KDI-TAF 2017
Asian Approaches to Development Cooperation

Shifting to Planned Urbanization in Asia:
The Role of Development and South-South Cooperation

edited by
Anthea Mulakala

KDI

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Preface and Acknowledgements

Rapid urbanization is one of the most critical trends facing the world today. In Asia, swift economic growth has resulted in more and bigger cities that have become hubs for economic, social, and cultural activities. At the same time, cities struggle to provide basic services, maintain green, healthy spaces, ensure safety and security, and provide quality of life for their diverse populations. By 2025, Asia will be home to 60 percent of the world's megacities, suggesting that the Asian century is also the urban century.

In 2016, 167 countries signed the New Urban Agenda (NUA) at the Habitat III conference in Quito, Ecuador. In conjunction with Sustainable Development Goal (SDG) 11 that aims to "make cities inclusive, safe, resilient and sustainable," the NUA provides a framework for governments, citizens, cities, the private sector, and NGOs, the better to plan, manage, and maximize the potential of urbanization.

Begun in late 2010, the Asian Approaches to Development Cooperation series — hosted jointly by the Korea Development Institute (KDI) and The Asia Foundation (TAF) — has provided a forum for Asian officials, experts, policymakers, and practitioners of development and South-South cooperation to explore and debate ways of confronting the challenges and opportunities that the region faces. In the annual dialogues and resulting publications, participants from Asia and beyond have shared their experiences, strategies, and actions in addressing contemporary concerns, ranging from gender-inclusive growth to climate change mitigation. In 2017, the series focused on Asian lessons and partnerships addressing the region's urbanization challenges, in the

context of the NUA and SDGs.

While home to the world's most populous cities, Asia also offers a trove of successful urban strategies and solutions. Participants in the 2017 dialogue in Manila, Philippines shared lessons from their histories along with current innovations that have successfully tackled urbanization challenges. South Korea's strategic approach to planning and construction during its housing crisis in the 1980s offers valuable lessons for other Asian cities facing current housing shortages. Women in cities across Asia feel safer because of an Indian nongovernmental organization's use of technology and crowd-sourced data to improve urban safety. This volume offers these and other lessons for policy-makers and practitioners in urban planning.

The collaboration between KDI and TAF rests largely on the vision and leadership of KDI's Professor Taejong Kim, and of the TAF representatives, Senior Vice President Dr. Gordon Hein and Ms. Anthea Mulakala, Director of International Development Cooperation, the volume's editor. We acknowledge their ongoing support and commitment to the partnership. We also extend thanks to The Asia Foundation office in the Philippines for hosting the 2017 dialogue. We would also like to thank individuals working at KDI and TAF who provided invaluable assistance: Mr. Yongjin Lee from KDI, and Mr. Dylan Davis, Ms. Kyung-sook Lee, Ms. Minjae Lee, Ms. Rebecca Schmidt, and Ms. Kyoungsun Lee of TAF for their support in coordinating, researching, editing, and proving logistical support to the dialogue participants, authors, and editors. Finally, from BlueSky

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As the Director for International Development Cooperation at The Asia Foundation, Ms. Mulakala leads the Foundation's work on Asian Approaches to Development Cooperation, which focuses on how Asian countries are influencing the global development and aid landscape. From 2007–2014, she served as Country Representative in Malaysia, concurrently leading the Foundation's engagement on development effectiveness and aid policy since 2010. Ms. Mulakala has overseen programs in Asia since 1991. Prior to joining the Foundation, she worked for the World Bank (in support of Indonesian decentralization), for the South Asia Partnership (strengthening NGO capacity in Sri Lanka and advising on gender issues), and for the UK's Department for International Development (DFID) (as team leader of a large Government of Bangladesh and multi-donor health project consortium, and subsequently as DFID's Reconciliation and Development advisor in Sri Lanka). Ms. Mulakala speaks French and intermediate Indonesian, Bangla, and Tamil. She holds a B.A. in Political Science with honors from the University of Western Ontario and an M.A. in International Affairs from the Norman Paterson School of International Affairs at Carleton University in Ottawa, Canada. Ms Mulakala has written and edited works on conflict dynamics in Asia, the changing development and aid landscape, and various issues in Malaysian political economy.

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Stephani Widorini is a CityNet Senior Program Officer, in charge of publication, program planning, and strategic outreach. She has managed various capacity-building activities, from urban transportation to climate leadership programs. In addition, she manages CityNet's annual legislative meetings, the governing body that maps out the network's vision and strategy in conjunction with international forums on urban development. She has also had the opportunity to follow local projects with CityNet member cities, including the development of a mobile app for addressing road infrastructure issues, and a community-based project on participatory development planning. Prior to joining CityNet, she worked with the BBC to produce and present news and current affairs for radio and online, as well as distributing them to other various outlets within the BBC Global News. She covered a variety of issues from socio-politics to business and feature stories.

Abbreviations

CCTV	Closed-caption television
GDP	Gross domestic product
KM	Kilometers
KRW	Korean won
MOC	Ministry of Construction
MOU	Memorandum of understanding
NGO	Nongovernmental organization
NUA	New Urban Agenda
SDG	Sustainable Development Goal
SSC	South-South cooperation
SMS	Short message service (text)
TAF	The Asia Foundation
UN	United Nations
UNDP	United Nations Development Programme
UK	United Kingdom
USD	United States dollars

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Introduction

The Role of Development and South-South Cooperation in Asian Urbanization

By
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Asia's Urban Phenomenon

In 2011, the Asian Development Bank described the 21st century as the Asian Century, highlighting the region's dramatic economic growth, its success in poverty alleviation, and the probability that Asian countries will account for half of global GDP by 2050 (ADB, 2011). Asia's high growth rates have coincided with dramatic urbanization. Between 1980 and 2010, the region's urban population grew by more than 1 billion; in 2018, it will exceed the rural population for the first time. By 2050, two-thirds of Asian-Pacific dwellers will be urban, and the region will host the majority of the world's 40 mega-cities, with populations of ten million or more. This massive urban transition has no historical precedent (UNESCAP, 2017). Therefore, it may be more apt to speak of this epoch as the Asian *urban* century (Mohan, 2006).

Despite this rapid migration, approximately half of the continent's population still live in rural areas (World Bank, 2015a; 2015b). This suggests that the influx of migrants to Asian cities is likely to continue, accelerating economic growth and regional dynamism, but also straining the region's resources.

How has Asia managed this demographic shift so far? The Economist Intelligence Unit (EIU) conducts an annual Global Livability Report that ranks cities according to a range of indicators, including safety and security, access to services, education, governance, culture and transport facilities. Asian cities populate the index at all levels. Dhaka and

Karachi consistently rank at the bottom, while Osaka and Tokyo reached the top-10 tier in 2018, a first for Asian cities in a field dominated by Canadian and Australian ones (EIU, 2018). The wide range indicates that as Asian urbanization advances, it produces both success and struggles. Asia's challenge is to makes cities more livable, not less, as the urban trajectory climbs.

Many forces drive urbanization in Asia. Across the emerging world, but particularly in Asia, cities serve as powerful economic nodes — hubs of growth, innovation, education, culture, services, and employment — that draw both domestic and international migrants. Historically, urbanization in Europe and North American occurred gradually over more than a century, allowing cities such as New York or Paris to adjust and manage the changes that came with rising populations. Asia's historical urban migration, however, has arisen over the span of a few decades, and most Asian cities do not have the administrative, management, institutional, and financial capacities to manage and maximize this rapid transition. As a result, many Asian cities struggle to deliver the promise of livability to their residents (Biswas and Tortajada, 2015).

Persistent Challenges

Rising urban poverty and inequality present a predominant challenge. By 2030, barring an unforeseen global shock or downturn over the next decade, more than 80 percent of the world's middle class will live in the megacities of the Global South, 3.2 billion of them in the Asian region (UNESCAP, 2017; Mulakala and Wagle, 2016). This vibrant middle class will propel the region's growth, innovation, and influence. However, alongside these positive trends, Asia also faces significant and rising urban poverty and inequality (UN Habitat, 2016). Asia's Gini coefficient, which measures income inequality, has increased this century from 39 to 46 as of 2013 (Kuroda, 2013). This persistence of poverty and inequality in rising Asia may reflect an overemphasis on growth at the expense of inclusivity.

Urban slums are one manifestation of this inequality and highlight the inability of cities to meet demands for employment, housing, and

infrastructure. The region has made significant strides in improving the lives of slum dwellers. Their proportion among urban residents in the Asia-Pacific region dropped from 44.3 percent in 1995 to 26.9 percent in 2014 (UN Habitat, 2015). However, this leaves more than 500 million still living in urban slums (World Bank, 2015a; UNESCAP, 2017). The prevalence and persistence of slums exacerbates the problems of poor sanitation, inadequate housing, poor health, and environmental degradation.

If inadequately addressed, such conditions can lead to increased crime and reduced safety and security in urban areas. The Economist's safe city index for 2017 ranks 60 cities across 49 security indicators covering digital, health, infrastructure, and personal issues. Asian cities top and tail the list, with four in the top ten (Tokyo, Singapore, Osaka and Hong Kong) and six in the bottom ten (Manila, Ho Chi Minh City, Jakarta, Yangon, Dhaka and Karachi) (EIU, 2017).

Strategies for Planned Urbanization

The way in which Asia urbanizes into the future will have a profound impact on the sustainability of the planet (UNESCAP, 2017). For the full realization of the Asian century, the region, its countries, and its cities, particularly those struggling at the depths of livability, need to find strategies and solutions that harness the opportunities afforded by urbanization while tackling the challenges. The interconnectivity of the region demands concerted, deliberate efforts.

Responses to rapid urbanization have increasingly shaped global policy agendas. The United Nations Sustainable Development Goals (SDGs) anticipate the challenges and opportunities posed by a rapidly urbanizing world. Cities will play a critical role in achieving the Agenda 2030, which includes poverty eradication, infrastructure development, and health for all (UNESCAP, 2017). SDG 11 specifically targets urbanization and aims to make cities and human settlements inclusive, safe, resilient, and sustainable. An increasing number of international cooperation programs are designed to mitigate the negative impacts of rapid urbanization, and to support the development of more resilient, prosperous, equitable and clean cities.

In 2016, United Nations member-countries negotiated and approved the New Urban Agenda (NUA), a set of global guidelines laying out a vision for achieving sustainable urban development. This document, approved in Quito, Ecuador in October 2016 by governments from around the world, offers a statement of intent: focusing more resources and attention on resolving current urban challenges, and shifting towards a more planned urbanization process that will mitigate future threats. Key principles of the NUA include basic services for all, equal opportunity for residents without discrimination, reducing greenhouse gas emissions, strengthened resilience to climate change and natural disasters, respect for the rights of all citizens including migrants and refugees, improved connectivity, and investing in safe, accessible green spaces. The NUA provides an integrative policy framework for cities to use in planning, managing, and delivering these priorities.

South-South or Asia-to-Asia knowledge-sharing offers a wealth of experience, solutions, and strategies to facilitate the NUA. With Asian cities at the top and bottom of the Livability Index, such exchanges can supply many lessons. In May 2017, urban development experts, city government officials, and scholars from across Asia gathered in Manila for the 16th meeting of the Asian Approaches to Development Cooperation (AADC) dialogue hosted by the Korea Development Institute and The Asia Foundation (TAF, 2017). The conference explored how Asian countries have helped each other via South-South cooperation and innovative partnerships, tackling urbanization challenges and advancing SDG 11 and the NUA. This volume captures participant experiences and presents the best practices that have emerged as their cities, countries, and organizations have partnered to plan and manage Asia's urbanization. All the authors are architects and/or implementors of the urban innovations they describe.

As more people move to cities, Asian governments struggle to meet the housing demand. Housing shortages incite property speculation and drive up inflation. In his chapter on South Korea's housing crisis, Jeongho Kim underscores the importance of strategic planning and smart financing to fill housing gaps. He provides insights and lessons for the current housing crises in Southeast Asia (e.g. Indonesia, Philippines, Thailand and Cambodia) by demonstrating how Korea

mitigated a similar situation in the 1980s. He explains how the shift to nuclear urban families in the postwar period increased demand for housing and resulted in shortages. Affordable housing moved beyond the reach of citizens. To address the crisis, the South Korean government implemented a strategic housing plan that mobilized financing and spurred new town development.

Koenig and Norovsambuu reiterate the primacy of sound planning as they describe Mongolia's struggle to manage the growth of unplanned, peri-urban settlements, or "ger areas," which account for more than half of the residents of the capital, Ulaanbaatar (UB). The authors explain how a city-city partnership between UB and Solo, Indonesia, brokered and assisted through international and local nongovernmental organizations, enabled UB to improve its urban planning. The authors stress the importance of data for improved planning and service delivery and demonstrate how Asia-to-Asia municipal partnerships and experience-sharing can offer opportunities to generate and share techniques for collecting and analyzing urban data.

India has pioneered the use of mobile data to improve urban safety in Asia. Both the SDGs and the NUA recognize universal access to safe and inclusive public space as an essential element of a sustainable city. Safetipin, a social enterprise based in India, created a map-based online and mobile phone application that collects and disseminates safety-related information through various methods, including crowd-sourcing. Vishwanath and Vyas describe how Safetipin, begun in New Delhi, has expanded across India and now operates in Jakarta, Nairobi, Bogota, and Quezon City. It also collects data in eight additional cities, including Rio de Janeiro, Kuala Lumpur, and Johannesburg. The chapter highlights and prioritizes the need for safer cities while also demonstrating the innovative and productive role that civil society can play in sustainable urbanization.

Few cities in South Asia can aspire to the livability standards achieved by Singapore. However, the state government of Andhra Pradesh, India, has taken on the challenge. Swee Keng Lim, from Singapore's Centre for Liveable Cities, explains how and why the world's most famous city-state has collaborated with the Andhra Pradesh government to build its new capital city, Amaravati, from the

ground up. A key feature of the partnership focuses on sustainable and green infrastructure, including the development of natural waterways, providing green public spaces and efficient public transport. Amaravati will become ten times the size of Singapore, but hopes to emulate the latter's reputation as a sustainable and livable city.

The last two chapters describe how multilateral agencies have enabled Asia-to-Asia cooperation on urban issues. Khilji and Cruz chart a United Nations Development Programme (UNDP) initiative that applied design thinking to facilitate a knowledge exchange between China and Bangladesh on urban service delivery. Through trial and error, non-linear planning, and the involvement of diverse stakeholders (including service providers, users, and government officials from both countries), the pilot partnership reveals important lessons about the value of bottom-up planning to identify sustainable solutions, and the limits of approaches that try to replicate one country's experience in another.

Ortega and Widorini profile CityNet, a unique international platform that, through a global network of partner cities, facilitates access to funding and technical solutions for city governments facing urban challenges. The authors provide various examples, including Ortega's own experience as President of CityNet and Mayor of San Fernando, Philippines, to argue that horizontal and multi-stakeholder approaches offer more options and potential for Asian cities than traditional country-to-country strategies.

The volume presents a snapshot of the Asian urban century as it evolves. It highlights challenges such as urban planning for unplanned settlements or designing a city from the ground up in one of the world's most populous countries. The experience and cases presented demonstrate how innovations in policy and planning, service delivery, and the use of data have emerged from the region's rich history and cultural diversity. Within this Asian marketplace of urban solutions and innovations, frameworks such as the NUA, and committed stakeholders from enabling organizations like the CityNet, the Centre for Liveable Cities, Safetipin, the United Nations, and the Asia Foundation, provide the resources necessary for Asian cities to navigate a sustainable urbanization path.

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CHAPTER 1

Massive Housing Construction to Mitigate Housing Shortages: The South Korean Experience

By
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Housing shortages, especially in growing metropolitan areas, are a salient feature of development in many highly-populated Asian countries. For example, Indonesia suffers from a housing backlog of 15 million units (Rukmana, 2014), and so does the Philippines with a housing shortage of 6.7 million as of 2016 (Elyda, 2016). Large cities such as Jakarta and metropolitan Manila experience more acute shortages (Elyda, 2016). To a lesser extent, a similar situation prevails in Bangkok and Kuala Lumpur (Rukmana, 2014). The housing shortage rate in Asian cities varies between 20-50 percent, depending on the definition of housing standard (UN HABITAT, 2007; 2012).[2]

Shortages lie at the root of most urban housing problems: overcrowding, housing price inflation, substandard quality, squatters, and so on. Both inadequate funding and a lack of residential land often lead to housing shortages. The Republic of Korea (South Korea) experienced many of these problems in the past, but mitigated them in the 1980s through a unique government-engineered initiative that other

1 The author was one of the architects who initiated the massive housing construction plan and worked on its strategies. He was also actively involved in its implementation process in an advisory capacity, developing not only policy tools and programs, but also monitoring/evaluation methods to support its speedy and effective execution. This paper includes first-hand testimony about the process and outcomes, in addition to compilations of data and past articles.

2 See also United Nations (2007).

Association of South East Asian Nations (ASEAN) member-countries may take as an example even today.

This paper briefly describes what the South Korean government did to rectify the situation, by facilitating housing construction on a massive scale within a short period of time. The "Two Million Housing Unit Construction Plan of 1988-92" (Kim, 1991a; Joo, 1994) epitomized its efforts. The government zeroed in on two major stumbling blocks when executing the plan: mobilization of investment capital and supply of residential land. The discussion that follows will elaborate upon both.

The Housing Situation in the 1980s

Two factors aggravated the Korean War-induced housing shortage: high population growth in the 1960s and a shift to a more nuclear family household structure during the 1970-1980s. Major metropolitan areas felt the shortage most acutely — especially Seoul, where the growth in housing stock fell far short of the increase in the number of households due to continuing in-migration. A net increase in personal income also caused pent-up demand for housing, which in turn led to a spiraling housing price. (Kim, 1988; 1990a; 2004).

Households increased by 5.9 million between 1960 and 1990, with only 3.7 million housing units added to the inventory. As a result, the housing shortage rate rose nationally from 17.5 percent in 1960 to 28.8 percent on average in 1980,[3] and in case of Seoul it went up to 38.9 percent in 1985 (NSOSK, 1948-1990). The shortage caused overcrowding for more than 60 percent of the city's households, who commonly lived in doubled-up and tripled-up units (Kim, 1991b; 1994a).

The housing price rose as much as fivefold during the thirteen-year period from 1975-1988, much higher than the nation's gross domestic

3 The housing shortage is the percentage ratio (or rate) of the total number of housing units over the total number of households. The shortage figures were calculated for each year separately. The shortage rate for the city of Seoul was calculated in the same way. For a comprehensive review and critical evaluation of the housing shortage as a policy indicator, refer to Yoon (1999).

product (GDP) growth rate.[4] This price inflation proved critical in Seoul, where the average rent more than doubled (2.2x) during 1981-87 (Seoul Metropolitan Government, 1989). Excess demand most likely underpinned the price spiral. When prospective homeowners and investors alike foresaw capital gains on short-term transactions, this fed the speculative fever. Once it got started, it almost instantaneously spread out throughout the metropolitan region; an expectation that prices would rise even higher led to the pent-up demand (Kim, 1989).

The Massive Housing Construction Plan of 1988-1992

The housing situation worsened in 1986 as Korea's economy boomed. Overall housing conditions had seen little improvement, and speculation would persist because of the shortfall in supply. Policymakers finally concluded that the only way to rectify the situation would be government-led mass production of housing within a relatively short period of time, especially in the capital region (Seoul Metropolitan Area, SMA). But given the limited resources – investment capital and residential land in particular – this project proved very challenging. (Kim, 1991b; 1994a)

The plan aimed to gradually increase the production level, taking into account the housing industry's limited production capacity. Constrained not only by capital and land limitations, but also shortages of construction materials (such as ready-mix concrete), skilled labor, and engineering technologies, the estimated production capacity in 1986 did not rise above 300,000 units per year at most (Kim, 1990b; 1990c). A proposed gradual expansion would have a production target of 400,000 units per year by 1990, and even more thereafter (Kim, 1994b; MOC, 1993). The plan also mandated that the city of Seoul produce at least 900,000 units; however, it only managed to secure 40 percent of the required land. This prompted the government to work out its "New

4 The average GDP growth rate varied significantly; 7.3 percent over the period of 1973-1975, 9 percent over that of 1982–1985, and 12.8 percent over that of 1986–1988, For more detailed information on Korea's GDP changes in the past, see Nam (1993).

Town Development" as a remedy for the land shortage, as we will discuss more fully below.

The government set the yearly average housing investment target at 6.5 percent of the GDP. Previously, the percentage had averaged 4.6 percent, ranging from 4.2 percent to a maximum of 5.8 percent. Much of the targeted investment money had to come from the private sector — financial institutions and prospective homeowners alike — and from the government's fiscal outlays. The government relied heavily on monies from the National Housing Fund (NHF) and the Korea Housing Bank (KHB). In the absence of a mortgage-backed securitization mechanism, both long-term credit financing and leveraging capabilities would remain very limited (Bertrand, 1997; Kim, 1995).

The Ministry of Construction had direct responsibility for the design and implementation, but the housing policy itself emerged from close consultation with (and oversight from) the president's chief secretary of economic affairs (Kim, 1991a; 1994). Other ministries and metropolitan governments also took part. A homeownership scheme matched potential beneficiaries with an income-based housing allocation system. It required that upper-income households occupy the units of large or medium size they purchased, while middle-income households could have access to owner-occupied but smaller units. Low-income households could opt into either very small owner-occupied units or rental apartments. The bottom 10 percent of low income-households received access to 200,000 units of low-cost public rental housing, officially referred to as "permanent rental housing." This kind of benefit for the poor was quite exceptional at a time when neither officialdom nor society took the concept of housing welfare (or social housing) for granted (Kim, 1994a).

Preparatory Works for Massive Housing Construction: Legal/Institutional

Traditionally, Koreans had depended on the "Land Readjustment Project" (LRP)[5] for residential development. This program assembled,

5 The Land Readjustment Project (aka LRP) was the most frequently-used method of

plotted, and allotted land to the original owners, readily available for immediate housing construction. But it did not suit mass production because it could not facilitate high-density/high-rise residential development. The government enacted the Housing Construction Promotion Law (HCPL) in 1972 as a supplementary measure to overcome the problem (Kim and Park, 2016).

The government took a step further in 1981 by enacting the Residential Land Development Promotion Law (RLDPL), encouraging not only high-density but large-scale residential developments. It also strengthened the public sector's role by adopting the "Publicly-Managed Residential Development Project" (PMRD); this presidential decree held that only public-sector entities could commission large scale, high-rise/high-density residential developments as necessary. This restriction relaxed in 1989 to promote public-private partnerships in new-town developments. The city of Seoul aggressively pursued high-rise/high-density development by adopting a new ordinance, "Designated Areas for Apartment Complexes" in 1989 (Kwon *et al*., 1994).

However, a lack of sizable land tracts delayed implementation. The 1972 Urban Planning Law prohibited conversion of doughnut-shaped greenbelts and farmlands into urban lands despite their location within the ordinance planning area.[6] But the situation reversed course when

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residential development in Korea until the late 1970s. Landowners formed an association (i.e. LRP Association) to develop their lands for housing estates, placing their lands into the association trust. The association assembled and plotted them in accordance with a set of planning guidance and land-use regulations as set forth by the relevant city administration. After the plotting of these lands and the placement of all the infrastructure facilities (service set-asides accounting for 40-45 percent of the total area), they were re-allotted to the original owners, readily available for immediate housing construction. For more detail, please refer to The Seoul Institute (2015).

6 The greenbelt, also known as the "development restriction area," came under the presidentially-decreed 1972 Urban Planning Law that strictly controls or prohibits its development. It aimed to preserve and protect the natural environment, scenery, and open spaces surrounding large metropolitan cities. But since the late 1990s, the law has gradually relaxed to allow residential developments to take place in the greenbelt. See blog.naver.com/netrealtor for recent updates on such development.

the RLDPL came into effect. The law dictated that only the publicly-managed development agencies, e.g. the Korea National Housing Corporation (KNHC) and the Municipal Development Corporation (MDC), had the authority to engage in large-scale, high-density residential developments. They could even expropriate private lands if necessary (Kim and Park, 2016).

Once an area became designated for development, the property value significantly rose, in tandem with rising expectations of land-use intensification and farm-to-urban land conversion. The public agency in charge of PMRD made special assessments of the affected properties, assuming that all the necessary infrastructure facilities and urban services would arrive in time to make the serviced lands readily available for development. The PMRD made fast-track developments possible, gaining momentum since 1988; during that same period, the LRP has virtually disappeared (The Seoul Institute, 2015).

The land value would generally increase many times over, and public agencies in charge of such development, such as the Korea Land Development Corporation (KLDC) and the Korea National Housing Corporation (KNHC), could either use the land as collateral or mortgage it to finance housing/urban development activities. Normally, these agencies would take short-term loans from the National Housing Fund (NHF), and after selling the serviced lands, would use the proceeds to pay off the debts. Through this process, the developing agency would earn a sizable "development gain," a large portion of which helped subsidize low-income/low-cost housing for the needy (Kim and Park, 2016).

Tax measures did not successfully control private housing speculation over new units. The government therefore introduced a bond-bidding system in 1983, to discourage speculative motives and to "tax away" in advance a large portion of windfall gains from both real and potential speculators. This system worked well, since buyers of newly-constructed condominiums had to purchase the Type II bonds (see below) as pledged in the bid before officially closing the sale. The highest bidders won the unit (Kim, 1993).[7]

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7 For detailed information on bond-bidding, see also KRIHS *et al*. (2011).

The bond-bidding system worked in tandem with a sales price ceiling system, controlling and stabilizing the price of the newly-built units. This helped first-home buyers save money by paying less than the market price for comparable units in terms of size and location. The program did not permit homebuilders to set the price on their own; they had to abide by the "standardized price" uniformly set by the government.

Implementation

The program particularly emphasized inter-agency coordination and cooperation. The president himself directly oversaw its implementation and the new town construction. This direct line of command helped expedite the decision-making and implementation process.

Officially, the Ministry of Construction (MOC) had the implementation mandate. Internally, it actively coordinated relevant activities in consultation with experts, largely drawn from the academy and from research institutes.[8] Externally, the MOC worked closely with other ministries such as economy, finance, domestic affairs, and so on, and with housing-related institutions such as the KHB, Housing Finance Credit Guarantee Corporation, the KNHC, the KLDC, and relevant local governments that helped provide land space for new town development (Kim, 1994a).

The KLDC acted as the key agent on behalf of the government. It purchased cheap lands for new town developments — mostly in agricultural zones or bounded by greenbelts — assembled them, provided arterial infrastructure facilities in accordance with *a priori* established urban design plans, and plotted them for immediate development.[9] It then sold the serviced lands to both private and public

8 A few government-funded national research institutes regularly advised the government throughout the implementation process – Korea Research Institute for Human Settlements, Korea Development Institute and Korea Transportation Institute (Kim, 1994a).

9 There are a number of articles on new town developments in Korea. Two informative and critical titles include Hwang (2003) and Cho (2008). Comprehensive overviews also appear in Ahn (1994) and blog.naver.com/realtor2013.

developers (see e.g. Ahn, 1994).

The massive housing construction plan was complemented by a housing price ceiling system (Kim and Park, 2016). The Housing Price Mediation Committee determined the sale price, taking construction costs and a reasonable level of overhead profits into account. Critically, most homebuilders set the prices close to the ceiling; consequently, initial offerings of newly-built homes tended to converge into the highest ceiling prices. This implied that most high-rise condominiums remained fairly uniform wherever they were built, leading to monotonous residential complexes all over Seoul and new towns. While the system helped make the mass production possible, it jeopardized the diversity of Korea's housing stock and culture.

A New-Town Approach to Mitigate the Residential Land Shortages in the Seoul Metropolitan Area

The capital region needed 101 million square meters (m^2) of land parcels. To mitigate the land shortage, in 1989 the government decided to build five new towns, totaling 224.8 million m^2, located 15 to 25 kilometers away from the city center (Kim, 1989). Two of them were situated north of the Han River and three to the south — all outside the greenbelt. The project set aside approximately 45 percent of the land for housing development, leaving the rest for other urban uses — streets, parks, roads, open space, and spaces for public facilities/utilities and commerce/businesses. The new towns were conceived as self-sustainable, minimally affecting Seoul's circulation and ecosystem.

To give legal legitimacy to the new town development, the government incorporated a new clause into the housing construction promotion law (HCPL). The residential land development promotion law (RLDPL) also strongly supported the PMRD-led large-scale new town development. Pursuant to the RLDPL, the government designated the Korea Land Development Corporation (KLDC) as the public developer. KLDC then formulated a set of new town development plans subject to government approval, and then prepared both land use and

urban design plans according to the guidelines set forth by the MOC.[10] The urban design laid out concrete sites for specific types of development — size, heights, bulk, density, housing type, land use mix and intensity, skylines, and so on (Kim, 1993).

The KLDC borrowed money from the NHF for its land purchases. It also had the authority to issue land-based corporate bonds to mobilize additional funds if necessary, redeemable upon the site preparation and the sale of serviced lands. It used the money for site development, providing arterial infrastructure, facilities, and services. It assessed the value of each serviced site in consultation with the Korea Appraisal Board, on the basis of its location, land-use and intensity, size, appurtenance, and other features. Once the KLDC completed its land appraisal and set the land price, it then sold the land parcels to developers — both public and private — as well as to local public institutions, such as school boards and local governments (for occupancy of public buildings). The sale prices varied substantially, depending on the development type and the project beneficiaries. The corporation paid back the short-term debts and used the remainder to accelerate site developments elsewhere (Kim, 1993; KRIHS *et al*., 2011).

The KNHC became the largest public homebuilder, while the MDCs served only the residents within local jurisdictions. These public builders engaged actively in low-cost and low-income housing production for the less economically privileged segments of the population. Their construction received most of its financing from the NHF and, to lesser extent, from local government budgetary contributions. The private homebuilders relied mostly on KHB, Citizens National Bank (CNB), and other financial institutions for short- and medium-term construction loans.

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10 The Ministry of Construction (MOC), since renamed the Ministry of Land, Infrastructure and Transportation (MOLIT), prepared a set of guidelines – land use, setbacks, street layouts, urban infrastructure (water, sewerage, utilities, schools), designs, etc. – consistent with current laws pertaining to residential and urban development. KLDC could exercise its discretion to develop livable cities and towns while making a reasonable amount of profit to sustain continuous development activities.

Box 1-1 Acronym quick-reference list

CNB	Citizens National Bank
HCLP	Housing Construction Promotion Law
HSI	Housing Subscription Installment Savings
HSTD	Housing Subscription Time Deposit
KHB	Korea Housing Bank
KLDC	Korea Land Development Corporation
KNHC	Korea National Housing Corporation
KRW	Korean Won (currency)
LRP	Land Readjustment Project
MOC	Ministry of Construction
MDC	Municipal Development Corporation
NHF	National Housing Fund
NHPSD	National Housing Preemption Subscription Deposit
PMRD	Publicly-Managed Residential Development Project
RLDPL	Residential Land Development Promotion Law
SMA	Seoul Metropolitan Area
USD	US Dollar (currency)

Securing Housing Funds for Home Builders and Buyers

Construction and purchase funds came from many sources – formal and informal. Formally, five of them prevailed: the government-managed NHF; funds from the KHB and housing lottery; funds from the CNB; funds from other commercial banks and insurance companies; and revenues from bond sales, both national and corporate. Informally, both c*honsei*[11] and pre-sale arrangements contributed significantly to

11 The term *chonsei* refers to a rental system, unique to Korea, in which a tenant deposits a lump-sum payment into the landlord's account without making monthly rent payments. The landlord should return it in full to the tenant when the rental contract

housing finance. Homeownership schemes aligned themselves with these funds. We will consider each type in turn.

Total housing funds quadrupled in less than four years, from KRW 1.3 trillion (USD 1.625 billion) in 1987 to KRW 5.32 trillion (USD 6.65 billion) in 1990 (Kim, 1999). In particular, the NHF and KHB funds increased more than fivefold during this period. The NHF also provided housing loans to low- and moderate-income households when they purchased publicly-supplied low-cost housing units.

Though less remarkable in their contributions, commercial banks mobilized KRW 500 billion (USD 625 million) in 1991, up from only KRW 153 billion (USD 191.25 million) in 1987. Life insurance companies also contributed to housing construction and consumer financing alike, on an equal scale to each. The amount of contribution started modestly with only KRW 2.6 billion won (USD 3.25 million) in 1987, but jumped up to KRW 42.53 billion won (USD 53.16 billion) in 1990, almost 18 times over four-year period (KHB, 1987-1995). Life insurance policy-holders could borrow money on favorable terms when purchasing newly-built condominiums.

The choice of homeownership scheme determined who received which type and size of housing unit, along with the where and how.[12] Purchasers could join one of three types of scheme: the Housing Subscription Time Deposit (HSTD), the National Housing Preemption Subscription Deposit (NHPSD) and the Housing Subscription Installment Savings (HSI). Those who joined the HSTD made lump-sum deposits, ranging from KRW 5 million (USD 6,250) up to KRW 15

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expires. Rents represent the opportunity costs of the deposit, normally equivalent to the short-term curb market interest rate, approximately 15-20 percent in the 1980s-1990s and 5-10 percent after the 2000s. The system developed and thrived in the absence of a housing finance/home mortgage system. Since homebuyers share the costs of home purchase with tenants, tenants partially serve as informal mortgage lenders. The practice still exists despite Korea's subsequent development of a reasonably sound home-mortgage system. For further discussion, refer to Strassmann (1991).

12 Very detailed descriptions regarding different types of homeownership schemes appear in Korea Housing Financial Cooperation (1995) (English version available). The Housing Construction Promotion Law was introduced by members of the National Assembly.

million (USD 18,750), and waited for at least two years to secure "priority in the queue" for purchasing a condominium unit.[13] The deposit amount determined the size of condominium the buyer could purchase.

The NHPSD collected deposits from low- and moderate-income homebuyers who intended to purchase the NHF-financed public housing units, largely provided by either the KNHC or MDC. The subscribers made monthly installments at their discretion in order to receive "priority in the queue" when purchasing low-cost housing units. All the deposit monies flowed into the NHF. The HSI, on the other hand, aimed to help first-time homebuyers save money on their condominium purchases. Once their installment savings grew large enough, they could borrow money from KHB or commercial banks at a subsidized interest rate, in an amount that matched the deposit.

Two types of national housing bonds existed: Type I and Type II. Companies that needed to obtain a license, permission, or authorization from the government, or else enter into a government contract for construction work under the HCPL, had to purchase the Type I bonds. HSTD subscribers needed to purchase the Type II bonds in order to bid on highly-sought-after condominium units. Such units were awarded to the highest bidders. Thus, the fiercer the competition, the larger the bond revenues for the government. Revenues from the sale of both types of bonds flowed into the NHF. The housing lottery thus made a significant contribution to the NHF. The net income from the ticket sales were added to the NHF, and primarily went to subsidize low- and moderate-income households.

The NHF contributed the most to the massive housing construction. Internally, it drew monies from both subscription savings and deposit monies from homeownership schemes; incomes from the sales of the Type I and II bonds; net income from the housing lotteries; and

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13 Since the competition for purchasing newly-built condominium units was so fierce, the government set a rule mandating that potential homebuyers make lump-sum deposits and then wait two full years to qualify for the open competition. Once they reached the eligibility list, they had permission to compete for the units they wanted to buy. But the chances of winning one were very low, implying that they had to repeat the "lottery" a number of times. The odds for a unit in a prime location were 1 in 100.

collection of loan principal and interest income. Externally, it received deposits from the Finance Capital Management Funds, savings from the Special Farm Account, and budgetary contributions from the government.

The KHB was the second-largest contributor to housing construction funds. It mobilized money from ordinary consumers and prospective homebuyers, thanks to government-subsidized homeownership schemes. It earned service fees by managing the NHF on behalf of the government; it also sold housing debentures (private bonds) domestically and overseas to secure additional funds from the capital market. It helped homebuilders and consumers in both deposit and loan services, and offered interest-subsidized loans to first-time homebuyers.

As discussed above, the *chonsei* system calls for a renter to sign a lease contract and place a lump-sum deposit, known as "*chonsei* money," into the landlord's account. The landlord then earns interest income from the deposit. For tenants, *chonsei* money offers savings; for landlords, it gives a form of insurance, since they can deduct the rent from the deposit if tenants default. Where in use, *chonsei* money might average 45-75 percent of the home price, large enough to serve either as seed money, down payment, or collateral on bank financing for both landlords and tenants alike. The system benefited both parties, as it gave a way to overcome the inadequacies in the formal housing-finance system.

The pre-sale arrangement constituted another informal construction financing mechanism, since it allowed homebuilders to sell the units upon site preparation under the HCPL. Normally, the pre-sale payments called for 20 percent disbursal at each construction stage: site preparation, initial construction phase, completion of the exterior frame, and completion of the interiors and furnishings, with the final 20 percent due when the building was ready for occupancy. The advance payments made homebuilders less reliant on borrowing from financial institutions.

Achievements

The total housing investment (from formal sources) over the five-year period amounted to KRW 66 trillion (USD 82.5 billion), as

recorded by the MOC. The investment peaked in 1991, accounting for 9.7 percent of the nation's GDP, and then declined afterwards due to government controls on over-investment (MOC, 1993).

The first year saw building permits issued for 317,000 units. This figure fell 10 percent short of the planned target of 350,000 units, but represented an increase of 31.2 percent over the total for 1987. From the second year on, the number of residential building permits accelerated, reaching a maximum level of 750,000 units in 1990 (Kim, 1994a; 1994b). The plan achieved its two-million-unit construction target a year ahead of the planned schedule, with a total of 2.7 million units permitted over the entire five-year period.[14]

The new additions helped reduce the housing shortage rate to 17.3 percent in 1993, down from 31 percent in 1987. The total housing stock as of 1995 was 9.3 million units, while the number of households had reached 11.1 million. The mass production also helped stabilize home prices and rents. Median price gradually declined at a rate of 0.7 percent per month from May 1991 to April 1995; rents fell between 0.7 percent and 1.6 percent during the same period. Further declines in both home price and rent were recorded in ensuing months (Korea Housing Bank, 1987-1995).[15]

Housing conditions improved substantially as a result of the construction. A 1995 survey by the Korea Research Institute for Human Settlements (KRIHS) found that the number of persons per room had declined to 1.1 for the country as a whole and to 1.2 for urban areas, down from 2 and 2.7 respectively in 1980. Over 95 percent of the

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14 The statistics on the new housing construction derive from building permits, not building completions. The completion statistics, officially published later in 1995, recorded the total number of housing completions over the period of 1988-1992 at 2.538 million units; about 200,000 units short of the permit-based figure of 2.777 million units. Normally it took 18 to 24 months to complete housing construction from the date of building permit. Local governments have compiled statistics on housing construction permits and completions since the mid-1990s; these reports then go to the Ministry of Land, Infrastructure and Transportation. The Housing Policy Bureau sorts and aggregates them on a city-wide as well as regional basis.

15 Korea Housing Bank undertook housing price/rent surveys annually for large metropolitan cities, and systematically compiled survey results. These included such statistics as median, mean, SD, and variance for each city surveyed.

households exclusively used kitchens for food preparation, and 68.5 percent of them enjoyed modernized ones. (The figure for Seoul ran even higher, at 70.5 percent). Nationwide, 70.6 percent of the surveyed used flush toilets, and so did 81 percent of those who lived in Seoul; 91 percent of the households in the SMA enjoyed hot running water. Almost half of SMA residents had central heating systems in their units (KRIHS, 1980-1995).

The housing investment also significantly expanded the nation's output. One compilation estimated the employment generation coefficient for the housing project at 0.27, higher relative to those generated by other types of investments. The multiplier was 1.98, suggesting that one unit of housing investment generated almost two units of value added in real terms. In 1990, near the peak of the housing construction cycle, the gross housing investment accounted for 21 percent of the total fixed capital investment, contributing 8.4 percent to the nation's GDP (Kim and Ro, 1993; Suh, 2006).

Lessons from the Korean Housing Experience

The Korean experience demonstrates that mass housing production is possible, but it has five essential prerequisites – mobilization of capital and other resources, strong leadership, effective organizations, close coordination, and laws and institutions that support the efforts in a systematic manner. Relevant government officials and professionals need to make concerted efforts at the outset to achieve a strategically well-defined but easily implemented plan. They should design it by scrutinizing both the potentials and constraints of the housing industry, and by clarifying who does what, when, and how. Political leadership also counts in ensuring timely execution of the plan.

Success requires diligent preparation of legal and institutional frameworks that will facilitate mass production and effective product deliveries. It also requires a pool of experts (such as urban designers, architects, economists, financial analysts, assessors, and so on), who can advise on the plan's formulation and execution. One should not underestimate the role of public officials, but they may not be able to perform in the absence of professional technical assistance.

Policymakers and planners undertaking such programs must search out and tap into various sources of funds. They should develop homeownership schemes that can draw deposits from prospective homeowners, in cases where financial institutions may not be willing to provide sufficient funds. The most desirable income-based housing allocation system will incorporate home ownership schemes with a wide variety of incentive measures — client-oriented, simple, and straightforward. A new-town approach can address land shortages in large cities by permitting massive housing production at reasonable cost over a short period (Kim, 2000).

Government interventions remain absolutely necessary, both for speedy execution of such a strategy and fair distribution of the economic benefits. Price stabilization is equally important; policies should discourage real estate bubble-led developments, because they may aggravate the housing problems in the long run.[16] Policies should also moderate inflationary pressure since this may jeopardize macro-economic policies. The construction industry affects the cyclical component in GDP; governments should therefore monitor and moderate housing construction periodically to prevent overinvestment that would lead to a surge in wages, higher interest rates, and possibly inflation.

Finally, all policies should view the housing sector as an integral part of the national economy. If the macro-economic policy framework misses the housing sector, not only will the sector fail to work properly, but it will negatively affect the performance of other economic aggregates, including income, employment, savings and investment, and the balance of payments. Therefore, one must look at housing policy in a broader macro-economic perspective. In this connection, credit allocation policies should carry as much weight as conventional fiscal and monetary policies.

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16 Extensive discussions pertaining to these and relevant issues took place at a full-day conference held at the Korea Chamber of Commerce on May 27, 2009, entitled "The Meaning of Achieving the Construction of Two-Million Housing Units and Implications for Future Housing Policy." For detailed information, refer to http://www.city.go.kr/blog/bin/blog/index.isp?sCmd=post_view&postIndex=4596.

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CHAPTER 2

Singapore's Role in Amaravati

By
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Introduction

Singapore's transformation, from a poor, unskilled, resource-deficient country in the 1950s to one of the world's most prosperous, dynamic and liveable cities, has prompted envy in many aspiring cities and nations in Asia (Shen, 2015). Singapore embodies the qualities of a true global city: a vibrant culture with innovation centers, international connectivity, global news and information, thriving businesses and well-developed infrastructure (Worldatlas, 2017). Observers often attribute the city-state's success to its strategic and meticulous urban planning (Marshall, 2016). In 2014, the Indian state of Andhra Pradesh wanted to establish a new capital city; its officials sought a partnership with Singapore that could illuminate best practices for its urban agencies while building their capacity for planning, development, and governance. The new capital city, Amaravati, aspires to achieve Singapore's liveability while avoiding the pitfalls of urbanization (overcrowding, lack of basic services, traffic, pollution) faced by other Asian cities (SCMP, 2018). This chapter charts the path of this cooperation, arguing that Singapore's long-term partnership and commitment to Andhra Pradesh, coupled with a comprehensive development strategy, are creating the conditions for Amaravati to become a sustainable global city.

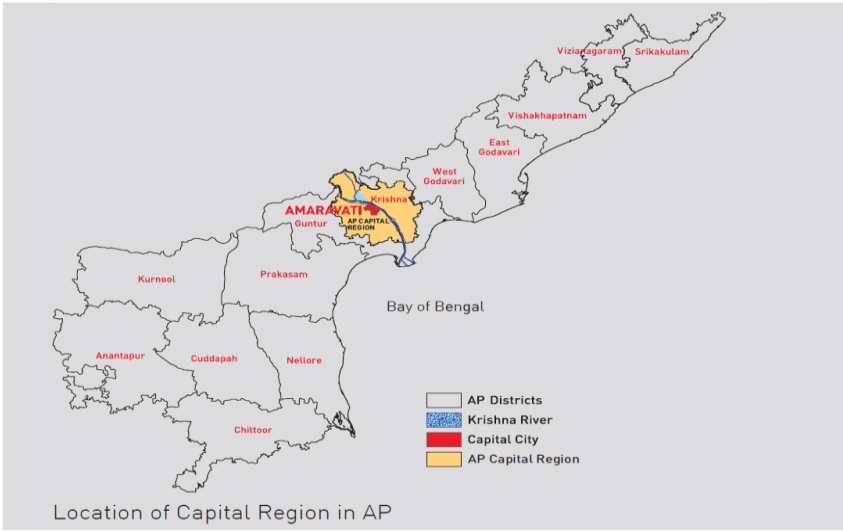
The Situation in Andhra Pradesh

On 2 June 2014, the then-unified southern Indian state of Andhra Pradesh was split into two separate states known today as Telangana and Andhra Pradesh (Figure 2-1). The Andhra Pradesh Reorganisation Act 2014 laid out the status of Hyderabad as the shared capital of the two states for 10 years; during that interim, Andhra Pradesh (AP) would need to build a new capital. In September 2014, the AP State Assembly passed a resolution to establish a greenfield capital in the middle of the state, between Vijayawada and Guntur cities on the banks of the River Krishna (Figure 2-2). The assembly chose the location based on its position at the center of the state with good connectivity to the rest, away from the cyclone zone in an upstream area of the Prakasam Barrage, and therefore less prone to flooding.

Figure 2-1 Map of Southern Indian States Highlighting Andhra Pradesh

Source: Indmaps.com (2016)

Figure 2-2 | Map of Andhra Pradesh State and Capital Region



Source: Andhra Pradesh Capital Region Development Authority (2017).

Mr. Chandrababu Naidu, elected as the first Chief Minister of the residuary state of Andhra Pradesh, then embarked systematically on two key steps to kick-start the city building: obtaining the required land and setting out the vision and master plans for the city. For the first step, the government began with a land-pooling exercise, with direct acquisition only as a last resort. Government agencies persuade landowners to sign over their ownership rights voluntarily. Once developed, smaller portions of land are returned to the original landowners. The rationale is that the developed land will increase in value because of the government investment in infrastructure and other facilities.[1] As Indian cities expand, land pooling could become the most equitable, acceptable

1 In the Andhra Pradesh case, "In return for one acre of land, [the] owner will get 1,300 square yards (about a quarter of an acre) of developed land in the new city. Of this, 1,000 square yards (a fifth of an acre) will be residential land and 300 square yards can have commercial structures such as offices and shops. Each land owner will also receive an annual compensation of Rs 30,000 per acre for a fixed period of ten years. Those who own fertile land will get an annual compensation of Rs 50,000 for ten years and a slightly larger portion of land" (2thepoint, 2017).

strategy of urban development.

Naidu's vision and master planning derived insights from various agendas and experiences. The planning of Amaravati coincided with the 100 Smart Cities mission launched by the then-new Prime Minister Narendra Modi on June 25, 2015, with 48,000 crores (approximately USD 7 billion) allocated for investments and operations. The mission aims to promote cities that can provide core infrastructure and result in a fair quality of life to citizens, along with a clean and sustainable environment and with "smart solutions" (Pai, 2015). It targets compact areas and aims for replicable models which can act as examples for other aspiring cities (Unnikrishnan, 2017). The strategic thrusts of the 100 Smart Cities mission include city retrofitting, city renewal, and city extension (via greenfield developments). Prime Minister Modi's stated approach of treating sustainability in urbanization as an opportunity rather than as a problem (IANS, 2016) catalyzed an important shift in mind-set for Indian cities, and placed the new capital city of Andhra Pradesh on the right footing for its task.

Purpose and Scope of the New City

By choosing a greenfield approach, the AP government hoped to avoid having to grapple with the urbanization problems afflicting many existing cities, such as unplanned growth, inadequate infrastructure, lack of employment and affordable housing for different strata of society, traffic congestion, and shortage of parks and open spaces. However, many planned cities, including some envisaged as "smart cities," have also faltered in many ways, ending up as ghost towns owing to property speculation, or becoming strictly administrative capitals without the buzz and color that mixed land uses add to cities.

Chief Minister Naidu started with a clean slate to visualize what this new city should be. As the capital, it would serve as the heart of governance, housing the government secretariat, legislative and judiciary functions. This would take shape in a modern metropolis with an abundance of jobs and ample homes, served by efficient transport networks along with recreational and community facilities, plus extensive green and blue spaces for the Andhra people. The government

aimed to have a well-designed capital that could attract global investors from Europe, China, Japan and other parts of Asia, while ensuring that the character of the city would retain distinctive local features. The Chief Minister declared that Amaravati — the name given to the new capital city after a well-known Buddhist pilgrimage town nearby — would become the People's Capital.

While numerous international urban planning consultancies could help the Andhra Pradesh government plan its new city, the Chief Minister and his team understood that the task at hand would entail a holistic approach, going well beyond mere master-planning to the effective execution of those plans. A long-time admirer of Singapore, Chief Minister Naidu reached out to the Government of Singapore to support Andhra Pradesh's efforts.[2]

Singapore as a Resource

Singapore has a global reputation as a well-planned and managed city, having undergone an astounding physical transformation since its independence in 1965; it accommodates a population of 5.6 million on a land mass of just 720 square kilometers, while enjoying high levels of economic development and environmental management as well as quality and vibrancy of life. Just fifty years earlier, Singapore was a "basket case" of urbanization, with urban overcrowding, backyard industries, congested roads, polluted rivers, and floods (Figure 2-3). Back then, the population numbered less than 2 million, but 1.3 million lived as squatters. Completely lacking in natural resources, Singapore has overcome severe physical constraints to become a city-state with more than 80 percent home ownership, less than 4 percent unemployment, 100 percent access to clean water, and a very high standard of health care and education level for its population. Today, it routinely ranks in the

2 The author has been involved with the project since December 2014, liaising with Singaporean practitioners who advise on land use and infrastructure issues, and coordinating capacity development and institutional building discussions. Many of the observations contained here arise from first-hand discussions of the project with various stakeholders.

Figure 2-3 Map of Singapore “Before” Urban Transformation in 1965 and “After” in 2015

Sources: Top - Ministry of Information and the Arts/National Archives of Singapore (1965); Bottom - Reuters/Edgar Su (2015).

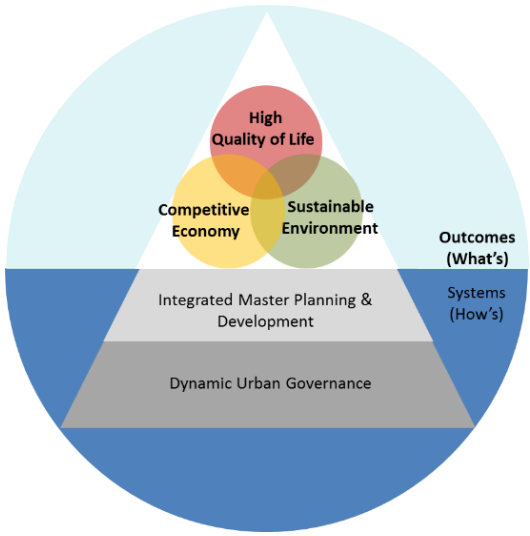
top 40 of global-city indices measuring city liveability (Varma, 2018).

Singapore's experiences have led to the conviction that sustainable development — resulting in a highly liveable environment despite high-density conditions — depends on balancing efforts and growth in all areas: the economy, the environment, and the social well-being of residents. Two important principles, implicitly guiding Singapore's urban pioneers, have made this balance possible: integrated master planning and development, and dynamic urban governance. As spelled out in official policy documents: "Comprehensive and integrated planning allows Singapore to optimize its limited land to meet the needs of current and future generations. Comprehensive planning means that we take the long-term approach, holistically balancing the social, economic, and environmental considerations of urban development. Integrated planning means we work closely with both our partner government agencies and the public when we produce and review our Master Plans" (Urban Redevelopment Authority, 2014). All this is encapsulated in the Singapore Liveability Framework, created by distilling Singapore's development experiences since independence (Figure 2-4). The framework captures and explains the principles for Singapore's success as a liveable smart city, including quality of life, environmental sustainability and competitive economics (CLC and CSC, 2014; Webb, 2012).

Singapore defines dynamic urban governance as a necessary condition for sustainable urban development. It has five key principles: leading with vision and pragmatism, building a culture of integrity, cultivating sound institutions, involving the community as stakeholders, and working with markets (Kwan, 2018).

These lessons arise from Singapore's 50-year journey, beginning from its early days of receiving strong support, advice, and technical assistance from developed countries such as Japan and Germany. Additionally, development experts such as Dr. Albert Winsemius from the United Nations and several World Bank teams also advised on Singapore's national economic development strategy from 1961 to 1984, and helped structure infrastructure financing projects respectively (Box 2-1).

Figure 2-4 Singapore Liveablity Framework



Source: CLC and CSC (2014).

Box 2-1 The Evolution of Singapore's Master Plan

In 1962, the Singapore government invited an expert team from the United Nations Development Programme (UNDP) to provide guidance on land use planning; it also created a Singapore task force comprising the Housing and Development Board, the Planning Department and Roads and Transportation Division to work alongside the United Nations Development Programme team. Help arrived in three stages: a systematic urban renewal strategy for the overcrowded and slum-filled Central Area (known as the Lorange plan), a strategy of project-based action programmes spearheaded by agencies and coordinated by an overall physical guiding concept (the Koenigsberger plan), and the State and City Planning project with planning consultant firm Crooks Michelle Peacock Stewart, engaged by UNDP in concert with relevant Singapore government agents seconded to the

project for smooth implementation. The latter culminated in the 1971 Concept Plan, a strategic and safeguarding roadmap for guiding development throughout Singapore, based on demographic and economic projections balanced with land-use needs. The Concept Plan remains in use today, with regular reviews once every ten years and a five-year midterm review initiated by the planning authority when required. After the publication of the 1991 Concept Plan, Singapore's national planning agency, the Urban Redevelopment Authority, proceeded to prepare 55 Development Guide Plans (DGP) covering the whole of Singapore and rendering the Concept Plan vision as detailed proposals for each local area. Each of these DGPs became the new statutory Master Plan upon completion, subject to review once every five years.

Having benefitted from these invaluable experiences of the past, Singapore has sought through the years to share with other cities what it means to strengthen urban governance, with sound institutions and mechanisms to provide for coherence in urban development plans — coherence that can enable social inclusion, sustained, inclusive and sustainable economic growth, and environmental protection. For example, in the 1960s, the Singapore government made a concerted and successful effort to provide homes for Singaporeans, via land acquisition to build mass housing, by cleaning up the environment and creating towns with excellent public transport connections, and by providing reliable utilities and social infrastructure such as schools, parks, shops, and public spaces. The Housing and Development Board (HDB) has supplied strong implementation and administrative guidance for all these improvements. Today, Singapore has no squatters nor ghettoes, and more than 80 percent of Singaporeans live in HDB flats (93 percent owner-occupied) (CLC, 2013). These successes explain Singapore's confidence in sharing its planning and development experiences overseas, as well as its relevance for the Amaravati

initiative. Instances of such cooperation since the 1990s have varied across different contexts, cast either as public- or private sector-led endeavors; they range from townships in China, such as in Suzhou and Tianjin, to industrial parks in Vietnam and India.

How and Why the Partnership Works

When Chief Minister Naidu approached the Singapore government in 2014 for assistance with the new capital city, he put forth their immediate needs as land-use master planning and development. Coincidentally, an informal knowledge-sharing network among several Singapore agencies had formed in 2012 to explore ways of furthering strategic and economic ties with India, and it swung into action quickly. This multi-agency group — comprising the Ministry of Trade and Industry, the Ministry of Foreign Affairs, the then-International Enterprise Singapore,[3] Singapore Cooperation Enterprise, the Centre for Liveable Cities, and the Building and Construction Authority — was able to respond promptly to the request. The partners signed a Memorandum of Understanding in December 2014 for collaboration on master planning and the construction of Amaravati as a modern, vibrant, sustainable and smart city with a strong economy, excellent social amenities, and efficient transport and logistic networks. The agreement included selecting an initial "seed" or start-up area where a Singapore private-sector group would begin implementation of the master plan. The partnership envisaged a process for AP officials to adapt Singapore's experiences to their own context, via engagement of AP and Singapore public- and private-sector groups; these engagements ranged from workshops brainstorming local urban challenges to discussions on the relevance of Singapore best-planning practices to the local Andhra conditions. The next sections review the specifics of these adaptations for the core concerns of the partnership.

3 International Enterprise Singapore was re-named as Enterprise Singapore as of April 1, 2018.

The scope of engagement

The next challenge lay in coming up with a comprehensive approach to master planning, development, and governance. It would need to fulfil several objectives: supplying a plan for common reference among all implementing agencies; providing direction for government officials on development priorities; creating institutions (such as the Capital Region Development Authority, the Amaravati Development Corporation, and other relevant bodies) that could steer investors and developers looking to participate in and commit funding to building projects, and maintaining public confidence in the capital city effort.

Master planning

Singapore's inter-agency team recognized that Andhra Pradesh's newly-created Capital Region Development Authority (CRDA), with its fledging team of planners, would face time constraints in producing the master plans. The team therefore commissioned two well-established Singaporean urban-planning firms, to carry out the planning work, eventually completed within seven months.

Drawing on Singapore's early urban planning experience, assisted by a United Nations Development Programme team (Box 2-1 above), the Singapore team advocated combining a long-range structure plan for the Andhra Pradesh capital region, a capital-city plan, and a priority development area. They also recognized that the CRDA and other state agencies, given their nascent stages of establishment and many pressing tasks, would require support to ramp up quickly on the city-planning and foundational work. If the Andhra Pradesh government could have the master plans quickly, the officials could then focus more attention on the implementation aspects.

Singapore selected Surbana International Consultants and Jurong International[4] as they were government planning units before being privatized and had proven track records in developing cities, townships, and industrial parks in Singapore, India, and globally (Wong, 2015).

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4 Today known as Surbana-Jurong Private Limited.

These firms worked in consultation with CRDA and CLC to draw up 3 master plans[5]: a Capital Region plan of 7,325 square kilometers within the Vijayawada-Guntur-Tenali-Magalagiri boundary, a Capital City plan of 125 square kilometers, and a detailed Seed Area master plan for 8 square kilometers, which also comprised the start-up area. The endeavor included a regional socio-economic analysis and demographic study and recommended a set of strategies to enhance connectivity, undertaking transit-oriented urban development while protecting agricultural zones, nature reserves, and heritage areas. To grow the economy, the master plan proposed the capital as a commercial hub for existing regional industries, such as agribusinesses and logistics, and new ones including information technology-enabled services and biotechnology. Besides a Central Business District, the plan proposed commercial and industrial zones near residential neighborhoods to promote job creation while reducing commuting. The plans also laid out transport and infrastructure provisions via a Bus Rapid Transit system that could eventually upgrade to Mass Rapid Transit, complemented by non-motorized transport choices (walking, cycling), along with flood management, water and power supply, sewerage and solid waste systems. To leverage Amaravati's location beside the Krishna River, the plan included a blue and green plan connecting existing greenery and waterways for integration with residential and recreational areas for residents. The plan also featured innovative approaches, such as combining water bodies as flood control-water storage facilities and as locales for public enjoyment.

Institution building and governance

The CRDA's job is a monumental one: it assumes multi-faceted roles in coordinating land pooling, land-use planning, economic promotion, and land-development promotion for both the capital region and the capital city. Hence, as the master plans got underway, the CRDA worked to strengthen its institutional basis by examining relevant aspects of Singapore's legislation, especially in land use and transport planning as

5 The master plans have undergone revisions by CRDA and were ratified by the Andhra Pradesh government in April 2016.

well as land management. A series of discussions between CRDA and CLC (beginning with the inaugural Andhra Pradesh Leaders in Urban Governance Programme [APLUGP] in January 2015) helped craft CRDA's overall vision and mission statements, while refining its organization structure, key work processes, and the professional and technical competencies required to staff the authority.

When parties work together on a concrete city-planning and management project, they can better realize an in-depth exchange of insights on what the work actually entails. In the past three years, numerous teams of AP officials concerned with public administration and operational frameworks have visited Singapore to study their areas of responsibility: water infrastructure, social housing, street-side greenery, and building control. Comprising meetings and site visits, these partner discussions have proven invaluable for mutual understanding of Amaravati's on-the-ground challenges and Singapore's journey in establishing robust urban systems.

These close interactions have aimed to highlight some important aspects of Singapore as a model: besides strong leadership and a clear political vision for creating a liveable city, and the economic imperative to create jobs — factors that Singapore serendipitously shares with Andhra Pradesh, due to their common background as suddenly-independent states — dynamic governance has proven the underlying force driving Singapore's urban work. The ruling government summarized it in 1979 in the following terms: giving clear signals and not confusing people, being consistent, staying clean, winning respect and not popularity (i.e. rejecting soft options), spreading benefits to people, and last, striving for success and never giving up (CLC, 2017). The principles emphasize the importance of political will and toughmindedness, strong government judged on efficiency and effectiveness in public service delivery to citizens, and decisive action coupled with efforts to build support for government policies (Box 2-2).

As the Andhra Pradesh officials present the current urban challenges they face and the Singapore practitioners share their experiences in creating similar institutions and processes in various domains, the latter also highlight key principles — rigorous planning and detailed implementation of policy tempered with pragmatism, accompanied by

high standards of accountability, incorruptibility, and meritocracy.

Box 2-2 Singapore's Dynamic Governance in Practice: Water Resource Management

After independence in 1965, the Malaysian government issued a veiled threat that it would cut off the water supply from Johor that furnished most of Singapore's water needs (under the 100-year water agreements signed between the two countries in 1961 and 1962), as a means of preempting any Singapore policies that might prove detrimental to Malaysian interests. In the decades that followed, Singapore sought to achieve water self-sufficiency by systematically developing its own sources and storage capacity with very limited land catchment areas. It also introduced recycling of waste water to drinking water and desalination, and managed domestic water consumption through instruments such as the pricing system, incentive schemes, regulations, and public education. Its successful implementation of recycled water use and its water conservation tax (most governments price water below cost recovery) demonstrate how the Singapore government has not only consistently delivered a reliable and safe water supply to its people and industries, but also pushed through with technological innovation, demonstrated effective public engagement, and instilled water conservation in the minds of its citizens. Today, Singapore has 100 percent access to clean water; under current projections, it should not need to renew the two water agreements upon expiry. This only became possible with strong political leadership and a capable public service of professional and uncorrupted public officials, all consistently circumventing tough problems and delivering through the years. This is what dynamic urban governance means. These and other similar examples featured in the discussions with the AP officials on urban planning, transport, housing, environment, and other matters.

Development strategy

From the onset of the first memorandum of understanding (MOU), Singapore had conveyed the need for a seed development as a demonstration project, showcasing the best practices of a modern capital city. This project aimed to make detailed master planning a tangible reality; as mentioned above, its implementation would go to a Singapore private entity (or entities), necessarily a developer of international repute with strong engineering and financial resources, and possessing a proven track record of developing projects in Singapore, India and the region.

Singapore recommended this master-developer approach as a major component of the development strategy for several reasons. The Andhra Pradesh government would benefit from the developer's commitment and partnership with the government to develop long-term value. With its international and regional project experiences, the company could bring and adapt best practices from Singapore and its past projects to apply to Amaravati. More importantly, it would contribute to capacity-building and knowledge transfer from a firsthand perspective as an operator. It could also catalyze investments in the new state by tapping into its client networks and partners.

In addition, master-developer sites typically run to a larger scale, with a more complex mix of uses but also greater consideration for urban design and architecture. These help to enhance the built environment, going beyond a positive demonstration of how the detailed land use plan will work.

On October 30, 2015, a Singapore Consortium (SC) of two established Singaporean companies — Ascendas-Singbridge Pte. Ltd. and Sembcorp Development Ltd. — submitted a proposal to the AP government to master-develop a start-up area of 6.84 square kilometers. The proposal was submitted via the Swiss Challenge method, in line with the Andhra Pradesh Infrastructure Development Enabling Act 2001, and subject to an open competition that closed at the end of February 2017. The Government of Andhra Pradesh issued a Letter of Award to the Singapore Consortium on May 15, 2017, allowed it to form a joint venture with the government's Amaravati Development Corporation;

this venture, named the Amaravati Development Partners, will act as the master developer (Ganapathy, 2017).

The creation of such a seed development will not only kick-start economic activity in the Amaravati Capital Region, but will also enhance the value of its land, benefitting the local population. In support of this effort, Singapore agencies such as the Amaravati Partnership Office, Enterprise Singapore, and the Building and Construction Authority have worked closely with the AP government to attract Singapore companies that could pursue opportunities in high-potential AP industrial and business clusters.

Capacity-building

Singapore benefited from technical assistance in its early years and thus recognizes the importance of institutional and human-resource capacity-building. Beyond the APLUGP and a series of study visits between 2015-2016, CLC has put together a series of workshops termed "Deep Dives." Starting in 2017, these have delved into various topics, such as land use and transport planning, development promotion, urban design, housing and building construction, water infrastructure, power, and solid waste management. Helmed by seasoned practitioners from Singapore who have held senior management positions in government agencies from the urban, infrastructure, and environmental sectors, these workshops have attracted staff from CRDA and AP's state agencies and have numbered close to 200 participants.

These Deep Dives typically promote cross-sharing by both the Andhra Pradesh and Singapore teams. The former will give briefings about on-the-ground conditions, existing organizational structure, and available data and systems, as well as proposed work plans and targets. The experienced practitioners from Singapore often respond by re-framing situations for discussions, asking about policies and processes and generally sharing from the implementation lessons that Singapore has picked up through the years. The workshops also include countless site visits for a better appreciation of the on-the-ground challenges. To allow for a sustained exchange of knowledge, CLC liberally shares the documentations of its case studies.

Figure 2-5 | Andhra Pradesh Landowners Visit Singapore

Source: CLC/Thinesh Paramasilvam (2017).

Besides the Andhra Pradesh officials, the Singapore inter-agency team has also hosted more than 140 AP landowners in Singapore from 2017 to early 2018, at the request of the Andhra Pradesh government (Figure 2-5). These have included farmers and landowners who had given up their agricultural land to the government under the voluntary land-pooling scheme for the new capital city. In return, they would receive reconstituted smaller plots in the city. Many had lived in villages their whole lives and were unfamiliar with what life in a metropolis with modern infrastructure and amenities would mean. They also lacked the experience and capacity to develop their plots. The land-pooling scheme has sparked controversy. Farmers have expressed concerns about their livelihood options after giving up their land, fearing that the city will not be built or that land prices will not increase as expected (Mohan, 2017). The Singapore visits exposed farmers to different models of residential neighborhoods, commercial hubs, and community spaces, and served to clarify queries on topics such as solid waste disposal, flood management, and water conservation, among other interests.

The Value of Long-term Partnership

As the AP government races ahead in its quest to build its new capital city, it will no doubt face recurrent pressures to deliver results. Most international technical cooperation efforts confine themselves to the specific domain/project under funding — e.g. drafting of a master plan, funding a sewage system, capability development in a particular field, etc. However, such efforts typically have a more short-term, siloed character, and often rely on the use of external consultants who do the work on behalf of the requesting cities. This approach means that the agencies or officials do not build up their own professional capabilities and remain unable to integrate their work with other urban systems, or carry the work through on a long-term basis. By addressing these key areas of planning and executing a development strategy, and conducting active exchanges on institutional building and governance issues via capacity-building platforms, Singapore hopes that its experiences will contribute to productive outcomes for Amaravati and her people, realized in a liveable city taking shape by the year. Anecdotal evidence from interactions between Singapore and Andhra Pradesh government officials reveals that Andhra Pradesh officials have gleaned useful insights from seasoned technical specialists who go beyond delivering infrastructure plans to sharing fine details in execution. The clarity of the master plans has created optimism and assurance amongst landowners, developers, and investors, and Andhra Pradesh officials have benefited from an expanded network of professional contacts.

The challenges have also proven numerous, centered largely in a lean and young administration that must undertake a wide-ranging portfolio of work without the requisite experience, instead of relying on many professional agencies as most established cities can do. In particular, balancing the urgent needs of land and infrastructure development, attracting foreign investment, and managing citizen expectations have also stretched the administration.

Conclusion

The sheer scale of Amaravati's development makes delays and hiccups understandable. Mobilizing funds and international procurement has taken time. Nevertheless, arterial roads and expressways, thousands of houses, and two universities have begun construction, along with allocation of plots to farmers after the pooling scheme (Raghavendra, 2018). One year after the Letter of Award was issued to the Singapore Consortium, the zero-date (official start of implementation) of the start-up area occurred in June 2018. As he witnessed the signing of the Shareholders Agreement and Concession and Development Agreement between the two partners, Singapore Minister-in-charge of Trade Relations S. Iswaran expressed confidence that the partnership will continue to advance Amaravati and Andhra Pradesh on multiple fronts — notably urban development, people-to-people relations, and skill development (The Hindu, 2018). This collaboration will prove a milestone not only in Singapore-Andhra Pradesh relations, but also in the invaluable lessons it offers. It will benefit Singapore and other developed cities across the world who seek alignments that can realize the urban Sustainable Development Goals: making cities and human settlements inclusive, safe, resilient, and sustainable as urbanization continues unabated.

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CHAPTER 3

Asia-to-Asia Cooperation and Strengthened Urban Planning: Reflections from the Experience of Ulaanbaatar, Mongolia

By
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Introduction

Cities in developing contexts urgently need to shift from "spontaneous" to "planned" urbanization. The unplanned growth of cities creates significant challenges for city governments, which often struggle to ensure that infrastructure and services keep pace with population growth while maintaining enough efficiency to remain affordable within city budget constraints.[2] Outgrowths of spontaneous urban expansion, unplanned and informal urban settlements have spread across Asia, where some of the highest rates of urbanization in the world have strained city governments. Ulaanbaatar, Mongolia is among the cities challenged by these trends. Its population has increased rapidly

1 The authors of this case study were both employees of The Asia Foundation, an international nongovernmental organization, working directly on the urban governance project that facilitated the exchange between Ulaanbaatar, Mongolia and Solo, Indonesia described in this case. Ariunaa Norovsambuu was a Project Coordinator based in Ulaanbaatar, and Mark Koenig was a regional advisor to the project based in Tokyo, Japan. Both authors directly supported the implementation of the community mapping process undertaken in Ulaanbaatar, Mongolia.

2 More information on ideas around shifting to 'planned urbanization' can be found here: https://unhabitat.org/principles-of-planned-urbanization-dr-joan-clos-executive-director-un-habitat-2/.

since the 1990s; a city designed for 500,000 residents now houses at least 1.3 million (CCSO, 2016a).[3] More than half of Ulaanbaatar today consists of so-called "ger areas,"[4] large unplanned settlements with poor access to services, now accounting for almost 60 percent of the city's population.

As part of its efforts to address these challenges, Ulaanbaatar has opened up exchanges and collaboration with other cities, particularly in Asia. In attempting to learn from them, Ulaanbaatar has focused in particular on improving urban planning and management. While the perfect planning model for any given city will depend on context, capacities, and other factors, all effective planning approaches start with collecting and using accurate urban data and information, as described in Box 3-1.[5]

Box 3-1 Urban Data and Information

"Urban information" and "urban data" interchangeably refer to data (often spatial) used in analyzing and interpreting social, economic, geographic, political, and ecological patterns in cities. For example, urban data can illustrate the distribution of population densities, the development or lack of water and sanitation services, and rates of construction across the city. Both governments and civil society organizations utilize such data to support allocation of public resources, provide critical infrastructure, and improve service delivery.

3 Many estimates range as high as 1.5 or even 1.6 million, but 1.3 million is the official figure used by the Municipality of Ulaanbaatar for 2016 (CCSO, 2016a).

4 "Gers" are white felt tents that are the traditional dwelling for nomadic Mongolian herders; they are also a common type of dwelling in Ulaanbaatar's unplanned settlements. Today most "ger areas" are a mix of families living in both gers and detached houses.

5 Many of the most exciting ideas about urban planning, such as the application of the complexity sciences to generating policy advice on a range of issues (see Batty (2008) for more on this), do not become possible without accurate information about a city, its population, the built environment, and other related issues.

> Urban data holds exceptional promise for transforming the governance of urban areas: it can open new opportunities for public participation and oversight, which in turn can improve targeting of resources and identify priority problems; it can generate new analyses that contribute to improved decision-making and planning; it can offer new tools that encourage collaboration between government, residents, civil society groups, and at times the private sector; and it can provide residents and government reformers with the means to generate ideas and build support for changes that improve their urban environments (Adapted from Taylor and Koenig, 2014).

Effective and efficient data collection and analysis strengthen urban planning and policy-making, and can result in improved quality of life and services for urban residents. With the help of other cities in the region, Ulaanbaatar has made significant strides in enhancing its ability to collect and use good information and data.

Rapidly-changing cities face significant challenges in keeping information up-to-date and relevant. They need to develop effective systems for efficient and continual data collection and management, in order to replace costly and irregular large efforts that may capture a comprehensive set of data all at once, but can quickly become outdated in cities experiencing rapid growth. In cities facing budget constraints and still developing their urban-planning capacities, the challenge becomes even more dramatic. Innovation, the use of new technology, and careful planning for data collection and management can help fill these gaps. A city charting a path forward will do well to begin by exploring positive models and effective solutions that others struggling to manage urban growth have used successfully, even in the face of financial and human-resource constraints. Asia-to-Asia cooperation — from sharing experiences and solutions to filling the critical gap in information collection and analysis — has an important role to play in improving urban planning and management across the region. Since

solutions may originate among a range of urban actors, this Asian urban governance cooperation needs to focus on diverse city-city exchanges, ones that include government representatives, the private sector, and civil society interaction. This paper looks into the case of several initiatives undertaken by Ulaanbaatar to overcome their data and planning gap, inspired by engagements with other cities in Asia.

Ulaanbaatar and Its Data Needs

Ulaanbaatar offers an interesting case study in rapid urbanization, data, and planning. The low-density "ger areas" have limited access to basic services. Most homes do not have piped water or connections to central heating service (leaving residents dependent on traditional wood- and coal-burning stoves), and roads remain mostly unpaved.[6] These challenges have multi-faceted causes, starting with the speed of urban expansion, and extending to insufficient political support for and focus on ger-area improvement, weak urban-planning capacity, and poor coordination between levels of government. The limited availability of good data available to the municipality for planning and decision-making has compounded these challenges.

The pace of internal migration, with more than 25,000 migrants arriving annually (CCSO, 2016b),[7] has also created challenges for collecting and managing the necessary data. Different administrative units will come up with inconsistent data due to varying data-collection methodologies for the same indicators, human error introduced during aggregation of figures, and a lack of the technical-management know-how. This situation affects urban planning and governance in a variety of ways. On the citizen side, limited data on *khoroos* (neighborhood) demographics and service availability has restricted the potential for

6 A variety of actors have conducted significant research regarding service delivery constraints in the "ger areas", examining service delivery, quality of life, and other issues. Some examples include Centre for Social Development, 2006; Engel, 2015; and Kamata *et al*., 2010.

7 Actually, in many years the number greatly exceeds 25,000: 25,196 arrived in 2016, but in 2014 the figure was 31,356 and in 2010 it rose to 39,701, according to official statistics from the Municipality of Ulaanbaatar (CCSO, 2016b).

citizens to participate meaningfully in decision-making and planning. Without adequate information, discussions with local communities have tended towards a "wish list" approach, one not based in evidence about service gaps or under-provision relative to other areas of the city, making it difficult for residents to advocate specific improvements. A similar challenge has existed for those managing the city, since information deficits have affected ways of making budgetary decisions. Without data for an evidence-based approach, political considerations and lobbying from interest groups have had a greater impact on infrastructure decisions than analysis of greatest need areas or existing gaps. This has contributed to significant inequality of service provision, not only between the unplanned "ger areas" and the rest of the city, but also between different neighborhoods within the "ger areas."

Urban data can play a significant role in transforming urban planning and governance, and can have a range of positive impacts on service delivery and planning. Taylor and Koenig (2014) identified four pathways for improving urban governance through the use of data, starting with (1) enhancing advocacy and oversight; (2) promoting more efficient resident engagement with urban systems; (3) filling important knowledge gaps that limit effective planning and decision-making; and (4) enhancing the coordination and capacity of local government. In Ulaanbaatar, all four pathways proved relevant.

Using Asia-to-Asia Cooperation to Address Ger-Area Information Deficits

The Asia Foundation's "Urban Services Project"[8] in Ulaanbaatar supported city government efforts to fill information gaps affecting planning and decision-making in the "ger areas." It did this through a community mapping initiative that grew out of a unique exchange between Ulaanbaatar and Solo, Indonesia. This case illustrates how municipal partnerships and experience-sharing can offer opportunities to generate and share techniques for collecting and analyzing urban data.

8 This program was funded through an institutional partnership with the Australian Department of Foreign Affairs and Trade (DFAT).

Ulaanbaatar and Solo (also known as Surakarta) appear strikingly different at first glance. Solo is situated on the Indonesian island of Java and has a tropical monsoon climate, whereas Ulaanbaatar's climate is both dry and cold. Ulaanbaatar is the national capital, by far the largest city in the country, while Solo is only a regional capital, dwarfed in population by Jakarta. In terms of demographics and spatial aspects of the city, the municipality of Solo has a population of around 500,000, but is situated among several other municipalities that have a combined urban population of over 5 million. In contrast, Ulaanbaatar has a larger population of approximately 1.3 million, but does not have any major urban areas nearby. Despite these differences, the two cities do face some similar challenges, including rapid population growth, ineffective urban planning, and a lack of accurate spatial data on expanding areas of the cities. During the data-collection activities outlined in this paper, the nongovernmental organization (NGO) partners described both city governments as showing awareness of shortcomings in their past efforts at planning, recognizing that better information would help them, and demonstrating a willingness to explore creative solutions with civil society partners. Building on these similarities, the exchange between the cities enabled them to develop a new area of commonality: the innovative participatory tool of community mapping, used to collect reliable and detailed information about local needs and concerns.

The interaction and discussion between Ulaanbaatar and Solo happened over the course of two study visits to Solo by members of Ulaanbaatar City Municipality, representing all three tiers of the city's government structure (municipality, district and *khoroo*). In turn, representatives of Yayasan Kota Kita, an Indonesian NGO, visited Ulaanbaatar to work with Mongolian city staff and civil society on community mapping. The first study tour focused on innovative participatory planning methods (as we will outline below),[9] and the second introduced more detail on such planning, with an emphasis on participatory budgeting (Solo Kota Kita, 2013; Wampler, 2000).

9 For more information on participatory planning, Pulse Lab Jakarta (2017) has a useful online toolkit introducing methodologies, and other useful information on related tools can also be found in Brody *et al*. (2003) and Creighton, J. L. (2005).

Indonesia has a participatory budgeting system known as the "musrenbang", which the city of Solo has augmented with a participatory mapping process led by the NGO Yayasan Kota Kita. This process has engaged citizens in using maps to discuss local infrastructure and service investments; the exchange teams viewed it as a potentially relevant model for helping engage and empower citizens in the ger areas. This aligned with the interest of the Ulaanbaatar city leadership in expanding their citizen participation efforts. The government-level engagements during these visits helped build an understanding among Ulaanbaatar decision-makers about the benefits of investing in such a process, as well as the conditions needed to make such an initiative successful. Since the model in Solo had actually developed through a partnership between a civil society organization (Yayasan Kota Kita) and the municipal government, the role of civil society in helping fill information gaps became a critical part of the exchange.

Over the preceding several years, this Indonesian civil society partner had conducted a community mapping initiative called Solo Kota Kita; aiming to support participatory budgeting and planning in the city of Solo, the process grew out of a collaboration with the mayor and the city government. It consisted of a citywide mapping exercise that documented demographic and socio-economic data through crowdsourcing, asking 2,700 neighborhood managers a short series of questions about their neighborhoods via mobile-phone short-message-service (SMS).[10] Solo Kota Kita compiled and presented the data in an atlas that featured clear maps, graphics and explanatory charts to ensure easy comprehension.[11] This information then formed part of community discussions about local needs and priorities, and became

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10 Solo Kota Kita (SKK) developed a SMS tool to streamline data collection from neighborhoods. Using the SMS questionnaire tool, a neighborhood manager receives the questionnaire as text messages sent to his or her mobile phone. Data about the neighborhoods goes back through text messages, which SKK then compiles into an online information dashboard.

11 The SKK atlas for each neighborhood can be downloaded on their website. An example may be seen at https://solokotakita.org/wp-content/uploads/atlas/Baluwarti%20English.pdf.

publicly available through several avenues: Solo Kota Kita's website; a Facebook page; public posting on billboards in local communities and at mosques; community centers or other high traffic places; and dissemination by local city officials and the neighborhood managers who had participated in data collection, as well as by local CSOs and activists. Printed atlases for each neighborhood went to the local officials and neighborhood leaders, along with a facilitation guide for holding conversations about the maps with community members (SKK, n.d.). These actors started to refer to the maps during community meetings and stakeholder discussions, helping to broaden participant use of the maps in discussions about neighborhoods. The map data also informed discussions of local budget priorities as part of Solo's annual planning process (*musrenbang*) (SKK, 2018).

These exchanges between Solo and Ulaanbaatar inspired the latter to introduce community mapping for its own residents. The Asia Foundation facilitated this by supporting a visit to Ulaanbaatar from experienced members of Solo Kota Kita, who mapped a single *khoroo* (neighborhood) as a training exercise for local actors. Interest in that first engagement led to a quick expansion to 11 *khoroos*. Following this initial mapping, a high-level roundtable was held with city officials (the mayor and other city leaders), during which representatives from the Asia Foundation, Solo Kota Kita, and the *khoroos* presented the 11 maps, along with the kinds of analyses that they could make possible.[12] At that meeting, the city leadership expressed a clear interest in using the maps to stimulate community engagement, as well as to help make sound budgetary decisions by prioritizing investments in a data-driven way. This positive response led to rapid scaling-up of mapping efforts for all 87 *khoroos* in the "ger areas."

The scaling-up process had less than two months for completion to match the city's budget cycle, and therefore required intense engagement from the Solo Kota Kita team and the Asia Foundation's project staff. Ulaanbaatar city matched this effort by committing

12 The maps on the dedicated http://www.manaikhoroo.mn/ website were developed from the maps initially generated through community mapping. An example of the first-generation maps is included in this chapter.

substantial resources to the process, mobilizing ten teams of data facilitators and contributing staff. The Asia Foundation augmented these human resources with their local staff and local civil society actors with relevant technical skills in facilitation and related computer software. Instead of relying on SMS data collection, the facilitation teams physically visited each neighborhood to acquire the relevant demographic and other information, and then asked local leaders to physically mark indicators on printed maps. This information then went to a team of mappers, consisting of Solo Kota Kita, Asia Foundation and city municipality staff, who translated that data into a geographic information system (GIS).

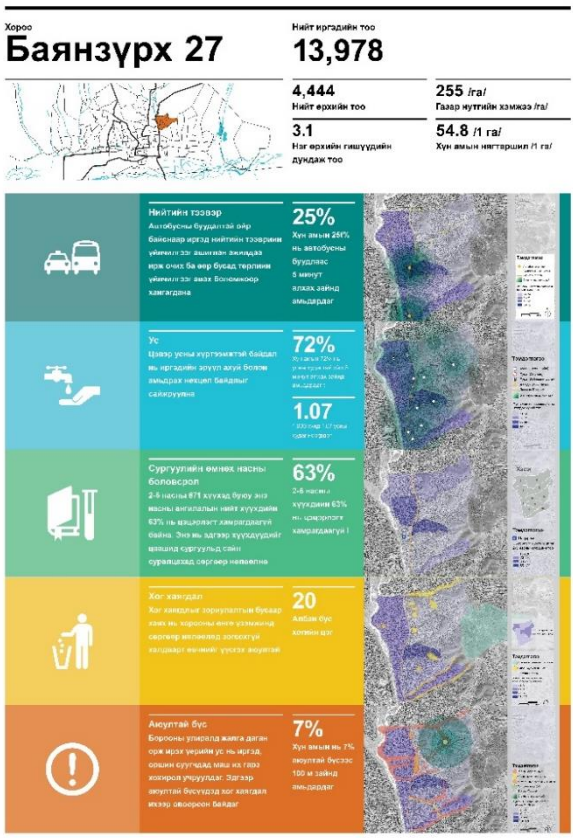
Upon completion of all 87 *khoroo* maps and data quality control, the Asia Foundation team worked closely with municipal staff to explore the most effective ways to generate data, utilize analyses made possible by the maps, and disseminate the information to a wide group of potential users. The Asia Foundation supported the development of a website, hosted by the municipality, to provide for public access to the data; the foundation also printed poster-sized versions of the maps. The municipality distributed the relevant maps to all local administrations in the mapped neighborhoods. Asia Foundation consultants and Yayasan Kota Kita staff carried out an analysis on the different levels of service availability in each *khoroo* and district[13]; they also completed a gap analysis to determine priority locations for specific service infrastructure development — bus stops, waste collection points, and water kiosks. The team carrying out the analysis presented the results to the city leadership during their budget process for 2014 (Taylor and Vanderberg, 2013).

The completed maps depict a range of indicators, including the

13 GIS analysis mainly focused on simple analysis tools to estimate what percentage of each local community lived within a specifically defined distance of service delivery infrastructure (such as a bus stop, water distribution kiosk, etc.) Additional analysis compared demographic data (such as the number of children not attending school in a given neighborhood) with spatial data (such as the location of schools). This information appeared in a gap-analysis report as well as a PowerPoint presentation and complete Excel tabulation of results, produced by community mapping participants and shared with the city leadership.

locations of paved roads, bus stops, street lighting, risk sites for crime and flooding, illegal dumpsites, frequency of trash collection, and locations of kindergartens and schools, police stations, health centers, and water kiosks, as well as figures on population (Figure 3-1). During the mapping process, the city government staff participating in the process verified some of the information, especially on public buildings, through comparisons with existing data sets held by the city. Other data, such paved roads, had never before had comprehensive mapping. While the municipality had collected population data at the *khoroo* level in the

Figure 3-1 | Overall Map for Bayanzurkh district, *Khoroo* 27



Source: Manaikhoroo.mn

past, it had never formally aggregated it in a clear way that the community mapping process now made possible.

The story of this engagement and its impact continues to unfold as the skills transferred to Ulaanbaatar actors and their use of the maps goes forward. Some of the initial results have included:

- **Enhanced citizen engagement:** The community mapping project empowered ger-area residents and promoted their engagement with government authorities by gathering spatial data that could visualize local service needs on maps. This helps ger communities articulate their most pressing concerns during participatory discussions about local development, and advocate for budget priorities. Maps also helped the communities better understand their neighborhoods and how their services related to the wider urban environment. As a means of building stronger community relationships and working toward communal well-being, the mapping tool also has great potential (Norovsambuu *et al*., 2013). The General Manager of Ulaanbaatar commented in discussions with the Asia Foundation's project team (Badral, 2013) that he has received more clear and well-reasoned requests for infrastructure improvements based on community mapping, which has made evaluation and response much easier.

- **Contributions to enhanced decision-making about infrastructure priorities:** The Municipality of Ulaanbaatar pledged to use the maps to target improvements that address critical needs of citizens. While there has not been a full analysis of how the maps have changed final budget decisions, we know more about their impact on the process. For example, municipal staff involved in the mapping process presented maps to the city leadership during deliberations and analysis of the most critical service improvements needs for the 2014 budget (Unuudur, 2014). The mapping exercise led to the Mayor holding public consultation meetings across the city in 2014. In 2015, city capital-planning procedures began to require explicit map references, a step away from wish-list budgeting (Daily News,

2014). City officials have also discussed drawing upon the maps for further participatory budgeting mechanisms in planning (Narantuya, 2014), but those improvements remain in progress today.

- **Impact on quality of population estimates:** The population estimates in the community mapping process prompted the city to make broader public acknowledgment of the formidable challenges faced in ger areas. The maps produced unofficial residential tallies that ran hundreds of thousands higher than the census statistics. While city officials knew of this situation, different agencies within the city often used differing statistics, and most external information focused on the outdated census figures. The mapping offered the city officials figures that aligned with analysis done by other independent organizations; the General Manager's office applied these updated figures (as the most accurate for planning) in evaluating the relative needs of different areas for service and infrastructure improvements (Badral, 2013).
- **Impact on capacity in the city:** The SKK and Asia Foundation teams worked in close partnership with the city throughout the process. The involvement of city staff in every step of the process meant that the teams transferred significant capacity to city employees for data collection, data entry into the GIS, and production of final maps. This cooperation with the city reduced the efficiency of the process, as city personnel required significant training and oversight to undertake the mapping process, but these investments increased the impact of the initiative. This bolstered capacity became clear when the city, without direct support from SKK or the Asia Foundation, expanded the mapping to include areas of the city beyond the 87 *khoroos* initially mapped. In addition, the engagement helped spur the growth of a full-time mapping NGO in Ulaanbaatar, the Ger Community Mapping Center. This center continues to work

with the city government in Ulaanbaatar today on a range of projects involving mapping and citizen engagement.[14]

- **Enhancing conversations about city standards:** The city seized upon one proposal in particular: that the maps could help introduce commensurate service standards across urban areas, a critical tool in prioritizing improvements. For example, the city used the maps to discuss the number of water kiosks needed per capita, average walking distance to bus stops, and regularity of household waste collection. This has helped solidify some goals for the city bureaucracy; for example, the target goal of twice-monthly waste collection for all ger area *khoroos* had existed for some time, but only became a formal minimum service standard with the mapping process (Ulaanbaatar City Government, 2015). This benchmarking takes a step towards formalizing improvement targets and continuous enhancement of ger-area service provision.

Takeaways

This case study from Solo and Ulaanbaatar demonstrates that Asia-to-Asia cooperation in Mongolia, especially between cities and civil society organizations, has benefited the city as it seeks innovative solutions to its urban problems. Many cities in Asia face the great challenge of unplanned settlements — of tracking their development and needs in a cost-effective way — and this exchange on community mapping might therefore prove relevant in other locations. If Asian cities and civil society organizations proactively develop new partnerships between urban areas, the resulting dialogue and exchange of information and experience could have a significant positive impact on urban planning. Such exchanges do not, however, provide impact in every case. The experience in Ulaanbaatar offers some lessons for those seeking to foster productive exchanges elsewhere.

14 Ger Community Mapping Center website can be found at https://www.germapcenter.org/.

A strong partnership between the city and those designing the exchange: The Asia Foundation's team in Ulaanbaatar took a partnership approach to its work with the city. Specifically, this meant that rather than having a set work plan for the project and lobbying to build governmental support for it, the project had a flexible implementation approach that allowed the team to adjust plans as it developed an understanding of the city's perceived needs and interests. This responsive approach allowed the team to build trust with the city government, supported its efforts to build and maintain relationships, and emphasized effective listening to the needs and ideas of key partners. This approach ensured that the exchange with Solo focused on topics and approaches relevant to Ulaanbaatar and city planners. This flexibility in program design also enabled the project team to move rapidly from piloting community mapping to a more extensive role, once the city understood the approach and its benefits and showed a strong interest in applying the tool in a robust way.

The critical role of cooperation between city government and civil society: Close coordination between city governments and civil society can produce far more efficient and effective data collection and analysis initiatives. The data from community mapping enabled civil society actors in both Solo and Ulaanbaatar to work effectively as a bridge between the government authorities and the residents, the better to advocate for improved services and living environment in unplanned settlements. This important partnership only became possible by expanding the scope of the Solo-Ulaanbaatar exchange to include civil society. Often when we think of international exchanges, we focus first on national governments, but as cities increasingly become the focus of such exchanges, the inclusion of civil society offers even broader opportunities for impact.

Context matters: Community mapping in Ulaanbaatar built on a model from Solo, Indonesia to generate effective evidence for policy planning in the ger areas, but this did not mean simply transposing that prior model. Significant discussion took place on how to make the model effective in Ulaanbaatar. Following the study tour, the

responsible officials from the Municipality of Ulaanbaatar, along with the project implementation team from the Asia Foundation, had a series of discussions and working meetings to review the indicators used in Solo that would be most relevant to city officials in Ulaanbaatar, as well as differences in preferred sources of information to include in data collection. The team adjusted methods of data collection to reflect differences in governance structures between the two cities; the increased role of the Ulaanbaatar government in supporting data collection (in Solo the local NGO had collected all data from local organizers themselves) supplied one such adjustment to the local political and administrative climate. In addition, the team redesigned the indicators to fit the relevant information for the ger areas, adding indicators for water kiosks (due to different water supply mechanisms in Solo and Ulaanbaatar), removing religious buildings from the maps, adding public kindergartens (an important part of service delivery infrastructure in Ulaanbaatar), and so on. This work to localize the model not only proved critical in creating the right methodology for Ulaanbaatar, but also built ownership among partners in Mongolian government and civil society. There are many examples of well-intentioned Asia-to-Asia collaboration that have had limited impact because of challenges in adjusting approaches to a new context, or due to a lack of investment in building broad local ownership of a concept — a prerequisite for pushing implementation forward.

Linking data collection with perceived needs to generate strong leadership support: The key political enabling factor was the active part played by the mayor and his advisors, who recognized problems with the budget process and became convinced that the community mapping model introduced from Solo could help them solve what they saw as a pressing issue. The head of the Capital City governor's office, a key decision-maker in the city administration, led the first study tour to Solo,[15] which helped ensure a highly-engaged senior leadership, well-informed about the proposed process and potential results. This political

15 The Head of the Capital City Governor's office plays a major role in designing and leading the many of the Mayor's policy initiatives.

leadership engagement helped mobilize the bureaucracy in support of the process and ensured the use of the maps in decision-making. Data- and information-driven programs can often lose focus on the link between their interventions and the intended impact on city planning, given that data can add value to urban governance in a variety of ways. Rather than focusing on all the potential benefits of improved data collection or analysis, program teams need to articulate the value of their proposed data-driven activities; specifically, they should explain how they can link data and analysis to tangible solutions for the problems that key decision-makers perceive as central. In this case, the mayor and other leaders in Ulaanbaatar could see that elements of the process would help them make progress on challenges that they faced. These included frustrations with the quality of information they had at their disposal for budgetary discussions, and unclear targets for service improvements (Badral, 2013). In addition, the community mapping process linked to key elements of the then-mayor's action plan and has carried over into that of the new administration for 2016-2020 (Capital City Governor's Office, 2016) [16] — most notably, in making a commitment to enhance information transparency and citizen participation in decision-making.

Concluding Thoughts

While many Asian cities face challenges in effective urban planning due to rapid urbanization and the expansion of unplanned settlements, interaction among them — city to city, civil society to civil society — creates significant opportunities for innovative solutions, especially through effective and efficient data collection and analysis. Data can be a powerful tool: it can enhance planning and responses to the challenges, but also change the political incentives and processes. Finding cost-effective and useful ways to integrate data collection into city planning and decision-making calls for innovation and creativity, especially with many new technologies now available. So as innovation continues, city-

16 Section 5 on Governance has the most relevance in the current plan; the 2012-2016 plan is no longer available online.

to-city partnerships and exchanges that include civil society groups have significant potential to spread these new approaches around the region. This regional sharing can help build a better understanding of how critical a role data and information may play in addressing rapid urbanization, as well as the need to improve the quality of life in informal settlements. The case of Ulaanbaatar and Solo offers one example of how this process could play out, if managed well with attention to the perceived priorities and concerns of all stakeholders.

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CHAPTER 4

Design-thinking as Innovative Service Delivery: UNDP, China, and Bangladesh

By
Taimur Khilji and Joseph D'Cruz

Introduction

Social service delivery is the bedrock of any social contract between a government and its people. Rapid urbanization across Asia has posed challenges to traditional service delivery models and modalities (UNDP, 2016). Both service access and delivery have proved a challenge for municipal and city administrations, one likely to intensify in the coming years. The current rate of urban growth in the region outstrips the overall population growth (UNHABITAT and UNESCAP, 2015). By this year (2018), half of the Asia and Pacific population will be living in towns and cities. By 2050, urban areas will account for nearly two-thirds of the region's total population (UNHABITAT and UNESCAP, 2015). Some Asian cities have done better than others in delivering essential social services. According to a World Bank study, Singapore and Hong Kong (for instance) provide high-quality public services at a low cost, and life expectancy in both cities stands at 83 and 84, respectively (Gill and Raiser, 2012). On the other hand, cities such as Phnom Penh face mounting challenges in basic service provision, including drainage, wastewater treatment, public transport, and solid waste management (Baker *et al*., 2017). A strong case can be made for cities teaching one another how to improve service delivery, especially when mutual trust and learning and political commitment at a high-level buttress such efforts (OECD, 2011). Innovative methods such as design thinking can

serve as an effective means of transferring knowledge and learning (Hurt, Otto, and Koppel, 2014). This study will illustrate one such effort: the United Nations Development Programme (UNDP) China-Bangladesh knowledge transfer initiative. This initiative took its inspiration from Beijing's model of a social services center. A design-thinking approach[1] can inform as well as complement more traditional approaches to South-South exchange. The UNDP initiative resulted in a successful knowledge transfer: the relevant stakeholders — UNDP, Bangladeshi government officials, and beneficiaries of social services in Gazipur, Bangladesh — collectively constructed prototypes for a one-stop service center.

The China-Bangladesh Knowledge Transfer Initiative

In 2013, UNDP invited city mayors from several different countries to identify opportunities for South-South collaboration. China's efficiency in serving large populations in its cities resonated with city mayors from Bangladesh (Ang, 2016). Also, since the forum explicitly aimed to create opportunities for south-south exchange, country representatives sought to share lessons and experiences. The Chinese delegation, in particular, wanted to share its experience in urban social service delivery. The Bangladesh delegation, comprising several mayors, were seeking workable solutions that (i) could boost the efficiency and effectiveness of social service provision; and (ii) serve large and rapidly growing populations.

Beijing's effective model of "one-stop centers" for social services illustrates how cities can provide services at scale — something Bangladesh city administrations were struggling to do. More specifically, the Mayor from Gazipur — one municipality in the metropolitan Dhaka region — highlighted his city's search for service provision solutions for

1 The concept of "design thinking" employed in this paper draws substantially from the pioneering work of Stanford University's "D-School" (see Stanford University Design School, 2017), via some of its applications in engineering. The project described here represents a pilot attempt to apply some of these precepts in a policy context, as we will outline below.

its rapidly growing population. Under the existing set-up, citizens had to go to several different municipal offices simply to obtain marriage licenses or birth certificates.

The concept of a one-stop center is not a new one; typically, it designates a center that offers a range of social services — from payment of utility bills to obtaining marriage licenses — so that citizens do not need to travel to several different locations for their needs. The UNDP facilitated a government-to-government exchange whereby Bangladesh city mayors could learn from Beijing's one-stop urban service center model. Toward this end, UNDP introduced methods from design thinking as an approach for this city-to-city knowledge transfer.

The steps drawn from design thinking included (i) ethnographic and context-specific research to understand the "issue at hand" from a user perspective; (ii) defining the problem or challenge; (iii) "ideating" with users to come up with feasible solutions; and finally (iv) developing, testing and refining prototypes through an iterative process (Stanford University Design School, 2017). Such an approach allowed users to become an integral part of the process of identifying the challenge and developing appropriate models of a one-stop service center tailored to their needs. The project adopted the Beijing example as one possible means of reimagining a service center model in Bangladeshi cities, one that could increase access to improved basic public services and deliver them in a more efficient manner.

Traditional approaches to South-South exchange, especially those that take the form of study tours, often fail to meaningfully test the adaptability of successful initiatives for different contexts. Such approaches often fail to articulate the problem or challenge correctly, and therefore seek out a successful (foreign) solution that may not apply elsewhere (Spradlin, 2012). Moreover, South-South projects based around public services often adhere to a traditional dyad relationship, developing their solutions through an expert "provider" (commonly a government agency, development agency, or consultants) for a "beneficiary" recipient (typically, citizens). In this structure, the provider plays an active role while the users become passive recipients with a marginal role in the design and articulation of the service or product. This approach contrasts to how a competitive environment

operates, where user experience and feedback become fundamental in the creation and evolution of products and services (Bertschek and Kesler, 2017).

UNDP's initiative sought to challenge the business-as-usual approach to South-South cooperation on two levels:

- The project emerged from the individual/experiential perspective of the user or beneficiary, rather than the organizational perspective of the provider. This approach implied that providers would need to develop empathy in order to see from the "eyes" of the user (Plattner, 2011).
- The process was collaborative and highly interactive. It went beyond involving the user in consultations; instead, the user became part of solution development. To this end, the resulting solution was "co-created" or "co-designed" by key stakeholders — including government and beneficiaries — who developed the solution collectively. At each step of the process — from identifying challenges to testing prototypes — users drove the process and interacted with one another, the workshop facilitators, as well as with the prototypes.

Throughout the duration of this project, UNDP experimented with methods derived from commercial industrial and product design and applied them toward its work in the urban context. In particular, this became an exploration of how far such design methods may contribute to human development outcomes.

At each step of the design-thinking process — research, problem definition, ideation, prototype development and testing — the teams sought to cultivate a sense of empathy with the users and empower them to take risks, define the problem, and develop potentially feasible solutions. This approach proved far from easy, as it required suspending judgement and not allowing preconceived notions and stereotypes to identify the problems inaccurately, thereby incorrectly shaping the "solution space" and subsequent prototypes.

Country Contexts and Project Participants

China has become an upper-middle-income nation, but it still deals with various transitional challenges, including those associated with rural-urban migration and urbanization. As the rate of urbanization continues to accelerate, the Chinese government seeks to find appropriate solutions to the challenges that lie ahead. They aim to increase urbanization from 55 percent at present to 60 percent in 2020 (Central Committee, 2015). In light of its economic success and high population, China serves as an inspiration for many countries dealing with urbanization issues.

Beijing provides the Chinese model for an accessible social services landscape. Local agencies mainly serve residents on two levels — district and community center — with the central government currently financing service centers at both. The Chinese government is gradually "outsourcing" societal challenges at the community level to non-profits and residents while reducing the involvement of local government. In Beijing, one community center can provide as many as 160 services and serve between 10-50 people per day. These services include vocational training, housing maintenance, assistance with administrative documents (e.g. form completion), food delivery for the elderly, marketplace activities for the elderly, and so on. Beijing has a higher percentage of elderly residents than the national average. As a result, many community centers in Beijing focus on the elderly, their main client demographic. In addition, there are call centers specifically dedicated to connecting residents with services and providing service-related information.

In contrast, Bangladeshis encounter several roadblocks in social service access. As one of the world's most densely populated countries, Bangladesh has faced rapid population growth alongside rapid urbanization. However, local governments need approval from the central government to make changes in their processes and/or acquire more resources, including processes for service delivery. Furthermore, a strong rivalry exists between two key political parties in Bangladesh, the Bangladesh Nationalist Party (BNP) and the Bangladesh Awami League. Differences in party mandate between local versus central government

can translate into obstructed resource flows for basic public services in some city corporations and municipalities.

Despite these political obstacles, the one-stop service model for local government services reflects a trend now gaining traction in Bangladesh, and several municipalities either look to adopt it or have already done so. For example, digital centers have become available to citizens in both rural and urban settings through a UNDP-supported Access to Information (a2i) programme: citizens now have access to the internet and printers and can receive assistance in filling out forms for various services. Furthermore, nongovernmental organizations have a large presence in Bangladesh and play a significant role in providing services such as health care, microlending, and education, among others. Early in the UNDP project process, all participating stakeholders identified conservancy (waste management) as a priority: proper garbage disposal has become a major issue in Bangladeshi municipalities, affecting public health and the environment. Other services highlighted by various stakeholders included vaccination and birth certificate services.

The UNDP Bangladesh selected Gazipur City Corporation (GCC) as the site of the workshop for two reasons: (1) UNDP's strong relationship with its government official counterparts, and (2) the unique urbanization issues that GCC has faced. Established in 2013, GCC is the largest city corporation of Bangladesh and covers an area of 330 square kilometers (Gazipur City, 2015). As a public service operation, GCC comprises a mayor, a chief executive officer and department heads, Zonal Office employees, and 76 ward councilors who administer a population of 2.5 million residents (Gazipur City, 2015). Gazipur City's rapid urbanization and population growth has brought significant concerns, including inadequate physical infrastructure, weak institutions, traffic congestion, and poor management of municipal services such as water, energy, and waste. The city also houses a large number of garment factories. As a result of industrialization and the exponential growth of the garment industry, the city has experienced a large influx of migrant workers; it consequently struggles to meet the growing demand for services. Urban residents frequently face a variety of complications in accessing simple administrative processes, such as birth or death certificates, bill payment, or requests for municipal water-

supply connections.

Project structure

The project consisted of two main segments, the first a workshop held in Beijing, where UNDP and the Chinese Government invited three Bangladeshi mayors who had expressed interest in learning from Beijing's social service model and landscape. The second phase took place in Gazipur City.[2] This phase included both field research and a workshop attended by local government officials and various other local stakeholders, including community representatives and beneficiaries such as slum dwellers. These activities gave participants the chance to learn about design thinking, and to create a prototype of a service center model that could better serve the rapidly increasing population of Gazipur City.

Project objectives

The project implementation comprised three specific goals:

(i) Facilitating learning about Beijing's one-stop urban social service center model for the participating Bangladeshi officials.
(ii) Development of early-stage concepts for new or improved public services in Gazipur City (GCC).
(iii) Development of an approach/methodology to facilitate other such South-South exchanges within an urban context.

Why Design Thinking?

Interdisciplinary research on culture and socio-economic values helps build a deeper understanding towards identifying and defining the 'problem.' Developing a solution hinges on the accuracy of problem definition. A mis-characterized problem will lead to a solution developed addressing the "wrong" issue. And vice versa: the more

2 Gazipur is also the location of the Dhaka University of Engineering and Technology.

accurate the problem identification, the greater the chance of a solution to address it. We cannot overemphasize the importance of 'users' in this process; user interaction with a service or product provides insights not only into what works well for them, but also what does not. Design thinking, where user interaction and feedback inform the design process, thus offers a useful way to transfer learning and experience.

During the workshop, participants engaged with research tools that put them into the perspective of users, the end-beneficiaries of their design: they walked through and mapped out the "user journeys"[3] of GCC services, and observed and interviewed users in context. The process also went beyond user consultation, since community representatives took part in the participant group, and therefore became involved in co-designing the prototype solution (see Figure 4-1). Over one hundred local beneficiaries, mostly from low-income backgrounds,

Figure 4-1 China-Bangladesh Initiative Design-Thinking Workshop Components

Source: Ang, Bernise, Shaun Koh and Kal Joffres, UNDP Power-point Presentation on China-Bangladesh Initiative (not published).

3 A user journey map is an oriented graph that takes one through the step-by-step journey of a user through the different touch points that characterize his/ her interaction with a service.

paired up with municipal Gazipur officials to create the prototypes, providing key design insights — such as separate queues for females and males; removal of glass barriers placed between users (beneficiaries) and staff (service providers) to personalize service; and a separate prayer room. Interestingly, about 60 per cent of the users were women, allowing the often-missing gendered viewpoint to inform the prototype design. Another key suggestion proposed setting up centers at several different locations to address community needs specific to each.

Project Components

The Bangladesh team took part in two week-long UNDP workshops with distinct activities. The first involved working with Bangladeshi officials at the management level towards the following aims:

- setting their goals for what they wanted to accomplish through the project;
- understanding and analyzing lessons from the Chinese context;
- understanding and building buy-in for design thinking as an approach to apply in the next stage of the process.

The second workshop engaged Bangladeshi staff at the working level and on-site, and included these goals:

- learning and applying the design thinking approach through constant engagement and dialogue with the users, municipal authorities, and other stakeholders at each step of the process, to ensure both engagement and the most precise identification of the issues at hand;
- exploring a variety of challenges and opportunities for creating a one-stop center that could improve service quality;
- beginning the planning and prototype process for the one-stop center.

Project Successes

(1) Working with local stakeholders during the research phase. In both China and Bangladesh, local resources proved critical. During the China workshop, the inclusion of representatives from a local think tank, International Poverty Reduction Center in China (IPRCC), enabled the team to navigate the political and institutional landscape of social services and governance in China. In Bangladesh, local representatives from the Urban Partnerships for Poverty Reduction (UPPR) initiative and the Bangladesh Urban Forum provided valuable knowledge about urban development and poverty-reduction efforts in Gazipur City and Bangladesh, as well as about the stakeholders involved. The workshop in Bangladesh created equal ground for all participants by actively encouraging and giving space for beneficiaries to express their concerns, opinions, and ideas openly.

(2) The workshop created a space for openness. UNDP and the design-thinking team actively reached out to beneficiaries (i.e. users) through a variety of means, such as focus-group discussions, strategic seat placement of users during the workshops, as well as through one-on-one interviews and dialogue to ensure active participation as well as critical information exchange. In addition, the teams asked the "users" to lead the sub-teams during the ideation (i.e. solution development) and prototype-building phase. Thus, users felt a sense of ownership throughout the process, from identifying the challenges to building and testing prototypes. Participants could express different perspectives on the same issue, regardless of their backgrounds. For example, when one government official stated that, "there is nothing wrong with the birth certificate process," a Ward Councilor and some community members immediately responded, raising issues of which the official had not been aware. In another example, a community member representative commented: "Before [when] I was only a recipient [of the services], I could only give blame. Now that I have been through this process with the city corporation, I see it is a difficult process, I see another side."

(3) Leadership and commitment from decision-makers. GCC's Mayor, Professor M.A. Mannan, and Chief Executive Officer, Sultan Mahmud, were both eager to serve the users of their services and improve citizen quality of life. Their commitment and motivation played an integral role in facilitating project team access to information on GCC's services. They were both open to specific questions about these services and comfortable in receiving critical feedback from users. They clearly intended to improve public service delivery, and that was also the primary rationale for learning from Beijing's experience.

(4) Users felt that they had been heard. At the end of the Bangladesh workshop, the workshop facilitators and the design-thinking community team asked the representatives from the participant group to reflect on what they enjoyed about the programme. In a brief interview, they shared that, apart from the new skills and knowledge they had gained, they had felt listened to and that their opinion was valued. One of the women representing slum dwellers even commented that she felt they were the most preferred or prioritized people in the workshop.

(5) The interactive nature of the design-thinking approach. With a programme design that included group work, site visits, and prototyping, participants went through a learning experience with a high activity level, one that allowed them to interact with each other and with the facilitator. When asked for their feedback, many participants commented on the "very participatory" character of the workshop and noted that this was a new way of learning for them.

(6) Learning how to make, and test, a prototype. Participants learned from their design errors during the prototype phase and corrected them as they built successive prototypes. In a very real sense, the exercise of building and testing prototypes illustrates the "learning-by-doing" approach. For example, during the first prototype session, one group demonstrated a prototype of a blind man receiving special assistance in applying for a birth certificate at the service center. By taking on the blind man's perspective and acting out the service, the group reflected after their presentation that they should also adjust the

service to include walking the blind man out of the building and helping him obtain transport. This identification of the design error allowed its correction in the subsequent prototype.

Project challenges

(1) Language and cultural barriers: Since the facilitators used a language foreign to participants, at times they were unable to respond to or provide guidance in conversations occurring during group work. Some information was lost in cultural and linguistic translation during the course of the workshops and related field work. Finally, language and inter-cultural communication barriers more than doubled the time initially allocated to each segment of the programme.

(2) Lack of access to users: In China, limited access to service users — mainly due to the language barrier — meant that participants had insufficient user perspectives on the services under study. In practice, the UNDP team did observe "one-stop" social service centers providing services to Beijing residents, but could not interview a significant number of users. While the team did conduct a few brief interviews on site, longer interviews would have helped them gain better insight into user experiences. Most of the data were gleaned from an observer vantage point: over the course of a week, the mission team managed to observe several different service centers in Beijing during peak and non-peak hours.

(3) Local context challenges in Bangladesh: Hierarchy is a significant component of management, governmental, and organizational culture in Bangladesh. For example, participants and interviewees from the research phase seemed more uncomfortable in sharing their thoughts and opinions when certain officials were in the room. Moreover, the mayors and government officials at GCC seemed to have limited autonomy, insofar as decision-making remained subject to central government mandate; they tended to resist any solution that would require more resources and approval from above. Finally, government services in Bangladesh do not feature a strong culture of

customer-oriented service. Advocating for the user perspective therefore became an important element of the workshop.

Steps Taken by Bangladesh Cities

According to user and beneficiary feedback, the iterative process of the workshop — one that led to successive prototype improvements — proved a successful one. Building on the prototypes, two cities — Gazipur and Rajshahi — went on to cost one-stop social services centers and to develop a financing plan, with the central government set to co-fund their construction.

Even with devolved decision-making powers and relatively autonomous cities, the level of fiscal decentralization remains limited, and cities still rely on the center for decisions around infrastructure-related initiatives (and associated financial resources). Securing resources from the central government proved a challenge for a variety of reasons, including bureaucratic red tape and domestic party politics.[4] In hindsight, the overall design of the initiative should have included a political-economy analysis and a strategy for working with the central government to secure early buy-in. A better understanding of the actual extent of urban decentralization in practice has a direct bearing on what implementation will become possible. A political-economy analysis would have brought such issues to the fore early in the process.

Lessons Learned

(1) South-South learning as inspiration, not replication (even with local adaptation). The view that development solutions consist of separable components, some of which could readily transfer or "adapt" to other contexts, seems a rather reductionist one. For instance, once on the ground in Gazipur, the teams quickly learned that they could not simply replicate Beijing's service center model due to several factors, including vast differences in governance and institutional structures, financing, and level of human development. The key takeaway from the

4 All the mayors belonged to a different political party than the one in power.

Beijing centers was that the city had found an effective and efficient way to provide core social services to a large urban population. One could draw inspiration from this model, but replication would not automatically translate into success in different context.

An approach based entirely on replication risks over-generalizing the nuances of user needs across various contexts — a risk that adequate research might mitigate, both on conditions in the "model" country and in the one seeking inspiration. Also, it may prove helpful to explore other sources of potential solutions, including other sectors within a country's own borders. For example, the Bangladesh workshop included a visit to an energy company's service center. This allowed participants to draw inspiration from an effective local solution.

(2) The significance of context warrants the investment in research. Allocating sufficient time for research and having adequate local support i) allows for better systems-level understanding in both countries/locations (in this case, the social service landscape and political structure), and ii) creates better conditions to facilitate, navigate, and guide the process of arriving at potential solutions.

(3) Careful problem definition can prevent teams from tackling the wrong problem. In this case, the 'problem' that Bangladeshi cities needed to address — the lack of centralized access to basic social services — came out of initial discussions in Beijing, prior to carrying out any research in Bangladesh. As a result, some of the programme objectives did not match with problems later identified in the local context of Gazipur City. For example, the Bangladesh delegation set a goal in the China workshop of designing a service/one stop center that could serve thousands annually. Based on field research in Bangladesh, this turned out to be secondary to the goal of creating services that meet the needs of residents more effectively. The prototype process that ensued took this into account. We would recommend conducting research and problem definition in the knowledge-seeking country before seeking input from the knowledge-providing country and other sources.

(4) Create buy-in for the approaches/methods proposed. Participant and decision-maker buy-in for the design-thinking approach underpinned the project's legitimacy. Facilitators spent significant time conveying the value of the user perspective and design-thinking strategies. Two factors made this necessary: i) design thinking was a novel approach for the Bangladeshi participants; ii) they had little familiarity with the notion of a "customer-oriented" culture within government services.

(5) Coherent project objectives come from aligned motivations. Success rests on understanding and aligning the interests/motivations of key parties and organizations prior to starting the exchange. Project objectives need to reflect client priorities in order to create buy-in.

(6) Leave room for trial and error. The complexities of social and urban challenges highlight the need to respond to new information gleaned as a project progresses on the ground. Strategically, this translates into allowing findings and lessons to steer the course of a project as it moves forward. Operationally, this calls for the mandate and flexibility to make changes to an initial project plan. For example, the project terms/parameters could include built-in time extension options to allow for potential in-project course correction, which may or may not come into use depending on how the project plays out.

Future Opportunities for South-South Learning

The China-Bangladesh knowledge transfer initiative chiefly aimed to bring social services closer to the people in a rapidly growing urban context. Beijing has successfully managed efficient and effective social services provision for a large urban population; it offered a point of departure and an inspiration. This initiative also provided the opportunity to develop a methodology/toolkit for facilitating South-South knowledge and experience exchange. The toolkit could further test the design-thinking approach with other countries, governments, and organizations, or in city-to-city exchange. We recommend a bottom-up approach as more likely to yield a deeper understanding of service

users and, consequently, solutions that better address their needs. A strategy that allows external examples to inspire a generative process and puts human users at its center can create such a bottom-up approach.

This initiative can be best viewed as a "prototype" version of a South-South exchange utilizing design-thinking methods. It yielded many opportunities for improving such exchanges in the future.

Design-thinking principles formed the methodological basis of the programme, making this South-South exchange a unique one. Its design allowed for flexibility in the programme, encouraged equal engagement from the participants, ensured the involvement of multiple stakeholders in the process, and challenged the traditional form of public services in Bangladesh.

Most significantly — arguably — it created a paradigm shift for local public servants: it is not common practice for government officials in Bangladesh (or in other countries) to investigate problems from the user perspective. As participants built prototypes and tested them through role-play, they not only created something with the user in mind, but *experienced* their own designs from the perspective of the user. As one participant commented, "To demonstrate a prototype was very nice because we are more easily sure [readily become more certain of how it works]… we realize how people will get the service."

As Asia undergoes its transition into a majority-urban region, providing services to a rapidly growing urban population will become a critical policy priority. Some Asian cities offer a wealth of experience in providing social services and can serve as an inspiration for cities struggling to meet their expanding basic needs. For effective knowledge transfer, the process or method becomes paramount. As a welcome addition to conventional approaches of knowledge transfer, design thinking offers a pragmatic way to develop solutions; with insights and inspiration drawn from the provider and a participatory process, it adapts, shapes, and at times creates an entirely new solution suited for the recipient-city context.

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CHAPTER 5

Building Safe and Inclusive Cities Using Crowdsourced Data

By
Kalpana Viswanath and Sonali Vyas

Women's Safety in Public Spaces

The safety of women in public places has become a growing concern, prompting governments around the world to seek solutions. This paper will examine how data can play an important role in making public spaces safer for women. In particular, reliable data can help convince city governments to deliver programs that respond to problems faced by citizens. The authors will present a technology platform that they helped create, Safetipin[1]; it collects data through crowdsourcing, as well as through photographic and other map-based analysis, the better to understand the state of urban infrastructure and social usage of public spaces. This technology helps in assessing whether citizens (especially women) feel safe when accessing public spaces in the city.

Safetipin, a social enterprise, was cofounded in 2013 by this chapter's co-author, Kalpana Viswanath; it reflects her vision of making cities more inclusive for women through technology-generated data. She and her team have built a platform that includes two free mobile software applications (apps), usable anywhere in the world. Safetipin's

1 Kalpana Viswanath is a cofounder of Safetipin and currently the chief executive officer. Working on gender and urbanization issues for over 15 years, she has given technical support to safe-city programs around the world. Sonali Vyas is an urban planner. Associated with the Safetipin project for more than two years, she serves as its program manager.

safety audit tool and mobile technology aim for wide availability and, making the data accessible for any person in a city. United Nations and other donor agencies, foundations, and city governments have provided funding for the company. Its work in India and other cities has shown that providing robust data can encourage city governments to make policies and programs that positively impact women's safety.

A crucial factor in understanding women's experience of the city is the growth in urbanization. Since 2008, the world has turned more than 50 percent urban, with projections that 66 percent of the global population will live in urban areas by 2050 — a growth expected to concentrate in Africa and Asia (UN, 2014). Urban spaces provide new opportunities for people to build their homes and lives, but also reinforce existing inequalities and often create new ones. Gender remains the central axis of discrimination, along with poverty, disability, and other vulnerabilities that define lives in modern cities. Inclusive urbanization appears in the United Nations Sustainable Development Goals (SDGs) (specifically Goal 11) as a key global aim (United Nations, 2015) as well as in the New Urban Agenda (United Nations, 2016); these accords provide cities and countries with guide maps for achieving sustainable and inclusive urbanization in the coming years.

Research has shown that sexual harassment of women is a serious problem in both the Global North and South. A 2014 study by Hollaback! and Cornell University that interviewed over 16,000 women found that over 50 percent of the European respondents and 75 percent in the United States reported facing their first incident of harassment before the age of 17 (Hollaback, 2014; You Gov UK, 2017). Over 81 percent of women interviewed had experienced some form of sexual harassment. The multi-country Gender Inclusive Cities Project, conducted in 2009, found that over 70 percent of women interviewed in New Delhi, Dar es Salaam, and Rosario had experienced some form of sexual violence in the past year (Women in Cities International, 2010). A 2008 survey in Cairo saw 83 percent women reporting at least one incident of sexual harassment (Women in Cities International, 2012). In the United Kingdom, a YouGov survey found that 43 percent of women aged between 18 and 34 had experienced sexual harassment in public spaces in the last year (You Gov UK, 2017).

The defining characteristic of violence against women is its ordinary and continuous nature. While gruesome and violent crimes also occur, the everyday, normalized nature of violence often makes it a key experience of women in cities; this has led to increasing awareness about gender discrimination and violence in general. Recent years have seen significant research around women's access to and safety in urban spaces (Whitzman, 2008; Falu and Segovia, 2008; UN-Habitat, 2013). While women have won many freedoms in the past few decades, violence and the *fear of* violence continue to be a part of their lives.

Creating safety involves much more than just responding to acts of violence; it requires conditions for women to move about safely and without fear. Therefore, in order to create greater levels of safety and comfort, policymakers and planners must address both actual violence and the fear of it. Many factors play a role in determining women's fear and their access to the city, including urban design and planning, community involvement, improved policing, usage of space, and so forth.

In this paper, we will show how the safety audit tool has been transformed into a technology that cities around the world have used to improve safety for women in public spaces. We will first describe the safety audit methodology developed in the 1980s. In the succeeding section, we will delineate the design and operation of Safetipin as a platform, followed by some case studies on its use in different contexts. After the case studies, we discuss how Safetipin could enhance South-South cooperation and its potential use by key urban stakeholders.

Safety Audit Methodology

One of the most innovative tools for diagnosing the problem of safety in public spaces has been the Women's Safety Audit (WSA), first pioneered by METRAC in Canada in the late 1980s. The WSA was a gender-specific response to increased violence against women in cities; it provided a method of assessing urban public places to define which factors make women feel safe or unsafe in them, drawing upon participatory data in each location. This tool has spread around the globe, applied in more than 50 cities across the continents (WICI and UN

Habitat, 2008). In Dar es Salaam, the WSA helped identify infrastructure and healthcare concerns; in India, the New Delhi-based nongovernmental organization (NGO) Jagori — a well-established organization addressing violence against women and women's empowerment — used the WSA to gauge the vulnerabilities of women and girls living in low-income neighborhoods, where poor provision of essential services such as water and sanitation lead to increased insecurities (WICI and Jagori, 2011). In Latin American cities, the WSA has identified problems and gaps that require both political will and improved urban planning to resolve (CISCSA, 2008).

Safetipin: A Technology Platform

More recently, advocates for women's urban safety have adapted the audit tool into a technology platform and software application (app) called Safetipin, now in use in several cities around the world (Viswanath and Basu, 2015). An India-based organization that collects large-scale data about women's safety, Safetipin launched in November 2013, at a time of heightened awareness on sexual violence and harassment.[2] It grew out of conversations between a technology and app designer and an urban safety specialist (the two founders of Safetipin, Kalpana Viswanath and Ashish Basu) and rested on two key premises: that large-scale data collection can lead to change, and that safety will ensue when more people become engaged in the issue. As a map-based mobile and online platform, Safetipin aims to build an extensive database about the perception of safety in cities around the world. We have two apps: My Safetipin for crowdsourced data, and Safetipin Nite to collect nighttime pictures of the city. After a modest start in 2013, the app now has data in more than 30 cities in India and globally.

The app design targets key factors that enhance public space safety and inclusion, specifically focusing on the experience of women and

2 In December 2012 a gruesome case of gang rape took place in a moving bus in New Delhi, eventually leading to the death of the young woman. This incident galvanized the city to protest for weeks and to make a slew of changes in the New Delhi and country-wide (Burke, 2012).

girls. It adapts the Women's Safety Audit referenced above, basing its own audit on the following nine parameters at each analyzed location:

1. Lighting – level of brightness on the streets.
2. Openness – can one see in all directions or only some of them?
3. Visibility – can pedestrians see one another? Are there windows, shops, vendors, etc., overlooking the street and its occupants?
4. People – how many other pedestrians are around?
5. Security – the presence of private security or police.
6. Walkpath – the condition of the walkpath/sidewalk.
7. Public Transport – availability and proximity of public transport.
8. Gender Usage – percentage of women and children among the crowd.
9. Feeling – how secure does one feel in that location?

The app allows any user to enter data about these parameters, as well as to share how they feel in any specific geo-tagged place in the city. It collects the data and makes it immediately visible to all app users. In this way, the app becomes an interactive virtual space for conversing about safety and perceptions. Furthermore, Safetipin compiles the data into reports with recommendations and map layers. It shares these reports with city officials and other stakeholders, such as NGOs and media organizations, among others, to help improve safety in urban public spaces.

Many cities in India and worldwide have used Safetipin to collect data and deepen their understanding of safety concerns and the causes of unsafe public spaces. We first worked in New Delhi and subsequently expanded to other cities around the world. We share examples of key successes and challenges in some of these cities below.

Case Studies of Safetipin Usage

Safetipin audits helped improve street lighting in the National Capital Territory of New Delhi.

New Delhi, or the National Capital Territory (NCT) of Delhi, is one of the five megacities of India with a population of more than 10 million

(Indiaonlinepages, 2016). With an average density of 225 people per hectare (pph), the city covers 1483 square kilometers (km). According to the National Crime Records Bureau's Crime in India 2015 statistics, New Delhi is the second most unsafe city in India, with a crime rate of 1066.2 per 100,000 residents. Of the five megacities, New Delhi has the highest rate of crimes registered under murder, rape, and insulting the modesty of women (NCRB, 2016). These statistics underpin perceptions of public safety that affect how and to what extent women will access public space. A 2016 study interviewed 1,387 women and men in New Delhi on sexual harassment in public spaces. About 40 percent of the women surveyed said that they had been sexually harassed in a public place (such as a bus or park) within the past year, with most of the crimes occurring in the daytime. Furthermore, 33 percent of women had stopped going out in public and 17 percent said that they had quit their jobs rather than face harassment in public places (Madan and Nalla, 2016).

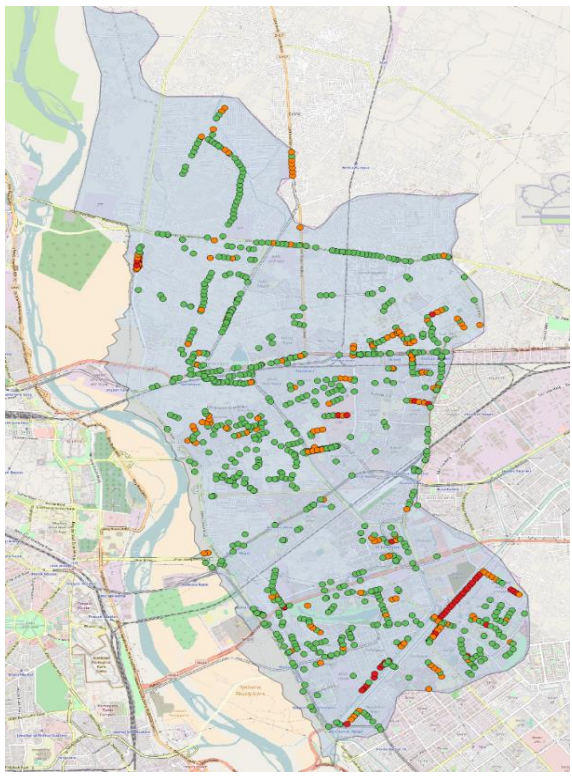
In 2015-2016, we conducted safety audits throughout the city using My Safetipin app to assess women's perception of safety. We also collected data via the Safetipin Nite app, which compiles geotagged and time-stamped photographs. A trained in-house team of professionals then coded the photos to generate the audits. This compilation covered around 4000 km of road length, auditing close to 60,000 points, of which 7,438 were identified as dark spots – locations with poor lighting or no lighting. We then shared this hard-hitting data on street lighting conditions with the New Delhi city government. Taking note of the acuteness of the problem, the Secretary of the Power Department convened meetings to bring together concerned stakeholders and all the agencies responsible for maintenance of streetlights in the city. The city agencies involved in the ensuing "street lighting improvement" project included the four Municipal Corporations (the North, East, South Delhi Municipal Corporations and the New Delhi Municipal Council), the Public Works Department (PWD), the Delhi Development Authority (DDA), and the Delhi Urban Shelter Improvement Board (DUSIB). Over the following year (January 2017 to May 2017), the Safetipin team went on numerous site visits across the city with the electrical engineers of the respective zones to check on working conditions of extant

streetlights and the areas slated for new ones (The Hindu, 2016).

In May 2017, Safetipin conducted a second round of audits in East and South Delhi to assess on-ground improvements. We conducted these audits using Safetipin Nite along the roads listed by the civic bodies. The maps showing the rates of lighting coverage before May 2017 (Figure 5-1) and after May 2017 (Figure 5-2) can be seen for East Delhi.

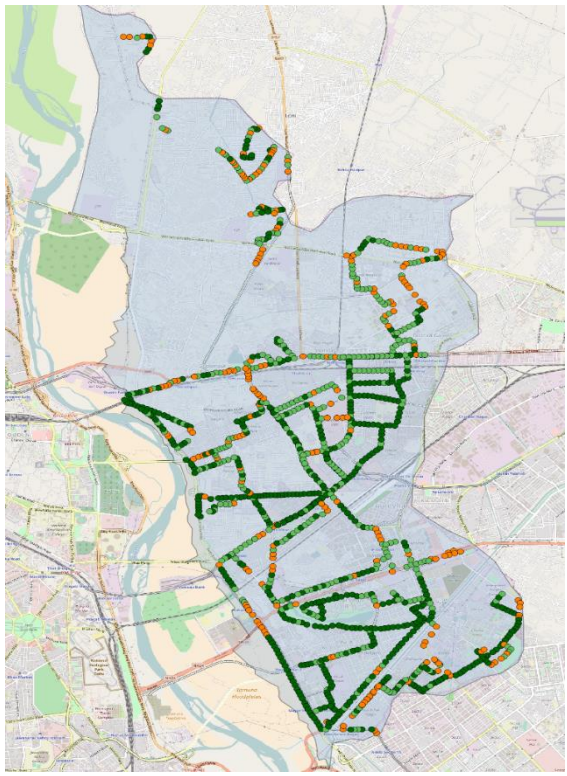
The audits and maps demonstrate that lighting has improved considerably in East Delhi. Upon completion of the first round of street lighting upgrades — the first step towards ensuring safety on the streets — the New Delhi municipal government moved to assessing and

Figure 5-1 Map of Street-lighting along East Delhi Roads Before May 2017



Source: Safetipin/Authors (2017)

Figure 5-2 Map of Street-lighting Along East Delhi Roads After May 2017



Source: Safetipin/Authors (2017)

improving the other parameters that inform street safety, requesting that Safetipin conduct a second round of data collection and audits for NCT of Delhi in 2018.

Safetipin's experience in Delhi has also forged strategic partnerships with community-based NGOs. Safetipin developed a model called "Safety Centre" to generate wider outreach, including to low-income neighborhoods, in order to bridge the digital divide. The model ensures inclusiveness by building a partnership between Safetipin and a local NGO working in a target neighborhood. Instead of relying on individual access to smart phones, this approach aims for collective usage, encouraging women and youth go out in small groups with smartphones

provided by the local NGO. After completion of data collection, the Safetipin team compiles the data into a map and brief report. The women and the NGO then jointly use the data and recommendations for advocacy to improve their neighborhood. This has helped Safetipin extend the benefits of digital technology to communities where it may be less widely available.

Safetipin audits addressed bus stop safety in Bangalore

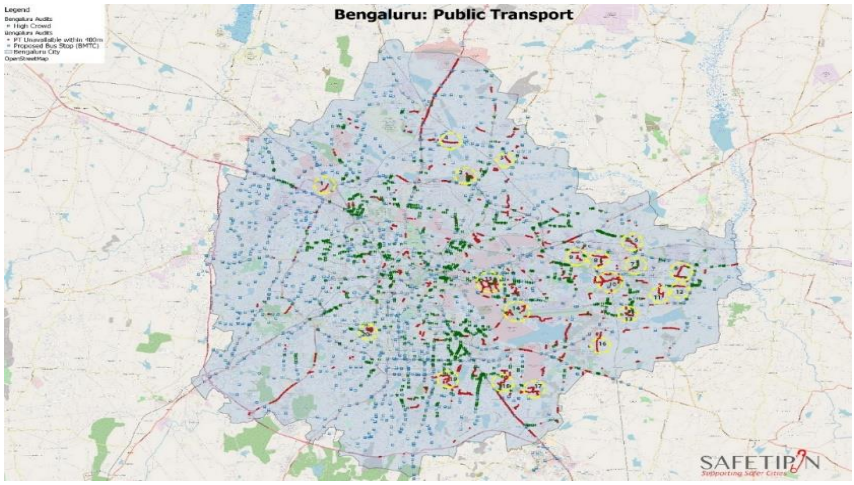
Outside of Delhi, Safetipin data helped Bangalore Metropolitan Transport Corporation to plan future bus stops and improve the condition of existing ones in the city.

Transport can play a significant role in ameliorating or exacerbating the life conditions of women, particularly poor women in developing countries, depending on the extent to which it takes gender differences into account (World Bank, 2010). Women and men have different travel and transport needs due to their different social and economic roles and activities. Women also face different constraints than men in accessing and using transport services. Although the Safetipin app does not map onboard harassment, a survey by Bangalore Bus Prayanikara Vedike[3] revealed 1,803 cases of harassment out of 2,647 women interviewed, i.e. two out of three women faced regular harassment while travelling on buses (Deccan Herald, 2013).

In 2017, in collaboration with WRI India (World Resources Institute) and B-PAC (Bangalore Peoples Action Committee), Safetipin conducted daytime as well as night-time audits through My Safetipin and Safetipin Nite app. This combined effort covered 1,431 km and generated about 17,128 audit pins — including 1,881 bus stops (audited specially to highlight location), associated infrastructure (lighting, footpaths, etc.), and last-mile connectivity. We shared the data on these conditions with Bengaluru Metropolitan Transport Corporation (BMTC), the sole operator

3 Bangalore Bus Prayanikara Vedike is a group of concerned individuals, organizations, artists and students in Bengaluru campaigning for an effective system to address the sexual harassment of women on buses, along with many other commuter-oriented issues.

Figure 5-3 | Map of Public Transport Status in Bengaluru



Source: Safetipin/Authors (2017)

of public buses in the city. BMTC, which supplies approximately 5 million passenger-trips daily, has also put in a proposal for building new bus stops and increasing its fleet size to match growing commuter demand (Jayaramiah, 2014). Safetipin superimposed its parameters for public transport and crowds with the proposed bus stops coordinates, as shown in Figure 5-3, to address the wide gaps between these locations and the need for stops in certain areas with high commuter density.

Additionally, Bengaluru Police and B-PAC (Bengaluru Political Action Committee, an NGO) have used the Safetipin data to identify ten wards for their community engagement project. B-CLIP (BPAC's civic leadership incubator program) leaders will adopt these wards as models for improving public safety through citizen participation. This will form part of Bengaluru Police's #ABillionEyes-Bystanders Campaign, first launched in October 2017 (Mantri, 2017).

The City of Bogotá turns to Safetipin

In 2015, Safetipin mapped 295 km of cycle track in Bogota to identify infrastructural needs along these routes. The Bogota city

government has laid down a wide network of cycle routes called "Ciclorutas" to encourage a sustainable mode of transport among its citizens. The city has one of the world's most extensive bike path systems, covering a length of almost 400 km. However, some bicycle tracks run through isolated areas, rather than as part of an integrated network or along the pedestrian pathway. They often terminate suddenly without connections to other bicycle paths. Both users and government have identified integration of the bicycle road network with Trans Milenio BRTS (Bus Rapid Transit System) as a priority (Pattiasina and Pinzón, 2015).

A 2016 qualitative study interviewing 1,334 regular cyclists in Bogota revealed gender differences in bicycle use. Compared with men, women cyclists perceived greater risks, highlighting safety concerns and feelings of vulnerability (Parra, Gomez, Sarmiento and Schmid, 2012). To encourage women's participation in public space and improve last-mile connectivity, The Bogota District Secretariat for Women, in partnership with Safetipin and with support from UN Habitat and Cities Alliance, collected data along the city bicycle paths to assess their overall safety. The municipal government launched a campaign to encourage bikers to participate in data collection. Phones were mounted on more than 20 bicycles to capture photographs along 295 km of the cycle paths. The survey also covered 1,927 km of city streets, generating a total of 19,351 audit pins. The city used this data to decide where to improve lighting, place bike stands, and position CCTV cameras.

Addressing nighttime usage of spaces is more complex than fixing lights or infrastructure but also requires direct engagement with city residents. Under the slogan "Women taking back the night," the Bogota District Secretariat for Women carried out night sessions near areas identified as unsafe for women after dark. The participants included citizens, Local Operative Councils for Women and Gender, and local women's organizations. In two neighborhoods, the organizers set up the selected sites with tents, platforms and communication displays. Participants took part in cultural events that also addressed the rights of women to have lives free of violence. These events aimed to instill comfort in participants, as well creating a feeling of ownership of public spaces in order to make them livelier and to encourage women to come

out and use them (Safetipin, 2017).

Opportunities for City Stakeholders

These varied examples, from different cities in India as well as others in the Global South, provide evidence that a variety of urban stakeholders, both government and non-governmental, can make effective use of Safetipin. In Delhi, the data proved useful at both the wider city and community levels in promoting advocacy and change. At the city-wide level, it can influence policy or widespread improvements in such areas as lighting, street life (including street vendors), and infrastructure, e.g. pedestrian paths. City officials, urban planning departments, city police, and municipal stakeholders can all benefit from using Safetipin to help decision-making in resource allocation and safety improvements.

On the other hand, at the community level Safetipin becomes a tool to empower citizens, one that can reach the most vulnerable groups as well as promote partnerships. Following the experience with Jagori, many other NGOs and community organizations, such as the Centre for Advocacy research, World Vision, and Plan India, have reached out to us to work at the neighborhood level for concrete changes in the environment; they seek to empower women not only to take part in data collection, but to leverage it for advocacy. We believe that NGOs in Southern cities can benefit from a technology like Safetipin in addressing the concerns of the most vulnerable, those living in poorly-served neighborhoods that lack proper infrastructure.

In Delhi, Safetipin conducted a series of safety audits in collaboration with New Delhi Municipal Council (NDMC) along all the 15 metro stations whose maintenance comes under their jurisdiction. In order to obtain wider participation, the audits engaged the architects working for NDMC, members of the National Association for the Blind (Delhi State Branch), and Jagori. In Bengaluru, Safetipin data helped address public transport concerns around safety and last-mile connectivity. Similarly, Bogota made good use of the data to ensure that women bikers felt safer and more comfortable using bike lanes after dark. Thus transport planners and transport officials will also find

Safetipin data useful for informed decisions.

Since our parameters measure both infrastructural factors and social usage of city spaces, urban designers and planners — as well as academics in both social science and urban design — can use the data to develop different and innovative means of improving our cities. When academics and urban designers engage with both process and data, we can give them an opportunity to look deeper, enabling them make connections and interesting correlations with other relevant data sets.

Opportunities Ahead for South-South Cooperation

With the growth of urbanization in Southern cities, the management of public spaces and infrastructure to promote safety and inclusion has become a pressing need. In the context of the SDGs, Goal 11 specifically requires monitoring of cities in terms of inclusive and sustainable urbanization as well as good public spaces, with a special focus on women's access and safety. City governments must find solutions to the growing problems of larger numbers of people in cities and the need for more and better public infrastructure and services. Public transport, for example, is one public service that has a direct impact on women's mobility and safety, and consequently on choices available to them about work, study, and leisure.

The Safetipin technology platform offers a simple and inexpensive tool to measure these outcomes. Since the app aims to provide safety scores for public spaces, it measures key parameters as outlined above. These parameters of lighting, openness, visibility and other factors provide a good means of assessing how well cities have advanced in providing inclusive and safe public spaces, especially for women. The app also monitors how women feel in different spaces by crowdsourcing their opinions, data that can also be shared with city stakeholders. This provides a valuable method of engaging citizens as well as a platform for their voices to reach government and municipal actors.

Furthermore, we have seen that Safetipin provides a methodology for measuring the impact of public policies and programs that aim to address safety and inclusion in public spaces. The tool can generate a baseline before interventions such as improving lighting security

presence, sidewalks, or make streets more active and provide natural surveillance through lower boundary walls as well as the presence of street vendors. “Eyes on the street” is a principle of urban design presuming that areas become safer with increased activity and the ability to physically see into the streets. Therefore, having high walls makes streets more unsafe. After the initial mapping, a second round can then measure the level of change. Crowdsourcing women’s perceptions of safety (before and after interventions) can also assess change and improvement in women’s mobility.

Safetipin can also help assess accessibility of public transport as well as last-mile connectivity; it can determine ways of making transit waiting spaces safer and more inclusive. We have conducted last-mile connectivity studies at metro stations and bus stops in Delhi and train stations in Mumbai, as women report high levels of harassment both when riding and waiting for public transport. The Bogota city example has also demonstrated that the app can assess safety on bike paths. Increasingly, many cities have promoted cycling as a sustainable mode of urban transport. But encouraging more women to bike requires both services and safety. The Bogota project that used Safetipin Nite for bicycle safety has proven an important innovation, one that we feel could assist many other cities in the South. Safetipin has found other applications in Asian cities such as Manila, Jakarta, and Phnom Penh, as well as Nairobi, Belmopan, Bogota, and others in the Global South.

The “Safety Centre” provides another innovative way to reach out beyond the digital divide, to ensure that women from low-income areas can benefit from technologies like Safetipin. Cities in the South all share the common condition of a large population living in slums and slum-like conditions, with poor delivery of infrastructure and services. The Safety Centre serves as a conceptual approach and does not necessarily require a physical space. It involves a conversation with a group of people in neighborhoods, presenting them with the Safetipin data in map form and encouraging them to engage with it. It is an offline activity that supplements data collected through online methods. The Safety Centre model generally calls for partnership with NGOs in areas where they work and can follow up on the concerns of the residents.

These cases show the many ways that the Safetipin app and

technology environment can benefit cities in the South, as they seek to design and plan safer and more inclusive cities and public spaces for all their citizens — especially the more vulnerable groups. It can also enhance South-South cooperation by facilitating comparisons between data and solutions across contexts, allowing Safetipin partners the benefit of experiences in other cities and countries. This in turn can provide a basis for further international partnerships between governments, NGOs, citizen activists, and other stakeholders.

Conclusion

In this paper, we have attempted to show that cities can use an app and technology platform such as Safetipin to become more gender-inclusive and safe for all their citizens. Based on crowdsourced data and picture analysis, Safetipin assigns safety scores to specific places. These scores are dynamic and change with every new data input. High safety scores reflect when and where citizens feel safe when moving around the city. The data can help ensure the safety of any given place, with a means to hold governments accountable where the safety score is low. Any agency – public or private — may use the data to address safety issues. Apart from the data available on the app for free, Safetipin also compiles reports, recommendations, and maps that advocates and public officials may use. Furthermore, we have maps of cities on our website that provide safety scores and other details.

The lack of accurate information for decision-making stands out as one of the greatest public-policy challenges in general, and for women's and gender issues in particular. The data based on the audits gathered by Safetipin has enabled several cities in India and in the developing world to address some key concerns around public spaces and gender inclusion. Globally, this issue has come into the limelight, with the generation of ever more data that demonstrate how sexual harassment and fear shape women's experience of the city.

Countries in the South share similar social problems and often have similar constraints in terms of institutions and infrastructure. Technology-based solutions such as Safetipin are easy to implement as well as low in cost. Furthermore, they provide a platform for city

authorities to interact with citizens, especially women, to hear their views on how they feel in the city and whether they can use all public spaces.

With growing urbanization, cities cannot become inclusive and sustainable without addressing safety and gender concerns. International agendas such as the SDGs and the New Urban Agenda have prioritized these concerns, and city governments will have to follow their guidelines. An app such as Safetipin can bolster these programs by providing reliable and robust data on a regular basis, through dynamic and relevant means.

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CHAPTER 6

CityNet: A City-to-City Tool for Sustainable and Inclusive Development

By
Mary Jane Ortega and Stephani Widorini

Introduction

While urbanization has turned into a major source of economic growth, enhancing productivity and increasing per capita gross domestic product (GDP), these gains have not benefited all urban dwellers equally, particularly in the Asia-Pacific region. Asian countries and cities have tried to achieve more equitable and sustainable urbanization, sharing knowledge and collaborating on urban challenges such as inadequate housing, poor sanitation and waste management, cumbersome administrative procedures, and other pressing problems. Cooperation among countries of the South, and/or with Northern partners, has yielded many positive results for such problems (see, e.g. Lim and Khilij in this volume).

However, the complexity and speed of urbanization means that bilateral North-South, South-South, or even triangular North-South-South cooperation no longer suffices. Municipalities needing access to a wider range of expertise and partnerships have therefore created a horizontal multilateral cooperation model. It rests on a knowledge-sharing platform called CityNet, shared by a global network of partner cities; it facilitates access to funding and technical partners and encourages participation of all stakeholders, including vulnerable urban populations. This chapter will first discuss some of the pressures and persistent challenges of urbanization and the cooperation modes that

have attempted to address them. It will then describe the formation of CityNet, a network of municipal, private-sector, and nongovernmental organizations (NGOs) concerned with urban services and city-dwellers in the Asia-Pacific region. We will present successful examples of CityNet's unusually inclusive and far-reaching projects as an argument for a more horizontal and multi-stakeholder approach to solving urban challenges.

The Complexity and Challenges of Urbanization in Asia

In 1975, just over 37 percent of the world's population lived in urban areas. Thirty years later, urban dwellers accounted for 54 percent, while 46 percent remained in rural areas. The United Nations predicts that by 2050, 66 percent of humanity will live in cities (United Nations, 2014). In the Asia-Pacific region, the current tally runs at 40 percent urban, contributing 80 percent of the region's GDP (United Nations, 2018). Urbanization in Asia has followed varied conditions and models. Although it acts as the engine of growth, it has yet to meet basic human needs for millions of Asians (CityNet, 2015). The economic development and transformations of cities have lifted millions out of poverty and increased the number of countries with middle-class populations. Nonetheless, this transformation has left vulnerable populations behind – the poor, youth, migrants, and minorities (United Nations, 2017). Moreover, some Asian cities face challenges associated with managing urban growth, such as sprawling slums, increased traffic congestion, inadequate sanitation, deficient waste management, substandard housing, and toxic air pollution; they also need to mitigate the effects of climate change.[1]

Harnessing the potential of urbanization to drive sustainable development amidst these challenges requires different and fresh policy responses. Developing and implementing sound urban policy, however,

1 In terms of climate change, for example, cities are responsible for 71-76 percent of global CO2 emissions (IPCC, 2014). They are also highly vulnerable to the impacts of climate change, especially in the Asia-Pacific region (United Nations, 2015a).

remains a challenge for many Asian cities.[2] As elaborated by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), traditional urban planning modalities and frameworks cannot keep up with the growing demands or ensure sustainable urbanization. Rapidly growing cities, particularly in developing countries, struggle to provide adequate infrastructure, services and governance systems (United Nations, 2015b). As mentioned in a UN Habitat (2009), *Global Report on Human Settlements 2009: Planning Sustainable Cities*, "Older and traditional approaches tended to focus on the separation of land uses, regulating built form, promoting 'aesthetic' environments, and achieving efficient traffic flow. More recently, different issues have required attention in planning." The old planning models currently in use tend to silo urban issues and policies; as such, they cannot provide a multidisciplinary approach that encompasses, for instance, the challenges of housing, transportation, sanitation and employment within a single solution. Better planning also calls for new multi-sectoral visions and partnerships that engage both national and local governments; the New Urban Agenda[3] (United Nations, 2017a) emphasizes such a cross-cutting approach (United Nations, 2015b).

Finding Solutions Through Various Modes of Cooperation

Cooperation can offer an effective way to tackle the challenges that hinder sustainable urban development. North-South Cooperation (NSC)

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2 Many cities in the region have limited capacity or resources for urban planning. They also lack skilled political leaders who have managed urban change (UN Habitat, 2014). In collaboration with UN Habitat, CityNet organised a workshop on this topic in 2014 and 2015, hosted by Kuala Lumpur City Hall.

3 According to UN Habitat III (2016), "The NUA is an inclusive, action-oriented, and concise document intended to guide the next twenty years of sustainable and transformative urban development worldwide. It has a strong focus on the inclusion and participation of stakeholder groups, civil society, and grassroots organizations. Sub-national and local governments are supported as strategic and operational partners for implementation, along with national governments." The NUA was adopted by member states of the UN at the Habitat III conference in Quito, Ecuador on October 20, 2016.

has long served as a practical vehicle for learning and knowledge transfer from developed to developing countries. However, NSC often presents a one-way learning process, with limited utility for Southern partners because of contextual and capacity differences between rich and poor countries. In recent years, South-South Cooperation (SSC), framed around the principle of mutual benefit, has expanded to close these gaps. Through SSC, countries form mutual understandings and close partnerships, exploring their complementary strengths to go beyond their traditional role as aid recipients (UCLG, 2016). Through financial, technical, and other forms of assistance, SSC creates "horizontal partnerships", based on trust and long-term relations (OECD, 2011). SSC has recently focused on the practice of sustainable urban development alongside three global initiatives — the United Nations Sustainable Development Goals (SDGs), the Paris Agreement on climate change, and the New Urban Agenda. Just as SSC closed the gap between national experiences in order to make cooperation more effective and better adapted to local contexts, so municipalities have now turned to city-to-city cooperation (C2CC) to meet the multidisciplinary challenges of urban development.

City-to-city cooperation (C2CC) has come into wide use as a means of transferring knowledge and experience from one city to another. It takes on various formats, such as workshops, technical assistance, and learning visits, among many others. It offers creative and powerful avenues for achieving sustainable development at the local level in both the South and the North. Clusters of cities from developing countries that face similar urban challenges can cooperate at a sub-national level, developing shared solutions adapted for local sustainability, and thus moving beyond what they sometimes perceive as theoretical rather than practical advice from national governments.

Studies and interviews conducted by the Institute for Global Environment Strategies (IGES) suggest that C2CC brings varied benefits to local governments, such as staff capacity development, improved urban governance, strengthened city internationalization, and fostering amicable relationships with migrant communities (see e.g. Ishinabe, 2010). In the best cases, C2CC also taps into and maximizes the contributions of non-state actors such as civil society, academia, and

the private sector, as we will see below.

However, cities often find C2CC difficult to put into practice. Municipalities must overcome several deficits — in financial resources; in communication among cities, in partners and other stakeholders; in expertise. Key factors in ensuring a successful C2CC include leadership, commitment, free flows of information, reciprocity, and mutual understanding from all stakeholders. Clear mapping and mutual understanding — of both good practices from the "mentor cities" and the needs of the "recipient cities" — can motivate participation and sustain the partnership. Against this backdrop, one can see that effective C2CC would require a "matchmaker" to ensure suitable learning delivery and promote the best engagements between local governments and the private sector, NGOs, research centers, and citizens. However, until recently C2CC suffered from the lack of a vital component: a platform that could facilitate the transfer of best practices and knowledge, and play this matchmaker role in fostering collaborative, multi-stakeholder partnerships.

C2CC: The Emergence of CityNet as an Interactive Platform

In 1987, the first Congress of Local Authorities, a regional convention organized by UNESCAP and what is now UN Habitat in collaboration with Yokohama City, recognized the need for cities to work more collaboratively together. It thus established CityNet with 26 member cities — some Northern and the majority Southern. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) served as CityNet's secretariat until the City of Yokohama stepped forward to host the association in 1992. The United Nations Population Fund (UNFPA) Tokyo Office Director, Mariko Sato, who was involved in CityNet at its inception, said that while urbanization issues became higher priorities early on and led to some North-South cooperation, no robust platform or network existed, given the lack of adequate technology (such as the internet), some cities lacked access to

international forums, so CityNet provided municipal officials with opportunities to interact and exchange technical information.[4] The Executive Secretary of UNESCAP, in his inaugural address of the second Congress of Local Authorities (CITYNET) in 1989, noted that the network was one of the most active examples of the technical cooperation among developing countries (TCDC) in the region (UNESCAP, 1989).

Moreover, CityNet created forums that brought the voices of local governments to national and international venues where national governments might listen to them. This reflected its ongoing mission to promote cooperative links and partnerships throughout the Asia-Pacific region in order to improve urban sustainability. Today, CityNet connects local governments with other urban stakeholders — civil society, the private sector, academia, and urban citizens — to promote knowledge exchange and innovative solutions for urban challenges. Crucially, CityNet also aims to build a movement for better cities: more people-friendly, socially just, ecologically sound, economically productive, culturally vibrant, and globally connected.

An independent network, CityNet serves as an important intermediary throughout the whole C2CC cycle. Having access to relevant best practices and understanding the needs of their members, a city network such as CityNet holds the best position for catalyzing and brokering the formation of partnerships. CityNet also plays a vital role in monitoring, evaluating, and disseminating the impacts of C2CC. It has operated training programs for local governments, undertaken community-based projects, served as technical advisors through site visits, and conducted research. While cities must have a population of

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4 Since the Network's establishment in 1987, activities undertaken with financial support from the United Nations Development Programme (UNDP) and based on the initiatives and contribution of the members have included: the Training Workshop on Community Action Planning for Settlement Upgrading hosted by Colombo Municipal Council in cooperation with National Housing Development Authority of Sri Lanka in May 1988 and Joint Research on the Role of Informal Transport in the Socio-economic Development of Urban Areas, with participation from Bangkok, Colombo, Dhaka, Metro Manila, and Surabaya; the workshop on the study methodology, hosted by Bangkok Metropolitan Administration in August 1988.

100,000 people or more to qualify as full individual members, CityNet also has national chapters formed by and for all smaller cities so that they can join with larger member cities at the national level. These chapters in Bangladesh, India, Indonesia, Nepal, Philippines, and Sri Lanka can thus benefit from CityNet member experience through workshops. The Seoul Metropolitan Government has hosted CityNet since 2013. CityNet activities now rest on four pillars: climate change, disasters, infrastructure, and the SDGs, all crucial in fostering sustainable urban development.

CityNet-facilitated Partnerships: Inclusive and Practical

CityNet has registered various success stories in addressing urban challenges in its member cities. One example comes from Songkhla, a former member city in southern Thailand. In downtown Songkhla, squatter settlements encroached on both sides of a canal and their improvised toilets polluted the water. This made it impossible to use the canal for passage of goods and services to the main port, hampering its economic efficiency. Through a delegation to Songkhla, CityNet shared advice and established a task force that included representatives from the settlements, local government, a local radio station, and civil society organizations (such as the Lions Club). The task force came up with an ingenious solution, integrating three-dimensional sustainable development: it featured concrete walkways along both sides of the canal while the squatters changed the orientation of their houses so that the main entrances would face the walkway and the toilets would sit on land rather than over the canal. The Thai government provided subsidies to finance walkway construction and housing modifications. Once the walkways were built, the canal reopened as an economic fairway, since no one could encroach past the concrete. Land-based septic tanks and sanitation facilities reduced pollution and improved the overall environment. Moreover, this solution allowed the slum dwellers to remain in place in downtown Songkhla, where their jobs and income-earning opportunities concentrate, in now-regularized housing. These outcomes only happened

because of the inclusive nature of CityNet and its ability to develop trust and dialogue with its members and other stakeholders. CityNet members do not actively follow a sustainable development philosophy, but one emerges anyway because of the nature of cities, and particularly because of CityNet's constitution as a network of local governments and their partners. These partners often included the civil society organizations that work with the poor and/or that work on the issues of urban environment.[5]

Another successful project, conducted by the CityNet Yokohama Project Office, is the Community Based Adaptation and Resilience Against Disaster program in Iloilo City, Philippines. Typhoon Frank, had flooded 80 percent of Iloilo City in 2008 and left considerable suffering in its wake. Despite the city's progress in post-flood clean-up, some challenges remained, particularly a lack of community preparedness and resilience in the event of a disaster (Iloilo City, 2015). Responding to the municipality's request, the Japan International Cooperation Agency (JICA) funded a five-year project that has helped develop eight ordinances and resolutions and a number of localized initiatives. These include hazard maps, evacuation maps and protocols, disaster education programs for schools, profiling of vulnerable groups, establishment of an early warning system, and other relevant tools (Iloilo City, 2015). On this project, CityNet successfully connected the relevant stakeholders, namely the local government administrators of the mentor and recipient cities — Yokohama and Iloilo respectively — along with citizens, local institutions and NGOs, and representatives from JICA.

Northern cities can also learn from Southern ones. At the Suwon (Korea) Human City Forum in 2016, the Mayor of Suwon, after hearing

5 "One of the indicators for sustainability impact through CityNet intervention is bringing institutional changes and policy changes. Building partnerships between local governments and communities will change the way decisions are made. It will incorporate people into the decision-making process at local levels" (CityNet, n.d). This project's success directly depended on CityNet's advisory service, which provided the activity guidelines and found suitable local stakeholders to collaborate on appropriate solutions.

the Mayor of Iloilo City share his disaster relief and reconstruction (DRR) experience, asked for a knowledge exchange with Iloilo so that Suwon could better prepare to deal with the aftermath of a disaster. Similarly, Japanese nursing students visited Iloilo on several occasions to learn about the care and community outreach that medical practitioners do in the Philippines. JICA has also sent a delegation from Japan to observe how Iloilo has improved their DRR resiliency.

CityNet also recently implemented the World Cities 2017-2018 project in South Korea. This project promotes cooperation among cities from the European Union and the Republic of Korea, Australia, South Africa, Indonesia, and Vietnam. CityNet and Ramboll[6] implement the project in the Republic of Korea. Four South Korean cities – Seoul, Suwon, Gwangju and Busan – have paired with four European cities – Eindhoven (Netherlands), the Scottish Cities Alliance (UK), Tampere (Finland) and Barcelona (Spain) – under the auspices of World Cities 2017-2018. The project aims to promote better urban policy and thereby improve the quality of life in participating cities. The cooperation requires the identification of pilot regions and cities and the development of concrete action plans. This covers initiatives such as urban innovation (the smart city) and green technologies (energy efficiency, low-carbon development). The design of actions targets an increase in (so-called) "triple-helix cooperation" between governments, academia, and the business world. World Cities will also create opportunities for start-ups, existing companies, and new jobs while pursuing sustainable development goals. Table 6-1 shows the planned areas of cooperation for each city-pair (World Cities, 2017).

6 Ramboll — the lead partner of the World Cities Project consortium — is a global engineering consultancy headquartered in Copenhagen.

Table 6-1 World Cities 2017-2018: South Korea Bilateral Cooperation Project Areas

Seoul – Eindhoven	Busan – Barcelona	Suwon – Scottish Cities Alliance	Gwangju – Tampere
a. Urban lighting: cooperation on smart urban lighting systems b. Social innovation: establishing a joint "Global Living Lab" addressing key societal challenges through innovation c. E-Government: exchange of policies and technologies towards a global digital transition to improve governing processes and facilitate all urban actors d. Joint participation in Horizon 2020 calls for proposals related to smart city, clean energy, urban mobility	a. Smart-city: possible Smart Cities Expo in Busan 2018 b. Urban mobility: Busan to learn from Barcelona's public transportation integrated fare system c. Joint participation in Horizon 2020 calls for proposals related to smart city, clean energy, urban mobility d. Urban regeneration: joint development of cultural concepts for brownfield sites e. Start-up ecosystems of Barcelona and Busan	a. Cultural heritage: cooperation between The Engine Shed and Suwon's Hwaseong Fortress, a UNESCO World Heritage Site b. Big data: cooperation between The Data Lab and Suwon c. Innovation, start-ups: cooperation between the CivTech Incubator and Suwon's Digital City	a. Mobility: Mobility as a Service (MaaS), Mobility hubs and e-mobility: Gwangju plans to build a cluster for making eco-friendly vehicle parts; Cooperation with LG Innotek. b. Smart City: cooperation on information and communications technology (ICT) standards. Gwangju to join the Open and Agile Smart Cities Alliance. c. Virtual reality and artificial intelligence: cooperation between Tampere's TAUCHI Human-Machine Interface Programme and Gwangju Techno Park 3D, GIST Gwangju Institute of Science and Technology. d. Governance in Climate Change Response: cooperation between Gwangju International Climate and Environment Center (ICEC) and Tampere's ECO Fellow e. Joint participation in Horizon 2020 calls for proposals related to smart city, clean energy, urban mobility

Source: Adapted from World Cities (2017).

CityNet Underpins Inclusive Sustainable Urban Development

CityNet has now grown to include over 135 municipalities, NGOs, private companies, and research centers; it is the largest association of urban stakeholders committed to sustainable development in the Asia-Pacific region (CityNet, n.d.). CityNet connects actors, facilitates knowledge exchange, and builds commitment to establishing more sustainable and resilient cities. Through capacity-building, city-to-city cooperation and tangible projects, CityNet helps its members respond to climate change effects, disasters, SDG policy imperatives, and rising infrastructure demands. CityNet works with regional and global donors, lenders, and other international organizations. CityNet occupies a rare and privileged position: it can capture the knowledge of leading Asian thinkers and experts from various backgrounds and cities, who have developed institutional expertise and knowledge through years of observation and experience. Its members and partners include cities governments, nonprofits, nongovernmental organizations, and corporations who have created solutions to their specific, city-level problems. CityNet members have demonstrated that every challenge can potentially lead to locally customized solutions, which can then serve as useful case studies for other cities (CityNet, 2002). Recently, with UNESCAP and the Seoul Metropolitan Government, it has formed an Urban SDG Knowledge Platform that features all the best practices among members, the better to foster the exchange of ideas and experience among cities implementing SDG-related policies (Urban SDG Knowledge Platform, 2017).

Just as urbanization works best when it meets the needs of its residents, CityNet works best when it meets specific demands or needs of its members. It uses networking to connect people to people, people to innovative ideas, and cities to funders, thus helping local government officials to facilitate and accelerate funding and implementation of urban solutions. In an era of increasing urbanization, CityNet offers a promising horizontal matchmaker model for sustainable and inclusive municipal development.

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Conclusion

By
Anthea Mulakala

The rapid advance of Asian urbanization has no global precedent and remains largely uncharted. Asian cities spawn growth and innovation, poverty and crime alike. They top and tail indices on security, livability, and safety. Harnessing the potential of Asian urbanization while managing its threats has both challenged and motivated cities and urban planners. The Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA) provide a useful shared framework for planning and action. In applying these roadmaps, effective South-South cooperation (SSC) can help deliver an "Asian century" that will prove both prosperous and livable. Despite Asia's diversity and rapid pace of change, SSC provides a viable mechanism for knowledge-sharing, lessons, and solutions as they unfold.

The experiences of Asia-to-Asia knowledge-sharing highlighted in this volume reveal several useful lessons for sustainable urbanization.

First, planning is essential, and while urban planning experiences remain unique to their contexts, sharing their lessons yields better results than blind navigation. The experiences described in the volume suggest that technically sound plans must also become politically viable in order to succeed. South Korea's long history of urban planning since the 1960s provides valuable lessons for other Asian countries. Kim's deep dive into Korea's successful mitigation of a housing crisis highlights several critical features of sound urban planning: inter-agency coordination and cooperation, supported by a strong institutional and legal framework; strategic leadership from the top; and a vision that situates urban sectors, such as housing, within broader national planning and macro-economic policy. This framework enabled the Korean

president to empower the Ministry of Construction in mobilizing multiple ministries, local governments, experts, and financial institutions, and thus made it possible to construct housing on a massive scale within a short period of time.

As with South Korea, meticulous planning for housing fostered Singapore's remarkable transformation from urban ghetto to one of the world's most livable cities. But political will proved the most pivotal factor in Singapore's success — the vision and drive of Singapore's Prime Minister Lee Kuan Yew. Can the experience of the world's most meticulously planned city deliver similar results for Amaravati, India's fifth and most ambitious attempt to date in ex novo planning for a state capital (Ravishankar, 2016)? Lim's chapter lays out the technical framework for a knowledge-sharing transfer from Singapore to Amaravati. In India, however, the politics of planning take precedence over its technical aspects. True, Amaravati has visionary leadership in Chief Minister Naidu. But India's fierce and vibrant democracy has thrown many politicians under the bus over urban planning disputes. To deliver his vision for Amaravati, Naidu will need to ensure balance and synergy between planning and politics.

While most Asian states can only dream of blank-slate, ground-up planned cities such as Amaravati, they often face a reality at the other end of the spectrum. Spontaneous urbanization, as in the case of Ulaanbaatar's unplanned ger settlements, challenges city and national governments to provide services and infrastructure that can strain their budgets and capabilities. Norovsambuu and Koenig demonstrate that targeted South-South cooperation can offer an effective path for cities facing spontaneous urbanization, enabling them to shift from reactionary to planned responses by adapting successful practices from other cities. For Ulaanbaatar, effective data supplied the critical factor in this shift.

This brings us to the second lesson gleaned from these chapters: the transformational potential of data in urban planning. While "big data" certainly will shape the future of urban planning and smart cities (Ma, 2018), city governments struggling with spontaneous urbanization, such as Ulaanbaatar, can change the game through small, easily-collected data sets. By adapting the community mapping model from Solo,

Indonesia, Ulaanbaatar could determine the population of 87 neighborhoods within the unplanned "ger" settlements, and understand and analyze their infrastructure and service needs. Such consultative tools, which generate data by involving the end-users and key stakeholders, can both improve planning and avert future resistance. The Safetipin case further illustrates the value of citizen data that improves the on-the-ground experience of urbanization. Safetipin's crowdsourced data enables women to navigate cities more safely while providing municipal governments with vital information for urban planning. This example leads to a third lesson of successful urbanization.

Sustainable urbanization requires multi-stakeholder partnerships, vertical and horizontal, within and beyond governments. Several chapters highlight the crucial role played by civil society organizations in designing and enabling innovative urban solutions. As Norovsambuu and Koenig rightly point out, in Ulaanbaatar and Solo, civil society became the essential interlocutor bridging government authorities and residents. Viswanath founded Safetipin, the Indian social enterprise and technology platform, specifically to tackle the urban safety challenges of women in India. As she and Vyas explain, the social enterprise model has proven an effective vehicle for expanding the Safetipin technology platform's reach across the globe. Similarly, the United Nations Development Programme (UNDP) has relied on local think tanks and civil society organizations in China and Bangladesh to understand urban governance, service delivery, and stakeholder interests. Lim underscores the added value of deep, long-term strategic partnerships, as opposed to one-off technical, siloed consultancies that address a single component or problem. Singapore's commitment to Amaravati runs end-to-end, from master plans to minute details. Officials provide peer-to-peer learning over multiple interactions and exchanges. This level of partnership qualitatively distinguishes the Singapore-Amaravati partnership from other project-based technical cooperation. CityNet embodies partnership in its mandate and structure. Ortega and Widorini here outline CityNet's raison d'être, namely that the design, building, and flourishing of sustainable cities depend upon inclusive, practical partnerships involving governments, civil society, and the private sector.

Finally, South-South knowledge-sharing requires facilitation. How

could such an innovative partnership between Ulaanbaatar and Solo have arisen without the Asia Foundation's offices and urban programs in Mongolia and Indonesia? Similarly, UNDP enabled city mayors from across the globe to come together and explore opportunities for SSC. China and Bangladesh mayors saw potential for learning and cooperation around service delivery, and UNDP turned interest into action. CityNet offers a marketplace where urban challenges, experienced professionals, and solutions can meet. The rapid pace and diversity of Asian urbanization makes such a network invaluable going forward. Enabling organizations act as more than brokers of technical solutions; they recognize the deeply political and context-specific nature of urbanization. Solutions will not transfer automatically, and as Khilji and Cruz argue, they require more than adaptation to work in different country contexts. In this era of unprecedented Asian urbanization, skilled, politically-astute organizations — such as the Center for Liveable Cities, CityNet, UNDP, and the Asia Foundation — have proven vital agents in harvesting and distilling workable solutions for Asia's aspiring cities.

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