



THE EMERGING ASIA-PACIFIC URBAN FUTURE

**The Future
of Asian
& Pacific Cities**

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Stories of Asian & Pacific cities today

When heavy rains come in May, residents of neighbourhoods surrounding Wuhan's Garden Expo in China no longer brace themselves for overflowing sewage as they had done in the days when this 46-hectare site formed the Jinkou landfill, Asia's largest garbage dump. After a three-year remediation programme, the trash heap, the methane emissions of which regularly caught on fire, had been transformed so that it opened to host the 10th China International Garden Expo in September 2015. This urban ecological restoration project converted a once toxic part of Wuhan, a city of 11 million people, into an award-winning green oasis that creates public space, improves air quality, provides habitat for native wildlife, adapts to climate change and operates on a sustainable financing model (Xinhuanet, 2018; C40 Cities, 2016).¹ Employing "sponge city" principles, the Garden Expo site can absorb Wuhan's subtropical monsoon rainfall (Jing, 2019). According to the Intergovernmental Panel on Climate Change (IPCC), monsoon rainfalls are expected to become more intense as climate change creates more extreme weather events (Stocker and others, 2013). While the project cost \$690 million, the improvements benefit 400,000 residents in the park's immediate surroundings, and the municipal government collects revenue from such events as wedding rentals that help recoup the city's investment.

Every Monday, a student from a Surabaya, Indonesia, kampong (village) prepares for another week of university studies. She pays for her tuition with income from a home-based business making sarongs that she runs with her family, which received seed funding from the city's Kampong Flagship Programme. The student heads to the nearest bus stop toting plastic bottles that she picked up in the alleys of her kampong, which has been improved with water and sanitation infrastructure under the city's Kampong Improvement Programme. When the bus comes, she deposits the plastic bottles in lieu of a cash fare payment. The bus doubles as a recycling collection point under the city's 3R programme. Instead of installing recycling collection bins and procuring recycling collection vehicles, the programme incentivizes citizens to collect recyclable materials on their own and the public buses double as transport for the material back to a central depot (Urban Redevelopment Authority Singapore, 2018). The Department of Cleanliness and Green Open Space manages the 3R programme with funding from its annual budget for urban waste disposal, but relies on community participation and a private sector market for plastic waste to ensure the financial viability of the programme (Secretariat of Guangzhou International Award for Urban Innovation, 2018a).

¹ The financing model is sustainable as it maximizes ecosystem services and environmental/social/economic co-benefits. The model saved \$125 million compared with conventional restoration methods.



Traffic managers in Aqkol monitor the streets in real time from an operations centre in Kazakhstan's first smart city, leading to reductions in streetlight energy usage and drunk driving (Yergaliyeva, 2019). City planners in Sydney are successfully financing real estate worth A\$13 billion in Australia's largest urban redevelopment project through a value capture scheme that will transform a 278-hectare brownfield site into a mixed-use neighbourhood for 61,000 residents and 21,000 workers by 2030 at a time when the city is facing an acute space crunch (Secretariat of Guangzhou International Award for Urban Innovation, 2018b). The government in Port Moresby balances the municipal budget without having to plead for emergency funds from the Papua New Guinea Government because urban building taxes, business license fees and market stall charges have made the municipal government largely fiscally self-sufficient, enabling the city to invest in public services with the confidence that the necessary funds will be available (Keen and others, 2017).

These contemporary slices of life from cutting-edge innovations in Asia-Pacific cities could be a harbinger of the region's sustainable urban future. Tackling climate resilience and social issues simultaneously with creative financing streams and streamlined municipal governance are examples of the bold public policy interventions the region will need between now and 2030 if it hopes to meet the United Nations Sustainable Development Goals. Fortunately, every subregion in the vast Asia-Pacific region has demonstrated the type of action necessary to deliver on this ambitious agenda. These illustrative stories highlight also how innovative interventions and policies led by local governments and supported by national Governments, the private sector and civil society can combat urban sustainability challenges and change people's lives for the better in Asian and Pacific cities.

However, these encouraging examples contrast with other stories where action to address urban challenges is lagging behind, hampered by national mandates or affected by national and international crises.





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“Day Zero” struck Chennai, India, in June 2019 when the city’s reservoirs ran dry in a crisis created by poor water management (World Resources Institute, 2019).² In October 2018, a combination earthquake and volcanic eruption in quick succession strained Indonesian first responders in Palu to the breaking point and highlighted the need to continue to build local government capacities to respond to such disasters learning the lessons from the 2004 Indian Ocean tsunami (Kapoor, 2018). In Jakarta, hawkers have watched their city sink and the sea level rise in real time as the city struggles to adequately manage the water distribution network’s capacity and supply (Kimmelman, 2017).

Peak hour commuters in Bangkok experience one of the worst traffic congestions of any Asia-Pacific city. Idling vehicles contribute to air pollution, a regional problem, and create a drain on economic productivity and quality of life as Bangkok commuters spend a significant amount of time sitting in congestion (INRIX, 2018). Chinese “ghost cities” built to accommodate an anticipated population may result in long term debt liabilities for the city (Shepard, 2015). Economic and social disparities in urban populations continue to grow, as the absolute number of urban slum dwellers is increasing in parallel with the fast pace of urbanization (ESCAP and UN-Habitat, 2015).

The future of Asian & Pacific cities

These extremes of everyday reality in Asian and Pacific cities highlight the present and portend the future because they are the outcomes of decisions taken and not taken in the past in the face of myriad other decisions and events. The current status of Asian and Pacific cities is one of enormous economic growth and rapid urbanization, putting the region at the forefront of urban innovation challenges. These

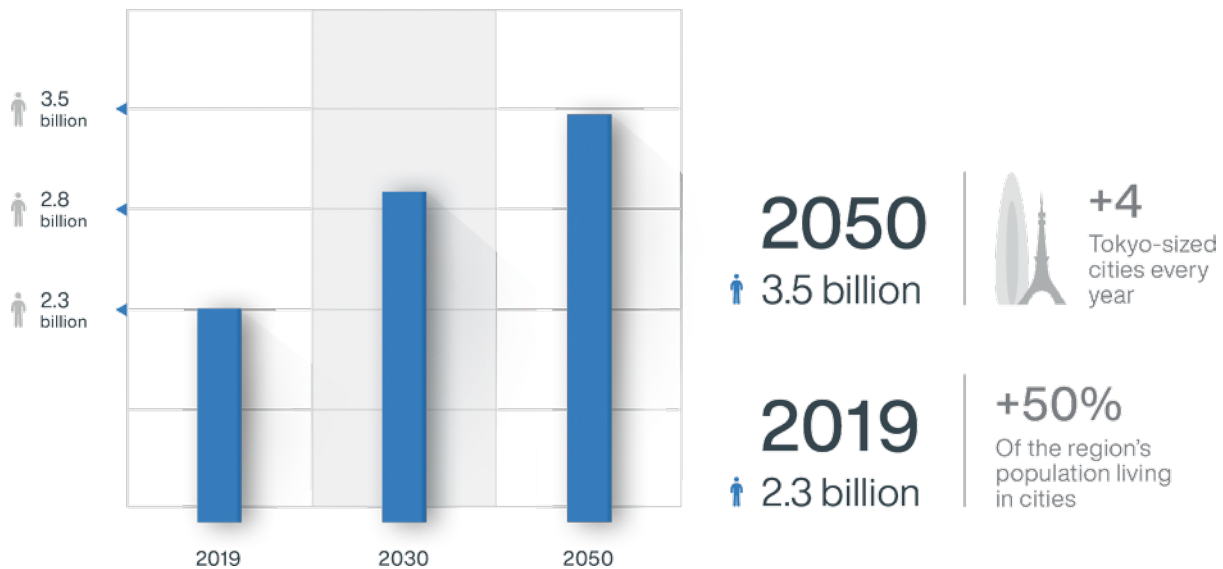
snapshots of life in cities are complemented by some challenging facts and figures regarding the present and the future of urbanization in the region.

United Nations demographers estimate that Asia and the Pacific became majority urban for the first time in history in 2019 with more than 50 per cent of the region’s population living in cities. The

² For details, see www.wri.org/blog/2019/06/how-does-flood-prone-city-run-out-water-inside-chennai-day-zero-crisis.

Figure 1

Projected urban population in Asia and the Pacific, 2019 to 2050



Source: United Nations, 2019.

region's urban population exceeded 2.3 billion, comprising 54 per cent of all urbanites on the planet. The region's number of urban dwellers is expected to rise to more than 2.8 billion in 2030 and reach nearly 3.5 billion in 2050 (see figure 1). Those numbers equate to adding four Tokyo-sized cities every year (United Nations, 2019).

While the number of urban dwellers is increasing, the urbanization rate is projected to plateau in the future. Japan is already experiencing a decline in its urban population; by the 2040s, the urban population of the Republic of Korea is expected to do the same. China's rate of urbanization will flatline by 2050 as well, leading to a first-ever decrease in East Asia's urban population. However, Central, South-West and South-East Asia are expected to become more urban over the next three decades, albeit at slower rates than in recent decades (United Nations, 2019).

The region's cities are dense by global standards, with an average of 10,000 to 20,000 people per square km. Such densities are about double those in Latin America, triple the rates in Europe, and reach some 10 times higher than those in

North American cities (ESCAP and UN-Habitat, 2010). The Asia-Pacific region is home to the largest concentration of people experiencing urban poverty, with one third of urban dwellers living in slums or slum-like conditions (ESCAP and UN-Habitat, 2015). Improving access to inclusive, high-quality services in the region's existing dense cities and ensuring that planned urban extensions meet similar standards are essential steps for cities to accommodate growth without consuming excessive amounts of undeveloped land. In short, well-planned cities should aim to grow upward rather than outward (UN-Habitat, 2017b).

Across the Asia-Pacific region, this trend plays out differently according to the latest research by the World Resources Institute, which in 2019 analysed cities in the Global South³ by comparing their upward and outward expansion as related to current and future city prosperity. Central Asian cities are not growing very much upward or outward. South Asian cities are largely growing outward more than upward. South-East Asian cities exhibit a similar trend but at a lesser rate. East Asian cities, most notably in China, are

³ The Global South is made up of Africa, Latin America, the Middle East and the developing countries of the Asia-Pacific region, and is home to the so-called BRIC countries: Brazil, the Russian Federation, India and China, which, along with Indonesia, are the largest Southern States.

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growing both upward and outward. The end result for the region is a mixture of what is referred to as "emerging cities", which have low income today but expected high-income growth relative to population growth in the period 2015-2030, and "thriving cities", which have both high income today and expected high incomes into the future, until 2030. Australian cities buck this trend and are considered "stabilizing cities" with high income today that will become low-income growth relative to population growth in the future. However, the region has very few "struggling cities" with low income today and similarly low income projected into the future (Mahendra and Seto, 2019). Finally, Pacific island cities consist of those characterized by a mix of densities and sprawl in Melanesian and Polynesian urban villages, while many countries in Micronesia are considered to be 100 per cent urbanized.

The addition of 1.2 billion new residents in Asia-Pacific cities between now and 2050 will have profound implications for the region's economy, society and environment. These residents will need jobs offering decent work in order to avert social unrest. They will need affordable housing with transport links to avoid the proliferation of slum-like conditions and urban sprawl that consumes agricultural and natural land. They will need the necessary water and sanitation infrastructure to prevent environmental degradation and public health risks. They will need to harness the potential of disruptive, digital innovations to drive positive social change. While the pace of urbanization will be slower than in decades past, the estimates still indicate fairly rapid urbanization in Central Asia, South

and South-West Asia, South-East Asia and the Pacific, a trend that can risk overwhelming cities' capacities to adequately plan for growth (United Nations, 2019). In a few cases, the opposite problem will require attention: dwindling urban populations risk creating shrinking cities with decaying or abandoned infrastructure. Similarly, a contracting tax base would undermine social stability and exacerbate community vulnerabilities.

The region's urban economies have developed through largely environmentally exploitative models. Rapid, inefficient and unplanned urbanization along with unsustainable consumption patterns and changes in lifestyle over recent decades together have predominantly resulted in environmental degradation, loss of biodiversity, increased pressure on natural resources, generation of waste, exposure to pollution and disasters, and vulnerability to climate change, all of which require urgent integrated responses and political action. Significant amounts of marine pollution are the result of land-based activities, such as pollutants from waste, sewage and wastewater. While the vast share of this pollution still consists of organic matter, over time waste streams are becoming more complex and non-biodegradable and containing ever more toxic components, including e-waste (ESCAP, 2018c).

A sustainable future for cities in the region is needed more than ever. City stakeholders, including elected leaders and private sector players, can be inspired by and rely for strategic visioning of such a future on the five



global agendas adopted by the international community between 2015 and 2016 (see box 1). National and local governments and other stakeholders have been working the last five years on translating the aspirational character of these agendas into operational actions. There are several areas that need to be addressed in such an operationalization process; it is difficult to predict the outcome of processes that are by their nature as complex and stochastic as that of sustainable urbanization. However, instead of attempting to predict the future, more value can be found in defining a science and expertise-based framework that can make this future a sustainable one.

Such a framework starts with the obvious assumption that the future of cities in the region will be determined by decisions on how to manage the demographic, environmental and economic conditions, such as the ones described above. Adaptive responses to tackle problems created by, and proactive measures to benefit from, external and internal drivers of change will define the character of such a future. These responses and measures will constitute specific pathways on which the cities in the Asia-Pacific region will embark towards their future.

To ensure that these pathways will be sustainable, an initial focus should be on defining a small set of systemic issues that seem currently to bar cities in Asia and the Pacific from becoming sustainable. After extensive consultation between experts, the team that developed this report has selected the following four issues as the most critical ones: *natural resource management*; *climate change*; *disaster risks*; and *inequalities*. These issues are integrated throughout the report's substantive chapters. While these major trends are not an exhaustive list of development challenges, by successfully tackling these four major issues, Asia-Pacific cities will have overcome some of their greatest challenges for achieving sustainable development by 2030. In other words, these issues constitute "common problems" facing all cities in Asia and the Pacific.

Consciously, the same team has opted not to use these challenges as the framing for the report's substantive chapters but to use instead a solutions-based approach, according to the framework described in the next section.

. BOX 1

Towards 2030 and beyond: United Nations global agendas and cities

The world is now five years into an important suite of global agreements that underpin the global path to sustainable development for the next several decades. Importantly, for the first time, cities are seen as engines of sustainable development rather than obstacles in the fight against poverty, hunger and climate change.

In chronological order, the first of these global agreements is the *Sendai Framework for Disaster Risk Reduction 2015-2030*, adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, in March 2015. The agreement acknowledges that responsibility to reduce disaster risk should be shared with other stakeholders, including local governments and the private sector. Specifically, the framework highlights the role of land use and urban planning, building codes and environmental and resource management regulations, and acknowledges the role of United Cities and Local Governments and other relevant local government bodies as necessary to support implementation of the framework (United Nations Office for Disaster Risk Reduction, 2015).

The second agreement is the *Addis Ababa Action Agenda*,^a adopted in July 2015. The Agenda underscores the necessity for new financial architecture that can support the global sustainability agendas. It explicitly recognizes and supports the role of local governments and calls for domestic public resources, domestic private finance, international private finance, international development cooperation and sustainable debt to help meet the estimated \$1-1.5 trillion annually need to fill the infrastructure gap in developing countries.^b

The third global agreement is the *2030 Agenda for Sustainable Development*,^c also known as the *Sustainable Development Goals*, which were adopted by the United Nations General Assembly in September 2015. Unlike the Millennium Development Goals, the Sustainable Development Goals apply to all countries, both developed and developing, and set bold, aspirational goals, such as eliminating poverty, ending hunger and ensuring universal primary and secondary education. While the Millennium Development Goals had only one target with an urban focus – to achieve substantial improvement in the lives of a minimum of 100 million slum dwellers by 2020 – the Sustainable Development Goals dedicate an entire goal to cities in Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 11 recognizes for the first time that urbanization is a transformative force for development and cities should be enabled to take the lead in addressing many global challenges. Most of the 234 statistical indicators to measure global progress towards the Sustainable Development Goals have an urban dimension and about one third of the Goals' indicators are measured at the local rather than national level (UN-Habitat, 2018). In short, any country serious about meeting its obligations to achieve the Sustainable Development Goals will find the path to sustainable development runs through its cities (UCLG, 2018).

The fourth major convention is the *Paris Agreement on climate change*,^d which was adopted in December 2015. In Paris, countries pledged to voluntarily reduce their greenhouse gas emissions in order to keep the mean global temperature rise below 2°C and ideally below 1.5°C from pre-industrial levels (United Nations Framework Convention on Climate Change, 2016). Since the agreement was negotiated, 194 States and the European Union have signed on. However, the United States of America has since declared its intent to leave the agreement and the Russian Federation has not yet ratified it. While the reluctance of these major emitters to join the global community has raised concern about the long-term viability of the Paris Agreement, various United States cities and local governments have communicated their intention to adhere to the



terms of the agreement in the hope of keeping the country's emissions in line with the nationally determined contribution that Washington agreed in 2015 (America's Pledge, 2017). Some cities, meanwhile, have seized on the Paris Agreement as a platform to argue for the importance of local level action to combat climate change. Scientists have estimated that cities emit at least 70 per cent of the world's carbon emissions, and likely more when accounting for goods and services produced elsewhere but destined for urban consumers (C40 Cities, 2018b). In 2018, the C40 Cities, a network of cities pushing climate action, announced that 27 major global cities had peaked their greenhouse gas emissions and begun showing decreases over the last five years in their total carbon footprint (C40 Cities, 2018a).

The fifth agreement is the *New Urban Agenda*,^e adopted in Quito, in October 2016. The New Urban Agenda sets out a 20-year vision to achieve sustainable cities that are well planned, regulated and financed. The New Urban Agenda supports the previous three agreements by offering a road map for implementing Sustainable Development Goal 11 and enhancing the role of cities in creating sustainable development, fighting climate change and reducing disaster risk. It calls for compact cities, polycentric growth, transit-oriented development, adequate public space and reining in sprawl. The New Urban Agenda was adopted as a collective vision and political commitment to promote and realize sustainable urban development, and as a historic opportunity to leverage the key role of cities and human settlements as drivers of sustainable development in an increasingly urbanized world.

^a General Assembly resolution 68/204.

^b General Assembly resolution 69/313.

^c General Assembly resolution 70/1.

^d Framework Convention on Climate Change Conference of the Parties decision 1/CP.21.

^e General Assembly resolution 71/256.

"The world must accelerate action on climate change and sustainable development, and cities should be the drivers of that action."

Objective & approaches

The main objective of this report is to provide a set of actionable “common solutions to common problems” as a guide to what the region’s sustainable urban future could look like in line with the United Nations global agendas: 2030 Agenda for Sustainable Development; Paris Agreement on climate change; New Urban Agenda; Addis Ababa Action Agenda; and Sendai Framework for Disaster Risk Reduction. The report outlines how city leaders in municipalities and metropolitan areas of all sizes can achieve those outcomes by working with partners at a global scale, such as international non-governmental organizations; at the national level with provincial governments; and at the local scale with local authorities and civil society. Such partnerships will enable cities to make the right key investments, actions and decisions in urban and territorial planning, urban resilience, data and technologies for smart sustainable cities and urban finance.

A business-as-usual approach will not enable the transformation required to meet the global agendas described above. Cities must therefore effectively implement solutions addressing the vital thematic areas covered in this report with the tools and resources to develop compelling future identities and visions. Above all, cities must make the right policy choices and *act now* to establish themselves on positive trajectories towards sustainable urbanization patterns. This responsibility is shared by all urban stakeholders

and the people who have a right to shape the urban future. The world must accelerate action on climate change and sustainable development, and cities should be the drivers of that action.

There are several key determinants for cities to drive that action and to meet the vision of the New Urban Agenda and successfully localize the Sustainable Development Goals in the Asia-Pacific region. These include but are not limited to: more sustainable integrated urban and territorial planning; stronger multilevel governance and capacities for resilience; adaptable technological innovations with systematic data collection and analysis; and adequate and predictable long-term financing. These four key determinants have been selected as the report’s chapters in order to identify a set of “common solutions to common problems” and provide city leaders with relevant future development pathways. In order to enable Asian and Pacific cities to become leaders and innovators in the effort to align cities on the trajectory towards sustainable development, this report offers four interlocking themes arranged as follows:

The future of urban & territorial planning

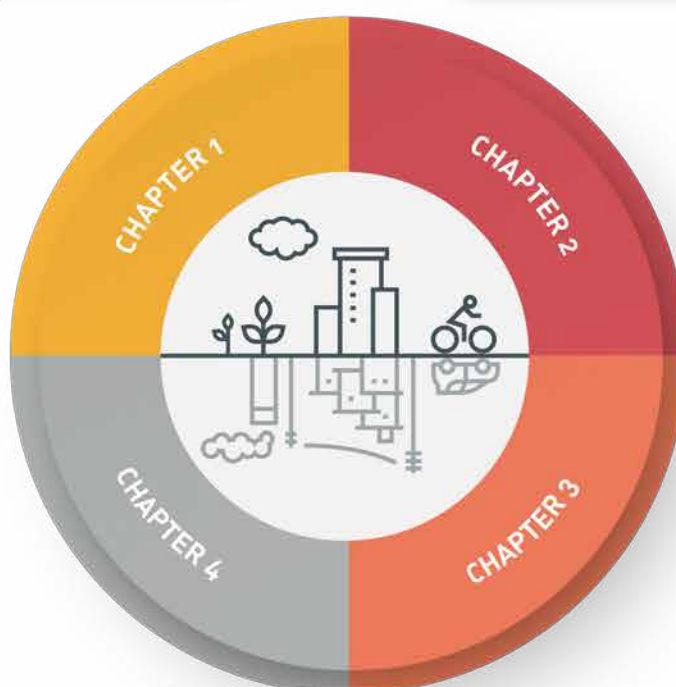


Any future vision begins with a plan. This chapter looks at how innovations in spatial planning can address social, cultural, environmental and economic challenges in cities comprehensively through regulatory and national spatial frameworks and applying new technologies.

The future of urban resilience



Addressing environmental, social and economic shocks and stresses today will safeguard city futures for all. This chapter pinpoints which resilience efforts must be scaled up for cities to grow sustainably within planetary boundaries while embracing technological, social and global change in a way that supports local resilience solutions.



The future of urban finance



The road forward to finance the future Asia-Pacific sustainable city is challenging but not impossible. This chapter provides policymakers with a practical basic agenda to leverage capital from public and private actors, which would promote scale and sustainability to meet their future infrastructure needs.

The future of smart & inclusive cities



Technological shifts ushered in by the "Fourth Industrial Revolution" are transforming and will continue to transform the way people in cities connect with one another, conduct business, provide services and live their lives. This chapter unpacks smart technological advancements and the institutional systems required to support inclusive smart city development, highlighting both opportunities and pitfalls for cities to make informed decisions effectively.

"Planning lays a foundation, resilience guards against future risk, smart cities deploy the best technology for the job and financing tools help pay for cities to achieve the 2030 Agenda for Sustainable Development."

With just three to five future policy pathways per chapter, the report offers a manageable road map to tackle these urgent challenges now and chart the right course for 2030.

None of these four issues, however, can be considered in isolation, but rather must be treated as interconnected topics. The concluding chapter on *development pathways for a sustainable urban future* unites the four main themes and reinforces the messages that planning lays a foundation, resilience guards against future risk, smart cities deploy the best technology for the job and financing tools help pay for cities to achieve the 2030 Agenda for Sustainable Development.

Unlike a report that solely addresses the state of today's cities in an effort to capture the status quo, this third edition of the report on Asia-Pacific cities acknowledges the past but places a strong emphasis on future conditions and solutions. That ambition to forecast future trends and offer solutions to head off future challenges is incorporated into the present report. Each thematic area presents a vision and follows it by exploring the implications of different transformative development pathways regarding the achievement of that vision for inclusive sustainable development in cities towards the horizon of 2030. The chapters are focused on assessing current challenges and presenting future solutions. These drivers of urbanization dynamics can in turn be met with the means to implement policies and programmes that will create results.

The report goes one level beyond identifying pathways for each individual key area. The most effective municipal policies and programmes are mutually reinforcing across these four areas and others, depending on the context. Cities need to be aware of the unintended consequences of their actions and therefore should pursue integrated, synergistic approaches. For example:

- Spatial planning integrating sustainability succeeds in reducing the vulnerability of people living in areas highly susceptible to extreme weather events, thereby increasing their resilience to climate-induced disasters
- Innovative proxy indicators for Sustainable Development Goal targets in the city can fill a key gap for smart governance to take place, notably for planning of housing and services for the urban poor living in informal settlements
- Access to adequate and predictable finance allows for the implementation of long-term planning and infrastructure decisions that can result in systemic reduction of vulnerability to environmental, social and economic shocks and stresses

These interlinkages underscore the importance of not just getting one theme right, but all four. Cities are complex systems that function best when overlapping priorities are addressed in an integrated manner. Attempting to solve housing, transport, solid waste or any other fundamental urban issue in isolation is a recipe for failure. As the World Economic Forum argued, "The future



of Asia-Pacific cities is one where city leaders take an integrated approach in urban and territorial planning and are increasingly agile and flexible in their urban management to respond to unforeseen future needs” (World Economic Forum: Global Future Council on Cities and Urbanization, 2018).

In Asia-Pacific, the sustainability of cities will determine the future development pathways for the region and the prospects for shared prosperity for all. Social, environmental and economic changes are not abstract national issues; they are played out locally in urban areas throughout the Asia-Pacific region. Urban challenges do not occur within a vacuum, meaning more strategic approaches to implementation are needed to overcome potential disconnections between short-term planning horizons and long-term outcomes of decisions across the environmental, social and economic spheres of sustainable development. Even so, it is still important to

recognize the importance of solutions which embody country-specific scenarios and meet the specific challenges which need addressing in that country. Cities need to make decisions now about how they want to develop and what means of implementation they intend to pursue towards their future objectives – how they plan, build resilience, finance and deploy smart technologies for the benefit of all.

If those tasks are done right, cities will have a transformative potential that can be harnessed and enhanced to forge inclusive, prosperous and resilient places. As home to the majority of the world’s urban population, Asian and Pacific cities can serve as the drivers of sustainable development for the implementation of the 2030 Agenda. How can they be such protagonists for global sustainability? Any future vision must begin with a plan.