization of interests between the local government, the financing entity and the enterprise. The government wanted to eliminate pollution from sludge; the financing entity offered concessional financing as a means of bridging any financial viability gap; and the enterprise was interested in running a sustainable commercial operation, producing Compressed Natural Gas (CNG) by capturing CH^4 and selling biochar for urban forestry programs.

KEY FINDINGS OF THE XIANGYANG PROJECT

The Xiangyang project successfully achieved the goals of financial viability, sludge stabilization through pollutant reduction, resource recovery, close to zero net carbon emission from the wastewater system, and renewable energy generation in the city.

Using the technical method of "high temperature hydrolysis + anaerobic digestion + heavy metal vulcanization + methane capture and utilization+ biochar soil", the project successfully recovered and reutilized the nutrients in sludge (C, N, P and etc.), avoiding the secondary pollution of water bodies. During the 21 years of the operation period, not only will the project reduce over 95% of the GHG emissions, but will also produce 45 million m^3 of CNG to replace 60,000 m^3 of gasoline, and an extra 140,000 tons of CO^2 reduction.

Joint support from the government and market has proved efficient in solving the sludge project's funding challenges. The successful implementation of a build-own-operate (BOO) contract arrangement validated the importance of cooperation between local government and the private sector. A key factor in enabling these green investments was the availability of low-interest rates and longer tenors, because this lowered the financial cost of the project.

In addition, as the Xiangyang project needs to treat 300,000 tons of old sludge, which has relatively little organic matter, the local government provided a relatively high subsidy. However, in Anhui and Hunan provinces, where projects only treat sludge produced on a daily basis using the same treatment technology, the level of subsidy is lower, which relieves the financial pressure on local governments.

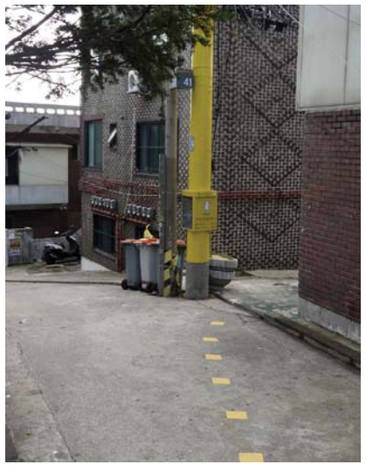
The "market perspective" treatment roadmap for sludge ensures the economic benefit of the project. The Xiangyang project demonstrated the importance of designing a complete value chain for the sludge project, recovering CNG from sludge and using biochar for arboriculture. Viewing market needs as a priority while selecting sludge treatment technology ensured the sustainability of the capital flow of the project. However, the design of concessional financing terms and operating subsidies remain the key for project success, as this class of project, which aims to mitigate environmental concerns, sometimes has difficulty passing the market test to attract the level of investment needed.

AN ARTICLE BY
XIAOTIAN FU
Associate, Water Program, World Resources Institute
LIJIN ZHONG
Senior Associate, China Water Lead, World Resources Institute
VIJAY JAGANNATHAN
Senior Fellow, World Resources Institute

Crime Prevention Through Environmental Design Project (CPTED)

¶ Seoul has grown from one of the world's poorest cities to one of the most economically powerful cities in just 60 years. This resulted in rapid urbanization, which caused a series of social issues, including a weakened sense of community, higher crime rates, and polarization.

LED number box in Yeomni-dong



△ Children can use the painted space in the alley to play
○ Utility pole signage and pedestrian road dotted sign
▽ Safety House provides helps to people in danger

Public safety is of the utmost importance, so Seoul Metropolitan Government (SMG) has attempted to address social issues using four strategies: modifying crime policies to focus on prevention, revitalizing old neighbourhoods instead of developing new ones, engaging community members to find suitable solutions, and helping restore a lost sense of community.

Countless crimes are committed in anonymous-feeling cities that have lost their sense of community; even CCTVs do not work as a preventive measure. In Seoul, 95% of crimes committed consist of theft and violence-related offenses, which occurred as a result of factors in the built environmental that invite crimes. Of these crimes, 62% took place in the streets and other public spaces and 41% happened at night between 8 p.m. to 4 a.m. This data implies that the built environment is one of the key variables in determining the crime rate. The city government, therefore, sought to prevent crime and reduce crime-related social costs, which are estimated to cost KRW 20 trillion annually.

The city government's second strategy is to develop diverse and sustainable programs in troubled neighbourhoods, instead of completely redeveloping them, which requires a great deal of money and time. This is done by modifying the environment to include a variety of crime preventive designs.

The community plays a central role in the success of the government's strategy. The most effective form of crime prevention is the effort each community member makes to sustainably cultivate the environment and trust in one another. By developing ideas for crime preventive design together with community members, the city government gets a better understanding of what each community is capable of in terms of physical and human resources. This process helps the community look after its own needs, and develop and nurture its sense of identity.

As cities gradually lose their unique physical characteristics on their headlong drive towards urbanization, and as residents begin to see their houses not just as their place of residence, but also as a means of self-enrichment, the sense of community that once held villages together and kept cities safe has started to crumble.

SMG realized that it was necessary to involve all components of the community, including organizations, schools, the police, and district and section offices in the selected areas, in its effort to seek innovative ways to tackle crime.

The City of Seoul launched its first Crime

The Salt Way fence before and after the CPTED project implementation

Prevention through Environmental Design (CPTED) Project in 2012 and has directly overseen a total of five types of projects involving five municipal sections, and provided consulting service to nine programs involving CPTED. One of them was implemented in Yeomni-dong, a neighbourhood in one of Seoul's districts, in October 2012.

In Yeomni-dong, a number of discussions with the residents and officials representing its community centre, district office and police station helped the city government to better grasp the types of crimes plaguing the area. They could then measure the feasibility of sustainably implementing a suitable safety project, listen to residents' views on the project, and discuss administrative elements to be considered in case of modifications. The government could also inform the police of the potential difficulties they may face in dealing with crimes in the neighbourhood, and plan how to get police support efficiently and effectively into the locality.

Some of the public hearings were held at a local church, where the government explained the project, the design features, programs developed for the area, and the timeline. Another hearing was held at a local elementary school where parents were briefed not only on the project but also on how to protect themselves from crimes.

COLLABORATION WITH VARIOUS ORGANIZATIONS

SMG has actively pursued opportunities to collaborate with NGOs, co-ops, and private businesses. In addition, they sought to cooperate with municipal districts whenever possible and provide consultations to other divisions interested in carrying out their own CPTED programs.

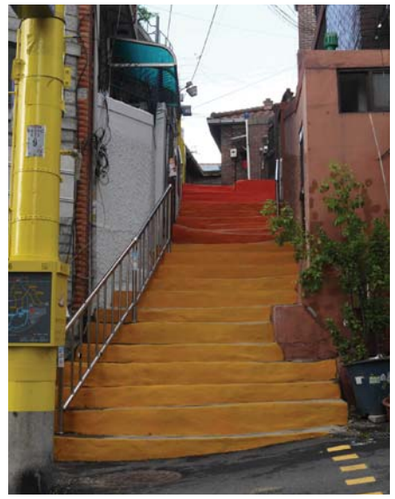
SECURING NEW FUNDING SOURCES AND VOLUNTEERS

SMG also secured external funding from suitable private businesses. Some of the companies included Samhwa Paints, which supplied paint for community art; POSCO C&C, which provided the steel required for constructing structures; KT Linkus, which equipped public phone booths with safety features so they can function as emergency shelters; ADT Caps, which offered a security system ideal for single women for less than US$10 and developed anti-theft "media art" for traditional marketplaces; Korea Seven, which modified its 7-Eleven stores into 24-hour "safe houses"; and Samsung, which funded the remodelling of abandoned structures into modern community centres. The total of these corporate sponsorships amounted to about KRW 440 million.

In addition to these funding sources, SMG also reached out to several institutions to donate their specific skills. For example, South Korea's eight leading artists donated consulting service to community art programs, the Department of Psychology at Baekseok University offered counselling service for students of a junior high school afflicted by juvenile crime and societal neglect, and a total of 300 students, teachers, and parents volunteered their time and effort to help carry out community art programs.

Local churches, schools and local businesses were also actively engaged to make their neighbourhoods clean and fun through their participation in local events.

Before



After

Residents participated in the project by painting the walls and stairs

Teachers and students from a local art high school regularly volunteered to paint alley gates brightly to mask the blind spots dotting their school neighbourhood, which was known for its high concentration of studio apartments. A local café has also since provided a space for community members to gather, and it shares community news through a podcast service.

THE SUCCESSFUL CASE OF YEOMNI-DONG'S CPTED PROJECT

The project in Yeomni-dong was praised by the media, because it transformed what was previously a high-crime area into the "Salt Way", a steep, 1.7 km-long ally. What used to be a dark alley, where some residents feared to walk at night, has been turned into a fitness circuit equipped with exercise stations interspersed at regular intervals.

Previously, the area was devoid of any amenities for exercising or for cultural activities. The fitness circuit was developed by professional physical trainers based on the characteristics of the surroundings. The new alleyway features an information board showing a map with numbers that indicate houses along the alley, and LED lights with numbers from 1 to 69 indicate houses and show passers-by where they can make a call for help in the event of an emergency.

In addition to exercise stations and bright lights along the Salt Way, there are six "safe houses" equipped with IP cameras and emergency bells and marked with yellow gates. The residents of these safe houses are well trained by the police in case someone in need of help rings their doorbells. The well-lit yellow gates are very visible at night and the cameras are regularly maintained. The idea of the safe house was suggested by community members living near the blind spots.

EVALUATION AND ANALYSIS

The Korea Institute of Criminology (KIC) is in charge of analysing the impact that CPTED programs have on a community's fears of neighbourhood crime. KIC also evaluates if the CPTED programs have any impact on crime rates in the target areas by comparing crime statistics from at least the past 3-4 years, as provided by National Police Agency.

According to a survey conducted by KIC in Yeomni-dong, five months following the project launch in March 2013, 78.6% of residents said they were aware of the effects of the programs and 83.3% reported satisfaction with the effects. Furthermore, 9.1% individual admitted to fearing neighbourhood crime less, 13.6% families became less worried, and 13.8% said their community attachment grew over the time period.

The second KIC survey was then conducted one year after the project launch. The result showed that the rate of five leading crime types decreased over the year. The robbery rate on the Salt Way has dropped as much as 12% and there have been no reported cases of rape. Concrete findings on the project's impact on crime rates are scheduled to be made public in 2017.

AN ARTICLE BY KANG HYOJIN
Deputy Director, Design Policy Division
Seoul Metropolitan Government
kojinny@seoul.go.kr

Developing a Green and Sustainable Municipality through Energy Efficient Street Lighting

¶ According to the statistics by the Da Nang Department of Industry and Trade, currently there are about 70,000 streetlights in the city. Power consumption per annum is about 25 million kWh, accounting for 1% of the commercial power output of the whole city.

Da Nang City has adopted various management and technical measures for energy-efficient street lighting

Sustainable development is a process in which economic, societal and environmental concerns are closely, rationally and harmoniously integrated. This has become a trend worldwide as well as in Vietnam.

Da Nang City is located in the coastal area of Central Vietnam, which makes it vulnerable to climate change impacts and rising sea levels. Thus, the local authority has integrated socio-economic development with environmental protection in order to build sustainability into the development process. Energy efficiency in street lighting is one of the many measures that the city has approved.

For effective and efficient use of energy in street lighting, over the past years the city has adopted various management and technical measures, such as regulating specific hours for switching on and off street lighting, depending on the season, and dividing lighting phases and applying dimming methods between midnight and early morning when traffic volume is lower.

These measures might be appropriate for the current condition in Da Nang, where almost all the street lights are the high-pressure sodium (HPS) type. However, there are limitations. HPS lights consume a lot of power; street lighting requires a large number of staff to operate, mostly manually; and lighting phase division decreases lighting quality since axial uniformity is not ensured.

LED STREET LIGHT CONVERSION

In recognition of such limitations, the Department of Industry and Trade, the consulting agency for the Da Nang People's Committee responsible for commenting on and appraising the design of street and public decorative lighting systems, has paid attention to and started selecting LED lights for street lighting on newly-built roads, main streets and tourist area. This is to follow the current trend in lighting systems and also to help save energy.

LED lights have been installed at many sites and routes in the city. However, in the long term, there needs to be measures for applying LED lighting technology in a wider area to enhance the city's lighting efficiency.

As a follow-up, a pilot project retrofitting LED street lighting systems has been considered by the Da Nang People's Committee. It originated from the World Bank's suggestion under the framework of the Sustainable Urban Energy and Emission Plan Program (SUEEP) phase III, "Energizing green growth in Da Nang."

The Da Nang People's Committee approved

△ Da Nang's power consumption per annum is about 25 million kWh
▽ Da Nang City is located in the coastal area of Central Vietnam, which makes it vulnerable to climate change impacts and rising sea levels

the policy framework for studying the project implementation, which suggests changing about 6,000 streetlights to LED lights. This pilot project is in line with the plan "Making Da Nang an Environmental City, 2020," promulgated on 21st June 2008 by the People's Committee, which associates the socio-economic development of Da Nang with environmental protection in order to support sustainable development for the city.

This project is in line with the trend of adopting LED lights rather than HPS lights, as they have more advantages. They are 40% more efficient and eco-friendly, have three times longer lifespan and also a better design with ensured technical specifications. Besides, as LED lights are produced in modules, it is easier to replace and repair them and they are also more suitable for lighting control. The warranty period provided by prestigious manufacturers is also longer, and can be up to 6 years.

THE CHALLENGES OF IMPLEMENTING LED LIGHTS

Currently the biggest challenge of implementing LED lighting is its high cost. However, with increasingly advanced production technology and widespread use, this cost is gradually decreasing.

During the project survey and study for implementation, Da Nang City required domestic and foreign bidders to pay attention to the key technical requirements of the project. The installation solution must fit the current lighting grid structure, the replaced LEDs must be of the double-power type and must be programmed in advance to meet the operational needs of each street or each electrical cabinet for street lighting. The LEDs also must be brighter with higher energy efficiency and longer life spans.

The municipality encourages bidding companies to carry out surveys and research to find out and submit an implementation plan following the model of ESCO (Energy Service Company). This encourages bidding companies to collaborate with energy service companies to implement the project and the city will give a refund, generated through power savings over time. After the investment phase, contractors are required to provide a product warranty and to pay for the maintenance, repair and replacement of all LED bulbs within the warranty period.

This pilot project will create an estimated average energy saving rate of 47.19%. Once implemented successfully, it will help the city save VND6.8 billion (USD305 million) every year on electricity costs, contributing to reduced energy consumption and CO^2 emissions. For the long term, the city will continue to carry out studies on converting all of the remaining public street lights to LED lights in order to build a more civilised, modern and eco-friendly city.

AN ARTICLE BY TRAN HUYNH VUONG HOAI VU
Department of Industry and Trade
Da Nang City - Vietnam

Disaster Risk Reduction Management Lessons from Iloilo City

¶ "As Iloilo City's DRR Champion, I encourage everyone not to be complacent in the face of changing times and climates but to be prepared and pro-active to save more lives and property."
— Hon. Jed Patrick E. Mabilog

Iloilo receives support for its DRRM activities from CityNet Yokohama Project Office, the City of Yokohama and Japan International Cooperation Agency (JICA)

△ The technical advisory team for the CBARAD project is led by Mayor Mabilog of Iloilo
▽ The technical advisory team for the CBARAD project

Iloilo City is the regional centre of the Western Visayas region and is situated on the southern shores of Panay Island in the central part of the Philippines.

The metropolis suffered severe flooding when Typhoon Frank hit in 2008, leaving the areas near the Jaro River devastated. Iloilo City is vulnerable to flooding and storm surge, as it lies on plains divided by rivers and creeks, and along the coastline.

In an effort to become disaster-resilient, the Iloilo City government strengthened its City Disaster Risk Reduction Management Council (CDRRMC), pooling resources, implementing development projects, and working closely with dynamic partners, primarily to enhance education and advocacy for Disaster Risk Reduction Management (DRRM).

For the disaster preparedness system to work, the CDRRMC must first put in place preparedness, prevention and mitigation measures. Then, in the event of a calamity the CDRRMC will be ready to closely collaborate with barangays (village) DRMM councils, response teams, evacuation centers, and volunteers to respond to the disaster, and to work towards rehabilitation.

In the event of a calamity, the city council must first declare an imminent state of emergency, which allows for the use of DRRM funds to purchase relief supplies and emergency packs to meet the immediate needs of the evacuees. To ensure that residents are prepared in the event of a disaster, there are massive information dissemination drives providing citizens with important and up-to-date information.

The CDRRMC, created through a city council ordinance to serve as a decision-and-policy-making body, meets on a quarterly basis or as the need arises. It is on the frontline before and during disasters, and throughout the rehabilitation process. The City DRRM Office (CDRRMO) was also created through an ordinance to oversee operations, serve as a secretariat and conduct trainings.

THE IMPLEMENTATION OF DRRM

In response to growing global concerns over environmental threats, Iloilo City has made a significant commitment to DRR initiatives. With this proactive approach, the city expects to be equipped with an inclusive disaster adaptation and mitigation plan, which it can activate to strengthen DRR capacities in cooperation with communities and support from stakeholders.

The city is learning from various fora, dialogues and study trips. Recommendations to improve the city's DRRM include conducting comprehensive annual budgeting, creating a drainage master plan, hazard mapping flood-prone areas, building rainwater harvesting facilities, installing solar panels, strengthening evacuation centre documentation, designing a fire-proofing plan, retrofitting and reviewing all structures in the city, and organizing and training youth volunteers, citizens and civic clubs on DRRM.

Active implementation of disaster adaptation and sustainable development programs, projects and priorities must be set up properly, effectively and efficiently to better respond to natural calamities and safeguard the lives and properties of residents during disasters.

Iloilo received staunch support for its DRRM activities from the CityNet Yokohama Project Office, the City of Yokohama and Japan International Cooperation Agency (JICA) through the Community Based Adaptation and Resiliency Against Disasters (CBARAD) Project. This started in 2012 and is currently in its second phase, which will end in 2017. CBARAD aims to strengthen community resiliency and provide a wider scope of capacity-building to further institutionalized DRR throughout the city. To improve DRRM, the city is collaborating with administrative bodies, vulnerable groups, including Persons with Disability (PWDs), the elderly, women and children, and educational institutions.

Through active participation in this project, city leaders have been able to learn about DRRM through first-hand experience with command centres, information dissemination, early warning and alert systems, preparedness, and infrastructure improvement and enhancement. The DRRM funds have enabled Iloilo City to establish best practices, such as implementing command centre-connected monitoring systems and devices, setting up a Disaster Information Centre, installing electronic signboards and bulletin boards, conducting disaster drills, and organizing preparation and evacuation management.

The city government allocated DRRM funds through its annual comprehensive budgeting to prioritize the sustainability of DRRM initiatives and strategies. This includes activities and projects to establish the command centre and evacuation centres: procurement DRR equipment and tools, profile and create a database of vulnerable groups, create Information Education Campaign (IEC) materials, craft operations manual, activate barangay disaster information teams, orchestrate information dissemination, set up educational centres or museums, and facilitate capability-building.

"Iloilo City has instituted a lot of 'firsts' in its aim to become disaster ready and resilient," CBARAD Project Coordinator Donna Magno said.

The CDRRMC has also collaborated and partnered with the academe to foster collaboration in DRR works, such as risk assessment and development of IEC materials, by tapping student cadets under the National Service Training Program (NSTP) to learn about DRRM.

INCLUSIVE DRRM

DRRM-related initiatives have been institutionalized through ordinances enacted by the City Council for sustainability. The barangays have started to replicate DRRM best practices to be implemented on the grass-roots level with strong community involvement.

The rest of the 175 barangays are set to replicate the successful experience of five pilot barangays of CBARAD I projects. These projects institutionalized and established DRR planning, education campaigns, and community DRR activities such as clean-up drives, evacuation drills, capability-building initiatives, construction of universally accessible facilities, creation of hazard/evacuation maps, preparation of evacuation shelters, installation of Early Warning System (EWS) and surveys of needs.

△ Mayor Mabilog encourages citizens to be pro-active in disaster preparedness
○ CBARAD aims to strengthen resiliency of the communities
▽ CBARAD provides a wider scope of capacity-building to further institutionalize DRR throughout the city

The CDRRMC has started risk assessment in barangays to determine and evaluate the effectiveness and sustainability of DRRM activities, programs and projects. Facilitators from CDRRMC and partner PWDs, senior citizens, and the academe have been trained on risk assessment. Afterwards, they share their knowledge and skills with other potential facilitators, who will work in communities.

The CDRRMC has developed partnerships and linkages, and strengthened networks to create opportunities for follow-up exchanges and collaborations. One of the novel initiatives is the KABALAKA Camp, a form of DRR education that aims to teach children about disaster preparedness and prevention in a fun way. It uses creative methods such as storytelling and games, which are appealing to children.

KABALAKA is an acronym for KAhublagan sa BArangay para sa LApnagon nga KAhandaan sa Kalamidad Movement in the Barangay for a Widespread/Extensive Disaster Preparedness. Kabalaka in a local dialect means care or concern. This Camp aims to create a new generation of children who are resilient to disasters and imbued with the spirit of sympathy - particularly to the elderly and PWDs - during calamity.

For the youth, the city government has created a Local Youth Development Office (LYDO) to recruit and mobilize young people by organising a camping activity called WEmboree. The CDRRMC has primarily tapped the expertise and services of vulnerable sectors such as PWDs, youth, senior citizens, and academe to become involved in DRRM.

Some of the initiatives being suggested for replication are the establishment of PWD-friendly toilets, solar panels and rainwater harvesting facilities in the barangays.

AN ARTICLE BY HON. JED PATRICK E. MABILOG
Mayor, Iloilo City, Philippines

How Big Data, Supported by T-Money, Drives Seoul City's Intelligent Transport System

¶ Seoul Metropolitan Government collaborates with Korea Smart Card, using information and communication technologies to generate a large amount of real-time data, which enables Seoul's Intelligent Transportation System. This system enhances the effectiveness of public transport in the Seoul Metropolitan Area.

On-Board Unit (OBU) for ticket-validation is installed in every bus in Seoul

T-money was established in 2003 and one year later started its main business, providing regional smartcard-based fare collection services for the public transportation system in Seoul Metropolitan Area (SMA). It currently covers about 20 million residents, 20 thousands buses, 450 km of urban rail system, and processes 50 million transactions a day.

The T-money system needed large scale and complex in-house ICT resources, including front end devices, numerous data centre servers, and a complex communication network. Since Seoul Metropolitan Government (SMG) was T-money's primary shareholder, they had full control of its ICT resources, especially human resources, which included around 200 top-class engineers.

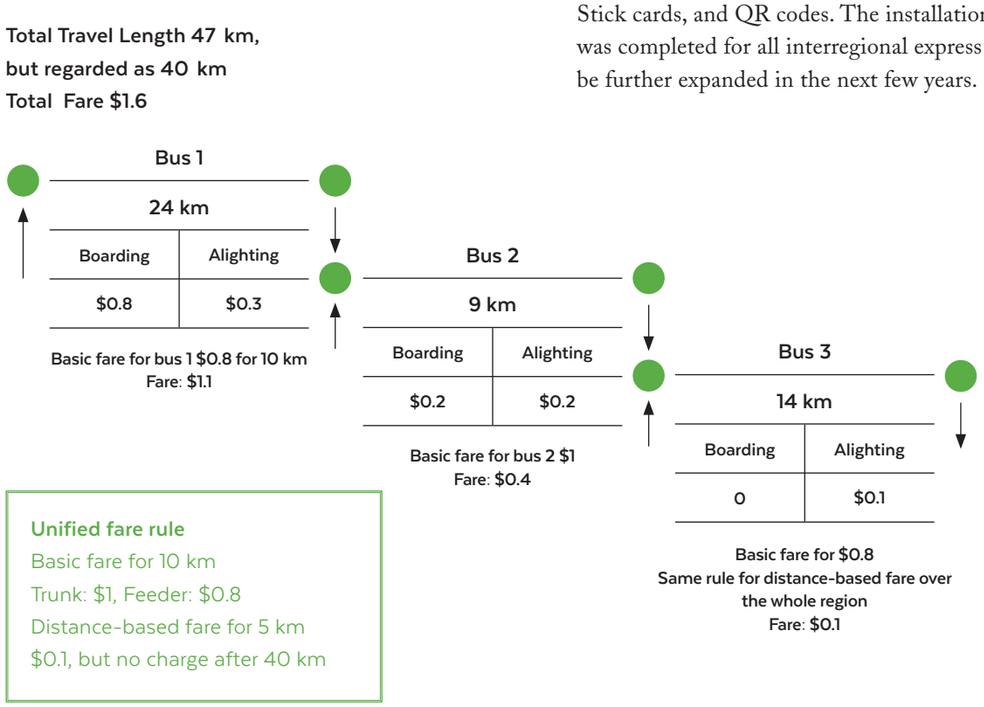
The "big data" generated by the T-money system supported SMG in several ways, helping with its public transportation system, fare collection, real time vehicle tracking, fleet management, and mobile device-based passenger services.

FARE COLLECTION SERVICE

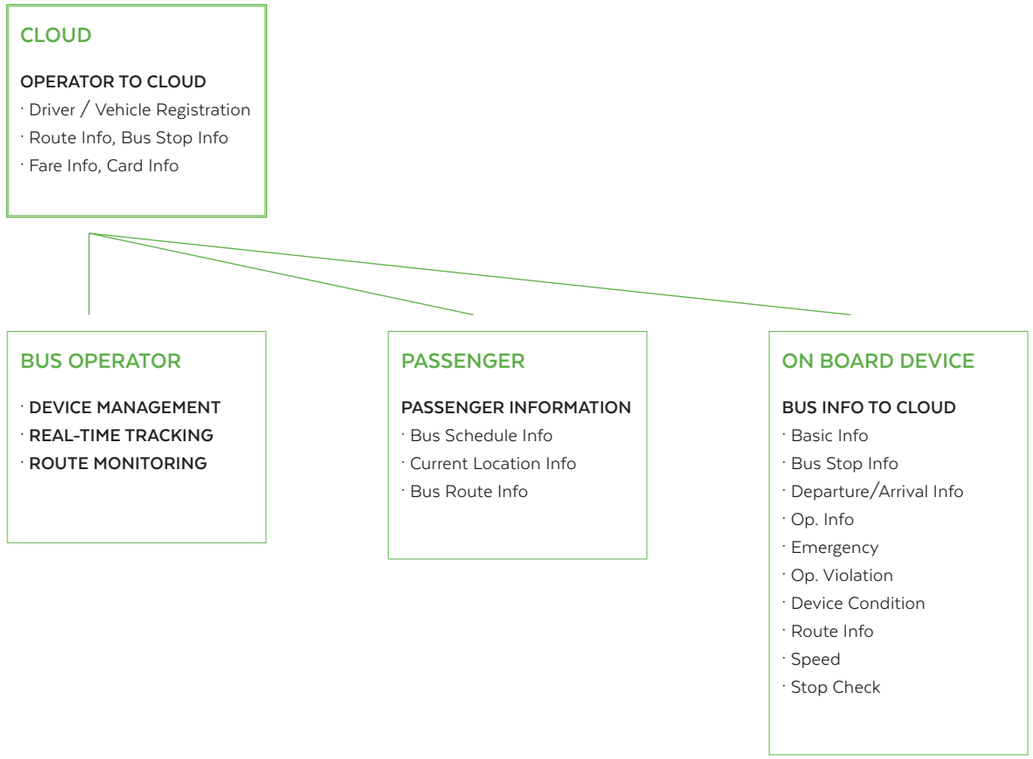
Since 2004, T-money has provided fare collection service designed for all modes of public transportation, including buses, urban rail, metro, and taxis, providing SMA with contactless radio frequency (RF) smartcard coverage. Through an open tender process, T-money, operated by Korea Smart Card, was selected to establish a single, unified fare structure.

SMG planned to reform the route-oriented bus service to a network-oriented public transportation system, integrating urban rail and bus services to create an effective trunk and feeder system. SMG sought to create a unified transit network, in which passengers pay the basic fare once, and then use both buses and urban rail to commute from origin to destination. To enable this operation, T-money uses an advanced automated fare collection (AFC) system.

The fare collection service was successfully implemented and was then extended to the taxi industry in SMA. However, as it required a large investment, T-money was hesitant to install card readers on a large number of taxis, so SMG stepped in to give financial support. Korea Smart Card started to install the On-Board Unit (OBU) for ticket-validation on interregional buses, which can replace ticket booth operation at terminals or bus stops. The OBU is a multifunction validator for contact and contactless smart cards, Near Field Communication (NFC)-enabled device, Memory Stick cards, and QR codes. The installation of the OBU was completed for all interregional express buses and will be further expanded in the next few years.



How T-Money operates in bus services



What T-Money is doing for ST-PT

	Taxi	Inner city bus	Inter city bus	Express bus	Metro	Para transit ferry
Fare Collection	●	●	●	●	●	●
Vehicle Tracking	●	●	NA	●	NA	●
Fleet Management	X	X	X	●	X	X
Passenger Information Service	●	●	X	●	X	X
Coverage	Nationwide 65%	Nationwide 35%	Nationwide 30%	Nationwide 100%	Nationwide 70%	Limited

VEHICLE TRACKING AND FLEET MANAGEMENT SERVICES

Almost all T-money fare collection devices are equipped with 3G and 4G communication channels and location detection functions via GPS, Google maps, topological node-link maps and map-matching software. Using these embedded capabilities, T-money provides vehicle tracking service for its customers and operators.

At the same time, operators can use the T-money 3G/4G channel and on-board devices to manage their fleet effectively through the cloud. For example, operational data such as planned routes, schedules, resource assignment and emergency command/control data can be downloaded to corresponding devices and execution data can be uploaded and matched to the planned routes etc.

In the process of downloading schedules and routes, T-money obtains operational data and makes it available to the public through its mobile operating system.

MOBILE PASSENGER SERVICE

With 3G/4G telecommunication technology, smart phones, and related ICT such as phone-embedded GPS and motion sensors, Google maps, mobile NFC technology, and TSM & USIM technology, passengers have unprecedented access to the public transportation system. This access can be classified into two categories: passenger information services and mobile ticketing services.

PASSENGER INFORMATION SERVICE

There are several applications that provide "Navigator" services, which give public transit directions, including transfer information, to users. These apps also provide real-time bus location and travel and arrival time information. These services are possible because SMG and T-money made the urban rail system's route and schedule information, as well as real-time bus tracking data open to the public.

There are several taxi companies in Seoul that operate similarly to Uber, using a dispatch system. The number of taxi-hailing mobile app users is increasing, and fewer customers are now using traditional taxi call centres or flagging cabs on the street.

T-money and SMG support this mobile dispatch system with the Smart Taxi Information System (STIS), which tracks all registered taxis in Seoul, because T-Money card readers are installed in every taxi and most are equipped with GPS and a 3G mobile channel.

MOBILE PAYMENT SYSTEMS

T-money started its mobile payment operation in 2007, even though the NFC standard was not yet established. Despite its poor quality, the old mobile T-money had enjoyed popularity and reached a half million regular users. Soon after the introduction of Android smartphones with NFC capabilities, T-money moved its mobile operation to the new NFC operation and achieved commercially acceptable service quality. There are 2 million regular users to date.

In 2015 Korea Smart Card expanded its mobile ticketing service to interregional and express bus services, while giving passengers the opportunity to flexibly and conveniently manage their travels, bookings and payments with their mobile phones. Customers can buy tickets through mobile apps using their debit or credit cards to generate a mobile QR code ticket. Upon boarding, passengers must simply tap their QR code ticket, stored in their mobile phones, to the QR code readers on the bus for validation. Alternatively, they can also book a ticket through the app and pay later through card readers with a pre-registered magnetic card, RF card, and NFC-enabled mobile device.

Through T-Money operations, SMG collaborates with Korea Smart Card to improve Seoul Metropolitan Area's public transportation by leveraging ICT.

Through the process described above, Seoul is gradually moving towards realizing "seamless travel through public transport (ST-PT) system." Through these ICT adaptations, the public transport system has become a serious competitor to private vehicles that provide door-to-door service.

AN ARTICLE BY PARK YOUNG-WOOK, PH.D.,
Korea Smart Card, Ltd.
yw.park@koreasmartcard.com
+82-10-7191-4080

How City Governments Can Better Engage Vendors to Ensure Their Successful Relocation to Public Markets

¶ In recent years, several Indonesian cities have relocated street vendors through engagement and participation and with limited confrontation, in turn reducing the volume of itinerant vendors, carving out better work environments, and improving public spaces. But how can city governments ensure that such policies have lasting impact? The answer is in making sure that vendors find success.

Following relocation many vendors opted to return to the streets
Source: Dennie Ramon

Informal food vendors can be seen along streets throughout Asia's cities. They offer delightful delicacies, and accessible, affordable meals for people on the move; they also provide employment opportunities for many of the regions' poor. However, food vendors are also seen as a nuisance: many city governments blame them for creating congestion and taking over public spaces, and thus struggle with how to effectively manage them.

In a few cases, local governments in Yogyakarta and Solo, Indonesia, have initiated positive efforts to deal with the proliferation of vendors by relocating them to public purpose-built markets. These policies are to be commended for their use of conflict-free, participatory, and consultative measures. Yet, they often do not go far enough, and many of the relocated vendors find themselves back on the streets, sometimes only a few months after having moved into new markets.

This article seeks to explain some of the reasons why so many informal food vendors returned to the streets after being relocated to markets, and in doing so, shed light on how urban policies and planning may hope to successfully incorporate informal vendors into formal market places. The research was carried out by the Indonesian NGO Kota Kita, which is interested in finding ways for all citizens, especially those in the informal sector, to be more effectively incorporated in the productive and sustainable development of cities.

CASES IN SOLO AND YOGYAKARTA

Kota Kita visited Pasar Notoharjo and Pasar Panggungrejo, both in Solo, and Pasar Pakuncen, in Yogyakarta, and met with vendors who experienced the hardship of managing their transition from the streets, but also the benefits and success of operating from markets. In both cities these vendors related how, for the first time, they were able to take out loans with newly acquired land certificates and had better lighting, security, storage capacity, parking, and sanitary conditions. Some were able to take their old customers with them, and some found ways to attract new ones. These were often the vendors who thrived by adopting a competitive mindset and adapting to new customer demands.

Others, however, did not fare so well in these same formal, fixed settings; this other group of vendors ended up returning to work on the streets. While many were satisfied that the markets' conditions were better than being on the street, they found shortcomings with market design and the infrastructure provided. One of the vendors' main concerns was that market sites were isolated and far from their customers, who wanted on-the-go food options on busy roads or in commercial areas. The new markets were often built on government land, away from main roads; this gave them less visibility, and more distant locations. Another issue was the design of market facilities; they didn't consider the importance of internal circulation and access. Vendors worried about having to occupy upper floors, or being stuck in narrow rows where they couldn't prepare food hygienically. They wanted a food court arrangement, with better storage, presentation and hygiene.

THREE ASPECTS TO BETTER MANAGE FOOD VENDOR RELOCATION

We learned three valuable lessons that can support city governments to better manage the relocation of food vendors: firstly, food vendor relocation policies should go beyond simply reclaiming public spaces and moving vendors to aesthetically pleasing new markets, by focusing on improving the economic prospects of street vendors too. While both the Solo and Yogyakarta governments were able to provide significant benefits to vendors, with purpose-built markets that offered designated spaces for food preparation and storage, parking areas, and public toilets, attention should also be paid to how the market spaces work internally, and within the surrounding urban context.

Effective site design is needed to promote the visibility of markets from the street, and architectural design can help improve the arrangement of food stalls in visible and accessible ways within market sites. Other design improvements can involve infrastructural elements that strengthen connectivity between market sites and major circulation routes, or pedestrian access paths. To achieve this, a focus is needed on ensuring that relocation policies are 'pro-poor' and that spatial interventions are inclusive. This goes far beyond convincing informal food vendors to abandon public spaces; policies are required that help deliver vendors' rights to the city, consider their proximity and connectivity to major residential and commercial clusters and transport networks, and ensure their freedom of mobility. Such provisions could be made by implementing regulatory agreements that designate particular spaces and times for vendors to operate. Within markets, inclusive and strategic spatial planning and management might engage food vendors in thinking through the spatial arrangements and services that work best for them.

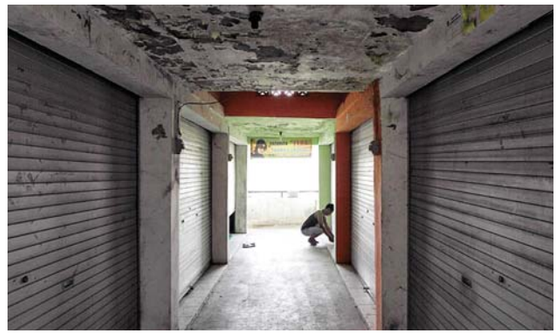
Secondly, the Yogyakarta and Solo governments have done well to avoid conflict, because the relocation processes in each city were participatory and based upon consensus; but relocation policies are more likely to have lasting effects if they incorporate technical assistance and trainings for vendors. Such training can help them to adapt to new customer demands and expand business through branding and marketing strategies, and ultimately be more successful in the new locations. Vendors require more support than just new facilities and formal certificates of stall ownership. They have little experience working in formal conditions and in some cases, paying taxes and monthly rent. Being poor, they also have generally low levels of education and are often reluctant to take out loans: they need additional technical support.

Thirdly, while the Yogyakarta and Solo governments have succeeded in building trust with vendors through public outreach and engagement, they should not simply relinquish involvement and responsibility once the vendors have moved. After relocation city governments should promote vendor organizing and social, political and economic empowerment. Civil society partnerships could enable vendors themselves to resolve emerging issues and engage with government planners on an as-needed basis. For instance, vendors associations or other non-governmental organizations could oversee maintenance, including the regular provision of basic services, skills trainings, and promotional campaigns, to promote the continued success of public markets following inauguration. Meanwhile, government could focus on consistently enforcing rules and regulations to ensure fair competition, or improving public accessibility of markets, for instance, through subsidized bus fares or undertaking urban infrastructure projects that improve circulation and walkability in the market's vicinity.

Together vendors and city governments can forge partnerships that promote the local economic empowerment of people working in the informal sector, while also improving circulation and public spaces. What is needed is not only participatory processes that build trust and consensus, but also better design, planning, and technical support to ensure that vendors are able to stay and thrive in new public markets.

AN ARTICLE BY JOHN TAYLOR
Co-founder and Strategic Advisor, Yayasan Kota Kita Indonesia; a non-profit organization based in Solo, Indonesia, with expertise in urban planning and citizen participation in the design and development of cities.

After selling his stall at the market, a street vendor returns to the road as he never found success in Pasar Panggungrejo, Solo
Source: Dennie Ramon



Unsuccessful relocation site
Source: Dennie Ramon

The Universitas Gajah Mada (UGM) Campus food court, Yogyakarta, has been a success because it is well located on university grounds, clean, and attracts many students
Source: Dennie Ramon

Integrated Solid Waste Management in the City of San Fernando, La Union, Philippines

¶ Mary Jane Ortega, the former Mayor of San Fernando, La Union shares her experience implementing a waste management system, which is still successful today.

The front gate of the sanitary landfill in San Fernando, La Union

As President of the Inner Wheel Clubs of the Philippines, Inc., an organization with 85 clubs in the country and affiliated with the International Inner Wheel based in London, I adopted two flagship projects – Zero Waste Management and Herbal Medicines in Every Backyard – in 1991.

Transitioning from a leader in civil society, I was elected Mayor and entered into the world of politics in 1998. I realized that although zero waste management was a good vision, a lot of work had to be done to educate citizens on proper solid waste management and that it would take time to be able to achieve the vision of Zero Waste Management. There was also the matter of residuals.

I was invited by USAID to visit several solid waste management facilities and attend the conference organized by the Solid Waste Association of North America (SWANA) in August, 1998, barely two months after taking office. It was then that I realized the need for an engineered landfill and thought of organizing the Solid Waste Management Association of the Philippines (SWAPP) as a platform for sharing knowledge and best practices on solid waste management, with the help of the World Bank and USAID.

EDUCATION CAMPAIGN ON PROPER SWM

The practice of the local government unit when I assumed office in 1998 was to use drums as garbage bins. The garbage collectors had to manually lift them, and since it was heavy to lift a full drum, they had to remove some garbage manually, to make it lighter. I saw how unhygienic it was and we decided to replace the drums with garbage bins made of cement which could accommodate a bamboo basket designed to fit into the cement garbage bin. Thus the garbage collectors did not have to handle the garbage manually any longer and we did not have to replace the drums every six months.

We had two cement bins side by side, properly labelled – RECYCLABLE and COMPOSTABLE. After three years, as I thought that the education campaign was already a success and citizens were well-educated on separating recyclable and non-recyclable, we converted the cement bins into flower pots, which are still in existence now. The sanitary inspectors, formerly called garbage collectors, still use the bamboo baskets for collecting garbage in small material recovery facilities in the villages.

In addition, we commissioned a Solid Waste Management (SWM) jingle to encourage citizens to reuse, reduce, recycle and compost. We requested that radio stations play it three times a day and schools were asked to play the jingle every Monday morning and Friday afternoon.

MATERIAL RECOVERY FACILITIES GARBAGE COLLECTION

We conducted training programs and encouraged every village to set up Material Recovery Facilities (MRF), use a subsidy from the city to buy garbage trucks for garbage collection in clusters of villages, and pass ordinances on garbage fee collection from every household and commercial establishment. One village was named the most outstanding MRF in the country and received a prize of one million pesos. Villages that bought garbage trucks have been collecting garbage fees from the neighbouring villages they serve. The villages, in turn, collect garbage fees from their residents to cover the cost of garbage collection.

ENGINEERED LANDFILL

We had a four hectare facility that we used as a dumpsite and the city expanded the area to ten hectares, in preparation for an engineered landfill. We applied for a loan from the World Bank through the Department of Finance for an engineered landfill with two cells that were supposed to last for fifteen years. The terms of reference for a design-build-operate agreement were drawn up with the assistance of the current CityNet Secretary General Vijay Jagannathan, who was then with the World Bank.

Through a joint venture, a local construction firm and Conestoga Rovers of Canada, who designed and supervised the project, built the engineered landfill and they operated the facility for a limited period of time, until the city was ready to take over landfill operations.

△ San Fernando had a four hectare dumpsite facility before expanding to ten hectares, in preparation for an engineered landfill

▽ San Fernando applied for a loan from the World Bank through the Department of Finance for an engineered landfill

The first cell had a clay liner one meter thick. Although the clay was available locally, labour costs rocketed, so the contractors suggested that they use geo-plastic liners for the second cell, with no extra cost for the city. The geo-plastic liners had to be imported, but this was offset by the reduced cost in labour and shortened completion time. Also, we were able to use the one meter space allotted for the clay liner for additional space for garbage, which lengthened the life of our landfill.

The waste facility has been in use since 1997 and with the extra space created by using geo-plastic liners and through proper recycling and garbage reduction, we expect it to remain operational for another ten years. This would make its lifespan a little less than thirty years, double the lifespan initially estimated.

The loan was PHP165 million to be paid in fifteen years after a five year moratorium. If we waited to save money before building the engineered landfill, it would have cost us much more with the rising cost of materials and labour. With the soft loan, we were able to implement the SWM practices earlier, and with the lengthened life span of the landfill, this investment was not only financially sound but it also gave immediate health benefits by reducing the occurrence of diseases caused by improper SWM

Having leachate ponds also helped us environmentally to avoid polluting the aquifer. Methane gas emissions were reduced because we composted through vermiculture what had to be composted, and only had residuals covered by soil. The first cell now looks like a hill with goats grazing on the grass grown on top of the sealed garbage. We also have separate storage for batteries, used bulbs, and used oil and most importantly, we have a garden made of recyclable materials, decorated with flowers and aromatic plants.

CONCLUSION

Our engineered sanitary landfill has been the model of a design-build-operate facility and has become a site for study tours of various local government units, both in the Philippines and from other countries in the Asia Pacific. It also shows that it is not a bad thing to borrow for a good cause, as long as the money is used properly and for the purpose it was meant for.

I would like to thank all the agencies who supported us, such as the World Bank, USAID, Department of Finance and most especially the people of the City of San Fernando.

AN ARTICLE BY MARY JANE C. ORTEGA
Former City Mayor, San Fernando, La Union, 1998-2007
Former Secretary General, CityNet, 2009-2013
Special Adviser, CityNet, 2013-2017

Stakeholders' Involvement as a Critical Element for Sustainable Cities

¶ Now more than half of the world's population lives in cities. Thus, actions in cities are key to addressing climate change and other sustainability challenges we face.

City initiatives to address climate change and promote sustainability are important to the world community. This was well demonstrated in global agenda setting in 2015; the SDGs recognized "sustainable cities" as one of the global goals, and at COP 21 in Paris many city leaders made new commitments to take actions to deal with challenges posed by climate change. Hundreds of mayors and vice-mayors gathered for the Climate Summit for Local Leaders in September 2015 in New York and committed themselves to support ambitious long-term climate goals such as a transition to 100 % renewable energy.

The Paris Agreement, as the newly established international framework for climate change, recognized the special role that cities could play to upscale efforts and support activities via the Non-State Actor Zone for Climate Action (NAZCA). It was established as a platform for exchanging experiences and sharing best practices on mitigation and adaptation. It is important to strengthen linkages between the United Nations Framework Convention on Climate Change (UNFCCC) and non-state actors (cities and businesses) through the mechanisms and processes established under UNFCCC.

IMPORTANCE OF STAKEHOLDERS' INVOLVEMENT IN CITY INITIATIVES

Although many local governments have launched and implemented initiatives to make cities more dynamic, liveable, sustainable, and resilient, an essential element is the effective involvement of key stakeholders.

It might be more time-consuming to involve many city stakeholders in the local decision-making process. However, it usually ensures comprehensive urban planning, fosters local democracy by encouraging citizens' engagement, and reduces the risk of having a project or policy prone to legal challenges upon its adoption.

The range of stakeholders to include in the process can span from individuals, associations of local residents, businesses, business associations and NGOs. There are many cases of leading cities in Japan where involvement of citizens and local industries has revolutionized the way urban environmental problems are addressed. The role of municipal governments has been very critical in facilitating effective solutions.

Traffic congestion problems in Yokohama in the 1970s
Source: City of Yokohama Municipal Archives Reference room

Industrial pollution in Yokohama in the 1960s
Source: City of Yokohama Municipal Archives Reference room

Yokohama Mayor's meeting with 10,000 citizens
Source: City of Yokohama Municipal Archives Reference room

Study tour for kindergarten children of waste treatment operations by the city of Yokohama
Source: Yokohama City

CASES IN YOKOHAMA

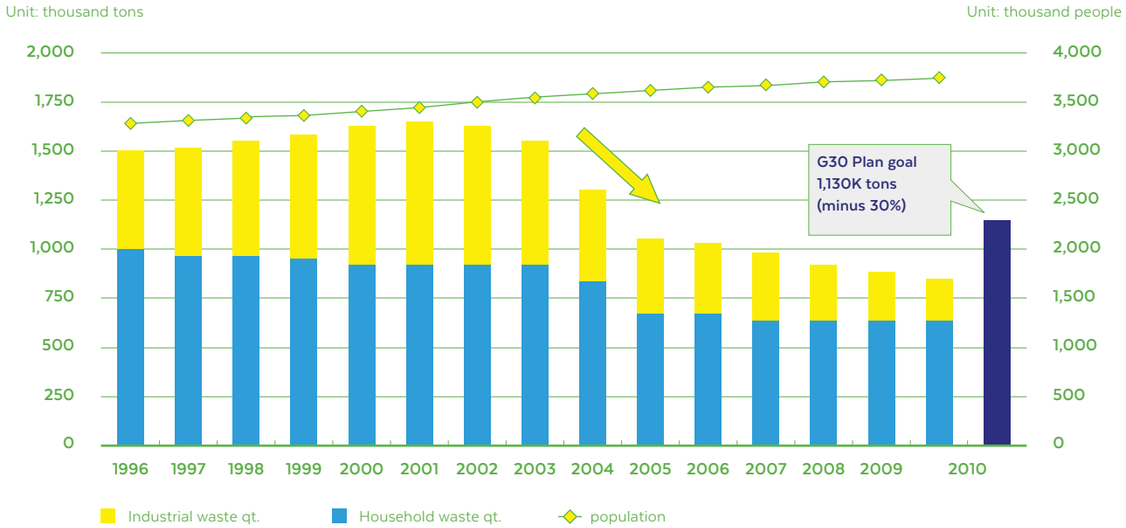
Around 1960s, Yokohama was facing serious pollution problems mainly caused by industry. A proposal was made to build a coal fired power plant in the southern part of the city. Many citizens raised their voices regarding potential pollution associated with the plant. But the local government at that time had no legal power to deal with pollution. In the end, a new approach called a “Pollution Prevention Agreement” (legally a gentlemen’s agreement) was used for the first time in Japan between citizens and the power plant company, facilitated by the city government. This set a great precedent in Japan, which was then adopted by other municipalities all over the country.

In the 1960s, mixed land use in the city resulted in various pollution problems caused mainly by small and medium-sized enterprises (SMEs). In response, a large project was proposed by the city to relocate many of these SMEs to newly reclaimed land in the southern part of the city. However, the SMEs did not have enough funds, technology or capacity for such relocation, so the city government took several measures to help.

Funds were channelled through a newly established national body called the Pollution Prevention Corporation. Technical advice was provided by cities’ technical institutes and a centralized waste water treatment facility was constructed for SME relocation. Many areas vacated after the relocation were purchased by the city government and converted to public parks and other facilities.

In the 2000s, Yokohama started a very ambitious initiative called G30, through which the amount of solid waste generated by its residents was to be reduced by 30%. A city wide campaign was launched and thousands of meetings and dialogues were held with local citizens. As a result, the target was achieved ahead of time, despite the fact that the number of citizens increased substantially during this period. Consequently, the number of garbage incineration plants was reduced from 7 to 4 with substantial cost savings.

Yokohama further extended its effort in participatory planning by engaging citizens and local



Waste reduction results from the G30 plan 1996-2010

Yokohama Minato Mirai area planning in the 1983 versus today’s realization

Source: Yokohama Y-PORT Center

4th Asia Smart City Conference, 20 October 2015, with participation of 21 Asian cities and more than 30 supporting agencies

industries. Multi-stakeholder's engagement was institutionalized in 2008 through the establishment of the co-creation promotion office, adoption of relevant guidelines, and organization of public fora and dialogues with multiple stakeholders to co-design the future of the city.

In May 2015, the city of Yokohama established the Y-PORT (Yokohama Partnership for Resources and Technologies) Center. The Center functions as a catalyst for various organizations promoting smart urban solutions to cities in Asia and the rest of the world.

The Y-PORT Center is Yokohama's the best tool for stakeholder involvement. It gathers an international research institution, a city network, and leading private firms and works in collaboration with financial institutions such as the Asian Development Bank (ADB) and public organizations such as Japan International Cooperation Agency (JICA) towards smart urban planning in emerging cities.

Combining Yokohama's experience of citizen participation with the Y-PORT Center's core focus on technologies from the private sector, the Center offers urban solutions that entail stakeholder involvement. This expertise is transferred to cities in developing countries through capacity building projects.

The Y-PORT Center has been disseminating knowledge by taking part in ICLEI's Transformative Action Program (TAP). Through TAP, with its "Y-PORT Center City-to-City Program for Low Carbon and Smart Asia" (City-to-City Program), the City of Yokohama aims to expand its low-carbon and smart-city development efforts beyond its territory and to co-produce the sustainable development of emerging cities in Asia.

Many of the current issues faced by cities in developing countries are the same as what Japanese local governments confronted during the period of rapid economic growth. From the 60s to the 80s, Yokohama experienced various urban issues such as uncontrolled expansion of urban areas, traffic congestion, widening infrastructure gap, vulnerability to hazards and risks, degraded living conditions, pollution and difficulties in urban management.

Now Yokohama is a leading city in Japan in promoting "Smart City" initiatives, utilizing ICTs and other modern technological innovations. These technologies make necessary actions more efficient and better coordinated.

That said, without real participation from citizens and local industries, efforts made now may be difficult to sustain in the long run. Stakeholder involvement fosters smart city planning and sustainable policy making, while allowing efficient policy implementation.

AN ARTICLE BY HIDEYUKI MORI
President, Institute for Global Environmental Strategies (IGES)

Story of the Nanji Island

¶ Seoul successfully tackled one of its most grave urban challenges—waste management—by restoring a dangerous landfill, using cultural sensitivity and unity to drive the project to completion.

Before the restoration project, waste pickers salvaged recyclable materials from the Nanji island landfill

Trash continued to pile up at the landfill before the restoration project

"Bowl Containing the Sky"
an observatory that offers a panoramic view of Seoul

Nanji Island, which is 20 minutes away from downtown Seoul, is a sand dune island formed by sand erosion from the Han River. Before it was converted into a landfill, Nanji Island was called an island of flowers, as it was surrounded by wild flowers and birds. It served as a farming area where approximately 70 families cultivated vegetables and peanuts.

Up until 1978, Seoul's waste was disposed in small regional landfills, but with population increase and urbanization, small landfills were not sufficient to accommodate the growing amount of waste. In March 1978, Seoul designated the 2.7km^2 Nanji Island a landfill and all trash was sent to Nanji Island until March 1993. During those 15 years, approximately 92 million m^3 of trash ended up in landfills, forming a 98m "trash mountain".

At that time, the general public did not really think about environmental problems, so landfills were just treated as the place where trash was thrown away. In fact, polluted water from landfills contaminated underground water and the Han River, and there was always the possibility that the trash mountain could collapse. During this time, there were 1,400 huge and small-scale fires from methane gas, a by-product of rotting trash. A fire destroyed the whole village in 1984, where 950 families lived by collecting recyclable materials.

THE RESTORATION OF NANJI ISLAND

Nanji Island suddenly became a land of curses. Seoul originally considered the landfill term to be 5-6 years but trash continued to pile up, as obtaining alternative landfill space was not that easy. In 1992, as the government secured the 20km^2 space located in the borderline of Incheon and Geong-gi as a joint landfill, Seoul closed Nanji Island.

The priority for Seoul shifted to getting rid of the fouling smell and dust coming from the trash pile. But the decision-making process was not easy. There were different opinions regarding the use of Nanji Island. Some people claimed that the trash should be incinerated and Nanji Island should be developed as a commercial area, and some others insisted on planning an ecological restoration project.

Seoul government considered six propositions, including development and conservation. After years of deliberation, Seoul finally concluded that it would be most logical to focus on land stabilization and ecological restoration. The goal of the Nanji project was to restore harmony and sustainability through development and conservation. Through the restoration project, once-abandoned Nanji Island turned into a new frontier that started to bring economic prosperity. Alongside this project, Seoul developed a hinterland of 1.6km^2 as a new town for residents and Digital Media City (DMC) – a high-tech media industrial park – in 2000.

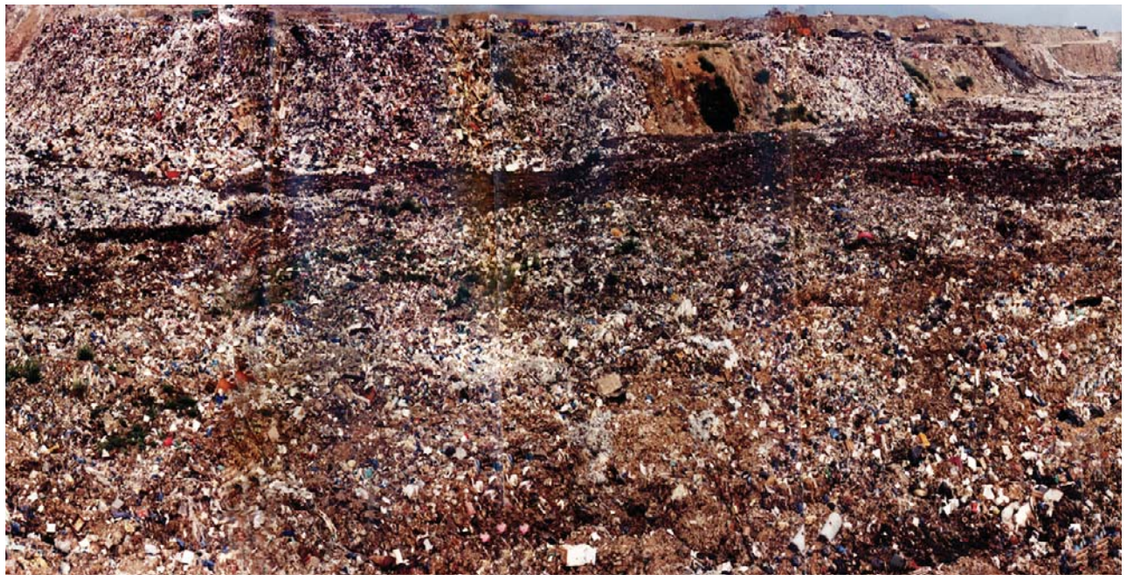
The first stage was to build a concrete and steel wall around the trash mountain that stretched as long as 6 km to keep the leachate from polluting the Han River and the surrounding areas. 31 collecting wells were built at 200 metre intervals along the prevention wall. The liquid contained in the leachate is discharged to a sewage treatment plant, purified and sent to the Han River. In addition, 106 gas-absorption devices were provided to collect methane. Annually, 28 million m^3 of gas was produced and used as fuel for supplying heat for 3,000 families. The next stage focused on stabilization. In order to prevent a landslide, the trash mountain's gradient was made 4% more flat, Geo-cells were installed and 5 metres of earth were heaped up to plant grass and trees.

CULTURAL VALUES HELPED ESTABLISH A SMOOTHER PROCESS

The construction schedule was very tight, but at that time South Korea had just won the bid to host the 2002 World Cup, which then became a driving force inspiring Seoul to complete the project under any circumstance. Six departments in Seoul Metropolitan Government were involved and the vice mayor had full authority in decision making.

Unfortunately, there were a number of challenges during the process. 950 families strongly resisted the relocation, building barricades and throwing Molotov cocktails. Seoul persuaded them by offering alternative public housing and employment at the incineration plants once they were built. The government also used a collectivistic cultural approach, having a series of casual gatherings to talk all night over six months. Following the persuasion process, the construction was finally able to begin.

Nature posed another major challenge. A heavy rainfall on July 28, 2001 collapsed 17 slopes, forcing the government to rebuild sewers and roads. It was one year before the World Cup, and all employees who were onsite were devastated and speechless. "Shouldn't we still complete the project?" the project manager said. Other employees responded, "The only way is to spend the whole night". The common dream, to successfully host the 2002 World Cup, tied everyone together.



One of the small parks in Nanji, Noeul Park, before and after it was converted into an environmentally friendly area

△ "Mirror Fountain" - one of the public attractions in Nanji
▽ Children playground on the Hangang river bank

WHAT'S NEXT?

The construction lasted for 5 years and 10 months, and cost USD223.2 million. It was covered by government budget and treated as a priority, as it was connected with the World Cup. This project brought a set of long-term benefits, including tax collection that would be much larger than the project cost. The Nanji project showed that humans and nature can coexist. Nature quickly recovered. The initial 89 types of plants and 167 types of animals that inhabited the island in 1994 increased to 502 types of plants and 731 types of animals by 2010. Nanji has also become the home of 450 media and entertainment companies, creating job opportunities for 36,000 people and bring economic value. However, as it was not easy to use the alternative landfill secured secured by the central government in 1991 due to community resistance to relocation, the city administrator predicted that the capacity of the alternative landfill would reach its peak by 2016. The next question is will it be possible to find a new landfill after 2016? If we don't find answers to this issue now, our waste management problem will soon be a disaster.

The sense of crisis led the Seoul government to adopt its incineration policy. The municipality set up a plan to build 11 incineration facilities, and began construction in 1992, but completed only 4 incineration facilities, including Mapo facility, in 14 years. Obstacles arose from the fact that the incineration facilities would cause dioxin, which is the main cause of cancer. A policy shift to incineration is still in progress. But with partial achievement, the ratio of landfill to incineration reduced from 93.6% in 1997 to 25.4% in 2012. As a result, the life span of the alternative landfill extended from 2016 to 2044. If more effort was put into the incineration and recycling process, the next generation would be free from looking for huge landfill places.

If there is a lesson from the Nanji Island project, it is that human effort can transform cursed land into a promise land.

AN ARTICLE BY KIM SANGBUM
Visiting Professor, School of Economics, University of Seoul
Former Vice Mayor, Seoul Metropolitan Government, November 2011 - June 2014

The Manila Water Story

¶ In the mid-1990s, Metro Manila's water sector was trapped in a vicious cycle: underinvestment which led to poor water and wastewater services and low coverage. The government was unable to increase its water tariffs as customers were unwilling to pay. This situation translated into very low cash flows for the government, thus leading again to underinvestment, and the cycle restarted.

Managing 39 sewage treatment plants and two septage treatment plants, Manila Water is now known as the largest used water operator in the Philippines

In the mid-1990s, only 26% of the 3.1 million customers of Metropolitan Waterworks and Sewerage System (MWSS) had 24/7 water availability. The system loss - due to either physical leaks or pilferage - was close to 1,000 million litres per day (MLD), equal to almost two-thirds of the water produced. A measly 3% of customers were covered by sanitation services and efficiency-wise, MWSS employed 9.8 employees per 1,000 connections, which was 2 to 7 times more than other major Asian capitals.[1] These issues disrupted Metro Manila's financially viable operations. To fill in the revenue gap, the city accumulated debt worth close to USD1 billion. In addition, fiscal subsidies were often extended under the increased equity infused by the National Government.[2] For this reason there was little incentive to improve performance.

ADDRESSING MANILA'S WATER CRISIS THROUGH POLITICAL LEADERSHIP AND GOVERNANCE

From 1991-1994, the country fell victim to successive El Niño events. For Metro Manila, this meant rationing water supplies during the dry season for 9 million residents. Moreover, MWSS was a financial burden to the state and had failed in fulfilling its mandate to bring water to the taps. The Executive branch took notice.

President Fidel V. Ramos took power in 1992 and became the key agent behind the involvement of the private sector in MWSS' operations. Ramos urged Congress to pass the National Water Crisis Act of 1995, which sought the involvement of the private sector to provide financial resources and operational know-how. After public bidding, Manila Water was selected for a 25-year[3] concession for the Metro Manila East Zone (EZ). The EZ is composed of 23 cities/municipalities[4] with an estimated population of 6.3 million[5].

DECENTRALIZATION, EMPOWERMENT, AND GOOD GOVERNANCE

The public private partnership (PPP) between MWSS and Manila Water had three objectives: to improve the delivery of water and wastewater services, to increase efficiency, and to expand water and wastewater coverage to unserved areas.

To maintain a sustainable framework, it was necessary to balance consumer interests (i.e. accessibility and quality at reasonable costs) and the operator's interests (i.e. financial viability and a reasonable rate of return).

The Concession Agreement (CA) adopted a "regulation-by-contract" regime where most activities, regulated by an independent regulatory agency, were set in a detailed format within the contract. This approach ensured that the balance never tipped in favour of either the operator or the general public.

Guided by this, the CA features the following key provisions: the concessionaire is MWSS' contractor and agent, responsible for servicing the debt obligations of MWSS, and is obliged to absorb former MWSS employees; the CA is performance-based (i.e. the agreement is outcome-oriented) and the concessionaire is obliged to achieve mutually agreed upon service and efficiency targets; the CA has formula-based tariff-setting adjustments to limit the discretion of regulators and politicians; ownership over the water and wastewater asset base is retained by MWSS; and disputes between the concessionaire and MWSS are resolved via arbitration.

Manila Water was immediately faced with daunting challenges, like run-down facilities, a dilapidated workplace, labour unrest, and poor operating efficiency. With this scenario, Manila Water started pouring large amounts of capital to refurbish, replace and expand the physical assets of the East Zone's water distribution system. Yet, it was not sufficient to achieve the concession's objectives.

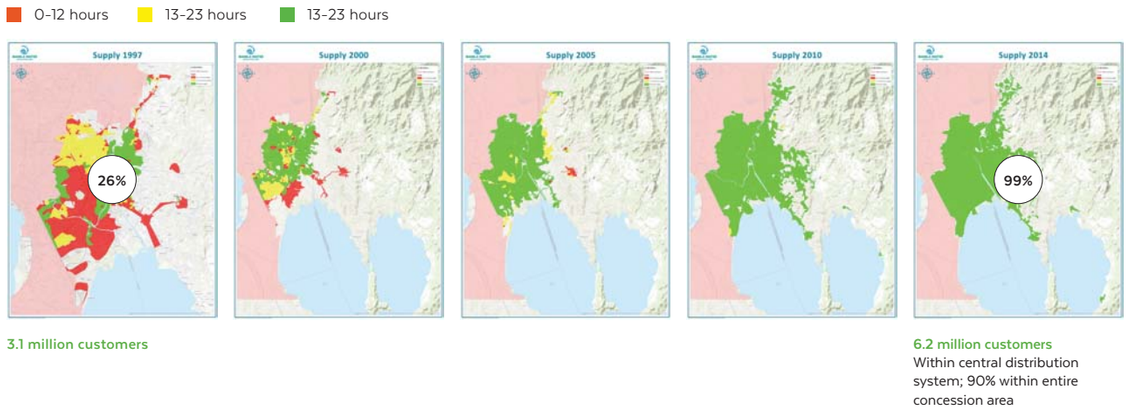
A corporate transformation – a change in how to manage the resources – was required. Management needed to transform its workforce from reactive and complacent to proactive and responsible. To this end, the company develop its key assets – its employees – through a three-pronged program of decentralization, incentivizing and training and development.

Decentralization entailed the empowerment of all employees. Each was expected to take charge in the working area. In return, the employee was either rewarded or penalized under a system of performance-based incentives. To complement this system, an elaborate training and development program to develop leadership and technical skills was rolled out. These initiatives transformed the absorbed MWSS employees – 90% of Manila Water's workforce in 1997 and around 49.09% in 2014 – from being perceived formerly as "liabilities" into true assets.

PAVING THE ROAD TO SUCCESS

With its financial muscle prudently and efficiently deployed, and successful managerial approach, Manila Water has been able to conquer obstacles. The most

Figure 1

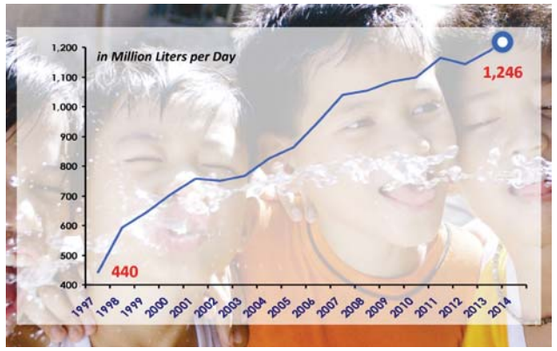


3.1 million customers

6.2 million customers
Within central distribution system; 90% within entire concession area

Figure 2
Reduction of water losses

Figure 3
More water delivered to customers



Watershed management, forest rehabilitation, and groundwater protection are among the programs implemented by Manila Water that resonate with its commitment to environmental protection

notable of these feats include: expanding water supply coverage and reliability (figure 1), reducing water losses (figure 2), and delivering more water to customers (figure 3).

EXPANSION BEYOND THE EAST ZONE AND THE PHILIPPINES

It was the success of Manila Water in the EZ that paved the way for geographical expansion. This expansion is anchored in the company's core competencies, which have already been proven in ten subsidiaries in the Philippines and in Vietnam.

Manila Water has also embarked on major projects in Myanmar and Indonesia that introduced the company's best practices, acquired from its experience over the years.

EMERGING CHALLENGES AND ISSUES[6]

As the company ventures into new markets, the EZ business faces key issues and challenges, including urbanization and population increase, regulatory risk, climate change, replicating the PPP model in other markets, operational difficulties, land availability, stakeholder/government cooperation and social acceptability, and internal challenges (i.e. developing new talents and leaders).

Given the challenges described above, Manila Water remains optimistic that it will sustain growth in the EZ, as well as beyond its border, as it tries to replicate its inclusive business model as well as leverage its strength and experience in new markets.

AN ARTICLE BY VIRGILIO C. RIVERA JR.
Chief Operating Officer – New Business, Manila Water Co. Inc.

For over 18 years, Manila Water has continuously strived to improve the quality of lives of communities by providing clean, safe, potable water

Endnotes:

1 Fabella, Raul. (2011). "The Privatization of the Metropolitan Waterworks and Sewerage System: How and Why It Was Won" in The Asia Foundation. (2011). *Built on Dreams, Grounded in Reality: Economic Policy Reform in the Philippines*. Makati: The Asia Foundation – Philippines

2 Ibid.

3 Successfully negotiated a renewal of concession agreement that extends the term of the concession by 15 years, up to 2037.

4 The East Zone covers the cities of Makati, Pasig, Mandaluyong, Marikina, San Juan, Taguig, most parts of Quezon City, some parts of Manila, the municipality of Pateros and some cities and municipalities in Rizal Province.

5 Population figures based on 2012 estimates.

6 Rivera, Virgilio Jr. C., *Tap Secrets: The Manila Water Story* (Mandaluyong City, Philippines: ADB, 2014)

What Urbanizing Cities Can Learn from Foshan

¶ Over the past few years, the Urban Land Institute (ULI) has conducted several Advisory Service panels in Asia, each exploring the unique issues facing thriving and complex urban areas. This article analyses one of those panels, held in Foshan, China, in November 2015. ULI believes that the recommendations of the Foshan panel are applicable to many Chinese cities of similar size and composition.

Foshan is a powerhouse with 7.3 million people and a gross domestic product topping US$100 billion

Foshan lies at the heart of one of China's most fertile deltas, across the Pearl River from the Guangdong provincial capital of Guangzhou. With a trading industry that has been in place since the 17th century, it is the ancestral home of many leading business figures in nearby Hong Kong and Macau.

Today, Foshan is a powerhouse—with 7.3 million people and a gross domestic product topping US$100 billion—and serves as an exemplar of both the achievements of and challenges faced by China's emerging metropolitan areas. The city owes its success in part to its proximity and ties of kinship to the special administrative regions of Hong Kong and Macau. This provided a significant advantage to Foshan at the outset of China's reform era.

Yet, with all its success, Foshan faces a challenge most cities around the world struggle with: attracting and retaining talent.

The city asked the ULI to assemble a multidisciplinary team of land use, development, finance, design, and economic development experts to look at the larger issues facing the city, with a focus on the Chancheng District and Shui On Land's Lingnan Tiandi development.

Chancheng, Foshan's original city centre, is considered the heart of Lingnan culture, a premodern artistic and cultural movement that blended Southeast Asian and Cantonese influences, including opera, cuisine, and herbal medicines.

Located in Chancheng is Lingnan Tiandi, a new and large mixed-use development that has as its centrepiece a retail area that makes excellent use of both repurposed historic buildings and new structures that mimic the old. The ULI panel observed that the quality of the urban design and architectural finishes at the Lingnan Tiandi retail is among the highest in China.

But despite this spirit and the city's rich heritage and size, Foshan is one of the least known great cities in China. It needs to regain its stature as the centre of the Pearl River Delta and of the economy of southeast China. The panel believes that against this historic and cultural backdrop the city should begin to build its brand as a means to attract and retain talent.

URBAN LAND INSTITUTE ADVISORY SERVICES PANELS

For 65 years, the Advisory Services program has been providing strategic advice to communities on a wide array of land use and real estate topics in cities around the world. Many panels' recommendations have powerfully affected the cities that hosted them and transformed them forever. Advisory Service panels address some of the most complex and vexing issues facing urban areas. The summaries and full final reports of many of ULI's panels are available at uli.org/programs/advisory-services/panel-reports/.

LIVE/WORK/PLAY: INTEGRATING FUNCTIONS

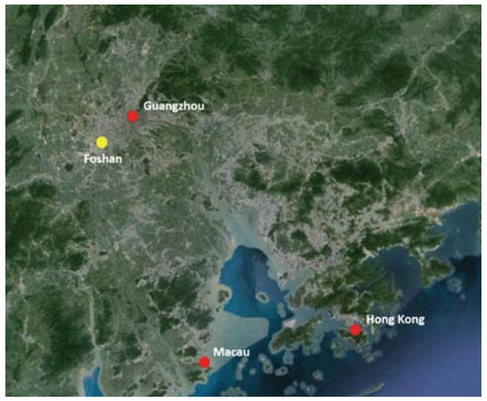
The world has changed with regard to what young, educated people want and expect from the places where they live. One challenge facing Foshan, and specifically Chancheng, is the need to integrate the functions of live, work, and play—an approach that has been at the forefront of urban regeneration in the West, panellists said. The Lingnan Tiandi has proposed all the elements of this approach, but only the play portion of the development seems to have been addressed so far.

The need for more people to live and work in central Chancheng should be the primary focus of city officials and the developer, the panel said. From its perspective, the live portion of the equation is hampered by the extremely high cost of new living space and the lack of units in the older portions of the city that can accommodate young workers.

The panel recommended that the city consider providing more affordable/workforce housing for younger workers. One strategy suggested by the panel is converting some of the hundreds of thousands of square meters of proposed office space in the Lingnan Tiandi master plan into live/work units that allow a different class of tenants to reside in the city centre.

Another major recommendation is that Foshan should improve its education system. Foshan University, the primary postsecondary educational presence in the city, has neither the status nor reputation of a top-tier university. The panel suggested the following approaches to improving this system:

- Create an urban campus. Young educated people worldwide are drawn to urban campuses where they can collaborate with students, faculty, and entrepreneurs.



Foshan lies at the heart of one of China's most fertile deltas, across the Pearl River from the Guangdong provincial capital of Guangzhou

- Recruit a world-class university to attract top talent. Foshan has already created the SYSU-CMU International Joint Research Institute (JRI). Located in the Shunde district of Foshan, the JRI is a three-way partnership among the Shunde People's Government of Foshan, Sun Yat-sen University (SYSU), and Carnegie Mellon University (CMU). The panel recommends that, as part of the urban campus, a partnership similar to the JRI be created in Chancheng.

- Establish a centre for entrepreneurial studies in Chancheng. This centre would address the need for greater understanding of issues facing entrepreneurs and the entrepreneurial community, specifically related to existing and emerging industries in Foshan. Components of the centre should include the following: a faculty of local, national, and international experts; a student venture fund (SVE) providing seed money to help students create their own ventures; an advisory board of entrepreneurs and international experts; and a full-time staff to organize programs.

With all its success, Foshan faces a challenge of attracting and retaining talent

MAINTAINING AUTHENTICITY AND BRAND CLARITY

One issue that continues to surface everywhere worldwide is authenticity, a key to attracting and retaining great talent is providing a vibrant, connected cultural environment for city residents and tourists.

The panel believes that Foshan has a great advantage in this regard with the cultural assets mentioned earlier. Each of these elements should be expanded so as not only to meet the needs of the city's population, but also to serve as a key attraction for tourism.

Foshan should also raise its profile as an international tourism destination, the panel said. As travel restrictions in China ease and tourists have increasing wealth and additional leisure time, China is poised to host a growing number of visitors. The savvy international traveller has been inundated with options and choices through the internet, so successful tourist destinations must have certain aspects that set them apart from similar destinations.

CONCLUSION

Foshan's leadership has accomplished a broad set of complex business objectives for the entire city, including attracting large back-office operations and new manufacturing and industrial design operations to its outer districts. The ULI panel believes that with similar leadership, the transformation of Chancheng will help Foshan compete in the face of the tidal wave of change descending on urban China. A focus on strategies to improve opportunities for education, live/work/play places, and authenticity in the city centre will improve the city's ability to attract and retain talent for the entire metropolis.

AN ARTICLE BY THOMAS EITLER
Senior Vice President for the Urban Land Institute, a global nonprofit education and research institute that focuses on issues of land use, real estate and urban development.

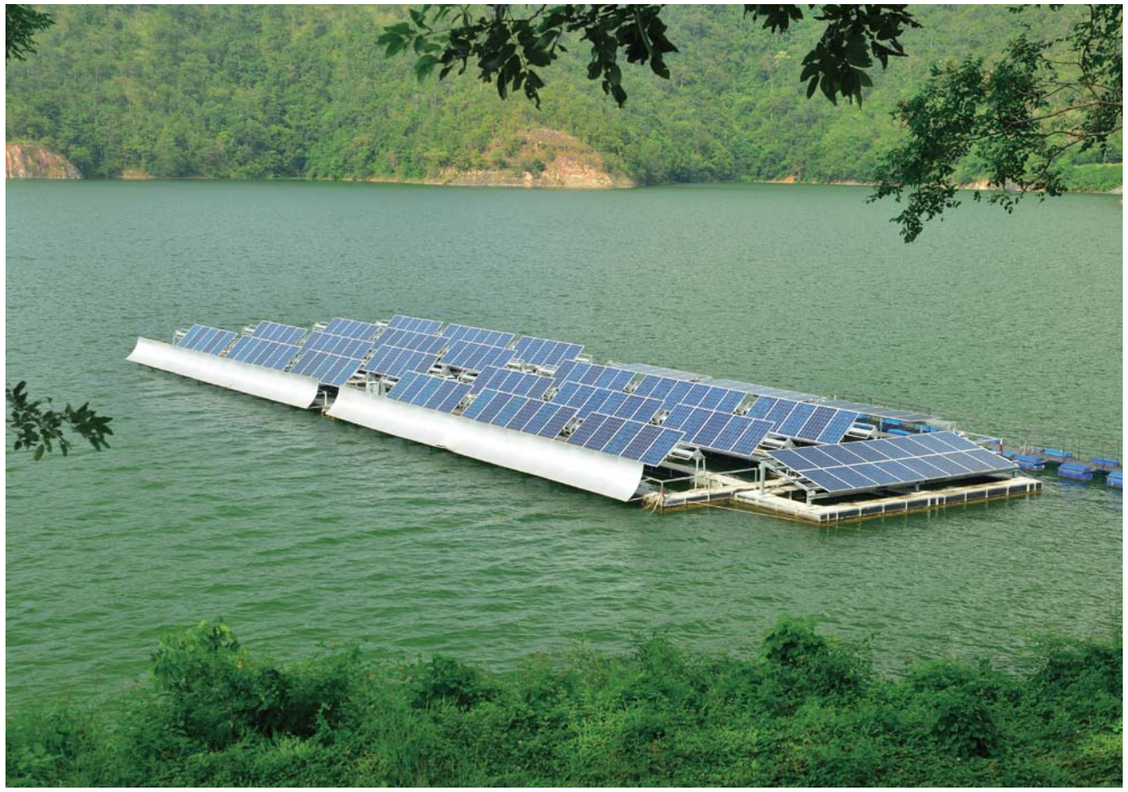
One challenge facing Foshan is the need to integrate the functions of live, work, and play

3.

Key elements of successful urban planning and financing

Catalysing Green Technologies in East Asian Cities

¶ Investments in clean technologies are still grossly insufficient to curb the effects of climate change, and the energy mix in fast-growing East Asia is not getting any cleaner.



In most cities, mayors are not fully aware of the opportunities and challenges of promoting green technologies through energy efficiency and renewable energy innovations
Source: Chokniti Khongchum

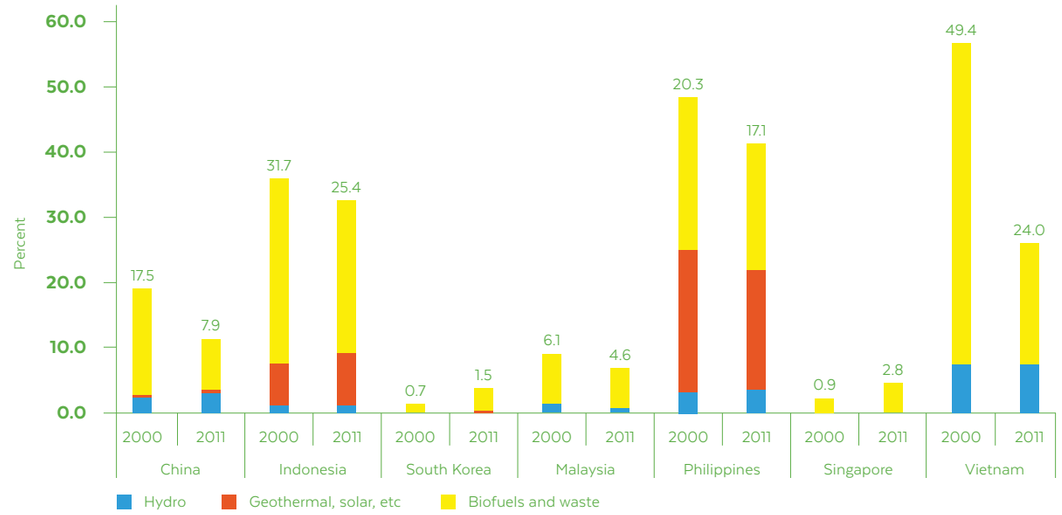


Chart 1: Changing energy mix – renewables as a percentage of energy supply, 2000-2011
Source: Compiled from IEA data

Despite the progress made at COP 21 in Paris, much still needs to be accomplished on-the-ground in order to greatly increase the use of green technologies as opposed to their polluting counterparts. Cities are most vulnerable; cities disproportionately face the brunt of climate change impacts due to their concentration of people and physical assets, as well as their typical geographic location near coastal areas. Cities in East Asia absorb 2 million new urban residents every month and are projected to triple their built-up areas in the coming two decades. More and more residents are entering the middle class, and buying cars, two wheelers and many other appliances that require energy sources.

Cities in East and South Asia will be significant contributors to greenhouse gas emissions (GHGs) over the next two decades. The largest cities are also close to large rivers and coastal areas that will be affected by sea level rise and extreme weather events. All this means increasing exposure to climate change risks that can cause heavy loss of life and property. These losses are particularly high for the poor in densely populated peri-urban and informal settlements, where residents live on marginal lands in poorly constructed shelters and lack financial resources.

GREEN ENERGY MEANS HIGHER ENERGY COST?

These challenges require accelerating green investment, which creates two issues: first, clean energy projects are more expensive and riskier. As a result, they have special financing needs, particularly to manage upfront costs and the high risks associated with these technologies. More importantly, a financial viability gap needs to be closed to attract investments, particularly from the private sector and commercial banks.

Second, due to the higher expenses, governments that want to promote green energy would see a trend of rising energy costs, since implementing cleaner energy projects typically requires implicit subsidies through a feed-in tariff or a renewable portfolio standard (RPS). If these policies are funded internally, it can jeopardise the country's basic interest in staying competitive, because higher energy costs also mean an increase in expenses in other sectors. Emission trading schemes (ETS) have been promoted to address these problems, but only by placing a tax on emitting activities to establish cleaner businesses. ETS might help, but they offer little in terms of new capital formation, which is a recurring problem for clean energy projects. In East Asia, most economies are geared towards promoting exports, and some countries even subsidize fossil fuels to stay competitive. This reflects a fundamental internal policy conflict, and one of the big reasons why green investments are not going forward. In this region, we have seen many policies that promote green investments, but have not resulted in a cleaner energy mix (see chart 1). In most cities, mayors and city officials are not fully aware of the opportunities and challenges of promoting green technologies through energy efficiency and renewable energy innovations.

Among seven important economies in East Asia, only South Korea and Singapore were able to effectively increase their share of renewables to total energy output from 2000-2011. But even for these two countries, the improvement is negligible when considering their absolute fossil fuel energy production.

On the other hand, China's share of renewable energy to total production actually declined from 19.4% in 2000 to 10.9% in 2011 despite substantial absolute investments in the sector. The trends in Indonesia, the Philippines and Vietnam are also concerning, despite abundant resources in renewable energy.[1]

FINANCIAL VIABILITY GAP

Reversing this trend is not a simple matter. But the two issues can be resolved through external subsidies to fund emissions reductions (also called GHG benefits), which new and justifiable clean energy investments would create by replacing low-cost, polluting alternatives. The Green Infrastructure Finance Framework[2] puts forward a sound approach for shared responsibilities (co-benefits), in which the national and city governments would shoulder the local externality portion of the benefits (i.e. from local pollution) while international funding sources, such as the Green Climate Fund, would shoulder the global externality portion.

A clean energy investment such as a wind, solar, or municipal waste to energy project is evaluated financially against its lowest-cost polluting alternative (e.g. coal) to produce a financial viability gap in net present value (NPV) terms (see chart 2).

Three different economic benefits and costs are then calculated for their monetizable values to assess whether the three combined or individually can potentially close the gap. In this case, the NPV values of the environmental benefits and distortions created the viability gap of USD17 million. Moreover, the value of the GHG benefits alone can close the financial viability gap and could be the basis for funding support from the Green Climate Fund. In such a scenario, the green investment could be implemented on par with the lowest cost alternative that would fulfil both the financial and economic dimensions as mentioned above.

JUSTIFIED COST ARRANGEMENT

Cities are in a position to leverage green funds to solve some of their most pressing pollution related problems. These cities generate thousands of tons of solid and liquid waste every day, which is a major challenge for city officials.

Traditional solutions, such as using sanitary landfills to dispose of waste, have proved to be problematic because of the NIMBY (Not in My Back Yard) problem. Communities living near to cities would rather benefit from land value increases through urbanization than become dumpsters for urban waste.

The best modern technologies that convert waste to energy can resolve the NIMBY problem, and simultaneously gain a credit for reducing GHG emissions. But such projects require viability gap financing, because the upfront investment costs are significantly higher than constructing a landfill.

If cities are willing to shoulder the internal costs of solid waste management and national governments shoulder the costs of the distortions through subsidies for fossil fuels, green finance could be sought for mitigating GHG emissions. The local externalities (e.g. elimination of solid wastes pollution) would be the city's responsibility, green energy policies would be under the national policy makers, and global externalities the purview of the global community. Each party would internally monetize these factors to determine a financial structure, using a combination of instruments and private funding that equals the NPV required to satisfy their respective responsibilities.

NATIONAL POLICY CONTEXT

Accelerating green investments must also focus on creating the right national environmental policy context. The more national governments and city mayors do independently to improve their climate resilience, the more they can solicit external funding to close the viability gap for climate-justifiable projects. The framework of shared responsibility aims to minimize additional distortions in the economy by ensuring that the parties who pay for the benefits actually receive the benefits. It also reduces the financial burden on governments, which has been a significant political obstacle in identifying real solutions for accelerating green growth. Most importantly, the ultimate decision regarding the viability of project opportunities lies with the party valuing the externality benefit. Therefore, each party can project their preferred values by internalizing the benefits.

Finally, regulation of this approach should be anchored around a country's existing public-private partnership (PPP) framework. This aspect of the framework is widely understood by many developing country governments and can be easily replicated not only in East Asia, but also in other regions.[3]

AN ARTICLE BY ALDO BAIETTI

Aldo Baietti has over 37 years of experience in international development, with a primary focus on financing, reform and private sector participation of infrastructure sectors, particularly emphasizing clean energy, water infrastructure, irrigation, and road transport sectors.

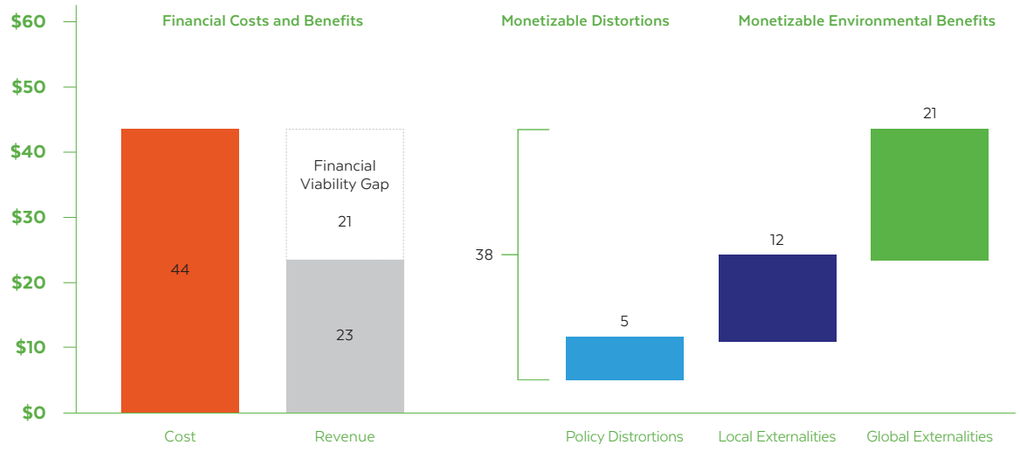


Chart 2: Illustration of the financial gap analysis methodology

Source: Baietti, A. January 2013. "A Public–Private Partnership Approach to Climate Finance." The World Bank, Washington DC.

More and more people buy cars and motorbikes in Asian cities
Source: xuanhuongho / Shutterstock.com

Endnotes:

1 Baietti et al., *The Green Infrastructure Finance Facility (GIFF) Concept - Financial and Operational Considerations Relating to the Proposed Concept* (Washington DC: The World Bank, July 2014)

2 Baietti et al., *A World Bank Study: Green Infrastructure Finance: Framework Report* (Washington DC: The World Bank, June 2012)

3 Baietti A., *A Public-Private Partnership Approach to Climate Finance* (Washington DC: The World Bank, January 2013)

Participatory Governance in Colombo: Citizens Contribute to Municipal Council's Annual Budgeting Process

¶ **Colombo Municipal Council has proved that citizen participation in planning the city budget gives significant advantages, which include better strategic planning and improved efficiency in the public expenditure system.**

The participatory budgeting process has ensured that the real needs of the people are identified

Colombo city is governed by an elected Mayor, along with the elected councillors on the Colombo Municipal Council (CMC). These city leaders come from different political parties and are responsible for providing Colombo citizens with equitable and efficient access to urban services, public utilities and amenities. As the people's representatives, the mayor and councillors have a statutory responsibility and are directly accountable for improving and maintaining urban services and promoting sustainable urban development in the CMC area. In order to fulfil their responsibilities, the council gets input from all stakeholder groups through an interactive process before deciding how the city's resources will be allocated in the annual municipal budget.

The annual budget preparation, implementation and monitoring is considered very important, and since 2011 the CMC has utilized a participatory process. The council invites all stakeholder groups in advance to view the development proposals. The participatory budgeting process is designed to create a spending plan that meets people's needs.

WHAT DOES "PARTICIPATION" MEAN?

The word "participation" can easily be defined but it is quite complex to implement. For example, the CMC has 16 departments and 6 district offices to serve a population of 550,000 people in over a 37 square kilometre area. Furthermore, there are thousands of different kinds of organizations that qualify as civil society stakeholders, taking into account religious, commercial, national and ethnic organizations.

Participation could take place in several forms, such as stakeholder dialogue, data and information sharing, experience exchange, resident mobilisation to identify priorities and improve the governance process, large scale meetings, local problem identification through public debates and discussions, and common challenge identification. Active participation shows that citizens understand how to voice their interests, act collectively and hold public officials accountable.

Public participation can ensure gender representation, secure stakeholder interests in proposed resource allocation, and ensure that ethnic, religious or culture-based values are adequately reflected, and give voice to political differences. What we have learnt is that participatory budget planning will succeed when the mayor, councillors, civil servants and common citizens are all engaged in the process.

The Worship Mayor of Colombo presents the budget plan

WHAT DO WE MEAN BY "PARTICIPATORY BUDGETING"?

The definition of participatory budgeting varies by cities. Colombo has defined the term as the direct participation and involvement of civil society organizations to prioritize needs of the people in the CMC budget.

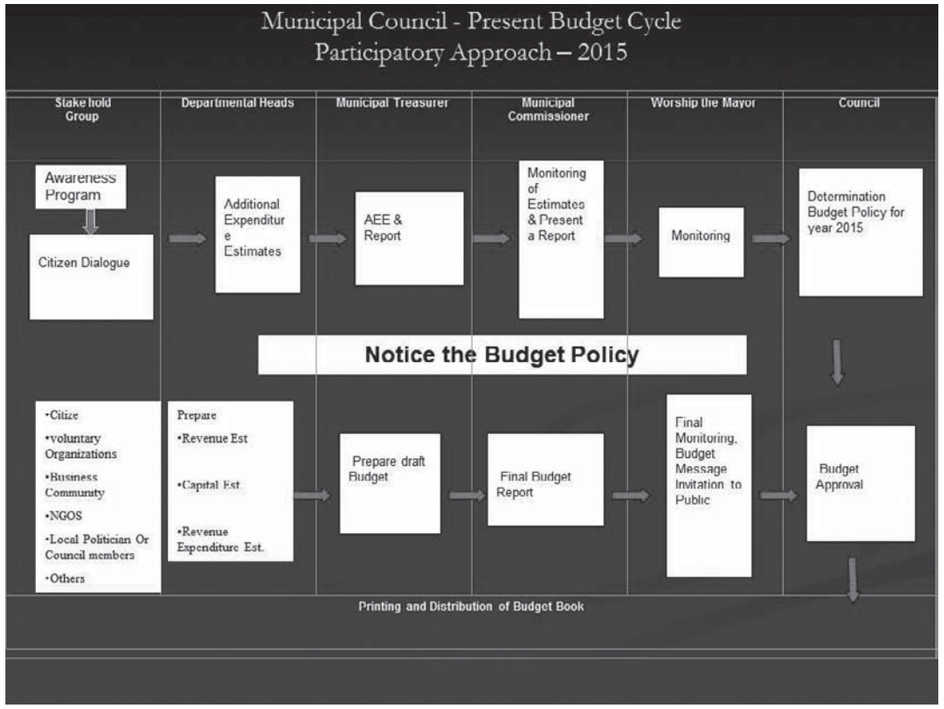
DEFINITION OF CIVIL SOCIETY

Civil society refers to the different stakeholder groups that work to formulate, implement and monitor the CMC budget. All city-level stakeholder groups are willing to constructively participate in the budget preparation process. This involves serious engagement, like reviewing documents and participating in discussions. The CMC invited many associations and community organizations to submit their development proposals.

WHY DO WE USE A PARTICIPATORY PROCESS TO PREPARE AND MONITOR THE CMC BUDGET?

The participatory budgeting process has ensured that the real needs of the people are identified, public funds are well-spent and the budget plan reflects the priorities of CMC, as well as the larger civil society, including low income residents. The mayor, councillors and officers had to be engaged in the process. The municipality also had to clarify the political will of the mayor and the other stakeholders involved in the decision-making process. To have a successful process, civil society had to be actively engaged to communicate people's needs, and well-established rules and regulations governing the participatory exercise and follow-up actions were needed. Ensuring a smooth participatory budgeting process also required setting rules and regulations prioritising public needs, transparent information sharing and providing public access to a holistic analysis of the budgeting process.

The CMC councillors submit development proposals, take part in the implementation, evaluation and monitoring process, provide leadership, inputs, and counselling, partner with city management, and assist in identifying the needs of the public.



Colombo Municipal Council participatory budget cycle

THE SIGNIFICANCE AND ADVANTAGES OF PARTICIPATORY BUDGETING IN THE CITY OF COLOMBO

After successfully implementing the participatory budget planning process, CMC has witnessed several advantages for the citizens: democracy is strengthened, citizens have opportunities to express their needs, the budget is used with maximum efficiency and effectiveness to improve quality of life, there is better budget control and monitoring, and an improved strategic planning process.

In addition to the public, the municipal administration also enjoys great benefits from the implementation of participatory budgeting. Not only does it enhance the efficiency of the public expenditure system and improve transparency, but it also secures public inputs in the decision making process of the CMC. The municipality has also been able to reduce their expenditure through private public partnerships and community contracts.

City leaders and managers have enhanced their responsibility and accountability, which is important for gaining public trust. This process has also improved the democratic culture and strengthened society.

THE OUTCOME AND MONITORING PROCESS OF PARTICIPATORY BUDGETING IN CMC

Once the participatory budgeting process is implemented, it is crucial to focus on outcomes and monitoring. CMC's budget for the past four years has won approval from the ruling party and opposition. This indicates that budget allocations were made for the benefit of all without interference from any caste, race or political interest. The CMC has also successfully completed several special projects and development works with total value of LKR 45 billion (USD310 million).

In addition to the budget for the upcoming fiscal year's programs, each councillor is allocated LKR4 million (USD27,500) each year to introduce the community contract method – an innovative approach to improving basic services in underserved settlements in Colombo – for projects valued below LKR2 million (USD13,500). Under this method, the council is able to obtain community contributions to projects, making the completion value higher than the invested funds. It is necessary for the council to allocate up to LKR200 million (USD1.4 million) annually for the development of low income or underserved settlements. Another important budget allocation is for housing projects through municipal bonds.

Building on the participatory budgeting policy, CMC plans to introduce the community audit system, which will help to promote sustainable urban development through better citizen engagement.

AN ARTICLE BY K. D. CHITHRAPALA
Municipal Treasurer, Colombo Municipal Council

Smart Monitoring System (SMS)

¶ The Municipal Council of Seberang Perai (MPSP), Penang, Malaysia developed a "Smart Monitoring System" to improve service quality for residents, in response to rising expectations and needs.


KEMENTERIAN KESEJAHTERAAN BANDAR,
PERUMAHAN DAN KERAJAAN TEMPATAN

SIJIL PENGHARGAAN

Kepada

MAJLIS PERBANDARAN
SEBERANG PERAI

Calon Senarai Pendek

ANUGERAH INOVASI
PIHAK BERKUASA TEMPATAN
(AIPBT) TAHUN 2015

Rahman

(DATUK ABDUL RAHMAN DAHLAN)
Menteri Kesejahteraan Bandar,
Perumahan dan Kerajaan Tempatan

△ The Launch of Citizen Action Technology, by Honorable Mr Lim Guan Eng, Penang Chief Minister at KOMTAR Penang, Malaysia

▷ Innovation Award of Local Authorities 2015 received from Minister of Ministry of Urban Wellbeing, Housing and Local Government

▽ President Dato' Maimunah Mohd Sharif received the Innovations Award of Local Authorities 2015

The Municipal Council of Seberang Perai (MPSP) has developed a 'Smart Monitoring System' (SMS) to improve service quality for Seberang Perai residents, especially for services related to flood monitoring and response, earth works monitoring and enforcement, illegal dumping of solid waste and other environmental issues. SMS is an in-house operation financed by MPSP, which can be replicated inexpensively by other local authorities. The overall cost to establish the system was only MYR50,000 (USD12,500) excluding hardware such as televisions and computers.

The SMS was created during a brainstorming sessions with MPSP top management, led by President YBhg. Dato' Maimunah Mohd Sharif and the Municipal Secretary, Sr. Haji Rozali Bin Haji Mohamud, to fulfil our obligation to monitor services for our ratepayers. SMS was officially launched by the Chief Minister of Penang, the Honourable Mr. Lim Guan Eng on 3rd January 2013. SMS is a reporting, monitoring and response system, which integrates data from Facebook MPSP Watch and Citizen Action Technology (CAT). This is an improved version of the conventional complaint channels that MPSP used previously.

MPSP Watch was created on August 2012 and managed by stakeholders using their own resources without any provisions from the council. The founder of Facebook MPSP Watch is a citizen of Seberang Perai. It is a platform that enables stakeholders to lodge complaints and ideas by using the social networking site Facebook and smartphones.

Then in early April 2014, MPSP Watch team created a Better Penang App called Citizen Action Technology (CAT). This application is much faster and user-friendly. MPSP Watch and CAT have interlinked data, providing a practical approach to help communities deal with MPSP in terms of hygiene monitoring and others.

SMS is an innovation that uses modern technology and smartphones and integrates MPSP Watch with the CAT application. There are two functions of SMS: managing citizens' complaints and monitoring development project sites. This SMS was introduced to improve the quality of services offered to Seberang Perai residents and to improve the quality, effectiveness and efficiency of Municipal Council services on the ground.

This is a new approach and a new way for stakeholders to interact with the government. The implementation of SMS has had a positive impact for the administration of MPSP, whereby MPSP is able to provide faster and more transparent services, which will eventually lead to a cleaner and greener Seberang Perai.

The main goal of SMS is to create two way communication between the community and MPSP. The system is designed to develop more creative management services to improve and refine MPSP service delivery system towards fulfilling the aspirations and hopes of the people. SMS is visible on the 60" television screen in the President and Municipal Secretary's office for monitoring purposes or by using a smartphone.

INNOVATIVE APPROACH THROUGH MODERN TECHNOLOGY

Using technology and smartphones, SMS is a faster and more user-friendly approach towards the conventional complaint-handling process. To submit a complaint, users only need to take pictures with android-based mobile phones and fill in a brief information section that describes the situation.

All information will be transmitted through this application and when it is uploaded to the system, a reference number will automatically be given as an identification number. This ensures that the report is received by MPSP and it is addressed quickly. MPSP staff monitors the responses and ensure the accuracy of the information provided.

THE ADVANTAGES OF USING SMS

SMS enables MPSP to deal with complaints quickly and helps to reduce labour costs, as SMS provides a comprehensive monitoring system with minimal man power. It uses an integrated approach, providing a regulated environment within an institutional framework that encourages the use of information technology.

In addition, MPSP uses this system as a platform to deliver information to the citizens of Seberang Perai. It also provides a social engagement platform for MPSP and stakeholders, which facilitates monitoring, especially of city cleanliness. The initiative is in line with Penang state government's Competency, Accountability and Transparency (CAT) principles that call for good governance to generate prosperity that can be shared equitably.

By installing a multimedia display to support this system, MPSP can execute more comprehensive and systematic procedures, particularly in giving orders, monitoring developments, enforcing changes and making more accurate conclusions. It uses multimedia data to integrate development projects, such as earthworks, drainage and road works, and building development.

The average response time for the SMS is one working day and the Key Performance Indicators (KPI) for taking action on the complaints are as follows:

1 Complaints regarding uncollected garbage, trash or rubbish traps in the drains or town roads will be handled on the same day
2 Other complaints and feedback will be given three days

SMS has attracted interest from a number of local authorities in West Malaysia, such as Penang City Council (MBPP), Johor Bahru City Council (MBJB), Hulu Selangor District Council (MDHS) and Alor Gajah City Council (MBAG). In addition to this, an article about this innovation was published in *Penang Monthly* magazine, which is a state created magazine, in June and August 2012 and in *Nan Yang Siang Pao* Chinese newspaper in March 2013.

MPSP's achievement on this project has been well recognized by the Malaysian Government. Malaysian Local Authorities Innovations Award (AIPBT) has named MPSP the first runner-up at the national level and first runner-up at the Penang State level as well. MPSP is dedicated to continuing its efforts to generate creative ideas for enhancing systems to provide efficient and effective service delivery and create greater impact for stakeholder.

AN ARTICLE BY
ROSMALINDA ROSLI AND
SITI NURHAYATI ABDUL RAHMAN
Department of Corporate and International Affairs
Municipal Council of Seberang Perai
Penang, Malaysia

STEP-BY-STEP GUIDE TO USING SMART MONITORING SYSTEM

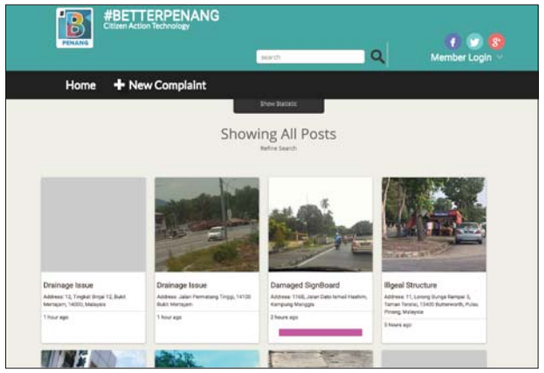
STEP 1

Front page of "Better Penang" application

Members of the public wishing to lodge complaints, may do so by visiting this website at http://www.cat.betterpg.com. Those who want to submit complaints using android Smartphone can upload the application from the Play Store. Complaints are submitted through three easy steps: snap a photo, select the category of complaint and describe the location, and finally upload the complaint (submit).

STEP 2

Front page of "MPSP Watch" on Facebook and Citizen Action Technology (CAT)



Complaints submitted through the website and the Better Penang application will be channelled to MPSP Watch-Facebook and the Better Penang website at http://www.cat.betterpg.com. Each and every complaint will be given a reference number by the Smart Monitoring System within 24 hours.

STEP 3

Front page of the Smart Monitoring System

The details of the complaints in the SMS will be channelled to relevant departments for action. Feedback and actions that have been carried out by Municipal Council of Seberang Perai will be presented on the website http://www.cat.betterpg.com. The complainant will also be notified.

Training Students in Sustainable Development

¶ Education in sustainable development often does not provide students with practical knowledge. This has hindered graduates in delivering practicable solutions to urban challenges. National University of Singapore has taken the initiative to address this issue.

Students explain and present their draft plans to community leaders

△ To facilitate project sustainability, students have to engage the various stakeholders, such as residents and community leaders, and involve them in the process of formulating the master plan

○ The students also conducted physical surveys of the grounds to appraise the topographical and environmental conditions to develop an environmentally sustainable plan

▽ Household surveys were conducted to understand the needs and aspiration of residents, helping to ensure some degree of social sustainability in the planning

While there are concerted efforts to raise awareness on the need for sustainable development in the world's growing towns and cities, the efforts to train personnel to plan for sustainable developments is less coordinated. Often, university and college graduates embarking on work in planning, designing or managing sustainable developments gain their know-how on the job. Desiring to give students at the National University of Singapore (NUS) early exposure to sustainable infrastructure planning, we introduced a project-based module that requires students to work out a sustainable-goal-orientated infrastructure master plan for a settlement in Yunnan, China.

The module is organized in 3 phases: pre-trip phase, field trip phase and post-trip study phase.

PRE-TRIP PHASE

Over a one-semester period, students will receive instructions on infrastructure planning and identify a field problem remotely. They must acquaint themselves with the Chinese political and administrative landscape to appreciate various economic, land-reform and development policies at multiple levels of government.

Further, they will need to research the existing and potential social and environmental challenges of the target community. Finally, they will produce a set of documents, including maps and survey templates, for the field trip in the second phase.

FIELD TRIP PHASE

During the 2-week trip, students will engage the residents and community leaders to gain further insights into the demographic and cultural set-up, as well as the needs and aspirations of the community.

To gain a better appreciation of the topographical and environmental landscape of the community, they will visit the community's surroundings, including nearby settlements. Further, they will conduct in-depth physical surveys, in the form of a Transect Walk, as well as household surveys, in the form of Participatory Development Appraisals, to scope the problem.

Before producing a draft master plan, they will conduct daily discussions among themselves and organize consultation sessions with community leaders, as well as interact with township officials and other stakeholders to align their proposals with the township and wider development plans. Throughout the exercise, the students will constantly evaluate their suggestions against relevant sustainable goals from the viewpoint of the local community.

POST-TRIP STUDY PHASE

In the last phase, the students must examine the necessary technical details that will form the master plan. They will prepare the necessary maps, drawings, plans and supporting references to accompany the proposed master plan in the form of a technical report. The technical report will be appended by survey data and other information about the community. They will also prepare a main report documenting their project execution, team organization, work processes and observations.

IMPACT ON STUDENT TRAINING

The module has three distinctive features: out-of-classroom learning, out-of-comfort-zone experience and out-of-the-box thinking.

The out-of-classroom learning takes students into the field, where real-life problems must be correctly identified and solutions must be amicably developed through stakeholder engagement. The students are encouraged to learn by observation and discovery from both interactions with stakeholders and engagement with the environment. They are encouraged to observe verbal and non-verbal responses from the stakeholders and to validate their observations through triangulation among themselves. They will be guided to develop soft skills such as situational awareness, communication, negotiation and conflict resolution.

The out-of-comfort-zone experience is accomplished when students are drawn out of the usual comfort and convenience found in highly urbanized Singapore to a completely different and less urbanized setting. The "shock" experience enables students to be more mindful of the wider needs in society and the balance between development and harmonious living. It also inculcates a better sense of personal preparedness and resilience, as well as inspires them to have a deeper appreciation for fellow human beings and commitment to society.

The out-of-the-box thinking requires students to draw on their training in various engineering and non-engineering disciplines to generate a feasible, integrated infrastructure master plan through a team effort. In deriving a solution that is socially, economically and environmentally sustainable, they need to consider the historical setting by examining the evolution of Chinese society over the centuries from feudal lordships to kingdoms and dynasties, to communist rule and modern-day socialism.

They have to consider the complex setup of land ownership and resource distribution in China and to rethink the applicability of western-style land-use planning methods. Faced with vastly different cultural, climatic and geographical conditions, the students are forced to challenge their thinking and prejudices on planning practice.

△ The students also studied various problems such as water resources and distribution, waste water treatment, transportation and other infrastructure needs

○ Meeting with township officials was a necessary part of the work for the students to appreciate the planning policies and plans at a higher level, to make plans sustainable

▽ The students also had discussion and brainstorm sessions to clarify their thinking and sharpen their analysis of the situation. Triangulation is an important method of making sure that the inputs from various stakeholders are moderated to represent a balanced view of the community

△ The work of the students generated much interest among the residents, including women. The interaction between students and residents resulted in mutual confidence and learning benefits

○ Community engagement goes beyond work; it is important for all to develop a sense of partnership in this planning project

▽ The work of the students was well received and received local media attention

A survey was undertaken at the end of the module to assess student learning outcomes based on the criteria set by the Engineering Accreditation Board in Singapore, which are similar to those set forth by the American Board of Engineering Accreditation. The students scored very highly on all learning outcomes, particularly those related to effective communication, impact of engineering solutions on society and sustainable developments, multi-disciplinary team involvement, as well as appreciation and application of non-engineering constraints in planning.

FOLLOW-UP PROJECTS

The field trip in the module is financially supported by the NUS under the STEER (Study Trips for Engagement and Enrichment) Program. Since its introduction in 2013, the module has proposed and revised the master plan for the community in Manle, Jiasa of Yunnan.

Beyond the master planning work, some follow-up projects have also been implemented, which are funded mainly by the Jiasa government and several non-government agencies in Singapore.

The module has attracted some attention from Yunnan University and Kunming University, both of which have indicated interest in sending their students to work alongside the students of NUS. In the coming offering in 2016, the target settlement is Majiazhai, which is also under Jiasa township. The students are currently in the first phase of preparation and will make the trip in May 2016.

AN ARTICLE BY PROF HOONG-CHOR CHIN
Professor, National University of Singapore

CITYNET

CityNet is the largest association of urban stakeholders committed to sustainable development in the Asia Pacific region. Established in 1987 with the support of UNESCAP, UNDP, and UN-Habitat, the network has grown to include 131 municipalities, NGOs, private companies and research centres. We connect actors, exchange knowledge and build commitment to create sustainable and resilient cities. Through capacity building, city-to-city cooperation and tangible projects, we help our members respond to climate change, disaster, the Sustainable Development Goals and rising infrastructure demands.

UNESCAP

UNESCAP is the regional development arm of the United Nations in Asia-Pacific, responsible for fostering cooperation among its member States and has been promoting cooperation among national and local governments on sustainable urban development for decades. ESCAP is the convener of the Asia-Pacific Forum on Sustainable Development (APFSD), the yearly regional mechanism for follow-up and review of the 2030 Agenda for Sustainable Urban Development, as well as the Asia-Pacific Urban Forum.

SEOUL METROPOLITAN GOVERNMENT

The city of Seoul has been one of the most active cities in the Asia-Pacific region in terms of inter-city cooperation and sharing its experiences in policy and practice. Among various initiatives, SMG has launched a comprehensive policy archive for knowledge sharing, the Seoul Solution (https://seoulsolution.kr), which introduces almost 200 cases of urban development and promotes inter-city and public-private cooperation.

CITYNET UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific SEOUL METROPOLITAN GOVERNMENT