World Cities Report 2020

The Value of Sustainable Urbanization

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FOR A BETTER URBAN FUTURE

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Secretary General's Foreword

António Guterres
Secretary-General of the United Nations

The COVID-19 pandemic has disrupted lives and economies around the world. The social and economic fallout is reversing development gains, and global poverty is expected to increase for the first time in three decades.

Cities have borne the brunt of the pandemic. Urban areas are already home to 55 per cent of the world's population, and that figure is expected to grow to 68 per cent by 2050. Our rapidly urbanizing world must respond effectively to this pandemic and prepare for future infectious disease outbreaks.

The most vulnerable to disease are those living on the margins of our cities. Unplanned urban living leaves people vulnerable. The COVID-19 pandemic has exposed deep inequalities and demonstrated that tackling the virus is more challenging in urban areas, where access to quality healthcare is uneven, housing inadequate, water and sanitation lacking, transport infrastructure patchy and jobs precarious.

We cannot go back to business as usual. Cities and communities are demanding that those in authority take the opportunity to build back better. To emerge stronger, we need a sustainable, inclusive and green recovery for people and the planet. That means dealing with the existing challenges of how cities are planned, managed and financed, and ensuring their development is compatible with the goal of net zero emissions by 2050.

With appropriate policies and supportive frameworks, resilient cities with improved housing and infrastructure can bounce back from the devastating impacts of disasters, including pandemics. The Sustainable Development Goals and the New Urban Agenda provide the blueprint to implement these measures.

The *World Cities Report 2020* reaffirms that sustainable urbanization remains central to overall sustainable development by creating economic, social and environmental value that supports the fight against poverty, inequality, climate change and other global challenges. This simple but powerful message should guide development efforts as the world recovers from the COVID-19 pandemic and throughout the Decade of Action to achieve the Sustainable Development Goals.

Executive Director's Introduction

MAIMUNAH MOHD SHARIF
Under-Secretary-General and
Executive Director of UN-Habitat

In a span of a few months, our world has been transformed in a manner that none of us anticipated. The novel coronavirus pandemic triggered the worst public health crisis in a century and we are now living through the worst economic recession since the Great Depression. With over 90 per cent of confirmed cases coming from urban areas, cities remain the epicentres of COVID-19. In our rapidly urbanizing and globalized world, the virus has spread to virtually every corner of the globe; first, among globally connected cities, and now, through community transmission, from the city to the countryside.

COVID-19 has exposed and exacerbated underlying inequalities in cities. The poor are the most vulnerable and the most likely to die from the disease. Informal workers dependent on daily wages have been deprived of their livelihoods. Children without internet access have lost a year of formal education. Elderly persons, facing risk and stigmatization, are confined to their homes with no opportunities for social interaction. Migrant workers return home after grueling journeys to face a future of poverty. Others are confined to dormitories with high exposure to the disease. Minority groups have also been disproportionately affected. Women were forced to juggle childcare, education and work without access to schools and daycare services. Essential workers continue to toil tirelessly and at great personal risk to ensure that our urban services function uninterrupted. Above all, COVID-19 is reversing the gains made in poverty eradication and is pushing back the possibility of attaining the Sustainable Development Goals by at least a decade if not more.

In the midst of all this gloom, urban areas offer a glimmer of hope as cities and frontline agencies have a key role to play in turning this grim situation around. The World Cities Report 2020 makes the case that cities remain central to

Urbanization should not be at the expense of rural development. In fact, both should be symbiotic and mutually enhancing

the sustainable development trajectory. The Sustainable Development Goals, and particularly Goal 11, recognize the transformative role that cities can play. COVID-19 brings to the forefront how effective and essentially local governments and communities are to the recovery process. The New Urban Agenda makes the case for the value of sustainable urbanization, or how people choosing to make their lives in cities can contribute to economic prosperity, environmental quality, social equity and strengthened civic and cultural institutions. Urbanization is essential to the global efforts to build back better and to transition to sustainable development.

COVID-19 will not reverse urbanization. The primal drive to congregate in cities and towns in pursuit of aspirations and a better life will continue. But we have a chance to make this agglomeration process more inclusive, with a clear focus on our collective wellbeing. To harness the transformative powers of urbanization towards sustainable development, we need effective planning, management and governance. We also need to build back greener. Growth cannot be at the expense of the environment.

The World Cities Report 2020 convincingly affirms that well-planned, managed, and financed cities and towns create economic, social, environmental and other unquantifiable value that can vastly improve the quality of life of all. Urbanization can be leveraged for the fight against poverty, inequality, unemployment, climate change and other pressing global challenges. In this regard, sustainable urbanization can play a key role in the Decade of Action to accelerate growth and shared prosperity to advance the achievement of the SDGs by 2030.

Global agendas provide comprehensive, multi-sectoral and multi-stakeholder frameworks for unlocking the value inherent to urbanization. But we need to do things right by ensuring that cities are well-planned, well-managed and with sustained financing. For this to happen, national governments must create an enabling environment for cities to thrive, and local authorities must seize the opportunities given to them to flourish and develop. Urbanization should not be at the expense of rural development. In fact, both should be symbiotic and mutually enhancing. The private sector should invest in sustainable development projects, deploying innovative ideas for affordable housing, infrastructure and clean technologies. Civil society must strengthen institutions and contribute with their powers of imagination to be part of this transformative process with a renewed sense of openness, participation and commitment. When all the interlocking parts operate in harmony and are supported by appropriate institutions and policies, cities will thrive and their value will be enhanced and shared by all; and in the process, no one and no place will be left behind.

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Acronyms and Abbreviations

AAAA	Addis Ababa Action Agenda
AFINUA	Action Framework for Implementation of the New Urban Agenda
BRT	Bus Rapid Transit
C40	C40 Cities Climate Leadership Group
CAF	Development Bank for Latin America
Can$	Canadian dollar
CCI	Centre for Community Initiatives, Tanzania
CIS	Commonwealth of Independent States
COP21	2015 United Nations Climate Change Conference
COP25	2019 United Nations Climate Change Conference
COVID-19	Coronavirus Disease
CPI	City Prosperity Index
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
EDGE	Excellence in Design for Greater Efficiencies
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FMDV	Global Fund for Cities Development
GCF	Green Climate Fund
GDP	Gross Domestic Product
GNI	Gross National Income
GPS	Global Positioning System
GTF	Global Taskforce of Local and Regional Governments
Habitat III	United Nations Conference on Housing and Sustainable Urban Development
HLPF	United Nations High-level Political Forum on Sustainable Development
ICLEI	Local Governments for Sustainability
IDPs	Internally Displaced Persons
ILO	International Labour Organization
IoT	Internet of Things
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
LDCs	Least Developed Countries
LGFAs	Local Government Funding Agencies
NBS	Nature-Based Solutions
NDCs	Nationally Determined Contributions
NEN	National Ecological Network
NUA	New Urban Agenda

NUPs	National Urban Policies
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PFMs	Pool Financing Mechanism
PPPs	Public Private Partnership
PSUP	Participatory Slum Upgrading Programme
R&D	Research and Development
SDGs	Sustainable Development Goals
SDSN	United Nations Sustainable Development Solutions Network
SIDA	Swedish International Development Cooperation Agency
SMEs	Small and Medium Sized Enterprises
SPV	Special Purpose Vehicle
TfL	Transport for London
TRC	Truth and Reconciliation Commission (TRC), Canada
UCLG	United Cities and Local Government
UK	United Kingdom
UNCDF	United Nations Capital Development Fund
UNDESA	United Nations Department of Economic and Social Affairs
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
US	United States
US$	United States dollar
VLRs	Voluntary Local Reviews
VNRs	Voluntary NationalReviews
WCR	World Cities Report
WHO	World Health Organization
WRI	World Resources Institute

Key Findings and Messages

Chapter 1
Urbanization and Cities: Trends of a New Global Force

The year 2020 marks a turning point in the global battle for sustainable development, with cities once again at the centre as home to a growing majority of the world's population. On the one hand, the world is entering the Decade of Action, the ten-year period during which national and local governments, the private sector and civil society must accelerate their efforts to deliver on the promise of the Sustainable Development Goals (SDGs) for accelerating sustainable solutions to the world's biggest challenges—ranging from poverty and gender-based discrimination to climate change, inequality and closing the finance gap. By 2030, countless local actions, the vast majority taken in cities or by city leaders, must collectively add up to a global shift toward a more sustainable future that reduces poverty, improves health outcomes, expands access to education and reduces carbon emissions, among other societal challenges.

On the other hand, all of humanity is concurrently facing the coronavirus pandemic, the worst public health crisis in a century that has triggered the worst economic prospects since the Great Depression. In our globalized world, a highly contagious virus has spread to nearly every corner of the globe, first among globally connected cities and then to even remote rural areas. The impact shuttered economies as nations scrambled to put their populations on lockdown. The rapid pace of international travel ground to a halt. White-collar workers shifted operations to working from home, leaving behind empty offices in central business districts from New York City to London to Sydney. So-called essential workers from nurses to bus drivers to grocery clerks suddenly found themselves on the frontlines

of a new, poorly understood disease. Facing lockdown and rising unemployment, millions of people in countries like India and Peru migrated from cities back to rural areas, villages and smaller towns, some perhaps permanently.

In the wake of these unexpected disruptions, the United Nations estimates that 71 million people will be pushed back into extreme poverty this year, the first rise in global poverty since 1998. Some 1.6 billion informal workers, half the global workforce, have seen their wages affected. School closures have prevented 1.57 billion children, 90 per cent of the global student population, from attending in-person school at some point this year.

Amidst this unprecedented backdrop, the World Cities Report 2020 makes the case that cities remain central to the sustainable development story. Their role was solidified in the last five years by the suite of United Nations agreements that collectively form the global development agenda. Chief among them, the New Urban Agenda makes the case for the value of sustainable urbanization, or how people choosing to make their lives in cities can contribute to economic prosperity, environmental quality, social equity and strengthened civic and cultural institutions. Sustainable urbanization will be essential to the global effort to build back better from the impacts of the COVID-19 pandemic and get the world back on track to achieve the SDGs and meet the ambitious targets of the Paris Agreement on climate change.

Key Findings

The importance of cities is enshrined in global development policy: Since 2015, the international community has adopted several key agreements to guide development. The 2030 Agenda for Sustainable Development, Paris Agreement,

New Urban Agenda, Sendai Framework for Disaster Risk Reduction and Addis Ababa Action Agenda collectively form the backbone of international development policy, recommendations, goals, targets and indicators for Member States. In each of these documents, local governments are recognized as important partners in the drive to a more sustainable future. The role of cities is woven throughout this tapestry of agreements, most prominently in SDG 11 and the urban dimension of the SDGs.

The New Urban Agenda is linked to the 2030 Agenda for Sustainable Development: Acknowledging that the SDGs are an overarching set of goals that require a more detailed roadmap, the New Urban Agenda provides a spatial framework for how to achieve a number of the goals and targets. The New Urban Agenda's expands on the relatively limited means of implementation for SDG 11 by delving into the processes that produce better urban outcomes, like national urban policies, legislation, spatial planning and local finance frameworks.

The world continues to urbanize: It is too soon to know if the pandemic experience of 2020 will lead to lasting demographic changes, but the long-term prospects continue to predict that the world will further urbanize over the next decade, from 56.2 per cent today to 60.4 per cent by 2030. Every region is expected to become more urbanized in the next 10 years, although highly urbanized areas are expected to slow their rate of urban growth. Ninety-six per cent of urban growth will occur in the less developed regions of East Asia, South Asia and Africa with three countries—India, China and Nigeria—accounting for 35 per cent of the total increase in global urban population from 2018 to 2050.

Cities are consuming land faster than they grow in population: Urban sprawl is an increasingly common phenomenon. Once associated with the land-rich developed countries of North America and Australia, it is now occurring in cities all over the world. Whether horizontal spreading, dispersed urbanization or peri-urbanization, the physical extent of urban areas is growing much faster than their population, thereby consuming more land for urban development. The unbridled expansion of urban areas has profound implications for energy consumption, greenhouse gas emissions, climate change and environmental degradation. Findings from a global sample of cities show that between 1990 and 2015, cities in developed countries increased their

Bonifacio Global City skyline and surrounding cityscape, Metro Manila, Philippines. © Michael D Edwards/Shutterstock

urban land area by 1.8-fold while the urban population increased by 1.2-fold; thus, implying that the expansion of urban areas in relation to urban population growth increased by a ratio of 1.5.

Migration is a driving force in urbanization: One in every seven people on the planet is a migrant. Currently, there are 763 million internal migrants and 272 million international migrants in the world. This demographic force has been a major contributor to urbanization, whether rural-to-urban movement within countries or the clustering of international migrants in global cities. International migration accounts for about one-third of urban growth in developed countries and is increasingly transforming urban areas into heterogenous, multi-ethnic, multicultural and multilingual spaces. In migration hubs like Brussels, Dubai and Miami, foreign migrants outnumber the local population. But cities are also on the frontlines of irregular migration, from Middle Eastern and African refugees in boats crossing the Mediterranean to Central American migrants crossing the U.S.-Mexico border to Rohingya living in refugee camps in Bangladesh.

Inequality remains a persistent trend in urban areas: Growing levels of inequality and exclusion are becoming persistent trends in urban areas. For more than two-thirds of the world's urban population, income inequality has increased since 1980. This widening gap means that about 2.9 billion people are living in cities where income inequalities are currently more pronounced than they were a generation ago. In a rapidly urbanizing world, the nature of inequality will largely depend on what happens in cities. Today, many US, UK, Latin American, Caribbean and African cities have levels of inequality higher than their respective countries. Inequality can fuel social unrest, as witnessed in Chile in 2019.

Affordable housing remains elusive: Housing affordability is not confined to a handful of expensive cities; it is a global challenge that affects virtually all households. Globally, prospective homeowners are compelled to save more than five times their annual income to afford the price of a standard house. Renter households often spend more than 25 per cent of their monthly income on rent. High levels of unaffordability mean that inadequate housing and slums remain the only housing choice for low-income households.

Currently, 1.6 billion people or 20 per cent of the world's population live in inadequate housing, of which one billion reside in slums and informal settlements. In developed countries, unsheltered or homeless populations are a small but significant feature of the urban landscape.

Urban areas bore the initial brunt of the COVID-19 pandemic: Even as coronavirus has now hit rural areas, the pandemic was initially an urban phenomenon as epicentres flared in Wuhan, Milan, Madrid, New York City, Guayaquil and Manaus among other cities. As the world slips into a severe recession, urban areas, which account for more than 80 per cent of global GDP, will be affected in several ways. First, the shrinking of the global economy implies that less funds will be available for urban development projects like water, sanitation, public transport systems, adequate and affordable housing, slum upgrading, poverty eradication and healthcare improvements to respond to both this and future pandemics. It is expected that revenue to local authorities will decline by 15–25 per cent in 2021 and will likely lead to reduced municipal service delivery. The envisaged decline in revenue is likely to hit developing world cities the hardest even as these are the places where critical infrastructure and health systems are already grossly inadequate.

Key Messages

Implementing the New Urban Agenda should be a global priority: Amidst unprecedented challenges, the New Urban Agenda as a means of implementing SDG 11 and the urban dimension of the other SDGs offers a roadmap to equitable growth and prosperity. Four years since the New Urban Agenda was adopted in Quito, UN-Habitat has prepared tools and methods to guide national governments, local governments, the private sector and civil society on how to create the framework for well-planned, managed, governed, regulated and financed cities.

Well-planned cities and urban extensions can curb excessive land consumption: Flexible zoning regimes that are in consonance with the prevailing socioeconomic milieu as well as building permits and master plans are among the regulatory tools that cities can adopt to address sprawl. Cities can and must grow their built environment footprint to accommodate growing populations, but they do not have to grow their footprint disproportionately.

Cities can respond to the enduring threat of climate change with local action: Urbanization offers many opportunities to deploy mitigation and adaptation strategies to limit the average global temperature increase to 1.5°C. Cities generate 70 per cent of global carbon emissions and consume two-thirds of the world's energy. To respond proactively, cities have undertaken emissions inventories and adopted reduction targets. Urban areas that have adopted compact and mixed land uses are able to reduce per capita rates of resource use and greenhouse gas emissions. When nature-based solutions are incorporated into design and management, urban areas can benefit from multiple ecosystem services including carbon sequestration, local climate regulation, stormwater capture and water and air purification.

Host cities should integrate migrants to spur diversity, prosperity and entrepreneurship: Migrants should not be seen as a burden to cities but rather, as an opportunity to be harnessed. Both educated foreign migrants with high intellectual capital and less educated migrants, whether internal or foreign, can bring an entrepreneurial spirit, cultural vibrancy and spur new opportunities if given the chance to thrive. A growing urban population does not mean that native-born workers will be squeezed out of the employment market. There is not some maximum number of available jobs for which workers compete. Rather, migrants bring a diverse set of skills, tools, perspectives, connections and capital that will ultimately "grow the pie" and create more opportunities for all.

Tackling urban inequality and unaffordable housing remain urgent priorities: Cities will not be able to offer opportunity and create value if workers do not earn liveable wages that permit them access to adequate housing and other services. Policy tools like minimum wages and formalization of informal employment can help boost incomes, although some of the most powerful tools, such as conditional cash transfer programmes, are within the purview of national government. Inadequate affordable housing can be addressed by changing regulatory frameworks to address the cost of land, building materials and housing finance that prevent urban dwellers from owning their homes or paying affordable rents with strong tenant protections. Pathways to this goal include increasing supply where there is a housing deficit, subsidizing access to formal housing where there is adequate supply and regulating housing markets to prevent improper speculative activity.

The COVID-19 pandemic does not signify the end of cities: Despite early fears that urban density correlates with the spread of the disease, the relatively successful ability of very dense places like Seoul, Singapore, Tokyo and even New York City, an early epicentre, to manage the virus is encouraging, even as it ravages rural and smaller communities. As epidemiologists have come to better understand COVID-19, a consensus has emerged that overcrowding, not density, is the chief culprit. In urban areas, addressing overcrowding and maintaining acceptable levels of hygiene in houses, shops, places of employment and on public transport are crucial to surviving the pandemic. These public health guidelines are a challenge in informal settlements, which are more prone to overcrowding and inadequate sanitation. In these cases, local governments must work to provide sanitation infrastructure in public spaces in order to mitigate the health risk. Health should become a new guiding principle in urban planning and governance. In turn, the pandemic has spurred innovations in cities like closing streets to cars and opening them to people to allow more room to walk, cycle and dine.

Chapter 2
Unpacking the Value of Sustainable Urbanization

When well-planned and managed, cities create value, which is the totality of the economic, social, environmental and intangible conditions (institutional, governance, political, cultural and civic perception) outcomes that have the potential to improve quality of life of residents in meaningful and tangible ways. As is increasingly understood by policymakers at all levels of government, planned urbanization leads to positive development outcomes and can be leveraged for improved quality of life and overall prosperity. Cities are not simply incidental geographies where people congregate, but rather are the loci of economic and cultural production and spaces of environmental and social development.

Urban areas are places of opportunity where aspirations are realized. This sense of possibility motivates people to

migrate from rural areas to urban areas and to leave their countries of origin for global cities. Consequently, the discourse on cities has shifted from the perspective that they are challenges to address to the view that they are key to improving development outcomes. There is an increased understanding that cities create and sustain value.

Key Findings

The value of urbanization should be inclusive of all groups that live in cities: Urban areas are heterogeneous places home to extremely diverse groups of people. Wealthy elites may live a short distance from poor slum dwellers. Youth looking for new economic opportunity might ride the bus next to older persons seeking good quality health care. Indigenous people, refugees, migrants and those with differing identity and orientation all coexist in urban areas. The value of urbanization should respond to the specific of each of these groups, as each group finds a different type of value in the city, which are sometimes at odds and sometimes in harmony.

Urban economies drive the performance of national economies: The global economy is increasingly a function of goods and services produced in or traded among cities and metropolitan areas. Resource-based economies require urban ports and logistics hubs to move goods. Consumption-based economies cluster their economic activities in cities. The knowledge economy continues to thrive on the basis of proximity to urban areas.

Urbanization does not constitute an intrinsic threat to the natural environment: Well-planned, compact urban development generates immense environmental value. Greater resource efficiency means less energy use. Avoiding sprawling land consumption protects natural and agricultural areas. Cities themselves can promote biodiversity through urban greening. Ultimately, urban areas cover just two per cent of global land area, meaning that the majority of humanity is able to live with a relatively light planetary footprint that allows for wildlife conservation and biodiversity hotspots to remain undisturbed.

Urban areas can enhance social inclusion and reduce poverty: Transformative commitments in cities, like embracing the framework of ensuring the "right to the city" or

"cities for all," build the social value of urbanization. For centuries, people have congregated in cities to pursue their aspirations and dreams, leading to increased individual and collective wellbeing. However, realizing the social value of sustainable urbanization is not a natural consequence of a city's economic growth, as increasing investment in urban areas does not automatically address poverty and inequality. Mounting evidence suggests that economic growth in itself will not reduce poverty or increase wellbeing if it is not accompanied by equitable polices that allow low-income or disadvantaged groups to benefit from such growth.

Strong civic and cultural institutions are crucial for the realization of sustainable urbanization: Sound institutions—a constitution, laws, regulations, social norms, customs and traditions—provide the superstructure for the value of urbanization to be fully realized and lead to inclusive prosperity and improved quality of life. This more intangible value of urbanization generates a sense of pride in the overall perception of the city. When these institutions function well, city dwellers have a sense of civic identity as urban residents.

Key Messages

Urbanization will continue to be the driving force for global growth: However, given the pace of urbanization, this process requires effective planning, management and governance if the value of urbanization is to be fully realized as a truly transformative process. Internationally-developed policies like the global development agenda can guide this process, but it must be adapted to the local context in order to ensure policy coherence. The perspectives of local governments should be integrated into international discussions, given their role in implementing such agendas.

Urban economic prosperity will provide the basis by which countries can contribute to achieving the SDGs and New Urban Agenda, as well as recovering from the COVID-19 induced global recession: In the absence of healthy urban economies and pro-poor economic development policies, the goals of the 2030 Agenda for Sustainable Development will be difficult to attain, especially enhancing economic opportunities for the urban poor. With the appropriate macroeconomic policies, well-planned and managed urbanization can help

countries accelerate their economic growth and serve as a channel to global markets by creating productive environments that attract international investment and increase economic efficiency. Recovering urban economies will be essential to lift countries out of the global recession occasioned by the COVID-19 pandemic.

Integrate environmental sustainability into urban development: Sustainable cities offer environment value through both the built and natural urban environments. When designed with climate adaptation, mitigation and resiliency, components of cities from buildings to public spaces can create communities that enhance environmental values like biodiversity and carbon sequestration. Combined, such efforts not only improve quality of life, but put cities at the forefront of solutions to climate change.

The social value of urbanization can be enhanced by protecting the rights of vulnerable groups: Cities exhibit social value when they promote gender equality and ensure broad-based civic participation. Empowering marginalized groups like slum dwellers, the homeless, indigenous people, LGBTQ2+ and youth makes cities equitable for all. Ultimately, sustainable urbanization is experienced through the intangible value of urban culture. As the world's cities become more heterogeneous, there are ever increasing opportunities to incorporate cultural diversity as part of a city's brand or identity thereby attracting the best and the brightest. Such intangible value, in turn, supports the economic, environmental and social value of urbanization in a virtuous cycle.

Chapter 3
The Economic Value of Sustainable Urbanization: Inclusive Prosperity and Opportunities for All

Cities do not merely symbolize the dreams, aspirations and hopes of individuals and communities, they are the primary catalysts or drivers of economic development and prosperity across the world. Urban areas generate enormous economic value as they are the world's platforms for production, innovation and trade, generating both formal and informal employment. This chapter, while providing a recap of the foundational mechanisms that enable cities to serve as growth accelerators, highlights the risks embedded within the very structure that enable cities to generate economic value. These risks have been magnified by the coronavirus pandemic and its adverse socioeconomic impacts.

Key Findings

Urban areas are accelerators of economic growth: Urban areas generate economic value across a range of spatial scales—local, regional and national. Cities are "advertisers" for foreign-direct investment in their countries because they are where the biggest factors attracting such investment—trade regimes, quality institutions, labour force and infrastructure—are located. Through urban-rural linkages, urban economic activities have a profound impact across the urban-rural continuum. Urban systems are also integrated knowledge creation and diffusion networks, which raises productivity in the aggregate. Positive spillovers such as diffusion of innovation and technologies from urban areas to their surrounding regions promote regional and national growth.

Sustainable urbanization is a generator of inclusive prosperity: The value of sustainable urbanization lies in its contribution to productive employment. Sustainable cities allow for more economic opportunities for all, including marginalized groups and people with disabilities, thus ensuring that the productive potential of all residents is realized.

COVID-19 shutdown measures in urban areas have had economic impacts far beyond their boundaries: Urban and national economies have been hit hard, resulting in substantial losses in productive jobs and loss of revenue for economic units, particularly the informal sector. Populations living in informal settlements and slums have been more economically vulnerable because of their reliance on daily earnings from the informal sector. For example, millions of informal workers in India returned to their villages when urban jobs dried up. As of May 2020, at least 170,000 Peruvians in urban areas requested assistance from local governments to return to the countryside. In Kenya, the economic hardship associated with the pandemic has forced urban households unable to afford rents to downgrade to cheaper housing or relocate to rural areas.

The very dense interaction networks of people, which are the factor behind cities' potential as economic growth accelerators, also carry embedded risks, as evidenced by the COVID-19 pandemic: These risks require both the ability to adapt quickly as well as more complex responses at the local, national and global levels for the long term. The capacity to rapidly respond to such unexpected risks is driven by good governance as well as the financial health of the local and national governments. Well-planned and managed cities are uniquely well-equipped to respond to all hazards, including public health threats.

The informal economy has become the lifeblood of many cities in developing countries: Informal employment comprises more than half of non-agricultural employment in most regions of the developing world: 82 per cent in South Asia, 66 per cent in Sub-Sahara Africa, 65 per cent in East and South-East Asia, 51 per cent in Latin America and the Caribbean and 45 per cent in the Middle East and North Africa. However, the nature of informal economic activity is also a major challenge for workers' rights. For example, the informal micro and small enterprises that constitute 80 per cent of enterprises worldwide generally fly under the radar of public policy interventions, such as government measures to save jobs, bankroll enterprises and provide workers with income support.

Property rights, land use regulations and poor transport systems are limiting value generation in cities of developing countries: In many developing and developed countries, poorly defined property rights and/or land use regulations have a huge economic impact that limits value generation. This institutional deficit results in higher housing prices and less inclusive cities. In the same vein, lack of sustainable urban transport systems results in higher commuting costs and less inclusive cities.

Subnational administrative structures can catalyse or hinder the full realization of agglomeration economies: Urban agglomerations, while part of a broader economic system linking them to other agglomerations, towns and villages, are usually their own independent economic entities. However, regional economic growth in most places is negatively impacted by overlapping functions, (dis)economies of scale and policy fragmentation. Enabling metropolitan governance structures and collaboration mechanisms, as appropriate, is thus key to enhancing the economic value of urbanization.

An overview of downtown Nairobi, Kenya. © UN-Habitat/Julius Mwelu

Key Messages

Urban and territorial planning supported by adequate governance structures will enhance the economic value of urbanization: How urban areas are spatially configured and organized is directly connected to their generation of economic value. Poorly planned and managed urbanization diminishes the potential to leverage economies of scale and agglomeration effects. It is therefore important that cities are spatially organized in the most efficient and sustainable way in order to increase their absorptive capacities and ensure sustained economic growth.

Local and national governments need to strengthen their urban productive capacities: Cities can enhance their productive capacities by reforming legal and regulatory frameworks as well as integrating urban planning and design with measures that provide greater security to workers, particularly those operating in the informal economy.

There needs to be a paradigm shift in how urban planning and governance frameworks view the informal economy: Sustainable and inclusive urban development will be hard to achieve in developing countries without adequate measures to facilitate the transition of workers and economic units from the informal to the formal economy.

As cities in all regions make progress toward realizing the SDGs and the New Urban Agenda, the more the economic value of urbanization is enhanced: Cities can become effective catalysts for inclusion, powerhouses of equitable economic growth and places where the productive potential of various population groups are realized and harnessed for the greater good of society. For this dynamic impact to be sustained, strengthening productive capacities is key. Cities must offer equal opportunities for all residents to access appropriate education and further develop their skills for productive participation in the local economy.

The economic growth and consumption potential of cities should be managed in ways that support the achievement of sustainable development outcomes and build resilience: Particularly in the wake of the COVID-19 pandemic that has disrupted business-as-usual patterns of consumption like short-haul air travel and carbon-intensive supply chains, governments can re-evaluate their growth and consumption patterns going forward so as to ensure inclusive prosperity and opportunities for all.

Leverage density but protect against crowding: The COVID-19 pandemic has shown that urban density does not inevitably correlate with higher virus transmission. Cities are largely vulnerable as a result of how people live, work and travel in and around them. Density has enhanced the delivery of services in the wake of COVID-19; it supports economies of scale in the provision of critical public services like health care and other necessary infrastructure. On the other hand, unplanned density associated with crowding increases the risk of rapid virus transmission.

Cities can have sustained economic growth and higher levels of productivity even as they navigate demographic transitions: From youth booms to the "silver tsunamis" associated with ageing, cities are undergoing demographic change. It is therefore imperative that policies (such as family planning, education and labour force participation) and urban and territorial planning processes are data-driven—i.e. informed by disaggregated data. This method is key to harnessing the urban demographic dividend as well ensuring age-friendly cities that "leave no one behind."

Governance, institutional, policy and legal frameworks should be aligned to local realities and not be a hindrance to economic growth: Development controls should be assessed regularly to check their relevance and responsiveness to prevailing needs. Local governments should also establish clear property rights to facilitate the efficient functioning of land, housing and commercial real estate markets. These measures are key to achieving compact and integrated development.

Sustainability and productivity go hand in hand: While making cities more affordable and inclusive as well as increasing connectivity in cities and improving urban quality of life are desirable goals on their own, they also have important economic effects. On the other hand, cities that offer a low quality of life usually have limited growth relative to their potential. Local and national governments thus need to incentivize companies and residents to minimize the social costs they generate, for example their contributions to traffic congestion or pollution.

Effective municipal financing is integral to equitable planning and development: Effective, innovative and sustainable financing frameworks and instruments strengthen municipal finance and local fiscal systems that create, sustain and share the economic value generated by sustainable urban development in an inclusive manner. Local governments in developing countries need to build productive capacities and leverage endogenous sources of finance as well as exercise prudent financial management practices to ensure sustained finances. In areas where taxation and fees are levied, equity considerations like progressive revenue must be considered to ensure inclusive prosperity.

Chapter 4
The Environmental Value of Sustainable Urbanization: Building Resilient Urban Development

Current international debates are characterized by urban optimism, as sustainable urbanization is recognized as a transformative force to harness environmental value. The implementation of the 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction are embedded in this urban optimism. There is also the implicit agreement that actions at the local level will bridge the gap between intended contributions from countries and the actual emission reductions required to keep global average temperature change within safe levels. The adoption of these global development agendas as well as the ushering in of the Decade of Action to deliver the SDGs presents an opportunity for pragmatism whereby urban actors have to demonstrate the effectiveness of existing actions.

Unplanned and unmanaged urbanization represents a threat to environmental sustainability, including unbridled urban sprawl, irreversible land-use changes and biodiversity loss, resource and energy-intensive consumption patterns, and high levels of pollution and carbon emissions. However, when well-planned and managed, urbanization provides opportunities to address these challenges and contribute to environmental value through energy innovation, sustainable settlement patterns, changes in human behaviour and lifestyles, environment-related improvements to health and wellbeing, and resource efficiencies.

Key Findings

Nature-based solutions represent an integrated approach to deliver environmental value across the urban-rural continuum, but there are challenges to overcome: In urban areas, nature-based solutions have been linked with positive effects on both urban nature and human health. However, when applying nature-based solutions to urban environments, there are still knowledge gaps regarding the effectiveness of solutions to address different environmental challenges, the involvement of various stakeholders and specific implementation challenges related to land competition, overlapping regulations and integration with existing infrastructure. In addition, there is a dearth of information on the extent and state of conservation of green and blue infrastructure across the various regions of the world.

Some green action and sustainability policies in urban areas are having unintended impacts: While environmental and conservation projects are adding value to the urban environment, marginalized groups are pushed out by the changing conditions for habitation, for example, because of an increase in housing prices and rents. Urban areas are finding a new challenge in these green and climate gentrification processes as people are excluded not only from housing and public space but also from safe and protected environments. For example, recent assessments of urban greening initiatives show that while they have resulted in positive environmental outcomes (increase in green space, reduction of pollution), they have also been associated with the displacement of low-income residents.

Multiple, interconnected environmental challenges affect life in rapidly growing urban areas: These include the ever-growing need to access resources and provide infrastructures and public services to sustain urban life, the increasing incidence of environmental risks linked with the impacts of climate change and air pollution, the threats to ecosystems and biodiversity, and the growing imperative to enable structural transformations to reduce emissions. In the US, the expansion of the wildland-urban interface is seen to contribute to ravaging wildfires as sprawling cities encroach on forests. In Europe, one in

every eight (or 13 per cent) of deaths is attributed to poor quality environments.

How environmental challenges are experienced and addressed largely depends on the living conditions and experiences of specific groups: Slums and informal settlements generally suffer the impacts of climate change and natural disasters disproportionately as compared to other settlements. While there have been improvements in global coverage of basic services over the past two decades, which have environmental benefits, particularly for slum dwellers, more action is still needed for this population most at risk of being left behind.

Recognizing the context and advancing principles of justice matters: Sustainability policies to unlock the environmental value of urbanization depend on the ability of different actors to tailor options to the context in which they operate. There are various ways in which planning, management and governance of urban areas can enhance the environmental value of urbanization. However, these measures need to be tailored to the specific conditions of an area, resources available and action potentials. Incorporating principles of justice entails taking into consideration the political and social implications of actions that are intended to unlock the environmental value of urbanization. In 400 sustainability initiatives in more than 200 urban areas, these principles are being embedded in current environmental action at the local level as cities make efforts to deliver on the NUA and the SDGs.

Despite its ravaging impacts, COVID-19 pandemic has shown that a green urban future is possible: The disruption caused by the COVID-19 pandemic has exacerbated some environmental challenges, for example, resulting in an increase of plastic waste. On the other hand, COVID-19-induced lockdowns led to a sudden fall in carbon emissions and improvements in air quality in cities, providing the world a brief window into the decarbonized, sustainable future environmental advocates have championed for decades.

Mobilizing all kinds of data: The recent shift towards evaluating the effectiveness of urban responses to harness environmental value has revealed an emerging interest in mobilizing all kinds of data. However, harnessing the environmental value of urbanization in a context of limited data and limited resources also means delivering strategic action through mapping current capabilities, enrolling multiple actors and identifying critical knowledge gaps and information targeted towards specific forms of urban change.

Key Messages

Address the structural drivers of environmental degradation: Local governments and other actors operating in the urban environment need to recognize the structural drivers of environmental degradation and how they interact with people's lives (as they drive vulnerability and reduce urban resilience). Harnessing the environmental value of urbanization requires planning with people rather than for people. Urban dwellers have the knowledge to deliver sustainability and resilience and multiply governments' capacity to harness the environmental value of urbanization. Recognition of the multiple drivers of disadvantage and how they shape the urban experience (known as "intersectional analysis" in the urban governance literature) is a precondition for delivering environmental justice in urban settings. There is a need for developing intersectional environmental policies that question privilege as the root of current environmental problems and celebrate social diversity. An intersectional approach is also key to understanding the needs and concerns of different groups, hence facilitating authentic inclusiveness.

Urban greening initiatives enhance the overall value of urbanization, but adequate measures are needed to ensure that they do not exacerbate inequality and social vulnerability: Green initiatives have numerous added co-benefits that can support simultaneous achievement of multiple developmental goals and targets, thereby enhancing the overall value of urbanization. The New Urban Agenda and SDG 11 place an emphasis on inclusive settlements and provide frameworks for unlocking the environmental value of urbanization for all, rather than for a rarefied elite.

The environmental value of sustainable urbanization cannot be realized without prioritizing the needs of disadvantaged groups: Prioritizing the needs of the most disadvantaged means creating opportunities within local planning processes to represent their views, something already reflected in the 2030 Agenda for Sustainable Development. Harnessing the value of sustainable urbanization requires delivering

environmental benefits across urban areas in a manner that reaches every sector of the urban population, especially those who are most disadvantaged. The urban poor must be represented and their needs prioritized in any decision-making process, be it about the urban commons, atmospheric commons, public spaces or resource use.

Implementing the 2030 Agenda and the New Urban Agenda is key to enhancing the environmental value of urbanization: The 2030 Agenda for Sustainable Development and the New Urban Agenda provide the opportunity to deliver a truly innovative programme for urban action that harnesses the transformative power of urbanization for the delivery of environmental value at all scales. The 2030 Agenda provides targets to orient environmental action. The NUA provides guidelines to integrate development objectives into a holistic vision of a liveable, sustainable city.

There is an ample range of initiatives to deliver environmental value in urban environments, but outcomes are highly dependent on how these are implemented: The environmental value of urbanization depends on how cities are planned and managed. Ensuring due process and recognition of multiple points of view are conditions for delivering sustainable development for all, requirements already enshrined in the NUA. For example, increasing understanding of the potential of nature-based solutions and green and blue infrastructure to deliver environmental benefits alongside more conventional transport and waste management interventions needs to be balanced with the realization of how green gentrification is driving further processes of urban exclusion.

Recognize the urban commons as socio-ecological assets: Urbanization has transformative power because of its potential to enable the sharing of social, cultural and natural capital. The urban commons include shared resources, spaces and knowledge. It can be related to both providing specific services (flood protection, food, water and recreational areas) and protecting and enhancing urban ecosystems. Inventories of shared assets developed collectively help to identify and protect the commons. Local governments play a role in mediating the generation of a collective pool of knowledge that can be mobilized for the protection of the commons. The urban commons are the basis for collective design processes. For example,

in 2014, Bologna, Italy, adopted the Bologna Regulation on Civil Collaboration for the Urban Commons, whose primary tool was a collaboration pact whereby citizens, the local government and any other interested organizations would agree on care and regeneration actions to improve shared green areas and public spaces.

Leverage technologies for environmental action: Technology and open data have opened new opportunities to enable collaborative networks within and across cities. For example, UN-Habitat's Global Public Space Programme is harnessing technologies such as Kobo Toolbox and the Minecraft video game to engage a wider audience—e.g. children and youth—in urban planning and design processes for safe, inclusive and accessible public space. The potential offered by digital technologies should not be overlooked, but it should not distract from well-established processes of collaborative planning and their potential to deliver environmental action.

A green economic recovery from the COVID-19 pandemic can yield long-term environmental benefits: While COVID-19 induced lockdowns have been associated with short-term reductions in emissions and pollutants, these will have very little long-term effects, and will not change the trajectory of global greenhouse emissions unless they facilitate deeper and longer-term human, business and institutional change. Countries should seize this moment to deliver on their commitment to sustainable development by investing in cleaner and more resilient forms of renewable energy that will we create lasting solutions, reduce the risks of future crisis and adequately mitigate the impacts of climate change.

Chapter 5
The Social Value of Sustainable Urbanization: Leaving No One and No Place Behind

The opportunities offered by cities lend a social value to urbanization. When cities are well-planned and managed, they can lift families out of poverty, liberate women from gender-based discrimination, point to bright futures for children and youth, offer comforts and supports to older

persons in their golden years and welcome migrants looking for a better life. This wide-ranging value of urbanization is one of its most potent features. Cities are the crucible in which social outcomes will be improved for all types of marginalized and vulnerable groups.

But the social value of urbanization will only be realized alongside the intangible value of urbanization. This broad category encompasses the institutions—rule of law, property rights and democratic participatory systems, among others—that allow cities to function effectively. Embedded in this intangible value is the cultural element of cities, from the diverse backgrounds of their residents to the cultural heritage assets at their disposal.

Key Findings

The "right to the city" underpins the social value of urbanization: The "right to the city" means that all people, particularly vulnerable and marginalized groups, should have equal opportunities and access to urban resources, services and goods. The World Charter on the Right to the City recognizes that cities are at the core of wealth creation; social, political and cultural diversity; and environmental preservation efforts. Access to these opportunities is not equal for all inhabitants, but local governments that embrace the right to the city can create more equitable outcomes. For example, the right to the city is enshrined in Mexico City's constitution, which informed the local government's efforts to provide aid to Central American migrants as they travelled through the city.

Gender-based discrimination is a systematic problem: Women make up over half of the global population yet suffer systematic gender discrimination in cities. Women at the bottom of the economic ladder provide 12.5 billion hours of unpaid care work every day, which is three times more than men do. Worldwide, men own 50 per cent more wealth than women. To address this imbalance, several local governments have implemented a feminist approach to urban planning. In the Spanish cities of Girona, Gavà and Donosti, a gender perspective informs public spaces and housing projects, which has resulted in better lighting in common spaces and improved spaces for pedestrians. Gender equality in cities is also driven by grassroots organizations, as some cities are being transformed into

spaces of inclusion due to the efforts of community organizations and committed citizens.

Urban planning often overlooks the needs of children and youth: Urban planning does not adequately account for the needs of young people, largely because they are dependent on their parents and do not have the right to vote or participate in decision-making processes. Consequently, their needs are not prioritized, as clearly demonstrated in the COVID-19 pandemic, which has resulted in school closure and significant restrictions on their outdoor activities and socialization. However, cities like Calgary, Ghent, Antwerp and Rotterdam are taking proactive measures to create more child-friendly play opportunities.

Older persons are increasingly "ageing in place"—in cities: The 65 and over cohort is now the fastest growing age group, with an increasing proportion moving to or remaining in cities instead of retiring to the countryside or returning to an ancestral village. They have distinct needs, like retrofitted home to accommodate their physical limitations, ready access to health care, and safe and reliable public transport. The Hong Kong Special Administrative Region Government has adopted the principles of age-friendly cities by focusing on a multi-dimensional approach that includes medical care, community and residential support, transport and mobility, housing and the built environment, active ageing, more flexible employment and family-friendly measures with local governments playing a key role. More than 700 cities are part of the Global Network for Age-friendly Cities and Communities to promote healthy, active ageing and improve quality of life for the elderly.

Poor migrants face an uncertain welcome in cities: At a time of nearly one billion migrants worldwide, national attitudes are increasingly hostile to migrants and foreigners. African, Middle Eastern and Latin American migrants brave the odds to cross deserts and seas without any guarantee of ever being socially integrated into their host countries. International migrants often lack even the most basic civil rights and face various forms of social and economic exclusion. In some cases, however, cities are opening their doors. Montréal recognizes cultural diversity as an asset that enriches the city's quality of life and the city government supports housing, education and

employment initiatives to integrate migrants. The city believes that immigrant integration rests on the principle of co-responsibilities shared by immigrants themselves and the host society, which has proven to be a positive and empowering approach.

Urbanization can be a pathway to eradicating poverty: Urban areas offer significant opportunities to generate prosperity, which in turn can be leveraged to eradicate poverty by filling the gaps in sustainable infrastructure, such as housing, water, sanitation and transport. Generally, higher levels of urbanization are associated with lower levels of poverty. When well-planned and managed, cities can be "real poverty fighters," if adequate policies are implemented like the multiyear roadmap to improve water supply and sanitation in the urban areas of Surkhandarya Province in Uzbekistan. A major predicament is that policies designed to achieve economic growth—and thus the prosperity of cities—do not necessarily result in improved economic and social opportunities for the poor, and could indeed worsen existing poverty even while improving the urban economy. Policymakers have to face important non-economic and equity considerations that must be balanced against economic growth.

The COVID-19 pandemic is exacerbating urban inequality: Lockdowns and other public health measures to control the spread of COVID-19 have exposed and worsened inequalities in cities. Informal workers dependent on day wages were shut out of their basic livelihoods. Children without internet access could not receive an education. Isolated older persons were confined to their homes with no opportunities for social interaction. Migrants returned home on gruelling journeys. Women were forced to juggle childcare, education and work without access to schools and day care services. Extreme poverty is expected to increase globally for the first time in over two decades due to the deleterious effects of COVID-19.

Effective institutions are the bedrock of sustainable urbanization: Effective institutions are indispensable to the management and governance of any city. These intangible components have tangible impacts on inhabitants' everyday lives, like whether the garbage is picked up, the bus runs on time or a pothole is filled. Sound institutions and mechanisms that empower and include urban stakeholders are crucial

for generating value through urbanization, as they provide the supportive framework responsible for steering urban development and enabling it to operate and deliver maximum benefits to a majority of the population.

Cultural and ethnic diversity is an urban asset: The cultural diversity of cities contributes to their vibrancy, prosperity, inclusiveness, competitiveness, attractiveness, positive perception and overall development. Culturally diverse cities feature more innovative workforces given that they benefit from a wider range of international knowledge links, idea generation, problem-solving and diverse decision-making. It is no coincidence that economically successful global cities are dotted with vibrant international cultural neighbourhoods, ethnic retail stores, diverse religious landscapes and regular multicultural events such as Drongo Festival in Amsterdam, Caribana in Toronto, Notting Hill Carnival in London, Chinese New Year Festival and Parade in San Francisco and Living in Harmony in Sydney.

Cities can build economies around culture and creative industries: Creative industries are emerging as one of the most important dimensions of new economies in regions around the world. Cities as diverse as Austin (music and technology), Berlin (visual arts), Mexico City (contemporary art and television), Mumbai (film) and Seoul (gaming and digital media) have thriving creative industries that have contributed remarkably to their respective urban economies. The world's top tourism destinations are all known for their cultural landmarks. Small cities like Ségou, Mali have built entire local economies around cultural festivals.

Key Messages

Governments should move from "equality" to "equity" and remove systemic barriers: Whether in housing, education, transport or other municipal services, the concept of equity recognizes that redistributive mechanisms are put in place for a fair and more efficient use of resources, skills and opportunities to target the most vulnerable with the highest levels of support. For the social value of sustainable urbanization to be fully realized, identifying and addressing the root causes of exclusion and inequity are critical. For instance, an equitable policy approach to affordable housing would not simply build more affordable housing equally throughout the city,

but target that affordable housing in the neighbourhoods that have been historically gentrified or seen displacement due to real estate investment.

Gender "mainstreaming" can address systemic discrimination against women: Feminist approaches to urban planning include the notion of "gender mainstreaming," which applies a gender-based lens on all public decisions. Vienna has pursued this practice for 20 years, including in budgeting, policy and resource allocation, while Rwanda has the world's highest rate of female elected legislators. On a larger scale, various governments are partnering with the United Nations Women Friendly Cities programme to develop urban areas where everybody, especially women, can equally enjoy the economic, social and political opportunities offered by the city.

Youth rights and urban planning principles can lead the way to child-friendly cities: Creating vibrant play spaces and providing quality education are among the youth-specific outcomes that local authorities can pursue in line with UNICEF's Child Friendly Cities Initiative. Many urban policy objectives that benefit children and youth also benefit all urban residents, such as ensuring healthy food, safe and reliable public transport, affordable housing and decent work opportunities.

Local governments can foster active ageing in cities: In line with the WHO Age-friendly City initiative, there are eight entry points for cities to better adapt their structures and services to the needs of older people: outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services. Some cities might only be able to implement a few elements at a time and gradually add on the rest. Like the Child Friendly Cities Initiative, these principles are not exclusive to the needs of older persons. A city that works for children and older persons alike works for urban residents of all ages.

Cities should develop frameworks to properly integrate migrants: Even amidst political disagreements over immigration, local authorities are on the frontlines of migrations and can prepare for the arrival of refugees and migrants by establishing "welcome departments." If cities and local governments look beyond the humanitarian emergency lens, they can see migrants as integral to the socioeconomic development of their cities. This perspective requires effective integration programmes in the form of housing, employment, education and health, safety and security, social protection and according migrants a sense of belonging.

Invest in cultural infrastructure for long-term dividends: Historic buildings in need of renovations, arts and crafts traditions that could prove nascent economic drivers and cultural institutions like museums and performing arts venues are all the building blocks of a creative economy. Cities with a vibrant cultural scene and assets are more likely to attract skilled talent who will boost the city's long-term prospects.

Chapter 6
Innovation, Technology and the Value of Sustainable Urbanization

The world is firmly entrenched in the Information Age. Technology continues to reshape economies and societies amidst the fourth industrial revolution, or the exponentially paced disruption caused by the possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity and access to knowledge. These possibilities will be multiplied by emerging technological breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing.

Cities are at the centre of these changes as the concentration of people and human activities encourage technology and innovation talent to co-locate. Even amidst the COVID-19 pandemic, cities are where the main health facilities are located and the home of the research institutions that are working assiduously to develop a vaccine. They are the home base for the technology companies that have produced the tools for millions to work from home. The interplay of technology and innovation has already influenced urbanization patterns and is poised to further shape the future of cities.

Key Findings

Cities are rapidly deploying technology to address a wide range of urban challenges: Rapid urbanization, technological change and the climate crisis are all happening at the same time, creating new challenges for cities. In response, cities are also innovating, leveraging new technologies, ideas and approaches to help achieve the New Urban Agenda and meet the Sustainable Development Goals and other international development frameworks relevant to sustainable urbanization. New technologies and innovations provide opportunities for cities to generate immense value from urban life. Cities that encourage creative activities, communities and people are best able to innovate.

Innovation is not the exclusive purview of the private sector—the public sector innovates as well: Innovation is most commonly associated with start-up businesses and technology entrepreneurs, but a growing recognition exists that while cities can serve as platforms of innovation, creativity and knowledge generation, city governments can also be innovators drawing on, and in some cases creating, new technologies and developing legal and institutional innovations to improve and transform government processes and service delivery.

New technology is facilitating better urban monitoring: Cities are increasingly using patented technologies like cheaper and more effective sensors to monitor and share information on water, air, solid waste, infrastructure, energy, traffic and public transport, among other areas. Such monitoring can also contribute to reducing the adverse environmental impact of cities, including by paying special attention to air quality and waste management.

Cities have troves of big data at their disposal: In addition to monitors and sensors, cities collect data from smartphone apps, city data dashboards, information screens in public spaces, intelligent operations centres and public-facing websites with critical information and feedback mechanisms. Combined, these sources generate "big data" so massive that traditional techniques and software cannot analyse them. Big data analysis, real-time monitoring and automation of various municipal services from streetlights to complaint systems are extremely useful for city planning and service delivery.

Pollution detector station of the Chief Inspector of Environmental Protection, Warsaw, Poland. © HAL-9000/Shutterstock

When cities make their data open and transparent, innovations emerge: Cities are making once proprietary data sources available to the public. As cities open their data portals to the public, private industry, civil society groups and individual citizens through activities like civic "hackathons" can create useful tools. For example, public transport data, once hidden, is now standardized and has enabled transit systems around the world to integrate their routes and schedules into mapping apps.

The COVID-19 pandemic is accelerating the deployment of innovation and technology in urban areas: Innovations designed to curb the spread of the virus and keep people safe, productive and connected when they are physically apart have profound implications for urban built environments, social relations, labour markets and education, among other areas. These evolving technologies have enabled remote work, online or distance learning, digital and contactless payments, telehealth, online shopping and drone or robot delivery. While these technological trends can make cities more resilient in the face of current and future pandemics, there is a real possibility that they could deepen the existing digital divide and social inequalities, particularly when millions of people cannot work or go to school remotely or access technology and its benefits.

Smart city rhetoric does not always match reality: "Smart city" is among the most common buzzwords at the intersection of technology and urbanization. However, top-down private-sector-led approaches driven mainly by technology firms frequently do not promote socially inclusive urbanization as envisioned in the New Urban Agenda. Technology firms are increasingly focusing on cities as markets for smart city technologies. Results of smart city initiatives are mixed and particularly poor when these efforts are driven by technology rather than by people. Cities should focus on applying their own civic and urban technology and encouraging public sector innovation to address existing problems within their jurisdiction.

Cities do not have adequate regulatory and policy capacity to address technological challenges: Many governments are trying to leverage new technologies to improve service delivery, citizen engagement and governance as well as reduce carbon footprints in cities. Few have adequate capacity to maximally use, manage and regulate these technologies while addressing concerns such as digital exclusion, privacy, surveillance and political misuse of social media platforms as well as the impacts on labour markets, poverty and inequality. To address these problems, more capacity support must be given to cities.

Investment in technology is unevenly spread across the world: The global distribution of the top 100 digital companies and the venture capital that backs new start-up enterprises is uneven, favouring specific metropolitan areas like Silicon Valley, the US Northeast Corridor, London, Paris, Toronto, Beijing, Tel Aviv, Shanghai, Mumbai and Bangalore. Large technology innovation networks and the companies within them are almost always located in global cities that can also attract young well-educated workers, many of whom are immigrants, while less globally connected cities are left behind.

Key Messages

Innovation and technology play a multidimensional role in urban areas: Disruptive technologies and new ways of managing cities are now fundamental to the urban experience. They are reshaping social relations, labour markets and governance. At the same time, technology cannot displace citizen engagement in neighbourhood and city affairs. Technology is most effective when coupled with institutional innovation and is not a substitute for improving governance, planning, operations and management.

True smart cities are people-oriented: Citizens are a city's greatest resource as they provide new ideas for innovation, act as the eyes or ears of the city, help monitor conditions on the ground and engage the city more actively in setting priorities. Smart city technologically-based initiatives need to be people-centred and people-driven.

Fostering collaborative network to drive research and development: Cities should foster strong research and development institutions and collaborative networks between levels of government to build the research, data and regulatory capacities to ensure that new technologies address urban problems rather than exacerbate them or create new challenges. Finding pathways towards global cooperation to confront these challenges and opportunities is critical, including through city networks that share innovative ideas.

Government should build its capacity to effectively manage, deploy and regulate the use of technology: Cities should be proactive in the technology they procure for public use. They should also be willing to take a regulatory approach toward disruptive technologies like transportation start-ups, which if left unchecked can create negative externalities like traffic congestion. Cities require access to and capacity to manage data, as well as benefit from building open data and open source ecosystems in line with the principles for digital development. To enhance the potential benefits, cities should develop open data portals, urban innovation labs, hackathons, innovation challenges, town-gown programs and support for research and local data science.

Governments should address digital divides and exclusion: Cities should develop and implement strategies to address ongoing problems of digital exclusion with a special focus on vulnerable populations to avoid exacerbating inequalities and instead tap into a wide, diverse pool of talent. In an era of remote learning, ensuring access to technology is now an essential responsibility of public education. At the same time, more traditional forms of public outreach remain necessary to reach segments of the population, like older persons or the homeless, who do not have easy access to smartphones or internet connections to answer surveys or sign up for municipal services.

Cities should put in place clear ethical frameworks and institutional arrangements for data collection and sharing: These governance frameworks need to set out ethical standards, including who has the right to data, access and ownership, and who should enjoy the benefits from the data. Here, it is important that the public sector, as the custodian of citizens' rights, assume its full governance responsibility. For many local governments, this is a completely new area, and as such, digital policy and governance capacity needs to be significantly strengthened or built from scratch. Cities should work with government to protect privacy and open, factual public discourse. They should prioritize innovative people-based policy over technological solutions. How technology is designed and used should reinforce democratic and humanistic values and ecological wellbeing as embodied in the Universal Declaration of Human Rights.

Chapter 7
Local Governments and The Value of Sustainable Urbanization

Local governments are the prime movers of sustainable urbanization. As the unit of government closest to everyday citizens, they are the most attuned to the needs and desires of urban residents. The successful implementation of the global development agendas and effectively unleashing the value of sustainable urbanization thus depends on the democratic, efficient and inclusive functioning of this level of urban governance.

Key Findings

Subnational governments are central to the global sustainable development agenda: There is a growing movement of local and regional governments advancing the localization of the global agendas to harness the value of sustainable urbanization. In all regions, local governments and their organizations are contributing to the advancement of sustainable urbanization by fostering climate change mitigation actions, urban resilience, alternative economic models and social inclusion policies. For instance, in 2019, more than 10,000 cities from 139 countries made commitments to take measurable climate action.

Overall, there is global progress on decentralization, despite setbacks: Local governments are playing an increasingly significant role in urban governance as decentralization processes get implemented across various regions. Globally, local governments account for 24.1 per cent of public spending, 25.7 per cent of public revenue and 36.6 per cent of public investments.

Weak institutional environments are hindering local action: In many countries, a weak "enabling institutional environment"—the powers, capacities and resources devolved to the local level—have a debilitating impact that hinders urban governance, and consequently, the realization of the value of urbanization. The extent of fiscal decentralization is uneven across regions, yet adequate financing flows are needed to support urban investments as acknowledged by the Addis Ababa Action Agenda.

Local governments can be transformative forces: In the implementation of the 2030 Agenda for Sustainable Development and the New Urban Agenda, many cities are playing the role of experimental hubs and their experiences can be used to inform policies that are scaled up at the national level. Many cities are revising their policies and strategic plans to include the SDGs, strengthening the value of urbanization. Participatory planning, for example, is being implemented in order to co-create fairer, more inclusive and environmentally sustainable cities. Notably, many cities are increasingly institutionalizing their engagement with local stakeholders as the basis for more inclusive decision-making that leaves no one behind.

Weak coordination, monitoring and reporting hampers localization efforts: Although various countries are taking advantage of SDG-driven national coordination initiatives to ensure greater collaboration between national and subnational governments, local governments in all regions are facing difficulties securing inclusion into the national coordination mechanisms and reporting processes. Many cities lack adequate statistical capacities. This dilemma

makes it difficult to monitor the implementation of the SDGs and the New Urban Agenda, as well as to ensure local and national planning processes are founded on realistic targets.

Key Messages

Galvanize the forces of localization of the 2030 Agenda and the New Urban Agenda in cities and territories: Localization strategies should be mainstreamed in all plans, programmes and budgets from national to local levels. Cities need to adopt the SDGs and the New Urban Agenda as reference frameworks to guide their policies and plans, as well as ensure coherent and integrated implementation. Countries need to integrate and strengthen robust localization approaches into their sustainable development strategies and actions.

Effectively involve local governments in national coordination mechanisms: National governments should strengthen local governments' involvement in the definition, implementation and monitoring of national urban policies

Community members design a public space at the Kalobeyei Integrated Settlement in Turkana, Kenya. © UN-Habitat

and the SDGs. Coordinated strategies to support these localization processes are also key.

Countries should create enabling institutional environments to effectively unleash the value of sustainable urbanization: Effective decentralization policies strengthen local authorities' capacities to pursue sustainable urban development. In order to address the critical mismatch between the increase of transferred responsibilities and the revenues allocated to local governments, special attention should be given to fiscal decentralization and adequate financing flows to support urban investments.

Create strong multilevel governance frameworks to foster vertical and horizontal cooperation between different levels of government and between local governments: Effective multilevel governance requires clear legal and institutional structures based on the principles of subsidiarity and decentralization, as well as adequate intergovernmental allocation of financial resources.

Make strong metropolitan governance a key component of new urban governance: National governments should enable metropolitan governance that responds to the realities of economic and social geographies, not just arbitrary jurisdictional boundaries, ensuring the involvement of both local and regional governments in the reform process.

Support sustainable urban transformation via participatory planning: An integrated planning approach is crucial to create inclusive cities and strengthen linkages between urban and rural areas. Inclusive and participatory planning is a key lever to involve local actors in the definition, implementation and evaluation of a shared vision and support the coalescence of transformative local forces. Participatory processes promoted by local government should be transparent and implemented with regularity and continuity, as well as endow citizens with real decision-making power.

The production and dissemination of disaggregated data for monitoring and impact evaluation is key: Cities must track the localization of the global agendas to ensure that planning processes at all levels are founded on realistic targets and effective implementation can be monitored, as well as to ensure accountability and citizen follow-up.

Chapter 8
Investing in the Value of Sustainable Urbanization

Significant investments are required to enhance the economic, environmental, social value of urbanization, including the intangible conditions of cities, all of which are critical for to realizing sustainable urbanization. Just like all aspects of development, sustainable urbanization requires adequate financing. The extent to which cities and countries attract and leverage the public and private investments required to achieve SDG 11 and the New Urban Agenda is key to enhancing the value of sustainable urbanization. Closing the investment gap requires coordination and co-operation among diverse stakeholders, including all levels of government, the private sector, and bilateral and multilateral development institutions.

Key Findings

Adequate investments in urban infrastructure are central to enhancing the value of sustainable urbanization: Urban infrastructure in all its dimensions—including physical assets, human capital, institutions, effective governance structures and innovative technology—is crucial to the delivery of essential services in urban areas to enhance the value of sustainable urbanization.

Delivering on the urban dimension of the SDGs will cost US$38 trillion: UN-Habitat estimates the total investment need for infrastructure and the SDGs at US$38 trillion for the years 2020–2030. Further, estimates based on the investment trends from the pre-COVID-19 period indicated that there would still be an investment gap of US$5.6 trillion following the trend at the time. With the COVID-19 pandemic triggering a global recession, the investment trajectory of developing countries might enter a downturn for some years, leaving the investment gap even wider.

Adequate global financial resources exist to meet current investment needs, but they are not channelled in areas where they matter most: While there is a considerable amount of investible funds available at the global level and increasing investment in global cities, adequate financing is not directed to sustainable urbanization in the cities

and territories where resources are needed most. Yet, as UN-Habitat estimates show, the total public and private investment capacity of US$98 trillion far surpasses total investment needs. Simply put, while financing capacity indeed does exist, it is currently not flowing into the right areas to meet this need. Redirecting even a part of these assets would make a significant difference, but it is imperative that these assets are matched to infrastructure and SDG projects to meet current investment needs.

The COVID-19 pandemic has created an uncertain investment climate: While the full impact of the COVID-19 pandemic will not be known for some time, the global economic consequences of the pandemic have shaken confidence in infrastructure investment. For example, only five per cent of public and private sector leaders believe that investments will "increase significantly" following the pandemic, a sharp decline from 34 per cent before the crisis.

Investment needs diverge widely: The investment needs of cities and countries required to achieve sustainable urbanization vary depending on city size, demographic trends, urban configurations, geographic location, the country's level of economic development and the quality of existing urban assets. For example, while investment needs of cities in most advanced economies are the necessary upgrades to replace ageing infrastructure, cities in emerging economies require adequate new investments in economic, environmental and social infrastructure to meet the demands of rapidly growing urban populations. Notably, a study by UN-Habitat shows that the average annual cost of achieving SDG 11 varies depending on context, ranging from the tens of millions to billions of dollars.

Local governments face multiple constraints regarding urban finance: These hurdles include insufficient and unpredictable transfers from central government, weak fiscal management, poor revenue generation and legal constraints that affect their institutional capacities. The combination of these factors poses enormous barriers such as restricting cities' access to capital markets—only 4 per cent of the 500 largest cities in developing countries are deemed creditworthy by international financial markets, and only 20 per cent are creditworthy in local markets. Cities also face challenges in accessing resources for pre-investment activities such as financial structuring necessary

to bring forth bankable projects and pilot projects that demonstrate local government capabilities.

Government revenues are still the primary source of financing for urban development: The average revenues in low-income countries remain below the 15 per cent of GDP—a threshold considered essential for the effective functioning of the state. Besides, most cities in developing countries are dependent on transfers from the central government and often have limited financial instruments and mechanisms for revenue generation; for example, the subnational taxes in developing countries are approximately 2.3 per cent of GDP compared to 6.4 per cent in advanced countries. Central governments' stringent control over spending and conditionalities tied to intergovernmental fiscal transfers often carry the risk of forcing local governments to spend funds in ways that do not match local needs, undermining a key objective of decentralization in developing countries.

The cost of inadequate investments in sustainable urbanization is high: Underinvesting in sustainable urbanization increases inequality and often threatens the competitiveness and productivity of cities and national economies. Inadequate investments also impact health outcomes—public health guidelines regarding the COVID-19 pandemic were almost impossible to implement in informal settlements due to inadequate infrastructure.

Investment in various aspects of human and institutional capacity is vital for inclusive and sustainable urbanization: The lack of adequate capacity impedes urban service delivery, revenue generation, financial management and project implementation in most cities in developing countries.

Key Messages

Adequate funding during the Decade of Action is key to realizing SDG 11, the urban dimension of the SDGs and the New Urban Agenda: As the world enters the Decade of Action, it is imperative for policymakers to catalyse actions that support the adequate investments in urban infrastructure (physical assets, human capital, institutions, innovation and technology) that are required to make cities and human settlements safe, inclusive, resilient and sustainable. Accelerated action on investment is required for the value of sustainable urbanization to be realized.

Cities require stable, sustainable sources of financing: In order to realize the investments necessary for sustainable urbanization, sources of municipal financing need to be sustainable. This stability comes when cities have diverse sources of revenue and adequate institutional capacities that allows them to harness innovative financing mechanisms— pooled financing, blended finance, green municipal bonds and land-based finance instruments, among others. Urban areas have tremendous assets that can be unlocked for investments and local economic development. Local authorities must develop ways to link revenue generation to urban growth to ensure that local finances are sustainable in the long term. Local governments must be empowered to tap their endogenous potential to innovatively increase and diversify own-source revenues, which in the long-run enhances local autonomy and long-term sustainability.

Realign financial frameworks for sustainable urbanization: Investing in sustainable urbanization calls for a policy framework that realigns local financial flows to public development goals. Urban governance should be underpinned by well-coordinated fiscal, political and administrative decentralization, where local expenditure responsibilities are backed by predictable intergovernmental transfers and fiscal empowerment.

Policy coherence between global, regional, national and local stakeholders is crucial for meeting investment needs: To leverage the full potential of sustainable urbanization, investments made in all forms of infrastructure must be compatible with the 2030 Agenda, New Urban Agenda and other development agendas. The goal should not merely be more spending, but rather more efficient spending while prioritizing sustainability to enhance the value of urbanization.

A multiplicity of actors and collaborative ventures is required to adequately fund urban infrastructure: Public sector entities, private sector corporations and financial institutions, multilateral development banks, international public finance and foreign direct investment all have significant roles to play in funding urban investments.

Sustainable cities stem not just from physical assets, but also from sound legal and institutional frameworks: Making cities inclusive, safe, resilient and sustainable not only requires physical assets in cities, it also calls for investing in effective urban governance, sound legal and institutional frameworks and strengthened capacities to formulate, implement, enhance, manage, monitor and evaluate public policies for sustainable urban development. Strengthening the institutional capacities of local governments is also integral to facilitating local financial sustainability. A city's ability to maximize its leverage of endogenous resources is subject to appropriate institutional arrangements, as well as its technical capacity for planning, accessing and administering the full range of financing instruments.

Optimizing revenue mobilization matters, as does improving value for money from investment: Effective management is essential to safeguard public investment. Local governments should strengthen institutions for public investment management to achieve desired developmental outcomes while, at the same time, achieving quality and efficiency in spending on the city's physical assets.

An accurate investment needs assessment is the basis for sustainable urban investment: Urban policies and investments should be evidence-based and founded on realistic targets that can be monitored. Preparing precise estimates of urban investment should be the starting point for all levels of government in their pursuit of sustainable urbanization. These estimates should be considered alongside the short- and long-term benefits unlocked by urban investments. The needs and combination of potential financing sources are unique for each country. Some countries may require technical assistance to develop a national reform agenda that maps infrastructure needs and the SDGs to national circumstances. Others may need technical assistance to align the complementary roles that various development partners can play in financing infrastructure development and maintenance needs.

Chapter 9
The New Urban Agenda and the Value of Sustainable Urbanization

Sustainable urbanization generates economic, environmental, social and intangible value that can be harnessed for the wellbeing of all. This message can and should guide development efforts during the Decade of

Action to achieve the SDGs and as the world recovers from the COVID-19 pandemic. Fortunately, there is a road map to sustainable urbanization in the New Urban Agenda, which provides a comprehensive framework for unlocking the value inherent in well-planned, managed and financed cities.

Unlocking the value of sustainable urbanization is a multisectoral and multi-stakeholder endeavour. National governments must create an enabling environment for cities to thrive. Local authorities must seize the opportunities given to them and govern their territories effectively, as called for in the New Urban Agenda. The private sector must invest in sustainable urban development, from affordable housing to climate-friendly infrastructure. Civil society must strengthen institutions and create a welcoming environment for a diverse citizenry. Philanthropy must fill in the gaps to support the most vulnerable. Universities must educate the next generation and foster research and development opportunities for innovation and inclusive prosperity. When all the interlocking parts operate in harmony and are supported by appropriate institutions and policies, cities will thrive and their value will be enhanced and shared by all.

Key Messages

A call to action and commitment to implement the New Urban Agenda: There should be a sense of urgency and a long-term commitment to implement the New Urban Agenda as the basis for achieving sustainable urbanization. The costs of inaction and delay are too high. Profound rethinking to formulate appropriate action is necessary. The start-up phase of New Urban Agenda and SDG implementation has been quite slow. The pace needs to accelerate rapidly in the Decade of Action to achieve the SDGs.

The effective implementation of the New Urban Agenda will harness the value of sustainable urbanization: Effective frameworks of action can substantively enhance the value of sustainable urbanization, most notably through supportive urban governance structures, planning and management of spatial development, and effective means of implementation in the form of adequate financing, capacity development, information, technology and innovation. Regionally-specific action plans and local initiatives from city governments and civil society groups complement one

another. Together they can boost awareness, enthusiasm and uptake of these global sustainability agendas.

Assess progress in implementing and achieving the development agendas relevant to sustainable urbanization: Cities should undertake audits and map their efforts onto the transformative commitments of the New Urban Agenda, SDG 11 and the urban dimensions of the other SDGs. This assessment is an important step that will demonstrate what is already being done and thereby help to identify what needs to be done, as well as key weaknesses and gaps on which to focus new interventions and direct appropriate resources.

Development goals and targets can be addressed simultaneously: Being able to identify and take advantage of such synergies across the SDGs and New Urban Agenda reinforces the need for integrated policy coherence and cross-sectoral harmonization from the global to local scales. Demonstrating progress early on, even without dedicated new investments, has the added benefits of reducing the scale of new costs to be incurred relative to starting from scratch. These "easy wins" make it easier to gain support from elected subnational and national representatives and officials who must trade off diverse and competing resource demands.

Collaboration and cooperation across scales is central to enhancing sustainable urban development: Convening multi-stakeholder workshops like national and regional urban forums can act as strong catalysts for change, bringing public sector, private sector and civil society together to determine what changes are needed, gauge reactions and explore more transdisciplinary and collaborative ways forward. Deeper forms of multi-sectoral co-creation and co-production are demonstrating significant improvements in appropriate public service provision as well as in research and practice for improved sustainable urbanization.

Effective governance with cooperation between formal and informal actors is key to achieving the SDGs and advancing the New Urban Agenda: Informality is a fact of life, from housing to the economy, and should not be ignored. Urban development initiatives where state-citizen relationships have been reformed and strengthened can be built upon and shared more widely for supporting sustainable

urbanization. Co-production of housing and infrastructure in informal settlements and spaces where civil society and governments engage in joint action are effective models for bridging the gap between the formal and informal, as well as enhancing the value of urbanization.

Sustainable urbanization leads to economic development and employment opportunities: Cities by their nature offer significant work opportunities because urban areas create employment that builds on their comparative advantage and unique characteristics. Urbanization creates economic development through the provision of decent jobs, income and equal opportunities for all. Ensuring access to sustained productive employment, enhancing innovation and productivity, nurturing the talent and skills required to thrive in a modern urban economy, developing creative industries and utilizing viable forms of municipal finance all have a key role to play in enhancing and sustaining the economic value of urbanization.

Urban greening enhances the environmental value of cities: One central requirement for accelerating urban sustainability is for all stakeholders to take the green or circular economy seriously and proactively promote it. Evidence from around the world demonstrates that proactive urban greening leads to a net gain in employment across diverse skill categories, thus removing previous concerns about job losses from phasing out carbon-intensive economic activities.

Cross-cutting considerations underpin all efforts to enhance social justice, equity and the overall value of sustainable urbanization by leaving no one and no place behind: While strongly recognized in the New Urban Agenda and SDGs, issues of cultural diversity, gender, age and other dimensions of intersectionality, as well as groups marginalized on the basis of other characteristics, require greater inclusion in the design of national and local policies on urban sustainability and resilience. Leaving no one and no place behind are the mantras of the development agendas.

Innovation in technology and data are integral to enhancing the value of sustainable urbanization: Technological innovation is no longer a luxury, but rather an integral part of everyday life in urban development and governance. Mobilization of diverse sources of data and delivering effective strategic action within current data constraints is key, together with capacity building for strengthening government's ability to effectively manage, deploy and regulate the use of technology.

Local governments are key agents of change for achieving the transformative commitments of the New Urban Agenda and enhancing the value of urbanization: However, the evidence base for city-level implementation and monitoring remains somewhat limited and uneven as relatively few municipal governments have explicitly embarked on a path to implementing the New Urban Agenda. The growth of national and international city networks, and their increasing membership, are potential catalysts to change this course. They play a leading role in sharing experience, knowledge and good practices in relation to climate change, urban sustainability and resilience.

Financing sustainable urbanization requires enabling environments: Local authorities must be empowered to raise the necessary revenue in order to plan and manage sustainable urban growth and development. There is a wealth of fiscal tools available to governments provided that they are given the necessary authority to deploy them effectively.

Cities can turn the COVID-19 crisis into an opportunity to "build back better": The current COVID-19 pandemic has brought to the fore existing problems and inequalities in how cities are planned and managed, from an overabundance of public space allocated to private automobiles to crowded housing conditions and inadequate sanitation in slums and informal settlements. The need for public health measures like physical distancing and appropriate hygiene practices underscore the urgency of eliminating urban poverty and improving housing and infrastructure, while the global sustainable development agenda, especially the SDGs and NUA, provide a unique framework and opportunity to implement the necessary measures.

Chapter 1

Urbanization and Cities:
Trends of a New Global Force

The year 2020 marks a turning point in the global battle for sustainable development, with cities once again at the centre as home to a growing majority of the world's population. On the one hand, the world is entering the Decade of Action, the ten-year period during which national and local governments, the private sector and civil society must accelerate their efforts to deliver on the promise of the Sustainable Development Goals (SDGs) for accelerating sustainable solutions to the world's biggest challenges—ranging from poverty and gender-based discrimination to climate change, inequality and closing the finance gap. By 2030, countless local actions, the vast majority taken in cities or by city leaders, must collectively add up to a global shift toward a more sustainable future that reduces poverty, improves health outcomes, expands access to education and reduces carbon emissions, among other societal challenges.

Quick Facts

1. After decades of ambivalence from policymakers, urbanization has emerged as a key agenda in international development policy.
2. The New Urban Agenda places emphasis on effective implementation at the local level and on the role of local governments.
3. Every region is expected to become more urbanized in the next ten years, although highly urbanized regions are expected to have slower rates of urban growth.
4. The New Urban Agenda and the 2030 Agenda for Sustainable Development were adopted in times of profound global challenges, many of which have been exacerbated by the coronavirus pandemic.
5. With over 90 per cent of confirmed cases coming from urban areas, cities have borne the brunt of COVID-19.

Policy points

1. The New Urban Agenda as a means of achieving SDG 11 offers a framework for unlocking the value of urbanization.
2. While countries have made progress in the implementation of the New Urban Agenda and urban dimensions of the SDGs, there are challenges that need to be addressed.
3. Sustainable urbanization has a key role to play in the Decade of Action for accelerating sustainable solutions towards eradicating poverty, reducing inequality, addressing climate change and enhancing gender equality.
4. Sweeping investment in clean technologies such as renewable energy are among the most cost-effective way to boost economies hit by COVID-19 while reducing emissions.
5. COVID-19 provides the opportunity for cities to build back better in the long term and build up resilience against future pandemics.

1.1 Urbanization: A Key Agenda in International Development Policy

Since the turn of the twenty-first century, cities have become increasingly central to global discussions around sustainable development. After decades of ambivalence from policymakers, urbanization has emerged as a key agenda within international development policy. The unanimous adoption in 2015 of the 2030 Agenda for Sustainable Development, which includes the goal to "make cities and human settlements inclusive, safe, resilient and sustainable," as well as the New Urban Agenda (NUA) in 2016, firmly places urbanization at the forefront of international development discussions. This recognition goes beyond viewing urbanization as simply a demographic phenomenon, but rather as a transformative process capable of galvanizing momentum for development. National governments, local authorities, international NGOs and the private sector now must emphasize the implementation of the New Urban Agenda, which lays out a 20-year vision for sustainable urban development, as an accelerator for achieving the urban dimensions of the 17 Sustainable Development Goals (SDGs).

The importance of urban systems thinking is no longer seen as relevant only to a few globally-connected metropolitan hubs. Such a lens is now distributed across the full spectrum of human settlements, from megacities to secondary cities to smaller towns, that constitute the world's urban majority. Now more than a decade since the world became predominantly urban, the continued increase in urbanization, especially the rapid pace in developing countries, has placed the urban space at the forefront of global policy debate. The centrality of urban processes in securing sustainable futures in a range of diverse fields such as climate change, economic growth, poverty eradication, housing, infrastructure, basic services,

decent jobs, food security and public health—including the coronavirus pandemic—currently ravaging all parts of the world is today undeniable.[1]

The global prominence now given to urbanization is nuanced, drawing both on traditional views that urbanization creates negative externalities such as environmental degradation and rural depopulation, as well as newer thinking about the transformative potential of urbanization for sustainable development. In many respects, this view stems from the realization that while cities hold the key to solving many of the world's sustainability challenges, the current model of urban development is unsustainable. In so far as the mandate of the SDGs is to "leave no one behind," urban development policies focusing solely on economic growth have not always brought about a reduction in poverty and inequality, with the latter increasing worldwide. And yet, when properly planned and managed, urbanization can contribute to socioeconomic development, including poverty reduction.[2]

Cities have emerged on the radar of international development partly due to unprecedented demographic growth, impacts of climate change, increased human exposure to natural hazards and other urban risks. That the international community is now receptive to the positive potential of urbanization follows the recognition that processes and activities in cities, such as unchecked consumption, have significant repercussions on the global environment and can push the planet beyond its ecological limits.[3]
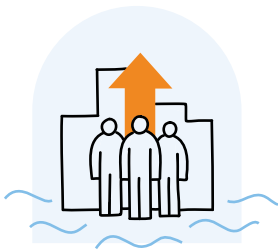
Cities have emerged on the radar of international development partly due to unprecedented demographic growth, impacts of climate change, increased human exposure to natural hazards and other urban risks

The rising profile of urbanization in global policy discussions can in part be attributed to the advocacy and activism of the Group of 77+China coalition of developing countries at the United Nations, working within the multilateral processes that shape global development priorities. Their diplomatic efforts were also supported by the United Nations Sustainable Development Solutions Network (SDSN), a body set up under the auspices of the United Nations Secretary-General and UN-Habitat. Together with key partners from across the urban sector, these groups formed the Campaign for an Urban SDG, which successfully lobbied during the SDG negotiations for urban-specific Goal 11.[4] With the ratification of the SDGs in 2015, at a United Nations General Assembly meeting featuring Pope Francis, and following the broadest, most participatory multilateral process in the history of United Nations, urbanization was thus thrust into the global limelight. The complexity of reaching a global consensus in securing an urban goal and agreeing on an agenda that has universal appeal was part of a process that has been described as a significant political battle characterized by variant or even conflicting positions held and promoted by different actors and competing priorities, which forced advocates of sustainable urbanization to make a compelling case that cities are a central driver of global development priorities.[5]

Such a case was made successfully due in large part to the emergence of a certain optimism about urbanization at the beginning of the twenty-first century, especially the importance of cities in developed countries. The "devolution revolution" that devolved national power to the local level and the subsequent sense that as the unit of government closest to citizens, cities were more capable than countries of taking action and working across borders in addressing common global issues, also led to the political rise of urban areas in the diplomatic arena.[6]

The international research community has been pivotal in bringing the urban question to the fore by helping to coordinate, integrate and prioritize evidence and ideas across the complex parts of the multifaceted urban question. For example, the last few decades have witnessed a proliferation of disciplines, including the hard sciences, that has taken up an elevated urban research focus with a concerted effort to demonstrate that "cities need not be environmental sinks."[7] This reinvigorated "science of cities" has further enhanced the expansion and sharing

Addis Ababa, Ethiopia. © Eduardo Moreno

of knowledge largely due to the interconnection between technology and development.

The emergence of the global agenda from multilateral processes is recognition of how critical cities are to sustainable development. SDG 11 is not only fundamental to achieving sustainable urbanization, but it also provides a multilateral platform for cities to build and strengthen partnerships as well as gain additional resources for advancing sustainable urban development.[8] SDG 11 has been described as: "the strongest expression yet by the international development community of the critical role that cities play in the planet's future."[9] It is believed that the SDG 11 will:

i.   Educate leaders and the public and focus political attention on urgent urban challenges and future opportunities.

ii. Mobilize and empower all urban actors around practical problem-solving, so that they may work collectively towards common objectives.

iii. Address the specific challenges of urban poverty and access to cost-effective infrastructure and housing, with cross-cutting benefits across a range of SDGs.

iv. Promote integrated and innovative infrastructure design and service delivery, using technology-driven and energy-efficient solutions.

v.   Promote land-use planning and efficient spatial concentration, while bringing a territorial approach to the SDGs.

vi. Ensure urban resilience to climate change and disaster risk reduction; and

vii. Give urban and local governments a place at the table to influence decision-making in achieving sustainable development.[10]

Some of the key issues emerging from the implementation of SDG 11 are summarized in Box 1.1.

Box 1.1: The view from the ground: What the Voluntary National Reviews of SDG 11 revealed

United Nations Member States volunteer annually to report on their progress toward the SDGs at an event known as the High-Level Political Forum. In 2018, SDG 11 was among the six SDGs under review. UN-Habitat's analysis of the 46 Voluntary National Reviews (VNRs) for SDG 11 reveals that Member States have adopted varied approaches towards achieving the goal to "make cities and human settlements inclusive, safe, resilient and sustainable" in line with their specific national challenges.

The notion of leaving no one or place behind features prominently in the VNRs with links to national strategies and specific issues, such as housing and the proliferation of slums, rural-urban divide, spatial and gender equality and public space. Member States also focus on vulnerable groups such as persons with disabilities, women and young girls, youth and older persons.

In highly urbanized countries, reoccurring themes were rural-urban connectivity, depopulation, sustainable transport, climate resilience, the green economy and pollution. Reports across countries addressed the importance of climate change adaptation and mitigation, with few countries discussing support for disaster-prone developing countries. The deployment of technology and innovation in decision-making and responding to urban challenges featured prominently, as did the notion of "smart cities."

Reporting countries in Asia and Africa recognized the importance of investing in cities, but in those regions the rapid rate of urbanization has been associated with negative externalities that need to be addressed. Over 90 per cent of countries reported challenges relating to housing and the need to establish social housing programmes to curb the proliferation of informal settlements. Eighty-two per cent of reporting countries stressed the importance of investing in safe and sustainable transport that supports interurban mobility. Reporting countries supported the use of non-motorized transport systems in pursuit of more sustainable transport services and green, pedestrian-friendly cities. Although many countries are cognizant of the interrelated nature of the SDGs and NUA, they presented few policy interventions to exploit such linkages.

To ensure the achievement of SDG 11, the VNRs identified four key areas that need to be improved upon:

i. Reinvigorate governance and civil society participation: Develop effective institutions and structures to oversee the implementation of national urban plans, strengthen urban governance and stakeholder collaboration, increase civil society participation and incorporate urban planning into local development.

ii. Reinforce financial mechanisms: Establish financial frameworks that attract sustainable investments, promote fiscal decentralization especially in developing countries, increase the productive role of cities and urban territories, and enhance collaborations with international development banks and the private sector to scale up urban investment in line with NUA principles.

iii. Capacity development: Enhance the human resources and capacity of policymakers and technical personnel to implement the NUA and the urban dimension of the SDGs.

iv. Technology and information: Increase the use of technology to produce open data to monitor and better manage urban development.

Source: UN-Habitat, 2019a.

Apart from SDG 11, which explicitly covers sustainable cities and communities, nearly all of the other goals require meaningful progress at the city level in order to be met, and as such, many targets beyond those attributed to the urban SDG are relevant to local governments. Development analysts argue that up to 65 per cent of the SDG targets are at risk should local urban stakeholders not be assigned a clear role in the implementation of the agenda.[11]

Accepting that we live in a predominantly urban world makes it easier to ascribe value to cities as critical development points. But in giving greater weight to the urban question, it is important to acknowledge that while there is now near universal agreement that cities are important and must be given even greater attention, there remains disagreement over why and how cities can and should add value to the ambitions of 2030.

1.2. Cities and Development: An Enduring Issue

Cities and urbanization have had a long and significant relationship to development. But it has not always been the case that what happened in cities was linked to wider global or national processes. Especially when only a minority of the world's population was urban, it was easy for policymakers to ignore cities as exceptional bubbles that needed no special attention and could largely take care of themselves. What is new is that cities are now seen as an integral part of the global system. There is more interest in the scale and intensity of current and future urban processes because of the linkages and flows between town and country that have enhanced the overall significance of urban living in shaping planetary dynamics. The emergence of a "global urban agenda" enshrined in multilateral accords like the 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement on Climate Change and the Sendai Framework for Disaster Risk Reduction 2015–2030 signals a formal recognition by Member States of the United Nations that urban processes hold the key to sustainable development at a worldwide scale.

Cities are now deeply rooted at the centre of development debates owing to the greater appreciation of the positive nature and benefits that accompany planned urbanization.

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When well-planned, urbanization is associated with greater productivity, opportunities and improved quality of life for all.[12] Cities drive economic growth, innovation and greater societal freedoms. Progressive institutional change—such as women's advancement, gender equality and entrenchment of the rights of minority groups—frequently take hold first in cities (Chapter 5). Highly urbanized countries are generally associated with positive societal outcomes such as higher incomes, lower poverty rates, stronger and resilient institutions that enable economies to withstand global shocks, enhanced democratic accountability, more gender equality and technological innovation.[13]

These cumulative benefits point to one conclusion: There is an intrinsic value associated with sustainable urbanization. Urbanization therefore represents an opportunity that can be harnessed to increase the wellbeing of all urban dwellers and their rural counterparts.[14] In acknowledging this new global and national scaling of interest in the urban, the question of how and why urbanization has risen to this more prominent status becomes salient. Indeed, now that the urban agenda has emerged, it has been "written into contemporary global politics" through particular sectors and kinds of disciplinary knowledge.[15] Moreover, the various theoretical and disciplinary traditions used to legitimize the new urban agenda—the generalized view of cities as a tool for development rather than the specific negotiated outcome document—each have their own way of conceptualizing urban processes as objects of inquiry and intervention.[16] The status afforded to the urban agenda is partly a function of this uneven sectoral and intellectual framing. The application of these foundational ideas is then entrenched through professional practices, including the defining of indicators that value or weight some issues over others.

Yet in the process of calling the urban sector into the global political and developmental realm and the push to make clear that cities cannot be ignored, there is a false impression

that there exists consensus on why the concentration of people, resources and economic activity in a circumscribed geographic area is so important. In making the general argument for cities, certain kinds of urban phenomena and knowledge have been rendered more prominent or visible. Given this tendency, it is important to reflect not only on the content and emphases of the new urban agenda, but also on its disconnections or omissions. Doing so prevents an overly simplistic or celebratory tone from taking precedence when talking about the implications of an increasingly urban world and global policy landscape.

1.3. Implementing the New Urban Agenda

While largely beneficial, urbanization occurs amidst entrenched planetary challenges. Many cities suffer from the impacts of climate change, inequality and exclusion, inadequate infrastructure, uneven access to basic services and a lack of economic opportunities for young people and minority groups. In addition, lax regulatory frameworks have permitted the elite and ruling classes to benefit disproportionately from urbanization through real estate speculation, or even to appropriate city assets outright.[17] Besides which, the process of urbanization in many contexts is based on a model that is environmentally, socially and economically unsustainable.[18] In these contexts, the process of urbanization erodes the inherent value that comes with it.

Many cities suffer from the impacts of climate change, inequality and exclusion, inadequate infrastructure, uneven access to basic services and a lack of economic opportunities for young people and minority groups

It is these persistent and emerging challenges of urbanization that the NUA addresses, as it provides an action-oriented road map to guide sustainable urbanization globally to the year 2036. In many respects, the NUA represents a paradigm shift that will:

a. Readdress the way cities and human settlements are planned, financed, developed, governed and managed, while recognizing sustainable urban and territorial development as essential to the achievement of sustainable development and prosperity for all.

b. Recognize the leading role of national governments, as appropriate, in the definition and implementation of inclusive and effective urban policies and legislation for sustainable urban development, and the equally important contributions of subnational and local governments, as well as civil society and other relevant stakeholders, in a transparent and accountable manner.

c. Adopt sustainable, people-centred, age- and gender-responsive and integrated approaches to urban and territorial development by implementing policies, strategies, capacity development and actions at all levels.[19]

The NUA is anchored on three transformative commitments that are grounded in the integrated and indivisible dimensions of sustainable development—social, economic and environmental. The transformative commitments are: sustainable urban development for social inclusion and ending poverty; sustainable and inclusive urban prosperity and opportunities for all; and environmentally sustainable and resilient urban development.[20] The value of sustainable urbanization as discussed in Chapters 3, 4 and 5 encapsulates the three transformative commitments of the NUA. The effective implementation of the NUA, which is an accelerator for the 2030 Agenda for Sustainable Development, can enhance the value of sustainable urbanization by creating socially inclusive cities where poverty is eradicated; generating inclusive urban prosperity and opportunities for all; and building environmentally sustainable and resilient urban development. Indeed, the NUA offers a global vision for people, the planet and long-term prosperity in which urbanization plays a vital role for positive change.

Manifestation of spatial inequality in Mumbai, India.
© Johnny Miller Photography

The NUA places emphasis on effective implementation at the local level and on the role of local governments

The NUA places emphasis on effective implementation at the local level and on the role of local governments. It affirms "sustainable urban development as a critical step for realizing sustainable development in an integrated and coordinated manner at the global, regional, national, subnational and local levels."[21] The implementation of the NUA contributes to the achievement and localization of the SDGs by providing an implementing framework for the integrated delivery of many SDGs at the urban level. In particular, it covers substantive areas partially covered or not covered by the 2030 Agenda for Sustainable Development, namely the additional means of implementation and localization.

Following the adoption of the NUA, a major task was to develop an enabling framework for its effective implementation at the national, subnational and local levels that would link the NUA to the SDGs. The impact of the NUA will depend on the effectiveness of its implementation and the extent to which it is mainstreamed into national development policy. An integrated approach to sustainable urbanization by various actors, as well as enhanced coordination and coherence, is crucial to its implementation.

Drawing from its normative and operational work, UN-Habitat proposed the Action Framework for Implementation of the New Urban Agenda (AFINUA).[22] This framework is designed as a basis for achieving the urban dimensions of the SDGs, as well as other international development frameworks relevant to sustainable urbanization—the Paris Agreement on Climate Change, the Sendai Framework for Disaster Risk Reduction and the Addis Ababa Action Agenda. The AFINUA identifies the basic ingredients for the implementation of the NUA,

who should lead each, how they might be measured and how these are linked to the provisions of the NUA. The AFINUA sets out five themes, which can be referred to as the "elements of planned urbanization": national urban policies; urban legislation, rules and regulations; integrated urban design and territorial planning; urban economy and municipal finance; and local implementation.

These elements require political buy-in at the national level and the necessary capacity at the local level. In an ideal situation, these elements should be interrelated and mutually reinforcing. Such links will not occur automatically, but rather should be facilitated by policy, planning and efficient institutions. This effort involves prioritization of actions as well as selection of interventions through appropriate decisions and monitoring. This strategic harmonization of actions will undoubtably contribute to the effectiveness of the AFINUA.

1.3.1. Linkages between the New Urban Agenda and the 2030 Agenda for Sustainable Development[23]

The New Urban Agenda emphasizes the importance of acting on the linkages between global development agendas. It focuses on where national governments, working in partnership with local governments, the private sector, NGOs and the grassroots, must enact change to ensure that cities and human settlements are planned, developed and managed sustainably. The NUA promotes this vision because there is a spatial dimension to sustainable development. The built environment in which people live, work, learn and play will influence their development outcomes. In acknowledgment of the interlinkages with other global agendas, the NUA complements SDG 11 by detailing strategic actions that are necessary for cities and human settlements to support and facilitate effective implementation of the 2030 Agenda and the SDGs. The NUA is the first internationally agreed document detailing implementation of the urban dimension of the SDGs. It builds on SDG 11, but addresses a wider range of urbanization and human settlements issues.

Sustainable urbanization as spelled out in the NUA has a key role to play in the United Nations Decade of Action to accelerate sustainable solutions to the world's biggest challenges.[24] With ten years left to achieve the SDGs,

With ten years left to achieve the SDGs, the importance of sustainable urbanization as an entry point for ensuring progress across multiple SDGs needs to be reemphasized

the importance of sustainable urbanization as an entry point for ensuring progress across multiple SDGs needs to be reemphasized. When well-planned and managed, urbanization can serve as a catalyst for the realization of many urban-related SDGs. Planned urbanization has a key role to play in eradicating poverty, reducing inequality, addressing climate change, enhancing gender equality, providing productive employment, driving economic growth and facilitating sustainable consumption and production patterns, among others positive attributes.

The sectoral nature of the SDGs requires a spatial framework, which the NUA provides. For instance, it will be impossible to address poverty (SDG 1), inequality (SDG 10), climate change (SDG 13), gender equality (SDG 5), water and sanitation (SDG 6), economic growth and employment (SDG 8), industrialization and innovation (SDG 9) and consumption and production patterns (SDG 12) without addressing the way cities are planned, managed and governed.

Most of the SDGs and targets relevant to cities and human settlements focus on people, households and communities, rather than on processes. For example, the means of implementation for SDG 11 are very restrictive. Goal 11's targets cover areas like urban-rural linkages (11a), resilience plans (11b) and local building materials (11c). These targets do not cover the most relevant means of implementation required to achieve sustainable urbanization. Similarly, the means of implementation of other relevant SDGs (water, energy, industrialization and climate change) do not cover some of the essential requirements in the context of cities and human settlements. This gap is filled by the means of implementation elaborated in the NUA document.

One of the ways in which the NUA expands on the means of implementation of the 2030 Agenda and SDGs is by addressing strategic spatial and governance frameworks essential for implementation of the 2030 Agenda and SDGs within urban areas, such as national urban policies, legislation, spatial planning and local finance frameworks. These frameworks, which are central to the NUA, will facilitate implementation within cities not only of SDG 11, but also of many other SDGs.

In some areas, such as urban basic services, the NUA deepens the scope of some of the targets of SDG 11. For example, transport is reflected more comprehensively in the NUA than in the SDGs, where it is limited to targets 11.2 (access to public transport) and 3.6 (road traffic accidents). By contrast, there is a range of recommendations pertaining to sustainable transport and mobility in the NUA, such as sustainable transport infrastructure and services generation; rural-urban linkages; travel demand management; road safety; climate change, air quality and energy efficiency; freight transport; land use, urban transport planning; transport poverty, equity and inclusion; capacity building; and sustainable transport financing. The NUA not only deepens the scope of implementation, but also proposes more integrated responses at the urban level, thereby providing a more detailed road map that will assist policymakers in creating a more sustainable urban future.

Although a document negotiated and agreed upon by Member States, the NUA places emphasis on implementation at the local level. In this regard, Chapter 7 discusses the vital contribution of local governments in unlocking the value of sustainable urbanization. While the 2030 Agenda also acknowledges the importance of implementation at the local level and the role of local governments, it positions local and regional governments in tandem with major groups and other stakeholders while giving national governments primacy. The NUA seeks a more balanced distribution of authority for the implementation of the urban dimension of sustainable development by empowering local authorities. Such a role is appropriate because local governments have traditionally facilitated development and provided services directly to households, as well as overseen spatial development through local planning, governance and financial policies. Consequently, the NUA also emphasizes the need to

develop the capacity of local authorities and other local actors to implement both the NUA and the SDGs.

Given that the NUA addresses a much wider range of urban issues than the SDGs, it requires its own follow-up and review process, which consists of a series of quadrennial reports, a midterm review of the New Urban Agenda (Quito+10) and annual dialogues at the World Urban Forum and UN-Habitat Governing Council. This follow-up and review process is complementary to that of the 2030 Agenda and SDGs, with regular overlap every three years when the High-Level Political Forum addresses SDG 11. Ahead of the midterm review of the Sustainable Development Goals in 2022, the follow-up and review of the NUA will have to feed into the overall follow-up and review of the 2030 Agenda and SDGs.

The first quadrennial report on the implementation of the NUA, issued 18 months after the agenda's adoption, provides many lessons, challenges and opportunities.[25] In some cases, there has been low levels of awareness regarding the potential benefits of urbanization and of urban-related commitments made in global development agendas. National authorities are burdened by low institutional and fiscal capacity and weak multilevel governance structures and multi-stakeholder engagement. The implementation of the New Urban Agenda demands local actions; this type of action requires institutional, organizational, policy and financial capacity that is often lacking or poorly developed in many countries. The capacity to strengthen devolution and local autonomy in many countries is low, and many cities continue to lack financial resources and the technical capacity to manage the challenges associated with urbanization.

The NUA seeks a more balanced distribution of authority for the implementation of the urban dimension of sustainable development by empowering local authorities

1.4. Recent Global Urban Trends and Conditions

The New Urban Agenda, the 2030 Agenda for Sustainable Development and other global frameworks relevant to sustainable urbanization were adopted in times of profound global changes and challenges. The Kuala Lumpur Declaration on Cities 2030 adopted at the Ninth World Urban Forum in 2018 acknowledged several trends and challenges typical of our increasingly urbanized world such as limited opportunities for collective city-making, inequitable access to urban life, gender inequalities in urban economies and leadership, and insufficient protection from human rights violations like forced evictions.[26] The Abu Dhabi Declared Actions adopted at the Tenth World Urban Forum in 2020 moved from challenges to solutions as international organizations, local and regional governments, the private sector, civil society, academia and other groups enumerated commitments to accelerate the implementation of the New Urban Agenda.[27] An understanding of these challenges, many of which have intensified since 2016 and were further exacerbated by the recent outbreak of the coronavirus pandemic, as well as the types of actions taken to address them, is crucial for achieving sustainable urbanization. These trends also have implications for unlocking the value of sustainable urbanization.

1.4.1. Demographic change and related trends

The world continues to experience an increase in its urban population even as the rate of urbanization in many regions has slowed from previous decades. Nevertheless, urban areas are expected to absorb virtually all the future growth of the world's population. At the time of adoption of the 2030 Agenda for Sustainable Development in 2015, 54 per cent (4 billion) of the world's population lived in urban areas (Table 1.1); by the end of the 20-year period covering the New Urban Agenda in 2036, 62 per cent (5.4 billion) of the global population is expected to reside in urban areas.[28] Ninety-six per cent of urban growth will occur in the less developed regions of East Asia, South Asia and Africa with three countries—India, China and Nigeria—accounting for 35 per cent of the total increase in global urban population from 2018 to 2050.[29] These countries are expected to add 416 million, 255 million and 189 million new urban dwellers, respectively.

Table 1.1: Urban population and level of urbanization (2000-2035)

Region	Urban population (million)								Percentage urban							
	2000	2005	2010	2015	2020	2025	2030	2035	2000	2005	2010	2015	2020	2025	2030	2035
World	2868	3216	3595	3981	4379	4775	5167	5556	46.7	49.2	51.7	53.9	56.2	58.3	60.4	62.5
High-Income Countries	822	870	919	955	989	1019	1049	1076	76.8	78.6	80	80.9	81.9	82.8	83.9	85.0
Middle-Income Countries	1935	2211	2511	2825	3145	3456	3757	4045	41.6	44.7	47.9	50.8	53.7	56.5	59	61.5
Low-Income Countries	109	133	162	199	243	296	359	432	25.7	27.2	28.9	30.9	33.2	35.7	38.3	41.2
Africa	286	341	409	492	588	698	824	966	35	36.9	38.9	41.2	43.5	45.9	48.4	50.9
Asia	1400	1631	1877	2120	2361	2590	2802	2999	37.5	41.2	44.8	48	51.1	54	56.7	59.2
Europe	517	525	538	547	557	565	573	580	71.1	71.9	72.9	73.9	74.9	76.1	77.5	79.0
Latin America and the Caribbean	397	433	470	505	539	571	600	627	75.5	77.1	78.6	79.9	81.2	82.4	83.6	84.7
Northern America	247	262	277	291	305	320	335	349	79.1	80	80.8	81.6	82.6	83.6	84.7	85.8
Oceania	21	23	25	27	29	31	33	35	68.3	68	68.1	68.1	68.2	68.5	68.9	69.4

Source: United Nations, 2018b.

With 2.3 billion people living in cities, Asia has the highest number of urban dwellers worldwide; the region is 50.1 per cent urbanized and accounts for 54 per cent of the world's urban population.[30] The process of urbanization in Asia, especially South-East Asia, is strongly linked to economic transition and greater integration into the global economy, as many cities have become the recipients of foreign direct investment, mainly in the form of the outsourcing of manufacturing of consumer goods by parent companies in developed countries. Urbanization in South-East Asia is leading to an economic transformation across the region as workers increasingly gravitate to the service sector.[31] Indeed, the economic hubs of Asia are almost entirely urban-based as its cities thrive with investments, infrastructure, innovation and competitiveness.

Urban growth rates vary remarkably across the world. The highest growth rates are in the developing regions, with Africa having urbanized the most rapidly at 3.7 per cent annually between 2010 and 2015 (Table 1.2); this figure is projected to have declined marginally to 3.57 per cent between 2015 and 2020, but still remains the highest of any region. Africa's rapid urbanization is driven mainly by natural increase, rural-urban migration, spatial expansion of urban settlements through annexation and the reclassification of rural areas.

Compared to other developing regions, Africa shows much lower income levels than other regions at similar levels of urbanization.[32] This discrepancy means that Africa is not reaping all of the potential economic development benefits of urbanization. By contrast, countries in East Asia and the Pacific surpassed the 50 per cent level or urbanization in 2009 with an average GDP per capita of US$5,300. The Middle East and North Africa region became at least half urban in 1981 with an average GDP per capita of US$3,700 and Latin America and the Caribbean region crossed the 50 per cent threshold in 1961 with an average GDP per capita of US$2,300. Meanwhile, Sub-Saharan Africa is currently 41.4 per cent urban with an average GDP per capita of US$1,574 (2018).[33]

Compared to other developing regions, Africa shows much lower income levels than other regions at similar levels of urbanization

MindTheStep project in Sao Paulo Brazil. © UN-Habitat

The world's urban population of 4.3 billion is unevenly distributed among human settlements of different sizes. The world has witnessed an increasing concentration of people in highly urbanized areas, especially megacities or those metropolitan areas with at least 10 million people. There are 33 megacities worldwide, which accounted for 13 per cent of the world's urban population in 2018, up from 9 per cent in 2000. Latin America leads the charge in this regard with 18 per cent of its urban population residing in megacities. While megacities are notable for their size, concentration of economic activities and influence in the global economy, they are not the fastest growing type of city, nor do they represent most of the urban population. Indeed, the fastest growing cities are the small and medium "intermediate" or "secondary" cities with less than 1 million inhabitants, which account for 59 per cent of the world's urban population and a majority of the urban population in every region.[34] The growth of intermediate cities will help foster better urban-rural linkages and relieve some of the quality of life strain, such as rampant informal housing, environmental degradation and long commutes, that can be endemic to megacities.

Despite the demographic importance and potential role of intermediate cities, urban planning in developing countries has focused disproportionately on the problems of large metropolitan areas, thereby further fuelling the problem

While megacities are notable for their size, concentration of economic activities and influence in the global economy, they are not the fastest growing type of city

of urban primacy. If small and medium cities are to fulfil their potential, then they should form part of the urban planning agenda for developing countries in the twenty-first century.[35] In this regard, the NUA calls for strengthening the role of small and intermediate cities and towns in providing access to sustainable, affordable, adequate, resilient and safe housing, infrastructure and services as well as facilitating effective trade links across the urban-rural continuum.

Gender, youth and older persons

Urbanization provides unique momentum to advance gender equality, as it is often associated with greater access to education and employment opportunities, lower fertility rates and increased independence. Yet, women's equal "right to the city" is still far from being realized, especially among lower-income women.[36] The growing number of women-headed households in cities and the participation of women in the labour market imposes new requirements on the location of homes vis-à-vis places of employment and urban services, as well as to the layout and management of transportation systems.[37]

Table 1.2: Urban rate of change 2000-2035

Region/Area	Average Annual Rate of Change of the Urban Population							Entire Period
	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2000-2035
World	2.29%	2.23%	2.04%	1.90%	1.73%	1.58%	1.45%	1.89%
High-Income Countries	1.13%	1.11%	0.76%	0.69%	0.61%	0.57%	0.51%	0.77%
Middle-Income Countries	2.67%	2.54%	2.36%	2.14%	1.89%	1.67%	1.48%	2.11%
Low-Income Countries	3.90%	3.98%	4.08%	4.03%	3.96%	3.85%	3.70%	3.93%
Africa	3.52%	3.61%	3.70%	3.58%	3.44%	3.32%	3.19%	3.48%
Asia	3.06%	2.80%	2.43%	2.16%	1.84%	1.58%	1.35%	2.18%
Europe	0.33%	0.46%	0.35%	0.35%	0.30%	0.28%	0.26%	0.33%
Latin America & the Caribbean	1.74%	1.61%	1.47%	1.30%	1.15%	1.00%	0.85%	1.30%
Northern America	1.13%	1.13%	0.95%	0.95%	0.96%	0.92%	0.84%	0.98%
Oceania	1.35%	1.78%	1.54%	1.42%	1.30%	1.24%	1.18%	1.40%

Source: United Nations, 2018b

Men, women, boys and girls experience cities in very different ways on account of gendered social rules, norms and culture; subtle discrimination against women such as micro-aggressions; institutionalized gender bias; and the structural asymmetrical distribution of power and resources between men and women. These different experiences suggest that the value attached to urbanization will also be different depending on one's gender (Chapter 2). Public transport can be liberating for a man to affordably experience urban life, but petrifying for a woman who suffers from a lack of personal safety. For example, over 65 per cent of women using public transportation in Mexico City have experienced sexual harassment while travelling.[38] Public space can offer a livelihood for men to sell street food, but not offer the same guarantee to women. For example, 92 per cent of women in Rabat, Morocco and 68 per cent of women in Quito, Ecuador have experienced sexual harassment in public spaces.[39] These disparities also manifest in areas like limited land and property ownership (women account only for 25 per cent of the landowners in Latin America).[40]

An important demographic trend that has implications for urban areas, particularly in developing countries, is the relatively large proportion of the youth population aged 15 to 24

An important demographic trend that has implications for urban areas, particularly in developing countries, is the relatively large proportion of the youth population aged 15 to 24. The world youth population is projected to rise to 1.3 billion by 2030.[41] In many developing countries, the decline in infant mortality and increase in fertility over several decades has created a youth population boom. In Africa, youth comprise almost 20 per cent of the population and 35 per cent of the global youth population.[42] While a youthful population can present challenges for ensuring education and employment, it could be an advantage against the devastating impacts of COVID-19 (see section 1.4.7). In Latin America and the Caribbean, South Asia and West Asia, youths account for between 17 and 19 per cent of the population. In some regions, the energy of a youthful population has been harnessed to nefarious ends. The high levels of youth unemployment in Latin America and the

Caribbean is associated with the proliferation of youth gangs and high rates of urban crime and violence.[43]

Currently, youth and children collectively account for nearly 40 per cent of the world's population. It is predicted that by 2030, 60 per cent of urban dwellers in developing countries will be under the age of 18.[44] A large youthful population presents the challenge of youth unemployment, which is two to three times higher than adult unemployment. The provision of training and employment opportunities, as well as investments in sports and recreational facilities will make cities more attractive and healthier for youth while encouraging pro-social behaviour. UN-Habitat's One Stop

Box 1.2: Providing for youth in Wau, South Sudan

In South Sudan, the world's youngest country, young people in the north-western city of Wau now have a place to relax, learn and come together following the opening of the One Stop Youth Centre with funding from Japan. The new centre provides a space for conflict resolution forums as well as opportunities for vocational and computer training, recreational activities, job placement and entrepreneurial skills development. It is a model that UN-Habitat has pioneered to promote youth development across East Africa.

The centre has already trained 72 young men and women in conflict resolution and trauma healing and 170 youth have enrolled in computer, tailoring and English courses. Up to 100 young people use the sports facilities daily and the centre has attracted youth from all over the state, including internally displaced people.

During the inauguration, the Japanese Ambassador to South Sudan handed equipment for basketball, volleyball and handball to the centre in the presence of the Governor, the national Minister of Culture, Youth and Sports and the Wau State Minister of Information, Culture, Youth and Sports. The Japanese Ambassador called on the youth to dream big and develop the country noting that: "The next responsibility for the development of South Sudan lies with you, young people."

Source: UN-Habitat, 2019b.

Youth Centres in East Africa provide meeting places for young people to access information and resources critical to youth-led development programmes (Box 1.2).

Population ageing has been described as one of the demographic megatrends that hold important implications for economic and social development and for environmental sustainability.[45] The so-called "global greying" is emerging as one of the most significant social transformations of the twenty-first century, with implications for financial and labour markets as workers retire. This demographic wave will impact the demand for goods and services such as housing, transportation and social protection, all of which are strongly linked to urban areas. In 2018, for the first time in history, persons aged 65 years or over worldwide outnumbered children under age five.[46] Ageing of the population is occurring in all countries all over the world, with the population aged 65 and over being the fastest growing age group—increasing from 6.9 per cent in 2000[47] to 9.1 per cent in 2019.[48] The proportion of older persons in the world is projected to reach nearly 11.7 per cent in 2030 and 15.9 per cent in 2050. The increase in the ageing population has been occasioned by declining fertility rates and improvements in life expectancy over the latter half of the twentieth century.

Ageing and its consequences, such as too few workers to support a large population of pensioners and the need for housing designed to meet the physical needs of older persons, appear gradually and predictably. As such, policymakers have time to address these issues before they become acute problems.[49] It is imperative that countries plan for population ageing, safeguard the wellbeing of older persons and ensure that they are not left behind by protecting their human rights and economic security as well as by ensuring access to age-appropriate healthcare services, built environment facilities, lifelong learning opportunities, and formal and informal support networks. The recent outbreak

An important demographic trend that has implications for urban areas, particularly in developing countries, is the relatively large proportion of the youth population aged 15 to 24

of COVID-19 poses a major threat to older persons as those aged 65 years and over account for 80 per cent of fatalities, making countries with a sizeable ageing population particularly vulnerable.

1.4.2. Urban footprints growing faster than urban population

Urban sprawl, a spatial phenomenon initially used to describe the suburbanization of land-rich developed countries of North America and Australia, is now occurring in cities in all over the world.[50] Whether horizontal spreading, dispersed urbanization or peri-urbanization, the physical extent of urban areas is growing much faster than their population, thereby consuming more land for urban development. The unbridled expansion of urban areas has profound implications for energy consumption, greenhouse gas emissions, climate change and environmental degradation. Findings from a global sample of 200 cities with over 100,000 inhabitants show that between 1990 and 2015, cities in developed countries increased their urban land area by 1.8-fold while the urban population increased by 1.2-fold; thus, implying that the expansion of urban areas in relation to urban population growth increased by a ratio of 1.5.[51]

In the case of developing countries, over the same period, urban land use increased 3.5-fold, while the urban population increased one-fold or doubled. This suggests that urban expansion increased 3.5 times in relation to urban population growth. Further findings suggest that the expansion of urban areas in developed and developing countries is projected to grow by a factor of 1.9 and 3.7, respectively, between 2015 and 2050.[52] However, if urban areas are effectively planned, managed and governed, then the urban expansion in both developing and developed countries will grow at a projected factor of 1.1 and 2.5, respectively. Elsewhere, it has been estimated that by 2030, cities are expected to cover three times as much land as they did in 2000, with much of the expansion occurring in relatively undisturbed key biodiversity hotspots.[53] These projections indicate the quantitative value of well-planned urbanization, which can preserve excess land from peri-urban redevelopment.

Table 1.3 provides an indication of the expansion of urban areas in different regions. Despite the rapid rate of growth of the urban population in developing regions, the expansion

Table 1.3: Growth in urban expansion and urban population

Geographic Regions	Average of Urban Extent Annual Change 2000-2015	Average of Urban Extent Population Annual Change 2000-2015	Ratio of Urban Extent to Urban Population
Sub-Saharan Africa	5.1%	4.2%	1.20
North Africa and Western Asia	4.0%	2.7%	1.45
North Africa	4.5%	3.1%	1.43
Western Asia	3.5%	2.4%	1.46
Central and Southern Asia	4.3%	3.0%	1.46
Central Asia	5.1%	4.3%	1.18
Southern Asia	4.3%	2.8%	1.50
East and South-East Asia	6.9%	4.2%	1.65
East Asia	7.2%	4.1%	1.77
South-East Asia	5.7%	4.4%	1.31
Latin America and the Caribbean	2.1%	1.9%	1.12
Caribbean*	0.3%	0.8%	0.35
Central America	2.6%	2.3%	1.14
South America	2.0%	1.8%	1.13
Oceania	1.2%	1.4%	0.86
Australia and New Zealand **	1.1%	1.7%	0.67
Oceania [excl. Australia and New Zealand] ***	1.3%	0.8%	1.64
Europe and North America	2.1%	1.0%	2.06
North America	2.0%	1.5%	1.32
Europe	2.1%	0.7%	2.88
Average Global Sample Cities	4.3%	2.8%	1.52

One city (Holguin)
**Two cities (Sidney and Auckland)
***One city(Suva)
Source: Based on UN-Habitat, 2016b

of urban areas is occurring even faster. For instance, urban areas in Sub-Saharan Africa expanded at an annual rate of 5.1 per cent between 2000 and 2015, behind East Asia and South-East Asia, where the expansion of urban areas grew at annual average rates of 7.2 per cent and 5.7 per cent, respectively. The rate of urban expansion in these regions is higher than the global average of 4.3 per cent.

The expansion of African cities, characterized by the spreading out of large cities at a remarkable pace, has been difficult to manage.[54] In the process, these cities engulf surrounding rural land and adjacent towns, leading to continuous belts of settlements.[55] This process of peri-urbanization, which is largely informal, is driven by the efforts of low-income households to secure affordable land in a reasonable location. It has led to the emergence of new settlement forms, which current planning and

regulatory frameworks are unable to address effectively. These sprawling urban peripheries are often disconnected from the main urban fabric. They lack the necessary road connections for efficient urban travel and increase the cost of providing municipal services. The failure to effectively plan and manage the expansion of urban areas has led to serious resilience challenges, such as housing affordability, traffic congestion, poor access to labour markets and public space, natural hazard risk to communities, loss of natural environment and ecosystems and lack of basic services such as water, sanitation and electricity.[56] The absence of basic services increases the vulnerability of these areas to the coronavirus disease, as is currently the case.

Although the ratio of the rate of urban expansion to urban population growth is low in Sub-Saharan African cities (1.2) when compared to East Asia (1.77) and Europe

and North America (2.06), cities in these regions have been able to offset the reduction of densities through innovative planning that contains sprawl and enhances connectivity, such as urban growth boundaries and urban infill policies.[57] The inadequate planning structures in the sprawling areas of African cities hinders the development of agglomeration economies and the efficient provision of public goods and services. Since most of the infrastructure to accommodate rapidly expanding urban areas in Africa is yet to be built, planning for urban expansion provides an auspicious opportunity to plan city growth in a manner that generates social and economic returns and enhances inclusive prosperity.

In the US, 80 per cent of metropolitan areas have become less dense since 2010 (Box 1.3). Even as jobs have shifted to urban centres, US residents continue to exhibit preferences for a suburban lifestyle while those who would prefer to live in cities must contend with extreme housing unaffordability as desirable cities have not permitted sufficient new housing construction to keep up with demand. This trend has contributed to the country's high rate of car ownership, distances travelled for work, length of paved roads, overall fuel consumption and high personal carbon footprint.

The spatial expansion of cities is an inevitable consequence of urban population growth and other contextual factors. The challenge for planning is to devise mechanisms for directing or controlling the timing, rate and location of urban growth. Urban sprawl—whether suburbanization in North America, peri-urbanization in Africa or metropolitanization in Asia and Latin America—are all products of either inappropriate or ineffective planning regulations. All of these types of sprawl necessitate the adoption of more sustainable urban growth management policies where both planned expansion and planned infill play key roles.

1.4.3. Migration: Opportunity and challenge for inclusive cities

Migration is one of the main factors driving the global increase in urbanization, and in the process it is making cities into more diverse places.[58] Currently, there are 763 million internal migrants[59] and 272 million international migrants in the world,[60] which means that every seventh person in the

Box 1.3: Seattle climbs but Austin sprawls: The myth of the return to cities

Be skeptical when you hear about the return to glory of the American city—that idealized vision of rising skyscrapers and bustling, dense downtowns. Contrary to perception, the nation is continuing to become more suburban, and at an accelerating pace. The prevailing pattern is growing out, not up, although with notable exceptions.

Rural areas are lagging metropolitan areas in numerous measures, but *within* metro areas the suburbs are growing faster in both population and jobs. On the other hand, as anyone who has tried to rent an apartment or buy a condo in a big city knows, housing prices are climbing faster in urban neighbourhoods than in the suburbs. And urban neighbourhoods are younger and richer than they used to be, with more educated residents and fewer school-age children. Higher-wage jobs are increasingly in city centres, with urban retail catering to these well-paid workers and residents.

This combination of faster population growth in outlying areas and bigger price increases in cities points to limited housing supply as a curb on urban growth, pushing people out to the suburbs. It is a reminder that where people live reflects not only what they want—but also what is available and what it costs. However, these broad national trends hide divergent local ones. A few large metro areas did, in fact, become more urban between 2010 and 2016. Of the 51 metro areas with more than one million people, average neighbourhood density rose in 10 and fell in 41, according to census population data and United States Postal Service counts of occupied housing units. That is, four-fifths of large metro areas have become more suburban since 2010, while only one-fifth have become more urban.

Source: Kolko, 2017.

world is a migrant. In many developing countries, internal rural-to-urban migration in search of economic opportunity has historically been a key driver of urban growth.[61] Safe, orderly and regular migration can be a powerful tool for lifting people out of poverty, reducing inequality and

Refugees migrate to Europe. © Fishman64/Shutterstock

contributing to sustainable development in both place of origin and destination.[62] At the same time, policies that address the negative drivers of migration such as poverty, unemployment and insecurity can make remaining in one's country more viable for potential migrants.

Most migrants are found in urban areas. International migrants represents over one-third of the population in global cities that have become magnets for foreign talent, from students to professionals, like Toronto, Los Angeles, Sydney, London, Melbourne, Vancouver, San Francisco, Malmö, Montréal, Brisbane, The Hague and New York. In certain international hubs like Brussels, Dubai and Miami, they significantly outnumber the local population.[63] International migration accounts for about one-third of urban growth in developed countries[64] and is increasingly transforming urban areas into heterogenous, multi-ethnic, multicultural and multilingual spaces with cities large and small reacting accordingly to accommodate

these newcomers. Such cultural diversity contributes to the vibrancy, prosperity, inclusiveness, competitiveness, attractiveness, positive perception and overall development of cities, all of which will enhance their intangible value (Chapter 5). It has been shown that culturally diverse cities are more innovative given that they benefit from a wider range of international knowledge links, idea generation, problem-solving, diverse decision-making and ability to attract a more innovative workforce.[65]

Rising migration brings both opportunities and challenges for the migrants, communities and governments concerned. The rise in international migration calls for policies to integrate migrants into cities in an inclusive manner. In this regard, the United Nations adopted the New York Declaration for Refugees and Migrants in 2016[66] as well as the Global Compact for Safe, Orderly and Regular Migration and the Global Compact on Refugees in 2018 in response to large movements of refugees and

protracted refugee situations as well as to define processes for shared responsibilities.[67] The 2030 Agenda recognizes that international migration is a multidimensional reality of major relevance for the development of countries of origin, transit and destination, which requires coherent and comprehensive responses. These global frameworks reinforce the role of local authorities as central to the integration of refugees and migrants insofar as cities are the frontline recipients of migrants. In the absence of effective integration policies, migration can lead to the formation of marginalized communities, which could serve as breeding grounds for exclusion, disenchantment, vulnerability and even radicalization.[68]

Cities are also on the frontlines of irregular migration, defined as movement that takes place outside the regulatory norms of the sending, transit and receiving country.[69] There were 58 million irregular migrants in 2017, up from 50 million in 2009.[70] At the core of irregular migration are restrictive policy regimes both at the countries of origin and destination that not only reduce the opportunities for regular migration but also deflect migrants toward irregular migration channels.[71] When avenues for regular migration are lacking, intending migrants are inclined to venture into irregular channels which are often costly, fraught with risks and potentially come with lower benefits for both the migrants and host communities. Even as migration boosts urban economic prospects, the increase in both regular and irregular migration over the last decade has triggered a xenophobic populist backlash fuelled by events like alleged sexual assaults against women in public spaces in Germany on New Year's Eve 2016[72] and fears of a "migrant caravan" from Central America to the US in 2018.[73] The resulting political climate seeks to restrict immigration, especially from poorer countries and often from countries of origin with different racial, ethnic or religious backgrounds than the country of destination. Border closures as a response to the COVID-19 pandemic have accelerated this trend.[74]

Cities are also on the frontlines of irregular migration, defined as movement that takes place outside the regulatory norms of the sending, transit and receiving country

Irregular migrants are often exploited for economic gain. In 2016, 2.5 million irregular migrants were smuggled for an economic return of US\$5.5–7 billion.[75] They are also subjected to various forms of risks, severe hardship and physical danger as they traverse dangerous terrains such as oceans and deserts, which often result in the fatalities. The discovery in October 2019 of the bodies of 39 migrants in a refrigerated trailer in Essex, UK is just one gruesome example that highlights the risks of irregular migration.[76]

In seeking a better future, migrants brave harsh practices designed to deter, prevent and punish irregular entry. Yet even if they do arrive safely, the difficulties faced by migrants in host countries can entrench poverty, stereotypes, racism and realities so different from the rewards initially anticipated. Irregular migrants face legal barriers and difficulties in integration, poor living and working conditions, limited access to services including social protection systems and the inability to make full use of their education and skills leading to deskilling or "brain waste."[77]

1.4.4. Rising levels of inequality in cities

Growing levels of inequality and exclusion are becoming persistent trends in urban areas where most of the world's population growth will occur over the next 30 years.[78] For more than two-thirds of the world's urban population, income inequality has increased since 1980.[79] This widening gap means that about 2.9 billion people are living in cities where income inequalities are currently more pronounced than they were a generation ago. In a rapidly urbanizing world, the nature of inequality will largely depend on what happens in urban areas. Inequality within cities has economic, social and spatial manifestations and is characterized by differentiated access to income, consumption, opportunities, employment, health, education, technology, public spaces, municipal services and private goods.

Inequalities are reflected in the way urban space is produced and consumed, with remarkable concentration of disadvantages in specific locations. More than ever, cities are demarcated by visible and invisible divides resulting in various forms of social, cultural and economic exclusion.[80] Inequality strongly affects vulnerable groups like women and girls, older persons, indigenous people, persons with disabilities, migrants, refugees and people living in

Figure 1.1: Gini coefficients for selected cities in Europe and North America
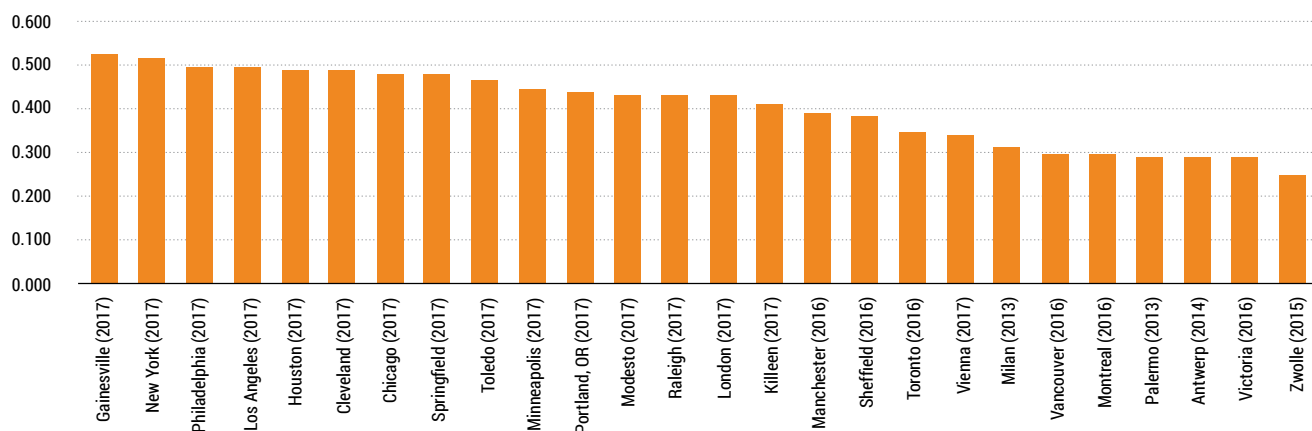
Source: UN-Habitat, Global Indicators Database 2020.

poverty, all of whom are excluded from full participation in economic, political and social life. The outbreak of the COVID-19 pandemic together with the accompanying lockdown measures are exacerbating these inequalities as discussed in section 1.4.7 and Chapter 5.

Generally, levels of inequality in developed countries are lower than in developing countries, which indicates greater access to public goods and services and the existence of institutions that implement more egalitarian polices. Nonetheless, income inequality in developed countries has been widespread and significant since the 1980s and has been blamed for the increasingly polarized politics witnessed in several countries.[81] Consequently, social exclusion, marginalization, urban segregation and persistent pockets of destitution and poverty are increasingly rife in developed cities.

In countries with widening income gaps, urban inequality often outpaces national averages. Many cities in the US have higher Gini coefficients than the national figure of 0.42.[82] For example, New York City, Gainesville, Cleveland, Philadelphia and Chicago have Gini coefficients of 0.51, 0.52,

The outbreak of the COVID-19 pandemic together with the accompanying lockdown measures are exacerbating these inequalities

0.48, 0.50 and 0.48 respectively (Figure 1.1). New York City epitomizes rising economic inequality in the US, where the top one per cent earns over 40 per cent of the city's income, which is double the national share of the top one percent.[83] Cities are often bellwethers of national trends and in this particularly worrisome trend, city authorities working in partnership with national authorities have a key role to play in creating more equal cities and subsequently more equal countries.

Globally, the regions with the highest levels of inequality are Latin America and Sub-Saharan Africa. While Latin American cities have become more egalitarian in the last two decades, income inequality remains high (Figure 1.2). The highest levels of inequality are in Curitiba, Santiago, São Paulo, Guatemala City, Buenos Aires, Córdoba, Cochabamba and Bogotá, where the Gini coefficients vary from 0.50 to 0.67. Between 1990 and 2010, the combined Gini coefficients for urban areas in Latin American dropped from 0.517 in 1990 to 0.494.[84] This improvement can be attributed to redistributive policies in some countries such as *Prospera* in Mexico[85] and *Bolsa Família* in Brazil[86] that were designed to improve the living standards of the urban poor through conditional cash transfers and massive investment in health and education.

Extreme inequalities can lead to social unrest or full-blown conflicts as demonstrated in Santiago, Chile in October 2019. What started off as student-led protests over the

Figure 1.2: Gini coefficients for selected Latin American cities

| | Curitiba(2009) | Belo Horizonte(2009) | Santiago(2009) | Sao Paulo(2009) | Quito(2010) | Leon(2005) | Resto Urbano (2017) | Guatemala City(2006) | Tegucigalpa (2017) | San Pedro Sula (2017) | Buenos Aires(2010) | Cordoba(2010) | Cochabamba(2007) | Tijuana(2010) | Bogota(2017) | Mexico City(2010) | San Jose (2010) | Valledupar(2017) | Guadalajara(2010) | San Salvador(2010) | Caracas(2010) | Culiacan(2010) |
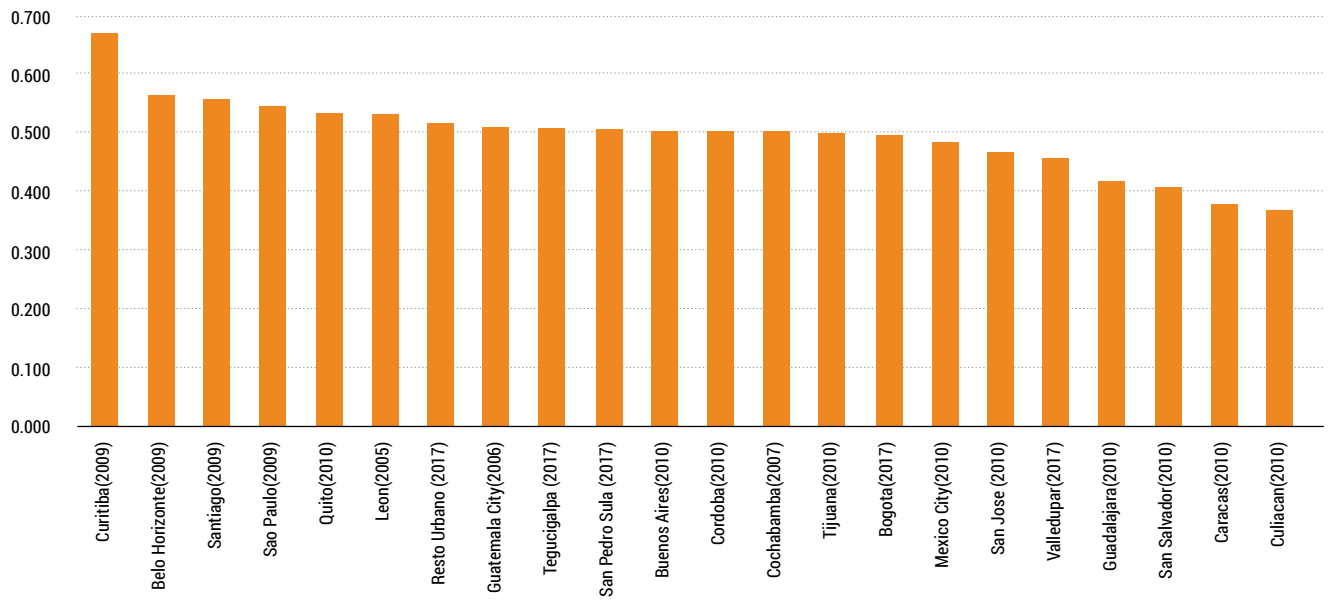
Source: UN-Habitat, Global Indicators Database 2020.

Health workers wearing protective gear monitor body temperature of people during the health check up camp at a slum in Mumbai, India. © Shutterstock/ Manoej Paateel

Box 1.4: Inequality fuels global discontent in cities

Concern about inequality underlies the pre-pandemic social unrest that sparked on almost every continent in 2019, although tipping points varied from corruption to constitutional breaches to price rises for basic goods and services. Even as global inequality has declined over the past three decades, domestic income inequality has risen in many countries—particularly in advanced economies—and reached historical highs in others. In OECD countries, income inequality is at its highest level of the past half century. Many of the protesters have long been excluded from their country's wealth and share frustration that the elite have captured gains at the expense of others.

In Chile, for example, a three per cent increase in metro fares triggered violent demonstrations, forcing the government to change policy amidst calls for "¡*dignidad!*" (dignity). Chile is one of the fastest growing, wealthiest and most stable Latin American economies. By some measures, it was reducing inequality. While the income share of the richest 10 per cent was 38 per cent in 2015, the poorest 10 per cent earned just 1.7 per cent. Its Gini coefficient—the most widely used measure of income inequality—fell from 0.57 in 1990 to 0.47 in 2017. Nonetheless, it still has the second highest Gini coefficient among OECD members, well above the rich country group's average of 0.32.

In Hong Kong, the recent months-long demonstrations on political issues have also been aggravated by inequality: at 0.54, Hong Kong's Gini coefficient is at its highest level in 45 years, significantly above those of China (0.39) or the United States (0.42). Inequality is a powerful, but oft-ignored, factor underlying the frustrations of Hong Kong's residents over disparities in labour markets, increased levels of poverty especially among ethnic minorities, slow growth in real wages and reduced expenditure on health and social welfare.

In Lebanon, where the Gini coefficient is 0.51, nationwide protests were triggered by the government's decision to impose a tax on the popular communication app WhatsApp. In Iraq, protests began in October—mostly led by people from the disenfranchised working class and middle-income groups—over issues of corruption, unemployment and demands for access to basic public services.

Source: World Economic Forum, 2020a

proposed increase of 30 Chilean pesos (US$0.04) in metro fares escalated into widespread violent demonstrations and vandalism involving over 1 million people; thus revealing deep-seated resentment among ordinary Chileans who feel excluded from the country's economic rise.[87] Similar demonstrations of widespread discontent in response to rising inequality have taken place in different parts of the world (Box 1.4).

Asian cities have the lowest levels of inequality among developing regions. The levels of inequality in Chinese cities vary remarkably (Figure 1.3). Over the last two decades, China experienced rapid economic growth and urbanization, which led to a massive reduction in the number of people living in extreme poverty.[88] However, economic growth and urbanization in China have been accompanied by growing inequality.[89] Empirical analysis shows that the increase in China's urban population from 23 per cent in 1985 to 51 per cent in 2010 resulted in an increase of 20.5 Gini coefficient points.[90] This jump reflects widening inequality in urban areas, brought about by internal migration and the lack of an adequate safety nets for migrants.

Sub-Saharan Africa has the world's second highest level of income inequality after Latin America. Close to three quarters of the cities in Figure 1.4 have high levels of inequality as indicated by Gini coefficients exceeding 0.4, with South African cities being the most unequal in the region; thus, confirming South Africa as the most unequal country in the world on account of its high Gini coefficient

Figure 1.3: Gini coefficients for selected Asian cities
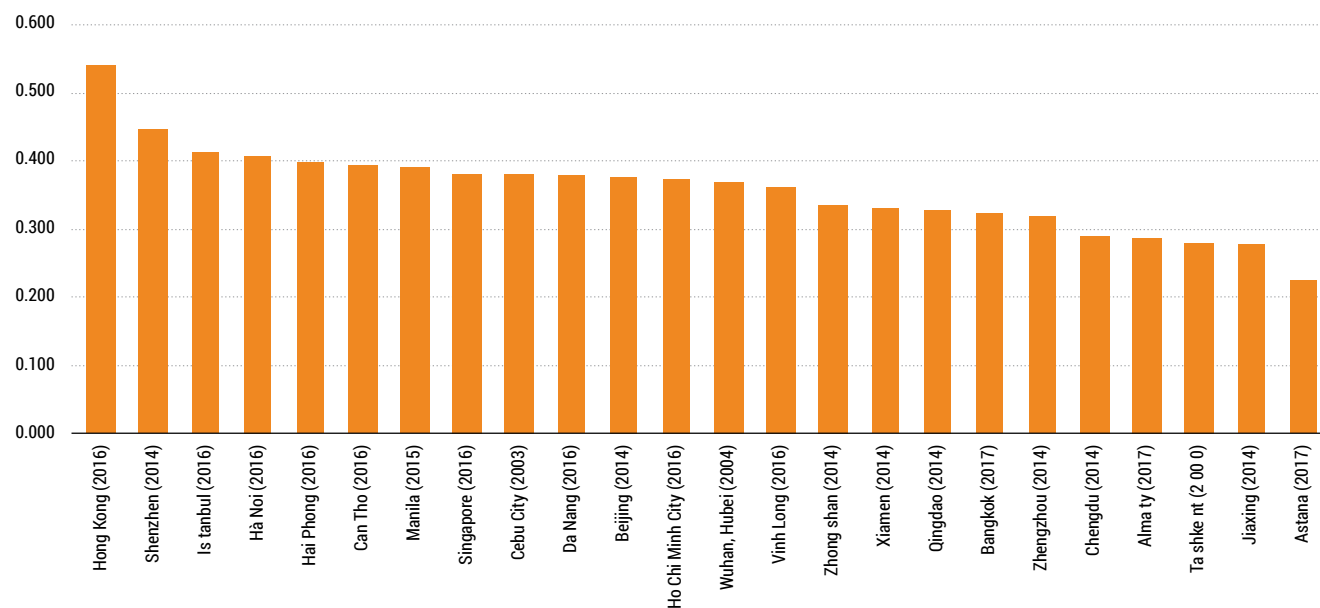
Source: UN-Habitat, Global Indicators Database 2020.

(0.63).[91] The key drivers of inequality in South Africa are inequality of opportunity; high levels of unemployment, which stand at 29.1 per cent nationwide and 58.2 per cent among youth[92]; low economic growth; financial constraints; and a highly polarized labour market characterized by a large wage gap and low intergenerational mobility.[93] The creation of productive employment and improved service delivery as enshrined in the National Development Plan 2030 will go a long way in reducing inequality in South African cities, but this will be severally challenged by the deleterious effects of COVID-19, which led to a 51 per cent contraction of the country's economy in the second quarter of 2020.[94]

1.4.5. Affordable and adequate housing: Still an illusion for many

Housing affordability is a global challenge that affects virtually all households. Globally, prospective homeowners are compelled to save more than five times their annual income to afford the price of a standard house.[95] Renter households often spend more than 25 per cent of their monthly income on rent. High levels of unaffordability mean that inadequate housing and slums remain the only

Figure 1.4: Gini coefficients for selected African cities
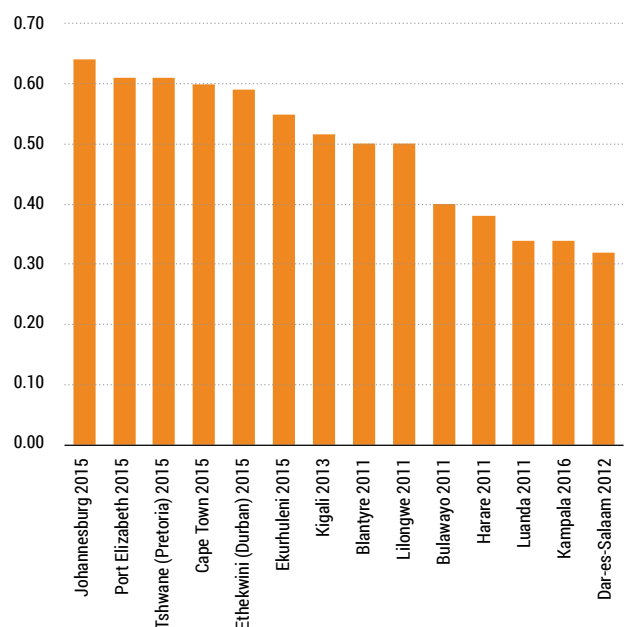
Source: UN-Habitat, Global Indicators Database 2020.

People experiencing homelessness are one of the most vulnerable groups to the COVID-19 pandemic

housing option for low-income households. Currently, 1.6 billion people or 20 per cent of the world's population live in inadequate, crowded and unsafe housing.[96]

The private construction industry dominates the housing market in most countries. It has systematically enabled middle-class formal homeownership, but the free market has simultaneously disabled ever-growing numbers of poor citizens from access to adequate and affordable housing. Such residents instead remain confined to single-room or informal housing, if not sheer homelessness, which now accounts for no less than 150 million people, or about two per cent of global population.[97] People experiencing homelessness are one of the most vulnerable groups to the COVID-19 pandemic. They often have underlying health conditions that make them more susceptible to dying from coronavirus and their living conditions make them unable to observe physical distancing and handwashing protocols, although some cities have adopted emergency measures like renting hotel rooms or installing handwashing stations near tent encampments.[98]

While many of the world's richest countries have an oversupply of housing, in Eastern and Central Europe[99] and in developing countries, shortfalls of formal housing tend to be quite large.[100] In South Asia, housing shortfalls amount to a deficit of 38 million dwellings.[101] There is a general acknowledgement that enabling the market has failed to provide affordable, adequate housing for the predominantly low-income households that live in the rapidly urbanizing regions of the world. Neither the public nor the private sector have been able to provide affordable housing for the poor at the scale dictated by the pace of urbanization and household formation.

In much of the developing world, the informal sector accounts for 60–70 per cent of urban housing in Zambia,[102] 70 per cent in Lima, 80 per cent of new housing in Caracas,[103] and up to 90 per cent in Ghana.[104] Without access to housing finance, adherence to building codes or the use of professional labour, such informal housing

is often "inadequate," meaning it is in poor physical condition, overcrowded, poorly ventilated, has poor access to municipal services and is located far from employment nodes and basic facilities. Moreover, decades of neglect in public or social housing and inadequate state intervention to regulate the private market and produce adequate and affordable housing for all segments of the population has resulted in urban political polarization, weakening of social cohesion and exacerbation of inequalities.[105]

Closely related to housing affordability is the growth of slums and informal urban settlements in developing regions, which forms part of the unfinished business of the urban agenda. Slums represent one of the most enduring faces of poverty, inequality, exclusion and deprivation. Slum dwellers must contend with inadequate access to potable water, poor sanitation, overcrowding, poor-quality housing in hazardous locations, insecure tenure and risk of eviction, food insecurity, malnutrition, poor health, unemployment and stigmatization, all of which make them highly vulnerable to COVID-19 and other pandemics. Under such conditions, physical distancing, self-isolation, handwashing and acceptable levels of hygiene, which are important measures against the disease, are virtually impossible.

While remarkable progress has been made in reducing the proportion of the global urban population living in slums from 28 per cent in 2000 to 24 per cent in 2018 (Figure 1.5), more than 1 billion people still live in such settlements with over half of these in East, South-East, Central and South Asia, and 23 per cent in Sub-Saharan Africa (Table 1.4).

The forces driving the prevalence of slums in developing regions are rapid urbanization; ineffective planning; lack of affordable housing options for low-income households; dysfunctional urban, land and housing policies; a dearth of housing finance; and poverty and low incomes. Empirical analysis shows that a one per cent increase in urban population growth will increase the incidence of slums in Africa and Asia by 2.3 per cent and 5.3 per cent respectively.[106] This correlation indicates that in some parts of these regions,

Slums represent one of the most enduring faces of poverty, inequality, exclusion and deprivation

Figure 1.5: Percentage of urban populating living in slums
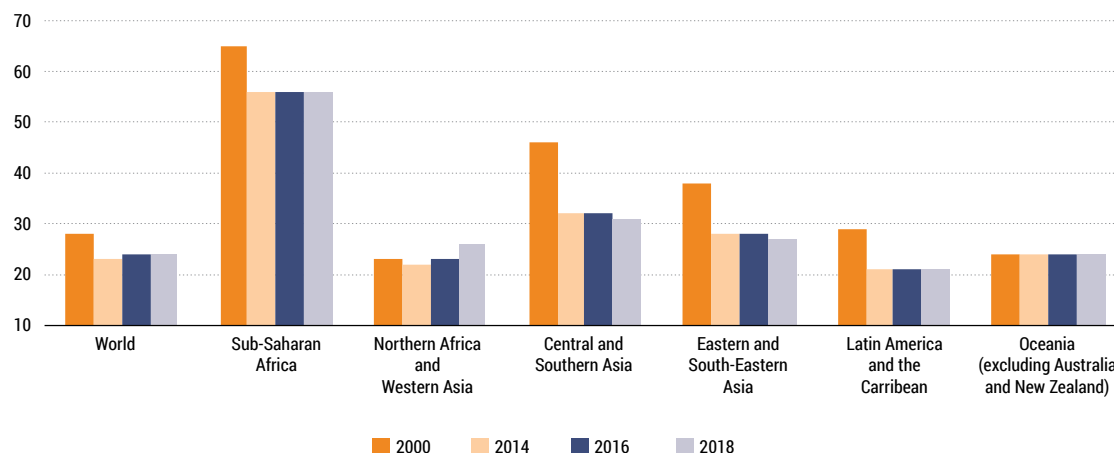
Source: UN-Habitat, Global Indicators Database 2020.

Table 1.4: Urban population living in slums

Region	2000	2014	2016	2018
		Urban population living in slums (millions)		
World	803.126	897.651	1003.083	1033.546
Sub-Saharan Africa	131.716	202.042	228.936	237.840
Northern Africa & Western Asia	46.335	63.814	71.720	82.123
Central and Southern Asia	205.661	206.704	223.643	221.092
Eastern and South-Eastern Asia	317.123	349.409	364.684	368.898
Latin America and the Caribbean	115.148	104.652	112.602	109.946
Oceania (excluding Australia and New Zealand)	0.234	0.602	0.648	0.643
Australia and New Zealand	0.03	0.03	0.01	0.01
Europe and Northern America	0.764	0.833	0.842	1.022

Source: UN-Habitat, Global Indicators Database 2020.

urbanization continues to occur unplanned, and within the context of much lower levels of income, rising poverty, worsening unemployment, weak and under-resourced municipalities, poor governance structures and the absence of coherent urban planning and housing policies. Under such conditions, rapid urban growth would serve as a recipe for the proliferation of slums.

When well-planned and manged, urbanization can be a catalyst for socioeconomic transformation and improved quality of life for all. However, slum dwellers will be left behind in this process if their concerns are not integrated into urban planning, urban policy, housing, legislation and financing frameworks. If the concerns of the urban poor and marginalized remain ignored, then the goal to "make cities and human settlements inclusive, safe, resilient and sustainable" will only be achieved partially, and in the process, deny millions the benefits of urbanization. The challenge is posed by the continuous increase in slums, especially in Sub-Sharan Africa and in East, South-East, Central and South Asia. Without concerted action on the part of governments at all levels including civil society and development partners, the numbers of slum dwellers will continue to increase in most developing countries.

1.4.6. Climate change: An enduring threat to cities

With its wide range of consequences, climate change is one of the most pervasive challenges facing cities. Urban areas are both the source of the majority of the world's carbon emissions and home to the majority of the world's population that will be the victims of climate change. Urbanization has been identified as one of the mega-trends that needs to be addressed to achieve the target of limiting mean global temperature increase to 1.5°C.[107] Cities, especially those in warm climates or low-lying coastal areas, face existential threats due to the risks and impacts of climate change and natural hazards, such as increased extreme heat events in New Delhi and pervasive flooding in Jakarta.

If the current rate of global warming continues, the world could be 1.5°C warmer by 2030.[108] Regional warming could be twice the global average in certain places, which means that at least 136 coastal cities will be at risk from flooding, and in the process, affect 280 million people

With its wide range of consequences, climate change is one of the most pervasive challenges facing cities

including many informal settlements.[109] Given that half of the world's population lives within three kilometres of a surface freshwater body, and over 40 per cent reside in coastal areas, these populations would be at risk from sea-level rise and extreme weather events associated with climate change.[110] Urbanization, especially in low-lying coastal areas, seems to ignore climate change and its potential impacts, rapidly increasing vulnerabilities and exposure to hazards (Chapter 4).

The combined threat of rising sea levels and storm surge in coastal cities could result in the loss of more than one trillion dollars each year by 2050.[111] Destruction of existing infrastructure, property and assets caused by tropical cyclones or flooding are among the most visible impacts of such losses, but the damage caused by the secondary threats of disease, displacement, increased crime and civil unrest should not be discounted.

The effects of climate change can exacerbate urban challenges and make it more difficult to tackle the persistent issues that cities already face, such as poverty, inequality, infrastructure deficits and housing, among others.[112] These challenges could make it difficult to achieve

Traffic on flooded roads of the city, Houston, USA. © IrinaK/Shutterstock

The combined threat of rising sea levels and storm surge in coastal cities could result in the loss of more than one trillion dollars each year by 2050

certain SDGs, especially those relating to poverty, hunger, health, water and sanitation, and ecosystems, as noted in Chapter 4. In developing countries, the long-term effects of climate change could combine with the short-term impact of the COVID-19 pandemic to further reverse global gains by pushing 100 million people into poverty.[113] Rapidly urbanizing cities in Africa and Asia are more vulnerable to climate change and least able to respond to its effects. They are hampered by limited financial, human and technical resources as well as weak institutions and governance structures relating to disaster mitigation and preparedness. At the same time, these cities contribute very little to global warming, making their suffering disproportionate.

Urbanization offers many opportunities to develop mitigation and adaptation strategies that limit the average global temperature increase to 1.5°C, especially through urban planning and design. In this regard, 105 cities, mostly in North America and Europe, have undertaken emissions inventories and adopted emissions reduction targets using various policy levers.[114] Urban innovation, economies of scale and concentration of enterprises make it possible for cities to take actions to minimize both emissions and climate hazards.[115] Cities that have adopted compact and mixed land uses are able to reduce per capita rates of resource use and greenhouse gas emissions. Cities have significant opportunities for disaster risk reduction, accelerated response and recovery through land use planning, building codes and regulations, risk assessments, monitoring and early warning, and building-back-better response and reconstruction approaches (Chapter 4). More importantly, when they incorporate nature-based solutions into their design and management, urban systems can benefit from multiple ecosystem services including carbon sequestration, local climate regulation, storm-water capture and water and air purification.[116]

The most recent IPCC report states that to stay under 1.5°C and address the effects of global warming, drastic measures are required to transform the way cities and human settlements are built and managed. Building more resilient and equitable cities should entail mainstreaming information on climate risks in the planning and delivery of urban services while strengthening local capacity; harnessing the power of nature to respond to both water and heat risks; building climate resilience by upgrading living conditions in vulnerable communities and informal settlements while drawing on community knowledge; increasing climate-resilient investments; and capturing value from adaptation benefits.[117]

In order to drastically reduce greenhouse emissions and adapt to global warming, a cost-benefit analysis by the Global Commission on Adaptation shows that the world will need to invest US$1.8 trillion over the next decade in climate resilience strategies in five areas: strengthening early warning systems; making new infrastructure resilient; improving dryland agriculture; restoring and protecting mangroves; and water resources management.[118] Investments in these areas could generate US$7.1 trillion in total net benefits and will contribute to a "triple dividend" of preventing future losses; generating economic benefits through reducing risk, increasing productivity and driving innovation; and delivering social and environmental benefits.

Urbanization offers many opportunities to develop mitigation and adaptation strategies that limit the average global temperature increase to 1.5°C, especially through urban planning and design

In recent times, young people have been at the forefront of galvanizing global action against climate change. This energy can be seen in the growing number of individuals and youth organizations engaged in intergovernmental climate change processes and conferences. In addition, young people have mobilized a new social movement around climate change organized online but enacted in public. In August 2018, teenage Swedish activist Greta Thunberg held up a sign outside the Swedish parliament in Stockholm reading *Skolstrejk för klimatet* ("School strike for climate"). Her gesture sparked the Fridays for Future movement of weekly school strikes around the world. That movement grew to encompass a global climate strike to coincide with

In recent times, young people have been at the forefront of galvanizing global action against climate change

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the United Nations Climate Action Summit in September 2019, marking the largest demonstration yet against climate change. Youths organized and led climate change demonstrations spanning 185 countries and involving 7.3 million people, 73 trade unions, 3,024 businesses and 820 NGOs.[119] Youth demonstrations echo one message: to bring about a renewed sense of urgency and protest governmental and business inaction on climate change by the generation that must live with the consequences.

The formal withdrawal of the US from the Paris Agreement, which commenced on November 4, 2019, poses a major blow to addressing the challenges of climate change. As the world's largest economy, the US is not only a leader in global environmental governance, but also accounts for about 15 per cent of global carbon emissions and is a significant source of finance and technology for developing countries in their efforts to address global warming.[120] The US withdrawal provides an opportunity for other countries like Canada, China, the EU and India to take enhanced leadership roles.[121] In turn, US mayors and state governors reaffirmed their commitment to the Paris Agreement and have pledged to stay on track, highlighting the importance of subnational levels of governments in tackling climate change.[122] Nevertheless, the US withdrawal will not only weaken enforcement of strategies and policies, it has emboldened the anti-climate change movement in some countries dependent on fossil fuels and eager to expand their natural resource extractive industries.[123] The US, Russia and Saudi Arabia watered down language on climate science at the United Nations Climate Change Conference in 2018 (COP 24).[124]

These decisions run counter to the spirit of cooperation and consensus that produced the Paris Agreement in 2015. They are a stark reminder of the limits of local action in the context of multilateral agreements forged by national governments. Even as youth march in the streets and local authorities try to rein in carbon emissions, some national governments continue to set energy policies reliant on fossil fuels.

1.4.7. Cities as crucibles of crises: The coronavirus pandemic

Cities all over the world are increasingly exposed to new and pervasive risks such as terrorism, violence, crime, different forms of conflict, urban warfare, heightened securitization and the spread of diseases. The globalized nature of cities has added new levels of urban health risks, the most recent being SARS-CoV-2, the novel coronavirus responsible for COVID-19, which first emerged in Wuhan, China in December 2019 and spread rapidly to virtually every country in the world. It has since severely overwhelmed healthcare services and paralyzed economies. Seven months after the World Health Organization declared COVID-19 a pandemic on March 11, 2020[125], the world recorded over 40 million confirmed cases and over one million fatalities.[126] Virtually all countries of the world have been affected; the hardest hit countries in terms of the number of confirmed cases have been the US, India, Brazil and Russia.

Cities all over the world are increasingly exposed to new and pervasive risks such as terrorism, violence, crime, different forms of conflict, urban warfare, heightened securitization and the spread of diseases

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Since the outbreak in Wuhan, the epicentre of the virus has consistently shifted from Europe to the US to Latin America, with India emerging as the newest epicentre. Given the speed, scale of the spread and severity of its societal and economic disruption, COVID-19 is one of the most unprecedented challenges facing humanity in modern history.[127]

Urban areas bear the brunt of COVID-19

While COVID-19 is a global health crisis, it has far-reaching implications for urban areas. With over 90 per cent of confirmed cases coming from urban areas, cities have been the epicentres of COVID-19.[128] The concentration of COVID-19 cases in urban areas is confirmed by a sample of countries in Table 1.5. Among African countries, between 77 and 89 per cent of confirmed cases are concentrated in the capital city and four major cities, with the highest being in South Africa, which has been the epicentre of COVID-19 in Africa. In Latin America, the coronavirus

Table 1.5: Incidence of COVID-19 in urban areas (July 2020)

Country	Number of confirmed cases	Number of cases recorded in capital city and four major cities	Percentage of cases recorded in capital city and four major cities (%)	Number of cities with over 100k population	Number of cities with over 100k population with recorded cases
Algeria	26,764	23,174	87	40	39
Argentina	173,355	163,217	94	30	27
Bangladesh	223,453	174,733	78	30	29
Brazil	2,554,042	1,460,545	57	324	308
Chile	351,575	299,844	85	49	49
China	82,880	76,441	92	401	322
Colombia	257,101	216,196	84	65	65
Egypt	91,583	74,119	81	41	39
Germany	212,331	184,691	87	79	79
Ghana	31,851	24,532	77	13	13
Iraq	110,032	84,662	77	29	29
Italy	248,229	224,381	90	48	48
Mexico	450,570	367,561	82	188	164
Nigeria	39,977	23,661	59	82	82
Peru	389,717	292,833	75	26	24
Qatar	109,305	104,123	95	2	2
Russia	864,948	651,147	75	168	157
Saudi Arabia	266,941	225,971	85	24	24
South Africa	434,200	388,154	89	57	56
Spain	302,814	181,433	60	56	49
United Kingdom	307,256	267,884	87	84	84
United States	4,748,806	3,874,766	82	317	317

Source: UN-Habitat, Global Indicators Database 2020.

cases are mostly concentrated in the major cities of Argentina, Chile, Colombia, and Mexico, and less so in Brazil where 57 per cent of the confirmed cases are in the major cities, possibly signifying a spread to smaller cities and rural areas. A similar pattern of the concentration of COVID-19 cases in major cities is replicated in Europe and the US.

In many developing countries, especially in Africa, the spread of the virus has been from airports to the major cities and then to secondary and third-tier cities.[129] The spread of COVID-19 in urban areas across the world has been amplified by globalization and the interconnectivity of cities, largely facilitated by the ease of air travel. Movement among cities around the world has significantly enabled the spread of COVID-19. This form of spread in part explains why most countries imposed partial or complete border closures to foreign travels. Currently, COVID-19 is spreading largely through community transmission and is moving from major cities to the countryside.

By their nature, cities are built-up agglomerations with concentration of people and high densities, and as such, the impact of pandemics such as COVID-19 increases

with crowding of people. If potential crowding is not carefully managed, the dense concentration and large size of cities makes them highly susceptible to disease spread in a pandemic. This risk is evident in the manner that COVID-19 has spread within many major cities around the world, including Milan, New York City, Madrid, São Paulo, London, Lima, Lagos, Paris and Tokyo. In general, more urbanized countries are most likely to experience a rapid spread of COVID-19, which suggests that the way urbanization is managed can play a key role in addressing current and future pandemics.

COVID-19 and the urban economy

The International Monetary Fund predicts that the global economy will contract by three per cent in 2020 on account of the coronavirus pandemic.[130] If that prediction holds true, the virus will have effectively erased US$2.6 trillion from the value of the world economy. This downturn is much deeper than the than the global financial crisis of 2008–2009 and represents the worst recession since the Great Depression. The cumulative loss of global GDP over 2020 and 2021 is estimated at US$9 trillion, which is greater than the economies of Japan and Germany combined.[131] COVID-19 will adversely affect growth in all regions of the world. Both containment measures to combat the illness and negative consumer and business sentiment will stifle demand, leading to a widespread reduction in spending. The decline in economic activities, closure of factories and disruption to supply chains will create supply bottlenecks.[132]

As the world continues to slip into a severe recession, urban areas, which account for more than 80 per cent of global GDP, will be affected in several ways. First, the shrinking of the global economy implies that less funds will be available for urban development projects like water, sanitation, public transport systems, adequate and affordable housing, slum upgrading, poverty eradication and healthcare improvements to respond to both this and future pandemics. The World Bank expects that revenue to

local authorities will decline by 15–25 per cent in 2021 and will likely lead to reduced municipal service delivery.[133]

The envisaged decline in revenue is likely to hit developing world cities the hardest even as these are the places where critical infrastructure and health systems are already grossly inadequate. Such revenue shortfalls are likely to hinder progress toward SDG 11 and other global agreements relevant to sustainable urbanization and make it even harder to deliver the annual investment of at least US$2.5 trillion required to achieve the SDGs (Chapter 8).[134]

The coronavirus pandemic has led to widespread job loss, especially in urban areas, with women and young people disproportionately affected. In the early weeks of lockdown measures, 2.7 billion workers, representing 81 per cent of the world's workforce, were affected by recommended or required workplace closures.[135] This figure decreased to 68 per cent in mid-April following the initial lifting of such closures, mainly in China.[136] In the US, in just over a seven-week period ending on May 2, 2020, 33.3 million people representing 20 per cent of the workforce filed for unemployment claims.[137] The US unemployment rate remains high at 8.4 percent as of August 2020, by which point the number of unemployed persons had fallen to 13.6 million.[138] The loss of jobs in the US resulted in loss of health insurance coverage for 5.4 million people between February and March 2020, thereby rendering them more vulnerable and unable to seek medical care without incurring substantial expenses.[139] In the UK, 9.6 million jobs have been furloughed since the government launched a wage subsidy scheme in March,[140] with 2.7 million people claiming unemployment benefits between March and July.[141] The worst affected areas following the COVID-19 induced lockdowns are hospitality, leisure and food and beverage, which was the worst affected sector with 75 per cent job cuts.[142] With urban dwellers fearful of gathering in enclosed spaces, the coronavirus pandemic has been described as an "apocalypse" for restaurants across the world in an industry with notoriously thin margins.[143]

The coronavirus pandemic has led to widespread job loss, especially in urban areas, with women and young people disproportionately affected

The story is even more dire in developing economies. In Bangladesh, 2.3 million workers in the garment industry have either been furloughed or lost their jobs due to the suspension or cancellation of exports worth US$3.2 billion to developed countries.[144] In Latin America and the Caribbean, COVID-19 has led to the loss of 14 million jobs with more than 50 per cent of all workers employed in the commerce and service sectors heavily impacted by the crisis.[145] In Africa, it is predicted that the lockdown, disruption of value chains and fall in commodity prices will result in the loss of nearly 20 million jobs, with the informal sector being most affected as it accounts for up 90 per cent of the labour force in some countries[146], with workers having limited or no access to healthcare services, savings and social protection. In the Gulf countries, tens of thousands of migrant workers in the construction, hospitality, retail and transport sectors have lost their jobs and have been forced to return home. In some developing countries, the economic downturn has sparked an exodus of migrant workers who have lost their jobs and are going back to their rural homes; in the absence of public transport due the lockdown, many embarked on this journey by foot.

While the impact of COVID-19 will be felt across the entire global economy, the hardest hit sectors are wholesale and retailing; vehicle repairs; real estate; business and administrative activities; manufacturing; accommodation and food services; transportation, storage and communication; and arts, entertainment and recreation—all of which account for 49 per cent of global employment or 1.62 billion people.[147] These sectors are closely associated with the economic wellbeing of cities and towns. All over the world, what were once bustling cities remained desolate for much of the months of March to July as hotels, restaurants, bars, entertainment centres, street food stalls, sports stadiums, factories, business hubs, malls and other public spaces were closed due to COVID-19-induced lockdowns. At the peak of the lockdown, the number of people using the New York subway was down by 90 per cent and yellow cabs virtually disappeared from the streets of Manhattan[148]; in Seattle, the demand for Uber services dropped by between 60 and 70 per cent in

Dharavi slum during the government-imposed nationwide lockdown as a preventive measure against the COVID-19, Mumbai/India. © Manoej Paateel/Patel

March 2020.[149] Economic activities are yet to fully pick up in many cities across the world as there have been second waves of the outbreak of the virus, some more serious than the first.[150] The ongoing repercussions of the COVID-19 pandemic have effectively paralyzed economic activities and disrupted livelihoods in cities around the world.

COVID-19 is reinforcing urban inequalities and disproportionately affecting vulnerable groups

Coronavirus-induced lockdowns and physical distancing measures are reinforcing inequalities and laying bare the fault lines that characterize many urban areas. These measures have disproportionately affected low-income households, the poor and vulnerable, the informal sector, and daily wage workers who must leave their homes for subsistence wages. Teleworking or telecommuting increased remarkably due to the coronavirus pandemic; so did online schooling. However, the notion of working from home or remotely is strongly skewed in favour of white-collar, high-income workers who have the necessary amenities, but is impossible for informal sector workers who are in the majority in developing world cities and depend on daily earnings for which a few days of lockdown can make the difference between poverty and starvation.[151] A large informal labour force is a key factor in Peru's high infection rate despite an early and aggressive lockdown.[152] Online schooling applies only to the well off and not low-income families who attend schools in informal settlements or where technologically enabled learning facilities are unlikely to be available. In addition, the housing situation of poor families is often not conducive for effective learning. All of these issues exacerbate the existing inequalities in education among different income groups, which in turn manifests in inequalities of opportunities that are rife in urban areas.

The overcrowded nature of slums and informal settlements, which is the only housing option for up to 60 per cent of the population of some cities[153], together with their

Coronavirus-induced lockdowns and physical distancing measures are reinforcing inequalities and laying bare the fault lines that characterize many urban areas

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shared multi-family living areas, inadequate infrastructure, poor public services and precarious locations, means that self-isolation and physical distancing is an illusion. For instance, how can physical distancing be maintained in the Dharavi slum in Mumbai that has a population density of 270,000 people per square kilometre[154] or in the world's largest refugee camp in Cox's Bazar?[155] It is not surprising that Dharavi, which is home to about one million people and one of the most densely populated areas in the world, has become a major epicentre of COVID-19 in India.[156]

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Inadequate water, poor sanitation and hygiene in slums and informal settlements, crowded refugee camps and migrant workers hostels[157] means that handwashing as a preventive measure against the transmission of coronavirus is a major challenge. In 2017, three billion people globally had no handwashing facility at home, 1.6 billion had limited facilities lacking soap or water and 1.4 billion had no facility at all.[158] In the least developed countries, close to three-quarters of the population lacked handwashing facilities with soap and water. These inadequacies provide ideal conditions for the rapid transmission of COVID-19 and other diseases.

Older persons and minority groups in urban areas have a higher risk of contracting and dying from COVID-19. Data from the Chinese Centre for Disease Control and Prevention shows that while those aged 60 years and over accounted for 31.2 per cent of all confirmed cases, they accounted for 81 per cent of all COVID-19 deaths.[159] A similar pattern appears in the US, as the Centers for Disease Control and Prevention reported that 80 per cent of COVID-19 deaths

occurred among adults aged over 65 years.[160] In Italy, 83.4 per cent of deaths were among those over 70 years old.[161] This can be attributed to Italy having the second oldest population in the world after Japan, with about 23 per cent of its population aged over 65.[162] The fact that older persons are more likely to die from coronavirus once infected has led to healthcare workers giving preferential medical treatment to younger people who are more likely to survive. This exacerbates negative stereotypes about older persons, who may be perceived as weak, unimportant and a burden to society.[163] In several countries, severe physical distancing measures forced older people to remain indoors or risk being fined. While well-intentioned, if not properly managed, these measures can have the unintended effects of stigmatizing and discriminating against older persons.

Recent data show that ethnic minorities in the US are disproportionately affected by COVID-19; specifically, African Americans account for up to one third of coronavirus deaths but constitute 14 per cent the population.[164] In virtually every city for which data on ethnicity are available, black people account for a greater proportion of COVID-19 deaths in relation to their share of the population. In Chicago, African Americans account for 72 per cent of COVID-19 deaths but make up 30 per cent of the population.[165] In New York City, which was once the US epicentre of the pandemic, African Americans account for one third of the city's deaths, but 22 per cent of the population.[166] Black residents in New York City are twice as likely to die compared to white residents if they contract COVID-19.[167] These differences in part reflect inequality in economic opportunities, access to healthcare, poverty and structural factors, among others. African Americans often earn lower wages, are less likely to have health insurance and are more likely to have pre-existing conditions and/or be employed in service jobs deemed essential during lockdown and thus unable to stay home.[168] African Americans also frequently reside in substandard, overcrowded housing in segregated neighbourhoods and rely on public transport, which makes physical distancing difficult; hence, they are more vulnerable to COVID-19.

COVID-19 exacerbates poverty levels

The contraction of the global economy together with rising unemployment resulting from the various lockdowns, especially in the absence of effective social protection programmes, will lead to an increase in poverty. Recent analysis of the potential increase in poverty due to the pernicious effects of COVID-19 shows that as much as half a billion people or 8 per cent of the world's population could fall into poverty.[169] The most affected regions on the basis of poverty lines of US$1.90 and US$3.2 per day are Sub-Saharan Africa and South Asia, which account for between two-thirds and 85 per cent of the world's total poor.[170] In these regions, the number of people falling into poverty could increase by between 80 and 420 million depending on the contraction of household income or consumption. This scenario will further exacerbate the poverty situation in urban areas in Bangladesh, India, Democratic Republic of Congo, Ethiopia and Nigeria, which already have large numbers of people living in extreme poverty. Regions to be affected at a higher poverty line of US$5.50 per day are East Asia and the Pacific, the Middle East and North Africa, and Latin America and the Caribbean, where the number of those newly living in poverty could rise by between 124 and 580 million.[171] The increase in poverty levels will not be restricted to developing regions as the pandemic has devastated the economy of developed countries, many of which have fallen into recession. However, developed countries have institutionalized social protection programmes that are being deployed to mitigate the adverse effects of COVID-19.

The contraction of the global economy together with rising unemployment resulting from the various lockdowns, especially in the absence of effective social protection programmes, will lead to an increase in poverty

The portended increase marks the first time that global poverty will increase in the last three decades, reversing years of remarkable sustained progress. In 1990, 1.9 billion people or 36 per cent of the world's population lived in extreme poverty.[172] By 2015, this figure had dropped to 736 million people or 10 per cent of the world's population; thereby, implying that close to 1.2 billion people were pulled out of poverty between 1990 and 2015. The reduction in poverty has been driven by strong global growth and increases in prosperity in many developing countries, especially in East Asia, the Pacific and South Asia.[173] China

has been at the forefront in the eradication of poverty; urbanization driven by massive economic growth helped pull 850 million people out of extreme poverty between 1981 and 2015 and reduce the rate of poverty to 7 per cent.[174] COVID-19 could therefore erase the gains made in eradicating global poverty and jeopardize SDG 1 of ending poverty in all its forms everywhere by 2030. This backsliding in turn will adversely affect the attainment of other goals: hunger and improved nutrition; healthy living; and inclusive and equitable education, which to a large extent depend on the eradication of poverty.

COVID-19 could therefore erase the gains made in eradicating global poverty and jeopardize SDG 1 of ending poverty in all its forms everywhere by 2030

COVID-19: Engendering short-term environmental improvement

The COVID-19-induced lockdown has affected the urban environment in various ways. Global CO_2 emissions are expected to fall by eight per cent or almost 2.6 billion tonnes in 2020.[175] This reduction marks the biggest ever drop in carbon emissions at six times greater than the 400 million tonne reduction in 2009 owing to the global financial crisis. Much of the decline in CO_2 emissions will be experienced in cities, which generate as much as 70 per cent of the human-induced greenhouse gas emissions primarily through the consumption of fossil fuels for energy and transportation.[176] In India, CO_2 emissions fell for the first time in 40 years (15 per cent in March and 30 per cent in April 2020), not only as a consequence of the COVID-19 lockdown, but due to the weakened demand for coal that was declining before the coronavirus outbreak.[177] The reduction in emissions is seen as a silver lining of the pandemic,[178] but is likely to be short-lived and will rebound once the global economy restarts, unless countries deliver on their commitment to sustainable development by investing in cleaner and more resilient forms of energy.[179]

The reduction in CO_2 emissions can be attributed to the various forms of lockdown, which affected economic activities and led to a reduction of energy consumption. Countries in full lockdown experienced an average 25 per cent decline in energy demand per week, while those

in partial lockdown experienced an average 18 per cent decline.[180] COVID-19 literally brought the world to a halt; in a matter of weeks, planes disappeared from the skies, local and national borders were closed, factories ceased production, businesses stopped functioning, global supply chains ground to a halt and tens of millions of jobs were lost. The oil industry, a key driver of CO_2 emissions, was hard hit by mobility restrictions and the drop in aviation demand, which account for about 60 per cent global oil consumption.[181] By the end of March 2020, global road transport activity was almost 50 per cent below the 2019 average and aviation 60 per cent below.[182]

In China, CO_2 emissions fell by 25 per cent or more in January 2020 when compared to the same period in 2019; this was driven mainly by a 37 per cent decline in coal consumption and crude oil use.[183] In March 2020, New York City experienced a 5–10 per cent drop in CO_2 emissions and a 50 per cent fall in carbon monoxide emissions attributed mainly to a 35 per cent decline in traffic levels.[184] Similar downward trends for carbon monoxide emissions were observed in Wuhan and Beijing (Chapter 4). In Latin American and Caribbean cities, traffic congestion declined by between 47 and 97 per cent in March 2020, while the use of public transport fell by at least 60 per cent in Guadalajara, São Paulo, Curitiba, Belo Horizonte and Brasília and by over 80 per cent in Lima, Bogotá, Mexico City, Buenos Aires and Santiago[185], both of which must have contributed to lower levels of CO_2 emissions and improved air quality.

In just two months following COVID-19-related lockdowns, remarkable improvements in air pollution were observed in different parts of the world. Satellite imagery for Hubei province in China shows significant decline in the levels of PM2.5 nitrate following the imposition of
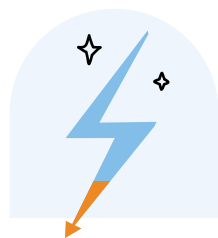
Countries in full lockdown experienced an average 25 per cent decline in energy demand per week, while those in partial lockdown experienced an average 18 per cent decline

travel restrictions.[186] While wind speed and temperature affect the concentration of nitrogen oxide, the spectacular improvements in air quality in China have been attributed largely to the interventions to contain the COVID-19 outbreak—stringent traffic restrictions and self-quarantine, first in Wuhan and neighbouring cities and later in all provinces in China.[187] Similar trends were observed in Republic of Korea, Italy, Spain, the UK, India, Saudi Arabia and the UAE leading to improved air quality.[188]

Cities in Latin America and the Caribbean also witnessed reduction in the levels of nitrogen oxide in the wake of the lockdowns. As shown in Figure 1.6, between the last ten days and first ten days in March 2020, the percentage change in nitrogen dioxide in the atmosphere declined by between 40–70 per cent in Bogotá, Lima, Buenos Aires, Medellín, Quito and Guayaquil, all of which were under total lockdown; and by between 5 and 35 per cent in Rio de Janeiro, Mexico City, São Paulo, Kingston and Santiago, which were all under partial lockdown. These contrasts suggest that the imposition of more stringent lockdowns can lead to greater improvements in air quality.

Figure 1.6: Change in Nitrogen Dioxide (NO$_2$) concentration in the atmosphere for selected metropolitan in Latin America and the Caribbean (percentage change)
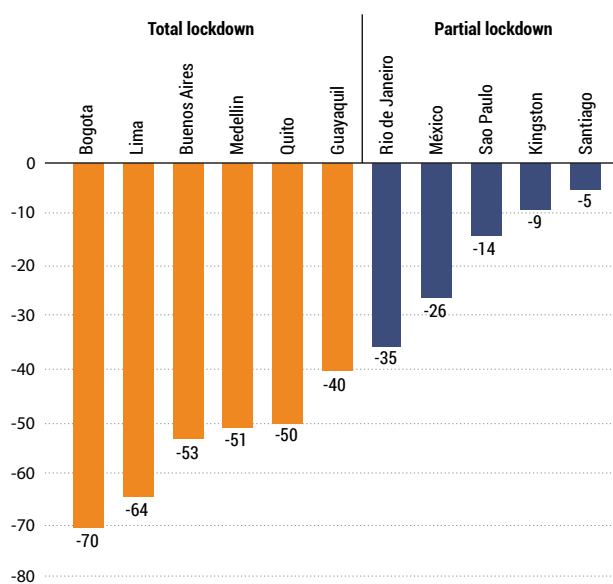
Source IADB, 2020.

Sweeping investment in clean technologies such as renewable energy are the most cost-effective way to boost economies hit by COVID-19 while reducing emissions

Echoing the view of eminent economists, short-term reductions in emissions and pollutants resulting from lockdowns will themselves have very little long-term effects and will not change the trajectory of global greenhouse emissions unless they facilitate deeper and longer-term human, business and institutional changes.[189] Sweeping investment in clean technologies such as renewable energy are the most cost-effective way to boost economies hit by COVID-19 while reducing emissions. As in the case of previous crises, unless the wave of investment to restart the economy is dedicated to cleaner and more resilient energy infrastructure, the rebound in emissions may be larger than the decline. China is already experiencing a rebound in emissions where mobility restrictions have been relaxed and factories are reopening.[190] Following the easing of lockdowns and reopening the economy, similar trajectories are being played out in cities across the world, as more people in a bid to avoid contracting COVID-19 are opting to drive rather than take public transit—a decision contributing to greater emissions and congestion.[191]

The critical question is whether the seeming environmental gains accompanying the lockdown can be sustained. The success of lockdowns across cities in flattening the curve of coronavirus infections also provides urban dwellers with a vision of behavioural change where they travel more by non-motorized modes and consume less carbon. Whether the environmental gains induced by COVID-19 can be sustained when the global economy returns to normalcy will depend on how human behaviour is effectively managed, whether there is a desire for a return to business as usual or to resume pre-pandemic lifestyle choices like inexpensive short-haul air travel. Ultimately what the pandemic shows is peoples' willingness to alter their behaviour in the face of adversity and in service of the collective good. This experience points to the need to alter the narratives surrounding climate change to one of emergency brought about by human activities. For behaviour to shift, the message must be effective and

What the pandemic shows is peoples' willingness to alter their behaviour in the face of adversity and in service of the collective good

targeted at all stakeholders. If climate change is tackled with the same vigour as COVID-19, it will be possible to restore the regenerative integrity of the natural environment towards mitigating and adapting to climate change and its attendant effects.

1.4.8. Deployment of Innovation and Technology in Urban Areas

As city dwellers under lockdown increasingly relied on technology to access their workplaces, order food, shop for groceries and communicate with loved ones, recent technological advances in urban areas seemed poised to accelerate. Even before the pandemic, cities were increasingly characterized by the deployment of innovation and technology in order to fuel a big data revolution to inform public and private sector decision-making.[192] Often referred to as disruptive technologies[193], this trend signifies a move towards a knowledge-based economy that relies more on analytical capabilities than physical inputs. This fourth industrial revolution[194] is characterized by innovation and technological breakthroughs like automation, robotics, artificial intelligence, the use of drones and the Internet of Things.

Advances in technology enhance the productivity and prosperity of cities as they facilitate innovation, efficiency and effective service delivery. Such innovations can contribute to making cities more sustainable and provide solutions to a wide range of challenges, such as water management, sustainable mobility, security, solid waste management, green city development, renewable energy and urban agriculture.[195] The application of these cutting-edge technologies is ultimately revolutionizing the way cities are planned, governed, managed and analysed.

Technological innovation is redefining urban labour markets and blurring the conventional lines between tradeable (manufacturing-based) employment and non-tradeable (service-based) employment in the process. This disruption has profound effects on the employment

structure of the city in that huge non-tradeable or service jobs have become tradeable with relocations occurring within and across regions. While this possibility creates new forms of employment in some cities, it is also deepening unemployment and job insecurity in others.[196] By 2025, it is reckoned that almost half of both new and replacement employment within the European Union will be highly skilled employment, forcing even higher rates of mobility across Europe.[197] These disruptive technologies have also created a new class of independent worker who participates in the "gig economy" by working per job via digital platforms. Such work offers flexibility and a low barrier to entry, but also lacks traditional worker protections, although some cities are enacting legislation to require technology companies to treat their independent contractors as employees. Despite the hype around the gig economy, the World Bank estimates less than 0.5 per cent of the global labour force works in such an arrangement.[198]

The ever-increasing application of data is driving the phenomenon of smart cities (Chapter 6). This concept describes the innovative application of information and technology to improve quality of life, efficiency of urban operations and services, and competitiveness in cities.[199] Smart cities can guide better decision-making with respect to prosperity, sustainability, resilience, emergency management or effective and equitable service delivery. The global demand for smart cities is growing rapidly at almost 19 per cent, from US$622 billion in 2017 to US$1 trillion in 2019, and is expected to reach US$3.48 trillion by 2026.[200] This push is driven mainly by governments investing in technology to meet the demands of a rapidly urbanizing world.

The development of smart cities has in part been facilitated by the increasing penetration of digital technology as more than 50 per cent of the world's population is now online with two-thirds owning a mobile device.[201] Singapore has been at the forefront of the smart city movement; its Smart Nation Programme seeks to harness ICT, networks and data

Advances in technology enhance the productivity and prosperity of cities as they facilitate innovation, efficiency and effective service delivery

UAV drone delivery delivering big brown post package. © Flystock/Shutterstock

to bolster better quality of life, create more opportunities and support stronger communities.[202] While smart cities are still in their nascent stages in African countries, South African cities have shown how digital technology can be deployed to improve urban management and governance, as well as citizen engagement (Figure 1.7).[203]

Not all smart city initiatives have been successful, such as the unkept promises of India's 100 Smart Cities Mission.[204] There are also pitfalls to investing public resources in smart city tools (Chapter 6). The technology and digital platforms that underlie smart cites are often developed and marketed by private sector actors, which in turn can lock cities into using a certain technology and thereby skew the long-term investment priorities of national and city governments.[205] Similarly, data ownership issues may arise between local governments and the private sector entity that is supplying technology to collect information.

While cutting-edge technology can enhance economic growth, productivity and social inclusion, when unevenly deployed in cities it can create a digital divide, which can exacerbate inequality. Such a divide is characterized by well-connected affluent neighbourhoods and business districts coexisting with under-serviced and under-connected low-income neighbourhoods. The affluent tend to have greater access to these technologies and ICT can often serve to extend their reach and control while curbing that of the more socioeconomically marginalized residents (Chapter 6). To realize the potential of innovation and technology in achieving sustainable urbanization, an enabling environment must be created with the appropriate institutions to ensure inclusion.

Figure 1.7: Application of digital technology in South African cities

GOVERNMENT
- E-services
- Citizen portals
- Digital city services and products
- Broadband fibre rollouts
- CCTV networks
- Data centre facilities
- Private cloud offerings

EDUCATION
- Internet access in libraries

MOBILITY
- Smart fines
- Intelligent traffic management system

HEALTH
- Electronic health records in clinics

BUILDINGS
- Internet to all municipal buidings
- Building-management systems
- Estate security and access control
- Science and technology parks
- ICT maintenance

ENERGY AND ENVIRONMENT
- Automated meter-ready systems for water and electricity

Source: South African Cities Network, 2018a.

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1.4.9. Where is the Money: Shortfall in Funding for Urban Development?

The NUA and other development agendas related to sustainable urbanization are being implemented within the context of a shortfall in the funding available for urban development programmes. This shortfall is likely to be exacerbated by the effects of the coronavirus pandemic. Chapter 8 shows that achieving the SDGs requires a huge financial outlay. Conservative estimates provided by the United Nations and World Bank show that it will cost US$3.9 trillion dollars a year to achieve the SDGs.[206] Some other agencies provide higher estimates of between US$4 and US$7 trillion annually.[207] All of these estimates are far higher than the development assistance currently available for urban development. With the current annual investment in the SDGs being just US$1.4 trillion, the shortfall of at least US$2.5 trillion will have to be financed through various sources identified in Chapter 8 if the goals of the 2030 Agenda are to be met.

There is an increasing need to develop and utilize a broad range of alternatives for financing urban development. For example, US$26 trillion currently invested in low-yield financial instruments can potentially be tapped for promising urban projects.[208] Tapping into these resources requires innovation on the part of city leaders to convert their urban challenges into well-defined and financially viable projects capable of bridging and potentially surpassing the US$2.5 trillion SDG investment gap.[209] Other possibilities that can be explored are municipal bonds, strengthening the revenue capacity of local governments, improving central-local fiscal transfers, mobilizing resources from

The NUA and other development agendas related to sustainable urbanization are being implemented within the context of a shortfall in the funding available for urban development programmes

land-based finance, strengthening the financial capacities of public service utilities, expanding and deepening capital market provision of housing and real estate financing and making more effective use of public financing (e.g. smart and well-targeted subsidies) to leverage private financing.

In responding to climate change, cities must also explore ways to generate local financing for adaptation and resilience investments. Cities in developed countries will need more sophisticated taxation and value-capture measures with relevant insurance schemes; while cities in developing countries must strengthen land management systems and invest strategically in resilient infrastructure for greater returns.[210]

1.5. Concluding Remarks

With the adoption of the New Urban Agenda and 2030 Agenda for Sustainable Development, the international community affirmed that urbanization is a driver of positive change with the genuine aspiration of leaving no one and no place behind. The New Urban Agenda is the framework to integrate and elevate the vital role that cities must play in decision-making and realizing development transformations.

While countries have made progress in the implementation of the New Urban Agenda and urban components of the Sustainable Development Goals, there are challenges that need to be addressed

While countries have made progress in the implementation of the New Urban Agenda and urban components of the Sustainable Development Goals, there are challenges that need to be addressed. These include the low level of awareness of urban-related commitments made in the global development agendas; low institutional and fiscal capacity; and weak multilevel governance structures and multi-stakeholder partnerships, among others. As seen in Chapter 7, the implementation of the New Urban Agenda demands local actions. This requires an institutional, organizational policy and financial capacity at the local level, which is often lacking or poorly developed in many countries. The

capacity to strengthen devolution and local autonomy in many countries is low and many cities continue to lack the resources to manage challenges related to urbanization.

Notwithstanding these challenges, sustainable urbanization has a key role to play in the Decade of Action for accelerating sustainable solutions to all the world's biggest challenges by serving as an entry point for ensuring progress across multiple goals of Agenda 2030. When well-planned and managed, urbanization can serve as a catalyst for the realization of many urban-related SDGs: eradicating poverty, reducing inequality, addressing climate change, enhancing gender equality, providing productive employment, driving economic growth and facilitating sustainable consumption and production patterns. While COVID-19 literally brought the world to a halt, disrupting and paralysing urban

While COVID-19 literally brought the world to a halt, disrupting and paralysing urban economies in numerous ways, it provides the opportunity for cities to build back better in the long term and build up resilience against future pandemics. Cities, in collaboration with their development partners, should wholeheartedly embrace

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COVID-19 prevention in Mathare, Nairobi, Kenya. © UN-Habitat/Kirsten Milhahn

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Chapter 2

Unpacking the Value of Sustainable Urbanization

When well-planned and managed, cities create value, which is the totality of the economic, social, environmental and intangible conditions (institutional, governance, political, cultural and civic perception) outcomes that have the potential to improve quality of life of residents in meaningful and tangible ways. As is increasingly understood by policymakers at all levels of government, planned urbanization leads to positive development outcomes and can be leveraged for improved quality of life and overall prosperity. Cities are not simply incidental geographies where people congregate, but rather are the loci of economic and cultural production and spaces of environmental and social development.

Urban areas are places of opportunity where aspirations are realized. This sense of possibility motivates people to migrate from rural areas to urban areas and to leave their countries of origin for global cities. Consequently, the discourse on cities has shifted from the perspective that they are challenges to address to the view that they are key to improving development outcomes. There is an increased understanding that cities create and sustain value.

Quick Facts

1. The value of sustainable urbanization is the totality of a city's economic, environmental, social and intangible conditions that have the potential to improve the quality of life of residents in meaningful, visible and concrete ways.
2. Many individuals and population groups in cities around the world are excluded from the benefits of urbanization.
3. Prioritizing youth employment creates benefits that will have significant impact on the economic value generated by cities.
4. The environmental value of urbanization improves quality of life, prosperity and wellbeing.
5. Cultural diversity contributes to the social, economic and environmental value of urbanization through tolerance, integration, and coming together in public spaces.

Policy points

1. Since urbanization will continue to be the driving force for global growth, this requires effective planning, management and governance to become a truly transformative asset.
2. The economic value of urbanization will provide the basis by which countries can contribute to achieving the SDGs and New Urban Agenda, as well as recovering from the global recession induced by COVID-19.
3. When designed with climate adaptation, mitigation and resiliency, cities can create communities that enhance environmental values like cleaner air, more compact, integrated and walkable cities.
4. Any urbanization process that does not actively address institutionalized obstacles to full representation, recognition and redistribution is inequitable and therefore undermines the value of urbanization.
5. Realizing the social value of sustainable urbanization is not a natural consequence of economic growth, which does not automatically reduce poverty and inequality.

Over the past two decades, tremendous effort has been invested to promote and articulate the significant role that cities play in the construction of a better world economically, socially and environmentally. As discussed in Chapter 1, international agencies and academics have played a leading role in promoting sustainable urbanization against the context of the traditional neglect of cities in national development policies.[1] As is increasingly understood by policymakers at all levels of government, planned urbanization leads to positive development outcomes and can be leveraged for improved quality of life and overall prosperity. Cities are not simply incidental geographies where people congregate, but rather the loci of economic and cultural production and spaces of social development. Even if this understanding is a relatively recent trend in global discourse, the role of cities in development has a long history. Cities have historically served as places of innovation and creativity and as centres of commerce, science and culture.

In the context of a rapidly urbanizing world, these roles have become more compelling, with planning, managing and governing cities now a major tool to create inclusive growth and prosperity while driving sustainable consumption and socially responsible investment. More importantly, cities have become laboratories where public policies originate and grassroots actions first take hold in order to tackle the

Cities have become laboratories where public policies originate and grassroots actions first take hold in order to tackle the critical challenges of the twenty-first century, including climate change, poverty, inequality, unemployment and inadequate housing

critical challenges of the twenty-first century, including climate change, poverty, inequality, unemployment and inadequate housing. As a result, cities around the world are playing an instrumental role in defining and localizing global development agendas.

Once viewed primarily through the lens of challenges to be addressed, cities are now recognized as central to securing a sustainable economic, environmental and social future. Chapters 3 to 5 explore in depth the economic, environmental and social value of sustainable urbanization. As a prelude, this chapter introduces the broad concept of the value of sustainable urbanization and unpacks its various dimensions. It initiates discussion on important questions such as: What is the value of sustainable urbanization? Who is currently benefitting from the value of sustainable urbanization? How can the value of sustainable urbanization be unlocked to ensure that we leave no one behind? This chapter also further establishes how the value of sustainable urbanization supports the implementation of the 2030 Agenda for Sustainable Development and the New Urban Agenda.

2.1. Conceptualizing the Value of Sustainable Urbanization

Urban practitioners around the world continue to face complex challenges in managing their urban development process and caring for their most vulnerable residents.[2] The challenges in cities found in both developed and developing countries limit the full realization of the potential value that can be derived from sustainable urbanization. Thus, how various stakeholders who champion an urban agenda articulate and promote the value of urbanization is crucially important.

This 2020 World Cities Report offers a road map for advocates to make the case for sustainable urbanization at all levels, from the neighbourhood to the nation, and through the Report conceptualizes the value of sustainable urbanization as the totality of a city's economic, environmental, social and intangible conditions, or features that have the potential to improve the quality of life of residents in meaningful, visible and concrete ways. This chapter introduces the interconnectedness of sustainable urbanization's economic, environmental, social and intangible conditions and posits that they are characterized by several components (Figure 2.1). The economic value of sustainable urbanization can be understood through the lens of the national economy, property development and prosperity across the urban-rural continuum. Likewise, the environmental value of sustainable urbanization can be understood through the lens of cities and climate change, the built and natural environment and ecosystem services. The social value of sustainable urbanization can be understood through a city's quality of life and focus on inclusivity and equity. Finally, the intangible value of sustainable urbanization can be understood through its governance systems, political institutions, cultural production and multi-level policy coherence. These values and their characteristics are introduced and explored throughout this chapter.

Urbanization is a multidimensional phenomenon, as such, its value must be couched in the language of multidimensionality. This Report uses value in the broadest sense—economic, environmental, social and the intangibles. That conceptualization implies that urbanization processes should benefit, not handicap, all residents who live in urban areas. As a transformative force, sustainable urbanization should accelerate the ability of governments to meet the diverse needs of residents' lived experiences, aspirations and wellbeing. The Report recognizes that because cities are inhabited by diverse residents, their needs and expectations of urban processes are different. In most cases, the distinct historical, cultural and political experiences of people influence how they perceive and value urbanization. For instance, merchants turned refugees fleeing the war zone of Aleppo (Syria) in fear for their lives, young professionals who made a voluntary lifestyle choice to buy a high-rise condominium in a walkable neighbourhood of Vancouver

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Borough Market in Southwark, London, United Kingdom. © ndreyspb21/Shutterstock

(Canada) or an affluent family who lives behind fences in a gated community in Buenos Aires (Argentina) will all view and value urbanization differently from one another. Thus, while cities may be plagued with challenges such as war, violence, inequality and poverty, they also offer opportunities for prosperity, hope, freedom and security.

The Report also recognizes that value is both time-sensitive and variable. In the context of urbanization, the economic roles of cities have evolved over time. During the peak of the industrial economy of the nineteenth through the mid-twentieth centuries, cities such as Manchester, Philadelphia, Lille and Osaka were economic powerhouses driven by industry. However, global economic restructuring had led to the erosion of traditional manufacturing away from legacy economies and into cheaper developing regions. As a replacement, developed world cities have taken on new economic functions, centring on knowledge industries, technology, advanced producer services and banking. These once-mighty industrial cities are now secondary cities whose economic prospects trail the financial capitals of New York, London, Paris and Tokyo. Some intermediate cities, including former manufacturing hubs that have inherited a legacy of underutilized warehouses, factories

and industrial infrastructure, have pursued policies to remake their economies, and ultimately their civic identity, as "cultural capitals."[3]

Around the world, from Montréal to Melbourne, from Essen to Katowice, cities have deliberately cultivated artistic activity as a sustainable economic alternative to heavy industry. Public policies have successfully reimagined these cities by spurring the physical regeneration of abandoned industrial sites and the creation of iconic cultural facilities, which have contributed to an economic reorientation toward consumption, services and knowledge industries.[4] When industrial cities can transition to an entirely different economy—and a factory can become a museum or a warehouse can become a nightclub—it indicates that the value residents derive from urban areas may change as a result of macro-economic trends. Since perceptions of value can vary over time, urban policies and programmes should be updated regularly through public participation processes to reflect urban residents' experiences and expectations. In the cultural sector, for example, the so-called "experience economy" of festivals, conferences, art exhibits and other in-person gatherings is currently at risk due to the COVID-19 pandemic and cities may have to reevaluate their approach to such large gatherings in the post-pandemic world.[5]

Figure 2.1: Conceptualizing the value of sustainable urbanization
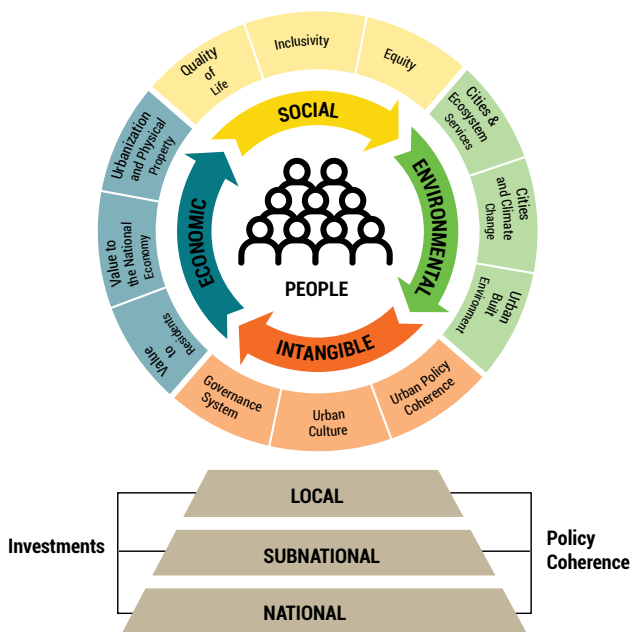
2.2. Value within the Context of Sustainable Urbanization

For many decades, the perceived value derived from sustainable urban development has predominantly been measurable by economic growth. However, this Report argues that value cannot be limited exclusively to the economic realm. Reducing the value of urbanization only to that which can be measured ignores the complexity and excludes the benefits that do not easily lend themselves to measurement, including the intangible value such as effective institutions, good governance, cultural diversity, sense of belonging and civic identity.

Another reason to broaden the language ascribed to the value of urbanization is that economic gains have largely benefited a small group of elites while worsening inequality. If only the economic dimension of urbanization is measured, the potential negative outcomes such as impacts

on social marginalization, environmental degradation and the breakdown of collective responsibility are ignored. This Report instead promotes a measure of urbanization that accounts for the unique needs and aspiration of all categories of urban dwellers in which no one is left behind (Table 2.1).

What has until recently been institutionalized as "development" is unsustainable and comes at a high cost in human, ecological and socio-economic terms. The 2030 Agenda and the NUA represent a new way of conceptualizing urban development. The SDGs are grounded in the developmental interdependence of economic, social and environmental values; there is an explicit recognition that current patterns of consumption and production exceed planetary boundaries and that unchecked global climate change presents immediate dangers. The NUA commits to people-centred development across the urban-rural continuum of human settlements that protects the planet and is responsive to the realization of all human rights and fundamental freedoms.[6] It outlines a commitment to share the value generated by sustainable urbanization in an inclusive manner.

Only when social equity is foundational to urban development, thereby ensuring access to core services for the most underserved, will cities thrive as engines of economic growth and contribute to environmental regeneration. This virtuous cycle is at the heart of the expanded notion of the value of sustainable urbanization that underpins this Report, which believes that cities should not strive to be the best city in the world, but the best city for the world.[7] This idea is a return to notions of collective responsibility and the interconnectedness of cities and their residents that requires a balance between individual wants and collective and planetary needs.

Such a recalibration should begin with the original inhabitants of any given geography. Even as humans migrate and establish human settlements far from their place of origin, the NUA acknowledges the value of indigenous peoples globally and commits to an intentional and ongoing dissemination of indigenous knowledge that comes from the long-term occupancy of a geographic area. Indigenous knowledge sees the individual as a part of nature, making decisions with past, present and future generations in

mind.[8] As the urban community begins to recognize the value in development that balances economic growth with environmental sustainability and social cohesion, there is an emerging interest in indigenous knowledge and ways of being, including in cities where indigenous people have historically been excluded by laws and policies that view indigeneity as incompatible with urban lifestyles.[9]

Such a mindset should also contribute to an understanding of economic value that not only generates wealth, but also levels the playing field for people currently excluded from economic prosperity. Similarly, environmental value cannot merely halt ecological destruction, but must also build ecological resilience and adapt to climate change. Social value cannot be superficial, but rather identify and address the root causes of exclusion and inequity. In practice, this approach means that cities must be welcoming to migrants and more accommodating of marginalized and underserved inhabitants. Local authorities must work with their constituents and social movements to build an economy that contributes to environmental and social goals.[10] Finally, cities can unlock the intangible value of sustainable urbanization by creating public spaces and opportunities for democratic participation and social inclusion that allow the cultural fabric of urban life to flourish.

In conceptualizing the value of urbanization, this Report recognizes that the specific circumstances of urban areas are not the same

In conceptualizing the value of urbanization, this Report recognizes that the specific circumstances of urban areas are not the same. While the scope of the SDGs and the NUA are universal and the targets for the global urban agenda include measurable indicators, setting the priorities and actions at various geographic levels requires grassroots community building informed by the needs of residents. With this recognition, it is nevertheless feasible to broadly conceptualize the value of sustainable urbanization. However, implementation and evaluation must be built on locally defined models of sustainability that are based upon the lived realities of local peoples. While cities around the world face similar challenges and hold similar aspirations, the priorities of the urban population can differ based on

Children on the playground of Kalijodo, Jakarta, Indonesia. © Pepsco Studio/Shutterstock

a variety of contextual factors such as economics, politics, ecological resilience, geographic location and social cohesion. Further, within each urban area resides a multitude of different individuals with different lived experiences who are looking for different types of value in the city based on their unique goals and aspirations (Table 2.1).

2.3. Harnessing the Value of Urbanization for People

The SDGs and NUA are explicit in the need for sustainable urbanization to be people-centred, which means it should serve the diverse interests, needs and aspirations of residents. Around the world, people who migrate from rural to urban settings do so with expectations. An African migrant who crosses the Mediterranean Sea destined for Europe and a young person leaving their rural South American village for the nation's capital have different needs, but they are both looking for opportunities. The unique geographical context in which people live will also shape the value they expect from sustainable urbanization. For example,

residents of a small human settlement in the Amazon rainforest are concerned about having an adequate health clinic when the nearest regional hospital is several days transport by boat versus urban planners hoping to locate enough basic services in a sprawling Sydney district so that residents can live in a "15-minute neighbourhood" and avoid adding to traffic congestion with trips across town. Likewise, slum dwellers crammed into inadequate housing in Mumbai need larger flats to prevent overcrowding while workers struggling to afford accommodation in affluent parts of Los Angeles where single-family houses predominate are pushing local authorities to relax zoning rules and allow smaller dwelling units that cost less. While these contrasts present extreme cases, the value desired by various groups in urban settings may overlap. For instance, most groups' environmental needs value protection from natural disasters and changing weather patterns. Thus, truly sustainable urbanization should accommodate both the unique and overlapping needs of each distinct group and aim to provide meaningful economic, environmental and social value (Table 2.1).

Table 2.1: Groups and priorities in urban settings

Groups	Economic Value	Environmental Value	Social Value	Connection to SDG and NUA
Youth	▪ appropriate education and skills for productive participation in society ▪ productive employment and livelihood opportunities	▪ healthy and productive environment for their future ▪ coordinated local climate action and sustainable urban infrastructure	▪ hope and aspiration for future ▪ connection to community and shared values	▪ safe, healthy, inclusive and secure cities ▪ effective participation in decision-making ▪ full and productive employment, decent work and livelihood opportunities ▪ access to education, skills development, and employment for increased productivity
Children	▪ environment that protects children's ability to attend school and not be forced into labour	▪ safe and secure urban environment ▪ healthy and productive environment for their future ▪ access to age appropriate play and recreation facilities and opportunities	▪ access to basic needs such as education, food, water, sanitation, etc. ▪ protection from trafficking, exploitation, violence and abuse	▪ equitable access to sustainable basic physical and social infrastructure; housing, drinking water, food, health care, education ▪ safe, healthy and secure cities
Urban Poor Women	▪ empowerment in decision making ▪ recognition of disproportionate amount of domestic responsibilities	▪ protection from natural disasters and changing weather patterns	▪ gender equality, enabling them to participate and benefit equally in society ▪ improve maternal health and access to reproductive health	▪ reducing inequalities and discrimination ▪ security of land tenure ▪ enabling all to live, work and participate in urban life without fear of violence ▪ full and productive employment, decent work for all and livelihood opportunities
Urban Poor Migrants	▪ access to income-earning opportunities ▪ enhanced and protected working conditions	▪ protection from natural disasters and changing weather patterns	▪ access to knowledge, skills upgrading, educational and training facilities ▪ affordability, accessibility and safety	▪ promote non-discriminatory access to legal income-earning opportunities to promote full and productive employment, decent work for all and livelihood opportunities ▪ ensuring full respect for human rights
Urban Poor Elderly	▪ mobility and access to the city ▪ opportunities to contribute	▪ protection from natural disasters and changing weather patterns	▪ access to social protection programs	▪ equitable access to sustainable basic physical and social infrastructure; housing, drinking water, food, health care, culture and information technologies ▪ opportunities for dialogue with government
Residents of slum or informal communities	▪ -security of land tenure and other assets -recognition of informal economy	▪ -protection from natural disasters and changing weather patterns -participate in proactive planning for a just transition to zero-carbon sustainable cities	▪ Access to amenities (e.g. sanitation, water, electricity, etc. ▪ representation in decision-making for land tenure and upgrading	▪ strengthening and retrofitting all risky housing stock to make it resilient to disasters ▪ address the multiple forms of discrimination ▪ improve the living conditions ▪ security of land tenure
Physically, mental and developmental challenges	▪ Access to transportation and adequate mobility options (e.g. paved and cleared sidewalks)	▪ mobility is prioritized during extreme weather conditions ▪ compact, connected, and clean cities that address climate change	▪ access to basic and affordable health services ▪ integrated into a society that welcomes and respects them as human beings	▪ sustainable mobility and transport infrastructure that is responsive to different levels of physical, mental and developmental challenges ▪ full and productive employment, decent work for all and livelihood opportunities ▪ addressing multiple forms of discrimination

Groups	Economic Value	Environmental Value	Social Value	Connection to SDG and NUA
People living with HIV/AIDS and related immune deficiencies	▪ Protection from stigma and rejection from employment opportunities	▪ healthy and urban friendly environment for active living ▪ environmental design that reduces stress levels	▪ access to basic and affordable health services relevant to their needs ▪ protection from stigma	▪ addressing multiple forms of discrimination ▪ prioritize health and well-being ▪ build just and inclusive communities ▪ ensuring full respect for human rights
Refugees, Asylum Seekers, and Internally Displaced Persons	▪ Access to productive employment ▪ Legal protection for employees	▪ protection from natural disasters and changing weather patterns	▪ welcoming environment and non-discrimination ▪ Legal and social protection	▪ promote non-discriminatory access to legal income-earning opportunities to promote full and productive employment, decent work for all and livelihood opportunities ▪ ensuring full respect for human rights
Small Holder Farmers (Rural urban connection)	▪ Access to market – physically (e.g. transport) and through reduced regulations ▪ Access to basic input and services ▪ Fair market price ▪ "Pay as you earn" (PAYE) for market access	▪ environmental leadership focused on adaptation and mitigation to climate change ▪ access to environmentally sustainable inputs and technology ▪ proactive planning for a just transition that centres the role of rural farmers	▪ celebration of "farmers feed cities" ▪ safety net in case of economic downturn	▪ facilitate effective trade links across the urban-rural continuum ▪ ensures that small-scale farmers are linked to local, subnational, national, regional and global value chains and markets
People Experiencing Homelessness	▪ subsidized housing built into future developments ▪ sufficient rental units and rent control	▪ protection from natural disasters and changing weather patterns ▪ compact, connected, and clean cities that address climate change	▪ access to decent and affordable housing ▪ social protection and adequate services	▪ addressing multiple forms of discrimination ▪ support policy that progresses towards the right to adequate housing for all and to prevent arbitrary evictions ▪ facilitate full participation in society and eliminate the criminalization of homelessness
Indigenous People	▪ adequate culturally appropriate employment opportunities ▪ support for indigenous business development	▪ effective management of environment and natural resources ▪ recognition of a cultural tie to land ▪ share in urban prosperity while participating in a just transition to sustainability	▪ respect for culture and language ▪ accuracy in the telling of history	▪ equitable access to sustainable basic physical and social infrastructure; housing, drinking water, food, health care, and culture ▪ recognizing the role that natural and cultural heritage plays in strengthening social participation
People with differing sexual identity and orientation (LGBTQ2+)	▪ Protection from stigma and rejection from employment opportunities	▪ quality environment, including access to amenities such as green spaces, public spaces, entertainment, etc.	▪ promotion of just and inclusive societies ▪ celebration of difference ▪ legal rights and protections	▪ addressing multiple forms of discrimination
Retirees and Older Persons	▪ ability to meet basic needs (i.e. housing and nutrition) ▪ protection of investments (i.e. property)	▪ healthy and urban friendly environment for active living ▪ benefit from connected, clean and compact cities built to address climate change	▪ reduced isolation or enhanced integration programs	▪ equitable access to sustainable basic physical and social infrastructure; housing, drinking water, food, health care, culture and information technologies ▪ opportunities for dialogue with government

Groups	Economic Value	Environmental Value	Social Value	Connection to SDG and NUA
Wage Labour	▪ -productive, decent and secured employment ▪ ability to meet basic needs (i.e. housing and nutrition) ▪ fair wage vis-à-vis cost of living in cities	▪ equal opportunities, allowing people to live healthy, productive, prosperous and fulfilling lives ▪ benefit from connected, clean, and compact cities built to address climate change	▪ safety net in case of economic downturn ▪ ability to achieve hope and aspirations	▪ access to income-earning opportunities, knowledge, skills and educational facilities ▪ full and productive employment and decent work and livelihood opportunities
Middle Class	▪ Strong economy to grow investments ▪ Addressing challenges faced by local businesses	▪ quality environment, including access to amenities such as green spaces, public spaces, entertainment, etc. ▪ proactive plan for adapting and mitigating the effects of climate change	▪ respect for culture and language ▪ ability to achieve hope and aspirations	▪ address the challenges faced by local business community by supporting micro-, small and medium-sized enterprises and cooperative throughout the value chain
Rich and elites	▪ Property protection -Investment security ▪ Enabling environment for business and innovation ▪ Sustainable economic growth	▪ quality environment, including access to amenities such as green spaces, public spaces, entertainment, etc. ▪ proactive plan for adapting and mitigating the effects of climate change	▪ opportunities and spaces for socializing and networking ▪ overall prosperity leading to pride in their city ▪ ability to promote their ideology and values	▪ increasing economic productivity ▪ promoting an enabling, fair and responsive business environment based on the principles of environmental sustainability and inclusive prosperity, promoting investments, innovation and entrepreneurship

In practice, ensuring that the value of urbanization responds to the needs of all groups may pose some challenges, including the capacity of urban governments to address competing priorities. Although local governments and their governance networks cannot possibly focus on all distinct groups within their city, they can intentionally plan their urbanization processes and services to address the most complex challenges, which will ultimately yield benefits for a larger swath of the population. UNICEF, in a report on urban development for children, suggests that designing child-responsive urban settings will meet

In practice, ensuring that the value of urbanization responds to the needs of all groups may pose some challenges, including the capacity of urban governments to address competing priorities

the needs not only of families but also other vulnerable populations like women and older persons.[11]

2.4. Economic Value of Sustainable Urbanization

The economic dimension is the most visible feature of the value of urbanization.[12] For decades, economists have argued for the importance of cities to economic development. Around the world, national prosperity or development continues to be largely dependent on the economic performance of cities. No country has achieved sustained economic growth and transitioned to middle- or high-income status without substantial and sustained urbanization. Moving from low-income to middle-income country status is almost always accompanied by a rural-to-urban economic transition.[13] In most emerging and some developing countries, cities are contributing to

Cairo, Egypt, overflowing streets and chaotic trading in the bazaar. © Byleshiy985/Shutterstock

Cities have the capacity to generate local economic activity and attract foreign investment, which is a key contributor to economic growth and development

productivity growth and job creation as their economy transitions from primary to secondary and tertiary industries.[14]

Fostering economic development and enhancing competitiveness are key goals for many cities around the world. Cities have the capacity to generate local economic activity and attract foreign investment, which is a key contributor to economic growth and development. At a macro level, the value generated by urban growth, such as the appreciation of land, housing and real estate values, constitutes a key feature of the economic dimension of the value of urbanization. The following section examines the economic value of sustainable urbanization at three levels: national, individual and physical properties.

2.4.1. National economy

The performance of national economies largely depends on the performance of urban economies.[15] Highly urbanized countries have higher incomes, provide better opportunities for investment and employment, boast stronger institutions and are better able to withstand the volatility of the global economy than those with less urbanized populations.[16] Urbanization geographically concentrates both people and economic activity. The value of concentration includes increased productivity and job creation, specifically in services and manufacturing, as well as higher standards of living. Overall, cities generate productivity and thereby enhance the agglomeration impacts of urbanization.[17] For instance, it is estimated that Asian urban productivity is more than 5.5 times that of rural areas.[18]
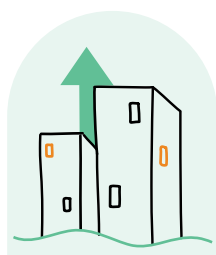
Cities generate productivity and thereby enhance the agglomeration impacts of urbanization

Cities benefit from agglomeration effects when firms and talent locate near one another. These agglomerations drive innovation, oftentimes leading to clusters of similar industries. Successful cities thus develop brands tied to specific fields—finance, health care, software, fashion, biotechnology, entertainment, higher education and media—that attract investment and businesses, generating benefits for the local economy that drive national economic figures.[19] Cities are also important nodes that articulate and shape the global economy. In advanced nations, so-called "alpha world cities" such as New York, Paris, London and Tokyo have long powered not only their national economies, but also the global economy.[20] While their economic influence as the leading world cities continues, they have been joined by growing a list of cities whose economic profiles have risen over the last two decades, including Bangkok, Beijing, Dubai, Guangzhou, Istanbul, Jakarta, Johannesburg, Kuala Lumpur, Mexico City, Mumbai, Seoul, Shanghai and Sydney.[21] In a changing world economy, these recently certified world cities and a vast array of second-tier cities are playing an important role in the economic prosperity of nations. The role of cities in propelling the economic growth of nations has taken a new dimension in the evolving global economy. This new dimension has confirmed a long-held view that cities, rather than countries, are the key economic units and motivates subnational policy prioritization.[22]

For many cities, their economic value has been enhanced in the current era of rapid urbanization and global competitiveness

As noted in Chapter 3, for many cities, their economic value has been enhanced in the current era of rapid urbanization and global competitiveness. Experience suggests that as countries' economies develop, urban settlements account for a larger share of national growth. Although urban areas constitute 55 per cent of the world's population, they generate roughly 80 per cent of the world's gross domestic product (GDP).[23] In some countries, a single city is contributing a disproportionate share of national economic growth—up to 50 per cent in certain cases, most notably the Republic of Korea where Seoul contributes almost half, and Hungary and Belgium where Budapest and Brussels contribute about 45 per cent, respectively.[24]

For many cities, their economic value has been enhanced in the current era of rapid urbanization and global competitiveness

Since the early 1990s, the "new economic geography" has been instrumental in reemphasizing the downward force on transportation costs engendered by increasing density as a central agglomerative force.[25] Alongside work in urban economic and regional science, scholars associated with this intellectual movement seeking to inject a spatial awareness in economic analysis highlighted the relationship between urban density and greater specialization, higher incomes and increased worker productivity. But it has also been recognized that densification generates risks and negative externalities. The influential 2009 World Bank Report, "Reshaping Economic Geography," drew upon some of this work in making a strong case for the role of cities within economic development, highlighting the need to promote densification and enhance the market forces of agglomeration, migration and specialization while avoiding the diseconomies of scale arising from congestion.[26] Yet the tone was often celebratory. Economists' renewed optimism around urban areas is also captured in Edward Glaeser's *Triumph of the City*.[27] In the wake of the COVID-19 pandemic, urban optimists are more tepid in their enthusiasm, both reaffirming their faith in agglomeration economies while also expecting some dispersal of economic activity away from expensive "superstar" cities to more tertiary locations.[28]

Beyond the theoretically assumed benefits of agglomerations, available evidence suggests that it is much cheaper to provide services and infrastructure in urban areas with high levels of concentration. The concentration of individuals, particularly the skilled, facilitates the exchange of ideas and the sharing of knowledge, boosting innovation and productivity.[29] Urban concentration encourages the start-up of new business enterprises. The widely known Silicon Valley in the San Francisco Bay Area (US) is a classic example. The area is home to thousands of start-up companies in high-tech innovation and scientific development (Chapter 6).

Generally, firms in urban areas enjoy the privilege of having access to a large local market, which in many cases may also be well connected to the markets of neighbouring cities and global markets. Access to larger markets encourages a wider variety of goods and services, many of which are inputs into the production of other firms. Firms in cities that are within mega-regions have even greater advantage with respect to access to a wider market and regional economy (Chapter 3). For example, the Northeast Megalopolis (US) is a US$3.8 trillion economy that stretches from Boston to Washington via New York City. It is home to 44 million inhabitants and generates 20 per cent of national GDP while consuming only two per cent of national land area.[30] Europe has a transnational mega-region: the Rhine/Scheldt Delta that spans Belgium, the Netherlands and Germany with a population of 26 million. Through infrastructure investments like high-speed rail and the world's longest oversea bridge, China has stitched together the Pearl River Delta cities of Guangzhou, Hong Kong and Shenzhen into the Greater Bay Area, a mega-region with a population of 70 million.[31] In these regions, agglomeration economies create more value at the local level through proximity of the factors of production and the increased size and specialization of markets.[32]

Despite agglomeration benefits, the spatial concentration of people and firms has drawbacks as well. Rising land, housing, labour, congestion and pollution costs are all potential outcomes from urbanization. These negative externalities eventually make the costs of living and conducting business challenging and may limit the competitive advantage of a given area. Spatially, agglomeration can intensify inequality within and between cities in the national and global urban system. National governments must properly manage their system of cities across the urban continuum in order to balance agglomeration benefits with the potential negative consequences of "superstar city" formation that leaves smaller cities and rural areas behind.

If properly planned, urban areas can also contribute to national development through the synergies that exist

If properly planned, urban areas can also contribute to national development through the synergies that exist between rural and urban economies

between rural and urban economies. Urban and rural areas are not mutually exclusive, but rather a seamless continuum of economic activities and settlements.[33] Urban markets provide a powerful incentive for and support to increased rural production, and rural markets have provided an equally powerful foundation for increased urban production of goods and services.[34] The concentration of economic resources in cities is an important asset for national economies, including all rural areas. If managed properly, the economic, environmental and social benefits of sustainable urbanization will not be limited to metropolitan edges but will also benefit rural areas. Ideally, sustainable urbanization will catalyse a long-term convergence in living standards between urban and rural areas.[35] Indeed, empirical evidence shows strong beneficial spillover effects from urban to rural areas for countries such as India and Nepal.[36]

In the vast majority of countries, ongoing economic, environmental and governance tensions make it difficult to realize the benefits of the interdependence between rural and urban areas. The core tenets of sustainable urbanization should embrace the enduring dynamic relationship that has existed at all human settlement scales, from small towns to metropolises, as well as between urban areas and their surrounding rural areas.[37]

Regrettably, in most countries, especially those in the developing world, the economic value of urbanization is being undermined by unplanned and spontaneous urbanization

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Regrettably, in most countries, especially those in the developing world, the economic value of urbanization is being undermined by unplanned and spontaneous urbanization, which is reflected in the continuous expansion of slums, sprawling development, rising inequality, inadequate services and poor environmental management (Chapter 1). These conditions are undermining the economic productivity of cities and liveability of urban environments. Urbanization must be well-planned and properly managed to ensure that urban growth becomes an opportunity to enhance productivity, ensure liveability, promote equality and leave no one behind.[38]

2.4.2. Value of urbanization to residents

Urbanization offers economic value to those who choose to locate in cities by providing richer market structures, jobs, recreation and entertainment.[39] Urban dwellers generally have better access to financial resources and opportunities to pursue creative ideas. They have a dense local consumer market to support their efforts. Likewise, urban workers often have better access to basic services like transportation, water, electricity and telecommunications including mobile phone and internet access. The concentration of economic activity in cities attracts a wider variety of business enterprises and offers employment opportunities that provide higher incomes for workers. It also generates opportunities for upward mobility and improved social status.[40] In most cases, the economic output per person in cities is much greater than that of the country. In cities such as Singapore, Kuala Lumpur, Bangkok and Manila, economic output per person varies between US$14,200 and US$66,800, although figures for Singapore will be coterminous with national figures.[41] In Latin America, cities such as Mexico City, São Paulo and Santiago have been attractive centres of investments for multinational corporations and regional start-ups alike in recent years, although the global recession occasioned by the pandemic may change those cities' fortunes.[42]

Residents of cities also derive value from the fact that urbanization reduces poverty. Studies have found that urbanization has helped lift the productive potential and standards of living for billions of workers.[43] In China, urbanization has contributed to lifting more than 700 million people out of poverty in the last 15 years, with more than 70 per cent of them migrants from rural areas. The Asian Development Bank has also found that between 1990 and 2008, the number of urban poor dropped from 137 million to 37 million, despite a doubling of the urban population.[44] These figures reflect the transformative power of cities and indicate that if managed properly, urban areas

In an uncertain global economic environment compounded by frequent catastrophic weather events and the COVID-19 pandemic, urban poverty and unemployment are growing in scale and extent in many countries

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can be adaptable and resilient by absorbing huge numbers of migrants without sliding into poverty. Although there have been substantial strides in poverty reduction in urban areas, life in cities is still challenging for large segments of the population (Chapter 1). In an uncertain global economic environment compounded by frequent catastrophic weather events and the COVID-19 pandemic, urban poverty and unemployment are growing in scale and extent in many countries. Globally, nearly half a billion people are still expected to live in extreme poverty by 2030, mostly in Africa, where urbanization is largely unmanaged.[45]

While the composition of groups in poverty will vary from country to country and city to city, one consistently underemployed or unemployed group in cities in both developed and developing countries is youth. Prioritizing

Prioritizing youth employment creates benefits that will have significant impact on the entirety of economic value generated by cities around the world

youth employment creates benefits that will have significant impact on the entirety of economic value generated by cities around the world (Table 2.2).

2.4.3. Urbanization and physical property

The concentration of people in urban areas increases demand for housing and land. Higher demand and market forces often lead to an appreciation of land, housing and real estate values, constituting a key feature of the economic value of urbanization. Around the world, land value generated by urbanization has been increasing. For example, rapidly expanding urban areas such as Dhaka (Bangladesh) have experienced 74 per cent yearly increase since the early 2000s.[46] Fast growing cities appear to be experiencing the most housing appreciation. The Global Residential Cities Index for Q1 2020 shows a 4.3 per cent average annual increase for the top 150 cities around the world, with 85 per cent of the cities indexed experiencing year over year price appreciation. The Philippine capital of Manila saw the highest increase (22.2 per cent), followed by Budapest, Hungary (16.3 per cent) and Izmir, Turkey (16.3 per cent).[47]

Table 2.2: The value of urbanization for youth

Value of urbanization	Plight of youth in cities
Economic ▪ Appropriate education and skills for productive participation in society ▪ Productive employment and livelihood opportunities	Youth unemployment and precarious jobs contribute to high levels of poverty in cities and countries. Almost 74 million young women and men of working age are unemployed throughout the world. In 2018, one-fifth of the world's youth were not engaged in education, employment or training programs. In addition, many more youth are underemployed and working long hours for low pay. An estimated 59 million youth between 15 and 17 years of age are currently engaged in hazardous forms of work. The under and unemployment of youth is a pressing economic issue in both developed and developing countries alike.
Environmental ▪ Healthy and productive environment for their future	Climate change will adversely affect future generations as they enter adulthood, leaving urban youth particularly at risk of sea-level rise, extreme weather patterns and natural disasters. Unchecked environmental degradation like poor air quality shortens life expectancies for youth who must endure unhealthy particulate matter over the course of their lifetimes.
Social ▪ Hope and aspirations for the future ▪ Connection to community and shared values	For youth looking to enter the job market, sustained unemployment can make them more vulnerable to social exclusion and prone to violence. Social policy in cities must specifically target the emerging crisis of youth unemployment. For youth to experience the social value of sustainable urbanization, priorities must address their unique needs within urban areas. With adequate employment youth can be a productive and socially responsible member of society that contributes to addressing the other challenges faced in cities. Addressing unemployment and social exclusion is complex and the solutions in each city will need to be tailored by local stakeholders according to the cultural context.

Source: https://www.un.org/youthenvoy/employment/

Korail slum settlement in Dhaka, Bangladesh. © UN-Habitat-Kirsten Milhahn/UN-Habitat

At the macro level, the urban housing market is a major economic sector that contributes significantly to GDP. The supply and consumption of housing interacts closely with economic growth through its impact on employment, income generation, investment and savings. In Singapore and Hong Kong, real estate plays such a major role in the functioning of the economy that one scholar describes the two cities as "property states."[48] Real estate forms an important part of the stock market and has enjoyed considerable growth while providing substantial revenue for governments and wealth for individuals. There are also significant interactions with financial systems, through housing banks, mortgage schemes, interest rates and consumption of housing services.[49]

Despite its economic value, speculative interest in property markets creates so-called "hedge cities" where global elites park excess capital outside of their home country. This trend excludes millions of urban residents and worsens inequality in many cities. From Auckland to London, Toronto to Sydney, cities with high quality of life located in stable countries are facing significant challenges in providing safe and adequate housing for urban residents. Rapid appreciation of real estate has fuelled the construction of high- and middle-income housing by profit-seeking private companies to the detriment of low-income housing development. In Vancouver (Canada), the median total income of households is US$72,662 while the average house price is roughly US$1.1 million, although local authorities are fighting back with policy tools like a provincial foreign buyer's tax and municipal empty homes tax.[50] Rents are alarmingly high in most large and mid-size cities, and out of line with incomes forcing many to pay more than half of their monthly income on housing.[51] In most countries, housing investment as a share of GDP has not kept pace with urbanization. In low- and lower-middle income countries especially, housing investment as a percentage of GDP lags behind what is needed to accommodate sustainable urbanization.[52] About a third

of all urban dwellers worldwide—1.2 billion people—lack access to safe and secure housing.

As new housing is built, adequate infrastructure must accompany to support urban growth. Infrastructure is severely deficient in most urban areas, which is adversely affecting the natural and built environments and exacerbating poverty because of its effects on the health and living environment of the poor. The challenge facing most urban governments is how to invest in infrastructure provision to keep pace with rapid urbanization in a way that is financially and environmentally sustainable, while ensuring access to an adequate level of services for the poor.

2.5. Environmental Value of Sustainable Urbanization

This Report conceptualizes the environmental value of sustainable urbanization as the benefits derived from actions taken to protect environmental assets, enhance efficient use of resources and improve environmental quality. It also involves efforts to reduce the negative environmental externalities associated with urbanization. The environmental value of sustainable urbanization will not be realized by chance; rather, it requires the intervention of planned and managed urbanization. This planning requires long-term vision and understanding trade-offs, all supported by strong regulations and monitoring frameworks, particularly international agreements such as the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction. Cities have the potential to improve disaster risk reduction, as well as accelerate response and recovery. They can do so by enabling land-use planning, building codes, regulations, risk assessments, monitoring, early warning systems and building-back-better response and reconstruction approaches. Enhancing the environmental value of urbanization depends largely on effective institutions, governance, urban planning, infrastructure and a culture of ecological conservation.

Urbanization is often seen as a threat to environmental sustainability. As discussed in Chapter 1, unplanned urbanization and poor land management can cause irreversible land-cover changes, biodiversity loss and environmental degradation. Around the world, unmanaged
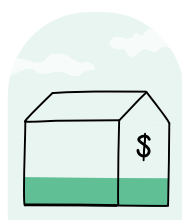
In most countries, housing investment as a share of GDP has not kept pace with urbanization

The environmental value of urbanization improves quality of life, prosperity and wellbeing. Planned urbanization offers many opportunities to address environmental sustainability and develop resilience in cities

urban expansion, where urban footprints are growing faster than population, poses a tremendous threat. Uncontrolled sprawl contributes to more private car ownership, distance travelled by automobile, total road miles paved, fuel consumption, alteration of ecological structures and conversion of agricultural or rural land into urban uses (Chapter 4).

However, when well-planned and governed, urbanization can create tremendous environmental value. Cities generate environmental value by achieving harmonious and balanced development, preserving nature, protecting biodiversity and reinforcing environmental assets. Well-planned cities use resources more efficiently and reduce energy use.[53] The environmental value of urbanization improves quality of life, prosperity and wellbeing. Planned urbanization offers many opportunities to address environmental sustainability and develop resilience in cities.

2.5.1. Urban built environment

The built environment is a product of human infrastructure development. It refers to any physical alteration of the natural environment, from hearths to cities, through construction by humans.[54] The built environment and its form have significant implications for the natural environment. Urban areas that are not properly planned, managed and governed will burden ecosystems. However, the built environment can be manipulated through intentional planning and design to reduce the negative impacts and generate environmental value. As discussed in Chapter 4, environmentally sensitive planning brings about compact cites, increased density, walkable neighbourhoods and opportunities for active transportation.

The NUA favours compact, high density and mixed-use urban development. Compactness has the potential to trigger economies of scale and agglomeration. Compact and well-regulated cities with environmentally-friendly

public transport systems have positive environmental impacts.[55] Urban form and density directly influence the extent of energy consumption: compacts cities use more clean energy, are less dependent on motorized transport and contribute less to greenhouse gas emissions. Moreover, cities that consume less energy are cleaner and provide a higher standard of living, including well-paying jobs. Estimates suggest that investments in low-carbon measures in cities could support 87 million jobs annually by 2030.[56]

A comparison of transport-related carbon emission around the world shows that emissions are highest in North America and Australia. North American urbanization is generally characterized by sprawl-like development and transportation systems rely heavily on the use of private motorized transport, leading to high levels of carbon emissions. In contrast, Western Europe produces approximately one-quarter of the transport-related emissions of North America, a difference that can be explained by the tendency of European cities to promote the use of clean energy and the more prevalent use of public transport in the region. Cities in Europe, notably Amsterdam, Barcelona, Copenhagen and Ljubljana are the most bike- and pedestrian-friendly in the world, with that trend set to accelerate in the wake of the COVID-19 pandemic as cities roll out new bike infrastructure to accommodate commuters who now prefer cycling to public transport due to the public health risk of contracting the novel coronavirus.[57] Most European cities have high-density centres where residents are encouraged to walk or cycle, which significantly reduces human stress on the natural environment.[58] When human-powered transport is not available, use of public transit systems is the next best option to substantially reduce emissions.[59] Governments that invest in low-carbon cities can enhance economic prosperity, make cities better places to live and rapidly reduce carbon emissions.[60]

Indeed, energy and transport specialists have long seen cities as key to a post-carbon transition. For these specialists, the urban transition presents opportunities for positive systemic change linked to technological innovations. Rapid urbanization in coal-based economies like India and China presents opportunities to shift toward a more energy-efficient mode of energy consumption and development.[61] In Africa, the application of off-grid

Table 2.3: The value of urbanization for poor women

Value of urbanization	Plight of poor women in cities
Economic ▪ Empowerment in decision-making ▪ Recognition of disproportionate amount of domestic responsibilities	Most of the world's urban poor are women with limited employment prospects. When urban poor women do find work, it is often precarious, and the wages are insufficient to escape poverty. Globally they earn 24 per cent less than men and there are 700 million fewer women than men in paid formal employment. They frequently work in the informal economy where they are less likely to have employment contracts, legal rights and social protections. Urban poor women shoulder disproportionate amounts of domestic responsibilities, limiting the amount of time they can dedicate to earning money. The World Economic Forum has calculated that it will take women almost 100 years to reach gender equality at current earning rates.
Environmental ▪ Protection from natural disasters and changing weather patterns	Urban poor women are at a disproportionate risk of negative impacts from climate change and the associated natural disasters because they are increasingly forced to live in undesirable locations within cities, exposing them to more intense and frequent weather events. Their homes are often poorly constructed and maintained. If their home is damaged or destroyed, they face enormous challenges to recover and rebuild.
Social ▪ Gender equality, enabling them to participate and benefit equally in society ▪ Improve maternal health and access to reproductive health	Progress on all the SDGs will be stalled if women's empowerment and gender equality are not prioritized in decision making. As cities develop and implement policy and actions to address to promote sustainable urbanization, the unique plight of urban poor women must be considered. By taking a gender mainstreaming approach that centres the needs of poor women in cities when formulating public policy, local authorities can redress systemic inequities.

Source: http://www3.weforum.org/docs/WEF_GGGR_2020.pdf

energy and sanitation technologies creates the potential for a wider array of actors to provide cost-effective urban services in a manner that promotes economic growth and reduces poverty.[62]

Additionally, the design of the built environment offers opportunities where local authorities can respect multiple groups' right to the city by providing value to their most vulnerable residents (Table 2.1). For example, poor women in cities often bear simultaneous responsibilities for childrearing, household management and income generation outside the home. Urban policy needs to recognize the disproportionate risk that women face from climate change and natural disasters and the impact that unplanned urbanization has on women and their ability to provide for their immediate and extended families (Table.2.3).

Urban policy needs to recognize the disproportionate risk that women face from climate change and natural disasters and the impact that unplanned urbanization has on women and their ability to provide for their immediate and extended families

2.5.2. Cities and climate change

Climate change is one of the greatest challenges of the twenty-first century. Cities consume over two-thirds of the world's energy and account for as much as 70 per cent of human-induced greenhouse gas emissions, primarily through the consumption of fossil fuels for buildings and transportation.[63] Thus, climate change in the absence of investment in resilience and adaptation can erode the environmental value of urbanization. However, as described in Chapter 1, an investment in climate resilience strategies could have a triple dividend: prevent future losses; generate economic benefits through reducing risk, increase productivity, and driving innovation; and deliver social and environmental benefits.[64]

Nearly 10,000 cities and local governments have set emissions reduction targets with accompanying policies and programmes to meet those targets.[65] An increasing number of cities are becoming centres of innovation in alternative energy, developing resources that may reduce dependence on fossil fuels and make our societies more sustainable. In 2017, for instance, 158 city authorities, businesses, non-governmental organizations and research institutions signed the Nagano Declaration, committing to increase cooperation and accelerating the transition to 100 per cent renewable energy.[66]

Climate change in the absence of investment in resilience and adaptation can erode the environmental value of urbanization

Urban planning can play a key role in designing effective mitigation and adaptation strategies, which in turn will enhance the environmental value of urban areas. Urban economies of scale make it cheaper and easier to take actions to minimize both emissions and climate hazards at the city level.[67]

Cities have the necessary population size, technological capability and institutional knowledge to adopt green economy initiatives at scale, like switching to renewable energy. Beyond its environmental value, alternative energy initiatives constitute an emerging economic sector for national economies. Global investment in renewable energy in 2018 totalled US$288.9 billion. Worldwide, the number of jobs in renewable energy, such as research and development, project development, engineering, installation, and operation and maintenance continue to increase, reaching an estimated 11 million by the end of 2018.[68] If cities follow through on their pledges and adopt renewable energy at scale, they could fuel national economic transformations.[69]

Climate scientists have become among the most influential voices to stress that cities play a central role in the fight against climate change. Under the auspices of the IPCC, city leaders convened in Edmonton (Canada) for a conference in March 2018 to inspire the next frontier of research focused on the science of cities and climate change, which will inform a special IPCC report in 2028.[70] Cities themselves continue to take centre stage in arguing for concerted attention to the relationship between urbanization and climate change. For example, the C40 Cities Climate Leadership Group launched a COVID-19

Urban planning can play a key role in designing effective mitigation and adaptation strategies, which in turn will enhance the environmental value of urban areas

recovery task force stressing than the post-pandemic world cannot return to "business as usual" on pace for 3°C or more of overheating.[71]

Both in their relationship to natural areas beyond their geographical limits and through the open spaces intermixed with metropolitan areas, cities are co-dependent with living systems. Natural scientists acknowledge that urban processes drive changes to patterns of biodiversity and ecosystems services globally, which were made all the more visible during coronavirus lockdowns as urban flora and fauna thrived in the absence of humans.[72] This understanding has helped to reframe urbanization as both a challenge and opportunity to manage ecosystems at the planetary scale.[73] There are urban areas located within all 36 biodiversity hotspots identified by the Critical Ecosystem Partnership Fund.[74] Twenty-two cities share ideas about enhancing urban biodiversity through their participation in the Biophilic Cities Network. Both ecologists and climate scientists see cities as laboratories in which emerging technologies, new social practices and alternative economic and governance models can be introduced, tracked and refined.

2.6. Social Value of Sustainable Urbanization

This Report conceptualizes the social value of sustainable urbanization through transformative commitments that enhance social inclusion and reduce poverty. It is further conceptualized through the framework of ensuring the "right to the city," an intellectual vision with legal recognition in some countries built on the pillars of "spatially just resource distribution, political agency, and social, economic, and cultural diversity."[75] This Report also embraces the notion of "cities for all," or the belief that all people on the urban-rural continuum should have equal rights, opportunities and fundamental freedoms to benefit from the value of sustainable urbanization. These approaches are reflected in the NUA transformative commitment to "leave no one behind, by ending poverty in all its forms and dimensions."[76]

For centuries, people have congregated in cities to pursue their aspirations and dreams, leading to increased individual and collective wellbeing. However, realizing the social value

of sustainable urbanization is not a natural consequence of a city's economic growth, as increasing investment in urban areas does not automatically address poverty and inequality. Mounting evidence suggests that economic growth in itself does not reduce poverty or increase the collective wellbeing if it is not accompanied by equitable polices that allow low-income or disadvantaged groups to benefit from such growth.[77] In fact, as cities grow larger and produce greater economic value, they have also become places of increased inequality and poverty (Chapters 1 and 5). This widening gap is due to the absence of institutional mandates to implement egalitarian policies, limited capacity and resources at different levels of government and a lack of community participation in urban development and decision-making.

There is a need for transformative change towards people-centred and sustainable urban development that enhances social value. Cities provide opportunities to create and maintain inclusive and just social systems and to produce services and experiences. A city is only sustainable to the extent that it addresses poverty, inequity, precarious housing and slums, among other pressing needs. While no city or country has completely addressed the complexity of sustainable urban development, some are making tremendous efforts, like Mexico City's embrace of Central American migrants.[78]

Realizing the social value of sustainable urbanization is not a natural consequence of a city's economic growth, as increasing investment in urban areas does not automatically address poverty and inequality

The intersection of inclusivity, equality and prosperity frames how the social value realized from sustainable urbanization is conceptualized. These broad and interconnected themes need to be unpacked to understand how individuals within unique social groups experience or are excluded from the value derived from sustainable urbanization.

2.6.1. Inclusivity

Inclusive and visionary urban planning and governance that includes slum prevention and upgrading, combined with pro-poor urban development policies that expand and improve opportunities for employment, are key ingredients for sustainable urban development and integral to the NUA and SDGs.

Many individuals and population groups in cities around the world are excluded from the benefits of urbanization

Many individuals and population groups in cities around the world are excluded from the benefits of urbanization. Sustainable urbanization should include underrepresented and underserved populations in participatory civic processes. For example, the negative consequences of urbanization are likely to disproportionately impact women in terms of safety, inadequate mobility in cities and unequal access to resources. In Latin America and the Caribbean, over half of public transportation users are women.[79] However, transportation systems are not always designed with women's needs in mind. Indirect routes lead to long walks to commercial and employment centres with few accommodations for children.[80] For instance, in Puebla (Mexico), more than two-thirds of the families living in affordable housing units located 30 or more kilometres away from the city centre are headed by women. These women commute very early in the morning when transportation options are limited in poorly lit public spaces where they may be exposing themselves to risks. The long hours also limit their ability to participate in civic life.[81] If a city like Puebla wished to upend this paradigm, it could develop a response that included adequate transportation and secure housing options. A prime example of planning for gender equity is Vienna (Austria), where the city's urban planning department created the "Manual for Gender Mainstreaming in Urban Planning and Urban Development" based on the experience of female residents. It incorporates gender considerations into planning public spaces, land-use planning and design, public washrooms, recreation facilities and transportation.[82]

Rural migrants are another population group that is frequently excluded from the benefits of urbanization. Often, in low- and middle-income countries, these migrants relocate due to unprofitable agriculture, limited livelihood options, poor living conditions and inadequate infrastructure and services.[83] City authorities focused on the inclusion of rural migrants need to develop policies

A young woman walks down a staircase. Zanzibar, Tanzania. © Eduardo Moreno

Simple design of urban scenery with people in various everyday scenes.
© Danielle Parentoni/Shutterstock

Rural migrants are another population group that is frequently excluded from the benefits of urbanization

and initiatives to address their housing needs and ensure that migrants understand their rights to access public spaces and services. To this end, Argentina has introduced a land titling program through which inhabitants of vulnerable neighbourhoods can acquire a "Family Housing Certificate" that allows them access to basic services and certifies their address.[84] Cities in Italy and South Africa are implementing basic income and living wage legislation to ensure the inclusion of vulnerable populations.[85]

The reforms necessary to address the exclusion of groups and individuals is context-specific, as a city in Côte d'Ivoire will have different priorities than a city in Canada. There are examples of cities embarking on initiatives to achieve their commitments through the NUA by building partnerships that create opportunities for residents to participate in the urban development decisions that impact their lives. In Ghana, the Accra Metropolitan Assembly, with the help of Cities Alliance and People's Dialogue, launched a programme to engage slum dwellers in improving their living conditions. The programme works with residents to map slums and obtain information on the number of inhabitants, access to basic services and sanitation systems.[86] The programme highlights that many local government attempts to create an environment for inclusive civic participation will involve residents that have historically contentious relationships with government-led urban development.

2.6.2. Equity
While urban stakeholders often advocate for equity, meaningful and tangible changes through planning are limited. As UN-Habitat has previously noted, "The challenges for urban planning in addressing inequality are particularly difficult, as urban planning alone cannot counter market forces. Urban planning should, therefore, seek ways to promote social integration and cohesion."[87] Equity can be understood as the intersection of representation, recognition and distributive justice in cities.[88] Specifically, representation is the political dimension, recognition is the cultural dimension and redistribution is the economic dimension of equity. Any urbanization process, regardless of the country or context, that does not actively address institutionalized obstacles to full representation, recognition and redistribution is inequitable, unjust and therefore undermines the value associated with urbanization. The State of the World Cities Report 2012/2013 proposed two necessary conditions for an equitable city: providing the conditions that enable every

Any urbanization process, regardless of the country or context, that does not actively address institutionalized obstacles to full representation, recognition and redistribution is inequitable, unjust and therefore undermines the value associated with urbanization

individual and social group to realize their full potential and harness the collective benefits and opportunities that cities offer; and removing any systemic barriers that discriminate against any individual or social group.[89] These proposed conditions for an equitable city draw an important distinction between the concept of "equity" and the oft used "equality." For historically underserved and underrepresented groups, applying an equal and consistent approach to every service or support for every resident merely serves to maintain the status quo. Elsewhere, it has been shown that the best policies for poverty reduction involve more redistribution of influence, advantage and subsidies away from wealthier, more powerful groups to those that are disadvantaged.[90]

Equity in urban development demands the rejection of a universal approach that ignores the reality of different groups within a city who are situated unequally relative to support systems and societal resources.[91] Equitable access to adequate housing, basic physical and social infrastructure, livelihood opportunities, safe and affordable drinking water, sanitation and hygiene, safety, food security and recreation requires developing targeted strategies that recognize the unique challenges of those within underserved and underrepresented populations. A recent report in the US found that communities of colour, low-income communities, non-native English speakers and communities that lack transportation and/or live in crowded conditions had less access to clean drinking water than more affluent communities. In fact, race had the strongest correlation to slow and inadequate enforcement of water quality laws.[92] Such inequities have also played out in the COVID-19 pandemic with observable racial disparities in the US and UK.[93] The failure to protect vulnerable communities is not happenstance; it is the result of social and political factors and decisions resulting in public policies that disadvantage communities of colour and indigenous communities.[94]

Children with special educational needs in an inclusive city park, Dnipro, Ukraine. © Shultay Baltaay/Shutterstock

Table 2.4: The value of urbanization for children

Value of urbanization	Plight of the children in cities
Economic ■ Environment that protects children's ability to attend school and not be forced into labour	Children are the most vulnerable population group in urban areas globally. At the extreme, an estimated 300 million of the global population of slum dwellers are children. The most disadvantaged children and their families are challenged with the high costs of living, unequal distribution and access to services, and poor characteristics of the built environment. Building on SDG targets for children, the New Urban Agenda commits to creating safe, healthy and secure cities for children. It promotes equitable access to sustainable basic physical and social infrastructure like housing, drinking water, public recreation space, health care, food and education.
Environmental ■ A safe and secure urban environment ■ Healthy and productive environment for their future ■ Access to age appropriate play and recreational facilities and opportunities	Children's behaviour is moulded by lived experiences in their formative years. A child's ongoing interaction with their urban environment will have a significant impact on their ability and desire to participate in shaping sustainable urban development in the future. Stakeholders within urban areas need to be informed about how children's vulnerabilities are related to the built environment and ensure urban policy reflects their needs in planning and development.
Social ■ Access to basic needs such as food, water, sanitation, etc. ■ Protection from trafficking, violence and abuse	When children are marginalized and excluded from urban planning and development processes, their voices are silenced. Meaningful inclusion of families requires local government to invest in building the capacity of children and their parents so that they can participate in the whole process of urban development. Community collaboration to co-produce better outcomes ensures that children benefit from the social value of sustainable urban development.

Source: UNICEF, 2018.

The greatest challenge to ensuring equity is not in the amount of resources directed at a problem; rather, it is ensuring that the lives of vulnerable and other marginalized groups are valued within public policy and process. Inequity is addressed through redistributive policies, developed in consultation with people with lived experience, that give priority to excluded or marginalized groups in the provision of services and opportunities. A poignant example of the importance of equity vs. equality can be seen within the plight of children in urban environments (Table 2.4). Ensuring that the unique needs of children are addressed in an equitable and sustainable manner provides value to other groups within urban areas.

It is only when equity is put forward as a main concern that cities will thrive as places of economic strength while contributing to environmental resilience.[95]

The greatest challenge to ensuring equity is not in the amount of resources directed at a problem; rather, it is ensuring that the lives of vulnerable and other marginalized groups are valued within public policy and process

Countries that have attempted to address inequality by investing in the health, housing and education of their most vulnerable populations tend to perform better on all human development indicators, including GDP

Countries that have attempted to address inequality by investing in the health, housing and education of their most vulnerable populations tend to perform better on all human development indicators, including GDP.[96] Such countries include Brazil, Cuba, Egypt, Sri Lanka, Thailand and Tunisia, which have performed relatively well on many human development indicators and have managed to contain or reduce slum growth largely due to political commitment—backed by resources—to invest in the urban poor. Evidence shows that urbanization that is centred in the principle of equity can have tangible outcomes for marginalized groups within the city.[97] A critical component to achieving equity is through inclusive civic participation and ensuring that underserved and underrepresented populations are involved in the decision-making that impacts them.

2.6.3. Quality of life

Generally, urban residents enjoy a better quality of life. However, the social value of urbanization should largely be viewed in terms of how vulnerable and marginalized groups have access to quality services and improved standards of living. Quality of life indicators consider a broad set of factors that influence people's lives. They include housing, health and education, as well as participation in local decision-making and availability of cultural assets and amenities.[98] Urban development experts suggest that effective urban planning and management, being proactive rather than reactive, are key factors in improving the quality of life for urban residents.

Effective urban planning and management, being proactive rather than reactive, are key factors in improving the quality of life for urban residents

As the world becomes increasingly urbanized and national governments cannot always be relied upon to deliver services at the local level, cities must increasingly provide their own safety nets in order to ensure a decent quality of life for their most vulnerable residents. Such city-level social safety net programs are emerging in cities around the world. For instance, Delhi has a social pension programme for older persons, which the city government doubled at the onset of the coronavirus lockdown. Emerging research suggests that with the close proximity of urban areas, social security programs can play an integral role in supporting the poorest residents in benefitting from the value of urbanization.[99] China's social security system has adapted mechanisms from developed countries to suit the Chinese context. Recent reforms have attempted to extend coverage to include former rural areas and all urban residents. As a result of their efforts, China is witnessing a decrease in regional disparities, but is still contending with inequality that is not decreasing as expected (Chapter 1).[100]

When urbanization is well-planned, it is associated with greater productivity, opportunities, improved quality of life and prosperity for all. Unfortunately, many cities have inadequate infrastructure and inequitable access to social services, while marginalized populations are excluded from the inherent value of urbanization. The inequity

in the degrees of prosperity are highlighted by the stark contrast between well-serviced, planned and secured neighbourhoods and inner-city, peri-urban, slum-like and informal settlements. A city is only prosperous if all its residents are thriving, where inequality, abject poverty and deprivation is minimal. Cities that are integrating a focus on improving quality of life into their urban planning provide adequate social services in the form of education, health, recreation, safety and security to improve living standards and help all residents realize their maximum potential. UN-Habitat advocates a vision of the twenty-first century city that is people-centred, capable of producing prosperity and sheds off the inefficient and unsustainable patterns of the previous century.[101]

2.6.4. Governance system

Sustainable urbanization requires a functioning deliberative body to develop legislation, then a capable bureaucracy to implement it in order to make cities and human settlements safe, inclusive, resilient and sustainable. Underpinning this process is a municipal finance structure that provides the necessary resources to fund operations. To accomplish this ideal, the public sector must work closely with governance stakeholders at all levels of government, civil society, community associations, indigenous peoples, marginalized groups, private investors, academics and other partners. Though all levels of government are necessarily represented in this system, sustainable urbanization will be most successful when adhering to "subsidiarity," or the organizing principle that political decisions should be taken at the most localized level possible, as emphasized in the NUA.[102]

Subsidiarity acknowledges that there is a baseline capacity required for successful devolution of decision-making. This capacity is often dictated by the enabling environment within which local governments operate. Globally, local governments have varying levels of institutional capacity to make their own urbanization decisions due to incomplete decentralization, among other factors (Chapter 7). However, in decentralized democracies it is the responsibility of the central government to provide the necessary resources that support the ability of local governments to fulfil their function as the level of government closest to citizens. There is also a role for higher levels of government to ensure that local processes are not co-opted by local elites.

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While there is no substitute for government leadership in addressing issues of inclusion and equity, civil society participation is a necessary component of sustainable urbanization

While there is no substitute for government leadership in addressing issues of inclusion and equity, civil society participation is a necessary component of sustainable urbanization. An active and informed civil society has the potential to equip and empower communities to participate in the development of their city, build social capital and influence urban design. Similarly, business, academia, trade unions and professional associations all need to contribute to the design and implementation of policies and regulations to keep cities moving on paths of sustainable prosperity for all. The process of negotiation with local stakeholders can forge new partnerships that strengthen national governments.[103] The active and meaningful participation of governance stakeholders and residents is an outcome of the intangible value of sustainable urbanization.

2.6.5. Urban policy coherence

The economic, social and environmental value created through the process of urbanization is the result of decisions that are made at all levels of government, in business and by supranational organizations. These decisions should be guided by "national urban policy," or a coherent set of guidelines developed with all stakeholders in a collaborative way that promotes transformative, productive, inclusive, equitable and environmentally resilient long-term urban development (Figure 2.1). The increasing adoption of national urban policies (NUPs) is an important step forward in managing urbanization. Over the past two decades, at least one hundred and fifty countries have developed NUPs that support sustainable urbanization and nearly half (73) are being implemented. NUPs are key policy tools which governments at all levels can use to enhance the value of sustainable development that cuts across urban, peri-urban and rural areas.[104]

To ensure urbanization is inclusive and equitable requires NUPs that consider the rights of the most vulnerable and marginalized. These policies must also prioritize a sense of belonging and identity, collective values, participation in political and social life, and women's empowerment and development. For example, policies must support the rights of women, including property rights, access to services and civic participation; youth empowerment, including education and employment; older persons, including policies to promote healthy ageing; and a broad focus on the urban poor and indigenous populations.[105] The pervasive nature of informal settlements and slums caused by rapid urbanization with limited planning and insufficient infrastructure is a complex problem with very tangible negative effects. City governments must leverage their skills, knowledge of context, resources and political will to improve the lives of all residents, including those in slums.

For local governments regardless of context, managing sustainable urbanization requires internationally developed policies to align with domestic policies that act together as a cohesive force for change.[106] Timely support must be mobilized across all levels of government to ensure a cohesive approach to planning and managing cities and their interactions across jurisdictional boundaries and with rural areas. Local governments alone cannot address the complex challenges facing modern cities. While the NUA and international agreements relevant to sustainable urbanization were signed by national governments, many of the commitments are within the purview of local governments. It is vital for national governments to equip local government with the capabilities, appropriate decision-making authority and necessary financial resources.[107] It is equally important that local and national governments collaborate on decision-making with regard to efficient and effective service delivery and movement towards achieving international development agendas.[108]

Efforts to promote sustainable urbanization must be responsive to the national context. At the same time, they must be sensitive to a local area's political and cultural readiness for policies supporting inclusion and equity over unconstrained sprawl and elite economic growth. It

City governments must leverage their skills, knowledge of context, resources and political will to improve the lives of all residents, including those in slums

Aerial view of Yick Fat Building, Quarry Bay, Hong Kong. © Tavarius/Shutterstock

Tribal Indian Healers, Zocalo, Mexico City, Mexico. © Dowraik/Shutterstock

is therefore vital to understand the distinctive context in each city, including the role of other national, territorial, rural and regional policies.[109] For too long in developing countries, regulatory frameworks have been imposed or imported with externally derived standards unsuitable for the local context.[110] Changing course entails a major review of policy, codes and institutional restructuring to support progressive measures that address complex urban challenges in an inclusive and equitable manner.

2.7. Intangible and Cultural Value

The intangible value of urbanization can be conceptualized as the synergy of effective governance and institutions that generate a sense of pride in one's overall perception of the city. For instance, sound institutions—a constitution, laws,

regulations, social norms, customs and traditions—provide the superstructure for the value of urbanization to be fully realized and lead to inclusive prosperity and an increase in quality of life.

In sustainable urbanization there are two concurrent processes occurring: building the political, institutional and stakeholder support for a concerted effort to intentionally shape and direct urban growth in an equitable and inclusive way; and developing the institutional capabilities, network collaboration, technical capacity, legal frameworks and financial instruments to manage urban growth. Government at all levels must regain control of urbanization with a renewed commitment to sustainable, people-centred urban development that equips residents to collectively influence the direction of their city.

Habima Square, a public space that is home to cultural institutions, Tel Aviv, Israel. © ChameleonsEye/Shutterstock

Culture is a related intangible value that is the lifeblood of vibrant urban areas. Creative expression helps define residents' perceptions of the city and empathize with their neighbours by seeing through the eyes of others. Cultural diversity contributes to the social, economic and environmental value of urbanization through improved learning and health, increased tolerance and understanding, and opportunities to come together with others in public

Cultural diversity contributes to the social, economic and environmental value of urbanization through improved learning and health, increased tolerance and understanding, and opportunities to come together with others in public spaces

spaces.[111] The quality of cultural life in a city brings a competitive edge, attracts businesses and drives economic development, but more importantly it strengthens the social fabric of a city.[112] Investments in culture preserve history and heritage and provide value to residents through the relations and processes that happen in the contexts of their individual networks of families, communities, and in publicly funded institutions.[113] Participation in publicly available arts and culture opportunities can relieve isolation and promote identity formation and intercultural learning, understanding and appreciation.[114]

In the developed world, rising migration has led to increased culturally diverse populations in cities (Chapters 1 and 5). In most of these cities, diversity is celebrated, and city authorities are developing programmes and creating the environment to make those who come from other

cultures feel that their values and background are not only accepted but celebrated. Not only are major metropolises dotted with vibrant international cultural neighbourhoods, but also ethnic retail stores, diverse religious landscapes and regular multicultural events such as Drongo Festival in Amsterdam, Caribana in Toronto, Notting Hill Carnival in London, Chinese New Year Festival and Parade in San Francisco and Living in Harmony in Sydney. Urban practitioners are increasingly recognizing the intangible value of culture to creating a sense of place and fulfilment, improving quality of life and reducing inequity through multi-level cultural planning.

2.8. Concluding Remarks and Lessons for Policy

This chapter has conceptualized the value of sustainable urbanization along four dimensions—economic, environmental, social, and intangible—all of which will be addressed in more detail in the next four chapters. It notes that although urbanization has value, the way and manner stakeholders articulate and promote the value of urbanization is crucially important. The chapter notes that any discussion of value should be people-centred and should serve the diverse interests, needs and aspirations of the people who reside in cities. Further, the chapter articulates that urbanization has value, but the benefits do not occur by chance. They require proper planning, effective management and sound urban governance.

With these caveats, the chapter offers the following as lessons for policy:

- If well planned and managed, urbanization can help countries accelerate their economic growth and serve as a channel to global markets by creating productive environments that attract international investment and increase economic efficiency.

- It is the economic growth and prosperity offered by cities that will provide the basis by which countries can contribute to achieving the targets of the SDGs, including enhancing economic and social opportunities for the urban poor. In the absence of a healthy urban economy, the goals of the 2030 Agenda for Sustainable Development will be difficult to attain.

- Policies should strive to achieve pro-poor economic development but also to reduce the environmental impact of economic growth and urban production on the environment.

- It is important for cities to continue to be at the forefront of solutions to climate change. Urbanization offers many opportunities to develop mitigation and adaptation strategies to deal with climate change, especially through good urban planning and management practices.

- Sustainable urbanization has social value when it enhances gender equality, protects the rights of underserved and underrepresented groups and ensures inclusive civic participation.

- Sustainable urbanization is experienced through the intangible value of urban culture. As the world's cities become more heterogeneous, there are more opportunities for celebrating cultural diversity as part of a city's brand or identity.

- Urbanization will continue to be the driving force for global growth. However, given the pace of urbanization, the process requires effective planning, management and governance if it is to become a truly transformative asset.

- Internationally developed policy must be adaptable to local context to ensure policy coherence. Local governments need to be invited into international agenda setting to contribute their unique perspectives.

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Chapter 3

The Economic Value of Sustainable Urbanization:
Inclusive Prosperity and Opportunities for All

Cities do not merely symbolize the dreams, aspirations and hopes of individuals and communities, they are the primary catalysts or drivers of economic development and prosperity across the world. Urban areas generate enormous economic value as they are the world's platforms for production, innovation and trade, generating both formal and informal employment. This chapter, while providing a recap of the foundational mechanisms that enable cities to serve as growth accelerators, highlights the risks embedded within the very structure that enable cities to generate economic value. These risks have been magnified by the coronavirus pandemic and its adverse socioeconomic impacts.

Quick facts

1. Well-planned and managed urban growth improves the economy across a range of scales (local, regional and national) through employment creation, contribution to GDP and FDI attraction among others.
2. Sustainable urbanization is a generator of inclusive prosperity; it allows for economic opportunities for all, including marginalized groups.
3. The informal economy is the lifeblood of many cities in developing countries. Yet, informal sector enterprises generally fly under the radar of public policy interventions.
4. The very dense interaction networks of people, which are the factor behind cities' potential as economic growth accelerators, also carry embedded risks, as evidenced by the COVID-19 pandemic.
5. Property rights, land use regulations and poor transport systems are limiting the generation of economic value in cities of developing countries.

Policy points

1. Urban and territorial planning supported by adequate governance structures will enhance the economic value of urbanization.
2. Cities can enhance their productive capacities by reforming legal and regulatory frameworks and adopting measures that provide greater security to workers, particularly those in the informal economy.
3. Adequate measures to facilitate the transition of workers and economic units from the informal to formal economy are fundamental to achieving sustainable and inclusive urban development in developing countries.
4. Building resilience in the aftermath of COVID-19 is the foundation for managing future pandemic and driving economic growth.
5. Governance, institutional, policy and regulatory frameworks should be aligned to the local realities and should not hinder economic growth.

Cities are the foundation upon which the prosperity of modern societies and past civilizations has been built. They have been the primary catalysts and drivers of economic development across the world. Today, cities generate enormous economic value. They are the world's platforms for production, innovation and trade, generating both formal and informal employment. They underpin the economic development and prosperity of nations, as clearly evidenced by their significant contribution to global economic output.

While cities are concentrations of wealth and productive capacity, they can also be sites of exclusion (Chapter 1 and 5). The urban divide has never looked so wide, as the benefits of urbanization have not been widely shared by all segments of society. In addition, while cities occupy little land globally, urban activities often pose massive sustainability challenges that go beyond their own spatial boundaries (Chapter 1 and 4).

The adoption of the 2030 Agenda for Sustainable Development and the New Urban Agenda not only placed urbanization at the forefront of international development agenda, it also set conditions for the necessary paradigm shift to sustainable urbanization. The NUA recognizes that "sustained, inclusive and sustainable economic growth, with full and productive employment and decent work for all, is a key element of sustainable urban and territorial development and that cities and human settlements should be places of equal opportunities, allowing people to live healthy, productive, prosperous and fulfilling lives."

As explained in Chapters 1 and 2, sustainable urbanization means that cities are being planned, developed, and managed considering: their costs, not just benefits; quality of life, not just income; their social and environmental,

Street market, Fa Yuen Street at mong kok, kowloon, Hong Kong. © SS pixels/Shutterstock

not just economic, benefits; their global, not just local, effects; and their long-term, not just short-term, impacts. Indeed, achieving sustainable and inclusive urban economies that ensure prosperity and opportunities for all requires: leveraging the agglomeration benefits of well-planned urbanization, including high productivity, competitiveness and innovation; promoting full and productive employment and decent work for all; ensuring the creation of decent jobs and equal access for all to economic and productive resources and opportunities; and preventing land speculation, promoting secure land tenure and managing urban shrinking, where appropriate.

As stated above, cities generate a substantial share of the global economic output—over 80 per cent of global GDP—yet concentrate half of the world's population on about three per cent of the Earth's land area.[1] As a result, economic output per capita is invariably high in urban areas, and countries that are more urbanized tend to be wealthier, as illustrated by the strong positive relationship between urbanization and income in various countries (Figure 3.1).

However, the economic value generated by cities varies depending on the local context. As shown in Table 3.1, the percentage share of urban activities—industry and services—in GDP is high across all areas, from about 70 per cent in the developing countries of Oceania to 90 percent in developed countries. Strikingly, urban areas generate this output using little land, from about one per cent of land area in Africa to 10 per cent in the developing countries of Oceania.

Urban productivity—proxied by the total GDP generated by industry and services divided by total urban population—is the highest in developed countries, reaching almost US$50,000 per capita. It is relatively lower in ex-transition countries (about US$30,000) and the developing countries of Asia (US$20,000), the Americas (US$15,000), Oceania and Africa (US$10,000 each). In other words, the urban areas of developing countries generate less output per capita than the urban areas of developed countries.

Figure 3.1: Urbanization and economic development
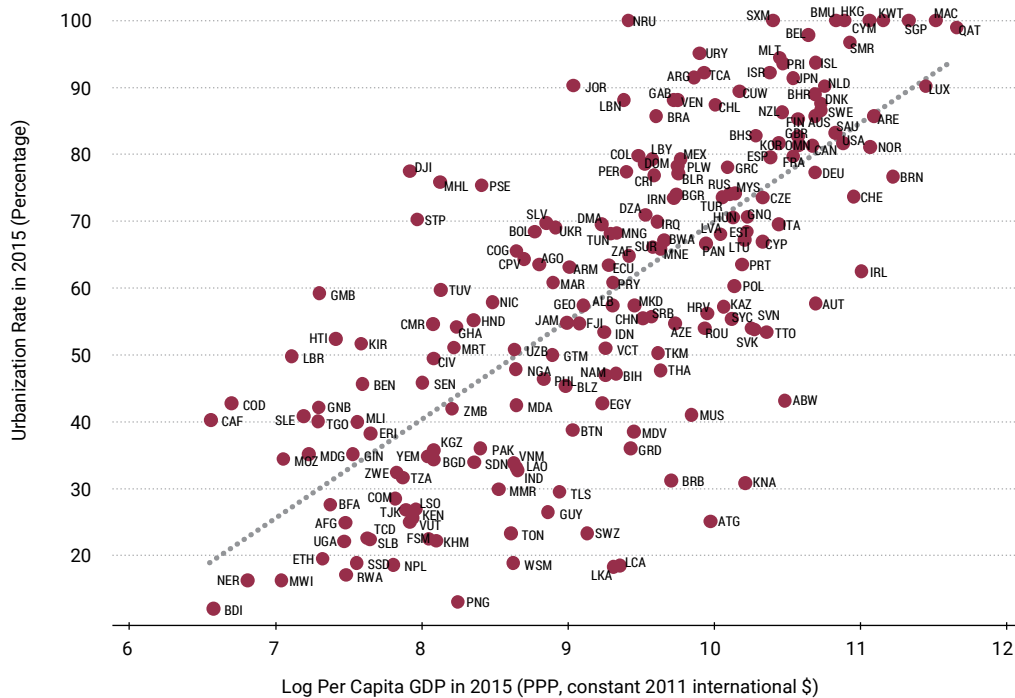
Sources: United Nations, 2018b; World Bank, 2019d.

Table 3.1: Contributions of urban-based sectors to GDP and land use, 2015

	Developed Regions	Ex-Transition Countries	Asia*	Latin America and the Caribbean	Oceania*	Africa
Industry and Services in GDP (%)	92.5	85.2	87.3	85.4	70.7	80.7
Urban Land in Total Land (%)	5.3	1.6	4.2	2.4	10.1	1.1
Industry and Services GDP (US$) / Urban Population	48,244	28,514	20,162	15,978	10,387	9,436

*Notes: *Developing countries*
Sources: United Nations, 2018b; World Bank, 2019d.

The urbanization process of more developed regions is also relatively more sustainable, underscoring the connection between sustainable urbanization and development. As compared to developing countries, developed countries score higher on selected indicators that monitor progress towards the attainment of SDG 11. As shown in Figures 3.2– 3.4, developed regions have smaller shares of their urban population living in slums; higher shares of people with access to controlled waste disposal facilities; lower mean levels of fine particulate matter in their cities; and a larger share of population with convenient access to public transport. As

cities in all regions make progress toward realizing the SDGs and the NUA, the more the economic value of urbanization is enhanced. For instance, expanding access to public transport—a vital service for urban residents—not only catalyses economic growth, it also enhances social inclusion.

As cities in all regions make progress toward realizing the SDGs and the NUA, the more the economic value of urbanization is enhanced

Figure 3.2: Share of the population with convenient access to public transport, 2019 (percentage)
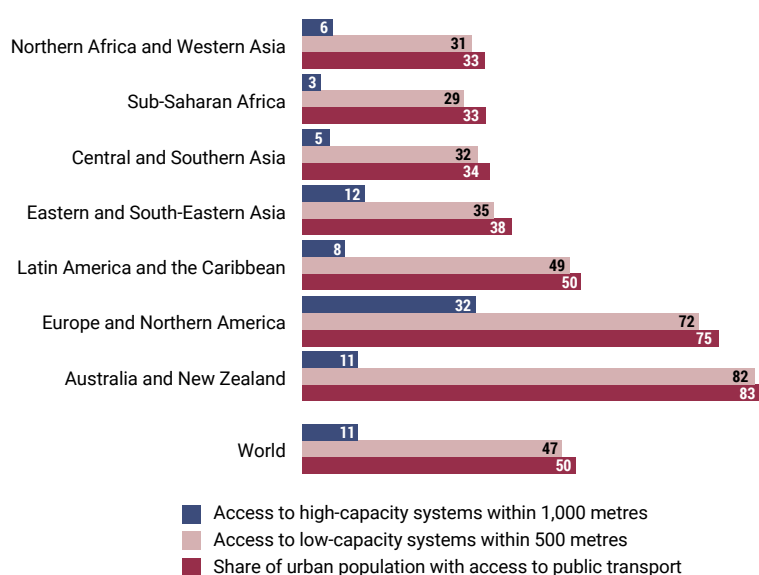
Source: United Nations, 2020d.

Figure 3.3: Share of municipal solid waste collected, 2001-2010 and 2010-2018 (percentage)

Sub-Saharan Africa: 32 / 52
Oceania*: 60 / 61
Northern Africa and Western Asia: 79 / 75
Latin America and the Caribbean: 80 / 77
Eastern and South-Eastern Asia: 85 / 81
Central and Southern Asia: 84 / 85
Europe and Northern America: 97 / 94
Australia and New Zealand: 99 / 99

World: 76 / 81

*Excluding Australia and New Zealand

■ 2001-2010   ■ 2010-2018
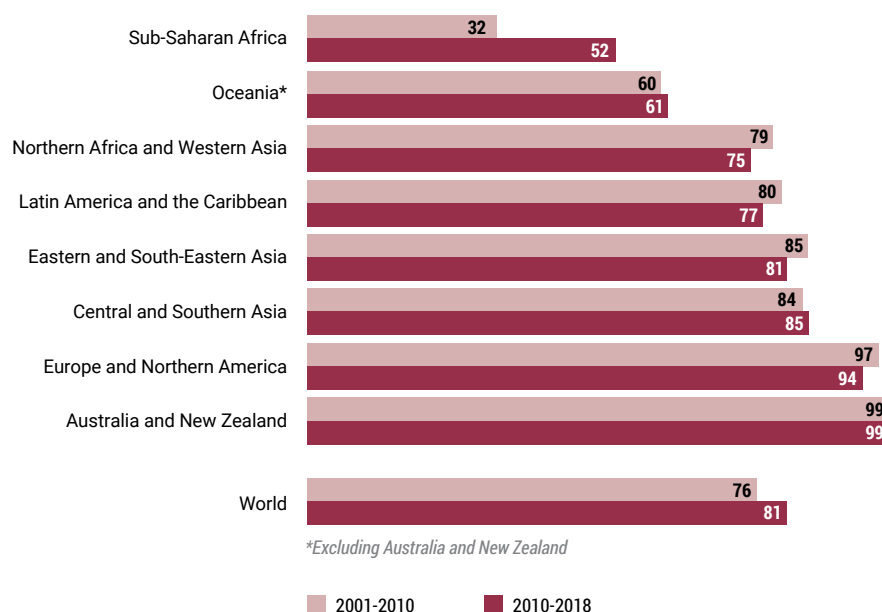
Source: United Nations, 2019a.

Figure 3.4: Concentration of fine particulate matter (PM2.5) in urban areas 2016

Australia and New Zealand: 7.1
Oceania*: 11.3
Northern America and Europe: 12
Latin America and the Caribbean: 16.8
Sub-Saharan Africa: 35.5
Eastern and South-Eastern Asia: 39.6
Northern Africa and Western Asia: 51.3
Central Asia and Southern Asia: 62.8

World: 39.6

*Excluding Australia and New Zealand
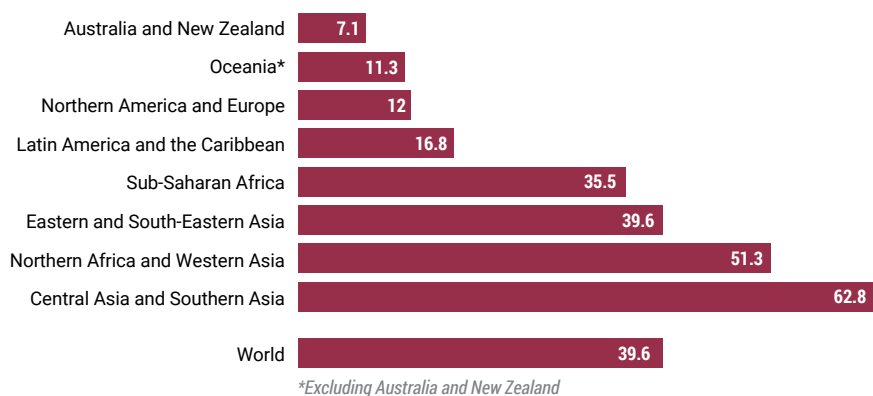
Source: Based on WHO Global Health Observatory data repository, 2018.

Overall, these facts raise questions that cities must learn from in order to become sustainable growth accelerators and generators of inclusive prosperity. What are the mechanisms by which cities can generate so much economic output per capita and by land area? In other words, what makes density so productive and how it can remain so in the wake of the COVID-19 pandemic? How do cities contribute to prosperity and inclusiveness across spatial scales? Why do the urban areas of different regions of the world generate different levels of economic output? Are all developing regions experiencing a sustainable urbanization process, and if not, how could this affect the long-term output generated by their urban areas? Finally, what conditions and policy measures are necessary for urban areas to be as sustainably productive as those in developed countries?

3.1. Cities: Sustainable Growth Accelerators

Since the seminal work of Jane Jacobs,[2] many studies have shown that urban areas increase the productivity, and thus income, of their residents.[3] For a given income level, cities also improve consumption possibilities, contributing to life satisfaction.[4] But what steps can cities take to realize their growth and consumption potential?

The mechanisms by which cities achieve such benefits are referred to as "economies of agglomeration": by concentrating resources in a small geographical area, cities help residents and businesses save time, money and effort on production; facilitate acquisition and exchange of knowledge and ideas, thus helping improve innovation and human capital; and provide convenient points of consumption.[5] Ultimately, through economies of scale and agglomeration economies, cities enable accelerated growth and socioeconomic development. Essentially, they

are the intrinsic (natural) productivity growth factors for a city (Table 3.2).

Economies of scale in production are perhaps the best-known of these mechanisms. This phenomenon has spurred the creation of denser human settlements throughout history. Across the world, many cities have grown from their initial organization around one factory or business service centre. For example, many towns in Industrial Revolution-era England developed around one cotton mill where cotton would be transformed into yarn or cloth.[6] More recently, large call centres are being established in small towns in India, accelerating the growth of these towns and expanding access to economic opportunities.[7] There are then economies of scale in marketplaces: cities exist because there is trade between regions and cities serve as physical places for the exchange of goods. For example, many trading towns emerged along the Silk Road between Europe and Asia.[8] Likewise, today's largest cities are port

Hyderabad, the fourth most populous city and sixth most populous urban agglomeration in India. © Snehit Photo/Shutterstock

Table 3.2: City-specific factors determining a city's productivity

Intrinsic (natural) productivity growth factors	**Agglomeration economies** • Matching • Sharing • Learning	**Economies of scale** • Production • Consumption • Provision of urban services	
Extrinsic productivity growth factors	**Technical efficiency** • Structural efficiency • Land management policies • Space efficiency • Infrastructure investment • Taxation • Disaster prevention (resilience) • Operational efficiency • Day-to-day urban management • Service delivery • Emergency management	**Institutional scaffolding** • Sound local institutions (e.g., decentralization) • Sound governance • Ease of doing business	**Quality of life** (quality of education, safety, cultural life, liveliness) • Attractiveness to knowledge-based industries • Attraction and retention of the 'creative class ' • Learning-based efficiency • Creativity and innovation • Research and development and technological development • Entrepreneurship • Vision • Local leadership • Local governance

Source: UN-Habitat, 2013.

cities. While the link between port and city growth has arguably become weaker over time, some cities, particularly in Asia, have over the past few decades continued to experience strong population growth alongside the high traffic to their cargo ports—for example, Shenzhen, Dubai, Shanghai, Singapore, Mumbai and Kolkata.[9] Lastly, there are economies of scale in consumption, distribution, public good provision and recreational opportunities. For example, supermarkets, hospitals and stadiums tend to be located in larger cities. Cities make the consumption of some goods and services cheaper for residents, thus generating purchasing power.

Over the years, theoretical frameworks have provided explanations of the basic mechanisms by which agglomeration generates gains for cities. It is because firms and urban residents recognize the economic value derived from cities that they are willing to compete for the more expensive space in cities. These benefits of cities relate to the *sharing*, *matching* and *learning* processes in cities.[10] By concentrating firms and urban residents in the same

Pedestrian crosswalk on a city road. © Ultramansk/Shutterstock

location, cities give access to a bigger and improved range of "shared" services, achieve joint economies of scale in provision of infrastructure and services, incentivize firms and workers to ultra-specialize in few products or tasks and achieve resilience to firm- or sector-specific shocks. Cities enable businesses to "match" their distinctive requirements for labour, premises and suppliers because a wider choice is available. Owing to a large density of actors, cities promote "learning": they are primary centres of innovation, science, arts and creativity. Cities are laboratories of experimentation, which explain their importance in the fourth industrial revolution, facilitated by the rise of computing power (Chapter 6).

Close proximity in cities provides opportunities for greater human interaction, thus enabling formal and informal networks of experts to emerge which promote comparison, competition and collaboration.[11] Cities also facilitate the diffusion of knowledge across broader populations. Indeed, if cities have large shares of educated workers, and if ideas are more likely to be exchanged after a face-to-face interaction between skilled or educated individuals, then knowledge will diffuse faster in cities. The effects, often qualified as *human capital spillovers*, imply that cities with higher shares of often young, highly skilled and educated workers—the "creative class" alluded to in Chapter 6 (and Table 3.2)—grow faster.[12]

As a result of these fundamental dynamics, many workers are more productive, and thus receive relatively higher wages (even for low-skilled jobs), in urban areas than elsewhere—the urban wage premium. The generation of this wage premium is, however, shaped by the characteristics of the urban system in a given country. For instance, recent studies in Nigeria, Tanzania and Uganda show that only the latter's workers experience an urban wage premium across all urban areas. In Nigeria and Tanzania, the urban wage premium is largest for workers in the primate cities and, in some cases, non-existent for workers in secondary cities.[13] The primate cities in developing countries usually have the highest economic mass, primarily because they are the location for national headquarters of financial and high-level business services. These cities also have a large number of government offices, with those working for the public sector generally enjoying much higher incomes than those in the private and informal sectors.

Figure 3.5: Labour productivity and city population density, South Africa, 2007
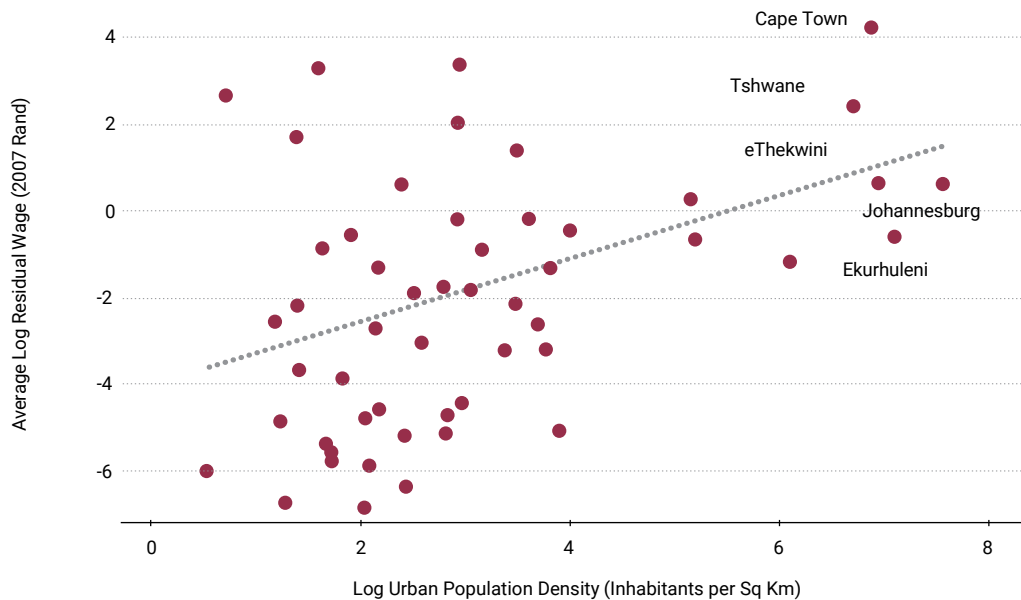
Source: 2007 Community Survey of South Africa. The residual wage is the estimated wage after controlling for individual characteristics such as educational attainment, age, gender, marital status, industry and occupation.

Likewise, larger, denser cities often offer relatively higher wages than other cities. The wage differential exists even for work of equal value; similar workers are simply more productive in larger cities.[14] Past studies have also shown that increases in employment density often lead to a rise in average labour productivity. In the US, for instance, a study found that a doubling of employment density increases average labour productivity by around six per cent.[15] Another study found that workers living in the 30 largest metropolitan areas in the US earned 33 per cent more than workers living outside these areas.[16] Similar observations of higher incomes in larger and denser cities have been made for the three major metropolitan areas in Japan (Tokyo,

Osaka and Nagoya).[17] In South Africa, doubling of urban population density leads to a similar rise in average wages—the five largest, densest cities offer relatively higher wages compared to other cities (Figure 3.5).

While there is a strong connection between labour productivity and large cities, the agglomeration effects have been observed to be much stronger for *cities with more skills*.[18] Thus, for the sustained economic value of urbanization to be realized, human capital development is crucial. Cities must offer equal opportunities for all residents to access appropriate education and further develop their skills for productive participation in society.

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In addition, how cities are built and spatially organized is key to delivering agglomeration economies and reaping productivity benefits. Poorly planned and managed urbanization translates to low densities, separation of land uses (high spatial fragmentation), mismatches between infrastructure provision and residential concentration, inadequate street networks and a lack of reliable transport systems. These negative conditions diminish the potential

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How cities are built and spatially organized is key to delivering agglomeration economies and reaping productivity benefits

to leverage the economies of scale and agglomeration.[19] In Sub-Saharan Africa, for instance, urban areas suffer from high costs, affecting not just households but also firms. Urban households in Sub-Saharan countries pay 20–31 per cent more overall than urban households in other countries at similar income levels. Notably, rental housing is 55 per cent more expensive compared to urban areas of other regions. These effects have been attributed to coordination failures, poorly designed policies, weak property rights and other factors that lower economic density.[20]

Recent years have shown that the very dense interaction networks behind cities' potential as economic growth accelerators also makes them vulnerable to disasters and public health threats such as infectious disease. They are often viewed as a factor in the rapid spread of epidemics and pandemics throughout history. Today is no different. The risk of such infectious disease is embedded within the structure and patterns of contemporary society, and requires both the ability to adapt quickly as well as more complex long-term responses at the local, national and global levels.[21] The coronavirus disease (COVID-19) pandemic, for instance, has had significant impact on urban economies across various regions (Box 3.1). Essential services to the economic functioning of the city, for example transport systems, have been deemed as potential petri dishes for contagion.[22] Besides the high fatality rates in some of the world's megacities, the pandemic has put countries, and the world at large, in an economic crisis.

Swift measures adopted to combat the spread of the virus such as closing borders, lockdown restrictions and requiring people to stay at home have resulted in reduction of economic activities, production and supply chain disruptions, and sharply reduced demand. Some of the unintended consequences of these measures have been reduced income and loss of livelihoods. The pandemic has clearly exposed the inequalities discussed in Chapters 1 and 2 and has further shown how such inequalities dictate the economic impact of the pandemic on various sectors of the urban population. Populations living in overcrowded informal settlements and slums have been more economically vulnerable because of their reliance on daily earnings from the informal sector. For example, millions of informal workers in India returned to their villages when urban jobs dried up.[23] As of May 2020, at least 170,000 Peruvians in urban areas requested assistance from local governments to return to the countryside.[24] In Kenya, the economic pinch of the pandemic has forced urban households unable to afford rents to downgrade to cheaper housing or relocate to rural areas.[25] Given such profound economic and social consequences, if such pandemics are not well-managed—particularly in such deeply fragile contexts—there lies huge obstacles on the path to realizing the SDGs and the NUA.

The COVID-19 pandemic has shown the importance of leveraging the upside of density afforded by urban areas while protecting against its downsides.[26] Density supports economies of scale in the provision of critical public services like health care. As a result, the capacity for public health surveillance, control programs, prevention and public knowledge programmes is far better in cities, provided governments allocate the necessary resources to build out this infrastructure.[27] In some cases, the novel approaches devised in urban areas have been transformational. The drive-through test centres for COVID-19 in urban areas across Republic of Korea, for instance, have provided a safe and efficient screening system that, to date, has averted massive community outbreak.

Although urban density has come under fire in critical observations of COVID-19's spread, it has been observed that it is not density in and of itself that seems to make cities susceptible, but the *kind of density* and the way it impacts daily work and living.[28] Household crowding, such as the number of people per dwelling unit, matters more than the simple fact of a dense number of residents per square kilometre.[29] A study of urban density and COVID-19 in the US found that while denser locations were more likely to have an early outbreak—due to interconnectedness with other locations—they did not necessarily suffer more in

Density supports economies of scale in the provision of critical public services like health care

the long run when compared to smaller towns or sparsely populated peripheries; the time-adjusted number of COVID-19 related deaths was not affected by density.[30]

Urban forms can be dense and still provide places for people to isolate and practice physical distancing in the face of a highly contagious disease.[31] Indeed, well-planned and managed cities are uniquely well-equipped to respond to all hazards, including public health threats. The capacity to respond rapidly is also a factor of good governance and the financial health of the local and national governments. In China, some dense cities (such as Shanghai, Beijing, Shenzhen, Tianjin and Zhuhai) were found to have markedly outperformed less populated places in combating the virus as illustrated in Figure 3.6. This has partly been explained by their ability to mobilize enough fiscal resources to cope with the coronavirus.[32] In Republic of Korea and Germany, good governance

and fiscal health enabled quick responses in urban areas and ensured low death rates.[33] Proactive governance and adequate financial resources are important in appropriately combining necessary health responses like investments in testing and quarantine facilities with socioeconomic mitigation measures—such as disaster responsive safety net programs like unemployment insurance or targeted cash transfers—to support those whose livelihoods have been upended by the containment and mitigation measures.
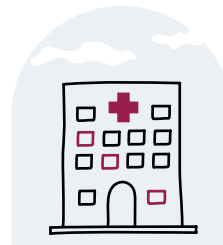
Well-planned and managed cities are uniquely well-equipped to respond to all hazards, including public health threats

A man sanitizing interior surfaces on a train in Mexico City, Mexico. © Eduardo Moreno

Figure 3.6: Urban density and COVID-19 infection rates in China
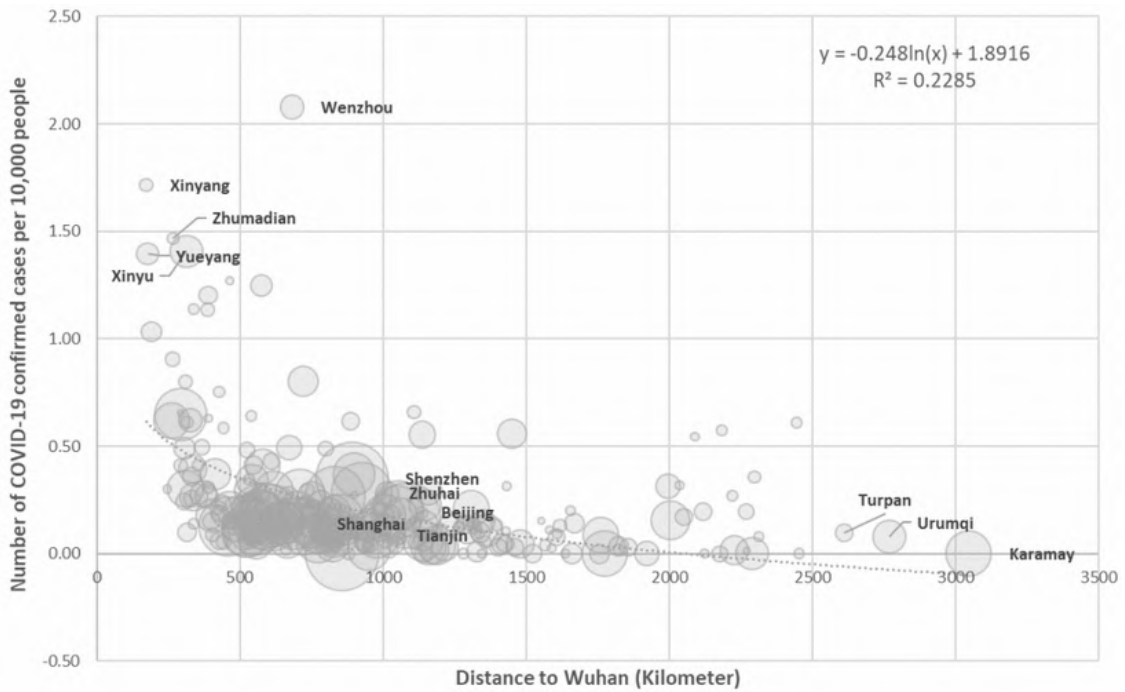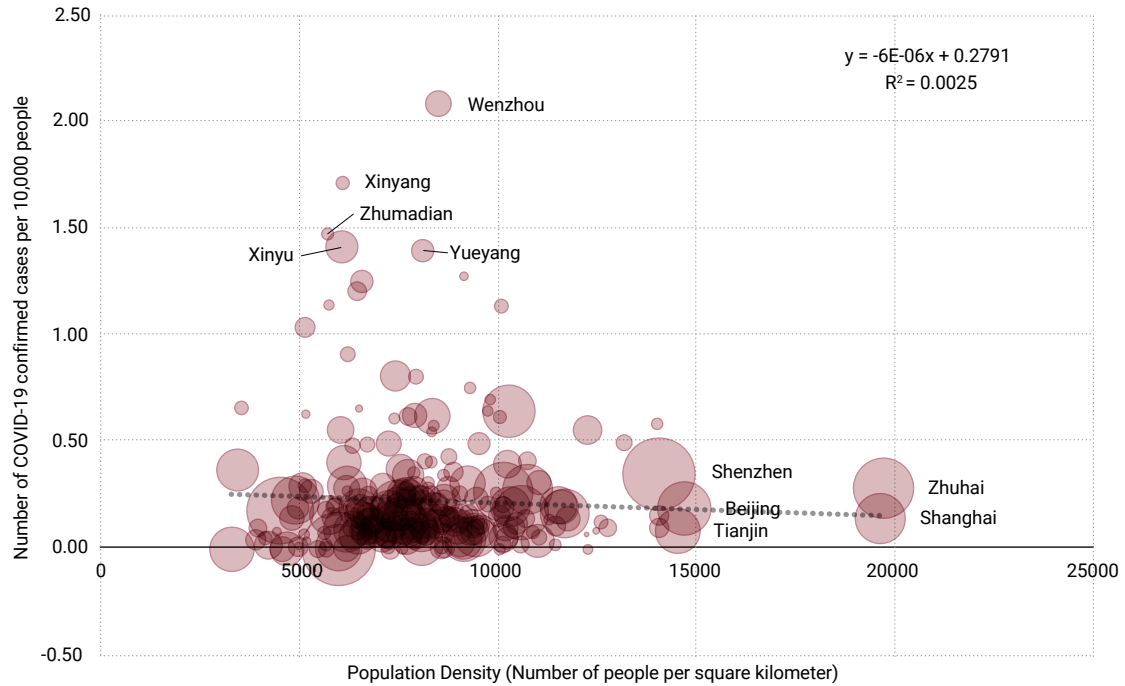
Source: Wanli and Wahba, 2020

Box 3.1: Economic impacts of COVID-19 pandemic in various regions

The COVID-19 pandemic has presented the world with a crisis like no other. As highlighted in Chapter 1, the global economy is expected to contract by three per cent due to the impacts of COVID-19, making it the worst recession since the Great Depression. Estimates also suggest that the pandemic will push between 71 and 100 million into extreme poverty.[34] Global remittances are also projected to decline sharply by about 20 percent in 2020.[35] Global value chains have been significantly affected and there is a general decline in investor confidence, foreign direct investment is expected to decline by 30–40 per cent in 2020.[36]

At the centre of some of these economic impacts are measures to contain COVID-19. The transmission control policies of various levels of governments (local, regional and national) as well as the preventative behaviour of individuals have driven the economic costs of the pandemic across various geographic regions. As stated in Chapter 1, the pandemic is reinforcing urban inequalities; workers in the informal economy and migrant workers have been particularly affected by the economic consequences of COVID-19. Notably in some regions, high levels of poverty, informality and unprotected jobs have made it more difficult to implement some of the transmission control policies.[37]

Economic impacts of COVID-19
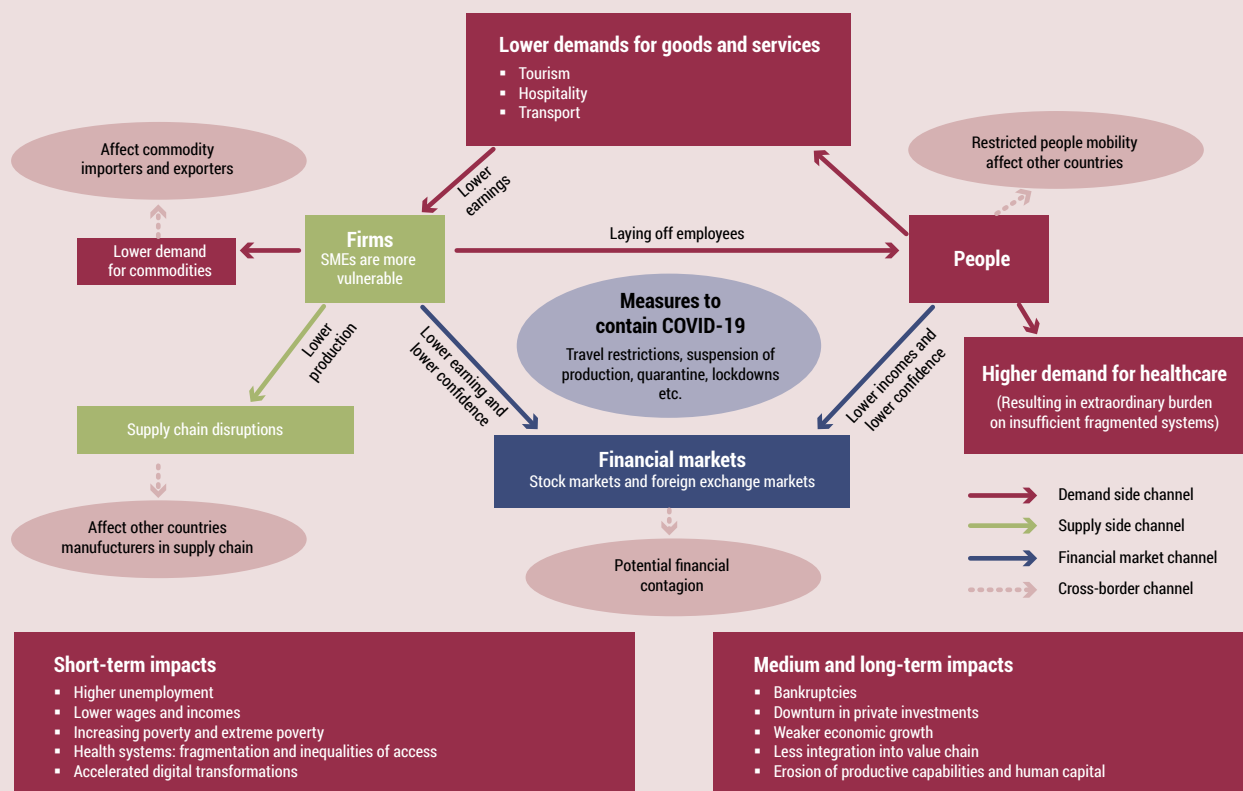
Source: Adapted from UNESCAP (2020) and ECLAC (2020a.)

The economic impacts of COVID-19 are playing out differently in urban areas of various regions of the world. In **Africa**, the effects of COVID-19 on employment are likely to be severe in cities as urban-based sectors of the economy (manufacturing and services) are expected to be hit hard, resulting in substantial losses in productive jobs. In addition, the livelihoods of approximately 250 million people in informal urban employment in Sub-Saharan African will be at risk. The effects of the pandemic will increase the vulnerability of businesses in African cities, particularly small and medium-sized enterprises (SMEs), which account for 80 per cent of employment on the continent. Consumption in large cities, which is, on average, 80 per cent higher than the national level, is likely to decline with attendant impacts on domestic value chains, including rural areas. A fall in revenue streams for local authorities is anticipated as well as a decline in intergovernmental and national transfers due to immediate national response and recovery requirements.[38]

The **Latin America and the Caribbean** region, where eight out of every 10 people reside in cities, is bearing the brunt of the global impacts of the COVID-19 crisis: a reduction in international trade, a fall in commodities prices, the intensification of risk aversion and worsening of global financial conditions, lower demand for tourism services and a reduction in remittances. As a result, the region's GDP is projected to drop by 5.3 per cent. The forecasts also indicate that South American economies will contract by 5.2 per cent owing to lower activity in China, an important export market. Central American economies are projected to contract by 2.3 per cent, due to a drop in tourism as well as reduced economic activity in the United States, its main trading partner and source of remittances. Finally, the reduced demand for tourism services will see Caribbean economies contracting by 2.5 per cent.[39]

The projections also show an increase in the unemployment rate to 11.5 per cent in 2020, a 3.4 percentage points increase from 2019 levels, or a 37.7 million rise in the number of unemployed persons. The negative impact of COVID-19 on employment is also visible through its harsh effects on SMEs as they account for more than 50 per cent of formal employment. Many such businesses are struggling to remain solvent.[40] On the whole, the drop in GDP and the rise in unemployment is expected to have a direct negative effect on the income of households. As a result, the poverty rate in the region is projected to rise to 34.7 per cent in 2020, a 4.4 percentage points rise from 2019 levels; implying that 29 million more people will find themselves in situations of poverty. Meanwhile, extreme poverty is seen rising by 2.5 percentage points, going from 11 per cent to 13.5 per cent, which represents an increase of 16 million people.[41]

In **Asia and the Pacific** region, as the measures to contain the spread of the virus took effect there was a general decline in aggregate demand, with particular impacts on service sectors (such as tourism, retail, hospitality and civil aviation). International demand for commodities also fell, especially for oil, further contributing to economic and financial uncertainty and instability.

The drop in global demand is expected to cost the region an estimated US$172 billion from trade alone, equivalent to 0.8 per cent drop of the GDP of the region.[42] In South Asia, regional economic growth is expected to fall to a range between 1.8 and 2.8 percent in 2020. The region has experienced disruptions in flows of remittances and loss of work for people in the hospitality and transport sectors. The negative impact of COVID-19 on poverty rates is expected to be higher in urban centres.[43] In East Asia and the Pacific, a sharp economic contraction is expected, lowering 2020 growth to 2.1 percent, from 5.8 percent in 2019. Growth in China is projected to decline to 2.3 percent from 6.1 percent in 2019 while the rest of the EAP region is projected to slow to 1.3 percent from an estimated 4.7 percent in 2019. Poverty in the subregion is estimated to increase by about 11 million people.[44]

In **Western Asia**, the Arab region's GDP is projected to decline by at least US$42 billion in 2020. The pandemic, coupled with an oil price war, has led to a continual decline in oil prices, causing the Arab region to lose nearly US$11 billion in net oil revenues between January and mid-March 2020. During this period businesses in the Arab region lost a massive US$420 billion in market capital— an equivalent to eight per cent of total regional wealth. The region is projected to lose 1.7 million jobs in 2020, thus increasing the unemployment rate by 1.2 percentage points— as the severely impacted service sector is the main employer. Further, the economic slowdown caused by the pandemic is expected to negatively impact wages and the flow of remittances. As a result, an estimated

8.3 million people will be pushed into poverty. COVID-19's negative effect on the global supply chains, production, transport and distribution is projected to impact food security in the region.[45]

The GDP of **Europe and North America** is projected to fall by 6–7 per cent in 2020 as a result of the crisis. Fiscally speaking, countries in Eastern Europe, the Balkans, Caucasus and Central Asia have been hit the hardest. Declining remittances from labour migrants, massive capital outflows from emerging markets, plunging oil prices and worsening conditions for external financing have taken a heavy toll on economies and societies in these subregions.[46]

As illustrated in this section by a recap of foundational concepts, cities can effectively serve as growth accelerators. However, it is critical that the growth and consumption potential of cities is managed in ways that supports the achievement of sustainable development outcomes and builds resilience. Outcomes resulting from the economic value associated with urbanization should accrue to all by ensuring inclusive prosperity and widespread opportunities. Recognizing that sustainable urbanization is a transformational journey requiring specific collaborative elements is a pathway to achieve these outcomes in cities. The NUA and UN-Habitat's *Strategic Plan 2020-2023* identifies these elements as fundamental *drivers of change:* policy and legislation; governance; financing mechanisms; and urban planning and design.

It is critical that the growth and consumption potential of cities is managed in ways that supports the achievement of sustainable development outcomes and builds resilience

These elements provide a framework for action in response to multiple challenges confronting urban areas and are hence vital for leveraging the economic value generated by urbanization to achieve inclusive prosperity and opportunities for all. They constitute a framework for balancing the economic value of urbanization with other inherent values: social, environmental and intangible. They have a direct bearing on the discussions on various sections of this chapter— and this report in general— and UN-Habitat regards them central to the achievement of objectives its strategic plan.

- *Policy and legislation*: Development and implementation of urban policies at the appropriate levels, including local and national, provide a vital framework to harnessing the economic potential of cities. National urban policies, for instance, bring together the otherwise disjointed energies and potential of urban centres within national systems of cities.

- *Strengthening urban governance*: Effective urban governance is a prerequisite for economic resilience. Effective institutions and governance mechanisms determine how people, public and private sector organizations make decisions of an economic, social or political nature, maximizing potential and optimizing resources.

- *Financing mechanisms*: Effective, innovative and sustainable financing frameworks and instruments strengthen municipal finance and local fiscal systems that create, sustain and share the economic value generated by sustainable urban development in an inclusive manner.

- *Urban and territorial planning and design* has an inherent and fundamental economic function. Reinvigorating long-term and integrated urban and territorial planning and design is key to optimize the spatial dimension of urban forms and deliver positive outcomes of urbanization such as promoting economic growth. The multiscale continuum of spatial planning ensures better integrated and connected cities and territories that foster sustainable urban development. Economic value is thus generated beyond city boundaries into regions, as discussed in the next section.

Modern sustainable neighbourhood in Almere, The Netherlands.
© Pavlo Glazkov/Shutterstock

3.2. How Cities Contribute to National Prosperity and Inclusiveness

Cities are the world's economic platforms for production, innovation and trade.[47] At the same time, when well-planned and managed, cities are also where populations realize their productive potential. In examining the role of urban areas in contributing to prosperity and inclusiveness, this section begins with an overview of how cities improve the economy across a range of scales. It then presents the unique role cities play as "advertisers" of foreign direct investment as well as their key role in poverty reduction and inclusion for marginalized groups in countries with differentiated access to opportunities.

3.2.1. Economic growth across spatial scales

Well-planned and managed urban growth improves the economy across a range of scales: local, regional and national. As pointed out in the previous section, urban areas generally increase the productivity of their residents. By promoting local economic development, they create employment opportunities that build on the comparative advantages and unique qualities of their localities and communities. As countries urbanize, a larger share of the population enjoys the economic benefits provided by cities. Overall productivity thus increases regionally and for the whole nation. Rural hinterlands, for instance, experience positive spillover effects from urban areas. A variety of urban-rural linkages in production, consumption and financial relationships have profound impact across the urban-rural continuum. Given the magnitude of these linkages, sustainable urban growth has large economic benefits for nearby rural areas.[48] Strengthening these reciprocal flows is also vital for achieving sustainable urbanization.

There are also spillovers between cities of the same region.[49] In addition to trading goods with each other, cities also trade ideas. Any innovation originating in one city appears quickly in other cities, from the emergence of shared mobility like ride-hailing or bikeshare to pandemic responses. Urban systems are integrated knowledge creation and diffusion networks, which raise productivity in the aggregate. In particular, there is evidence that major economic activities are increasingly concentrated in large urbanized regions, or "mega-regions," that are centred in and around global cities. These mega-regions often encompass cities, towns, villages and rural areas, with some crossing national boundaries in the form of planned or unplanned urban corridors. Oftentimes, they operate as single economic entities that set in motion self-reinforcing, cumulative growth patterns that make a significant contribution to the world's economic activity—as their economic power and boundaries now sometimes surpass those of their nation-states. Table 3.3 presents 29 such mega-regions identified using satellite and economic output data.[50]

These regions account for almost 40 per cent of world GDP. As can be seen in Table 3.3, 11 of them are in Asia, 10 are in North America and six are in Europe (Latin America and Africa only have three mega-regions combined). The five largest mega-regions in the world comprise Bos-Wash (from Boston to Washington D.C. via New York City), Par-Am-Mun (from Paris to Munich via Amsterdam), Chi-Pitts (from Chicago to Pittsburgh), Greater Tokyo, and SoCal (from Los Angeles to San Diego).

If more productive mega-regions can afford to make larger investments in infrastructure, they capture economic activity from less productive mega-regions. Yet, such competition is "healthy," to the extent that more productive mega-regions are likely to grow faster than less productive mega-regions, making the whole urban system on average more productive. However, mega-regions can over-compete with each other, leading to a geographic imbalance whereby mega-regions absorb economic activity and leave other regions impoverished. Another concern is that two-thirds of these mega-regions belong to the developed world. This "winner take all" approach propels developed countries to keep growing economically as fast, or sometimes even faster, than developing countries, which widens spatial inequality. Oftentimes, these urban configurations result in unbalanced regional development and severe urban primacy due to their self-reinforcing nature—they bolster ties to the existing economic centres, thereby creating more localized development as opposed to allowing more diffused spatial development across territories. Such asymmetrical development has the potential to compound the urban divide.[51]

Already, evidence suggests that such city clusters in developing countries may not be generating increasing

economic returns as they get larger due to the slow development of endogenous growth industries and rising externality costs.[52] This is further worsened by their very fragmented governance systems, extending across municipal and sometimes national boundaries. In order to realize the economic value for sustainable urbanization and ensure inclusive prosperity, developing countries need strategies that ensure integrated spatial growth and

development—to nurture nascent mega-regions within their territories, as well as those spanning neighbouring countries, so as to facilitate economic activities. For instance, it is vital to develop and implement national urban policies that maximize the benefits of urbanization and respond to these forms of interconnectivity and urban interdependence, as well as anticipating and managing the negative consequences of urban and regional growth.

Table 3.3: Largest Mega-Regions in the World, 2015

Rank	Mega-Region	Cities	Output (Billions)	Population (Millions)
1	Bos-Wash	New York; Washington, D.C.; Boston	US$3,650	47.6
2	Par-Am-Mun	Paris, Amsterdam, Brussels, Munich	US$2,505	43.5
3	Chi-Pitts	Chicago, Detroit, Cleveland, Pittsburgh	US$2,130	32.9
4	Greater Tokyo	Tokyo	US$1,800	39.1
5	SoCal	Los Angeles, San Diego	US$1,424	22
6	Seoul-San	Seoul, Busan	US$1,325	35.5
7	Texas Triangle	Dallas, Houston, San Antonio, Austin	US$1,227	18.4
8	Beijing	Beijing, Tianjin	US$1,226	37.4
9	Lon-Leed-Chester	London, Leeds, Manchester	US$1,177	22.6
10	Hong-Shen	Hong Kong, Shenzhen	US$1,043	19.5
11	NorCal	San Francisco, San Jose	US$925	10.8
12	Shanghai	Shanghai, Hangzhou	US$892	24.2
13	Taipei	Taipei	US$827	16.7
14	São Paulo	São Paulo	US$780	33.5
15	Char-Lanta	Charlotte, Atlanta	US$656	10.5
16	Cascadia	Seattle, Portland	US$627	8.8
17	Ista-Burs	Istanbul, Bursa	US$626	14.8
18	Vienna-Budapest	Vienna, Budapest	US$555	12.8
19	Mexico City	Mexico City	US$524	24.5
20	Rome-Mil-Tur	Rome, Milan, Turin	US$513	13.8
21	Singa-Lumpur	Singapore, Kuala Lumpur	US$493	12.7
22	Cairo-Aviv	Cairo, Tel Aviv	US$472	19.8
23	So-Flo	Miami, Tampa	US$470	9.1
24	Abu-Dubai	Abu Dhabi, Dubai	US$431	5
25	Osaka-Nagoya	Osaka, Nagoya	US$424	9.1
26	Tor-Buff-Chester	Toronto, Buffalo, Rochester	US$424	8.5
27	Delhi-Lahore	New Delhi, Lahore	US$417	27.9
28	Barcelona-Lyon	Barcelona, Lyon	US$323	7
29	Shandong	Jinan, Zibo, Dongying	US$249	14.2

Source: Florida, 2019.

3.2.2. Foreign direct investment (FDI) attraction

Cities are important drivers of FDI, which in turn can boost national economic prospects. With the exception of the natural resource sector, most FDI is often in manufacturing or knowledge-intensive service sectors.[53] Studies also show that the biggest factors attracting FDI are trade regimes, quality of institutions, labour force talent and infrastructure.[54] Since cities are where these factors are the most visible to potential investors, and also where the most commonly invested-in industries tend to be concentrated, they are important "advertisers" for FDI in their countries.[55]

There is a snowball effect as FDI attracts similar investment. As FDI grows, a virtuous cycle is established: when a few cities are economically successful, they are able to make additional investments that boost the country's competitiveness internationally, in turn attracting more

An elderly woman from an informal settlement. Georgetown, Guyana.
© UN-Habitat/Kirsten Milhahn

FDI. Urbanization in Asia, especially South-East Asia, has been strongly linked to economic transformation and greater integration into the global economy as many cities have become FDI recipients. In Africa, FDI stock has created the largest number of jobs in South Africa, Nigeria, Egypt and Morocco.[56]

3.2.3 Poverty reduction and inclusion for marginalized groups

Cities are where aspirations, ambitions and other intangible aspects of life are realized for all, including economic opportunities for marginalized groups. For those at the bottom of the economic ladder, the value of urbanization lies in its contribution to poverty reduction, whether through formal or informal employment. While most urban dwellers do not enter the informal economy by choice, studies show that earnings from informal employment are relatively potent contributors to poverty reduction (Box 3.2).[57] In the same vein, estimates of multidimensional poverty, which takes into account overlapping deprivations in education, health and living standards, show that poverty is generally lower in urban areas than in rural areas (Figure 3.7).[58] Access to improved infrastructure (such as better health and education) in urban areas generally enhances quality of life and is associated with lower levels of poverty.

In countries where women, people with disabilities, and ethnic, religious and/or sexual minority groups face discrimination in the education system and the labour

Figure 3.7: Percentage of the population living in multidimensional poverty, 2018

Region	Rural	Urban
Northern Africa and Western Asia	17	6
Eastern and South-Eastern Asia	25	6
Europe and Northern America	2	1
Latin America and the Caribbean	19	4
Central and Southern Asia	28	10
Sub-Saharan Africa	71	31
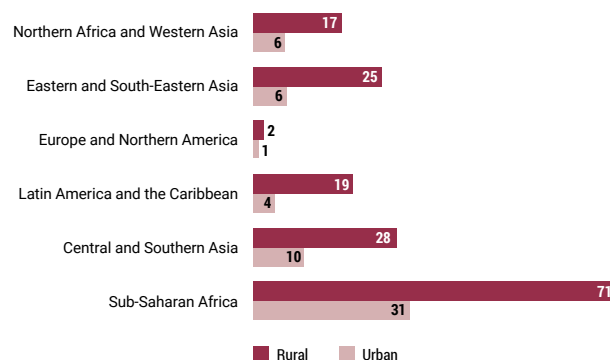
Source: UNDESA, 2020a.

Box 3.2: Informal economy: A lifeblood for many cities

The informal economy has become the lifeblood of many cities. Sustainable and inclusive urban development is impossible in most developing countries without addressing the plight of informal workers. In 2020, over 2 billion people are earning their livelihoods in the informal economy, accounting for 62 per cent of the world's workforce. Informal employment represents 90 per cent of total employment in low-income countries, 67 per cent in middle-income countries and 18 per cent in high-income countries.

Informal employment comprises more than half of non-agricultural employment in most regions of the developing world: 82 per cent in South Asia, 66 per cent in Sub-Sahara Africa, 65 per cent in East and South-East Asia, 51 per cent in Latin America and the Caribbean and 45 per cent in the Middle East and North Africa.

The informal economy in all its aspects is also a major challenge for the rights of workers. As such, inclusive prosperity calls for a rights-based approach built on effective partnership between informal workers and local governments as well as a radical rethink of governance and urban planning paradigms to facilitate the transition of workers and economic units from the informal to the formal economy. Doing so aligns with the priorities in the Decade of Action to deliver the Global Goals, particularly SDG 8, which commits Member States in part to "…build economies for the future and ensure decent work for all."

Source: UN-Habitat, 2018b; UN-Habitat, 2016c; ILO, 2017; ILO, 2019; ILO, 2020e

Informal employment as a percentage of total non-agricultural employment

Informal employment in non agricultural employment (%)

Gender gap (% points)

Total · Female · Male · ● Gender gap

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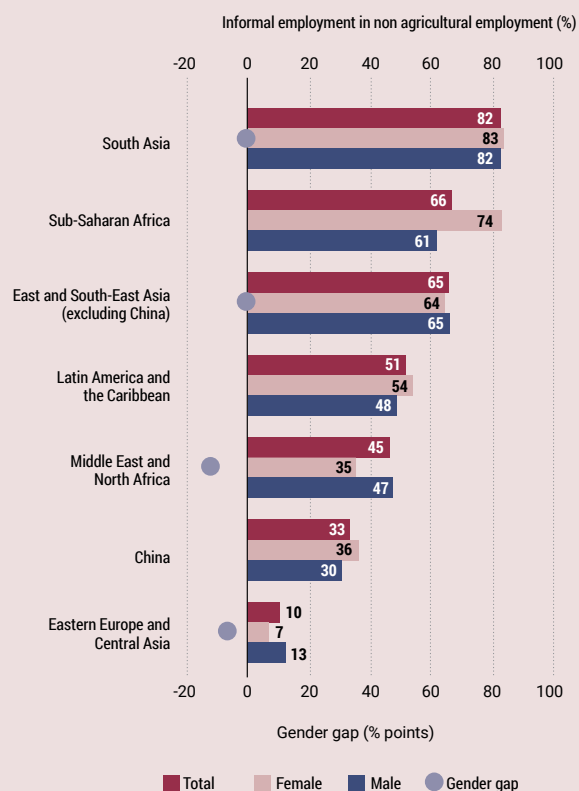
market, the productive potential of a significant share of the population becomes constrained.[59] Studies have shown that living in cities causes residents to become more accepting of these groups.[60] Thus, within a country, cities offer a less discriminatory environment for minority groups, allowing the members of such groups to access human capital development and employment opportunities that otherwise they would not easily access elsewhere (Chapter 5). For instance, some cities have dedicated formal channels and programs for persons with disability to access gainful employment like *Access to City Employment* in San Francisco and *EmployAbilities* in Edmonton.

Overall, urbanization generates economic value in many ways. However, all too often the generation of this value is constrained as is evident in instances where increased urbanization is not associated with economic growth. As highlighted in this section, well-planned and managed cities can be catalysts for inclusion and powerhouses of equitable economic growth. It is imperative, therefore, that the urbanization process be sustainable in order to maximize the economic benefits that urban areas are able to provide. Further, at this time when the world is grappling with the impacts of the COVID-19 pandemic, cities have a key role to play in inclusive and sustainable economic recovery as engines of growth.

Aerial view of beautiful city Helsinki at spring, Finland. © Subodh Agnihotri/Shutterstock

3.3. Sustainable Urbanization is Crucial to Reap the Economic Benefits of Cities

While urbanization has historically been associated with economic development, this relationship has become weaker over time.[61] Various explanations have been advanced for this phenomenon of "urbanization without growth," for example globalization and food imports contributing to lower food prices or rapid demographic growth pushing people into cities in poorer countries.[62] Likewise, some regions of the world appear to have urbanized almost to the same extent while experiencing different growth and industrialization patterns, for example Africa versus Asia (see Chapter 1).[63] Countries with similar urbanization and income levels may have distinct urban economic structures, thus suggesting that the urbanization process has different determinants across countries. Finally, even in cases where urbanization is associated with economic growth, there are ways to make the process more sustainable. These various scenarios are outlined in more detail below and should inform urban and territorial planning processes in order to enhance the economic value of urbanization in existing and new urban settlements.

3.3.1. Urbanization rate and the absorptive capacity of cities

The world continues to rapidly urbanize even if the COVID-19 pandemic has created unforeseen consequences to that global mega-trend. If projections hold true, 90 per cent of the urban growth expected by 2050 will occur in less developed regions. As highlighted in Chapter 1, rapid urban growth presents an important opportunity, but it also poses challenges to the implementation of the NUA, the urban dimensions of the SDGs and other global development frameworks relevant to sustainable urbanization. If urban population increases too fast, particularly in settings with weak planning systems and capacities, there is a risk of "uncontrolled urbanization." In this scenario, the benefits of concentration are offset by rising congestion, overcrowding, overloaded infrastructure, pressure on ecosystems, higher costs of living and high property costs in cities, all of which harm productivity.[64] If urban areas do not have the capacity to absorb this growing population, the increase in population scale will decrease productivity.[65] For example, transport networks become overcrowded and congested, with an attendant increase in costs for all. The surge in demand for housing causes neighbourhoods to develop haphazardly and cities lose the economic gains associated with well-planned urbanization. This urban growth pattern results in urban sprawl, with development occurring prior to the layout of infrastructure for basic services and local authorities playing catch-up or incurring increased service provision costs due to low densities. Finally, services vital to the enhancement of quality of life in urban areas are not adequately provided. In such a scenario, there will be inadequate schools and health facilities, as well as insufficient trained teachers and health personnel, to cope with rapid population growth, thus curtailing human capital formation in the economy.

Besides enhancing efficiency in existing city footprints through planned infill development, it is vital that urban expansion be planned for, in particular by reserving land

If urban areas do not have the capacity to absorb this growing population, the increase in population scale will decrease productivity

that can be developed to meet this future demand.[66] This land would have to be: (i) at the periphery of existing cities to promote compact, contiguous development and thus avoid having to create whole new cities *ex nihilo*, which is expensive; (ii) of lower environmental value, in order to minimize the environmental impact of such expansion;[67] and (iii) properly designed and serviced, with clearly laid-out blocks, streets, and protected pavements and public spaces.[68] The pavements, streets, squares and parks should remain publicly owned, but there should be well-defined private property rights for the parcels of land comprising the blocks. As the economy of these cities grows, developers will acquire the parcels, build structures of various heights and subdivide these structures into housing units or commercial spaces. But if local authorities do not pursue this pathway, they will be ignoring the future needs of urban residents and the costs of redeveloping these areas at a later date will be higher.[69]

As cities plan for future growth, they may have to reassess their development controls, such as floor-area ratios, plot coverage and height limits, other among other restrictions. A study by UN-Habitat found that an overwhelming 85 per cent of cities report one or more regulations that limit building size in their expansion areas (Figure 3.8). Of these, 68 per cent had maximum floor area ratio regulations, 59 per cent had maximum building height regulations and 57 per cent had maximum plot coverage regulations. Strikingly, 62 per cent of all cities, and 72 per cent of cities in less developed regions, reported that multifamily buildings were either not allowed, or allowed only in a small part of the city. Such restrictions reduce housing supply (thus increasing housing prices), limiting opportunities for densification and consequently the absorptive capacities of these cities.[70] Most African cities still retain regulatory standards passed on from the colonial era that are ill-equipped to address present-day needs, making housing unaffordable to a majority of the population.[71]

Therefore, in order for the economic benefits of urbanization to be realized, such exponential growth must be accompanied by the relevant governance, institutional, policy and legal frameworks necessary for *a city that plans*.[72] Otherwise, weak planning or overly restrictive development controls will result in land regulation crises marked by rampant speculation and growth of informality.

Figure 3.8: Presence of building size regulations across various regions
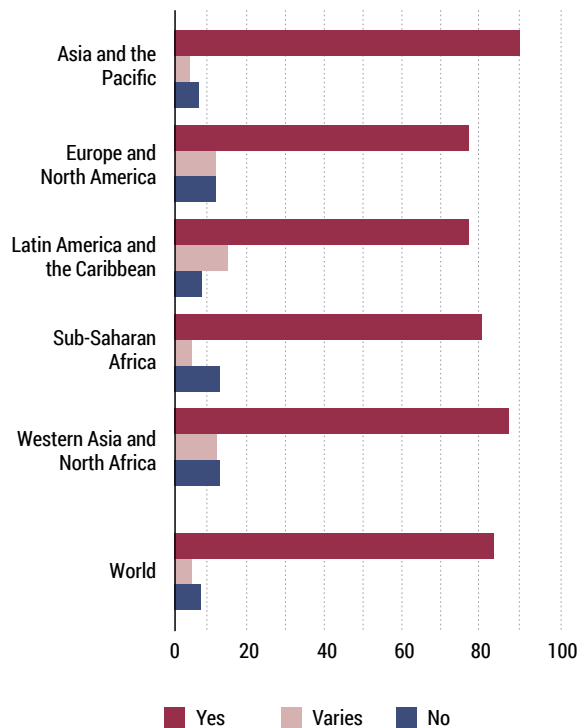
Source: UN-Habitat, 2016c.

It is therefore important that the objectives of legal frameworks be aligned to local realities so that legislation is not overambitious, setting unrealistic targets irrelevant to local needs and conditions. UN-Habitat has developed an assessment tool for cities and countries to systematically identify the strengths and weaknesses of urban planning law within their contexts. The *Planning Law Assessment Framework* looks at the laws, regulations and decrees that are applicable in a city, and enacted at different levels. It has been tested in Colombia (2012), Philippines (2013), Rwanda (2014), Mozambique (2014), Egypt (2015) and Saudi Arabia (2016).[73]

It is important that the objectives of legal frameworks be aligned to local realities so that legislation is not overambitious, setting unrealistic targets irrelevant to local needs and conditions

3.3.2. Demographic composition and growth implications

The demographic trends highlighted in Chapter 1 clearly point to the changing population composition of cities. Cities across the world dramatically vary in their age structure and their share of workers vis-à-vis non-workers.[74] For example, while New York City had an average of two adults per child in 1850, it now has four adults per child. Most cities in China and Japan have 10 adults per child, an extremely low child dependency ratio. At the opposite extreme, cities such as Dhaka (1.5 adults per child) and Bamako (one adult per child) have high child dependency ratios. Finally, in many developed countries, cities are ageing. Milan, Munich, Orlando and Tokyo have three working-age adults per older person, while by comparison Bogotá, Istanbul, La Paz and Manila have 10 working-age adults per older person.

Higher age dependency ratios could impact a city's economic growth through a variety of negative channels.[75] The economically active population and the overall economy might bear a greater burden to support and provide the social services needed by children and older persons, both of whom are often economically dependent on working-age adults. Low dependency ratios promote economic growth. In rapidly urbanizing regions like Africa, for instance, studies have also shown that a one percentage point change in the working-age population could cause up to a 1.1 percentage point increase in GDP. However, this benefit is conditional on major investments in human capital and labour-intensive industry and services.[76]

Local authorities and national governments can support low dependency ratios by adopting family planning policies and programmes, as well as expanding education and labour force participation policies that ensure sustained economic growth and higher levels of productivity to help economies navigate through demographic transitions. Such policies are typically more efficient to implement in urban areas. In the short- and medium-term, cities should collect data on their age structure and fertility, mortality and migration trends in their population, in line with Key Item 1.1 of the Action Framework for Implementation of the New Urban Agenda (AFINUA).[77] Cities can use this information to forecast how their total population and its composition will evolve, which will inform urban and

Women stitch clothing at training centre in Savar city, Dhaka, Bangladesh.
©UN-Habitat-Kirsten Milhahn

territorial planning processes, for instance, in planning their future neighbourhoods and adapting public services to the current needs of the population.

For example, regions with high percentages of children should put in place strategies that will expand youth-employing sectors so as to leverage demographic dividends resulting from the window of opportunity afforded by this increase in working-age population. These children will eventually enter labour markets, consequently improving the city's economy if there are jobs available to them.[78] Such efforts align with the New Urban Agenda, where Member States committed themselves "to harnessing the urban demographic dividend, where applicable, and to promoting access for youth to education, skills development and employment to achieve increased productivity and share prosperity in cities and human settlements."[79]

As highlighted in Chapters 1 and 5, the proportion of older people living in cities is rapidly increasing in both developing and developed regions with important implications for economic and social development and for environmental sustainability. Planning for an ageing urban population requires innovation as well as devoting adequate resources to geriatric care and other social services. In Asian countries, for instance, age-related public expenditures, such as pensions and health care, are projected to increase, eroding public finances by up to 10 percentage points of GDP by 2050.[80] Nevertheless, Member States must support their ageing populations in line with the SDGs' overriding principle of "leave no one behind" and the New Urban Agenda's commitment "to addressing the social, economic and spatial implications of ageing populations…and harnessing the ageing factor as an opportunity for new decent jobs and sustained, inclusive and sustainable economic growth, while improving the quality of life of the urban population."[81] In the same vein, the World Health Organization's Age-Friendly Cities initiative is fostering mutual learning between cities and communities worldwide (Chapter 5). Indeed, ensuring access to age-appropriate health care services, lifelong learning opportunities and formal and informal support networks is essential for the better health and wellbeing of ageing persons. Better health provides access to more economic opportunities that allow older adults to continue to contribute creatively to sustainable development.[82]

3.3.3. Consumption cities vs production cities

Economies of agglomeration are typically stronger in manufacturing and high-skilled service sectors, both of which tend to be found in most Asian or Latin American countries, but not in Sub-Saharan African, Middle Eastern or North African countries.[83]

Patterns of urbanization and industrialization vary across regions of the world. Kuwait, Gabon, Saudi Arabia, Libya, Algeria, Angola and Nigeria are as urbanized as Uruguay, Republic of Korea, Mexico, Malaysia, South Africa and China, and yet "the former countries have not industrialized to the same extent as the latter."[84] Indeed, urbanization does not have to be necessarily associated with an industrial or service revolution because other factors like natural resource exports can drive urbanization. As countries discover natural resources, whether oil, diamonds or cocoa, their income level increases. As the recipients of the proceeds from resource exports ("resource rents") in these countries spend a large share of their income on goods and services produced in cities, economic opportunities are created in cities. In addition, if resource rents are used to import food and cities serve as trading stations for the exports and imports, living in cities becomes cheaper. As a result, more migrants will be attracted to cities.

Figure 3.9 confirms that the relationship between urbanization and income that was shown in Figure 3.1 is not significantly different between resource-rich and resource-poor countries. In other words, wealthier countries are more urbanized, no matter whether industrialization (and/or services) or natural resources are behind their higher income level. Figure 3.10 then illustrates the relationship between industrialization and urbanization in resource-exporting countries versus non-resource-exporting countries. For non-resource-exporting countries, urbanization is strongly associated with industrialization. The same relationship is not seen in resource-exporting countries.

Urbanization in resource-rich countries is driven by the income effect of these endowments; people consume the resource rents in cities. Since a large share of urban workers in these countries work in non-tradable service sectors (specifically, commerce, transport, personal services and government services), these cities are referred to as

Figure 3.9: Urbanization-income relationship for resource exports and other countries
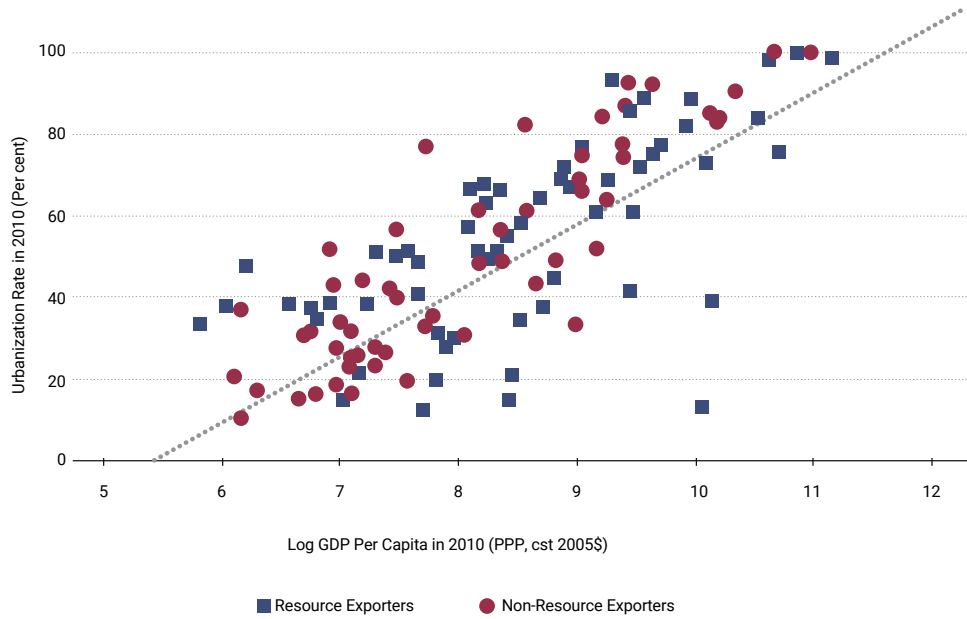
Source: Gollin et al, 2016.

Figure 3.10: Urbanization and manufacturing and service output
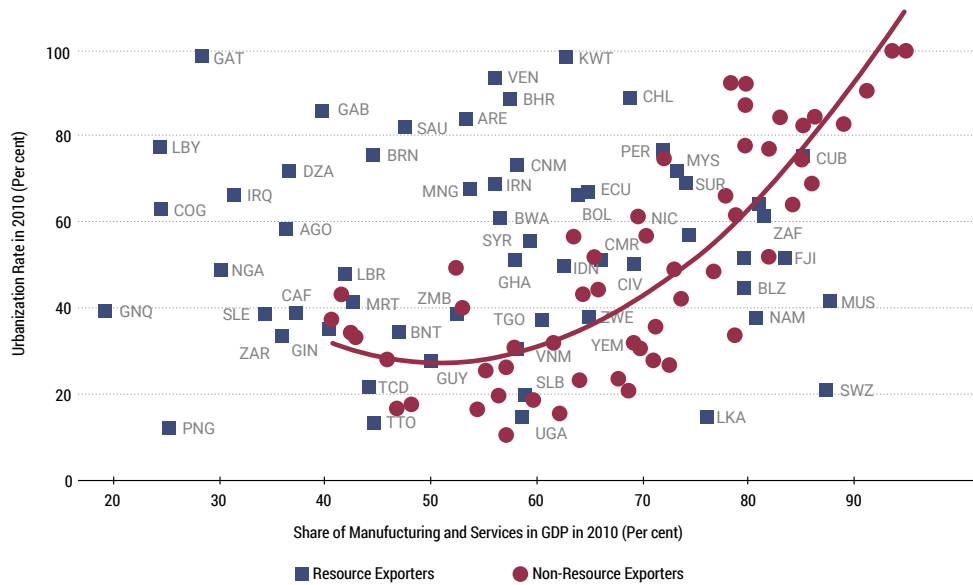
Source: Gollin et al, 2016.

Consumption cities, because of their economic structure, will not generate the same kind of productivity growth associated with production cities

"consumption cities." Cities in resource-poor countries, on the other hand, tend to be "production cities," with more workers in manufacturing or in tradable services like finance and business services. For example, in the urban areas of resource-rich Angola, Ivory Coast, Kuwait, Nigeria and Saudi Arabia, 60–70 per cent of individuals work in non-tradable service sectors (as defined above) versus 5–10 per cent in manufacturing and tradable services.[85] In the urban areas of countries with a relatively poor resource base such as China, Lesotho, Malaysia and Mauritius, these shares are more balanced, reaching about 35–40 per cent and 35–45 per cent respectively. In addition, within the non-tradable service sector, government services represent 5–10 per cent of workers in resource-poor countries, 10 per cent in African resource-rich countries and 20 per cent in resource-rich countries of the MENA region. Thus, consumption cities, because of their economic structure, will not generate the same kind of productivity growth associated with production cities.

In addition, some resource-rich countries have the national government as the primary agent for urban growth and as result their urban systems are often skewed towards their primate city. That is the case in resource-rich Angola, Chile, Gabon, Equatorial Guinea and Mongolia, where the primacy rate is in the range of 40–60 per cent. Oil-rich Gulf countries also have very high primacy rates. Indeed, resource rents are disproportionately "spent" on goods and services (including government services) produced in the most administratively and/or economically important cities. Owing to their centralized governance structures, resource-rich countries also often lack clearly articulated mechanisms for inclusion and public stakeholder participation in urban governance. In turn, their top-down approaches tend to adopt urban-biased policies or policies favouring the primate city.[86] More generally, such policies resulting from centralized planning limit proactive management of urbanization at lower tiers of government thus leading to unsustainable patterns such as urban sprawl, which result in inefficiently oversized

cities. In some of the cities in oil-rich Gulf countries, for instance, planning practices have encouraged low urban density due to land availability in some countries, preference for single-family detached housing and also an inability to control development on land designated for planned uses.

Cities increase productivity because of economies of scale in productive infrastructure and agglomeration effects. However, in consumption cities, the absence of the necessity to focus on optimizing the conditions for private sector production provides limited incentive to invest in productive infrastructure such as roads, hospitals and schools. Instead, there are more frequent public investments in high-profile building projects such as public monuments, conference centres, and sports venues that may not have high payoffs. Likewise, the economic sectors of consumption cities do not benefit from the knowledge generation and diffusion potential of cities because they are not particularly knowledge intensive.

Cities have the potential to become engines of growth, but only when they have productive industries within the private sector that can benefit from the economies of scale and agglomeration that cities offer. Historical examples show that the development of these industries should not be driven by large and generally inefficient public subsidies. As the 2016 edition of the World Cities Report puts it, governments need to move "from sectoral interventions to strategic urban planning and more comprehensive urban policy platforms."[87] To create an enabling environment

Cities have the potential to become engines of growth, but only when they have productive industries within the private sector that can benefit from the economies of scale and agglomeration that cities offer

for these industries to grow organically, investments in productive infrastructure are needed, along with strong, responsive institutions (Chapters 1 and 7). There are indeed cases when strong institutions have helped to achieve long-term development from resource production. For example, gold rushes led to the growth of cities such as San Francisco, Denver and Seattle in the 19th century, while oil booms explain why Calgary, Dallas-Ft. Worth and Houston are large North American metropolitan areas today. In both Canada and the US, federal institutions had been established before the discovery of natural resources. As such, resource rents were used to invest in productive infrastructure that bolstered the sustainable development of these cities and their national economies. Supported even further by policies that enabled and encouraged private sector growth, these cities all ultimately industrialized and

are now specialized in tradable services, notably technology in the case of the former gold rush cities.

In these contexts, national policies should be aimed at mitigating the effects of the so-called "Dutch disease," where the discovery of natural resources can paradoxically harm a country's broader economy as other sectors slow down. Ways to counteract Dutch disease include strengthening institutions and ensuring citizens have the freedom to pursue new economic opportunities. Additionally, in countries with bureaucratic inefficiency or corruption at the national level, local governments will be less able to deal with the challenges arising from rapid population growth in their cities. Finally, resource-rich countries must focus on creating the conditions for their cities to become centres of private production, rather than centres of public consumption.

Compact neighborhood aerial view © Jaggat Rashidi/Shutterstock

3.3.4. Affordability, compactness, and connectivity

As cities grow, a larger population is able to access the benefits cities offer. Indeed, because cities offer economic benefits, firms want to be located, and residents want to live, in urban areas. However, as cities become larger, externality factors often arise, complicating access to affordable housing, labour and services.[88] There is increased pressure on land, commercial real estate and housing markets. There is also increased pressure on transport networks, contributing to congestion—and the negative environmental and health effects associated with it. In addition, the urban poor are less likely to enjoy the economic benefits of increasingly unequal and less socially mobile cities, thus limiting the economic value they contribute to the urban economy (Chapter 5). They are also more likely to suffer from high housing costs, congestion and pollution (Chapters 4 and 5).

A study by UN-Habitat found only 13 per cent of the world's cities have affordable housing.[89] Urban households across various regions spend a disproportionate portion of their incomes on housing. The poor in urban areas are at most risk of becoming cost burdened for housing. In 16 OECD countries, for instance, more than 40 per cent of low-income owners with a mortgage spent over 40 per cent of their disposable income on housing in 2016. The same was true for low-income renters in private rentals in 14 OECD countries.[90] As housing prices increase, priced-out residents have to seek housing further away from cities, especially the urban poor who have to live in peri-urban slums like Ciudad Bolívar in Bogotá or low-income housing projects in peripheral areas such as RDP houses in South Africa and HLMs in France.[91] As a result, cities are both less productive and less equitable, making them less likely to meet SDG Target 11.1: "by 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums."[92]

The fact that cities are too expensive for the poor to live in endangers their "right to adequate housing" and thus their "right to the city" (Chapter 5).[93] While slum upgrading, land titling and other social housing programs directly improve the lives of poorer urban residents (Chapters 2 and 5), cities cannot meet the fast-increasing demand for urban space without managing densification. Sustainable densities that ensure an upward rather than outward expansion can be achieved through multi-storey dwellings and commercial buildings. At the same time, cities can work to reconfigure already dense settlements to make them more liveable and productive.[94] This modification is particularly important to meet the physical distancing needs necessitated by the COVID-19 calls for reimagining public space both during and after the pandemic.

Inefficient land use exacerbates land-intensive urban sprawl. Studies have shown that the rate of land consumption through urban expansion exceeds population growth in recent decades, a trend that has profound repercussions for environmental sustainability at various scales. For instance, between 2000 and 2014, land areas occupied by cities grew 1.28 times faster than their populations.[95] Alongside falling densities, cities are facing a decrease in the proportion of planned areas (Figure 3.11).[96] The implication, if this trend continues, is that there will be a steady increase in the real unit area operating costs of servicing urban areas. Cities that continue to experience a rapid fall in population density will see aspects of their competitiveness reduced.

Cities that continue to experience a rapid fall in population density will see aspects of their competitiveness reduced

The ratio of land consumption rate to population growth rate is indicative of cities' planning and management capacities (SDG Target 11.3), namely their ability to achieve compact integrated and connected development. It is therefore vital that adequate investments be made to enhance institutional capacities so as to realize well-planned and designed cities, among other aspects of sustainable urbanization (Chapter 8). Well-planned and designed cities can optimize economies of agglomeration as well as anticipate expansion with sound policies—such as planned city extensions—that will encourage compact growth as well as control the speculation associated with urban sprawl.

Another key component to a successful compact urban form is sustainable mobility, yet only half (50 per cent) of urban residents have convenient access to public transport

Figure 3.11: The evolution of planning in the expansion areas of cities, a sub-sample of 30 cities
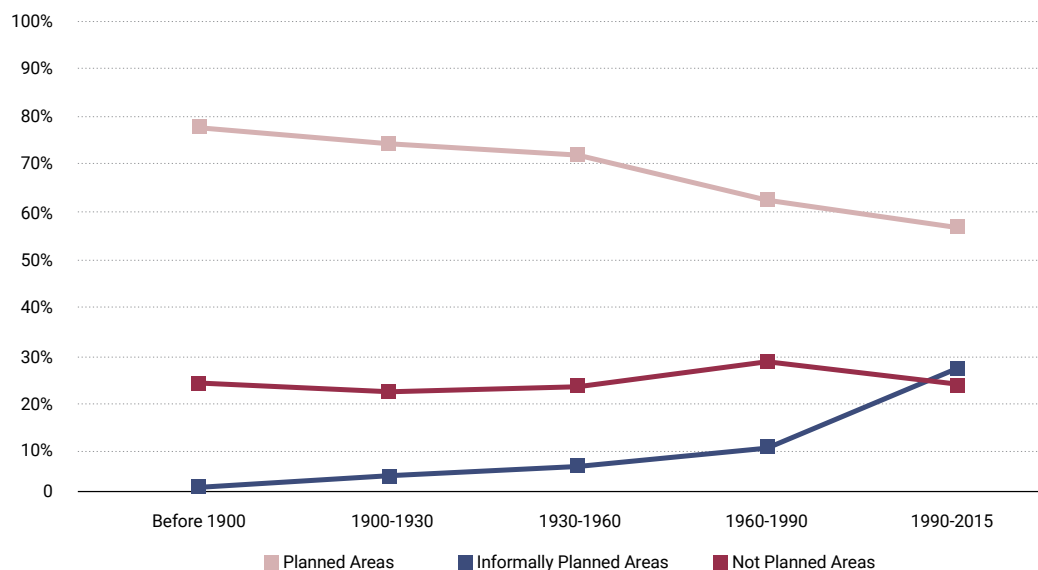
UN-Habitat, 2016c.

(Figure 3.2). As workers spend significant amounts of time commuting, they lose time that they could use to work, recreate, take care of household tasks or be with family and friends. Traffic data indicates that drivers in the five most congested cities in the world—Mumbai, Bogotá, Lima, New Delhi and Moscow—spend an average of 55–65 per cent extra travel time stuck in traffic.[97]

Given the impacts of traffic congestion on productivity losses, investments in public transport systems can have large economic benefits, especially for the urban poor whose access to economic opportunities is limited by socio-spatial segregation (Chapter 5). Mass public transit is key for the transition to a low-carbon, resilient and inclusive cities (Chapter 4).[98] In regions with low access to public transport, informal transport modes have emerged. However, such modes are less efficient, less safe and less environmentally friendly than public transit. Under the right conditions, public transit can reduce the total amount of time commuting and promote an efficient distribution of the population and economic activity in a city. Such transformations are possible even in cities with strong informal transport networks. UN-Habitat

is thus working with such cities to strengthen transport policies and guidelines for sustainable and equitable access. UN-Habitat has developed a toolkit to support the creation of safe, sustainable and accessible public transport spaces for women and vulnerable groups.[99] With the ongoing pandemic, the inclusion of informal transport operators in the COVID-19 recovery efforts provides an opportunity of making "these services, safer, and more efficient, while protecting millions of jobs."[100]

Finally, as mentioned in the previous sections, the *drivers of change* identified in the New Urban Agenda are fundamental to achieving sustainable urbanization. For example, urban and territorial planning is a catalyst for sustained and inclusive economic growth, which provides an enabling framework for new economic opportunities, regulation

The particular ways cities are planned, designed and built says much about what is valued there, and planning processes can either help or hinder development of opportunities for all

Box 3.3: Public transport networks: BRT and the economic benefits of cities

Cities in developing countries are increasingly investing in mass transit to manage congestion associated with rapid urban growth. The Bogotá TransMilenio (opened in 2000) is seen as the gold standard of BRT, with a daily ridership of about 2.5 million passengers. The TransMilenio has had large economic benefits, allowing workers greater mobility and achieving significant reductions in travel time for commuters. Similar benefits have been observed in cities that have recently implemented BRT projects. In Dar es Salaam, the BRT system (DART) has been transformational, both socially and economically; it has achieved travel time savings of about 16 days per year for commuters. At the beginning of 2020, there were 172 cities across the world operating BRTs with a daily ridership of 34 million passengers.

Global BRT data

Regions	Passengers per Day	Number of Cities	Length (km)
Africa	491,578	5	131
Asia	9,471,593	44	1,624
Europe	1,613,580	44	875
Latin America	20,939,780	55	1,835
Northern America	912,598	19	588
Oceania	436,200	5	109

Sources: https://brtdata.org/ (Version 3.48, January 13, 2020); ITDP (https://staward.org/winners/2018-dar-es-salaam-tanzania)

of land and housing markets and the timely provision of adequate infrastructure and basic services.[101] The particular ways cities are planned, designed and built says much about what is valued there, and planning processes can either help or hinder development of opportunities for all.[102] If housing and transport costs are high—for instance, due to poorly defined property rights and land use regulations that limit housing supply, underinvestment in public transport systems and policies that do not promote transit-oriented development, among other factors—the economic growth of cities will be constrained. Sustainability and productivity go hand in hand. While making cities more affordable, inclusive, compact and connected are desirable goals on their own, they also have important economic effects.

The particular ways cities are planned, designed and built says much about what is valued there, and planning processes can either help or hinder development of opportunities for all

3.4. How Various Levels of Government Can Help Cities Thrive

Local, regional and national governments all have a role to play in ensuring urban areas contribute to economic growth and inclusive prosperity. Indeed, economic inclusion is strongly associated with the planning functions of all levels of government, as well as with the active participation of various actors that advocate for stronger political will, freedom of expression and human rights. The connection between economic inclusion and social and political freedoms comes as a response to extensive rent-seeking by the political and economic elites that often dominate the urban economy, resulting in the economic benefits accruing from urbanization realized only by a few.[103]

Therefore, national and local governments need to explore ways to strengthen the productive capacities of all inhabitants by reforming legal and regulatory frameworks as well as integrating urban planning and design with measures that provide greater security to workers,

particularly those operating in the informal economy.[104] These measures should be in line with the rights-based approach to formalization that has been recommended by ILO for transition from informal to the formal economy.[105] In this regard, several countries have started institutionalizing participatory governance. India, for instance, enacted *The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014*, which requires cities to establish town vending committees to regulate street vending, with at least 40 per cent representation of vendors on the committee.[106] Cities can also support alternative economic models to develop decent jobs in line with SDG 8 and the NUA, while fostering small, medium and micro enterprises (Chapter 7).

The COVID-19 pandemic has further brought to the fore the vulnerability of the urban informal economy. Informal micro and small enterprises that constitute 80 per cent of enterprises worldwide are generally out of reach of public policies, for instance, government measures to save jobs and enterprises, and provide workers with income support. Various levels of government need to put in place mechanisms that ensure equitable and inclusive policy responses during such crises. For instance, income support could be extended through non-contributory social security schemes or existing cash transfer programs.[107] In Mexico City, for instance, the city government has launched a cash transfer program for non-salaried workers.[108]

How urban areas are spatially configured is directly connected to their generation of economic value, namely their capacity to improve productivity and expand wealth. All levels of government also play a crucial role in organizing cities in the most efficient and sustainable way to ensure sustained economic growth. For example, by effectively implementing integrated urban and territorial planning and design that delivers compact urban forms, a city is set on the course to generate externalities aligned with sustainability goals. These functions are in line

How urban areas are spatially configured is directly connected to their generation of economic value, namely their capacity to improve productivity and expand wealth

with the New Urban Agenda's clarion call "to optimize the spatial dimension of the urban form and deliver the positive outcomes of urbanization."[109] Moreover, according to the AFINUA, "good urbanization does not happen by chance, but rather by design."[110]

In terms of planning for urban expansion, these levels of government—working in coordination and collaborating with other public entities and stakeholders—have at minimum three fundamental roles to play: (i) creating realistic projections of future urban growth based on available demographic information as well as the historical spatial expansion of an area; (ii) identifying expansion areas in direct proximity within existing urban fabrics and in relation to natural features and risks; and (iii) planning the routes for wide arterial roads and sustainable mobility. Malaysia, for instance, has taken a proactive approach in development of an economic corridor in Iskandar (Box 3.4). The forward-looking planning functions of these levels of government are especially important to avert haphazard development, which is characterized by curvilinear loop or cul-de-sac street designs and poorly-defined property rights. These can be observed in the slums of developing countries, from Kibera in Kenya to Dharavi in India, to the exurban communities of North America and Australia. Indeed, once an area is already developed, with the land and structures subdivided, it becomes more expensive to redevelop in an efficient way.[111] Moreover, well-planned cities offer a higher quality of life, thus attracting the right capital and talent to maximize the benefits of agglomeration economies.

Cities that offer a low quality of life usually have limited growth relative to their potential. Thus, besides provision of necessary infrastructure and social services, local governments are at the front lines of addressing challenges relating to sustainability. As a result, local and national governments need to incentivize companies and residents to minimize any social costs they generate, for example their contributions to traffic congestion or pollution. Local governments may, at times, employ the use of relevant land-use regulations such as zoning and greenbelts to ensure sustainability. To ensure affordable housing, cities may adopt strategies that increase supply for the local population. Paris, for example, tripled taxes on 100,000 second homes to incentivize homeowners to either sell or

Cities that offer a low quality of life usually have limited growth relative to their potential

rent their properties so as to open up more housing for full-time city residents.[112] Similarly, Vancouver has an Empty Homes Tax (Vacancy Tax) whose proceeds are reinvested into affordable housing initiatives.

Subnational administrative structures can catalyse or hinder the full realization of agglomeration economies. Urban agglomerations, while part of a broader economic system linking them to other agglomerations, towns and villages, are usually their own independent economic entities. As localities expand and become de facto combined, city-regions develop. In places where subnational administrative structures are not reformed to be responsive to such dynamics, oftentimes overlapping functions, (dis)economies of scale and policy fragmentation become the norm. This increased fragmentation has been shown to have negative impact on regional economic growth (as indicated by per capita

GDP).[113] New governance arrangements across existing administrative boundaries and sectors are needed to reinforce institutional coordination at all levels. It is thus vital to enable metropolitan governance structures and collaboration mechanisms (see Chapter 7).

Sustainable urbanization calls for sustainable municipal finance. As highlighted in previous sections, urban areas are the biggest contributors to wealth generation in most countries. Yet, in most developing countries, cities are financially constrained as locally generated annual revenue ranges from US$100 to US$500 per inhabitant. The figure is even lower (less than US$50) in smaller cities of Africa and South Asia.[114] Consequently, they invariably rely on transfers from the central government to make necessary infrastructure investments and provide services. In Africa, for instance, these transfers account for 70–80 per cent of local authorities' finance.[115] On the other hand, cities in developed countries rely less on intergovernmental transfers. In cities

Sustainable urbanization calls for sustainable municipal finance

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Box 3.4: Iskandar Malaysia: a catalyst development corridor

Designated as a catalyst development corridor, Iskandar Malaysia is one of Malaysia's fastest growing areas in terms of population and economic activity. By 2025, the population is expected to have doubled from 1.6 million in 2006 to 3 million, while GDP is expected to grow at an annual rate of change of over seven per cent. Established in 2006, Iskandar Malaysia was largely funded by the federal government's investment arm, Khazanah Nasional Berhad. The objectives for Iskandar Malaysia's establishment were to strengthen Malaysia's economic competitiveness and improve the quality of life for its citizens.

The Iskandar Regional Development Authority (IRDA) was established under the IRDA Act (Act 664) of 2007 to oversee the development of Iskandar Malaysia. Act 664 assigns IRDA the power to facilitate the planning and implementation of spatial and economic development program in support of the vision for Iskandar Malaysia. IRDA has formulated a Comprehensive Development Plan and several sectoral blueprints, including the Transportation Blueprint 2010-2030 and the Low Carbon Society Blueprint for Iskandar 2025.

Due to its strategic geographical location as the southern gateway to Malaysia and neighbouring Singapore, Iskandar Malaysia is well positioned to increase its transboundary economic activity. The economic region is divided into five flagship zones. Each flagship zone is a priority area for major investments and new developments including industrial parks, education hubs and health parks.

Source: UN-Habitat, 2019c.

such as New York, Stockholm, Seattle and Tokyo, locally-based revenues are more than US$3,000 per capita each year. Such cities are better equipped at attracting multinational corporations that benefit from strong property rights and contribute to municipal and national revenue streams.[116] Local governments in developing countries need to build productive capacities and leverage endogenous sources of finance as well as exercise prudent financial management practices to ensure sustained finances (Chapter 8). In areas where taxation and fees are levied, equity considerations like progressive revenue must be taken into account to ensure inclusive prosperity.

Finally, as highlighted in Chapter 6 and 8, local authorities also need to leverage the potential offered by technological advancement to improve operational efficiency in the face of declining revenues. Besides enhancing efficiency, employing such technologies appropriately can make a city "smart" in terms of being more responsive, as well as enhancing its capacity to provide better and new services critical to meeting the SDGs and New Urban Agenda.

3.5. Concluding Remarks and Lessons for Policy

Although the COVID-19 pandemic represents an unprecedented course correction, world history strongly suggests that continued urbanization is inevitable. In turn, chapter suggests that sustainability and productivity in cities can go hand in hand. Cities both large and small have the potential to create sustained economic prosperity and improve quality of life for all. For cities to be engines of growth and the economic benefits of sustainable urbanization to be realized by all, this chapter has placed emphasis on the following key areas for various levels of governments to unlock the economic value of sustainable urbanization:

- Strengthen the productive capacities in cities and ensure that the legal and regulatory frameworks are equitable.

- Ensure that cities are spatially organized in the most efficient and sustainable way that will increase their absorptive capacities and sustain economic growth.

Local governments in developing countries need to build productive capacities and leverage endogenous sources of finance as well as exercise prudent financial management practices to ensure sustained finances

- Assess development controls to ensure that the objectives of legal frameworks are aligned to the local realities and not a hindrance to economic growth.

- Pursue strategies that increase the supply of affordable housing and, where appropriate, employment self-containment to reduce commuting distances.

- Regularly collect disaggregated demographic data to forecast how total population and demographic composition is evolving so as to inform labour force participation policies, as well as urban and territorial planning processes.

- Adopt family planning, education and labour force participation policies that ensure sustained economic growth and higher levels of productivity through the demographic transitions from youth booms to the "silver tsunamis" of ageing cities.

- Establish clear property rights to facilitate the efficient functioning of land, housing and commercial real estate markets.

- Take advantage of economies of scale in the provision of various types of infrastructure and social services.

- Encourage good urban governance and investments in productive infrastructure, especially in resource-rich countries and countries experiencing rapid demographic urban growth.

- Leverage endogenous sources of finance.

Endnotes

1. Using data from World Bank, 2019d, cities occupied 2.85 per cent of earth land area in 2010. When considering cities above 50,000 inhabitants, this share drops to 0.1 per cent of the world's land area (using data from European Commission, 2019). However, their environmental effects go beyond their own spatial boundaries (UN-Habitat, 2017a).
2. Jacobs, 1961.
3. Rosenthal and Strange, 2004; Combes et al, 2012; Combes and Gobillon, 2015; Duranton, 2016; Chauvin et al, 2017; and Quintero and Roberts, 2018.
4. Glaeser et al, 2001; Albouy, 2008; and Albouy and Stuart, 2014.
5. Rosenthal and Strange, 2004; and Duranton and Puga, 2004.
6. Rimmer, 1970.
7. The Economic Times, 2016.
8. Coulibaly et al, 2012.
9. OECD, 2014.
10. Duranton and Puga, 2004.
11. MIER, 2015.
12. Rauch, 1993; Glaeser, 1999; Glaeser and Mare, 2001; Moretti, 2004a; Moretti, 2004b; Moretti, 2004c.
13. Jones et al, 2017.
14. Larger cities foster greater rates of human capital accumulation on the job, especially for more highly skilled workers (Baum-Snow and Pavan, 2008; Baum-Snow and Pavan, 2012).
15. Ciccone and Hall, 1996.
16. Glaeser and Maré, 2001.
17. Kondo, 2015.
18. Glaeser, 2009.
19. UN-Habitat, 2016a.
20. Lall et al, 2017; Nakamura et al, 2016.
21. Benson and Faiez, 2020.
22. Florida, 2020.
23. Agarwal et al, 2020.
24. Nolte, 2020.
25. Kivuva, 2000; As of May 2020, 37 per cent of households were unable to pay rent. Reduced income and earnings were cited as the main reason for the inability to pay rent by 61 per cent of these households (Kenya National Bureau of Statistics, 2020).
26. Florida, 2020.
27. Neiderud, 2015.
28. Florida, 2020.
29. UN-Habitat considers a dwelling unit not overcrowded (i.e. providing sufficient living area for the household members) if not more than three people share the same habitable room.
30. Carozzi et al, 2020.
31. Florida, 2020.
32. Wangli and Wahba, 2020.
33. Ahn, 2020; Jowett, 2020.
34. Mahler et al, 2020.
35. World Bank, 2020b.
36. QiangYan et al, 2020.
37. ILO, 2020d.
38. UNECA, 2020.
39. ECLAC, 2020b.
40. Boston Consulting Group, 2020.
41. ECLAC, 2020b.
42. UNESCAP, 2020.
43. World Bank, 2020c.
44. World Bank, 2020d.
45. UNESCWA, 2020.
46. UNECE, 2020.
47. UN-Habitat, 2016a.
48. Cali and Menon, 2013; UN-Habitat, 2016a; Vandercasteelen et al, 2018; Asher et al, 2019.
49. Abdel-Rahman and Anas, 2014.
50. Mega-regions are defined as "areas of continuous light that contain at least two existing metro areas, have populations of five million or more, and generate economic output of more than US$300 billion" (Florida, 2019).
51. UN-Habitat, 2010a.
52. Tsen and Furuoka, 2005.
53. Wall and Van der Knaap, 2011; Burger et al, 2012.
54. Wall and Stavropoulos, 2016; UN-Habitat, 2018a.
55. UN-Habitat 2016b, pp33-34.
56. UN-Habitat, 2018a.
57. Rogan and Cichello, 2017.
58. United Nations, 2020b.
59. Badgett, 2014; World Bank, 2015b; Panter et al, 2017.
60. Wirth, 1938; Stouffer, 1955; Tuch, 1987; Huggins and Debies-Carl, 2015.
61. Jedwab and Vollrath, 2015; Glaeser, 2014; Fay and Opal, 2000.
62. Glaeser, 2014; Jedwab et al, 2017; Jedwab and Vollrath, 2019.
63. Gollin et al, 2016.
64. Turok and McGranahan, 2013; UN-Habitat 2016b, p3.
65. Jedwab and Vollrath, 2019.
66. Angel, 2012; Lincoln Institute of Land Policy, 2016; Lamson-Hall et al, 2018.
67. Key Item 1.2 of the AFINUA stipulates that "the supply of urbanized land must be sufficient to accommodate urban growth while protecting sensitive areas and avoiding uncontrolled sprawl" (UN-Habitat, 2017, p5).
68. Key Item 2.2 insists on the importance of distinguishing "public space from buildable urban land" (UN-Habitat, 2017b, p7). Key Item 3.5 stipulates that urban design must provide "livable spaces, walkability and a sense of place" (UN-Habitat, 2017b, p10); In the projected areas of expansion, the routes for wide arterial roads should be spaced no more than one-kilometer apart. That space should have a clear "iron" (like New York City) or "radial" (Washington, DC) grid with well-defined blocks, pavements, streets, pavements, and public spaces, consistent with Key Item 3.3 of the AFINUA.
69. Lamson-Hall et al, 2018; focus on the case of Ethiopia to document how making room for urban expansion can be implemented in African cities, where on average 78 per cent of the new residential areas developed since the 1990s are informal, of which 27 per cent were not within walking distance of an arterial road.
70. UN-Habitat, 2016c; Key Item 2.4 of the AFINUA stipulates that the "area and proportion of a plot that may be built upon and the permitted building height and floor space are fundamental to value and have a significant impact on street dynamics and service demands. These elements should be effectively regulated and actively managed to fairly balance burdens and benefits" (UN-Habitat, 2017b). While cities with fewer tall buildings offer a higher quality of life due to natural light being less obstructed, the same residents may prefer having access to cheaper housing, and taller, denser cities can provide social and other services at a lower cost per capita due to returns to scale.
71. Visagie and Turok, 2020.
72. UN-Habitat, 2016a.
73. UN-Habitat, 2018c.
74. Jedwab et al, 2019.
75. Jedwab et al, 2019.
76. Drummond et al, 2014.
77. UN-Habitat, 2017a.
78. UN-Habitat, 2016a, p9.
79. United Nations, 2017a, p18.
80. IMF, 2017.
81. United Nations, 2018d; United Nations, 2017a, p18.
82. Stakeholder Group on Ageing, 2018.
83. Rosenthal and Strange, 2004; Combes and Gobillon, 2015.
84. Gollin et al, 2016, p55.
85. Gollin et al 2016.
86. Ades and Glaeser, 1995; Davis and Henderson, 2003; Campante, Do and Guimaraes, 2019.
87. UN-Habitat, 2016a, p27.
88. Glaeser, 1998.
89. UN-Habitat, 2016b.
90. OECD, 2019a.
91. RDP stands for "Reconstruction and Development Programme" and HLM for "Habitation à Loyer Modéré" ("Moderate Rent Lodging").
92. United Nations, 2015.
93. United Nations, 2017.
94. Visagie and Turok, 2020; The importance of relaxing such regulations has been highlighted in the previous WCR (UN-Habitat, 2016a, p35).
95. United Nations, 2019d.
96. UN-Habitat, 2016b.
97. TomTom, 2018.
98. Calnec-Sugin and Heeckt, 2020.
99. Gender Sensitive Mini-Bus Services & Transport Infrastructure for African Cities: A Practical Toolkit.
100. Calnec-Sugin and Heeckt, 2020.
101. UN-Habitat, 2015a.
102. UN-Habitat, 2010a.
103. UN-Habitat 2010.
104. UN-Habitat, 2018b.
105. ILO, 2015.
106. UN-Habitat, 2016d.
107. ILO, 2020d.
108. Noteworthy, domestic workers in Mexico have secured multiple, historic victories over the past few years, including a Supreme Court ruling making social security protections obligatory for domestic workers in late 2018 (WEIGO, 2020).
109. United Nations, 2017a, p8.
110. UN-Habitat, 2017b.
111. Henderson et al, 2016.
112. O'Sullivan, 2017.
113. Bartolini, 2015.
114. UN-Habitat, 2017b.
115. UNECA, 2020.
116. UN-Habitat, 2017b.

Chapter 4

The Environmental Value of Sustainable Urbanization: *Building Resilient Urban Development*

Current international debates are characterized by urban optimism, as sustainable urbanization is recognized as a transformative force to harness environmental value. The implementation of the 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction are embedded in this urban optimism. There is also the implicit agreement that actions at the local level will bridge the gap between intended contributions from countries and the actual emission reductions required to keep global average temperature change within safe levels. The adoption of these global development agendas as well as the ushering in of the Decade of Action to deliver the SDGs presents an opportunity for pragmatism whereby urban actors have to demonstrate the effectiveness of existing actions.

Unplanned and unmanaged urbanization represents a threat to environmental sustainability, including unbridled urban sprawl, irreversible land-use changes and biodiversity loss, resource and energy-intensive consumption patterns, and high levels of pollution and carbon emissions. However, when well-planned and managed, urbanization provides opportunities to address these challenges and contribute to environmental value through energy innovation, sustainable settlement patterns, changes in human behaviour and lifestyles, environment-related improvements to health and wellbeing, and resource efficiencies.

Quick facts

1. Nature-based solutions represent an integrated approach to deliver environmental value across the urban-rural continuum.

2. While environmental and conservation projects are adding value to the urban environment, some are having unintended impacts particularly on marginalized groups who are being pushed out by the changing conditions for habitation such as the appreciation of property values and rental costs.

3. Sustainability policies to unlock the environmental value of urbanization depends on the ability of different actors to tailor options to the context in which they operate as well as incorporate the principles of justice.

4. Despite its ravaging impacts, COVID-19 has shown that a green urban future is possible due to behavioural change; COVID-19-induced lockdowns have resulted in a fall in carbon emissions and short-term improvement in air quality in cities.

5. While there have been improvements in global coverage of basic services over the past two decades, which have environmental benefits, particularly for slum dwellers, more needs to be done for this population most at risk of being left behind.

Policy points

1. Harnessing the environmental value of urbanization requires a more participatory approach to planning. An intersectional approach is thus key to understanding the needs and concerns of different groups.

2. Urban greening initiatives enhance the environmental value of urbanization, but adequate measures are needed to ensure that they do not exacerbate inequality and social vulnerability.

3. A green economic recovery from the COVID-19 pandemic involving investment in clean technologies such as renewable energy can yield long-term environmental benefits while reducing emissions.

4. The environmental value of sustainable urbanization cannot be realized without prioritizing the needs of disadvantaged groups.

5. Implementing the 2030 Agenda and the New Urban Agenda is key to enhancing the environmental value of urbanization.

Urbanization transforms society's relationship with its environment. Urbanization presents environmental challenges, including land-use changes and biodiversity loss,[1] resource and energy-intensive consumption patterns,[2] and high levels of pollution and carbon emissions.[3] At the same time, urbanization in the 21st century opens up opportunities to address these challenges and contribute to environmental value through energy innovation, sustainable settlement patterns, changes in human behaviour and lifestyles, environment-related improvements to health and wellbeing, and resource efficiencies. Debates on the environmental impacts of urbanization are often polarized between those who see cities as an opportunity to reduce global environmental footprints and those who view urban growth as leading to irreconcilable environmental trade-offs.[4] While this Report acknowledges the environmental harm of unplanned, poorly managed urbanization, this chapter focuses on how to harness the transformative power of sustainable urbanization to enhance environmental value and advance the New Urban Agenda and the Sustainable Development Goals.

Scientific models have linked urbanization with environmental impacts on a global scale.[5] Developing the world's infrastructure to the level of industrialized countries (those included in Annex 1 to the Kyoto Protocol) has been estimated at 350 Gt of CO_2 equivalents only from materials production (or between 35–60 per cent of the carbon budget available before 2050, if the increase in global average temperatures remains under 2°C).[6] Unsustainable urbanization's impacts on land transformations and accelerated biodiversity loss are also documented.[7] Moreover, evidence suggests that the environmental impacts of urbanization are increasing, not only on climate but also on air pollution, ecosystems, land use, biogeochemical cycles, water pollution and solid waste management, with devastating impacts.[8] In the US, the expansion of the wildland-urban interface (WUI) contributes to ravaging wildfires as sprawling cities encroach on forests.[9] In Europe, one in every eight (or 13 per cent) of deaths is attributed to poor quality environments; the urban environment is characterized by the presence of multiple stressors, with

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Box 4.1: **COVID-19 pandemic and the glut in plastic waste**

The COVID-19 pandemic has furthered the collapse of oil prices, a major constituent of most plastics, making them cheaper to produce. The pandemic increased the consumption of single-use plastic, for example by an estimated 250–300 per cent in the US. Cities such as Athens, Greece, have recorded a 150 per cent increase in the amount of plastic found in the general waste stream. In low-income countries, the situation might be precarious as 93 per cent of waste goes into open dumps.

Source: The Economist, 2020b.

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people in cities being more exposed to air pollution, noise and chemicals while also having less access to green space than people in rural environments.[10] Further, the disruption caused by the COVID-19 pandemic may exacerbate some of these environmental challenges (Box 4.1). Urban lifestyles are also blamed for eroding traditional and indigenous knowledge that prizes more harmonious engagements with land, biodiversity and ecosystems.[11]

There is, however, an alternative outlook that views urbanization as a powerful force to foster an alternative engagement with the planet that moves humanity towards more sustainable socio-ecological relations. In this view, urbanization can mediate the radical change required for a sustainable society.[12] Indeed, well-planned and managed urbanization contributes to environmental sustainability by mitigating and adapting to climate change while building long-term resilience that enhances the wellbeing of urban and rural dwellers alike in a prosperous economy. Chapter 1 outlines how well-planned and managed urbanization adds environmental value, including by promoting clean energy; sustainable land-use patterns in urban development; ecosystems and biodiversity protection; healthy lifestyles in harmony with nature; sustainable consumption and production patterns; building urban resilience; disaster risk reduction; and climate change mitigation and adaptation. However, urbanization patterns are also highly uneven.[13] Harnessing the environmental value of urbanization depends on the ability of multiple actors to deliver an array of actions at the urban scale that respond to context-specific challenges, whose impact can expand across scales.

The notion of value introduced in Chapter 2 emphasizes that the relative worth of something depends on multiple dimensions. The question "value for whom?" formulated in Chapter 2 emphasizes that social positions, needs and interests determine values. Environmental value depends on existing social and ecological relations, and it is closely linked to questions of decision-making, social inclusion and human rights.[14] Environmental valuation has profound ethical dimensions.[15] Determining how to calculate environmental value requires understanding the multiple interconnected challenges that affect cities and human settlements, as well as how different social groups access natural resources and experience environmental impacts. Active efforts to plan urbanization can integrate diverse perspectives and produce shared proposals for action towards sustainability. Such efforts must balance the perceived effectiveness of specific actions with the context-specific challenges that different social groups face in cities and human settlements. This definition of environmental value is consistent with the findings of the 2016 World Cities Report, which emphasized how principles of environmental justice, including the recognition of multiple scales of valuation and the participation of diverse publics in decision-making, constitute a useful and practical paradigm for urban management.

Well-planned and managed urbanization can enhance environmental value in many ways. Still, the effectiveness of different initiatives will depend on the capacity of different actors to maintain long-term processes of sustainability governance and planning that integrate social and environmental needs. Resilient urban development depends on establishing the enabling conditions to deliver on long-term sustainability visions. International initiatives such as the New Urban Agenda highlight the importance of action across multiple levels of governance, including cities and human settlements, and

Separation of household waste in a recycling factory,
Lampang Province, Thailand. © Gigira/Shutterstock

the role they play in delivering the SDGs.[16] For example, the transformative power of urbanization is central to deliver climate change adaptation and mitigation.[17] Pioneering reports such as UN-Habitat's *Cities and Climate Change: Global Report on Human Settlements 2011* revealed the full range of policy initiatives available to address climate change in cities and human settlements.[18] Since then, new approaches to governing climate change in cities and human settlements have led to numerous technical, social and policy innovations.[19] The adoption of the Paris Agreement on climate change in 2015 has led to a pragmatic turn in climate governance, with a focus on the evaluation of action on the ground.[20] The New Urban Agenda and the 2030 Agenda for Sustainable Development provide an enabling framework to harness the potential of transformative urbanization. However, there still lacks large-scale assessments of sustainability action and their linkages to urbanization. The perception that local action is too fragmented to have a global impact is still pervasive in international policy circles, although that attitude is changing as subnational authorities engage assertively in climate diplomacy (Chapter 7).
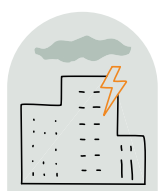
Resilient urban development depends on establishing the enabling conditions to deliver on long-term sustainability visions

Finally, not all environmental initiatives are benign. Some are merely superficial, or "greenwashing." Others lead to "green gentrification," exacerbating inequality and social vulnerability in cities. For example, recent assessments of urban greening initiatives such as the High Line and Brooklyn Bridge Park in New York City indicate that, while they have resulted in positive environmental outcomes (increase in green space, reduction of pollution), they have been associated with the displacement of low-income residents.[21] Similarly, green urban enclaves promoting social and spatial exclusion have emerged whereby high-income population groups are able to securitize land and resources to the exclusion of other groups.[22] The New Urban Agenda and SDG 11 place emphasis on inclusive settlements and provide frameworks for unlocking the environmental value of urbanization for all, rather than for a rarefied elite.

The New Urban Agenda and SDG 11 place emphasis on inclusive settlements and provide frameworks for unlocking the environmental value of urbanization for all, rather than for a rarefied elite

This chapter first focuses on the international imperative to harness the environmental value of urbanization as enshrined in global policy agendas. It then discusses challenges to realizing the environmental value of urbanization. The chapter then maps the action space to deliver environmental value and discusses the principles of environmental justice that must underpin efforts to unlock the environmental value of cities and avoid the contradictions of green urban development.

4.1. Environmental Values through the Lens of the Global Development Agendas

The United Nations system-wide strategy on sustainable urban development recognizes the intersection of SDG 11 with the other SDGs, noting, for example, that stronger climate action is one of the overarching outcomes that should emerge from sustainable urban development patterns.[23] The IPCC has stated that it is difficult to imagine how a 1.5°C world would be attained unless the SDG on cities and sustainable urbanization is achieved in developing countries.[24]

Consequently, cities play a large role in the fight to limit the worst impacts of global warming. As UCLG has argued, the 2030 Agenda represents a "new social contract" to co-create a sustainable future for the planet.[25] Local governments are key players in this act of co-creation and the SDG 11 targets provide a starting point for local governments and partner institutions like regional and national governments, community groups and the private sector to launch the kind of initiatives that can deliver on those targets. Achieving those targets depends on harnessing the environmental value of urbanization processes. Table 4.1 illustrates some context-specific examples whereby a range of organizations can intervene to deliver environmental value.

Table 4.1: Examples of environmental values associated with the targets of SDG11, alongside existing projects that enhance those values

SDG11 Target	SDG 11 Indicator	Relevance to deliver environmental value	Context-specific examples of actions
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing	Access to adequate and affordable housing and basic services improves communities' health and wellbeing; it also prevents informal urban development in sensitive ecosystems, as well as water, soil and air contamination from untreated sewage and improper solid waste collection.	The Centre for Community Initiatives (CCI) in Dar es Salaam, Tanzania, supports community management projects to provide access to water and sanitation.[26] CCI is increasingly committed to intersectional and gender-based perspectives on development that reveal the differential impacts of structural vulnerabilities.
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by sex, age, and persons with disabilities	Public transit supports mobility needs while reducing the overall environmental impact (reducing pollution of emissions, GHG emissions and land consumption).	Bus rapid transit systems have proliferated throughout the world as efficient, grade-separated mass transit at a lower price point than rail projects. Hanoi, Viet Nam launched its first 14.7 km busway in 2017, serving 14,000 riders daily. The Hanoi Urban Transport Development Project estimates that 23 per cent of those riders switched to BRT from driving private vehicles, which will reduce the city's carbon emissions by 122,177 tons through 2025.[27]
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	11.3.1 Ratio of land consumption rate to population growth rate 11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically	Land transformations represent one of the main impacts of urbanization. Increasing environmental value thus requires incorporation of multiple perspectives in the planning processes regarding relative impacts and benefits.	The Dutch NGO Both ENDS has implemented a rights-based approach to land governance called Participatory Land Use Planning to recognize and secure land rights.[28] A pilot project to improve spatial planning in the Sanggau district of West-Kalimantan, Borneo, Indonesia, showed that communities' negotiations with companies happen on unequal terms because land rights are not always officially recognized. Mapping their land, communities have an additional tool to claim those rights. Similar examples could help to resolve land conflicts in rapidly growing urban areas, particularly to confront evictions.[29]
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage	Preservation of cultural and natural heritage will ensure access for future generations.	The Baiheliang Museum is an archaeological site in Fuling, China submerged under the waters of the newly built Three Gorges Dam. It displays some of the world's oldest hydrological inscriptions, recording 1,200 years of changes in the water level of the Yangtze River.[30] The project has received support from UNESCO, as a flagship project of their submerged heritage programme.
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	11.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people 11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services	Responses to disasters may be determinant on the extent to which the city can recover from a disaster. Effective strategies for managing disaster risk lessen vulnerability in cities and support the constitution of more resilient settlements with substantial additional benefits for people's health and wellbeing.	The Peruvian Ministry of Environment developed an Action Plan on Gender and Climate Change in 2015 that employed a participatory approach to recognize gender-led vulnerabilities and possible actions. On risk management, the plan highlights the role of the Driving Group of Management of Risks, Disasters and Climate Change (GRIDES), a network of institutions aiming at recovering traditional knowledge and integrating it with expertise, which has made a deliberate effort to integrate a gender perspective in their work.[31]

SDG11 Target	SDG 11 Indicator	Relevance to deliver environmental value	Context-specific examples of actions
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by cities 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Reduction of pollution in urban areas (solid waste, emissions) improves the immediate living environment for urban residents.	The Seva Sahakari Sanstha (SWaCH), in Pune, India, is a waste pickers' cooperative owned and operated by over 3,000 members, most of whom are women and Dalits. They provide door-to-door waste collection services to more than 2.3 million residents, including more than 450,000 slum dwellers.[32]
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities 11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months	Green and public spaces that are accessible to all constitute a shared collective resource that not only enhances community cohesion but has direct benefits for health, wellbeing, and the ecological systems.	UN-Habitat is currently implementing the Global Public Space Programme to support cities in improving the quality of public spaces (Box 4.2). In Kenya, for instance, the programme is supporting the city of Nairobi to revitalize public spaces. Already, an inventory and assessment of public open spaces has been carried out. This inventory is part of a wider collaboration to build the capacity of city staff, civil society and other stakeholders to enhance the quality of public spaces for all.
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	11.a.1 Number of countries that have national urban policies or regional development plans that (a) respond to population dynamics; (b) ensure balanced territorial development; and (c) increase local fiscal	Urban and regional development plans contribute to equitable development outcomes between urban and rural areas by limiting sprawling urban growth in order to preserve working agricultural land and natural areas that provide ecosystem services.	Rapid urban growth in Ulaanbaatar, Mongolia, threatens the city's sustainability, which depends on managing the subserviced Ger areas that surround the city. In 2014, the Urban Planning, Architecture and Design Institute of Ulaanbaatar City proposed a master plan that recognized the city's nomadic heritage while seeking to resolve the complex relationship with its hinterland.[33]
11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	11.b.1 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030a 11.b.2 Number of countries with national and local disaster risk reduction strategies	Inclusive strategies for disaster risk reduction increase the resilience of the city as a whole. A holistic approach to disaster risk reduction will include measures to reduce exposure and vulnerabilities, in line with the requirements of the Sendai Framework.	Boston, US, has made racial equity the foundation of its resilience strategy. One focus has been the racially and ethnically diverse Dudley Square neighbourhood. The city has partnered with a local community land trust, Dudley Neighbours Incorporated (DNI), to acquire land to provide essential services within the neighbourhood, including community gardens and an urban farm, which improve food security and strengthen the infrastructure for close collaboration with the community in the event of future shock or stress events.[34] Birmingham, UK, held the first UK Citizens' Assembly on climate change. The assembly was commissioned by six cross-party House of Commons Select Committees. It is looking at how the UK will reach its net zero emissions climate target and what can be done by members of the public to help reduce carbon emissions.[35]

SDG11 Target	SDG 11 Indicator	Relevance to deliver environmental value	Context-specific examples of actions
11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	11.c.1 Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials	The performance of the built environment influences patterns of consumption and reduces carbon emissions from buildings. Built environment initiatives can have numerous social and environmental co-benefits.	"Reinventing Cities" is a competition organized by C40, with the support of the European Institute of Innovation and Technology Climate Knowledge and Innovation Community (KIC). The objective is to deliver urban projects to drive carbon-neutral and resilient urban regeneration in sites in decline. All the projects combine a design-led approach to retrofitting with profound social concerns. The first 20 winners of the competition include a social housing project in Milan (Italy), a market in Madrid (Spain) and an urban community to support housing with a focus on people with disabilities in San Francisco (US).[36]

Box 4.2: Creating environmental value through public space

Launched in 2012, and currently active in over 75 cities, UN-Habitat's Global Public Space Programme promotes safe, inclusive and accessible public space as a cornerstone of sustainable cities and communities. The programme's focus areas include:

- **Public space assessment:** A comprehensive citywide inventory and assessment of public spaces enables city leaders to know the state of public spaces within their jurisdictions, understand the gaps, set goals, develop strategies and allocate financial resources to meet the demand for public spaces.

- **Capacity development:** Enhancing knowledge and developing capacity of local governments and stakeholders on public space issues at the neighbourhood, city and national levels through a multi-faceted approach.

- **Public space upgrading:** Through an annual call for proposals supported by the Block by Block Foundation, UN-Habitat supports a number of public spaces upgrading projects in developing regions. This upgrading process is participatory, engaging the community and the users.

- **Technology:** The programme leverages digital technologies ICT to engage a wider audience—e.g. children and youth—in urban planning and design processes. Technologies such as Kobo Toolbox and the Minecraft video game are harnessed as tools for crowdsourcing ideas; and

- **Policies:** UN-Habitat supports national governments to mainstream public space in national urban policies as well as local governments in developing local public space frameworks and strategies.

In Nairobi, Kenya, for example, the programme is implementing pilot projects that demonstrate participatory and integrated public space development approaches.

Figure A: citywide inventory and assessment across various regions

Islamic Republic of Afghanistan
• Kabul

United Arab Emirates
• Sharjah

Occupied Territory of Palestine
• Khan Younis, Gaza Strip
• Bethlehem Cluster, West Bank
• Jenin, West Bank
• Jericho, West Bank
• Nablus, West Bank

Mongolia
• Ulaan Batar

China
• Jianghan, Wuhan
• Wuchang, Wuhan

Dominican Republic
• Santo Domingo

Ethiopia
• Addis Ababa
• Hawassa
• Adama
• Bahir Dar
• Mekele
• Dir Dawa

Bangladesh
• Dhaka

Ecuador
• Ibarra
• Cuenca
• Quito
• Portoviejo

Colombia
• Valledupar
• Monteria

Cameroon
• Bamenda

Kenya
• Nairobi
• Kisumu

Uganda
• Koboko
• Arua
• Nebbi

Tanzania
• Mwanza

Uruguay
• Montevideo

South Africa
• Johannesburg
• Durban

Scale of the Public Space Assessments

● City level
● District level
● Neighbourhood level
■ Country present

Figure B: Components of the Nairobi public space project implementation

Demonstration of co-creation of public space through design and development of two pilot public spaces in Nairobi

Scaling up: Inventory and assesment of public open spaces in the city county and a safety audit in the city in collaboration with safetipin

Development of citywide public space strategy, policy and bill to mainstream public space in normative programs of the city

Capacity building for the city county staff and community groups on co-creation of public spaces

Awareness and advocacy campaigns through placemaking to promote use and change attitudes towards public spaces

Source: Global Public Space Programme, UN-Habitat.

Pedestrianization of streets in Nairobi, Luthuli Avenue, Kenya. © Mark Ojal/UN-Habitat

The New Urban Agenda has emerged as a distinct tool to achieve the SDGs from the perspective of the development of urban policy that defines environmental protection as a cornerstone of urban development. The NUA is distinct because it establishes procedures to localize the 2030 Sustainable Development Agenda. The NUA also focuses on the interdependencies between social, environmental and economic sectors to deliver SDG 11 alongside the other Global Goals. The commitments made in the NUA's implementation plan demonstrate the need for spatial diagnoses of socio-ecological challenges and the potential of place-based action to deliver environmental value.[37]

The NUA supports localized action to augment environmental value in cities and human settlements like preserving the human commons, enabling sustainable access to resources and preventing environmental pollution. Simultaneously, the NUA makes explicit the global imperatives that underpin urban policy. For example, the Paris Agreement emphasized the need to build capacity for actions at various levels—national, subnational and local. The NUA supports mechanisms for the coordination of multiple actors' activities to deliver resilience and sustainability in cities for all, and hence, it reinforces the Paris Agreement's commitments.

The NUA's aspirations are also supported by recent global scientific reports that have emphasized the transformative value of urbanization. The IPCC Special Report *Global Warming of 1.5ºC* specifies that the mix of adaptation and mitigation options required to deliver an accelerated transition and keep the world safe will have to be implemented in a participatory and integrated manner.[38] The IPBES report describes the current trends as resulting from an anthropocentric, materialist worldview that emphasizes utilitarian extraction.[39] The IPBES report regards migration and urbanization as disruptors that can catalyse a radical shift in values towards nature and the environment that would sustainably transform the relationship between society and ecosystems. Rather than proposing punctual, sectoral interventions, these reports call for fundamental cultural and social changes to human lifestyles. Oftentimes, the language of global reports does

The NUA supports localized action to augment environmental value in cities and human settlements like preserving the human commons, enabling sustainable access to resources and preventing environmental pollution

Children playing on a playground in Ras Mekonnen, Addis Ababa. © Katla Studios

not always convey the profound political consequences of such transformations, which instead manifest in the worldwide urban climate movements like the Fridays for Future school strikes and Extinction Rebellion, which since 2018 have pressured policymakers on climate change through direct action.

4.2. Challenges to Delivering Environmental Value of Sustainable Urbanization

Environmental value has long been the central concern of sustainability planning as it engages with the classical question of "How can we plan and develop communities that will meet long-term human and environmental needs?" Adding environmental value calls for addressing environmental challenges both at the global and local level while at the same time addressing immediate household needs.[40] The 2016 World Cities Report identified four environmental challenges cities face that require suitable responses:

- equal access to resources and public services;

- managing environmental risks, from pollution to climate change impacts;

- minimizing the negative impacts of land transformations in the use of resources, biodiversity and ecosystems; and

- responding to the global call for decarbonization and rational use of resources.[41]

Rather than serving as a list of areas for intervention, these four elements have to be seen as a series of interrelated challenges that should be addressed simultaneously. This is because of the multiple trade-offs between these different aspects, as illustrated below:

- providing public services in an equitable manner depends on the preservation of ecosystems and the rational use of resources;

- resilience to environmental risks and climate change impacts depends on addressing the structural drivers of vulnerability by ensuring equitable access to urban services;

- land transformations go hand in hand with the deterioration of essential services to more disadvantaged urban populations;

- our capacity to reduce carbon emissions and reduce our global footprint depends on ensuring the conservation of ecosystems and providing efficient urban services.

The transformative commitments of the NUA requires cognizance of these trade-offs. The NUA also recognizes that the impacts of urbanization are noticeable at multiple scales. While urban areas cover less than three per cent of the global land area, there is an accelerated rate of land consumption—exceeding population growth rate (Chapter 3). This trend has a direct impact on biodiversity and carbon pools.[42] The 2019 IPCC Special Report on Land and Climate Change describes the close links between land transformations and global and regional climate.[43] For example, the report suggests that urbanization increases temperatures in cities and their surroundings (heat island effect) and can intensify extreme rainfall episodes.

Moreover, urbanization in contexts where there are shortcomings in urban planning and risk management, as well as fragmented and overlapping structures of environmental governance, resilience measures are often affected. This is evident from the growth of urban land in flood plains in China, which account for 44 per cent of the total urban land in China.[44] In urban Africa, the halo around cities shows how land transformation is impacting biodiversity and ecosystems in the urban hinterlands. However, there is also an expectation that urbanization will ease the pressure on ecosystems elsewhere.[45]

Urbanization in contexts where there are shortcomings in urban planning and risk management, as well as fragmented and overlapping structures of environmental governance, resilience measures are often affected

Fire in the outskirts of Lviv Oblast the city, Ukraine. © Maryana UA/Shutterstock

Different social groups have varying experiences in cities. How environmental challenges are experienced and addressed largely depends on a specific group's living conditions

Different social groups have varying experiences in cities. How environmental challenges are experienced and addressed largely depends on a specific group's living conditions. Over 1 billion people live in slums and informal settlements, mostly in South Asia, East Asia, South-East Asia and Sub-Saharan Africa (Chapter 1). UN-Habitat defines "slum-like conditions" based on access to water and sanitation, conditions of housing and security of tenure.[46] However, these are not the only deprivations experienced in slums. Rather, they are indicators of wider gaps in governance, institutions and the physical provision of built environment and infrastructure. While there is a need to recognize the enormous creativity of people living in slums to get by through these severe environmental conditions in cities, it is also vital to acknowledge slums manifest a dysfunctional relationship between structures of habitation, citizens' needs, the urban economy and governance structures. Informal settlements are also a response to the dwelling conditions created by global capitalism's intense competition for land and profits. Rather than looking at slums as places of squalor to be eradicated, various levels of government need to address the structural conditions that lead to substandard forms of habitation while recognizing existing habitation practices.

While there have been improvements in global coverage of safely managed drinking water (from 61 per cent in 2000 to 71 per cent in 2017) and sanitation (from 28 per cent in 2000 to 45 per cent in 2017), which have environmental benefits, particularly for slum dwellers, more action is still needed for this population most at risk of being left behind. When informal settlement dwellers lack services, they generate alternative "institutions" which provide those services, often with unregulated pricing systems. In India, for example, poor households in informal settlements often resort to private vendors who charge a much higher price than the water supplied by the local government (Box 4.3).

Box 4.3: The water-energy nexus dilemma in Bangalore, India

Bangalore has an important role in the history of infrastructure innovation, for example, after the construction of the Chamarajendra waterworks of 1894 and the installation of the hydroelectric plant of Shivanasamudra in 1906, which made Bangalore the first city to have electricity in India. Urban infrastructure has played a key role in the constitution of Bangalore as a global city, but the infrastructure challenges in Bangalore are also great. Water provision and energy are two key challenges in the city. As time has evolved, the nexus between water and energy has also changed, from an initial state in which water was seen as a productive force, through the production of electricity in hydropower stations, to the gradual way in which power came to be seen as the way to deliver water into the city, through large distance water transfers.

The overlapping systems of water governance as well as the current system of water provision produces injustice in water access because piped networks only cover specific areas, leaving the poorer sectors of the population dependent on private vendors or even water mafias to access water. Communities in peripheral or marginal areas also struggle to negotiate their basic rights with the authorities.

In the meantime, Bangalore has seen a resurgence of citizen-led action seeking to harness the traditional network of water tanks for multiple uses, including actions to rejuvenate blue infrastructure, provide spaces for recreation and create an outlet for treated sewage water. Documenting the lakes, investigating alternatives sources of supply and restoring lakes which have been degraded or polluted are some of the actions that seek to improve the city's blue infrastructure on a day-to-day basis, helping deliver alternatives to access water for the most disadvantaged.

Sources: Castán Broto and Sudhira 2019; Ranganathan, Kamath, and Baindur 2009; Ranganathan and Balazs 2015; Unnikrishnan 2018; Unnikrishnan, Sen, and Nagendra 2017.

Vulnerability to climate change impacts and disasters depends, above all, on structural conditions that determine the possibilities of effective emergency response and post-disaster recovery

Vulnerability to climate change impacts and disasters depends, above all, on structural conditions that determine the possibilities of effective emergency response and post-disaster recovery. While some of these vulnerabilities can be addressed via government-led interventions like early warning systems, infrastructure protection schemes and post-disaster reconstruction programmes, daily living conditions are central to understand people's possibilities to cope with disasters.[47] Slums and informal settlements generally disproportionately suffer the impacts of climate change and natural disasters as compared to other settlements.

Land transformations also impact informal settlement dwellers directly, for example, if they are involved in urban or peri-urban agriculture or located on land parcels that become desirable to real estate development interests. The global proliferation of securitized spaces like gated communities, which consume large amounts of land relative to the number of residents, exclude the poorest sectors of the urban population who are politically disadvantaged from influencing processes of urban development through existing governance structures. In Brazil, for instance, favela communities were displaced ahead of the 2016 Summer Olympics in Rio de Janeiro.[48] Difficulties in claiming these land rights often translate to a lack of access to resources and environmental goods.

Like all city residents, slum dwellers also play a role in reducing carbon emissions. Recognizing collective responsibility does not mean, however, that everybody is equally responsible, but that decisions about reducing emissions have to be taken collectively. These decisions should consider the impacts public policies to promote low-carbon energy use may have on the most disadvantaged—who tend to have much lower carbon footprints—for example, restricting their energy access (Box 4.4).[49] To unlock the environmental value of urbanization, the urban poor must be represented and their needs prioritized in any decision-making processes, be it about the urban commons, atmospheric commons, public spaces or resource use.

Box 4.4: Developing research agendas on urban energy access: experiences from Maputo, Mozambique

In Maputo, Mozambique, the distribution of electricity is uneven and varies, but the use of charcoal is ubiquitous. Household members adjust their energy use depending on the resources available to them. They combine multiple fuels to secure supply, varying their own needs to cope with moments of scarcity. Charcoal remains the dominant source of energy for most households. Factors like the possibility to fraction its use, the perceived control of the supply chain and the perceptions of security in the household have made it difficult to swift to alternative fuels such as liquefied petroleum gas (LPG), despite efforts from the local government to facilitate such change.

There is a growing need for research that challenges long-held assumptions about energy access in urban areas, in line with the SDGs' requirements to align results to people's needs, perspectives and aspirations. Energy access relates to both the current resilience of urban populations and the possibility to deliver sustainable societies in the long term.

Three questions should guide a research agenda on urban energy inspired on environmental justice principles:

"What are the users' needs in specific contexts?" requires an understanding of people's aspirations within specific social and spatial constraints.

"Do we have the appropriate information to address energy access questions?" reflects the chronic lack of data about energy use and demand, particularly in rapidly urbanizing areas.

"What is the match between government policies for energy access and the needs of the urban poor?" addresses the fundamental role that planning can play in transforming about sustainable energy access.

Source: Castán Broto et al. 2017; Castán Broto 2017a.

To unlock the environmental value of urbanization, the urban poor must be represented and their needs prioritized in any decision-making processes, be it about the urban commons, atmospheric commons, public spaces or resource use

The representation of different social groups in the decision-making process is key to achieve stronger results and outcomes. Alongside the physical living conditions and structural successes or failures of governance, the capacity to respond to environmental challenges and add environmental value depends on social and cultural processes in urban areas. A holistic perspective is thus necessary as these processes play key roles in defining sustainability and resilience goals, thresholds and outcomes. For example, aspects like social capital and cultural diversity are closely linked to the process of enhancing resilience to climate change.[50]

While urbanization is a global phenomenon, it is also a complex process whose variations and dynamics cannot be adequately described in a set of universal principles.[51] For example, recent attempts at modelling urbanization impacts have shown how environmental footprint varies significantly across income groups (generally growing carbon emissions in lower-income groups but hindering the growth of emissions in higher-income groups).[52] Dense urban development also enables the reduction of energy use and, hence, decreases carbon emissions, although this relationship varies geographically.[53] There is, thus, a need to characterize the multiplicity of processes in relation to their impacts on the urban environment, understanding urbanization as a series of interconnected processes whose consequences depend on multiple drivers.[54]

In environmental planning and management, the urban environment is commonly perceived as a field divided into separate (rather than interconnected) sectors, which leads to a focus on individual interventions that do not address the structural causes of environmental degradation. Transformation depends on the possibility of urban processes to address structural drivers across different sectors. Recent evidence suggests that social movements and activist groups have an essential role

to play in making those drivers visible. In May 2019, the Fridays for Future school strike took place in 1,594 cities, located in 118 countries,[55] proving that cities are critical sites of mobilization to demand actions for climate change.[56] Greta Thunberg is the most salient face of a global movement of young people seeking to hold governments to account. She emphasizes that lack of political will and sheer irresponsibility is taking the planet to the point of no return. Urbanization and its environmental impact need to be understood within the political and economic drivers at the root of the global environmental crisis.

More recently, the COVID-19 pandemic brought about unprecedented global disruptions. Drastic measures to combat the novel coronavirus have raised environmental activists' hopes for a similarly bold response to global warming; COVID-19 has shown that a green urban future is possible. During the peak of global lockdowns in March and April 2020 to slow viral spread, COVID-19 led to a sudden fall in carbon emissions and improvements in air quality in cities, providing the world a brief window into the decarbonized, sustainable future environmental advocates have championed for decades (Box 4.5). "Well-designed stimulus measures that support a green economic recovery can yield long-term economic benefits, prevent stranded assets and avoid locking in high-emission and high-polluting infrastructure and transport systems that may last for decades. Aligning urban planning and development with human and planetary health is essential to avoid ecological imbalances, increased risk of exposure to new pathogens and the emergence of new diseases. Only by seizing this moment to expand investments in an equitable green transformation will we create lasting solutions and reduce the risks of future crisis and adequately mitigate the impacts of climate change."[57]

Well-designed stimulus measures that support a green economic recovery can yield long-term economic benefits, prevent stranded assets and avoid locking in high-emission and high-polluting infrastructure and transport systems that may last for decades

Box 4.5: COVID-19 and reduced emissions

The COVID-19-induced lockdown has led to improvements in the urban environment. Global CO_2 emissions in 2020 are expected to fall by eight per cent or almost 2.6 billion tonnes in what is seen as the biggest ever annual drop in carbon emissions. In China, CO_2 emissions fell by 25 per cent or more in January 2020 when compared to the same period in 2019, driven mainly by a 37 per cent decline in coal consumption and crude oil use. In India, CO_2 emissions fell for the first time in 40 years. They reduced by 15 per cent in March and 30 per cent in April 2020 not only as a consequence of the COVID-19 lockdown, but also due to a pre-coronavirus weakened demand for coal. In March 2020, New York City experienced a 5–10 per cent drop in CO_2 emissions and a 50 per cent fall in carbon monoxide emissions attributed mainly to a 35 per cent decline in traffic.

In just two months following COVID-19 related lockdowns, scientists and residents alike observed remarkable reductions in air pollution. Satellite imagery from Hubei province in China showed a significant decline in the levels of $PM_{2.5}$ nitrates following the imposition of travel restrictions to curb the spread of the virus. Similar trends were observed in Republic of Korea, Italy, Spain, UK, India, Saudi Arabia and United Arab Emirates.

Cities in Latin America and the Caribbean witnessed reduction in the levels of nitrogen oxide in the wake of the lockdowns. Between the last ten days and first ten days of March 2020, the percentage change in nitrogen dioxide in the atmosphere declined by 40–70 per cent in Bogotá, Lima, Buenos Aires, Medellín, Quito and Guayaquil, which were under total lockdown; and by 5–35 per cent in Rio de Janeiro, Mexico City, São Paulo, Kingston and Santiago, which were under partial lockdown.

Though remarkable, these environmental improvements are likely to be short-lived and will rebound once the global economy returns to its pre-coronavirus production and consumption levels, unless countries use the crisis to deliver on their commitment to sustainable development by investing in cleaner and more resilient forms of energy. Countries must make sweeping investments in clean technologies. Renewable energy is the most cost-effective way to reduce emissions as countries cannot depend on the fortuitous impacts of pandemics to catalyse environmental improvements. As in the case of previous crises, unless the wave of investment to restart the economy is dedicated to cleaner and more resilient energy infrastructure, the rebound in emissions may be larger than the decline.

Source: Abstracted from Chapter 1.

4.3. Mapping the Action Space for Urban Environmental Value

Urban managers, planners and activists working on the ground have long confronted the fact that there are not simple, one-off solutions to unlock the environmental value of urbanization that can be applied uniformly across cities.[58] For instance, there are models of urbanism that embed multiple aspects of urban life within utopian, technology-oriented visions promising sustainability and low-carbon outcomes. But these "smart" models prioritize corporate interests over the daily needs of everyday citizens, small and medium enterprises, and local institutions, ultimately failing to address existing urban challenges.[59] With its call for integrated, long-term policy approaches to urban development, the NUA moves away from such models of technocratic urbanism. However, there are several effective policies, strategies, practices and actors that have enhanced and strengthened the environmental value of sustainable urbanization in different contexts, for example, working with nature in cities to harness environmental value.

4.3.1 Introducing nature-based solutions
Sustainability and climate change action in urban environments is most effective when tied to a wide range of environmental and social co-benefits.[60] In

In the current international context, action to address global challenges such as climate change and biodiversity loss will be most effective when linked to ongoing sustainability agendas

this vein, sectoral approaches are problematic not only because they are inadequate to address the multiple environmental challenges of complex systems like cities, but also because they may be detrimental to deliver transformative action if they limit co-benefits and impact negatively on the life and agency of beneficiary groups. In the current international context, action to address global challenges such as climate change and biodiversity loss will be most effective when linked to ongoing sustainability agendas.[61]

Nature-based solutions represent an integrated approach to deliver environmental value across the urban-rural continuum. IUCN defines nature-based solutions as "actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits" (Figure 4.1).[62] Nature-based solutions embed environmental value in water and land management practices from the micro-level, such as improving the porosity and permeability of soils, to the macro-level, such as improving the connectivity and resilience of landscapes (Table 4.2).[63] In urban areas, nature-based solutions have been linked with positive effects on both urban nature and human health.[64] However, when applying nature-based solutions to urban environments, there are still knowledge gaps regarding the effectiveness of solutions to address different environmental challenges, the involvement of various stakeholders and specific implementation challenges related to land competition, overlapping regulations and integration with existing infrastructure.[65]

Nature-based solutions have been linked with positive effects on both urban nature and human health

Tanner Springs Park is a remediated wetland and naturalized public space, Portland, Oregon, USA. © Stephanie Braconnier/Shutterstock

Table 4.2: Different types of nature-based solutions with impact at multiple levels

Type of action	Definition	Physical parameters influenced	Ecosystem services delivered (added environmental value)
1 Organic farming[66]	Integrated farming practices with explicit sustainability objectives, often under a recognized system of certification	Infiltration Interception Ponding Soil surface protection Ecosystem resilience	Soil protection Biodiversity Carbon sequestration Water quality regulation Biomass growth Nutrient regulation Flood regulation
2 Managed rewilding[67]	Land management techniques to reinstate natural processes such as the free movement of rivers, habitat succession and trophic chains	Infiltration Interception Soil surface protection Ecosystem resilience Dis-connectivity	Soil protection Biodiversity Carbon sequestration Water quality regulation Flood regulation
3 Agro-forestry[68]	Land management techniques that intentionally combine forestry and agriculture/pasture	Infiltration Soil water retention Soil surface protection Tree resilience	Soil protection Drought regulation Water quality regulation Carbon sequestration Biodiversity
5 Land restoration[69]	Conservation action to bring a previously damaged land (polluted or degraded) to a productive state, including healthy soils and landscapes	Infiltration Interception Ecosystem resilience Dis-connectivity Water and sediment retention	Soil protection Biodiversity Carbon sequestration Water quality regulation Biomass growth Nutrient regulation Flood regulation
6 Wetlands restoration[70]	Conservation action to recover the natural functions of wetlands	Dis-connectivity Water and sediment retention	Biodiversity Water quality regulation Nutrient regulation Flood regulation
7 Sediment trapping[71]	Vegetation-based measures to prevent erosion and runoff at the catchment level	Dis-connectivity Infiltration Ponding Interception Water and sediment retention	Soil protection Carbon sequestration Water quality regulation Biomass growth Nutrient regulation Flood regulation

Source: Adapted from Keesstra et al. 2018.

Nature-based solutions are closely linked to the delivery of green and blue infrastructure, that is, a strategically planned network of nature- and water-based features, integrated with the urban environment, that provide multiple functionalities.[72] There are impressive examples of green infrastructure integrated with urbanization processes. For example, the Netherlands has been implementing the National Ecological Network (NEN) since the 1990s, a national project to link nature areas and farmland with surrounding towns. The project has improved, connected and extended nature areas; it can claim credit for 20 national parks, new wildlife habitats, agricultural land managed in nature-friendly ways and over 6 million hectares of conserved water landscapes.[73] However, global examples are still few and far between. In many regions, there is a dearth of information on the extent and state of

conservation of green and blue infrastructure. In Africa, for example, there are barriers to the development of green infrastructure, including technical barriers (e.g. lack of data and lack of capacity) as well as more complicated cultural and political barriers (e.g. localized values and perceptions of green infrastructure, access inequalities, spatial trade-offs and conflicts).[74] Land restoration projects also have the potential to deliver co-benefits for all the SDGs in line with the recommendations of the NUA, but they depend on the adoption of an integrated landscape approach taking into account the spatial variability of urban areas and the needs of diverse stakeholders.[75]

In many regions, there is a dearth of information on the extent and state of conservation of green and blue infrastructure

Figure 4.1: The Nature-Based Solutions (NBS) assessment framework
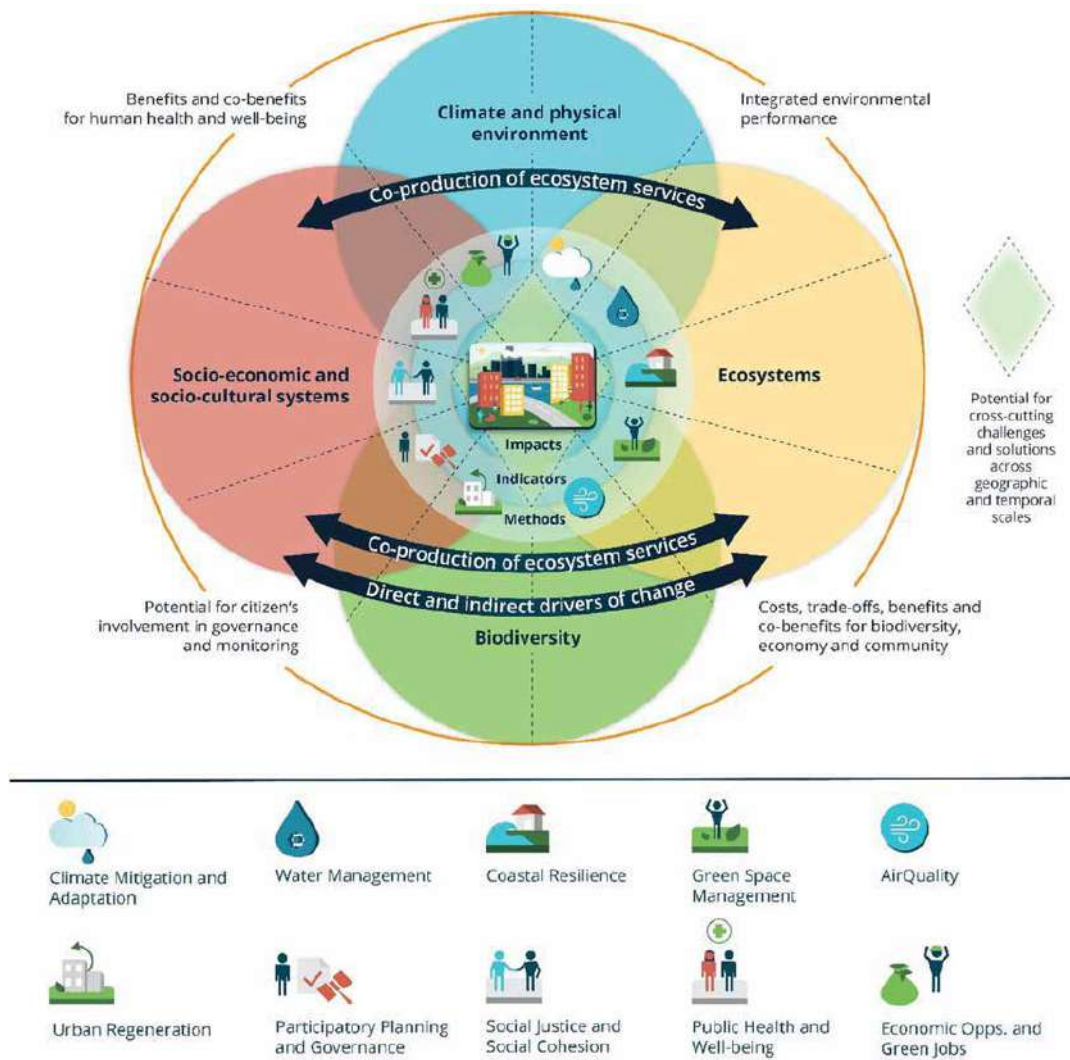
The Nature-Based Solutions (NBS) assessment framework considers different elements of the system, the 10 challenge areas that NBS can address in urban environments and a suite of indicators and methods for assessing NBS impacts within and across challenge areas (Raymond et al. 2017, Kabisch et al. 2016).

> **Box 4.6: From crisis to resilience: urban and peri-urban agriculture in Rosario, Argentina**
>
> The city of Rosario is described by environmental activists as an island of agroecological practices in an ocean of soybeans. Since Argentina approved the cultivation of genetically modified soybeans in 1996, the harvested area has grown from 6 million ha to 20 million ha (Fao, 2015). Most of Argentina's soybeans are grown in Santa Fe Province and are processed in the Rosario municipal area for export. Soybean production has displaced other traditional export crops. Horticulture around the city of Rosario is under increasing pressure as farmers lease their land for soybean production.
>
> After the economic crisis of 2000, 60 per cent of Rosario's population had incomes under the poverty line. In 2002, the municipal government, in collaboration with two partners (the national Pro-Huerta programme and the Centre for Agroecological Production Studies, an NGO) sought to find a solution to the alimentary deficiencies suffered by the most disadvantaged sectors of the population. Initial plans for 20 farming groups across the city soon grew into 800 community gardens meeting the needs of 40,000 people. In 2004, UN-Habitat awarded Rosario the International Award for Best Practices in urban development. Today, an estimated 1,800 farmers work in Rosario's community gardens, of which 250 are full-time commercial producers organized in the Rosario Gardeners' Network.
>
> The programme promotes agroecological practices while also building on peer-to-peer training. Moreover, allotments are most often developed in marginal lands otherwise unsuitable for urban infrastructures. Rosario has fully integrated urban and peri-urban agriculture in their urban development plans and coordinated them with other ecosystem management and nature management strategies.
>
> *Source: FAO (http://www.fao.org/ag/agp/greenercities/en/ggclac/rosario.html).*

The alignment of blue and green infrastructure with productive activities that mobilize local socio-ecological knowledge can build long-term resilience. For example, Rosario, Argentina, is now well-known for an urban and peri-urban agriculture programme addressing the needs of the most marginalized while also developing alternative agroecological models for food production that enhance urban ecosystems (Box 4.6). Delivering an urban and peri-urban agroecological programme requires more than just quantitative data like indicators to identify target groups. The most critical forms of knowledge that make the project possible emerge from the actual experience of agriculture: the mastery of agricultural techniques; the identification of farming and allotment locations (understanding of land tenure procedures, and in this case, leveraging social networks and accessing the local land registry); and, importantly, the identification and application of relevant socio-ecological knowledge for the long-term sustainability of the programme, for example, the establishment of a seed bank. While Rosario gardeners are interested in experimenting with different types of crops, their seed bank emphasizes documenting indigenous knowledge about the natural environment

(in this case, Guaraní traditions about plants and their potential benefits). While a localized experience of urban farming may seem limited, the struggle for food in urban areas is intimately linked to the struggle to claim the right to the city and urban food movements provide the opportunity to both empower vulnerable communities and build urban resilience.[76]

4.3.2 Addressing the structural drivers of vulnerability

Urban development planning needs to recognize the urgency of the adaptation challenge, particularly for those living in informal settlements. The impacts of climate change and the biodiversity crisis interact with the global processes of economic restructuring and social change that impact directly on the lives of urban dwellers. The "double exposure" framework (Figure 4.2) illustrates the close relationship between global processes of economic change and the eventual outcomes for environmental change.[77] For example, in large cities such as Manila, Philippines, globalization is changing models of urbanism so that the most common infrastructure planning response is privatization. The immediate consequence of privatization

is increased inequality and uneven climate resilience, creating a polarized metropolis. People living in informal or precarious housing situations are doubly vulnerable. First, these settlement areas are exposed to hazards (e.g. floodplains, steep slopes prone to landslides), and second, when disaster strikes, these areas lack appropriate emergency services. Institutions struggle to assess and tackle the compounded, interconnected character of cascading risks.[78] Nature-based solutions alone are not sufficient to address structural drivers of vulnerability, which often require deeper processes of socio-ecological change, including measures for social protection, supporting local economies and delivering access to essential services and protective infrastructure.

But the move toward privatization and polarized cities with a gulf between the rich and poor is misguided. Although unplanned development and lack of services in informal settlements can lead to site-specific ecological

Cities can extract useful lessons about sustainable urbanization and environmental value from informal settlements even as they seek to fulfil their obligation to provide basic municipal services

Figure 4.2: The double exposure framework applied to urban infrastructure planning
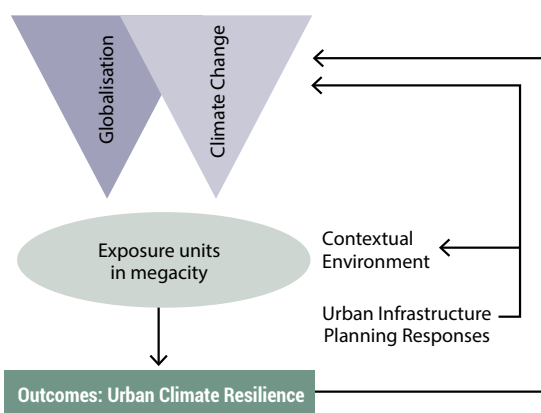
Source: adapted from Meerow, 2017; Leichenko and O'Brien, 2008.

degradation, their self-built design typically results in pedestrian-friendly, low-carbon urban forms with lower carbon footprints than higher-income formal neighbourhoods. Researchers in Rio de Janeiro have mapped 111 urban sustainability initiatives self-generated in the city's favela communities (Box 4.7). Cities can extract useful lessons about sustainable urbanization and environmental value from informal settlements even as they seek to fulfil their obligation to provide basic municipal services.

Box 4.7: Sustainable Favela Network in Rio de Janeiro, Brazil

Favelas are home to countless community initiatives through which residents themselves tackle a wide range of challenges. All these initiatives serve to raise awareness among residents who benefit from them, even while they are made necessary due to missing public investment. Furthermore, many initiatives furthering urban sustainability can be found in the city's favelas—qualities which are difficult to develop through centralized planning and which urban planners around the world are trying with great difficulty to stimulate, too little, too late.

For example, Vale Encantado (Enchanted Valley) installed a biodigester with the help of a local university to generate cooking gas for some of the favela's 25 homes and a local eco-tourism cooperative.

Favelas are responding to diverse life challenges through individual action and local collective projects, making them solution factories. Given their history, favelas are areas of the city that require their own development processes based on their assets, and tackling their challenges with these positive qualities as a starting point, without following the all-too-common unsustainable development model characteristic of formal areas of the city. Favelas represent an opportunity for sustainable development outside of traditional formal principles, based on the innumerable assets of the favelas themselves.

Sources: Catalytic Communities, 2018; Mendes, 2018.

Rocinha's slum Rio de Janeiro, Brazil. © UN-Habitat/José Bernardo Junior

4.3.3 Conditions for harnessing environmental value through urbanization

The NUA recognizes that there are no universal, ready-made solutions to deliver sustainability. Instead, the delivery of the global development agenda in cities and human settlements requires an integrated approach. Sustainability action to unlock environmental value depends on the ability of different actors to tailor options to the context in which they operate. Moreover, the agenda's acknowledgement of the "right to the city" and "cities for all" explicitly considers environmental justice principles as enablers of inclusive action delivery.[79] In this regard, harnessing the environmental value in sustainable urbanization rests on two fundamental considerations.

The first consideration is **to situate every urban challenge in the broader context in which it occurs. This requires a view of urban environments that reflects their complexity and enables the identification of trade-offs and interconnections between multiple impacts.** It recognizes cities as complex systems and engages with the socio-ecological relations that take place in the city. These socio-ecological relations need to be understood historically, particularly with regard to the development of urban institutions. For example, the trends of exclusion in Guatemala City's history is today manifested in a pattern of social-spatial segregation—whereby low-income populations have settled in areas highly vulnerable to seismic and geomorphic hazards with limited access to water, whereas higher-income communities occupy safer locations which they transform into securitized enclaves.[80] Understanding urban history is essential to assess both how environmental change impacts different social groups and the extent to which sustainability action may expose them to unintended impacts.

Understanding context also requires context data. For urban managers, demonstrating that their actions add environmental value depends on data quality and availability. Effective action strategies require data to determine what the environmental value is now and how

Sustainability action to unlock environmental value depends on the ability of different actors to tailor options to the context in which they operate

Understanding urban history is essential to assess both how environmental change impacts different social groups and the extent to which sustainability action may expose them to unintended impacts

it may change. Enormous gaps in urban data exist in cities and urban areas, particularly in rapidly urbanizing regions of Africa and South Asia. Data on informal settlements and rapidly urbanizing urban and peri-urban areas is lacking, especially pertaining to disaster risk reduction.[81] These gaps have led to self-enumeration projects, a practice that informal settlement dwellers have conducted for decades, and, more recently, different forms of mapping urban settlements like the Million Neighborhoods Initiative.[82] The availability of open data platforms may help create resilience by allow citizens to share real-time data on disasters and crowdsourcing in order to map aftermath impacts.[83] However, the development of new data sources has also led to calls for standardization and reliability.[84]

Data needs to be targeted to strategic areas of priority. A study examined 28 international urban databases[85] for insights into the politics of urban data management.[86] It found that these databases lack information about critical areas where action is most urgent. In addition, it identified a network of actors who dominate data management and flows, mostly international agencies (the United Nations and the World Bank) as well as philanthropic organizations. Besides this precarious architecture, there is also an imbalance in global coverage evidenced by the lack of adequate representation of disadvantaged regions.[87]

Even when local governments can collect data effectively, they may find themselves without the capacity to analyse it,[88] and even worse, without the capabilities to share it with citizens and debate its implications. Moreover, holding specific knowledge about their neighbourhood may be the only effective way for deprived and excluded communities to assert any form of control over urban environments and the biophysical processes that affect everyday life.[89]

The NUA supports holistic approaches to urban management that integrate multiple ways of knowing and experiencing

socio-ecological relations. "Knowledge co-production" has become an influential principle in urban planning and management, whether linked to forms of cooperative governance, collaborative planning or participatory decision-making. Knowledge coproduction enables collective decisions about environmental and urban management that recognize multiple forms of expertise, transcend institutional boundaries and avoid legitimating some perspectives over others.[90] This approach to urban policymaking facilitates the inclusion of multiple perspectives but also questions the structural drivers of inequality and facilitates the adoption of an intersectional approach to the production of knowledge and data.[91] Co-production also enables moving beyond the focus on indicators that still dominate both international development agendas and urban management.[92]

Knowledge coproduction enables collective decisions about environmental and urban management that recognize multiple forms of expertise, transcend institutional boundaries and avoid legitimating some perspectives over others

The second consideration is that **any urban management or development proposition must explicitly incorporate justice principles**. This imperative requires taking into account the political and social implications of actions that are intended to unlock the environmental value of urbanization when determining policy actions. With this principle in mind, social equity becomes a condition for making a just transition to sustainability.[93] The "just sustainabilities" framework argues that social and environmental justice within and between nations should be an integral part of the policies and agreements that promote sustainable development (Figure 4.3).[94] According to one recent study of 400 sustainability initiatives in more than 200 urban areas, these principles are already becoming embedded in current environmental action at the local level as cities make efforts to deliver on the NUA and the SDGs.[95]

However, environmental justice discourse must ensure that it does not foreclose the recognition of alternative perspectives from other knowledge traditions, such as indigenous people living in cities. Instead, public participation processes for urban environmental action

Environmental justice discourse must ensure that it does not foreclose the recognition of alternative perspectives from other knowledge traditions, such as indigenous people living in cities

should give a fair hearing to multiple voices, with particular attention to preventing the imposition of more powerful frames of reference, such as those espoused by experts or quantified in indicators over people's lived experiences, knowledge and values. As such, international law frameworks should protect both the cultural and biological integrity of indigenous peoples.[96] The cultural and social plight of indigenous people is partially linked to rural-urban migration and the degradation of ecosystems that are sometimes linked to climate change impacts.

As urban indigenous populations grow, cities have responded through both national initiatives and as a result of grassroots pressure. In Canada, the 2015 final report of the Truth and Reconciliation Commission on the legacy of the Indian Residential Schools system called municipalities to action.[97] In Australia, the Redfern Aboriginal Tent Embassy pressured Sydney authorities to preserve a key parcel for affordable housing.[98] In the US, non-indigenous citizens of Seattle pay voluntary rent
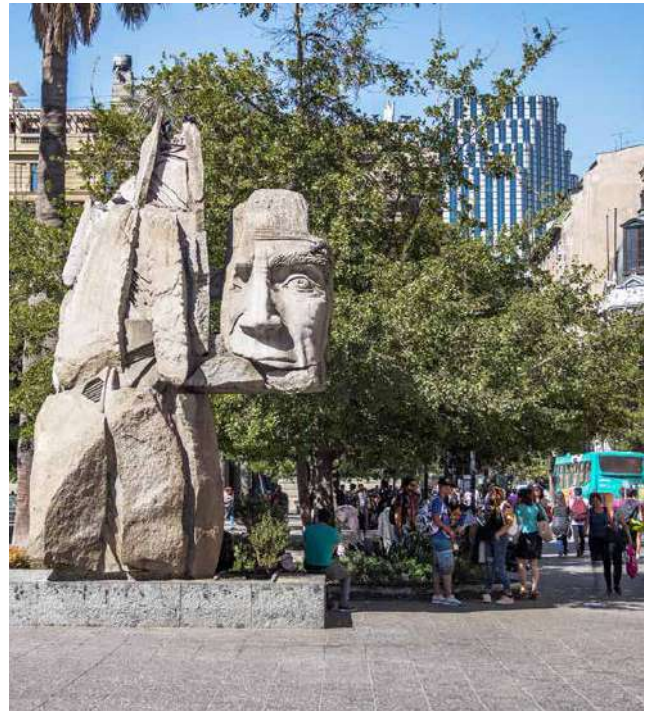
Monument to indigenous people (al Pueblo Indígena) at Plaza de Armas Square, sculpture of Enrique Villalobos, Santiago, Chile. © Diego Grandi/Shutterstock

to the indigenous tribe after whom the city is named and property owners in Portland have begun giving land back to indigenous ownership. In July 2020, the US Supreme Court affirmed indigenous land rights, ruling that much of eastern Oklahoma, including large parts of the city of Tulsa, falls within an Indian reservation.[99] Overall, cities have responded by adding indigenous languages to place names and signage, consulting First Nations on urban infrastructure projects, conducting land acknowledgments before public events and promoting urban indigenous land ownership and property development. As these official and grassroots efforts show, partnerships for a collective, sustainable future require institutional efforts to recognize the environmental and social value of indigenous knowledge.[100]

Building on these two important considerations—recognizing the context and advancing principles of justice—there are six principles that help to promote inclusive action for the creation of environmental value in urban areas and deliver the 2030 Agenda for Sustainable Development in line with the NUA implementation framework (Box 4.8).

Figure 4.3: Principles of just sustainabilities

- Improving people's quality of life and wellbeing
- Meeting the needs of both present and future generations
- Ensuring justice and equity in terms of recognition, process, procedure and outcome
- Recognizing ecosystem limits and the need to live within the possibilities of this planet
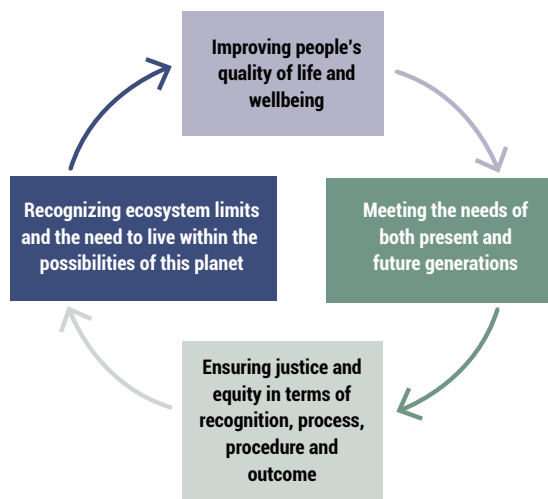
Source: Agyeman, 2013

Box 4.8: Six principles for the creation of urban environmental value

1. Recognize and understand the urban commons.
2. Prioritize the needs of the most disadvantaged, creating inclusive forums where they can be represented in ways that move beyond standard clichés.
3. Enrol a variety of actors through multiple institutional and governance arrangements, such as partnerships and networks, experimenting with new forms of cooperative environmental governance.
4. Adopt an intersectional environmental policy that challenges privilege, recognizes and celebrates social and ecological diversity.
6. Investigate points of intervention that enable rapid transformations of existing institutions.
6. Create opportunities for innovation and experimentation.

The **urban commons** are any cultural or biophysical resource accessible to everyone in the city, especially those resources which contribute to developing human settlements.[101] Indeed, urbanization has transformative power precisely because of its potential to enable the sharing of social, cultural and natural capital.[102] The urban commons are the basis for collective design processes. For example, in 2014, Bologna, Italy, adopted the Bologna Regulation on Civil Collaboration for the Urban Commons, whose primary tool was a collaboration pact whereby citizens, the local government and any other interested organizations would agree on care and regeneration actions to improve shared green areas and public spaces (Figure 4.4). Since adopting the regulation, the City of Bologna has signed more than 400 regeneration pacts, all contributing direct environmental value to the city.[103]

Figure 4.4: Design principles of the Co-City Cycle employed in Bologna, Italy
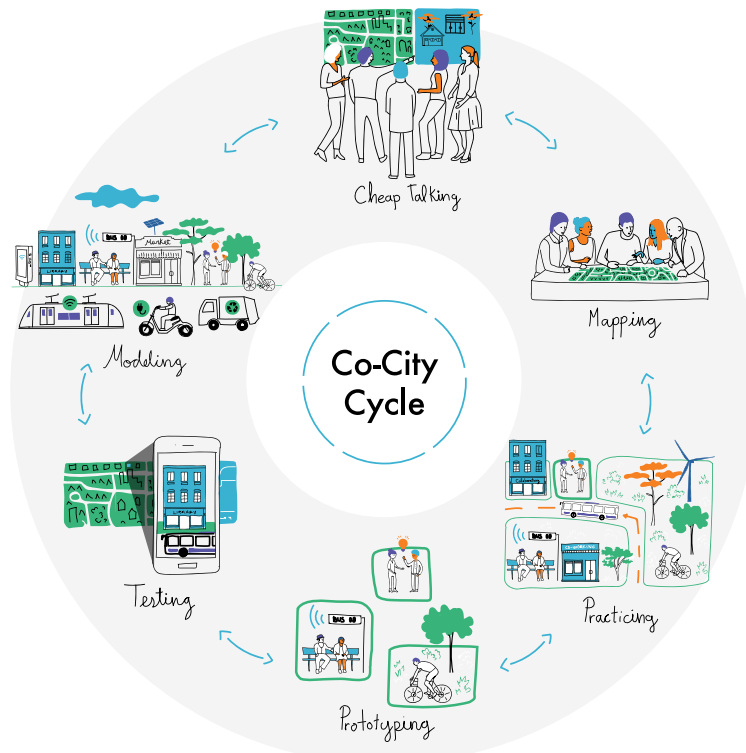
Source: LabGov.City, 2018.

The experiences and needs of the most disadvantaged need to be considered first because otherwise, they may be cast aside by the concerns of the hegemonic groups whose sway in political decision-making leads to environmental inequalities.[104] Moreover, prioritizing the most disadvantaged can generate better urban environmental outcomes; environmental performance is tied to practices within the informal economy in key sectors like public transport,[105] waste management[106] and sanitation.[107] There is increasing evidence that incorporating informal economies—a lifeblood of many cities (Chapter 3)—in sustainability research and policy will have a beneficial effect to add environmental value.[108]

Prioritizing the most disadvantaged can generate better urban environmental outcomes; environmental performance is tied to practices within the informal economy in key sectors like public transport, waste management and sanitation

Recognizing social groups within the informal economy is a crucial strategy to deliver environmental value in a manner that puts the needs of the most vulnerable first, for example, through strategies that benefit them directly such as reforming regulatory frameworks, simplifying environmental regulations, encouraging more collaborative governance arrangements and supporting more inclusive urban planning approaches that improve efficiency in environmental management so as to "transition to an economy that is not only greener, but also more inclusive."[109] These measures are all closely linked to democratization processes and the creation of spaces for participation that tend to be eroded in times of crisis (Box 4.9). They also require an intersectional approach to understanding the needs and concerns of different groups of the population through a diagnosis of the structural causes of discrimination and exclusion, rather than a superficial analysis of identity-based characteristics.[110] In other words, authentic inclusiveness must be central to urban and territorial planning processes.

Box 4.9: In times of crisis, grassroots networks are informal workers' bulwark

Women in Informal Employment: Globalizing and Organizing (WIEGO) reports that the rights of informal workers across the world are under threat following a reversal of gains won over the decades. Still, street vendors have found a way forward by activating/ mobilizing networks of support (movement building) to navigate these challenging contexts. In Bangkok, Thailand, local authorities in worked with street vendors to create a clean, vibrant, shared commercial space. In the aftermath of the 2014 political crisis, massive evictions of street vendors ensued, endangering livelihoods. Consequently, the street vendors organized the citywide Network of Thai Vendors for Sustainable Development. The network created a space to establish their demands for public space management. Through marches, a social media campaign and civil disobedience, the Network has demonstrated the type of participatory practices that add value to Bangkok's public spaces.

Belo Horizonte established spaces for the institutional participation of waste pickers, that benefited the city's waste management systems. An ideological change in politics has led to budget cuts to the institutions responsible for inclusive recycling policy. Waste pickers have mobilized local and national organizations to deliver strategies of resistance. In 2017, they were able to block an incineration bill in a multi-stakeholder public hearing. More recently, they have lobbied state alliances to continue dialogues around the crucial issues that affect them.

In Lima, a pro-poor municipal ordinance supported street vendors directly, after a process of dialogue in a mesa of collaboration between policymakers and street vendors in 2014. However, the implementation of the ordinance has been weak, and instead, street vendors have continued to face evictions from most markets. In response, Lima's street vendors have convened a forum of experts with the hope that municipal officials will consider their innovative proposals.

Source: Harvey and Ogando, 2019; UN-Habitat, 2018b.

A wide variety of actors can be enrolled through multiple institutional and governance arrangements, such as partnerships and networks that experiment with new forms of cooperative environmental governance. The need to engage numerous actors operating at different scales is a recognized requirement of global environmental governance.[111] What is perhaps less understood is the extent to which partnerships at the local level can implement action to make a global difference.[112] While the notion of a global partnership is enshrined in SDG17, greater emphasis must be put on aligning the actions of international actors and coordinating the delivery of national agendas than on delivering the kind of incremental action at the local level that only enable changes to the quality of life of a city's inhabitants.[113] Often, a focus on alignment and leadership by municipal officials and other environmental policy champions may obscure the complexity of interactions that support action to increase the environmental value of urban areas. Scholars studying governance processes often describe successful policy action as emerging from "muddling through" a process that relies on temporal forms of consensus and experimental approaches to feasible actions.[114] The question is the extent to which deliberative governance processes enable a deep reflection

The need to engage numerous actors operating at different scales is a recognized requirement of global environmental governance

of the power dynamics that shape the process and whether they are explicitly acknowledged in the interactions between multiple actors.[115]

There is a need for developing **intersectional environmental policies** that question privilege as the root of current environmental problems and celebrate social diversity. Such a policy lens aligns with the NUA's commitment to deliver gender- and age-responsive planning and investment, though intersectional approaches typically go further to account for race and ethnicity. With its roots in anti-racism and feminist movements, environmental justice, as a social movement, is deeply concerned with the intersecting mechanisms of exclusion and oppression that people experience in their daily lives. An understanding of how social structures shape processes of environmental degradation has helped to consolidate environmental justice as a movement that transforms urban policy while transcending local spaces of action.[116]

Local environmental action needs to focus on **particular intervention points that can activate rapid institutional transformations**. While the interconnectedness of the urban cultural and biophysical fabric most often calls for holistic visions that integrate a multidimensional view of the urban context, action may also require an analytical perspective that enables identifying where to intervene to have the maximum impact with the resources available. For example, the court system is the new arena where urban

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Box 4.10: Why European parents are suing their cities over poor air quality

Seven years ago, Lies Craeynest won a €10,000 neighborhood improvement grant from the local council in her Brussels district. She planned to spruce up the busy arterial street where she lives by working with her neighbors to grow climbing plants along the houses. But the council government had a warning about her choice of plants: If you live on an arterial street, weak varietals will die from toxic air.

For Craeynest, a mother of two, the warning was a gut punch. Craeynest is among the plaintiffs in a lawsuit against the Brussels government for failing to meet European Union air quality standards. The lawsuit is one of 80 cases that environmental law non-profit ClientEarth has waged against European city governments and arguably the most significant, with the European Court of Justice ruling in the citizen activists' favour in June 2019.

Source: Scruggs, 2020.

Woman on e-bike in smog blanketed city. Beijing, China. © TonyV3112/Shutterstock

environmental battles are fought. London held an inquest into the air pollution that caused the asthma-related death of 9-year-old Ella Kissi-Debrah in 2013.[117] European NGO ClientEarth has sued 80 municipal governments over air quality in violation of EU standards (Box 4.10). However, the NUA does not explicitly acknowledge the role of the courts in shaping environmental policy.

Finally, the creation of urban environmental value requires **understanding the complex processes and multiple locations of innovation**. As discussed in Chapter 6, innovation in the broad sense lies both in scientific and technological developments but also in the creative actions of governments and citizens that strive to use new institutional arrangements to address urban challenges. These processes are diverse, and there is now a plethora of strategies to foster innovation in urban environments from state-led technological incubators to entrepreneurial start-ups, or collaborative urban labs (Chapter 6).[118] Spaces of innovation, however, are constituted through the interactions of entrepreneurial or experimenting actors, processes of urban governance and the dynamics whereby innovations are embedded in the urban fabric and adapted to social practices. The analysis of energy transition in cities such as Rizhao or Shenzhen (China), for instance, suggests that a factor of success was the strong partnerships local governments and industries that fostered innovation.[119]

4.4. Unintended Impacts of Urban Sustainability Policies

Ongoing planning and policymaking practices are associated with an urban action gap and the challenges of dealing with green gentrification and the securitization of urban natures. Are cities and urban areas expected to fill in the gap between action pledges and the action needed at the global level? While urban areas are leading the localization of the global agendas, they should not be expected to meet the "action gap" because the global commitment to social change is something that pertains to a broader cultural and political change, part of which goes beyond the sphere of action of local governments, civil society and local businesses. The potential for innovation in urban areas is recognized but should not distract analysis from actual imperatives for national or global action. While empirical research documents specific

The potential for innovation in urban areas is recognized but should not distract analysis from actual imperatives for national or global action

case studies in detail, it does not provide a generalizable explanation of the visible gap between rhetoric and action in urban environmental policy.[120] Systematizing the impact of local action through the calculation of aggregated global outcomes may not ever be possible.

For example, the Paris Agreement formalized the principles of voluntary commitments to climate action.[121] Under the agreement, nation-state parties present their commitments in the form of Nationally Determined Contributions (NDCs).[122] Since the adoption of the Paris Agreement, there have been calls for subnational actors to bridge the gap in emissions.[123] Action outside the UNFCCC regime has been led by a host of actors, including civil society, subnational governments and businesses who argue that they could achieve additional reductions of greenhouse gas emissions. Initiatives like the Non-State Actor Zone for Climate Action (NAZCA) record those initiatives at a global level and mark their extent and significance.[124] These actions are varied. They cannot be reduced to measures of emissions reductions because they have multiple co-benefits. They cannot be aggregated because they involve context-specific action. Moreover, the difficulties of integrating local sustainability objectives in international policy should not distract us from the multiple ways in which local action delivers environmental value.

Global aspirations to bridge the sustainability action gap pose additional demands on local governments and other local institutions, but often, without additional resources or capacities to enable local governments and other urban actors who are already under-resourced and ill-equipped to respond to these challenges. The SDGs provide a target-based framework to evaluate sustainable development: an instrument that guides action towards collective agreements. Also, the NUA goes beyond the aspirations of the 2030 Agenda for Sustainable Development by providing an integrated vision that situates those objectives in context, beyond an approach that reduces human and ecological wellbeing to indicators. As debates

Figure 4.5: How green gentrification affects poor urban communities in the context of building resilience

Green infrastructure interventions for resilience

Resilient living shorelines and berm landscapes
Resilient greenways and parks
Raingardens, trees, and permiable pavements
Resilient green roofs/walls and landscaping as part of resilient buildings

Green Climate Gentrification

Today
Greater exposure of their homes and properties to climate-risk due to privately-led green resilience projects.

Socio-cultural exclusion from the uses and benefits of green resilience

In the future
Displacement due to real estate speculation and to increased housing costs to more affordable areas but more exposed to climate risks

Greater difficulty to adapt due to loss of social networks

Source: Anguelovski et al. 2019.

on environmental justice have made clear, target outcomes alone should not guide the intent of sustainability action. How environmental value is delivered matters as much as achieving that result.

For example, recent scholarship has grown increasingly concerned with the production of new forms of inequality associated with green action and sustainability policies. Is green action in urban areas a new driver of inequality? Critical case studies show shortcomings in the association of environmental policy and social injustices. For example, urban areas are finding a new challenge in green and climate gentrification processes whereby people are excluded not only from housing and public space but also from safe and protected environments. Urban ecological security emerged as a new paradigm of urban management in the first decade of this millennium, whereby urban elites focus on ensuring the continuity of the city within available resources.[125] The concern is that attempts at securing privileged enclaves leads to the fragmentation of urban space, with the effects of that fragmentation felt most acutely by the most disadvantaged.

This practice has evolved into a dynamic of extra-urban and intra-urban forms of differentiation in which access to environmental resources and exposure to environmental risks constitute a new measure of urban inequality. More recently, there has been a wave of studies, mainly focused on North American cities, that have examined a trend towards "green gentrification" and its link to resilience and climate change adaptation policies.[126] Green gentrification means that as environmental and conservation projects add value to the urban environment, marginalized groups are pushed out by the changing conditions for habitation, for example, because of an increase in housing prices and rents. The impacts of green gentrification impact over time (Figure 4.5). There is a fear that this dynamic will translate into the constitution of exclusive safe enclaves protected from climate change impacts, which could constitute, in effect, a form of climate apartheid.[127] While these practices will undoubtedly exacerbate the income differences between different groups, they will have devastating consequences for people who are particularly vulnerable to climate impacts.

4.5. Concluding Remarks and Lessons for Policy

The 2030 Agenda for Sustainable Development and the New Urban Agenda provide the opportunity to deliver a truly innovative programme for urban action that harnesses the transformative power of urbanization for the delivery of environmental value at all scales. Urban environmental planning and management provide multiple opportunities to deliver sustainability

improvements in specific neighbourhoods, build resilience at a citywide scale and address global environmental challenges head-on. The 2030 Agenda provides targets to orient environmental action. The NUA provides guidelines to integrate development objectives into a holistic vision of a liveable, sustainable city.

There is an ample range of initiatives to deliver environmental value in urban environments. However, outcomes are highly dependent on the form of execution. The possibilities of environmental benefits of urbanization depend on how cities are planned and managed. Ensuring due process and recognition of multiple points of view are conditions for delivering sustainable development for all, requirements already enshrined in the NUA. For example, increasing understanding of the potential of nature-based solutions and green and blue infrastructure to deliver environmental benefits alongside more conventional transport and waste management interventions needs to be balanced with the realization of how green gentrification is driving further processes of urban exclusion.

Urban managers need to integrate sustainability policy with planning and social policy. One way to do so is through observing the six principles for adding environmental value through urban planning and management interventions proposed in this report.

The recognition of the **urban commons** as socio-ecological assets, shared across the city, starts in the conceptualization of urban policy and plans. Collectively developed inventories of shared assets help to recognize, and hence, protect those commons. Local governments play a role in mediating the generation of a collective pool of knowledge that can be mobilized for the protection of the commons.

Prioritizing **the needs of the most disadvantaged** means creating opportunities within local planning processes to represent their views, something already reflected in the 2030 Agenda.

Urban managers can develop mechanisms to ensure a **wide diversity of actors** is represented in decision-making processes. Those mechanisms need to move from mere consultations or token participation. Municipalities are

key enablers of action, providing assets and finances for civil society organizations and businesses. They can also enter formal partnerships to deliver on a given objective.

Adding environmental value depends on the ability of urban actors, especially local governments, to recognize the **social and ecological diversity** that drives cities. This diversity is critical to promote and deliver innovation at multiple levels. Decision makers can provide specific forums for shared learning where diversity is celebrated, but also where diversity is mobilized to deliver neighbourhood-relevant innovations, which can be scaled up to achieve global impact.

Activating the transformative power of urbanization depends on the collective capacity to activate **points of intervention** that enable rapid transformations. Identifying those points of intervention depends on the shared understanding of the history and experiences of the urban environment. Decision makers have to work with leading changemakers and communities to find out what kind of radical changes can be fostered to add environmental value.

Technology and open data have opened new opportunities to enable collaborative networks within and across cities. This potential should not be overlooked, but they should not distract from well-established processes of collaborative planning and their potential to deliver environmental action.

The coordination of action across multiple levels of government and the formulation of national urban policy is central to ensure the delivery of the SDGs. Supported local governments will be able to develop transformative capacities to ensure sustainable urban futures for all. However, the absence of such coordination mechanisms should not detract from the growing urban movement seeking to deliver sustainability via local governments working in partnership with communities, citizens, businesses and NGOs. Adding environmental value through planned urbanization requires a commitment to long-term policies and practice directed towards building inclusive processes of decision-making that recognize and engage with urban complexity.

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Chapter 5

The Social Value of Sustainable Urbanization: *Leaving No One and No Place Behind*

The opportunities offered by cities lend a social value to urbanization. When cities are well-planned and managed, they can lift families out of poverty, liberate women from gender-based discrimination, point to bright futures for children and youth, offer comforts and supports to older persons in their golden years and welcome migrants looking for a better life. This wide-ranging value of urbanization is one of its most potent features. Cities are the crucible in which social outcomes will be improved for all types of marginalized and vulnerable groups.

But the social value of urbanization will only be realized alongside the intangible value of urbanization. This broad category encompasses the institutions—rule of law, property rights and democratic participatory systems, among others—that allow cities to function effectively. Embedded in this intangible value is the cultural element of cities, from the diverse backgrounds of their residents to the cultural heritage assets at their disposal.

Quick Facts

1. The right to the city, which underpins the social value of urbanization, means that all people, especially vulnerable groups should have equal opportunities and access to urban resources, services and goods.
2. The value of urbanization is socially inclusive when it enhances gender equality, protects the rights of minority and vulnerable groups and ensures social inclusion.
3. Many cities around the world are designing and retrofitting their cities to meet the needs and priorities of children.
4. The COVID-19 pandemic is eroding the social value of urbanization by exacerbating inequality, further marginalizing vulnerable groups and pulling more people into poverty worldwide.
5. Cultural diversity contributes to the vibrancy, prosperity, inclusiveness, competitiveness, and positive perception of cities.

Policy points

1. When adequately harnessed, the social value of sustainable urbanization offers pathways to enhancing social inclusion, reducing inequality and ending poverty; thereby, leaving no one and no place behind.
2. If integrated through inclusive policies, migrants will not only ease skill shortages, but will contribute to the social, economic cultural enrichment of their host communities.
3. A system that leaves one no and no place behind and creates equal opportunities for all recognizes that economic growth alone will not reduce inequality and poverty.
4. Sustainable and inclusive cities are the outcome of good governance that encompasses effective leadership; integrated urban and territorial planning; jurisdictional and multilevel coordination; inclusive citizen participation; and adequate financing.
5. To adequately harness the social value of urbanization, authorities must address the threats to more egalitarian cities.

Cities are unique in their ability to improve social outcomes and create ladders of opportunity. Sustainable urbanization can enhance the social value of cities by ending poverty, promoting equity and improving quality of life for all. Urban areas are where aspirations are realized, from pursuing economic ambitions to embracing social identities. However, as has been consistently emphasized throughout this Report, the value of sustainable urbanization will not be realized without strategic interventions. Unlocking the social value of urbanization requires a transformative change towards people-centred policies and programmes, rooted in the ideals of sustainable urban development.

Sustainable urbanization can enhance the social value of cities by ending poverty, promoting equity and improving quality of life for all

To that end, realizing the social value of sustainable urbanization also depends on various tangible and intangible features of cities such as urban growth and cultural norms. Approximately 200,000 new city dwellers are added to the world's population daily, which translates into 5 million new urban dwellers per month in the developing world and 500,000 in developed countries.[1]

These regions have varying abilities to cope with this demographic influx. Urban growth rates are much faster in developing regions as demonstrated by the growth rate in Africa, which is ten times higher than Europe.[2] Recent reduction in fertility rates in most of the developing world means that the working-age population (25 to 64 years) is growing faster than other age groups, providing an opportunity for accelerated economic growth and social wellbeing, which is known as the "demographic dividend."[3] These trends translate into differing abilities of city governments to achieve the social value of urbanization and improve residential quality of life in meaningful and tangible ways.

This chapter addresses the social and intangible dimensions of sustainable urbanization. It discusses how sustainable urbanization can contribute to the social value of cities by reducing inequality and poverty; enhancing social inclusion with a focus on gender, older persons, children and youth; and fostering effective systems of governance and institutions. The chapter further explores distinct policy responses and case studies to show how the social and intangible values of sustainable urbanization are enhanced and strengthened at the national and local levels. If pursued, these approaches can ensure that no one and no place is left behind in the process of urbanization.

5.1. Understanding the Social and Intangible Value of Sustainable Urbanization

The social value of urbanization is a recurring theme in the global development agenda as one of the intrinsic dimensions of sustainable development. It is foundational within the first transformative commitment of the NUA: "sustainable urban development for social inclusion and ending poverty."[4] This commitment acknowledges the importance of people-centred urban development and respect for the basic human rights of migrants, displaced persons and refugees. It also promotes equitable access to physical and social infrastructure for all.[5] The NUA mentions social integration and inclusion, emphasizing the importance of sustainably managing the urban environment and developing programmes to achieve an improved quality of life for all. The social value of urbanization is built on the pillars of spatially-just resource distribution, political agency, and social, economic and cultural diversity.[6]

The intangible value of sustainable urbanization refers to effective institutions (both formal and informal), good governance, respect for human rights and celebrating cultural diversity. The synergy between formal institutions, the national constitution, laws, regulations and social norms provide the superstructure for the value of urbanization to be fully realized and improve quality of life. The informal features may not be written into law, but instead include sociological phenomena like customs, traditions, a sense of belonging and identity, civic pride, shared urban values and participation in political and social life. Women's empowerment and other forms of gender development are interconnected to the formal institutions and are either amplified or limited depending on a wide range of contextual factors. These attitudes and practices are fundamental to the notion of belonging, which ensures that the city will be able to serve all residents and offer equal access to public services, funds and democratic rights, including the right to hold office or be represented in government.

Enhancing the social and intangible value of urbanization is key to addressing the ongoing coronavirus pandemic, both to reduce its spread and provide an equitable social safety net for all residents. This urgent need relies almost entirely on the capacity of governments to provide resources that support physical and mental wellness. In this regard, city governments and their development partners need to actively facilitate a transition to equitable, inclusive sustainable urban development.

The processes of urbanization can be leveraged for the purpose of addressing global challenges like inequality, climate change, poverty, affordable housing, productive employment, and access to adequate infrastructure and basic services, among others.[7] Urbanization is an efficient way to enhance social value when cities and urban extensions are properly planned and governed through democratic and participatory processes. It is 30–50 per cent cheaper to provide services and infrastructure in cities on account of the large economies of scale; consequently, urban areas provide these services more efficiently in poor neighbourhoods which, in the long run, can contribute to reducing inequality and exclusion. Inequality can also be addressed through redistributive policies that give priority to low-income and vulnerable groups in the provision of urban services through area-based solutions.

Enhancing the social and intangible value of urbanization is key to addressing the ongoing coronavirus pandemic, both to reduce its spread and provide an equitable social safety net for all residents

Beirut, Lebanon. © Eduardo Moreno

5.2. Pursuing Inclusion through Sustainable Urbanization

There is a growing consensus that inclusion needs to be explicitly integrated into urban development policies and programmes and that this focus must address the unique needs of individuals and groups (Chapter 2). The value of urbanization is socially inclusive when it enhances gender equality, protects the rights of minority and vulnerable groups and ensures civic participation. Both the SDGs and the NUA explicitly acknowledge the importance of ensuring the distribution of opportunity in the urban development processes so that everyone can benefit from the benefits associated with urbanization.

The value of urbanization is socially inclusive when it enhances gender equality, protects the rights of minority and vulnerable groups and ensures civic participation

5.2.1. Ensuring the right to the city

The World Charter on the Right to the City recognizes that cities are at the core of wealth creation; social, political and cultural diversity; and environmental preservation efforts. However, access to these opportunities is not equal for all inhabitants. The "right to the city" means that all people, particularly vulnerable and marginalized groups, should have equal opportunities and access to urban resources, services and goods. Effective citizen participation in local policies creates the responsibility for governments to ensure just distribution of resources and acknowledge socio-cultural diversity as a source of social enhancement.[8]

Every city needs to fully address human rights in four main areas.[9] First, urban laws should lay out the entitlements due to urban dwellers. These include adequate housing, health care, safe and affordable water and sanitation, security, recreation and public space for all. Second, cities should establish the values that ought to guide the treatment accorded to individuals in urban areas, emphasizing respect for human dignity, freedom, equality, non-discrimination, inclusivity and the realization of the potential of all human beings. Third, authorities should empower city dwellers to participate in urban planning, management and governance decisions, as well as to hold their leaders accountable. Fourth, they should guide the process of resolving competing interests for urban goods and services.

For these objectives to be fulfilled, the NUA states that Member States should "aim to achieve cities and human settlements where all persons are able to enjoy equal rights and opportunities, as well as their fundamental freedoms."[10] The NUA acknowledges the right to an adequate standard of living for all, particularly for the poor and vulnerable groups. It also emphasizes participatory and inclusive decision-making across all levels of government and between stakeholders; promotes effectiveness, transparency and accountability in decision-making; encourages inclusion and respect for the rights of women, refugees, internally displaced persons and migrants; and calls for an end to the criminalization of homelessness.

These commitments rely heavily on targeted policies, legal frameworks and enforcement mechanisms. Therefore, the role of the law and institutions is to identify not only rights but also duties and the corresponding duty bearers. Laws needs to be understandable, enforceable and effective, and as such:[11]

- offer a reasonable trade-off between the costs and benefits of compliance;

- reflect the current urban context;

- be the product of consultative, inclusive processes;

- be economically and politically inclusive while creating the basic preconditions for economic growth;

- protect the interests of the public (with a focus on the poor) when confronted by stronger commercial and political interests;

- promote stable and sustainable urban governance;

The NUA acknowledges the right to an adequate standard of living for all, particularly for the poor and vulnerable groups

- build strong social contracts between state and non-state actors; and

- be designed in such a way that even a relatively fragile state or city can effectively implement them.

There are practical examples of the right to the city that have incorporated a strong social inclusion and participatory agenda in different parts of the world. Dublin, Ireland has granted non-Irish, non-EU residents the right to vote in local elections irrespective of their legal status.[12] This form of political inclusion includes voter education and awareness campaigns, and marks a departure from the long-established link between civic rights and nationality.[13] Following protracted activism, the Government of India passed a law in 2014 to protect the livelihoods of street vendors and establish a participatory mechanism to regulate street vending.[14] In Colombia, the government has taken the necessary steps to guarantee access to basic services— water supply, sanitation, electricity, waste collection, telecommunications and gas—for all residents including slum dwellers.[15] The lack of basic services is a key feature of informal settlements and is conventionally motivated by lack of secure formal tenure; the basic services guarantee effectively breaks this link and integrates slum dwellers into the mainstream space of shared basic services with or without land title.

The diversity of residents in cities presents a challenge to urban governments in their attempts to meet the needs of their underserved and vulnerable populations. By focusing their resources on cross-cutting and intersectional issues, they can begin to address significant concerns. While the needs and desires for social value are unique across the different groups within a city (Chapter 2), city governments can realize the social value of urbanization by creating cities that are gender equitable, designed for children and youth, accessible to elderly residents, welcoming to migrants and protective of the rights of minority and vulnerable groups.

Women-Only Subway Cars in Delhi India. © Joyfull/Shutterstock

5.2.2. Promoting gender inclusive urban policies and programmes

Women make up over half of the global population yet suffer systematic gender discrimination in cities. According to Oxfam, women at the bottom of the economic ladder provide 12.5 billion hours of unpaid care work every day, which is three times more than men do. Worldwide, men own 50 per cent more wealth than women.[16] Gender sensitive urban policies can benefit women in diverse ways: offering increased legal protection; narrowing gender gaps in education at all levels; improving access to services and infrastructure; creating greater employment opportunities; and removing gendered socio-cultural restrictions compared to the experience of women in rural areas.

Anecdotal evidence suggests that female leadership has been more effective in addressing the pandemic's interlocking public health and economic impacts

To address gender-based economic inequality, governments must ensure that the economy eliminates the barriers that women face by investing in national care systems and introducing progressive taxation that favours careers over wealth.[17] This critical issue in addressing gender inequity has been highlighted by the COVID-19 pandemic, with women on the forefront of educating children and caring for the elderly within and across families, while also at an increased risk for domestic violence worldwide.[18] Indeed, anecdotal evidence suggests that female leadership has been more effective in addressing the pandemic's interlocking public health and economic impacts.[19] Some explanations for this effect include female leaders' propensity to adopt proactive and coordinated policy responses, their more unassuming and less pretentious nature, their acceptance of diverse viewpoints, less constraint by traditional trappings of leadership, more acceptance of the science underlying the pandemic and their more hands-on leadership styles.[20]

Gender-sensitive governance involves both the substantive representation of women in decision-making at all levels of government and an enhanced understanding of gender-specific needs within governance structures because women are severely underrepresented in local political

leadership. In a study of 127 cities, only 40 to 50 had women in their political leadership, occupying 13 per cent of the positions.[21] The Beijing Declaration and Platform for Action recommends that women should occupy not less than 30 per cent of political positions at each level of government. In the European Union, 52 per cent of the population are women, but only 15 per cent of the mayors are women.[22] However, Rwanda has taken inclusion of women in the political space a notch higher, as women account for 61 per cent of the national legislature—far more than any country in the world.[23]

Gender-sensitive governance can be achieved by reducing gaps in policy and service provision that disproportionately affect women and recognizing their unique contribution in the formation of urban policies and programmes. This recognition involves the meaningful interaction of government representatives with grassroots women's movements and civil society groups that actively advocate for women's issues and gender equality. Strategies to give women a greater voice and agency include:[24]

- collective action through unions, social justice movements and the use of technology and social media to enable women access to social, economic and political resources;

- gender quotas at local, regional and national levels;

- well-resourced and strategically located governmental bodies, such as parliamentary caucuses or bureaucratic offices, dedicated to the advancement of women's interests;

- political literacy training for women;

- increased financial resources and support for women running for public offices; and

Gender-sensitive governance can be achieved by reducing gaps in policy and service provision that disproportionately affect women and recognizing their unique contribution in the formation of urban policies and programmes

▪ improved social support such as childcare and parental leave benefits.

Given that men and women experience cities and public spaces differently due to their gendered social rules, norms and culture, urban planning must consider their unique needs. Under-representation or exclusion of women in urban decision-making processes across all levels of government has profound implications for women in cities in terms of mobility, safety and access to educational and employment opportunities. In response to this exclusion, women create their own alternatives to male-dominated systems. For example, gender-exclusive transportation services with women drivers or all-women passengers offer rides to women who are willing to pay for a safer service. Such services exist in El Salvador (Linea Rosa), New York City (SheTaxi, She Rides), Cairo (PinkTaxi) and Kerala (SheTaxi), among other cities.[25]

Given that men and women experience cities and public spaces differently due to their gendered social rules, norms and culture, urban planning must consider their unique needs

On a larger scale, various governments are partnering with United Nations Women Friendly Cities programme to develop urban areas where everybody, especially women, can equally enjoy the economic, social and political opportunities offered by the city. In these cities, women have access to health, education and social services; employment opportunities; high quality and comprehensive urban services (such as transportation, accommodation and security); and mechanisms that will guarantee their rights in the event they are subjected to violence.[26] Participating cities develop local equality action plans with a participatory approach and they serve as roadmaps in the areas of education, health, employment, participation in management mechanisms, violence against women and urban services. They are guided by the United Nations Convention on the Elimination of All Forms of Discrimination Against Women and other national plans and international conventions.[27]

Box 5.1: Gender mainstreaming in Vienna

Vienna is an exemplar of gender mainstreaming in urban planning. The city has one of the longest legacies of gender-sensitive planning. It opened the municipal Women's Office in 1992 and began gender mainstreaming—the practice of ensuring women and men are accounted for equally in policy, legislation and resource allocation—in 2000.

Gender is integrated into the city's strategies and all public space designed and built by the city is done so with gender in mind. The outcome is an urban landscape that benefits everyone: parks are lit effectively to provide safety and access; social housing is architecturally designed with flexibility for different family situations; pavements are wider for parents and the elderly; street crossings are longer; and pedestrians are prioritized.

Today gender mainstreaming principles are enshrined in policy, with sanctions for those who do not comply. Gender-sensitive budgeting, which was introduced in 2005, requires each department to report twice a year on how their expenditure has benefited men and women equally. New housing projects must meet gender sensitivity criteria to be subsidized. It is now fairly common practice in Vienna to approach city living through a gender lens. In 2008, UN-Habitat recognized Vienna's urban planning strategy as a best practice.

Other cities are now looking to follow in Vienna's example, with Berlin, Barcelona and Copenhagen all incorporating gender mainstreaming into their urban design efforts. As a trendsetter, the City of Vienna is keen to share its experience with other cities across the world and has published two guides, "Gender Mainstreaming Made Easy" and "Gender Mainstreaming in Urban Planning and Development." They provide practical tools and tips, including gender-sensitive language, data collection and advice on how to avoid gender-mainstreaming becoming a catch-all buzzword. The latter guide focuses explicitly on how to achieve gender mainstreaming in an era of austerity and limited resources. Vienna officials believe that gender-sensitive planning is more efficient because it can better target resources for those in need.

Source: URBACT Knowledge Hub, 2019; Hunt, 2019.

Several local governments in Europe have implemented a feminist approach to urban planning. In the Spanish cities of Girona, Gavà and Donosti, a gender perspective informs public spaces and housing projects, which has resulted in better lighting in common spaces and improved spaces for pedestrians.[28] Gender equality in cities is also driven by grassroots organizations, as some cities are being transformed into spaces of inclusion due to the efforts of community organizations and committed citizens. Vienna is a beacon of best practices in gender-sensitive urban planning (Box 5.1).

5.2.3. Children and youth

Children and youth account for about 40 per cent of the world's population.[29] Of the 4.2 billion people currently living in urban areas, about one-third of them are children under the age of 18; by 2050, it is estimated that 70 per cent of the world's children will live in urban areas.[30] Many of these children, especially in the developed world, enjoy the advantages of urban life, including access to educational, medical and recreational facilities. Conversely, many in developing regions are denied such essentials; forced into dangerous, exploitative work; and

Urban planning often overlooks the specific needs of children because of outmoded thinking that children are not capable of contributing to urban development

face the constant threat of eviction, even in substandard housing. Children account for between 22–55 per cent of the nearly 2.5 million people who are trafficked annually. Around the world, an estimated 215 million boys and girls aged 5–17 were engaged in child labour and 115 million of them in hazardous work.[31]

Urban planning often overlooks the specific needs of children because of outmoded thinking that children are not capable of contributing to urban development.[32] The neglect of the needs of children is clearly demonstrated in the COVID-19 pandemic, which has resulted in school closure and significant restrictions on their outdoor activities and socialization even as adult activities like bars and restaurants have been allowed to reopen. UNICEF

Children's playground, Helsingborg, Sweden. © Art of line/Shutterstock

shows that the mental health and psychosocial impact of restricted movement, school closures and subsequent isolation are likely to intensify already high levels of stress, especially for vulnerable youth.[33]

Given that the built environment offers opportunities where cities can commit to the respect of children's rights, urban planning can be deployed to create thriving and equitable cities where children live and play in healthy, safe,

By adopting ten children's rights and urban planning principles, cities will not only support children's development but also thrive as homes for future generations. All cities should commit to:

Principle 1: Investments – Respect children's rights and invest in child-responsive urban planning that ensures a safe and clean environment for children and involves children's participation in area-based interventions; stakeholder engagement and evidence-based decision-making; and securing children's health, safety, citizenship, environmental sustainability and prosperity, from early childhood to adolescence.

Principle 2: Housing and Land Tenure – Provide affordable and adequate housing and secure land tenure for children and the community, where they feel safe and secure to live, sleep, play and learn.

Principle 3: Public Amenities – Provide infrastructure for health, educational and social services for children and the community, where they have access to the tools necessary to thrive and develop life skills.

Principle 4: Public Spaces – Provide safe and inclusive public and green spaces for children and the community, where they can meet and engage in outdoor activities.

Principle 5: Transportation Systems – Develop active transportation and public transit systems and ensure independent mobility for children and the community, so they have equal and safe access to all services and opportunities in their city.

Principle 6: Integrated Water and Sanitation Management Systems – Develop safely managed water and sanitation services and ensure an integrated urban water management system for children and the community, so they have adequate and equitable access to safe and affordable water, sanitation and hygiene.

Principle 7: Food Systems – Develop a food system with farms, markets and vendors, so children and the community have permanent access to healthy, affordable and sustainably produced food and nutrition.

Principle 8: Waste Cycle Systems – Develop a zero-waste system and ensure sustainable resource management so children and the community can thrive in a safe and clean environment.

Principle 9: Energy Networks – Integrate clean energy networks and ensure reliable access to power, so children and the community have access to all urban services day and night.

Principle 10: Data and ICT Networks – Integrate data and ICT networks and ensure digital connectivity for children and the community to ensure universally accessible, affordable, safe and reliable information and communication.

Source: UNICEF, 2018.

Many cities around the world are designing and retrofitting their cities to meet the needs and priorities of children.

inclusive, green and prosperous communities.[34] Many cities around the world are designing and retrofitting their cities to meet the needs and priorities of children. In Calgary (Canada), Antwerp (Netherlands), Ghent (Belgium) and Rotterdam (Netherlands), planners are designing play into the urban fabric, thereby expanding children's recreational opportunities.[35] In Netherlands and Finland, where cycling and walking to school are standard practice, streets and public spaces have been designed to enhance children's safety.[36] In many African cities, up to 70 per cent of students walk to school, often covering considerable distance, because they have no other choice, yet similar design efforts like sidewalks and cycleways remain far less prevalent.[37]

The health benefits of cycling or walking to school supports planning initiatives that deliver quality walking and cycling routes as seen in successful programmes such as the Belfast Healthy City (Northern Ireland) and the Greenways in East Los Angeles (US).[38] Programmes that cater to the specific needs of children in urban settings align with UNICEF's Child Friendly Cities Initiative, which provides guidelines for good urban planning and design to ensure that children and young people can exercise their right to the city (Box 5.2).

5.2.4. Ageing in cities

The global population is ageing, with the 65 and over cohort now the fastest growing age group (Chapter 1). As an increasing proportion of the world's population gets older and moves to or remains in cities instead of retiring to the countryside or returning to an ancestral village, authorities will have to pay greater attention to the needs

Three senior women sitting on the bench. Santiago de Compostela, Spain. © Lina Balciunaite/Shutterstock

of older persons in urban design and planning. COVID-19, which disproportionately impacts older persons, may temporarily slow this trend.

The WHO developed the Age-friendly City initiative to encourage active ageing by optimizing opportunities for health, participation and security to enhance quality of life as people grow older.[39] In practical terms, an age-friendly city adapts its structures and services to be accessible to and inclusive of older people with varying needs and capacities.[40] The WHO age-friendly city consist of eight entry points for cities to better adapt their structures and services to the needs of older people: outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services (Figure 5.1). More than 700 cities in 39 countries participate in the WHO's Global Network for Age-friendly Cities and Communities to promote healthy, active ageing and improve the quality of life for people aged 60 and over.[41]

The Hong Kong Special Administrative Region Government has adopted the principles of age-friendly cities by focusing on a multi-dimensional approach that includes financial assistance, medical care, community and residential support, transport and mobility, housing and the built environment, active ageing, more flexible employment and family-friendly measures with local governments playing a key role.[42] Hong Kong's challenges in creating an age-friendly city stem from home modifications in small high-rise apartments and accessible mobility in a city where most people rely on public transportation. Spain provides another example of local governments taking a proactive role in urban ageing. Cities have adopted age-friendly cities policies with the goal of improving the physical and social environment of cities in a way that will allow older people to live in dignity, enjoy good health and continue to fully and actively participate in society.[43] In Indonesia, the government is improving mental and physical health by promoting social activities, stress management and early detection of cognitive decline or related vascular or degenerative disorders in older adults.[44] Addressing these concerns, especially social isolation and

Figure 5.1: Age-friendly city topic areas
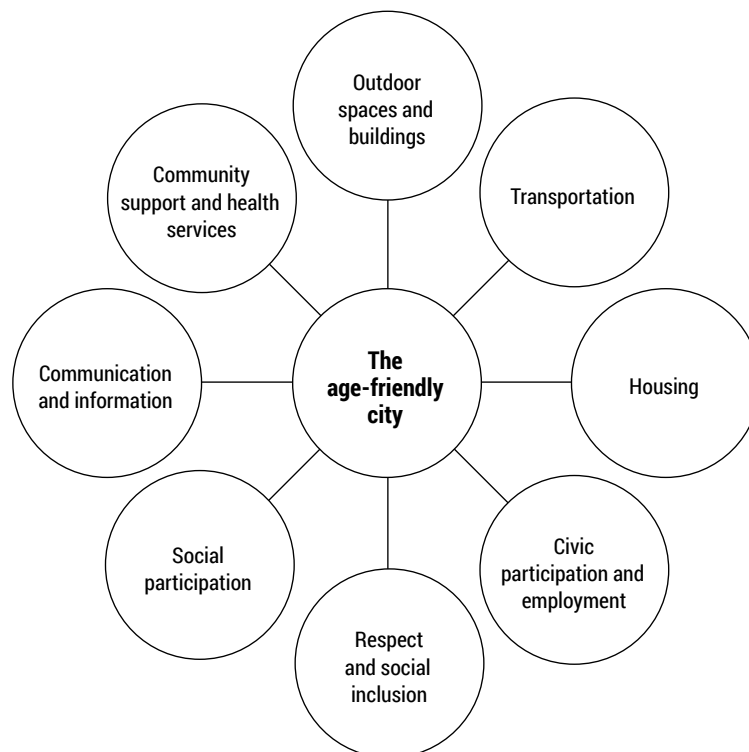
Source: World Health Organization, 2007.

mental health, are particularly acute in the wake of the COVID-19 pandemic, which has limited many older persons' opportunities for social interaction.

The megatrend of ageing has implications for the built environment especially as it relates to housing, transportation, recreation and social services. These core components of cities need to be adapted to the needs an increasingly ageing population. Planning for an ageing urban population requires innovation to address increased demand for health care, recreation, transportation and other facilities.[45] Planners in various contexts, especially in developing countries, will have to have to rethink basic assumptions as they learn to integrate active elderly living into the urban fabric.

5.2.5. Urban poor migrants

The constant migratory flow to cities, whether from rural areas or through intranational and transnational migration, contributes significantly to urban population growth with impacts on age distribution, since migrants are usually young. Cities are the most desired destinations for migrants. In Toronto, Los Angeles, Sydney, London, Melbourne and New York, foreign-born residents represent over one-third of the population. In Brussels and Dubai, they significantly outnumber the local population (Figure 5.2). International migration is increasingly transforming urban areas into heterogenous, multi-ethnic, multicultural and multilingual spaces (Chapter 1).

There are currently 763 million internal migrants[46] and 272 million international migrants worldwide[47] (Chapter 1). In China, about one-tenth of the child population (27.3 million) has migrated internally along with their parents. However, a significant number of children and youth also move within countries on their own. An analysis of 12 countries found that one in five migrant children aged 12–14 and half of those aged 15–17 moved without a parent.[48]

Irregular and forced migration due to conflicts, climate change, floods and famine reflects another face of migration, which is more dramatic because of the greater number of refugees and displaced persons moving from their homes to other regions within their countries or to

Figure 5.2: Foreign-born population in some major cities
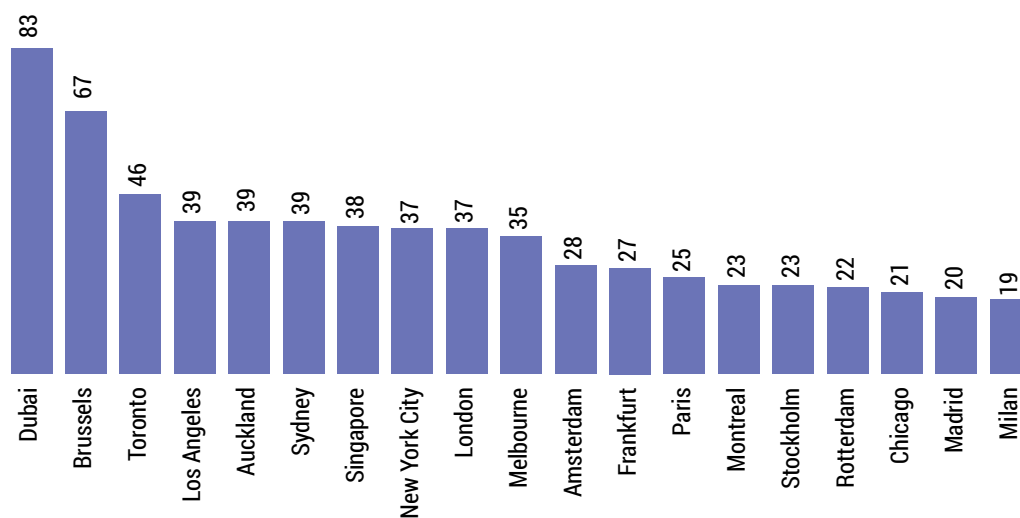
Source: IMO: Global Migration Data Analysis Centre.

Migrant workers journey back home during a nationwide lockdown to fight the spread of the COVID-19 coronavirus. © Manoej Paateel/Shutterstock

other countries. Such is the case of the dramatic experience of the tens of thousands of African migrants who brave the odds to cross deserts and the sea without any guarantee of ever being socially integrated into European host countries. This trend is also the case of the migration between some violent regions in Colombia, Venezuela, Central America and Mexico, displacing people to neighbouring countries—for example from Venezuela to Colombia, from Honduras and El Salvador to Mexico or from Central America and Mexico to the US.

International migrants often lack even the most basic civil rights in their host countries and face various forms of social and economic exclusion, including from the democratic process. Immigration is one of the most politically charged debates in developed countries.[49] A 2014 European Union opinion survey revealed that immigration was the third most frequently mentioned political issue after unemployment and economic conditions.[50] Similarly, migration was a defining issue in the Brexit referendum on the withdrawal of the UK from the European Union.

At the same time, some cities and local governments have been welcoming of refugees and immigrants.[51] The German

International migrants often lack even the most basic civil rights in their host countries and face various forms of social and economic exclusion, including from the democratic process

cities of Munich, Düsseldorf, Stuttgart and Freiburg have established "welcome departments" within their city halls to prepare for the arrival of refugees and immigrants. For the shrinking cities of Europe, North America, Japan and the Republic of Korea experiencing an ageing population, low birth rates and deindustrialization, the arrival of migrants is an opportunity to revive their fortunes.

If cities and local governments look beyond the humanitarian emergency lens, they can see migrants as integral to the socioeconomic development of their cities. This perspective requires effective integration programmes in the form of housing, employment, education and health, safety and security, social protection and according migrants a sense of belonging.[52] If integrated through inclusive policies, migrants will not only ease skill shortages, but will serve as valuable contributors to the social and economic

Box 5.3: Montréal: A city of immigration

One in two residents of Montréal was born abroad or has parents who were born abroad. Immigrants account for 33.2 per cent of the population. The city's residents are from 120 different countries of origin and speak 200 languages and dialects. Every year, Montréal welcomes an average of 35,000 newcomers with permanent immigrant status and 68,000 with temporary status due to Canada's well-functioning national immigration policy. This equates to nearly 280 people arriving each day into the city.

Natural increase is declining, leading to the demographic challenge of an ageing population. Rising immigration is important to balance demographics. Montréal has declared itself a "sanctuary city" to respond more effectively to the needs of residents without legal status or with irregular immigration status. While legal immigration is the norm, illegal immigrants are on the rise primarily because of US immigration policy.

The positive contribution of immigration to Montréal's demographic, social and economic development is undeniable. However, the municipal administration must cope with the challenges of integrating new citizens, adapting its services to respond to the difficulties migrants face and reducing obstacles to their integration. These challenges include maintaining, financing and coordinating services among various levels of government; institutionalizing measures to alleviate unfamiliarity with available resources and services; and dealing with language-related specificities that can create situations of isolation and exclusion.

Housing: Nearly half of Montréal's recipients of social assistance are born outside of Canada. Immigrant families face difficulties at times in finding adequate and affordable housing.

Education: To welcome new arrivals, special classes and services in minority languages, among other amenities, are needed. Access to education for children with an irregular immigration status is a major concern.

Employment opportunities: Some immigrant groups, especially those belonging to visible minorities, face difficulties in job integration, even though many of them have an educational level equal to or greater than that of Montréal's population. Common problems include lack of recognition of achievements and jobs below their skill levels.

Integration and social cohesion: Montréal is recognized as an open and welcoming city with a rich and positively perceived diversity. However, cohabitation by people of diverse cultures, socioeconomic conditions and religions often lead to misunderstandings and tensions within and between neighbourhoods. One of the city's emerging (though marginal) issues is violent radicalization that could be attributed to social precariousness, family problems, discrimination, feelings of marginalization and exposure to extremist ideologies. Integration in the workforce is also a challenge.

Montréal recognizes cultural diversity as an asset that enriches the city's sense of living. Understanding the value of cultural diversity is one of the basic premises of Montréal's social compact, enabling the city to innovate continuously through its approach and programmes. The city believes that immigrant integration rests on the principle of co-responsibilities shared by immigrants themselves and the host society, which has proven to be a positive and empowering approach.

Critical factors contributing to the success of its initiatives include many complementary services that facilitate the welcome and integration of newcomers (i.e. support from the first stage of their establishment to help with finding housing and assistance with job searching, among others), as well as joint consultation and coordination. Also, tailor-made services and appropriate communication are essential, as the need for services can differ depending on a person's immigration status. Moreover, it is not always simple for these new citizens to sift through the variety of municipal services.

Source: World Economic Forum, 2017.
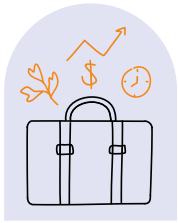
If integrated through inclusive policies, migrants will not only ease skill shortages, but will serve as valuable contributors to the social and economic development of their host communities

development of their host communities. For instance, over the last one and half decades, immigrants have accounted for 47 per cent of the increase in the workforce in the US and 70 per cent in Europe.[53] Employed migrants contribute more to taxes and social contributions than they receive in individual benefits, with the exception being where there is a larger share of older migrants.

The absence of effective integration and social cohesion policies can lead to the formation of segregated and marginalized communities, which could serve as breeding grounds for frustration, disenchantment, vulnerability and even radicalization.[54] The policies for integrating migrants differ considerably. They range from benign policy approaches that empathize with migrants to outright brutality on the part of law enforcement agencies. Since 1989, Montréal, Canada, has established a policy framework to respond to migration and integration-related challenges in a welcoming fashion (Box 5.3).[55]

Migrant workers are among the most affected by the coronavirus pandemic. The lockdowns designed to halt the spread of COVID-19 have led to massive loss of jobs all over the world with migrants being highly vulnerable (Chapters 1, 3). This trend will no doubt affect some of the 164 million migrant workers worldwide[56] for whom returning home can mean falling back into poverty. In the Gulf countries, tens of thousands of migrant workers in the construction, hospitality, retail and transport sectors have lost their jobs and have been forced to return home (Chapter 1).

The lockdowns designed to halt the spread of COVID-19 have led to massive loss of jobs all over the world with migrants being highly vulnerable

The loss of employment will affect the ability of migrants to make remittances to their home countries. Many developing countries will be hard hit as remittances are predicted to fall by 20 per cent from US$551 billion in 2019[57] to US$445 billion in 2020[58] on account of the economic downturn associated with COVID-19. The top remittance-recipient countries in 2019 were India, China, Mexico, Philippines, Egypt, Nigeria, Pakistan, Bangladesh, Vietnam and Ukraine. They received a total of US$350 billion or 63.5 per cent of all remittances in developing countries.[59] A decline in remittances would have major implications for urban areas, given their role in poverty reduction, housing finance, education and health care to improve family members' quality of life.

5.3: Pursuing Equity through Sustainable Urbanization

Urban development presents an opportunity to move from equality to equity and remove the systemic barriers that prevent vulnerable individuals and groups from realizing the benefits of the social value of urbanization (Figure 5.3). Inherent in the notion of social value is the belief that urban spaces should not perpetuate inequality or allow for the appropriation of the benefits associated with urbanization by certain groups to the exclusion of others. In such situations, existing structures and institutions are skewed in favour of dominant groups in society, who may legally or otherwise maximize these for their own benefits not by chance but by design and perpetuate the extant conditions that favour them.[60]

Urban development presents an opportunity to move from equality to equity and remove the systemic barriers that prevent vulnerable individuals and groups from realizing the benefits of the social value of urbanization

The concept of equity recognizes that redistributive mechanisms are put in place for a fair and more efficient use of resources, skills and opportunities to target the most vulnerable with the highest levels of support. The drive for equity also involves enhancing socioeconomic equality and providing for universal civic participation in the social, political and cultural spheres.[61] For the social

Figure 5.3: Equality versus equity

In the first image, it is assumed that everyone will benefit from the same supports. They are being treated equally.

In the second image, individuals are given different supports to make it possible for them to have equal access to the game. They are being treated equitably.

In the third image, all three can see the game without any supports or accommodations because the cause of the inequity was addressed. The systemic barrier has been removed.

Source: City for All Women Initiative, 2015, p.17.

value of sustainable urbanization to be fully realized, identifying and addressing the root causes of exclusion and inequity are critical.

5.3.1. Addressing urban inequity and inequality

For social value to be fully harnessed, urban mechanisms must necessarily address issues of inequity and inequality. In most urban contexts, however, emphasis on economic growth has led to wealth concentration and an increase in urban poverty and inequality in both developed and developing countries. High levels of inequality and exclusion from the decision-making sphere negatively impact social cohesion and the quality of institutions and policies, which slows progress on human and social development.[62] In addition, many cities are not prepared for the multidimensional challenges associated with urban

The growing inequality gap between developing and developed countries goes beyond differences in income, wealth, access to education, health, employment, credit, natural resources and the quality of life.

inequality because they lack the sound institutions that are crucial for achieving more equitable cities.

These institutions provide the superstructure that enables underlying factors to operate and deliver maximum benefits for a majority of the population. Institutional inadequacies take the form of weak legal and institutional frameworks, disregard for the rule of law, poor enforcement of property rights, excessive bureaucracy and proliferation of corrupt practices, among others, all of which are incompatible with the notion of equitable cities.

The growing inequality gap between developing and developed countries goes beyond differences in income, wealth, access to education, health, employment, credit, natural resources and the quality of life. For many of the poor, their birthplace and gender increase the odds against them simply because of where they were born.[63] Inequality is multidimensional in how it is reflected within cities, where there is social and spatial exclusion as well as discrimination due to race, gender, group identity, age and other factors. In majority-white multi-ethnic societies, Afro-descended people face particularly acute discrimination, especially in how they are policed by state security forces. That

Box 5.4: Black Lives Matter sparks a global urban social movement following the killing of George Floyd in Minneapolis (US)

On May 25, 2020, Minneapolis police officers arrested George Floyd, a 46-year-old black man, after a convenience store employee called 911 and told the police that Mr. Floyd had bought cigarettes with a counterfeit US$20 bill. Seventeen minutes after the first squad car arrived at the scene, Mr. Floyd was unconscious and pinned beneath three police officers, showing no signs of life.

Floyd's death sparked protests in nearly 550 places across the US and over 60 countries against racism and police brutality. Some 15 to 26 million people in the United States participated in demonstrations in June 2020. These figures would make the recent protests the largest movement in the country's history.

The protests raised awareness about inequality, social exclusion and racial bias in many facets of society. Urban planners, designers, and architects called attention to the need for "design justice," or the principle that for nearly every injustice in the world, there is an architecture that has been planned and designed to perpetuate it. Design justice seeks to dismantle the privilege and power structures that use architecture as a tool of oppression and sees it as an opportunity to envision radically just spaces centred on the liberation of disinherited communities.

That built-in oppression takes many forms. It is in the planning decisions that target non-white communities for highway projects and "urban renewal" schemes conceived to steer economic benefits away from existing residents. It is in a design philosophy that turned neighbourhoods into mazes of "defensible space" that often criminalize blackness under the guise of safety. And it is in the proliferation of public spaces that often fail to let certain cultural communities congregate without fear of harassment.

Source: Hill et al, 2020; Buchanan et al, 2020; Lee Jr, 2020.

longstanding issue came to a head in June 2020 following the killing of a black man in Minneapolis, US (Box 5.4).

The level of income inequality in cities as reflected by their Gini coefficients varies across regions of the world (Chapter 1). European cities have the lowest levels of inequality among developed countries, while cities in North America especially the US have the highest levels of inequality. Among developing countries, Asian cities generally have the lowest levels of inequality; in some cases, comparable to European cities. However, several Chinese cities are beginning to experience widening inequality brought about by internal migration and the lack of adequate safety nets for migrants. Latin American and African cities have the highest levels of inequality. Over the last decade, income inequality in some Latin American cities has been declining due to social programmes that address income and socio-spatial inequality like informal settlements, economic informality, urban violence and the marginalization of women. Levels of inequality are higher in large cities than in small cities and more pronounced at the urban than national level (Chapter 1). The COVID-19 pandemic is exposing and exacerbating existing inequalities in urban areas along several dimensions (Box 5.5).

Inequality in urban areas is undermining the social value of urbanization. A more proactive approach is therefore required to deal with urban inequality challenges and to take advantage of the economic and social opportunities offered by urbanization. Socially-oriented macroeconomic policies are a prerequisite to progressive urban social programmes; that is, if the value generated by urbanization and public investments were more equitably distributed among the most vulnerable social groups in urban settings, there will be greater possibilities of increasing economic prospects, boosting innovation, enhancing productivity and above all addressing socio-spatial inequality.

Inequality in urban areas is undermining the social value of urbanization

In seeking to achieve a more egalitarian society, it is crucial to institute redistributive polices that serve to counter market forces by giving priority to low-income and underserved areas in the provision of urban services.

Box 5.5: **COVID-19: Reinforcing inequalities in urban areas**

COVID-19 is reinforcing inequalities that characterize many urban areas. The lockdown and physical distancing measures have disproportionately affected vulnerable low-income households, especially informal sector workers who must leave their homes to earn a living. Working from home favours white-collar and high-income workers who have the necessary amenities. Similarly, online schooling applies to well-off households, and not low-income families who attend schools in informal settlements or where technologically enabled learning facilities are unlikely to be available.

The overcrowded nature of slums and informal settlements, which house up to 60 per cent of the population of some cities in poorly serviced and precarious locations, means that self-isolation and physical distancing is at best illusory. It is not clear how can physical distancing be maintained in Dharavi slum in Mumbai (India) that has a population density of 270,000 people per square kilometre or in the world's largest refugee camp, Cox's Bazar (Bangladesh), with a population of about 3 million people.

Inadequate water, poor sanitation and hygiene in crowded slums, refugee camps and migrant workers' hostels means that handwashing as a preventive measure against the spread of the novel coronavirus is a major challenge. In 2017, 3 billion people globally had no handwashing facility at home, 1.6 billion had limited facilities without soap or water and 1.4 billion had no facility at all. In the least developed countries, close to three-quarters of the population lacked handwashing facilities with soap and water.

Older persons and minority groups are at a higher risk of contracting and dying from COVID-19. In China, those aged 60 years and over accounted for 81 per cent of all COVID-19 deaths. A similar pattern appears in the US, where 80 per cent of COVID-19 deaths occurred among adults aged over 65 years. In Italy, 83.4 per cent of deaths were those over 70 years old. The propensity of older persons to die from COVID-19 has led to the prioritization of health care for younger people, thus reinforcing negative stereotypes that could have the effects of stigmatizing and discriminating against the elderly.

Ethnic minorities are disproportionately affected by the pandemic. In the US, African-Americans account for up to one third of coronavirus deaths but constitute 14 per cent the population. In Chicago, African-Americans account for 72 per cent of COVID-19 deaths but make up only 30 per cent of the population. In New York City, Black and Latino residents were twice as likely to die as compared to white or Asian residents. These differences in part reflect underlying inequality in access to economic opportunities, health care, poverty, pre-existing medical conditions and employment service jobs deemed essential during lockdown, all of which make African-Americans highly vulnerable to COVID-19.

Source: Extracted from Chapter 1.

In seeking to achieve a more egalitarian society, it is crucial to institute redistributive polices that serve to counter market forces by giving priority to low-income and underserved areas in the provision of urban services

The provision of infrastructure and social services in poor neighbourhoods will reduce inequality and enhance social value, cohesion and inclusion. In cities of developed countries, a key issue to be addressed are manifestations of the various forms of exclusion and marginalization that migrants and other minority groups face, many of which have been worsened by the impacts of COVID-19 (Box 5.5).

A system that leaves one no and no place behind and creates equal opportunities for all recognizes that economic growth alone will not reduce inequality. Governments in Latin America use redistributive policies to bring significant improvements to the living standards of the urban poor through massive investment in health and education. A

A system that leaves one no and no place behind and creates equal opportunities for all recognizes that economic growth alone will not reduce inequality

classic example is the *Bolsa Família* (Family Stipend) in Brazil that supports millions of poor beneficiaries, most of them living in urban areas, through transfers which are made conditional on requirements such as school attendance, visits to clinics, periodic immunization, prenatal check-ups for pregnant women and remedial education for children and those at risk of being drawn into child labour. By 2015, *Bolsa Família* accounted for 12–21 per cent of the recent sharp decline in inequality and reduced the proportion of Brazilians living below poverty by 7 million from 13 to 3 per cent.[64]

Creating inclusion for the benefits of urbanization requires the removal of the systemic barriers that impede access to goods, services and opportunities, as the European Union is pursuing through initiatives such as Cities Against Social Exclusion. This programme demonstrates the concerted efforts by cities and regions to develop effective policies to counteract social segregation, identify good practices and develop innovative solutions for fostering social inclusion.[65] Stockholm is working to remove barriers to full civic engagement for women, youth, the homeless, older persons and the disabled.[66] Vienna is developing an action plan that entails non-discrimination at all levels while improving political and social participation of all minority groups, including migrants, and monitoring social diversity and integration with measurable indicators.

5.3.2. Eradicating poverty in cities

It is estimated that one-third of all urban residents are poor, which represents one-quarter of the world's total poor with the majority residing in small cities and towns.[67] The rate of growth of the world's urban poor is greater than that the rate of growth of the world's urban population.[68] This fact implies that the urban share of poverty increases with the increasing pace of urbanization, resulting in a greater concentration of poverty in urban areas. The absolute increase in extreme poverty in Africa has implications for poverty in its urban areas given the rapid pace of urbanization. Urban poverty in many African countries is increasing faster than national

poverty.[69] This trend is due in part to the influx of poor rural migrants and the inability of city authorities to adequately respond to their multiple needs.

It is estimated that one-third of all urban residents are poor, which represents one-quarter of the world's total poor with the majority residing in small cities and towns

Sub-Saharan Africa has the highest incidence of urban poverty globally with about 23 per cent of the urban population living below the international poverty line and 29 per cent experiencing multidimensional poverty (Table 5.1). In Kenya, while rural poverty declined remarkably from 51 per cent in 2005–2006 to 39 per cent in 2015–2016, urban poverty declined only marginally from 32 to 29 per cent, but increased in absolute numbers from 2.3 million to 3.8 million.[70] The increase is attributed to high population growth, increased cost of living due to high housing, transportation and high food prices, as well as scare employment opportunities, all of which significantly reduced disposable income for urban households.

A woman fetches water. Satkhira, Bangladesh. © UN-Habitat/Kirsten Milhahn

Table 5.1: People living in monetary or multidimensional poverty, 2013

Region	Monetary headcount ratio (%)			Multidimensional headcount ratio (%)			Number of economies	Population coverage (%)
	Urban	Rural	Rural share of the poor	Urban	Rural	Rural share of the poor		
East Asia and the Pacific	3.9	6.5	67.8	4.2	10.2	75.5	13	28.9
Europe and Central Asia	0.2	0.5	52.7	0.8	1.8	52.2	17	90.0
Latin America and the Caribbean	1.9	11.2	61.0	2.5	19.9	68.2	17	91.5
Middle East and North Africa	0.9	6.4	84.8	1.9	11.5	83.2	9	72.1
South Asia	3.9	15.2	90.3	10.5	33.3	88.4	5	23.0
Sub-Saharan Africa	22.6	55.9	83.4	28.8	81.8	85.2	29	60.7
Rest of the World	0.4	0.6	30.7	0.4	0.6	30.7	29	39.6
Total	4.1	21.0	81.3	5.6	33.6	83.5	119	45.0

Notes: Estimates based on the harmonized household surveys in 119 economies
Source: World Bank, 2018b, p.113.

The incidence of poverty will be worsened by the deleterious impacts of the COVID-19 pandemic (Chapter 1). Residents of urban areas in India, Nigeria, Democratic Republic of Congo, Ethiopia and Bangladesh, which account for half of the world's 736 million people living in extreme poverty, are likely to fall further into the poverty trap. Even in relatively well-off regions—East Asia, the Pacific, Middle East, North Africa, Latin America and the Caribbean—millions are expected to enter poverty on account of COVID-19. In Latin America, 28 million people are expected to fall into poverty, with women being overrepresented due to the decline in economic activity precipitated by COVID-19.[71] The portended increase in poverty will have adverse ramifications for achieving SDG 1 of ending poverty in all its forms everywhere by 2030. The interlocking nature of this goal means that failing to achieve SDG 1 will negatively impact other goals like hunger and improved nutrition (SDG 2); healthy living (SDG 3); and inclusive and equitable education (SDG 4).

Urban areas offer significant opportunities to generate prosperity, which in turn can be leveraged to eradicate poverty. Generally, higher levels of urbanization are associated with lower levels of poverty. When well-planned and managed, cities can be "real poverty fighters," if adequate policies are implemented.[72] Realizing the poverty eradication gains of urbanization will, however, depend on how well urban growth is planned and

Urban areas offer significant opportunities to generate prosperity, which in turn can be leveraged to eradicate poverty

managed, and the extent to which the benefits accruing from urbanization are equitably distributed. Formulating the necessary policies and enabling institutions and organizational change is crucial in eradicating poverty. As developing countries rapidly urbanize, it is important that the necessary investments are made to respond to the increase in population. Managing urbanization should therefore be an essential component of nurturing growth and eradicating poverty.

No city can harness the social value of urbanization when large segments of its population live in extreme poverty. There are several ways by which the social value of urban areas can be enhanced to eradicate poverty, including through the provision of affordable housing, access to land and finance, employment opportunities, a facilitating environment for entrepreneurship and basic

No city can harness the social value of urbanization when large segments of its population live in extreme poverty

infrastructure. Access to a wide range of good and services, like education, health and recreation, enable citizens to attain their full potential by developing their intellectual capacity and ability to lead full, productive and fulfilling lives. Harnessing the social value of urbanization entails promoting gender equality and protecting the rights of minority and vulnerable groups, as well as ensuring widespread civic participation in the social, political and

cultural spheres. The failure of cities to fully integrate excluded groups into their decision-making process creates and reinforces poverty.

Planned urbanization has helped millions escape poverty through higher levels of productivity, employment opportunities and improved quality of life via better education and health, large-scale public investment

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Box 5.6: **Eradicating poverty through improved water supply and sanitation in Surkhandarya province**

In the early 2000s, Surkhandarya province in Uzbekistan experienced challenges with water supply and sanitation. Deteriorated, outdated and leaking infrastructure, power outages and lack of revenue hindered better service. Improving the health and living conditions of the people by providing access to safe and reliable water supply and improved sanitation was therefore the government's top priority. While its water and sanitation coverage was relatively high, households in urban areas were supplied with water for only 6 to 16 hours a day, and those in rural areas for between 2 and 10 hours a day.

It was against this this backdrop that the Surkhandarya Water Supply and Sanitation Project was approved by the Asian Development Bank in 2009. The goal of the project was to improve living standards, environment and public health in the urban areas of Surkhandarya province by providing safe, reliable, inclusive and sustainable water and basic services, as well as improving community hygiene for 340,000 people living in the seven districts of Kizirik, Angor, Muzrabad, Shurchi, Kumkurgan, Jarkurgan, Sariasiya and Termez City.

The Asian Development Bank prepared a sector strategy, road map and investment plan up to 2020; the authorities rehabilitated and constructed water supply systems, strengthened the capacity of the *vodokanals* (operating arm of water supply and sanitation agency) and developed a commercial approach to customer services. The province adopted three strategies to address the specific needs of the poor, which accounted for 32 per cent of the 2014 population. First, the project covered connection fees, thus eliminating a significant barrier to access by the poor. Second, the vodokanal installed mandatory meters that were to be repaid over three years. Finally, the partners built socially inclusive processes into the project to ensure that everyone benefited equally.

The rehabilitation and provision of water supply resulted in significant savings in the purchase of water, which previously consumed about 30 per cent of household monthly income. Access to a water supply system improved the quality of people's lives in small- and medium-sized cities in Surkhandarya province. About 367,000 residents were provided with safe, reliable and inclusive piped water, with the main beneficiaries being 3,079 low-income families, of which 47 per cent were women-headed households. This project provided equitable access to safe and reliable water supply for urban and poor rural communities and vulnerable groups. It also increased the time for other more productive and enjoyable activities, improved health and reduced health care expenses for the poor.

The project provided safe drinking water, ventilated pit latrines and septic tanks in 17 public schools in the seven districts, as well as improved sanitation and promoted positive hygiene behaviour among schoolchildren to prevent communicable diseases. It is anticipated that 90 per cent of the population will be provided with safe and reliable water over 20 hours a day by the end 2020, if an uninterrupted electricity supply is ensured. As of March 2015, water supply varied from 15–22 hours per day as compared to 2–6 hours before the project implementation.

Source: Asian Development Bank, 2019.

Bijoy Sarani Railway Slum, Bangladesh, Dhaka. ©
UN-Habitat/Kirsten Milhahn

Planned urbanization has helped millions escape poverty through higher levels of productivity, employment opportunities and improved quality of life via better education and health, large-scale public investment and access to improved infrastructure and services

and access to improved infrastructure and services.[73] Nowhere is this more evident than in East Asia, where increases in urbanization over the last three decades have been accompanied by a remarkable decrease in poverty. The provision of improved water supply and sanitation played a key role in reducing poverty in the urban areas of Surkhandarya Province in Uzbekistan (Box 5.6).

Where inclusive social and economic institutions and policies undergird the development process, urbanization and poverty reduction tend to be closely related. However, the direction of causality is neither simple nor unidirectional because of the impact of other intervening factors such as economic growth, pro-poor policies and the extent to which the benefits and opportunities associated with urbanization are equitably distributed.[74] Furthermore, planned urban growth is essential for eradicating rural poverty, since sustainable urbanization creates prosperity for both rural and urban populations.[75] Indeed, cities are also the engines of rural development, as they offer rural dwellers better access to information, jobs and services.

Sustained economic growth is a necessary but not the only condition for eradicating poverty. The main challenge is not so much to increase growth, but to ensure that the benefits of economic growth reach all segments of the population.[76] Rising levels of poverty in the face of economic growth as seen in many countries is a clear indication that the benefits of economic growth are not always evenly distributed and that growth does not automatically translate into ending poverty. A major predicament is that policies designed

Sustained economic growth is a necessary but not the only condition for eradicating poverty

to achieve economic growth—and thus the prosperity of cities—do not necessarily result in improved economic and social opportunities for the poor and could indeed worsen existing poverty even while improving the urban economy. Policymakers will have to face important non-economic and equity considerations that must be balanced against economic growth. A city that is not socially inclusive or equitable is unlikely to harness the social value of urbanization.

5.4. The Intangible Value of Sustainable Urbanization

While cities offer numerous tangible values, they also offer intangible ones (Chapter 2). This section examines various elements of the intangible value of urbanization, including sound institutions, effective governance systems and urban culture—all of which facilitate a sense of belonging and collective values among urban dwellers.

5.4.1. Effective institutions

Sustainable urbanization requires effective institutions both of a formal (constitution, laws and regulations) and informal nature (social norms, customs and traditions) capable of supporting policies and programmes that enhance the social value of cities and make them liveable for all. Effective institutions are indispensable to the management and governance of any city. Sound institutions and mechanisms that empower and include urban stakeholders are crucial for generating value through urbanization, as they provide the supportive framework responsible for steering urban development and enabling it to operate and deliver maximum benefits to a majority of the population. All of these characteristics are incompatible with sustainable urbanization. The most relevant institutional changes affecting urban areas[77] with implication for the value of urbanization are:

- Gradual mainstreaming of the equity agenda by local authorities in close collaboration with national governments

- Adoption of activities and responsibilities beyond traditional local government mandates such as provision of health, education, or housing

- New urban configurations that will bring changes to the size and form of institutions at urban, metropolitan and regional scales

- Weaker local authority finances, especially in smaller cities, owing to undependable transfers from financially strapped central governments

- Slow expansion in effective municipal tax bases, which fail to keep up with demographic growth

- Lack of adequate coordination among national, provincial and local authorities, hampering both planning and implementation of urban policies

- Inadequate or poorly enforced rules and regulations governing urban management due to weak, inefficient institutions and poor civil society participation

UN-Habitat has shown with compelling evidence that the impact of ineffective and weak institutions on sustainable urbanization appears to be more pronounced in African and Arab cities, where over 40 per cent of urban experts cite institutional inadequacies as the single most important impediment. This challenge is less prevalent in Asia and Latin America and the Caribbean as indicated by 24 per cent and 27 per cent of the respective urban experts. What this discrepancy implies is that cities in Africa and Arab States need to do more to develop effective institutions as a basis for enhancing the value of urbanization. Indeed, in many developing countries, the institutions required for leveraging and distributing the benefits associated with urbanization, if any, are poorly developed. Sound institutions as called for in the NUA determine the efficacy of urban policies and programmes implemented by all levels of government, including non-state actors.

In many developing countries, the institutions required for leveraging and distributing the benefits associated with urbanization, if any, are poorly developed

Creating sound institutions requires effective collaboration between public agencies and non-state actors. Citizen organizations that find a collective value in the city must also take part by increasing their participation in political and social affairs. Working on socio-political agreements among stakeholders and local governments could be a strong driver for better urban governance (Chapter 7). These agreements require a coherent framework, based on leading-edge knowledge of effective, long-lasting urban governance and supported by up-to-date technical knowledge and information. Further, discussions should be directed towards building a long-term, integrated and participatory urban vision based on mutual trust and collaboration.

As participatory agreements, they should be legally formalized in urban plans and programmes, as well as in action-oriented social pacts or agreements to comply with the socially agreed vision of the city. Some urban experiences have led to more equitable and inclusive processes in the distribution of urban facilities and the creation of social capital through mutual collaboration between city governments, stakeholders and social actors as shown in Villa El Salvador (Peru), Barquisimeto (Venezuela) and Porto Alegre (Brazil).[78] Overall, the active participation of governmental institutions and social and citizen organizations is critical to enhance the intangible value of planned urbanization.

5.4.2. How cities and human settlements are governed

Local governments are key stakeholders in building urban and metropolitan governance within a diversity of political and legislative structures, with varying executive and legislative city responsibilities. Governance is a key component of the intangible value of urbanization and is crucial to providing, maintaining and restoring sustainable and resilient services and social, institutional and economic activity in cities and human settlements.[79] Good governance is a prerequisite for sustainable urbanization and poverty eradication.[80] Although it is commonly accepted that good governance leads to improvements in service delivery, questions remain about how to achieve these ideals. In this regard, the NUA provides a blueprint for achieving good governance and its transformative commitments encourage governments to take the necessary steps to strengthen national, subnational and local institutions.

Box 5.7: Citizen report card: A tool for urban governance

The Citizen Report Card (CRC) is a simple but powerful tool to provide public service agencies with useful feedback about the quality and adequacy of their services. It is a governance tool that can be used by citizen groups, service providers and policy makers alike to gauge access to services, their quality, problems and hurdles.

The CRC also identifies the key constraints that users, especially the poor and the underserved, face in accessing public services and the effectiveness of staff providing services. These insights help generate recommendations on sectoral policies, programme strategies and management of service delivery to address these constraints and improve service delivery. It can be particularly effective when respondents are asked to rate a wide range of providers, as this allows for relative rankings, which have been proven to be an effective way of providing incentives for improvement.

The CRC was pioneered in Bangalore in 1994 and has since been replicated in other Indian cities such as Ahmedabad, Chennai, Delhi, Hyderabad, Mumbai and Pune, as well as many cities in the developing world. In Mumbai, the civic NGO PRAJA used the report card findings to jointly design and make operational a citizen charter on services with the City Municipal Corporation. In addition, two cities in Ukraine and a social development project in the Philippines have prepared report cards based on this model with World Bank support. In the twin cities of Sekondi-Takoradi in Ghana, the Citizen's Report Card used a new initiative to elicit feedback on the delivery of water and electricity, which formed the basis for follow-up on complaints and to advocate for citizens' priorities in service delivery.

In 2010, the Rwanda Governance Board introduced the CRC as an invaluable tool for the collection of feedback from citizens for the purpose of ensuring improvement in the quality of service delivery. The 2018 CRC is designed to provide citizens satisfaction as a core component of accountable governance. The Rwanda CRC gives feedback to service providers in 15 broad sectors, which include infrastructure, land, private sector, hygiene, sanitation, social welfare, family issues, security and citizen participation.

The CRC findings have provided further impetus to ongoing efforts to improve service delivery. The finding that 20 per cent of citizens had no dustbins near their houses compelled the Bangalore Municipal Corporation to address this aspect of solid waste management. The report card stimulated Karnataka Electricity Board to undertake a survey on its own to obtain public feedback about its services.

One significant issue that emerges from the CRC work is that a lack of information is a serious barrier that limits citizen access to public services. This challenge has catalysed the agencies to introduce greater transparency in their operations and led to greater interaction between the service providers and citizen groups.

A progression in the influence of the CRC in Bangalore over the years can be seen, from limited impact (with dissemination of feedback) to more impact (with dialogue and public pressure for change) to greater impact (with advice on reform). The skills, resources and organization required to play all three roles will not always be available to civil society organizations. Nonetheless, independent civil society groups can play a useful role to provide such feedback which, in turn, can act as a stimulus to reforms.

Source: Administrative Staff College of India, 2008; Global Communities 2015; Citizen's Rwanda Governance Board, 2018; UN-Habitat, undated.

The prevailing situation is that many city governments, especially in developing countries, are weak due to limited power over key public services, including planning, housing, roads, transit, water, land use, drainage, waste management and building standards. Local governments often lack the financial resources to make their cities and human settlements inclusive, safe, resilient and sustainable (Chapters 1, 8). When governance capacity is weak, cities are constrained in their abilities to address the persistent and emerging challenges associated with urbanization.[81]

Sustainable, resilient, safe and inclusive cities are the outcome of good governance that encompasses effective leadership; integrated urban and territorial planning; jurisdictional and multilevel coordination; inclusive citizen participation; and adequate financing. Strong leadership is critical for overcoming fragmentation across departments, various levels of government and investment sectors when building consensus and eliciting action on specific agendas.[82] Integrated urban and territorial planning across broad urban regions is vital for effective governance. Territorial and spatial strategies are central in addressing the risks associated with climate change and public health crises like the COVID-19 pandemic that transcend jurisdictions and require effective and contextually appropriate response strategies. Multilevel coordination is essential not only in areas such as land, transport, energy, emergency preparedness and related fiscal and funding solutions, but in addressing poverty and social exclusion through innovative mechanisms of inter-territorial solidarity.[83]

Sustainable, resilient, safe and inclusive cities are the outcome of good governance that encompasses effective leadership; integrated urban and territorial planning; jurisdictional and multilevel coordination; inclusive citizen participation; and adequate financing

The provision of sufficient, affordable and quality basic services is considered a core function of urban governments, which they deliver through a wide range of arrangements with the private sector and relevant stakeholders. However, in many cities, delivery is constrained by the challenges of coordination, governance, finance and capacity, and further exacerbated by the pace and scale of urbanization. Over the years, urban dwellers have been empowered to make their voices count by holding service providers accountable for the quality of services delivered (Box 5.7).

Given the wide range of actors participating at different levels in decision-making, there is a need to foster network-based rather than hierarchical governance.[84] For instance, the evolving roles of private and public actors, combined with new forms of political participation, facilitate a transformation of urban governance. In such contexts, the institutions and values that underpin them have played an instrumental role in aligning and reconciling interests and fostering shared paradigms of urban governance. For example, the Citizens' Agreement for an Inclusive Barcelona is a strategy that articulates shared objectives and actions between Barcelona's City Hall and different actors in the city, promoting co-production through network-based actions.[85] The programme is the outcome of a two-way interactive process that entails a top-down process proposed by the municipal government intersecting with a bottom-up process based on the effort and interests of different organizations and social networks working within the city's social welfare system.[86]

5.4.3. Cultural diversity in urban areas

Culture is an intangible value for city development with tangible manifestations.[87] Culture is the life blood of urban areas and it addresses different forms of social integration, which involves understanding the informal and formal institutional structures of the past and the present. As shown earlier, foreign-born residents constitute a significant proportion of the population of many cities; thus, making these cities more heterogeneous and multicultural. People from different cultural, ethnic and religious backgrounds now live together. The cultural diversity of cities contributes to their vibrancy, prosperity, inclusiveness, competitiveness, attractiveness, positive perception and overall development. Indeed, the cultural diversity of cities is viewed as a social asset that can be harnessed in various ways. Culturally diverse cities feature more innovative workforces given that they benefit from a wider range of international knowledge links, idea generation, problem-solving and diverse decision-making.[88]

Cuban people are performing an African Dance in the Old Havana City, Capital of Cuba. © EB Adventure Photography/Shutterstock

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Box 5.8: An innovative entrepreneurial model for culture-based urban regeneration in Ségou, Mali

The former capital of the ancient Bambara kingdom from the mid-seventeenth century, Ségou lies along the Niger River, 240 kilometres from Bamako. Its urban heritage is characterized by vernacular Sudanese architecture in red terracotta and colonial buildings. With an estimated population of 163,000 inhabitants, Ségou's development indicators are low compared to the rest of the country, with approximately 65 per cent against 49 per cent nationwide. Yet, the city has an interesting development potential due to its outstanding urban heritage, cultural vitality, geographic location and economic base.

With a view to harnessing these assets, a group of local entrepreneurs working through the Foundation Festival on the Niger launched the *Festival sur le Niger* in 2005. Each year, the festival gathers national and international artists and musicians and showcases local cultural industries. With around 30,000 visitors per year on average, the festival has been a major catalyst for the local economy, especially the arts, crafts and agricultural sectors. Over 150 local enterprises are involved, contributing to 140 direct and 2,000 indirect jobs. The tourism sector has boomed, increasing ten-fold between 2005 and 2010, which has fostered the gradual upgrading of tourist infrastructure.

Through this dynamic, other culture-based initiatives have emerged, including the Kore Cultural Centre, a training centre dedicated to cultural professions, and the Ndomo Centre, a production centre for traditional Bogolan weaving, targeting unemployed youth. Two certifications were created through the SMARTS-Ségou programme which focused on locally-woven loincloths and cultural tourism. The city has recently initiated a project entitled Ségou, Creative City to develop an integrated municipal cultural development policy and a sustainable cultural development programme.

The project was conducted using an innovative entrepreneurial model. Although initiated by local entrepreneurs, it received strong support from local authorities, which resulted in a formal public-private partnership, the Council for the Promotion of Local Economy. The Council stands as a service for cooperation and the promotion of local enterprises, economic actors and local authorities of the city. It also provides advisory consulting and training to local authorities and enterprises on its socio-economic and cultural development programme. The model tapped into the *Maaya* process, an ethical concept grounded in Malian culture based on the principles of serving and involving the community, building confidence and reinforcing relationships, mobilizing local resources to foster autonomy and sustainability and ensuring coherence with local values.

Source: UNESCO, 2016.

Urban areas contain the cultural diversity, creative capital, vitality, social infrastructure and career choices to help attract the skills and talent required to generate and exploit knowledge and build dynamic competitive advantage. New migrants to cities create new opportunities, offer new skills, bring fresh perspectives and generate new requirements for institutional innovation.[89] Many countries have long recognized the importance of cultural diversity and have initiatives, policies and programmes aimed at enhancing the diversity of their population.

While cities have always been melting pots, there are certain features of contemporary cultural diversity that are

novel.[90] First, cultural diversity in cities is both wider and deeper than ever before. Second, it is far more affirmative as minorities and immigrant groups demand equal rights, access to urban opportunities and the right to participate in decisions that affect their collective life. Third, the forces of globalization, which drive international migratory patterns, entail sustained flows of ideas, symbols and meanings, which permanently link places of origin and present sites of domicile.

Cultural diversity has important implications for how urban areas are planned and managed, and in the process impinges on the value of urbanization. It is important to

Cultural diversity has important implications for how urban areas are planned and managed, and in the process impinges on the value of urbanization

seek the right balance between cultural groups seeking to preserve their identity in cities and the need to avoid extreme forms of segregation or even marginalization and urban fragmentation.[91] There is the possibility that cultural diversity could also make participatory processes around planning issues more complex as different socio-cultural groups have different expectations and needs.

Culture and sustainable urbanization

The NUA acknowledges the importance of culture and cultural diversity to the sustainable development of cities and human settlements. The NUA further recognizes that culture should play a pivotal role in the promotion and implementation of new sustainable consumption and production patterns that contribute to the responsible use of resources.[92] Culture features prominently in the 2030 Agenda for Sustainable Development, as target 11.4 seeks "to strengthen efforts to protect and safeguard the world's cultural and natural heritage." Cities should therefore celebrate and harness their cultural identity and integrate these cultural elements into development programmes and policies to contribute to sustainable urbanization.
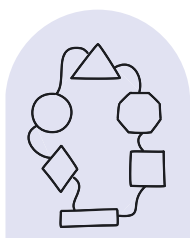
The NUA acknowledges the importance of culture and cultural diversity to the sustainable development of cities and human settlements

Many cities are increasingly placing culture at the heart of urban regeneration and renewal. This does not only improve the physical environment, but also the non-physical elements of urban space through creative means that advance the quality of place, thereby promoting cultural infrastructure.[93] A city's cultural and historical heritage can foster urban regeneration and catalyse the

local economy (Box 5.8). This strategy has also been used by cities experiencing industrial decline like Glasgow (UK), Liverpool (UK), Barcelona (Spain) and Bilbao (Spain), among others, to boost their economic fortunes by promoting their identity as cultural centres often in the form of an iconic museum, popular festivals and arts-focused higher education.[94]

Cultural elements are widely perceived to enhance the image and attractiveness of the city.[95] Assets such as museums, heritage theatres, concert halls, opera houses and galleries not only have symbolic benefits to the city's image, but they also serve as powerful magnets for creative people by offering attractive lifestyle opportunities, thereby boosting economic fortunes of cities.

Creative industries, which are inherently urban, are the intersection of culture, the arts, business and technology. They can contribute to sustainable and inclusive prosperity (Chapter 1). Cities as diverse as Austin (music and technology), Berlin (visual arts), Mexico City (contemporary art and television), Mumbai (film) and Seoul (gaming and digital media) have thriving creative industries that have contributed remarkably to their respective urban economies. For instance, Austin's creative economy has generated some 50,000 arts-related jobs spanning film, television, gaming and other visual arts.[96] In Mexico, the export of creative goods and services generates over US$5 billion per annum, making the country the largest cultural exporter in Latin America.[97] Mumbai's Bollywood is the world's largest concentration of film production, with some 900 movies a year further spawning related creative industries such as design, digital media, fashion, food and music.[98] Given its pervasive influence, creative industries are emerging as one of the most important dimensions of new economies in regions around the world.[99]

With the spread of information and increased mobility, cities are experiencing an upsurge in tourism. The natural landscape and the built environment, with their intangible traditional and contemporary assets, constitute a cultural heritage that attracts tourists. Culture-driven urban tourism is rapidly developing and generates spending and employment, as well as various backward and forward linkages that have the multiplier effect of creating additional jobs to cater for visitors.

Many of the top destination cities for tourists are known for their cultural landmarks, creative industries and entertainment (Table 5.2). In 2018, Dubai recorded the highest amount spent by international visitors globally with a total of US$30.2 billion.[100] Other cities where international visitors spending is high are Bangkok (US$20 billion), Singapore (US$16.6 billion), London (US$16.5 billion) and Paris (US$14.1 billion). In terms of employment, 1,000 additional tourists generate 409 jobs in Bali, 105 jobs in Dubai, 87 jobs in Phuket, 16 jobs in New York City, 15 jobs in London and 11 jobs in Paris.[101] These figures show that the employment generation of urban tourism is higher in cities with lower labour costs. Cities in developing countries, where labour costs are generally low, can use urban tourism to create employment opportunities, especially for young people, which in turn will lift many people out of poverty, although the COVID-19 pandemic has temporarily curtailed the global tourism industry.

Culture can be used as a political instrument in pluralistic societies to help define identities, with important implications for inclusive planning.[102] Cultural diversity places new demands in terms of mediating between conflicting lifestyles and expressions of culture. For instance, conflicts around religious buildings, burial arrangements, ritual animal slaughter and building aesthetics are issues that are increasingly being addressed in urban areas.[103] If not properly managed, these cultural differences could trigger anti-immigrant resentment, alienation and even violent conflict.

The challenge facing many cities is how to meet the needs of a contemporary city—improve infrastructure, eradicate poverty and promote economic growth—without destroying or eroding its cultural heritage. Cities also face the challenge of how to develop cultural heritage sites that at the same time preserve them for the long term. Urban regeneration and revitalization programmes should avoid using blueprints that reflect the desires and aspirations of minority elites or propose solutions that do not reflect the shared legacies of the majority. In order to take concrete steps towards fostering social integration, building a sense of shared identity and nurturing community belonging, there is a need for effective and meaningful participation of the local community and grassroots groups in planning, policy formulation, implementation and monitoring.[104]

The preservation of cultural heritage plays an important role in creating and enhancing social value, with the ability of inspiring and promoting citizen participation in public life, improving the well-being of individuals and communities, contributing to the reduction of social inequalities and fostering social inclusion.[105]

The preservation of cultural heritage plays an important role in creating and enhancing social value, with the ability of inspiring and promoting citizen participation in public life, improving the well-being of individuals and communities

Table 5.2: Top destination cities 2018

Rank	City	International visitors (million)	Rank	City	International visitors (million)
1	Bangkok	22.78	11	Seoul	11.25
2	Paris	19.10	12	Osaka	10.14
3	London	19.09	13	Makkah	10.00
4	Dubai	15.93	14	Phuket	9.89
5	Singapore	14.67	15	Pattaya	9.44
6	Kuala Lumpur	13.79	16	Milan	9.10
7	New York	13.60	17	Barcelona	9.09
8	Istanbul	13.40	18	Palma de Mallorca	8.96
9	Tokyo	12.93	19	Bali	8.26
10	Antalya	12.41	20	Hong Kong SAR	8.23

Source: Mastercard, 2019.

Measuring the contribution of culture to sustainable urbanization

Cities have increasingly become strategic in assessing the value and contribution of culture to sustainable urban development. Sustainable cities are also an entry point for advocacy to promote the role of culture in sustainable development. The adoption of the 2030 Agenda and the New Urban Agenda represents a unique opportunity to reflect on existing approaches to measuring the contribution of culture to development and assess whether alternative frameworks may be necessary. Culture and creativity contribute directly to the three pillars of sustainable development—economic, social and environmental—and at the same time, these three dimensions of sustainable development contribute to the safeguarding of cultural heritage and nurturing creativity (Figure 5.4).[106]

The task of measuring the contributions of an tangible value like culture to sustainable urban development has generated several approaches.[107] A comparative analysis of these approaches and alternatives is a good start, but the real priority is for cities (or countries) to be able to measure their own cultural stocks and how these can contribute to the trajectory of sustainable urbanization (Box 5.9). Further efforts along these lines will require the localization of global efforts to measure and track the

contribution of culture to sustainable development. At the same time, the experience of development projects and interventions have clearly demonstrated the importance of local knowledge and community participation in achieving sustainable urban development.[108]

A beautiful street art takes shape as a volunteer group of young girls work together painting a store front to bring a new breath of life to the community area. Subang Jaya, Malaysia. © SWEEANN/Shutterstock

Figure 5.4: Culture and sustainable development: Three models

Culture in sustainable development
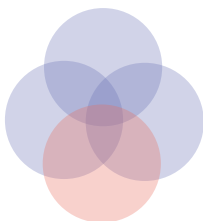
Culture for sustainable development
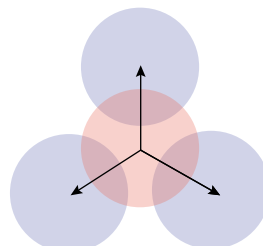
Culture as sustainable development
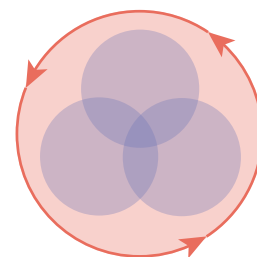
The three roles of culture (represented in orange) in sustainable development (the three circles represent the three pillars). Culture added as a fourth pillar (left diagram), culture mediating between the three pillars (central diagram) and culture as the foundation for sustainable development. The arrows indicate the ever changing dynamics of culture and sustainable development (right diagram)

Source: Dessein et al, 2015.

Box 5.9: Equity in distribution of and access to cultural resources within countries

Cultural infrastructure is crucial to create environments conducive to the emergence of dynamic cultural sectors and clusters, as they can foster cultural, economic and social vitality alike. Without basic infrastructure, establishing viable cultural ventures is extremely difficult. Hence, cultural infrastructure is essential if cultural assets are to work for development.

Cultural infrastructure and spaces are often poorly distributed between urban and rural areas, particularly in developing countries. Results obtained from 2011 to 2017 in 15 countries under UNESCO's Culture for Development Indicators project revealed the skewed distribution of selected cultural infrastructures and facilities (museums, exhibition venues dedicated to performing arts, and libraries and media resource centres) relative to the distribution of the population in administrative divisions immediately below state level (standard deviation). On a scale from 0 to 1 (with 1 representing the situation in which cultural infrastructures are equally distributed amongst regions according to the relative size of their population), the average score of the 15 countries was 0.46, ranging from 0.14 in Cambodia to 0.66 in Bosnia and Herzegovina and Viet Nam.

Distribution of cultural infrastructures relative to the distribution of population immediately below state level, 2011-2017
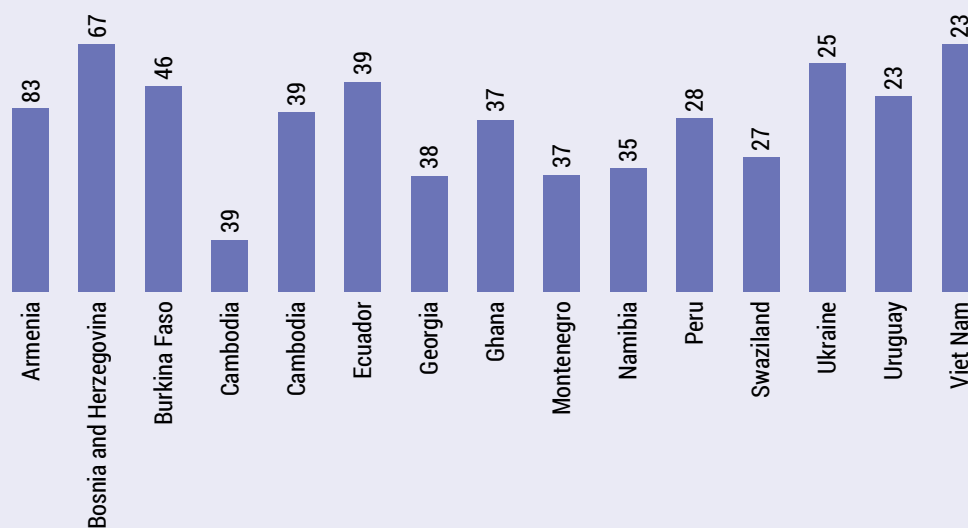
To tackle this shared challenge and support regional equity in the distribution of cultural resources and infrastructures, countries are implementing a range of measures. For instance, New Zealand will prioritize investment in both tangible and intangible cultural infrastructure and research opportunities to augment public spending, review current funding models and strategic outcomes and offer policy advice on the performance and financial strengths of key cultural and media agencies.

Other examples include Lithuania's Regional Culture Development Programme; Cyprus's construction of a multipurpose cultural centre to assist the creation of sustainable communities in urban and rural areas; Georgia's Supporting Dissemination of Culture in the Regions programme that fosters cultural and social inclusion of people residing in the regions, promotes the cultural expressions and cultural participation, and maintains and develops cultural sites, spaces and infrastructure; Latvia's Regional Policy Guidelines regarding investment in the development of infrastructure services; and Ecuador's National Territorial Strategy that fosters social and territorial equality, cohesion and integration.

Source: UNESCO, 2017.

Mehrangarh Fort with Jodhpur city scape at sunset. A UNESCO World heritage site at Jodhpur, Rajasthan, India. © Roop_Dey/Shutterstock

Culture will be instrumental in the shift to a more sustainable urban future. The 2030 Agenda for Sustainable Development presents a broad view of culture that includes cultural heritage, creative industries, cultural products, creativity and innovation. Culture's contribution to sustainable development includes local communities, economies, materials and cultural diversity. This perspective demands that the contribution of culture to sustainable development is viewed beyond the economic value it generates, but instead encompasses ways to promote and measure social cohesion and cultural diversity. Indeed, culture and innovation hold the key in terms of how cities can contribute significantly to addressing global challenges like climate change and biodiversity loss.[109]

There is a clear need to have accurate and timely cultural data and metrics for development goals to be widely achieved. Cities need effective systems with performance-based metrics that enable local authorities to make correct decisions on the best policies to adopt. In a culturally diverse urban setting, timely data is fundamental to understanding patterns through visualization and measuring the economic and social impact of culture in urban progress. Similarly, making cities sustainable requires addressing knowledge and innovation gaps, broadening participation across stakeholders and incentivizing behavioural and cultural change at the individual, neighbourhood, corporate and city levels. Therefore, a cultural data revolution may be necessary for future successful cities.

There is a clear need to have accurate and timely cultural data and metrics for development goals to be widely achieved

The culture that exists in cities is as old as civilization itself. While the size and economy of cities may ebb and flow, the culture and connection to the land and integration with natural ecosystems is relatively permanent. Important insights can be gained from the contribution of culture and heritage to sustainable development, if the necessary steps are taken to measure, track and understand the tangible and intangible stock of culture in cities across the globe.

UNESCO and UN-Habitat, along with other partners, have developed indicators that can effectively track the contribution of culture to sustainable urbanization.[110]

These indicators cover four thematic areas: environment and resilience; prosperity and livelihoods; knowledge and skills; and inclusion and participation. These indicators are designed to assess the quantitative and qualitative contributions of culture through adopted urban policies and public action that integrate culture in the implementation and monitoring of global agendas.

The underlying shifts around many urbanization trajectories is the attraction to urban economic, cultural, social and educational opportunities, along with the quality of life that a city provides. While many of these shifts are visible, they are not well assessed partly due to the lack of cultural heritage or historical data. With the drive to collect new cultural and heritage data with and by cities, greater insights will be provided on the role of culture in driving sustainable urbanization in close to real time and on a wide variety of issues.

5.5. Concluding Remarks and Lessons for Policy

When adequately harnessed, the social value of sustainable urbanization offers pathways to enhancing social inclusion, reducing inequality and ending poverty in all its forms; thereby, leaving no one and no place behind. No city can claim to be equitable when large segments of its population are excluded from the benefits of sustainable urbanization or live in extreme poverty. By harnessing the social and intangible value of urbanization, cities can serve as an entry point in the Decade of Action to deliver the SDGs, especially in terms of accelerating sustainable solutions for eradicating poverty and reducing inequality.

When adequately harnessed, the social value of sustainable urbanization offers pathways to enhancing social inclusion, reducing inequality and ending poverty in all its forms; thereby, leaving no one and no place behind

The social value of urban areas can eradicate poverty through the provision of affordable housing, access to land and finance, employment opportunities, a facilitating

To adequately harness the value of urbanization, authorities must address the threats to developing more egalitarian cities

environment for entrepreneurship and basic infrastructure. Access to a wide range of good and services like education, health and recreation will enable citizens to attain their full potential by developing their intellectual capacity and ability to lead full, productive and fulfilling lives.

Harnessing the social value of urbanization entails promoting gender equality and ensuring that the right to the city is secured for all, particularly vulnerable and marginalized groups. It also requires guaranteeing equal opportunities and access to urban resources, services and goods while fostering effective citizen participation in local policies with responsibility, enabling governments to ensure just distribution of resources and acknowledging cultural diversity as a source of social enrichment.

To adequately harness the value of urbanization, authorities must address the threats to developing more egalitarian cities that are due to inadequate planning, management and governance; perverse distributive systems that benefit the few rather than the many; systemic barriers that impede access to goods, services and opportunities; weak institutions incapable of redressing inequality and social exclusion; inability to enforce the rule of law; inadequate and unpredictable financing especially at the local level; reduced municipal autonomy; poor coordination between local governments and other tiers of government and engagement with stakeholders; and a poor rate of community participation.

Harnessing the social value of urbanization requires good governance that encompasses effective leadership; integrated urban and territorial planning; jurisdictional and multilevel coordination; inclusive citizen participation; adequate financing; and leveraging culture and cultural diversity for sustainable urban development. It also requires the joint and participatory effort of all levels of government, the private sector, non-governmental organizations and citizens supported by effective institutional framework and policies as called for in the New Urban Agenda.

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Chapter 6

Innovation, Technology and the Value of Sustainable Urbanization

The world is firmly entrenched in the Information Age. Technology continues to reshape economies and societies amidst the fourth industrial revolution, or the exponentially paced disruption caused by the possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity and access to knowledge. These possibilities will be multiplied by emerging technological breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing.

Cities are at the centre of these changes as the concentration of people and human activities encourage technology and innovation talent to co-locate. Even amidst the COVID-19 pandemic, cities are where the main health facilities are located and the home of the research institutions that are working assiduously to develop a vaccine. They are the home base for the technology companies that have produced the tools for millions to work from home. The interplay of technology and innovation has already influenced urbanization patterns and is poised to further shape the future of cities.

Quick Facts

1. Cities are rapidly deploying technology to address a wide range of urban challenges.
2. New technologies and innovation provide opportunities for cities to meet the SDGs and generate immense value from the process of urbanization.
3. The COVID-19 pandemic is accelerating the deployment of innovation and technology in urban areas.
4. The global demand for smart cities is growing rapidly, from US$622 billion in 2017 to US$1 trillion in 2019; this is expected to reach US$3.48 trillion by 2026.
5. Problems of digital exclusion in access to the benefits of new technologies persist, potentially deepening inequalities

Policy points

1. Cities must work to promote effective policies to protect citizen data and empower citizens to understand how to protect their personal data.
2. Clear, ethical frameworks and institutional arrangements for data collection and data sharing should be put in place.
3. Technology is most effective when coupled with institutional innovation and is not a substitute for improving governance.
4. Results of smart city experiments are mixed and particularly poor when these efforts are technology- rather than people-driven.
5. Technology cannot displace citizen engagement in community and city affairs.

As centres of art, science and idea exchange, cities have historically played a key role in catalysing "innovation," a term broadly defined as novel ideas, methods, approaches and knowledge.[1] Development of new technologies, production methods, institutional arrangements and knowledge are important elements that explain how cities have grown and continue to serve as centres of wealth, opportunity, diversity and creativity.[2]

At this current moment of rapid urbanization and fast-paced technological change in the context of ecological and public health crises amidst deep social inequalities, cities remain the linchpin to achieving sustainable development and meeting our climate goals. Hence, more than ever, it is critical to leverage the opportunities that urbanization presents "as an engine of sustained and inclusive economic growth, social and cultural development and environmental protection."[3] Innovation is the lubricant that facilitates this engine.

Cities are comprised of diverse populations living in intricate webs of cooperation and coordination. As a result of this proximity, density, diversity and sheer numbers, cities give rise to a set of complex problems around challenges like health, education, mobility, logistics, food security, consumption, waste, poverty and inequality. These issues, in turn, make cities prime stages to develop innovative solutions to global challenges. Cities are well poised to address these pressing problems by leveraging the very strengths of urban life. Indeed, cities that are open, inclusive and diverse encourage creative responses and vibrant neighbourhoods that result in higher human

Cities are at the centre of the technological changes occasioned by the fourth industrial revolution, namely the move towards big data, quantum computing, the Internet of Things (IoT), automation and artificial intelligence

productivity[4] and innovation.[5] Cities, as the unit of government closest to citizens, act as "civic laboratories" to foster innovation for sustainable development that can be replicated and scaled up.[6]

Cities are at the centre of the technological changes occasioned by the fourth industrial revolution, namely the move towards big data, quantum computing, the Internet of Things (IoT), automation and artificial intelligence. Technology companies are attracted to cities because of their specialized and diverse talent pools as well as clusters of likeminded firms. Consequently, some cities are reaping the direct and indirect benefits of technological innovation while also addressing new problems such as e-waste,[7] surveillance,[8] labour disruption[9] and digital and spatial exclusions that can exacerbate inequalities and environmental problems.

Large technology, architectural and engineering firms with financial interests in urban development are also promoting their own notions of how cities should innovate

under the rubric of "smart cities." Thus, cities must navigate how to manage, regulate and sometimes resist pressures to adopt technologies that are being actively promoted by multinational corporations. Instead they must facilitate bottom-up innovation and technology that benefit residents and address pressing problems while protecting privacy and citizen data.[10] These technological frontiers are just one of the domains in which cities are waging critical battles for sustainable human development with impacts far beyond their boundaries.[11]

This chapter will explore how cities across the globe are addressing challenges through innovation and technology and in doing so, meeting the demands of the New Urban Agenda, SDGs and Paris Agreement on climate change. It explores how cities are creatively experimenting to generate economic, social, cultural and environmental value (Chapter 2). The chapter will discuss the ways cities have enhanced and strengthened the deployment of innovation and technology in urban areas for the benefit of residents. However, it will also discuss the threats to inclusive, safe,

Operators work in road traffic control centre, Moscow, Russia. © Anton Gvozdikov/Shutterstock

sustainable and resilient urban development brought about by technological change and problematic concepts and dynamics around how technology should be used. Concerns include serious disruptions in labour markets, potential deepening inequality and social segregation (Chapter 1), as well as increasing surveillance and the danger that the overall pace of change is outstripping the ability of regulatory systems and municipal capacities to manage the risks associated with new technologies. Some of these concerns emerge from the rise of "smart cities" and contrast with successful urban innovation that prioritizes people over technology. Finally, this chapter offers some recommendations for the way forward for cities to innovate and leverage technology in ways that unleash the full value of sustainable urbanization and help us solve our global challenges.

6.1. What is Innovation and Why Does It Matter?

Some have cautioned that innovation has become so frequently used in such a wide range of contexts that it is now a meaningless buzzword.[12] This accusation makes it even more important to be clear on its meaning. Broadly, innovation refers to novel ideas, methods, approaches and knowledge that are applied to solving problems. These problem-solving measures can include the development of new technologies, but it is important to note that this definition goes beyond new technologies and inventions to include changes in production methods and institutional, ecological, social and political arrangements. As one historian of the idea of innovation notes: "today people expect innovation to be societal, environmental and ethical, rather than strictly economic."[13]

At a time when the world is rapidly urbanizing in the context of serious climate, resource, public health and ecological challenges,[14] the need for innovation broadly understood takes on particular force. In the face of the need for rapid transition to decarbonized, sustainable urban economies and development (Chapter 2), cities need to innovate to develop novel pathways and solutions to persistent and emerging challenges. This urgency makes innovation fundamental to attaining a better urban future for the planet that captures the full value of sustainable urbanization.

At a time when the world is rapidly urbanizing in the context of serious climate, resource, public health and ecological challenges , the need for innovation broadly understood takes on particular force

For this reason, the New Urban Agenda stresses the importance of creating "an enabling environment and a wide range of means of implementation, including access to science, technology and innovation and enhanced knowledge-sharing."[15] Innovation is also explicitly part of SDG 9, which requires Member States to build "resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation." Innovation is thus seen as both a critical means to the end of delivering on the international development agenda related sustainable urbanization and as a desirable end in and of itself that brings improvements through new tools, products and ways of working. In this context, innovation offers a notion of human progress and creativity in light of the societal challenges that span the SDGs, NUA and Paris Agreement.

In the contemporary moment, innovation is often associated with start-up businesses and technology entrepreneurs pursuing narrower economic goals of efficiency and productivity. The OECD, for example, defines innovation "as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations."[16] In this definition, innovation is largely seen as emerging from within the private sector, with the role of government being that of an enabler. This definition is too narrow for discussions of the value of sustainable urbanization because urban innovations take place within complex networked forms of governance where cities and national governments play a key role in partnership with the private sector, over which they maintain oversight. Governments can help by judiciously channelling public investment[17] and creating networks with other key actors, thus driving change towards the public good. These steps include innovations in delivering municipal services, reducing carbon emissions, improving the urban environment and fostering more liveable cities.

City governments can also be innovators drawing on, and in some cases creating, new technologies as well as developing legal and institutional innovations to improve and transform government processes and service delivery
▬

A growing recognition exists that while cities can serve as platforms of innovation, creativity and knowledge generation, city governments can also be innovators drawing on, and in some cases creating, new technologies as well as developing legal and institutional innovations to improve and transform government processes and service delivery. Cities can also draw diverse actors into collaborative networks and support innovation ecosystems that drive needed change in specific areas by supporting competitions, convening meetings and leveraging procurement power to incubate social innovation for sustainable urban development. This underscores the critical importance of innovative cities for unlocking the full value of sustainable urbanization.

6.2. Civic Technology for Urban Innovation

Urbanization is occurring within the context of rapid technological change including the exponential rise in computing power that permits the storage and analysis of big data along with a whole suite of related developments such as artificial intelligence, IoT, nanotechnologies and blockchain. One key aspect of this change is automation as machines increasingly take over functions once performed by humans. Hence, we see the rise of robots[18] and the automation of decision-making more generally with algorithms that can be taught (machine learning) and which draw on massive amounts of data to "think" (artificial intelligence). These technological advances create both new tools and problems as they raise a number of profound ethical and social questions.[19] Technology is

Technology is not neutral and moral values like bias and discrimination are often embedded in the very design and workings of these innovations
▬

not neutral and moral values like bias and discrimination are often embedded in the very design and workings of these innovations.[20]

As with past technological innovations, these components of the fourth industrial revolution are likely to be highly disruptive to urban labour markets, especially with the rise of more "automated thinking"[21] and "connected machines that will interact, visualize the entire production chain and make decisions autonomously."[22] For example, many companies are working on autonomous vehicles and mobility solutions. While such an innovation could reduce traffic congestion and carbon emissions, it would also displace jobs for taxi, ridehail and public transport drivers. Moreover, if realized, the advent of autonomous vehicles raises profound social and urban planning issues in cities that are trying to minimize car-centric development patterns.[23] The emerging and potentially profound shifts in work and labour stemming from these new technologies are likely to exacerbate inequalities even more without adequate social policies (Chapter 1). Cities, where both technological innovation and economic activities are concentrated, are the places where this increasing inequality will be most evident.

6.2.1. What is civic technology?

Cities, often in collaboration with the public, civil society and businesses, are innovating how to use new technologies to address a wide range of urban challenges. Local governments are increasingly purchasing patented technologies like cheaper and more effective sensors to monitor and share information on water, air, solid waste, infrastructure, energy, traffic and public transport, among other areas, all in the name of building a smart city. With these investments, companies are trying to capture and shape ideas about smart cities from the top down. In contrast, civic technologies are a more people-centred concept that aims to support stronger participatory and democratic processes from the bottom up.

Smart city technologies include smartphone apps, city data dashboards, information screens in public spaces, intelligent operations centres and public-facing websites with critical information and feedback mechanisms. These platforms rely on physical hardware, from publicly owned sensors that monitor vehicular traffic flow to citizen-owned mobile phones that call a ride or order food

Smart car (HUD) , Autonomous self-driving mode vehicle on metro city road iot concept with graphic sensor radar signal system and internet sensor connect. © Zapp2Photo/Shutterstock

delivery. These kinds of services tend to produce "big data," or quantities of data so massive that traditional techniques and software cannot analyse them, instead requiring large-scale computing power, algorithms and data science to uncover trends and patterns. Big data analysis, real-time monitoring and automation of various municipal services from streetlights to complaint systems are extremely useful for city planning and service delivery. Hence, leveraging these technologies appropriately is one way to make the city smart in terms of being more efficient, responsive and able to provide better and new services critical to meeting the SDGs and the NUA. The everyday citizen end user in turn benefits with the opportunity to view the city's progress via public data portals.

Another aspect of some of these technologies is that they allow for more decentralized, local data collection at the city level, to some extent democratizing computing and data collection. This decentralization enables civil society and citizens to potentially become more involved in data collection on their own, monitoring service delivery and participating in governance and decision-making.

Cities can work to create systems that enable citizens to deliberately use their phones to collect data. For example, the 311 system started in North America and now operating all over the world allows complaints to be routed immediately to the appropriate city department and has proven effective at responding to problems identified by citizens while reducing costs (Box 6.1).

Cities can work to create systems that enable citizens to deliberately use their phones to collect data

6.2.2. Civic technology for urban mobility

Other applications use passive mobile phone data to track urban mobility patterns. The Digital Matatus project in Nairobi, Kenya, uses GPS-enabled mobile phones to trace out minibus routes and stops to create critical public transport data and passenger information where none existed before (Box 6.2). Transport is a popular sector for these types of initiatives. In India,

Box 6.1: How citizen reporting for municipal response evolved from "Dial 311" to SeeClickFix to civic apps

In 1996, Baltimore, US, launched a three-digit non-emergency phone number, 311, that residents could call to report municipal issues like potholes, illegal dumping, graffiti and abandoned vehicles. The system coincided with a sentiment among government that the public sector can and should be more closely connected with citizens and their needs. At the same time, 311 had the additional impact of collecting reams of data about government operations.

Its back-end system, Customer Relationship Management software, captured details about every phone call, query, complaint and request, generating insight into how workers delivered city services. The system was so useful that OpenPlans, a US non-profit dedicated to making cities work better, facilitated the development of Open311 software in 2010 to help other cities adopt the system as a free tool rather than buying proprietary software.

These apps enable communication for all types of people. One study found that lower-income residents and young, college-aged individuals were more likely to use Boston's 311 app than the traditional phone number or website. For certain disabled residents, app-enabled engagement can help leverage services in a way that wasn't possible before.

Mobile 311 apps gave way to online services like SeeClickFix, which attempt to sell cities access to a platform that falls somewhere between a 311-call centre and a social network. SeeClickFix allows citizens to identify a problem with their smartphone and click on a map with their location. That geo-located information is then conveyed to the appropriate city government departments. Some city governments monitor what SeeClickFix users are saying about the places they live, while others take things a step further, integrating the platform into the city's back-end systems. Some cities also have bespoke apps, like San Francisco's water quality app for its beaches and Calgary's pet adoption app.

Today, things have gone a step further. Seeing how well mobile reporting apps work for citizens has made governments realize that if it works for citizens, it can work for internal operations too. From SeeClickFix to custom purpose-built reporting apps, what began as a humble call centre has evolved into a nimble and reliable way for government to target scarce resources on its most vexing problems.

Sources: Wood, 2016; Snow, 2017.

the Delhi government began providing transit data from GPS trackers on state-run buses to researchers and app developers, including Google, to develop useful tools like real-time schedules.[24] In Abidjan, Côte d'Ivoire, IBM researchers used anonymized data from mobile phone users to discover the most frequented bus routes and then came up with 65 network improvements that would save passengers an estimated 10 per cent travel time.[25] In these cases, data was generated without deliberate citizen action but through so-called "digital exhaust," or the data trail from online activity, which can be aggregated and analysed to reveal useful patterns about urban flows.[26]

Not all urban innovations require high-end technology skills or equipment. Ecosandals is a social enterprise in the poor Nairobi neighbourhood of Korogocho that improves upon the common practice in many African cities of turning rubber tires into sandals and creates youth employment in the process. Similarly, in Morocco, the small company Upcyclemo employs youth to create outdoor furniture and plant pots out of tires. In Uganda and Kenya, social entrepreneurs are converting plastic bottles into bricks and

Not all urban innovations require high-end technology skills or equipment

paving stones, solving two problems at once: both plastic waste and the need for sustainable building materials.[27] Software engineers in Lilongwe, Malawi used cast off computers to develop a highly effective electronic health records system to improve care for HIV patients.[28] While outside technology providers bring skills and expertise, locally-developed innovation often faces challenges in accessing capital and support, suggesting cities need to recognize and support homegrown innovation systems that creatively solve problems with context-sensitive solutions.

Figure 6.1: Public transport map for Nairobi
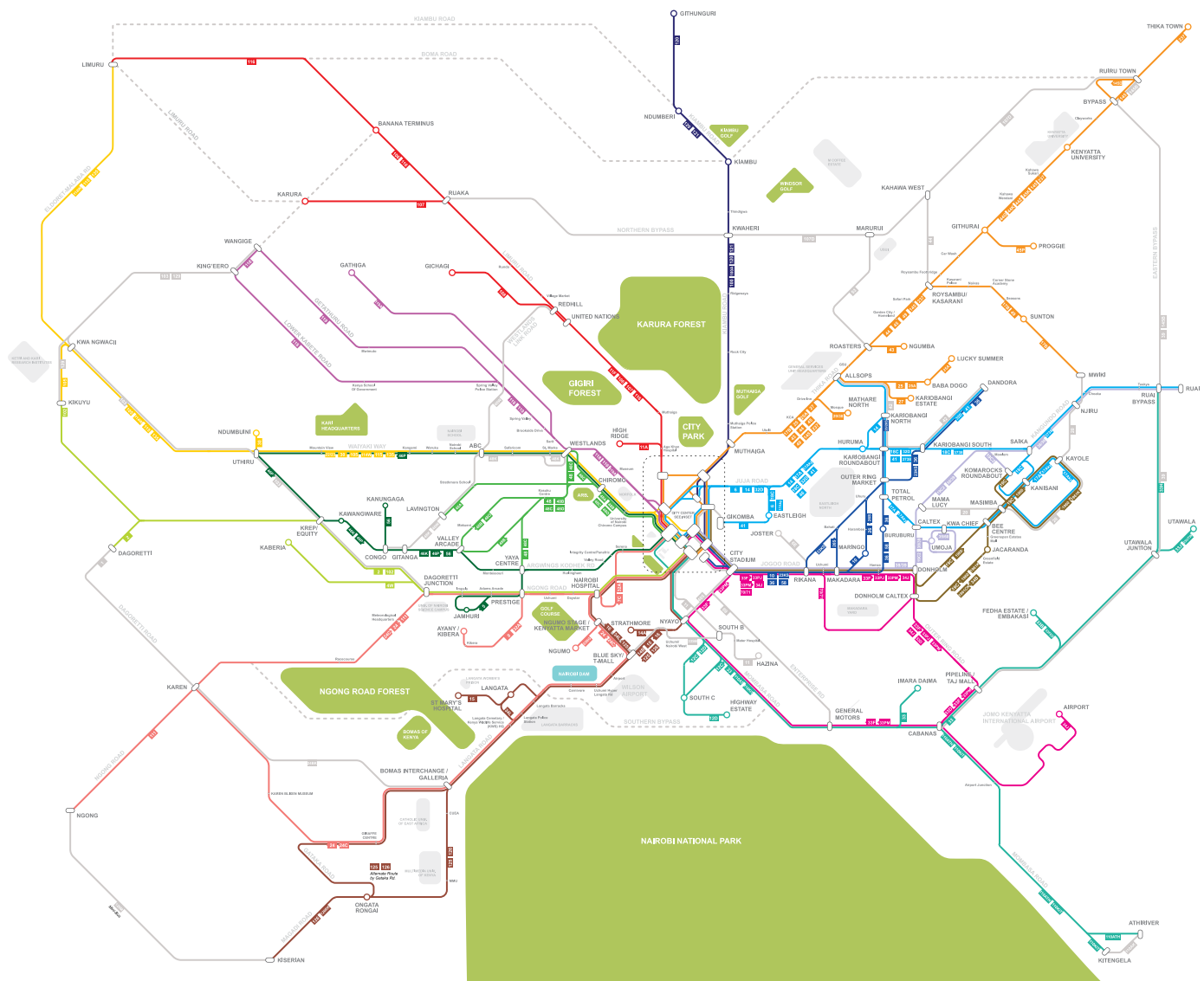
Box 6.2: **Digital Matatus project maps minibuses in Nairobi**

In cities where informal transport systems are the primary form of urban mobility, local authorities do not have basic data on their transit systems because these systems are run by many different private actors who do not collect or share data on routes, passengers and frequency. Digital Matatus was a pioneering mapping project that helped catalyse ongoing efforts to map informal transport systems in African and Latin American cities.[29] This collaboration between the University of Nairobi, Columbia University, MIT and the small US design firm Groupshot mapped out Nairobi's *matatu* (minibus) routes and stops using GPS enabled mobile phones in 2013.[30] The team used this data to create a schematic map in 2014 that proved popular in the absence of an official public transport map for the city. The regularly-updated data is open source and the routes have been integrated into different apps including Google Maps. This data is also being used to measure access to health facilities[31] and green spaces as well as to measure the proportion of the population with access to frequent public transport, which is the indicator for SDG target 11.2.[32] Many cities across Africa and Latin America are similarly collecting bottom-up data for their transit systems.[33] In Addis Ababa, Ethiopia, software developers came up with the idea of putting a simple QR code on buses that contain the map for that route and in Maputo, Mozambique, a company developed an information screen for the public.

Measuring the SGD11.2 target
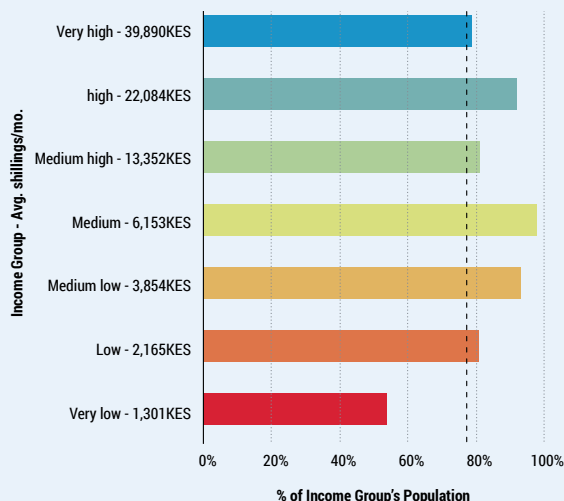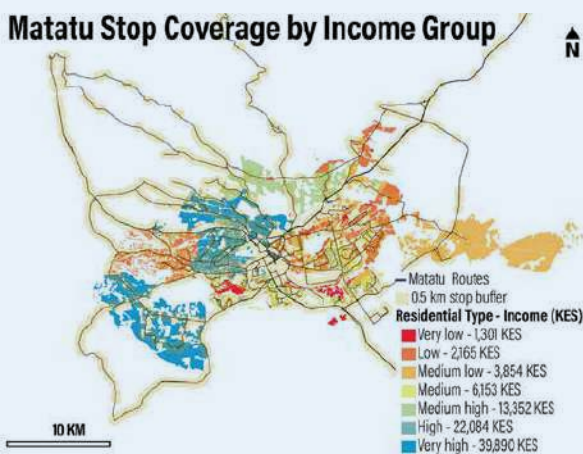
Source: Fried et al., 2020.

6.2.3. Tracking COVID-19

The latest frontier for mobile technology and big data is understanding and managing the spread of COVID-19. In East Asia, national governments have partnered with software developers to create smartphone apps that geolocate people's movements in relation to the COVID-19 status of other geolocated users.[34] This exercise provided information to citizens to help them avoid places where they might get infected. For example, Corona 100m is a tracking app from Republic of Korea that alerts users if they are within a 100-metre radius of the latest tracked location of a coronavirus patient. The app appears to be popular in the Republic of Korea and was downloaded over 1 million times within 10 days of being launched.[35] Australia and

The latest frontier for mobile technology and big data is understanding and managing the spread of COVID-19

Singapore have launched contact tracing apps—CovidSafe and TraceTogether, respectively—that facilitate contact tracing in the event of COVID-19 infection by individuals whose mobile phones are linked.

These apps enable governments to dampen infection rates, which simultaneously protects public health and inspires consumer confidence to spur economic activity. As with most technologies, however, these apps must be supplemented by well-functioning public health policies and programmes such as rapid testing, in-person follow-up contact tracing and mandatory isolation. Despite these apps' relative success, there are clear trade-offs between public health and privacy, which exist alongside other data security concerns.[36]

Contact tracing apps are just the tip of the iceberg in technological trends sparked or accelerated by the COVID-19 pandemic. These innovations have been crucial in keeping people safe, productive and connected when they are physically apart while simultaneously ensuring that society remains functional during lockdowns.[37] It is important to note, however, that in many of the world's cities substantial numbers of people cannot transition to remote learning and also face exclusion from these technologies. Some COVID-19 impacts of these technologies are likely to endure in the post-COVID-19 era and have potential long-term implications for urbanization processes (Box 6.3).[38]

It is important to note, however, that in many of the world's cities substantial numbers of people cannot transition to remote learning and also face exclusion from these technologies

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Box 6.3: Ten technology trends accelerated by COVID-19

The coronavirus disease (COVID-19) pandemic has accelerated key technology trends, including digital payments, telehealth and robotics, which can help reduce the spread of the disease while helping businesses stay open. These technology trends can help make society more resilient in the face of pandemics and other threats, as well as considerations about their effects on business, trade, work, production of goods and services, education, health care and entertainment.

Online shopping and robot deliveries

COVID-19 has transformed online shopping from a nice-to-have to a must-have around the world. Online shopping needs to be supported by a robust logistics system. In-person delivery is not virus-proof. Many delivery companies and restaurants in the US and China are launching contactless delivery services where goods are picked up and dropped off at a designated location instead of from or into the hands of a person. Chinese e-commerce giants are also ramping up their development of robot deliveries. However, before robot delivery services become prevalent, delivery companies need to establish clear protocols to safeguard the sanitary condition of delivered goods.

Digital and contactless payments

Cash might carry the virus, so central banks in China, US and the Republic of Korea have implemented various measures to ensure banknotes are clean before they go into circulation. Contactless digital payments, either in the form of cards or e-wallets, are the recommended mode of payment to avoid the spread of COVID-19. Digital payments enable people to make online purchases and

payments of goods, services and even utility payments, as well as to receive stimulus funds faster. The availability of digital payments relies on internet availability, internet-equipped devices and a network to convert cash into a digitalized format.

Working remotely

Many organizations have asked their employees to work from home. Remote work is enabled by technologies including virtual private networks, voice over internet protocols, virtual meetings, cloud technology, work collaboration tools and even facial recognition technologies. Working remotely poses challenges to employers and employees. Information security, privacy and timely tech support can be big issues. Working remotely can also complicate labour law issues, such as those associated with providing a safe work environment and income tax issues. If remote work becomes more common after the COVID-19 pandemic, employers may decide to reduce costs and hire people from regions with cheaper labour costs. Not all jobs can be done from home, which creates and reinforces disparity. Well-educated, white-collar workers are more likely to have jobs that allow them to work from home unlike informal sector workers and those employed in service jobs deemed essential during lockdown.

Distance learning

As of mid-April 2020, 191 countries announced or implemented school or university closures, impacting 1.57 billion students. Many educational institutions started offering courses online to ensure education was not disrupted by the lockdown. Technologies involved in distant learning are like those for remote work and include virtual reality, augmented reality, 3D printing and artificial-intelligence-enabled robot teachers. Concerns about distance learning include the possibility that the technologies could create a wider digital divide in terms of readiness, availability, affordability and income level.

Telehealth

Telehealth can be an effective way to contain the spread of COVID-19 while providing essential primary care. Wearable personal IoT devices can track vital signs. Chatbots can make initial diagnoses based on symptoms identified by patients. However, in countries where medical costs are high, it is important to ensure telehealth will be covered by insurance. Telehealth also requires a certain level of tech literacy to operate, as well as a good internet connection.

Online entertainment

Although quarantine measures have reduced in-person interactions significantly, creativity has brought entertainment online. Cloud raves and online streaming of concerts have gained traction around the world. Chinese film production companies also released films online. Museums and international heritage sites offer virtual tours. There has also been a surge of online gaming traffic since the outbreak of COVID-19.

Supply chain 4.0

The coronavirus pandemic has created disruptions to the global supply chain. With physical distancing and quarantine measures, some factories are completely shut down. Heavy reliance on paper-based records, a lack of visibility on data and lack of diversity and flexibility have made existing supply chain system vulnerable to any pandemic. Core technologies such as big data, cloud computing, IoT and blockchain are building a more resilient supply chain management system for the future by enhancing the accuracy of data and encouraging data sharing.

3D printing

3D printing technology has been deployed to mitigate shocks to the supply chain and circumvent export bans on personal protective equipment. 3D printing offers flexibility in production: the same printer can produce different products based on different design files and materials. However, massive production using 3D printing faces a few obstacles. First, there may be intellectual property issues involved in producing parts that are protected by patent. Second, production of certain goods is subject to regulatory approvals, which can take a long time to obtain. Other unsolved issues include how design files should be protected under patent regimes, the place of origin, impact on trade volumes and product liability associated with 3D printed products.

Robotics and drones

COVID-19 has made the world realize how heavily it depends on human interactions to make the economy work. The pandemic provided a strong push to rollout the use of robots, which have increasingly been used to disinfect areas and deliver food to those in quarantine. Drones have walked dogs and delivered items. While there are some reports that predict many manufacturing jobs will be replaced by robots in the future, at the same time, new jobs will be created in the process. Policies must be in place to provide sufficient training and social welfare to the labour force to embrace this change.

5G and information and communications technology

All these technology trends rely on a stable, high-speed and affordable internet connection. While 5G has demonstrated its importance in remote monitoring and healthcare consultation, the rollout of 5G is delayed at a time when the technology may be needed the most. The adoption of 5G will increase the cost of compatible devices and the cost of data plans. Addressing these issues to ensure inclusive access to internet will continue to be a challenge as the 5G network expands globally.

Source: Xiao and Fan, 2020.

6.2.4. Measuring air and water quality

Besides mobile phones, other kinds of sensors like air or water quality monitoring devices are also becoming less expensive and more widely available, allowing cities and their citizens to monitor environmental conditions more cheaply and frequently. This trend can also enable wider participation in citizen science initiatives that create better informed citizens who will advocate to reduce air and water pollution.[39] Such monitoring can also contribute toward achieving SDG11.6: "*By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.*" These monitoring devices can track measurements for SDG11.6 indicators like mean urban air pollution of PM_{10} and $PM_{2.5}$ particulate matter. Technology in the hands of cities and their citizens can subsequently help move towards more sustainable urbanization that addresses climate change and its impacts (SDG 13).

While lower cost monitors can be profoundly useful and potentially cut costs, they do not obviate the need for cities to build continuous and stronger air and water quality monitoring systems. Supporting local university and scientific communities is also critical to be able to interpret data from these devices, help properly calibrate the sensors to local conditions and ultimately implement air and water quality solutions in alignment with the New Urban Agenda (Box 6.4).[40] Such efforts can also help

Besides mobile phones, other kinds of sensors like air or water quality monitoring devices are also becoming less expensive and more widely available, allowing cities and their citizens to monitor environmental conditions more cheaply and frequently

collect currently missing data to monitor SDG 3 (good health and wellbeing for all) as well as look at inequalities across neighbourhoods that can spur demand for change. In Nairobi's Mukuru slums, for example, residents created art inspired by air quality measurements to speak out about the unfair distribution of air pollution and health burdens in their community.[41]

Box 6.4: Measuring air pollution with low-cost air quality monitoring networks

In 2012, poor air quality was responsible for seven million premature deaths, making it the world's single largest environmental health risk. Air pollution is a major problem in cities across the globe and it requires a data-driven approach. But a large gap exists in the abilities of different cities to measure and model air pollution and relatively few have air quality monitoring systems in place. Low-cost air quality sensors have the potential to bridge this data gap. UNEP in partnership with the company Alphasense, the University of Cambridge, the NASA-GLOBE citizen science programme, the Wajukuu Arts Collective and the Kibera Girls Soccer Academy conducted an experimental deployment of six low-cost air quality monitors in schools across Nairobi.

Despite technical limitations, this experiment showed that sensors can provide indicative measurements of air quality that are valuable to local communities. It also found that such a sensor network can play an important role in engaging citizens by raising awareness about the importance of addressing poor air quality. Sensors are clearly a potentially important complement but not a substitute for high quality and reliable air quality monitoring systems as problems of calibration, certification, quality control and reporting remain to be solved. However, when carefully interpreted, data from low-cost monitors can be useful and this experiment helped inform Nairobi's air quality management plan. Increasingly, African governments are supporting their cities to measure air pollution. Both Ghana and Senegal, for example, have monitoring stations, air quality management plans and air quality indexes for citizens.

Low Cost Air Quality Monitor installed in a school in Nairobi

Source: deSouza et al, 2017.

6.3. Technology Firms and the Smart City

Digital technologies can help make a city "smarter" because the user of these technologies has a continual flow of data which, when analysed by algorithms, ideally helps see, think, intervene and make decisions more intelligently in and for the city. For example, a resident may look at an app to know which bus to catch for the shortest travel time or whether to go outside depending on the air quality. A traffic light can see a bus coming and turn green to give public transport priority over private vehicles. At its most optimistic, a smart city might best be defined as an "innovative city that uses information and communication technologies and other means to improve quality of life, efficiency of urban operation and services and competitiveness, while ensuring the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects."[42]

Technology firms are increasingly offering to sell smart city products and services to city governments, other companies and even directly to citizens. Estimates vary widely on the global smart cities market size. The global demand for smart cities is growing rapidly, from US$622 billion in 2017 to US$1 trillion in 2019. It is expected to reach US$3.48 trillion by 2026 (Chapter 1).[43] These figures indicate an important and growing sector that is seen as an enormous opportunity for technology companies.
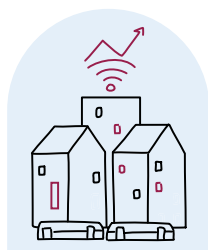
The global demand for smart cities is growing rapidly, from US$622 billion in 2017 to US$1 trillion in 2019

The most ambitious smart city approach involves local governments partnering with technology companies to develop whole new experimental neighbourhoods or exurban developments sometimes conceptualized as entirely new cities. While the specifics of each smart city or smart neighbourhood project varies, they typically involve technology like sensors, wireless networks, IoT and smart meters. Using these technologies, smart cities automate services like communicating with citizens to receive

feedback. In households, these technologies reduce energy costs by automatically turning lights and other appliances off when people are not around and through smart meters that talk to smart appliances and turn them on and off to reduce costs, for example, cleaning dishes in the middle of the night when energy demand is low.[44] Given the way that technology is leveraged to reduce energy demand and encourage low emissions living, these cities are also sometimes called "eco cities", an idea that has a much longer history reaching back into the 1970s.[45]

New Songdo City on reclaimed tidal wetlands on the outskirts of Incheon, Republic of Korea was one of the first smart city developments. The national government spearheaded the idea for a new city built from scratch that would strive for simultaneous economic prosperity and environmental sustainability through cutting-edge technology that would attract private sector tenants and build a new national business and innovation centre. The government engaged with local and foreign companies to develop a top-down master plan. Architects designed the city with sustainability principles reinforced by ubiquitous information sharing through wireless networks, digital technologies and devices that communicate with one another. A steady stream of data is continuously being computed and sent to adjust services and infrastructures aiming to create a more efficient urban metabolism and service experience for residents as well as businesses.

Despite US$40 billion of investment and technology that has attracted a wide array of companies, the city remains only partially populated and lacks the social quality of an organically grown city.[46] It is, in effect, a low-density, car-centric, high-end, exclusive US-style suburb that some residents describe as lonely.[47] As a testbed or showcase for the new international city-building industry, Songdo points to the limitations of having neighbourhoods, much less whole cities, designed by "partnerships of real estate developers, institutional investors, national governments and the information technology industry"[48] rather than by and for people from the bottom up.

Songdo also illustrates the problems with new city developments that focus on making a more efficient urban metabolism without maintaining broader climate and ecological goals like carbon neutrality, biodiversity,

Central Park, Incheon, South Korea. © PKphotograph/Shutterstock

wetlands preservation and coastal zone management in the face of sea-level rise.[49] Often designed and serviced by the same international architectural, engineering, and technology firms, variations on the Songdo model has proven somewhat impervious to criticism and spread across the globe (Box 6.5).[50] In other cases, like the Eko-Atlantic City on an artificial island in Lagos, Nigeria, or Konza Technology City outside of Nairobi, the vision is largely in favour of social exclusion through high-end real estate development.[51] These real estate development schemes are the very opposite of socially-inclusive urbanization as envisioned in the New Urban Agenda.

Box 6.5: Google's Sidewalks Lab encounters resistance to Toronto Tomorrow

Tech giant Google and its spinoff urban development company Sidewalks Lab is a prime example of the growing smart city business model. Sidewalk Labs describes itself as a firm that "imagines, designs, tests, and builds urban innovations to help cities meet their biggest challenges."[52] In 2017, Sidewalks Lab reached an agreement with the City of Toronto to redevelop a 12-acre (4.9-hectare) waterfront industrial parcel into a futuristic neighbourhood. The company's experimental master innovation and development plan, Toronto Tomorrow, was unveiled in 2019 and envisioned self-heating sidewalks, underground trash chutes, flexible streets and cross-laminated timber skyscrapers, all collecting copious amounts of data to ensure optimum energy and mobility efficiency.[53]

While the conditions of Sidewalk Labs' agreement required actively negotiating with municipal entities to ensure that the planned neighbourhood fit into the city's vision, citizen groups argued that the wealthy tech outsider was circumventing public oversight and citizen engagement processes.[54] They were also wary of the degree of surveillance that Toronto Tomorrow would entail and how much data the tech giant would ultimately control.[55] In July 2020, Sidewalk Labs ended the project citing economic uncertainty due to the COVID-19 pandemic.

Source: Sidewalk Labs, n.d.; Summers, 2019; Weiditz, 2020.

Another smart city approach involves cities, rather than national governments, more centrally in the driver's seat in creating smart city projects. In some cases, however, these kinds of projects are incentivized by national governments. For example, in 2015, India launched the Smart Cities Mission "to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions."[56] This national programme applied technology to a wide variety of urban problems from wastewater treatment to telemedicine (Figure 6.2). The programme selected 100 cities and approved their smart city plans for partial funding.[57] However, it is important to note that progress has been slow, with some cities making faster progress than others, which reveals uneven local capacity to finance and implement smart city initiatives.[58]

Another smart city approach involves cities, rather than national governments, more centrally in the driver's seat in creating smart city projects.

Even with the excitement over the power of new civic technologies for urban innovation, many limitations exist. First, technology cannot displace citizen engagement in neighbourhood and urban affairs. Digital platforms are not a substitute for civic meetings, dialogue and institutional reform. Efforts to displace these gatherings or move them online are often problematic. For example, the institutional innovation of participatory budgeting developed by the city of Porto Alegre, Brazil, gives citizens a say in how the city budget is spent. It is effective in part because of the dialogue it generates, which gives the poor a bigger voice and creates citizen monitors who watch to ensure the projects they voted for are implemented.[59] When this process is taken online, it loses some of its effectiveness. At its worst, it can generate more distrust in government.[60]

Additionally, technology is most effective when coupled with institutional innovation and is not a substitute for improving governance. Many smart cities projects are led astray by their emphasis on technology over engagement with existing governance processes. In the case of Toronto Tomorrow, citizens were deeply concerned about the power of a large wealthy technology firm to distort democratic

Figure 6.2: Government of India's smart city mission

E-Governance and Citizen Services
1. Public Information, Grievance Redressal
2. Electronic Service Delivery
3. Citizen Engagement
4. Citizens - City's Eyes and Ears
5. Video Crime Monitoring

Waste Management
6. Waste to Energy & fuel
7. Waste to Compost
8. Waste Water to be Treated
9. Recycling and Reduction of C&D Waste

Water Management
10. Smart Meters & Management
11. Leakage Identification, Preventive Maint.
12. Water Quality Monitoring

Energy Management
13. Smart Meters & Management
14. Renewable Sources of Energy
15. Energy Efficient & Green Buildings

Urban Mobility
16. Smart Parking
17. Intelligent Traffic Management
18. Integrated Multi-Modal Transport

Others
19. Tele-Medicine & Tele Education
20. Incubation/Trade Facilitation Centers
21. Skill Development Centers

politics and violate their privacy rights. The potential exists for cities to use governance frameworks, regulation and tools such as public procurement to take a more proactive approach to the ongoing digital transformation and ensure that projects that involve technology are more closely aligned with the goals of cities and citizens.

6.4. The Bottom-up Smart City: Urban Labs, Open Data and the Open-Source Movement

Cities and the people who live in them are increasingly finding bottom-up ways to innovate in order to make their cities better places. These strategies include forging links with local universities; leveraging local, civic-minded software developers, tech companies and collectives; building, encouraging and sharing anonymized open data; and leveraging open source software. Cities are also increasingly developing regulatory mechanisms for urban tech companies to rein in their disruptive power with mixed results.

Ultimately, citizens are a city's greatest resource. They provide new ideas for innovation, act as the eyes or ears of the city, help monitor conditions on the ground and engage the city more actively in setting priorities, for example through participatory budgeting and voting for elected officials or on specific policies and programmes. Whether through texting or apps, citizens with mobile phones and other monitoring devices like low-cost portable air monitors or medical records systems can help generate important data. Cities also generate data from their own systems, whether buses with trackers, utility meters on public housing, sewage pipes equipped with sensors or financial information about city budgets.

6.4.1. Cities and open data

A growing number of cities are working to standardize such data and make it public through open data portals.

Cities and the people who live in them are increasingly finding bottom-up ways to innovate in order to make their cities better places

The so-called "open data" or "open government" movement seeks to make as much information as possible about city operations available to the public both to inform the everyday citizen and to inspire those who might create a useful tool, application or analysis from that data. This movement is gaining momentum as cities recognize that they can create a lot of value in terms of technological innovation that improves service delivery, public trust and analysis to feed into better policy.[61]
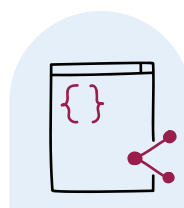
Open data and open source software contribute to increased economic development as well as resilience in planning and service provision.

Open data and open source software contribute to increased economic development as well as resilience in planning and service provision. These low-cost alternatives to proprietary software allow entrepreneurs in the region to build up new businesses that improve services and planning as well as researchers and analysts to develop new, context-specific knowledge to guide decision-making. For example, software developers in Lilongwe were able to build lower cost medical record software for health clinics by drawing on OpenMRS, an open source enterprise electronic medical record system platform that shares and builds open code, thereby reducing the costs of developing software. Recognizing the importance of these benefits, the international development community has developed principles for digital development (Figure 6.3).[62]

Open data is defined as "data that can be freely used, re-used and redistributed by anyone subject only, at most, to the requirement to attribute."[63] According to the Open Data Institute, good open data should have four attributes: be linked to the internet so that it can be easily shared and talked about; be available in a standard, structured format, so that it can be easily processed; have guaranteed availability and consistency over time, so that others can rely on it; and be traceable, through any processing, right back to where it originates, so others can work out whether to trust it.[64]

Figure 6.3: Digital principles for development

Design with the User

Build for Sustainability

Reuse and Improve

Understand the Existing Ecosystem

Be Data Driven

Address Privacy & Security

Design for Scale

Use Open Standards, Open Data,
Open Source, and Open Innovation

Be Collaborative

Source: www.digitalprinciples.org.

One clear example of where open standardized data has made a large positive impact is in the transport sector. In 2015, TriMet, the public transit agency in Portland, US, agreed to make its proprietary data about routes and schedules available to Google, which integrated that information into its popular mapping app using a transit data format that eventually became an open source platform.[65] The open transit data movement has since spread with great positive effect. The United States National Academies of Sciences, Engineering and Medicine surveyed 67 transport agencies across the globe on their experience with open data and found evidence that significant benefits emerge from making public transport data open including that the public was more aware of public transport services.[66]

Open data also allows third-party innovation around passenger information systems. This innovation is most evident in the "ecosystem of third-party apps being developed for the dominant smartphone platforms."[67] Open public transport data thus can also help foster business development, and some app developers are able to generate income from innovative apps they create using open data. Indeed, the cost of developing apps in-house was a key factor in the decision by Transport for London (TfL) to move towards an open data strategy.[68] Allowing the private sector to develop diverse quality products on top of the data can be highly cost effective. TfL calculated that apps powered by its bus data will deliver £83 (US$106) million of customer benefit over 10 years, at a cost to TfL of £820,000 (US$105,000) per year.[69] By 2012, 5,000 registered developers had produced over 362 apps powered by TfL data. The apps reached 4 million people with an estimated £15–58 million (US$19–74 million) value in time saved by users.[70]

Some of these companies are also able to generate more data as apps gain users who, in turn, feed back into data creation, which can even lead to new transit provision. For example, CityMapper, a London-based company, used its data to discover demand for missing bus links and launched a bus-taxi hybrid service on these routes.[71] TransitScreen, Inc. uses open data from public transit agencies to develop informational screens for building lobbies and public spaces. Overall, many of these businesses develop services that make shared mobility and public transport more attractive. These efforts help build a rich ecosystem in support of the global agenda of improving public transport and reducing individual car use, a critical part of addressing climate change and air pollution in cities. Evidence speaks to the power of developing ecosystems around open data, not just in the transport sector but in all areas. Indeed, with climate change, cities should be building open environmental and demographic data for climate resilience planning.[72] This approach also addresses the question of how to reach SDG targets 17.6 (enhancing international cooperation on and access to science, technology and innovation and enhance knowledge sharing) and 17.7 (promoting the development, transfer, dissemination and diffusion of environmentally sound technologies) by making technology available at fair terms and encouraging knowledge transfer and learning across cities.

To leverage open data as a resource, cities have to develop their own ICT capabilities to help build and organize data as well as portals to share this data in a standardized format

> **Box 6.6: Hackathons leverage open data to build city tech tools**
>
> The idea of running a hackathon to leverage new ideas for how to use open data in cities has caught on across the world. One of the first city-run competitions in the US was Apps for Democracy, held in Washington, DC in 2008 to leverage the city's 200 opened datasets as catalogued by a third-party company. The city found sponsors to provide US$50,000 in prize money for the top three apps. The hackathon resulted in 47 successful designs, which helped raise an estimated US$2.3 million for the city itself. But this value is only created when cities have the resources to make data available in a useful form and requires an existing civic-minded tech community. In addition, many of the innovative ideas do not get developed and hence are not sustained requiring a more iterative and collaborative approach. Communities of "civic hacktivists" are growing across the world and cities increasingly are finding ways to partner with them to provide services or understand problems better.
>
> *Source: Smith, 2017.*

To leverage open data as a resource, cities have to develop their own ICT capabilities to help build and organize data as well as portals to share this data in a standardized format; many cities are now sharing a wide variety of anonymous data and creating app competitions or "hackathons" to encourage new applications to address urban problems (Box 6.6). Open data portals also have the added benefit of increasing collaboration among departments and promoting more interaction and trust between residents to solve challenges.[73]

Another strategy for cities is the innovation challenge. This approach hopes to draw on the diverse ideas, talent and people in the city and beyond to tackle a specific challenge. For example, ThinkCity, a social purpose organization in Kuala Lumpur, Malaysia, created the "climathon" in 2019 to solicit ideas to address the serious challenge of climate change resilience. The winner of the first climathon in Penang developed a prototype for a smart flood warning system for the city of Pulau Pinang which is highly vulnerable to flooding. Using sensors and artificial intelligence to transmit data on water levels in real time, the system would model hydrological problems in advance, enable early detection of flooding risk and generate a public alert system. ThinkCity with its partners from George Town, in turn, won the EIT Climate-KIC Climathon Global Awards for nature-based solutions to prevent flooding including planting climate-resilient species of trees that can help cool communities.[74]

In a similar vein, after Hurricane Sandy wreaked havoc on the New York City metropolitan area in 2012, the US Department of Housing and Urban Development in partnership with the non-profit and philanthropic sector organized Rebuild by Design, a design competition to foster and fund innovative solutions to climate resilience. This collaborative public-private process continues to work in different cities across the globe.[75]

6.4.2. Urban labs

Cities with institutions of higher education can also develop so-called "town and gown" partnerships with universities (Box 6.7). Many universities are in urban areas and are increasingly looking to collaborate with local communities and tech companies in urban labs to address a wide range of urban problems. The MIT Senseable City Lab and University of Chicago's Urban Labs are examples in the developed world. Other collaborative urban tech initiatives like the Hyderabad Urban Lab or C4D Lab (University of Nairobi) and iHub in Nairobi are supported by foundations, civil society and multilateral aid. Still others are housed within city government, like the Laboratorio de Innovación Quito (LINQ), LABcapital in Bogotá and the Laboratorio para la Ciudad in Mexico City, which closed in 2018. These kinds of urban tech collaborative networks and spaces are growing globally, and cities can encourage them by providing affordable space, open data and collaboration. Research is a critical building block for urban innovation systems that spawn new civic-oriented tech companies.

Box 6.7: New York City's "Town and Gown" programme

Created in 2009-2010, Town+Gown is a city-wide university-community partnership programme, resident at the New York City Department of Design and Construction, that brings academics and practitioners together to create actionable knowledge in the built environment.

Town+Gown is an open platform research program that uses service (experiential) learning and faculty-directed research to facilitate partnerships between academics and practitioners on applied built environment research projects through the collaborative inquiry model of systemic action research.

Town+Gown aims at increasing evidence-based analysis, information transfer, and understanding of the built environment, using, in many instances, New York City's built environment as a laboratory for practitioners working in the city's physical spaces, and academics in the built environment disciplines, with the ultimate objective of making changes in practices and policies based on research results. The programme involves city departments partnering with university teams sharing data and insights on problems that university teams work on. The city then organizes for events where the projects are presented and discussed in public. Joint solutions to city problems emerge out of this dynamic.

Source: https://www1.nyc.gov/site/ddc/about/town-gown.page

6.5. Cities and the Uneven Geography of Technological Innovation

Technological innovation requires public investment in research and development (R&D) and venture capital, or funding that goes into risky new projects or ventures. These components are unevenly distributed across the world. Large technology innovation networks and the companies within them are almost always located in global cities that can also attract young well-educated

workers, many of whom are immigrants, while less globally connected cities are left behind.[76] These workers are sometimes called the creative class, a term that encompasses artists and entrepreneurs of all kinds that work in lucrative creative industries.[77] In 2015, creative industries generated over US$2.2 trillion with more than 29.5 million jobs worldwide, which is equivalent to three per cent of the world's GDP.[78] While creative industries are open to people of all ages and backgrounds, they offer significant pathways to youth employment and connect the formal and informal sectors, generations and regions, bearing a largely untapped potential to improve urbanization by 2030.

Although it is hard to measure precisely, some estimates suggest that the digital economy alone in 2016 was worth US$11.5 trillion globally, equivalent to 15.5 per cent of global GDP, and is projected to grow to 24.3 per cent of global GDP by 2025.[79] If the Silicon Valley region were a country, it would be one of the richest in the world with annual production valued at US$275 billion.[80] As technology and related knowledge spreads, which happens quickly in the digital age, innovation supports other economies both directly and indirectly through productivity gains.[81]

The geography of current technological innovation, however, is riven with inequalities, with many profound implications for society

The geography of current technological innovation, however, is riven with inequalities, with many profound implications for society that express themselves at different levels: within and between these metro areas, between metro areas and rural areas, and across cities and countries around the world. Currently, the San Francisco Bay Area in the US is the largest tech innovation ecosystem in the world. Many of the largest tech companies, like Google, Facebook, Uber and Airbnb, are based there and have outsized impacts locally because of the wealth they generate and globally because of their impact on rental housing markets, the taxi industry, political advertising and data privacy. It is important to understand these dynamics because most cities are now impacted by these giant technology firms that are, in many cases, wealthier

Figure 6.4: Global distribution of top 100 digital companies and market capitalization (US$ billion)
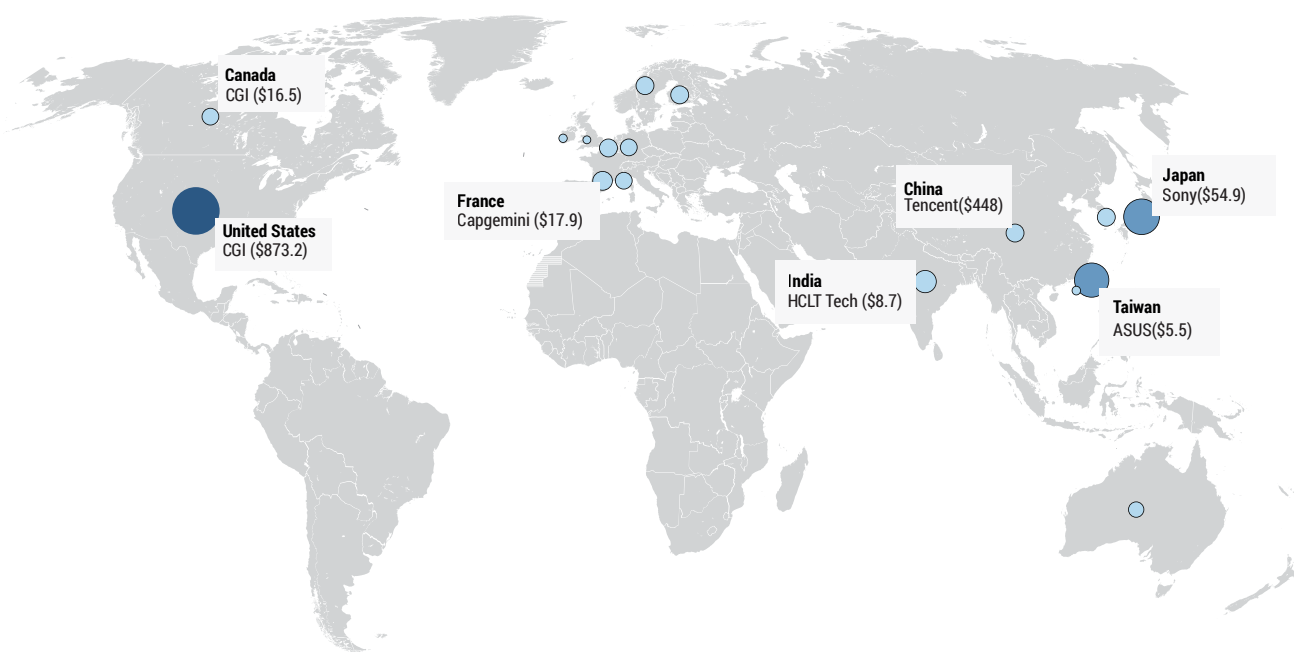
and more powerful than many countries and have wide-ranging impacts, including on city governance.

Venture capital supports technology companies by lowering the barriers to taking products to market. This financing also tends to be concentrated in the US, especially in the San Francisco Bay Area and the Northeast Corridor (Boston-New York-Washington), with most venture capital-backed high-tech start-ups found in global cities like London, Paris, Toronto, Beijing, Tel Aviv, Shanghai, Mumbai and Bangalore, among some others (Figures 6.4 and 6.5).[82] While much of this venture capital goes into investment in local technological innovation, some of it is exported to support technology companies globally,[83] sometimes creating conflicts between more locally funded and developed technology firms and global players that make for a very uneven playing field and what some term "tech or digital colonialism."[84]

Public sector investment in scientific, engineering and technology research that forms the basis of much of the core of technological innovation is also very unevenly

distributed globally, which raises a problem for the enabling environment envisioned in the New Urban Agenda and SDGs: "access to science, technology and innovation and enhanced knowledge-sharing."[85] According to UNESCO, while global spending on R&D has reached a record high of almost US$1.7 trillion, only 10 countries account for 80 per cent of spending which consists of both private and public sector support.[86] Part of this public sector R&D support makes it into universities that either incubate or spin off start-ups or provide breakthroughs in science that enable further technological advances.

Public sector investment in scientific, engineering and technology research that forms the basis of much of the core of technological innovation is also very unevenly distributed globally

Even though some of the benefits of improved technology spread across the globe, the spatial distribution of venture capital and public sector R&D along with the technology

Figure 6.5: Global distribution of venture capital

Venture Capital Investment
(US$ Millions)

10,000
5,000
1,000
100
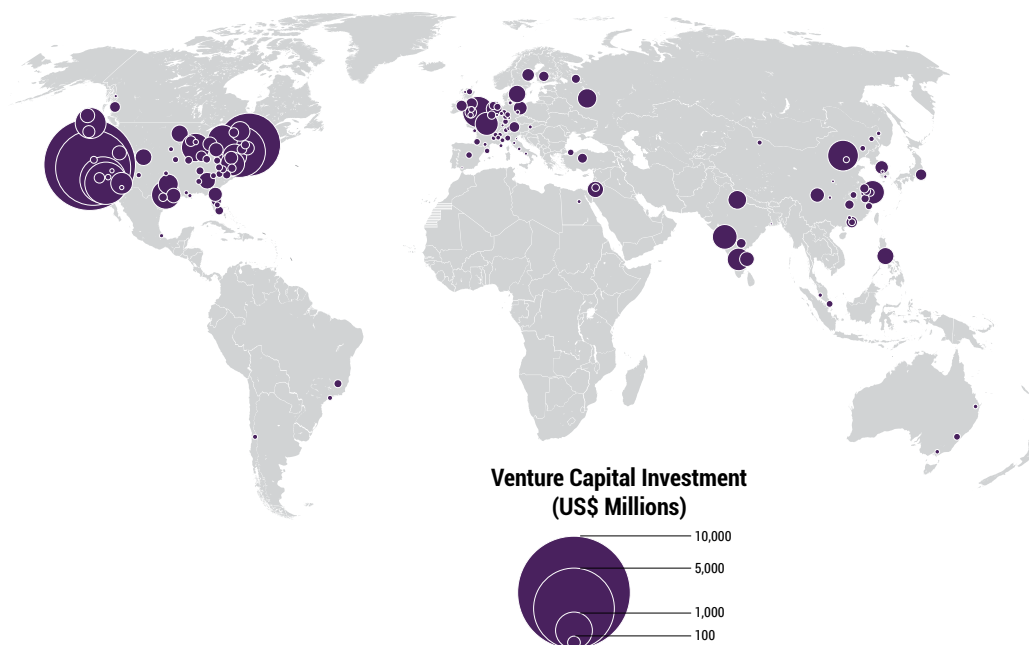
Source: Martin Prosperity Institute, 2016

companies that draw on them is profoundly concentrated. One implication is that large technology firms are players in many cities across the globe, creating new power dynamics as was the case of Sidewalks Lab in Toronto.

As the technology sector can generate employment and economic dynamism with the production of new services and increased efficiencies, many cities strive to foster conditions for these kinds of businesses to flourish. Witness the dozens of cities around the world that have attempted to brand themselves with the moniker "Silicon," from the Silicon Wadi of Tel Aviv to the Silicon Savannah of Nairobi. However, cities also are highly unequal in the extent to which they can develop policies to encourage technology firms as an economic strategy. Some cities with more resources are investing in innovation districts, incubator and accelerator spaces, knowledge centres and universities, as well as providing land or tax breaks to tech companies. Other cities simply host technology firms but are not focused on building innovation systems. Overall, a great diversity exists among cities in terms of their orientation towards the innovation and technology firms that increasingly dominate the world's most economically dynamic cities.[87]

A great diversity exists among cities in terms of their orientation towards the innovation and technology firms that increasingly dominate the world's most economically dynamic cities

One of the most dramatic examples of the ambivalent relationship cities can have toward the technology sector is San Francisco. In 2015, the mayor faced a budget deficit and created tax breaks for tech companies to move into the city. The incentive created a dynamic hub that boosted city employment and generated substantial revenues, but the influx also raised rents and property prices feeding a housing crisis that has made San Francisco one of the most unequal cities in the US.[88] In 2018, city voters responded to the changes in their city by approving a tax on tech companies to fund housing for the homeless over strenuous opposite from the tech industry.[89] But Silicon Valley is more than just a single city's policies. A detailed analysis of the Bay Area's innovation ecosystem by the Bay Area Science and Innovation Consortium (BASIC), which brings together local government, companies and universities in

an innovative form of cooperative networked governance, shows a whole set of complex public and private actors that interact to produce the region's wealth, including universities, accelerators, big companies and venture capital (Figure 6.6).[90]

So far efforts to kickstart innovation systems in other metropolitan areas have brought mixed but usually lower than expected success.[91] This outcome is because it is hard to nurture a complex ecosystem that involves a form of networked collaborative governance, which is in and of itself a kind of institutional innovation. This conclusion reinforces the insight that innovation in the broad sense lies both in scientific and technological developments, but also in the creative actions of governments and citizens that strive to use new institutional arrangements to address economic as well as social and environmental challenges. However, even if a city is not actively trying to build local innovation systems, we have seen many ways for cities to leverage new technologies from the bottom up to become "smarter."

6.6. Digital Exclusion, Data Privacy and the Perils of New Technologies

Historically, every set of profound technological changes has led to transformations in labour, social and political relations. This section systematically examines some of the perils of the movement towards ever more automation and digitization. These include digital exclusion, questions of data control and digital colonialism, privacy and surveillance concerns, political misuse of social platforms and impacts on labour, poverty and inequality.

The problems of digital exclusion and inequality in access to the benefits of new technologies persist. Despite the fact that internet use and mobile phones are expanding rapidly, with approximately one million people going online each day for the first time and with two-thirds of the global population owning a mobile device, about half of the world's population (3.9 billion) do not have internet access,[92] with a majority of these being rural dwellers, low-

Figure 6.6: The San Francisco Bay Area innovation system

Representative Collaborative Patterns in the Bay Area Innovation System
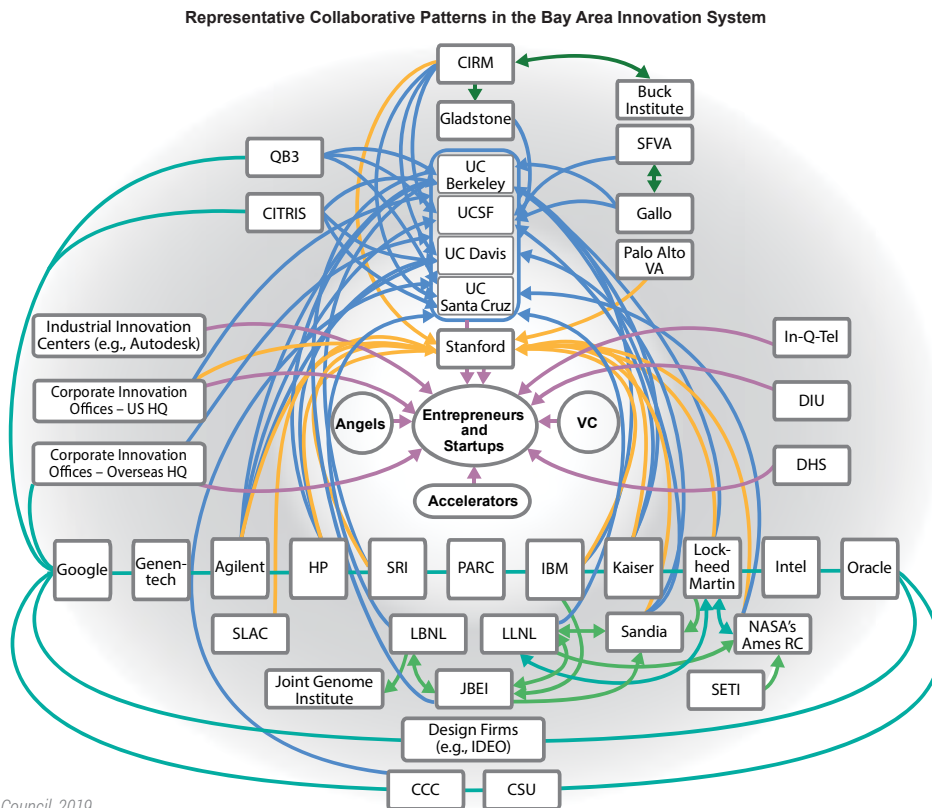
Source: Bay Area Economic Council, 2019.

The problems of digital exclusion and inequality in access to the benefits of new technologies persist

income, elderly, illiterate and female. The offline population faces four kinds of barriers: low incomes, affordability, user capability and infrastructure.[93] While digital exclusion is a clear problem in rural areas, urban areas with increasingly large populations of poor residents face serious problems of digital exclusion, even in wealthier countries.[94]

This disparity means that cities need to have digital inclusion strategies if they want smart city or citizen programmes and outreach to work in an equitable way for all residents. Several strategies exist from providing free wi-fi in public places like plazas and public transit to sponsoring municipal broadband as a utility to promoting digital literacy, especially among women and children, by distributing low-cost devices or integrating coding into school curricula. However, many cities across the world are themselves slow to digitize data and take advantage of the new technologies available to them, which means they are also slow in addressing digital inclusion problems.

Another key challenge is privacy. Cities must work to promote good policies to protect citizen data that get collected via these new services and empower citizens to understand how to protect their personal data. While static open data like the number of light posts or housing locations raise few legal problems, profound concerns exist around making health or real-time data open.[95] This concern is applicable to many of the emerging apps associated with tracking and contact tracing COVID-19 cases. More work needs to be done to develop data protection laws, education programs and policies especially in contexts where such laws are currently weak or underdeveloped.[96] Some cities are hiring staff tasked with managing open data portals and protecting privacy. Big tech firms offering

Cities must work to promote good policies to protect citizen data that get collected via these new services and empower citizens to understand how to protect their personal data

services in cities use private data often in ways that leave citizens unaware. As cities embrace and promote digital technologies by partnering with tech companies, they need to act to protect user data, especially at a moment when profound ethical and political questions exist around the use of tech for surveillance and manipulation to undermine democratic processes.[97]

Another problem is how to regulate technology companies providing new types of services that lead to problematic impacts, particularly in the realm of labour disruption, regulation and city planning. Cities, for example, are being inundated by new mobility services from ride hailing cars and vans to scooters, with big tech firms also testing autonomous vehicles. By claiming to be a technology company and not a transport company, new mobility companies often attempt to evade regulations, and many cities need to update their legal frameworks and policies to address these kinds of new services and experiments.

How to manage and regulate technology companies is a major challenge

How to manage and regulate technology companies is a major challenge. For example, Uber and its many equivalents provide a service connecting passengers with a ride through an e-hailing app that uses geolocation and algorithms to calculate costs. In many cities like Johannesburg, South Africa, Uber has displaced low-income workers in the taxi sector with immigrant drivers who are still nevertheless paid poorly,[98] triggering violent strife and raising questions about unfair competition.[99] Evidence is also accumulating that in some cities, Uber is causing additional traffic congestion by creating an incentive for many more vehicles circulating on the road.[100] Thus, cities need to find ways to manage these new services and ensure they complement existing mobility paradigms.

Whether these powerful tools will be used to improve urban life depends on "who controls the technology, who has access to the data, who interprets them, and of course, what they are used to achieve."[101] With data and analysis an increasingly lucrative business, a scramble exists for urban data collection with many firms offering services but keeping both the data and the software they use as

private property. This tendency creates a strong data and tech dependency, which some call "digital colonialism" that stifles potential innovation and spinoffs from the data. Hence, developing strong governance frameworks built on digital rights is key to ensure that technology is deployed in a way that improves public life in cities and feeds into the value of urbanization.

6.7. The Importance of Governance and Digital Rights

Given the concentration of power in technology companies and the pace of technological change, governments are under pressure to play a more active role in enhancing the positive aspects of technology while safeguarding against its negative effects. Governments must ensure that there is a comprehensive and functioning regulatory environment that builds citizen trust and sets clear rules for technology companies.

To realize this goal, governments need to put in place regulations and policies that govern technological development, addressing issues such as interoperability, procurement, public-private partnerships and issues to do with privacy and security raising from the use of digital platforms and data collection. To build trust, governments need to enact privacy laws that respond to the concerns of citizens, businesses and civil society in relation to security breaches, the handling of personal data and surveillance.

Clear, ethical frameworks and institutional arrangements for data collection and data sharing should be put in place, especially in relation to data collected from different sources as well as around algorithms and the use of artificial intelligence, which have in-built biases.[102] These governance frameworks need to set out ethical standards, including who has the right to data, access and ownership, and who should enjoy the benefits from the data. Here, it is important that the public sector, as the custodian of citizens' rights, assumes its
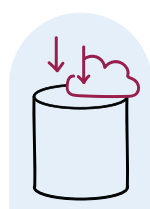
Clear, ethical frameworks and institutional arrangements for data collection and data sharing should be put in place

full governance responsibility. For many local governments, this is a completely new area, and as such, digital policy and governance capacity need to be significantly strengthened or built from scratch.

Municipal data is increasingly becoming a strategic resource that enables local governments to carry out their mission and programmes effectively

Municipal data is increasingly becoming a strategic resource that enables local governments to carry out their mission and programmes effectively. Appropriate access to municipal data significantly improves the value of the information and the return on the investment in generating it. As discussed in relation to civic technologies, well-governed municipal data ensures accountability and transparency, promotes openness and public participation in government, and provides actionable insights. Cities and local governments are realizing their responsibilities when it comes to digital governance, data and upholding citizens' digital rights.

In 2018, the Cities Coalition for Digital Rights was launched as a network of cities committed to upholding digital rights and supported by the Office of the United Nations High Commissioner for Human Rights, UN-Habitat, Eurocities and UCLG. The coalition is a global initiative that puts citizens' digital rights at the centre of policies relating to data and technology. The coalition shares best practices and coordinates common initiatives and actions. Inspired by the Internet Rights and Principles Coalition, the work of 300 international stakeholders over the past ten years, the Cities Coalition for Digital Rights is committed to the following five evolving principles:

i. *Universal and equal access to the internet and digital literacy*: Everyone should have access to affordable and accessible internet and digital services on equal terms, as well as the digital skills to make use of this access and overcome the digital divide.

ii. *Privacy, data protection and security*: Everyone should have privacy and control over their personal information through data protection in both physical and virtual

places, to ensure digital confidentiality, security, dignity and anonymity, and sovereignty over their data, including the right to know what happens to their data, who uses it and for what purposes.

iii. *Transparency, accountability and non-discrimination of data, content and algorithms*: Everyone should have access to understandable and accurate information about the technological, algorithmic and artificial intelligence systems that impact their lives, and the ability to question and change unfair, biased or discriminatory systems.

iv. *Participatory democracy, diversity and inclusion*: Everyone should have full representation on the internet, and the ability collectively to engage with the city through open, participatory and transparent digital processes. Everyone should have the opportunities to participate in shaping local digital infrastructures and services and, more generally, city policymaking for the common good.

v. *Open and ethical digital service standards*: Everyone should be able to use the technologies of their choice, and expect the same level of interoperability, inclusion and opportunity in their digital services. Cities should define their own technological infrastructures, services and agenda, through open and ethical digital service standards and data to ensure that they live up to this promise.

The coalition and its principles are the start of a global movement of cities that are taking digital rights seriously to ensure that the new digital economy is having a positive effect on urban life. Barcelona, for example, whose residents have been experiencing major increases in rents and neighbourhood displacement in recent years, has banned landlords from renting out properties without a tourism licence on Airbnb. However, this regulation proved difficult to enforce because officials would need to scroll through thousands of listings and check them against the register of tourism apartments. In 2018, applying the principle of data transparency and accountability, the Barcelona City Council signed an agreement with Airbnb in which the city was given full access to properties being listed; thus, enabling officials to easily corroborate the data against the tourism apartments database. This successful enforcement demonstrates how

a concerted effort from cities can assert regulatory power to correct the negative impacts of companies working in the digital economy.[103]

6.8. Concluding Remarks and Lessons for Policy

Advances in digital technology and innovation are unleashing the underdeveloped potential to make maximum use of local resources and assets and address profound urban challenges. New technologies can also boost economic growth and prosperity, but whether they will be harnessed to the benefit of the majority is an outcome firmly in the hands of cities and their national governments. Decisions made by cities around how to use and regulate rapid technological change within an innovation strategy will have profound impacts and determine how much we capture the value of urbanization to fulfil the aspirations for a sustainable future.

New technologies and innovation provide opportunities for cities to meet the SDGs and generate immense value from the process of urbanization

New technologies and innovation provide opportunities for cities to meet the SDGs and generate immense value from the process of urbanization. Serious challenges also exist, and regulatory and legal tools need to be applied to steer needed innovation and manage new technologies that can harm as well as help. It is also important to reiterate that not all innovation is about technology. Cities themselves are innovators and incubators of innovation.

Cities are exploring new ways to engage with residents to ensure equity and justice including access to and regulation and management of new technologies. They are developing

Cities are exploring new ways to engage with residents to ensure equity and justice including access to and regulation and management of new technologies

and fostering new ways to provide high-quality services to address the SDGs and New Urban Agenda as well as confront the growing threats of climate change and the ongoing threat of the COVID-19 pandemic. Technology is most effective in unleashing the value of sustainable urbanization when it supports city governance and innovation including in operations, management and citizen engagement and democracy.

Cities have become highly adept at sharing and adapting new innovations on their own, accelerating the diffusion of good ideas and speeding global learning

It is most critical for cities to build capacities to manage potentially tumultuous changes[104] and to find pathways towards national and global cooperation when confronting these challenges especially as the impacts of technological and climate change are often highly uneven, creating deeper inequalities in the absence of mitigation measures.[105] Fortunately, cities have become highly adept at sharing and adapting new innovations on their own, accelerating the diffusion of good ideas and speeding global learning. More must be done to support this trend.[106]

Several lessons emerge from the discussion in this chapter:

- New technologies and innovation provide opportunities for cities to meet the SDGs and generate immense value from the process of urbanization. Cities that encourage creative activities, neighbourhoods and people are best able to innovate.

- Open cities that welcome and leverage diversity and migrants and foster creative and collaborative networks between levels of government, universities, the private sector and citizens tend to build productive innovation systems that enhance economic, social and cultural value.

- Developments in big data, quantum computing, networked IoT, automation and artificial intelligence have the potential to reshape social relations, labour, politics and city life in profound ways. Cities must

build regulatory and policy capacities to address these challenges and negotiate what is in the public interest, ideally adopting strong frameworks for digital rights and development.

- Technology firms are increasingly focusing on cities as markets for smart city technologies. Results of smart city experiments are mixed and particularly poor when these efforts are technology- rather than people-driven. Cities should focus on their existing problems, apply their own civic technology and encourage innovations to address these problems before pursuing private sector technology products.

- Technology cannot displace citizen engagement in neighbourhood and city affairs. Technology is most effective when coupled with institutional innovation and is not a substitute for improving governance.

- Cities require data and data capacities and benefit from building open data and open source ecosystems. Developing open data portals, hackathons and innovation challenges and support for research and local science along with needed labour retraining will foster a healthy technology innovation ecosystem.

- Problems of digital exclusion in access to the benefits of new technologies persist, potentially deepening inequalities. In line with the New Urban Agenda and SDGs, cities must actively develop programmes and strategies to promote inclusion in technology development, use and education.

- Finally, the need for innovation in its ancient Greek philosophical meaning as "introducing change to the established order"[107] has perhaps never been more critical as we strive to build a new socio-ecological order on the foundation of the SDGs, New Urban Agenda and the Paris Agreement. Cities are the key places where intense technological, social and political experimentation is taking place to address the challenges of urbanization: inequality, the fourth industrial revolution and the climate crisis. The value of their work in realizing sustainable development in this context is immeasurable.

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Chapter 7

Local Governments and the Value of Sustainable Urbanization

Local governments are the prime movers of sustainable urbanization. As the unit of government closest to everyday citizens, they are the most attuned to the needs and desires of urban residents. The successful implementation of the global development agendas and effectively unleashing the value of sustainable urbanization thus depends on the democratic, efficient and inclusive functioning of this level of urban governance.

Quick facts

1. There is a growing movement of local and regional governments advancing the localization of the global agendas to harness the value of sustainable urbanization.
2. There is global progress on decentralization with local governments increasingly playing a significant role in governance as decentralization processes get implemented across various regions.
3. Weak institutional environments—the powers, capacities and resources devolved—are hindering local action, and consequently, the realization of the value of urbanization.
4. Cities are playing the role of experimental hubs in the implementation of the 2030 Agenda for Sustainable Development and the New Urban Agenda, and their experiences can be used to scaled up polices at the national level.
5. Cities are increasingly integrating the SDGs in their policies and strategic plans, which in turn enhances the value of urbanization. Cities are also institutionalizing their engagement with local stakeholders as the basis for more inclusive decision-making.

Policy points:

1. Galvanize the forces of localization of the 2030 Agenda and the New Urban Agenda in cities and territories by mainstreaming localization strategies in all plans, programmes and budgets from national to local levels.
2. National governments should strengthen local governments' involvement in the definition, implementation and monitoring of national urban policies and the SDGs.
3. Countries should create enabling institutional environments for local governments to operate in order effectively unleash the value of sustainable urbanization.
4. Strong multilevel governance frameworks are key to foster vertical and horizontal cooperation between different levels of government and between local governments. Additionally, strong metropolitan governance that responds to the realities of economic and social geographies should be enabled.
5. Cities must track the localization of the global agendas to ensure that planning processes at all levels are founded on realistic targets.

Local governments are at the forefront of urban governance and are recognized as key players for progress toward the global development agendas. This acknowledgment is embedded in international agreements and supported by the proven commitment of local governments and their organizations to the realization of these agendas. Local governments have not only widely embraced these agendas as they seek to implement them, but they were also actively involved in their negotiation. Indeed, the New Urban Agenda explicitly recognizes the proactive role played by local leaders and the World Assembly of Local and Regional Governments during the Habitat III process. The highly symbolic gathering of this constituency's political voice in Quito was facilitated by the Global Taskforce of Local and Regional Governments (GTF), which was created in 2013 and brings together the main global and regional networks of local and regional governments to contribute to the post-2015 process.[1] Their engagement has since been reaffirmed and reinforced through the ongoing efforts by local governments to "localize" these global agendas.[2]

The global agendas are intrinsically interlinked and cannot be achieved in isolation: all actions in pursuit of sustainable development impact the highly interrelated challenges affecting cities and territories

From the perspective of local governments, the global agendas are intrinsically interlinked and cannot be achieved in isolation: all actions in pursuit of sustainable development impact the highly interrelated challenges affecting cities and territories. The New Urban Agenda contributes to catalysing and complementing the SDGs, yet it will not be possible to fully realize either the New Urban Agenda or the SDGs without fulfilling the objectives set out in the Paris Agreement on climate change and the Sendai Framework on Disaster Risk Prevention.

Moreover, although harnessing the potential of urban systems to promote sustainable development is a decisive measure to achieve the global agendas, the current reality

Street cleaning to prevent the spread of Covid-19 in Santa Marta favela, Rio de Janeiro, Brazil. © Photocarioca/Shutterstock

of cities, as shown in previous chapters, is particularly challenging. Often, cities and their local governments are constrained in how they can respond to these challenges. Placed on the frontline of the COVID-19 crisis, the pandemic's critical impact is also shaping the modalities of the next phase of local governance for sustainable development. The successful implementation of the New Urban Agenda and the effective value of sustainable urbanization will depend on the development of appropriate, democratic, efficient and inclusive urban governance and institutional frameworks.

This first section of the chapter provides examples of visionary local leadership promoting bottom-up transformation and advancing initiatives to create more sustainable and inclusive futures for cities, including some brief references to cities' ongoing responses to the COVID-19 pandemic. The second section gives an overview of the governance challenges facing cities with a particular focus on the evolution of decentralization processes to explain local government's institutional frameworks in different regions of the world. The third section discusses the role of local governments' in bringing together the social and economic forces that operate at the local level, creating synergies that allow for the development of urban governance systems that are able to steer the transformation

of urban development patterns. The section identifies the different instruments available to achieve this goal, namely: planning, participation and multilevel governance. This section further discusses the involvement of local governments in national urban policies and in national coordination mechanisms for SDG implementation. Lastly, the chapter outlines the necessary changes for local governments and their institutional environments to leverage the value of sustainable urbanization.

7.1. The Emerging Urban Alternatives for a Sustainable Future

Cities on different continents are emerging as significant examples of new urban development paths, enhancing the transformative forces of urbanization and reshaping urban-rural linkages.[3] Ambitious local leaders, supported by their networks, are pushing societal change forward, increasingly embracing innovation and leading the way towards solutions to global challenges. Their actions have both direct and indirect impacts on the wellbeing of their inhabitants, as well as on the safeguarding of many of humanity's common goods. Cities from all size and their organizations are, as mentioned earlier, leading the "localization" of the global agendas (Box 7.1).[-]

Box 7.1: The localization of the global agendas for sustainable development

Since the adoption of the 2030 Agenda for Sustainable Development, the local and regional government movement for the localization of the SDGs has been progressively expanding to all parts of the world, albeit at a different pace within and between regions. Progress is most noticeable in Northern and Western European countries.

In North America, an increasing number of pioneering high-profile cities and states are demonstrating their commitment. For example, New York City and Los Angeles prepared Voluntary Local Reviews (VLRs) to monitor their respective progress toward meeting the SDGs. Progress has been more varied in Latin America, driven mainly by local governments associations in Brazil, Costa Rica, Colombia, Dominican Republic, Ecuador, and by regional governments and large cities in Argentina and Mexico. In Brazil, for instance São Paulo adopted the 2030 Agenda as a framework for public policies in 2018. Further, the cities of Barcarena, Niterói and Santana de Parnaíba presented the outcomes and results of the localization of the SDGs through VLRs.

In Africa, significant efforts have been made towards the development of local plans and strategies aligned with the SDGs in countries such as Benin, Kenya, Rwanda, South Africa and Togo. In Benin and Kenya, local governments associations developed several voluntary subnational reports to contribute to their country's respective VNRs. In Rwanda, the Rwanda Association of Local Government Authorities (RALGA), in partnership with the national government and development partners, is strengthening local government capacities to effectively adapt the SDGs to local contexts. Similarly, the South African Local Government Association (SALGA) is promoting the alignment of local plans with national strategies and the SDGs.

In the Asia-Pacific region, local governments are advancing in the alignment of their policies and plans with the SDGs (Japan, Republic of Korea, China and Indonesia, followed by Australia, the Philippines and New Zealand and at the federated state level in India). Meanwhile, progress in Eurasian, Middle Eastern and Western Asian countries remains incipient (with the notable exception of Turkey and with recent acceleration in the Russian Federation). In the Philippines, both the League of Cities (LCP) and the League of Municipalities (LMP) are leading the charge on SDG localization.

Voluntary Local Reviews
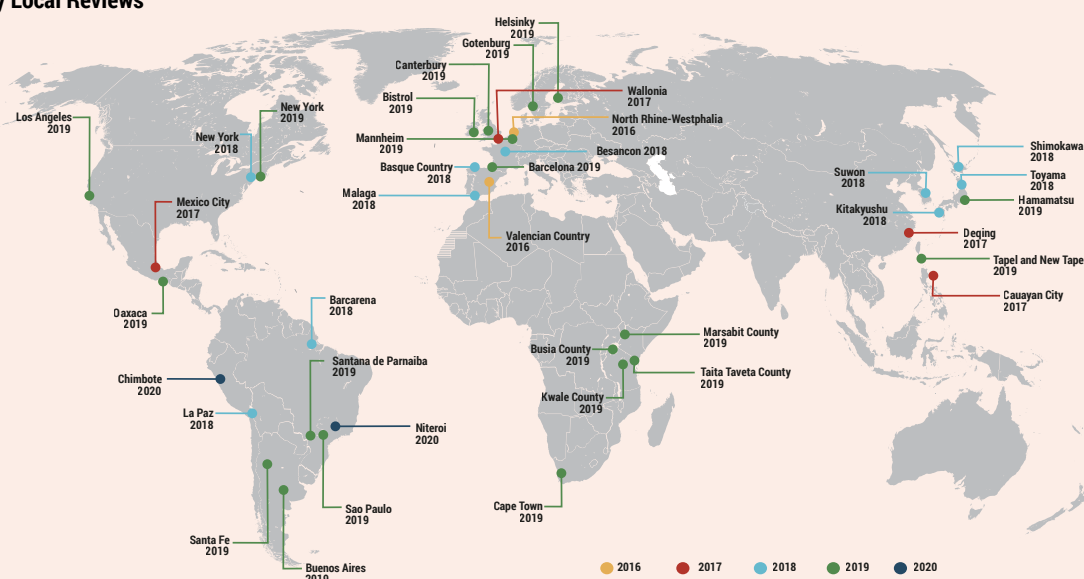
Source: GTF and UCLG, 2020, GTF and UCLG, 2019; GTF and UCLG, 2018; GTF and UCLG, 2017; UCLG 2019.

The COVID-19 pandemic has brought to the fore the critical role local governments play as front-line responders in crisis response, recovery and rebuilding

The COVID-19 pandemic has brought to the fore the critical role local governments play as front-line responders in crisis response, recovery and rebuilding.[4] They have been at the forefront of addressing the cascading public health, economic and social impacts of this crisis. Local governments are stepping up to help their communities and rapidly implement responses, focusing mostly on the interlinkages between access to public services, poverty, social inclusion, economic development and environmental protection. As cities innovated and developed new policy responses to this unprecedented crisis, UN-Habitat in collaboration with United Cities and Local Governments (UCLG) and Metropolis established Cities for Global Health, a knowledge-exchange platform and database for mayors and local leaders in which cities across the world are sharing their protocols, plans and initiatives.[5]

7.1.1. Environmental actions

A significant number of cities are at the forefront of climate action and resilience strategies. In 2019, more than 10,000 cities from 139 countries made commitments to take measurable climate action through the Global Covenant of Mayors for Climate and Energy (Box 7.2). Many cities are developing renewable energy systems, divesting from fossil fuels, making efforts to develop cleaner and more inclusive public mobility systems through multimodal transport systems, promoting active mobility and including distant and deprived neighbourhoods in the formal economic fabric (e.g. Medellín's *Metrocable*). In 2018, Guangzhou, China, electrified its entire 11,220 bus fleet and installed 4,000 charging stations.[6] Many leading cities have stepped up their actions for achieving zero waste, reducing waste generation, moving away from landfill and incineration practices towards transforming waste to energy and adopting zero-plastic policies. For example, the Accra Metropolitan Authority in Ghana integrated informal waste collectors into the city's waste management system in 2016 and increased waste collection from 28 to 48 per cent in two years.[7]

An increasing number of cities are developing tools for monitoring air pollution and adopting air quality action plans with policy tools like London's Ultra Low Emission Zone.[8] At the same time, cities are also seeking to expand public and green spaces[9] to improve their urban tree canopy, like Edmonton, Canada, which has developed an ambitious Urban Forest Management Plan. Some cities of the Global South are moving towards promoting the use of modern cooking fuels and renewable energy to reduce indoor and outdoor air pollution, as is the case with Dakar's Territorial Climate Energy Plan to reduce pollution in Senegal.

Box 7.2: Global Covenant of Mayors for Climate and Energy (GCoM)

The Global Covenant of Mayors gathers over 10,200 cities from 139 countries on all continents committed to reduce, by 2030, 24 billion tons of CO_2 emissions in line with SDG 13 and the Paris Agreement. The covenant is supported by a global alliance of local government networks—C40, Climate Alliance, Eurocities, Council of European Municipalities and Regions, Energy Cities, ICLEI and UCLG—and international institutions—the European Commission, the European Committee of Regions, UN-Habitat, Bloomberg Philanthropies and the European Federation of Agencies and Regions for Energy and the Environment.

GCoM members commit to prepare a baseline emissions inventory; submit a sustainable energy action plan; carry out regular reporting for evaluation, monitoring and verification purposes; and share experiences and know-how. Global networks have also promoted other collaborative climate actions, such as ICLEI's partnership with the Carbon Disclosure Project (CDP) to develop a carbon climate registry to support subnational climate action reporting. In addition to the global networks, numerous climate leadership networks have emerged at country and regional levels (e.g. Climate Mayors in the US, Climate Alliance in Europe).

Source: https://www.globalcovenantofmayors.org/our-cities/; https://carbonn.org.

Confronted with increasing disasters, cities are progressively mainstreaming disaster risk prevention and climate change adaptation programs into their urban and territorial planning strategies. In partnership with UN-Habitat and other international organizations (such as the United Nations Office for Disaster Risk Reduction and the now-defunct 100 Resilient Cities and its successor, the Global Resilient Cities Network)[10] many local governments are designing and implementing more innovative and comprehensive resiliency strategies, making use of new technologies, promoting the involvement of communities and the most vulnerable populations through comprehensive planning processes and mainstreaming resilience into neighbourhood upgrading plans. Cities of all sizes are assessing their sectoral interdependencies to identify the critical points in their infrastructure and inform their planning processes, while involving their communities in the development of resilient strategies.

7.1.2. Local economic development initiatives
Local governments bear a large responsibility to promote economic development and employment generation, as highlighted in Chapter 3. In response to the increasing inequality brought about by unsustainable economic development, cities are supporting alternative economic models to develop decent jobs in line with SDG 8 and the NUA.[11] They are building specialized networks to promote the social, collaborative, circular, green, creative and cultural economies while also fostering small, medium and micro enterprises.[12] Examples of circular economy initiatives abound, from Cape Town, South Africa's industrial symbiosis programme or Circular Gothenburg in Sweden to initiatives in Geneva (Switzerland), Maribor (Slovenia), Phoenix (US) or Quezon (Philippines), among others, that aim to increase efforts at reducing and recycling waste through reuse and repair.[13] At the same time, many cities in developing countries are fostering the integration of informal sector (such as waste collectors, informal transport and street vendors) into the formal economy in an effort to improve labour conditions and public space use, as is the case in Belo Horizonte (Brazil), Dhaka (Bangladesh) and

Cities are supporting alternative economic models to develop decent jobs in line with SDG 8 and the NUA

Manila (Philippines). In Qalyubeya Governorate (Egypt), for instance, integrated community-based solid waste management system is improving waste collection while advancing the working conditions the informal workforce.[14]

Additionally, as mentioned in chapter 6, cities are giving increasing importance to the leading role that technological innovation plays in sustainable development, particularly in increasing productivity, employability and urban governance, which has fostered the growth of "smart city" solutions.[15] Many cities, of all size and regions, stand out in the use of new technologies for urban development and management. Examples of this trend include Lahore's deployment of surveillance technology to manage public safety and Seoul's innovative use of mobile data to plan public transport routes.[16] Networks like the Cities Coalition for Digital Rights have also emerged to address the multifaceted nature of the digital divide and advocate for the recognition of big data for public services as a common good.[17]

Beyond just the digital divide, broader socio-economic inequalities are growing both within and between cities (for example between metropolitan areas and peripheral cities and growing and shrinking cities), and between urban and rural territories. To reduce inequality in line with SDG10 and the NUA, local governments are advancing inter-municipal cooperation and forging new partnerships to foster smart specialization that promotes the sustainable development of rural and peri-urban areas located on urban fringes.[18] Key components of these partnerships usually include shared development strategies like eco-tourism, promotion of local food systems and urban agriculture, provision of access to social services for peri-urban and rural areas and the protection of environmental resources that are critical for urban systems (e.g. watershed management, wetland conservation, coastal protection and reforestation). These partnerships exist among various national and international networks.[19]

7.1.3. Inclusiveness policies
Although extreme poverty has decreased in recent years, urban poverty has persisted and even worsened in many cities and territories, with the COVID-19 pandemic expected to exacerbate the issue. Given the multi-dimensional nature of poverty in cities, local governments are fostering inclusive social policies to support their most vulnerable

populations in accessing basic public services, which are core local government commitment to the 2030 Agenda and the NUA.[20] Although access to piped water has improved overall at the global level, challenges remain in many cities, particularly in Sub-Saharan Africa and South Asia. In the face of increasing water stress, many cities are developing renewed water management strategies from integrated approaches inspired by the global agendas (e.g. Brisbane, Australia; Cape Town, South Africa; and Quito, Ecuador) while others are developing water management strategies to reduce flooding (e.g. Jakarta, Indonesia) and innovating to overcome sanitation challenges (e.g. Rajkot, India).

Informality and the expansion of informal settlements are two of the more salient issues related to urban poverty, as well as a prominent characteristic of urban settlements particularly in African, Latin American and Asian countries. Local governments are implementing incremental upgrading programs with the participation of civil society and revisiting land-titling procedures. Some local governments such as Rosario (Argentina), Nairobi (Kenya) or Harare (Zimbabwe), have developed participatory, inclusive schemes for slum and neighbourhood renovation or upgrading. In Nairobi, for instance, a comprehensive approach to slum upgrading that includes various stakeholders is being undertaken in Mukuru slums through the development of an inclusive integrated development plan. This effort follows the declaration of the slum as a "Special Planning Area" by the Nairobi City County in 2017.[21] Although local governments' responses to informal settlements increasingly tend towards in-situ upgrading, there are still cases where settlements face eviction. Local authorities are assigned the responsibility to relocate the settlements' inhabitants, which is a highly complex issue requiring forward-thinking policy innovation to ensure respect for human rights.

In the framework of the global housing crisis, the right to affordable and adequate housing is increasingly prominent in

Local governments are fostering inclusive social policies to support their most vulnerable populations in accessing basic public services, which are core local government commitment to the 2030 Agenda and the NUA

Cities are also building multi-stakeholder alliances to facilitate access to housing, like encouraging cooperative housing in Montevideo (Uruguay) and Bologna (Italy) and community land trust initiatives in Brussels (Belgium) and Burlington (US)

local and global development agendas. Leaders of the largest cities, both in developing and developed countries, launched a global initiative in 2018 to advance their populations' right to housing in an effort to address the effects of the commodification of housing, market deregulation and skyrocketing prices of land and houses (**Box 7.3**). Nevertheless, action stemming from various regions is still far from the scale needed, given the magnitude of the housing crisis. Cities are also building multi-stakeholder alliances to facilitate access to housing, like encouraging cooperative housing in Montevideo (Uruguay) and Bologna (Italy) and community land trust initiatives in Brussels (Belgium) and Burlington (US).

View of low cost house apartment in Kuala Lumpur, Malaysia. © Hafiz Johari/Shutterstock

Box 7.3: Cities for Adequate Housing Initiative

The global housing crisis led several cities to bring to the 2018's United Nations High-Level Political Forum on Sustainable Development (HLPF) a firm pledge for the right to adequate housing in the form of the Cities for Adequate Housing declaration.[22] This action builds on the Make the Shift initiative promoted by the UN Special Rapporteur on adequate housing.

With this declaration, a growing number of cities have committed to promote renewed housing strategies to overcome the obstacles to the realization of the right to adequate housing, such as the lack of national funding, market deregulation and housing commodification.

The declaration calls for more powers to better regulate the real estate market, more funds to improve public housing stocks, more tools to co-produce affordable housing between the public and private sectors, urban planning that combines housing with inclusive and sustainable neighbourhoods and the adoption of municipalist cooperation in residential strategies.

Source: Cities for Adequate Housing, 2018 (https://citiesforhousing.org/).

The COVID-19 crisis has highlighted the critical dimensions of inequalities and the role city governments need to play in ensuring social assistance as well as access to food and shelter for vulnerable populations like older persons, persons with disabilities and people experiencing homelessness. During lockdown, many local governments took extraordinary measures to maintain essential public services at an adequate level and ensure the livelihoods of both formal and informal workers despite strong restrictions, so as to prevent the health crisis from dramatically exacerbating their vulnerabilities. Cities are increasingly appreciating the role of the communities living in informal settlements, and the informal economy, in have recovery from of the pandemic. Cities such as Subang Jaya (Malaysia), Cali (Colombia) and Freetown (Sierra Leone) are working with informal networks in such communities to both raise awareness about the pandemic and include these communities in the recovery phase.

7.1.4. Strengthening right-based approaches

As progress is made in increasing female representation in elected government, local agendas are increasingly cognizant of gender-based discrimination. In turn, local governments are now seeking to mainstream gender-specific approaches to urban management and policymaking through programmes whose goals include addressing gender-based violence, acknowledging women's role in the informal economy and developing targeted initiatives to promote equality for women and girls in line with SDG 5 and the NUA.[23] Many cities are taking preventive and policing measures against domestic violence and harassment in public spaces, such as in parks or on public transport.[24]

Following SDG and NUA principles, local governments are also choosing to mainstream rights-based approaches into their development strategies to tackle all forms of discrimination and support diversity and social inclusion

Following SDG and NUA principles, local governments are also choosing to mainstream rights-based approaches into their development strategies to tackle all forms of discrimination and support diversity and social inclusion (such as extreme poverty, youth, minorities, persons with disabilities and immigrants). Within the framework of the preparation of Habitat III, local governments and civil society organizations developed a joint initiative to support the "right to the city" approach that was included in the outcome document. It recognizes "the right of all inhabitants ... to inhabit, use, occupy, produce, govern and enjoy just, inclusive, safe and sustainable cities, villages and human settlements, defined as commons essential to a full and decent life."[25] More than 400 mayors from all regions have signed the Global Charter-Agenda for Human Rights in the City and implemented awareness-raising campaigns and education programmes, as well as created human rights commissions and offices, ombudspersons or *mediateurs*.[26] These networks have also taken an active role in the process opened by the United Nations Human Rights Council to recognize local governments' role in the promotion and protection of human rights.[27]

Cities are also working to protect migrants during a time when more people are displaced worldwide than any time since World War II

Cities are also working to protect migrants during a time when more people are displaced worldwide than any time since World War II. More than 500 jurisdictions in the US describe themselves as "sanctuary cities." More than 80 European cities and towns formed the Solidarity Cities network to welcome refugees and asylum seekers. In December 2018 the Marrakech Declaration of Mayors—adopted at the Fifth Mayoral Forum on Human Mobility, Migration and Development—acknowledged the role of cities in the implementation, follow-up and review of both the Global Compact for Safe,

Cities are also taking the lead in promoting culture and respect for diversity through local policies (e.g. Belén, Costa Rica) as well incorporating culture as a priority component in urban plans and strategies (e.g. Bilbao in Spain and Canoas in Brazil).[28] More than 500 local governments have adopted the Agenda 21 for culture which elevates cultural rights and policies as one of the pillars of sustainable strategies fostering diversity and inclusion.[29]

7.2 The Evolution of Local Governments' Institutional Frameworks and its Relevance to Harnessing the Potential of Sustainable Urbanization

Despite these encouraging examples, there remain important gaps between more dynamic local governments and many other less economically developed and fragile cities whose ability to address urban challenges is hampered by weak local capacity, minimal resources, inadequate national institutional frameworks and national or international crises.

The transformation of the urban landscape—with the expansion of borderless metropolitan areas and urban regions as well as the expanding role of intermediate cities—poses incremental challenges to both local and national urban governance. At the same time, globalization has

reshaped the political economy of urban governance. While globalization has created unprecedented opportunities and revitalized the role of cities and territories, it has also fostered the financialization of urban assets and the commodification of public services. This trend has stressed urban systems and increased social and territorial inequalities and environmental challenges. Rising civil society discontent with political systems and public institutions should also be considered in the list of the key policy challenges facing future urban governance.

Within this global context, national institutional development along the lines of decentralization, the evolution of urban legislation and the political economy of these reforms all determine the ways in which local governments' actions can contribute to leveraging the opportunities brought about by sustainable urbanization.

7.2.1. Global decentralization trends by region

Since the 1980s, and particularly over the last decade, major reforms of local governments' legal, fiscal and administrative frameworks have ranked high on national policy agendas. A majority of countries have implemented decentralization processes that have resulted in locally elected governments with management authority over cities and territories, including the delivery of basic services to respond to local communities' needs. In all regions, local governments play an increasingly significant role in urban governance. On average, they represent 24.1 per cent of general government public spending, 25.7 per cent of general government public revenue and 36.6 per cent of general government public investment (Figure 7.1).[30]

Similarly, many metropolitan areas have been increasingly endowed with more powers to address the challenges of complex, diverse and vast urban areas covering multiple jurisdictions. Globally, urban laws remain highly segmented and not well articulated to the evolving reality of urban

Globally, urban laws remain highly segmented and not well articulated to the evolving reality of urban settlements and the realities in which local governments and agencies operate, for example with limited funding

Figure 7.1: Average of local governments expenditures, revenues and direct investments as a share of total public expenditures, revenues and direct investments by regions, 2016
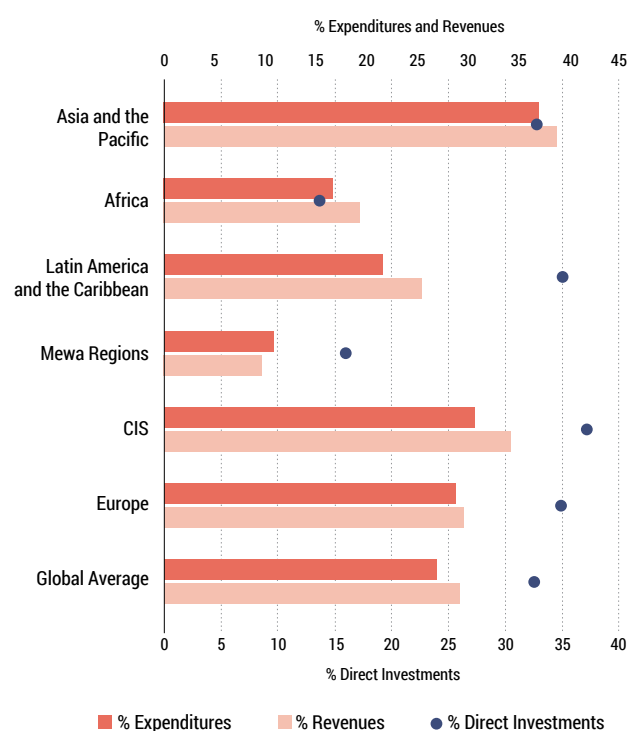
Source: Based on Subnational Government Finance and Investment (SNG-WOFI) data base (http://www.sng-wofi.org/data/).

settlements and the realities in which local governments and agencies operate, for example with limited funding.[31] The analysis of these reforms, and particularly of decentralization, shows that implementation has been complex and varied across regions with direct impact on the ability to achieve the global agendas.

Most European and Northern American countries, for example, have a long-established tradition of local self-governance. Local governments have primary responsibility for urban management, public services delivery and key infrastructure (SDG 11). They also ensure local economic development (SDG 8) and influence territorial cohesion and the protection of ecosystems (SDG 10 and SDG 15). As most European countries (particularly Northern and Western Europe) are highly decentralized, local

governments typically account for a significant share of public revenue and expenditure (25.7 per cent on average but up to 52 per cent in Northern countries) and play a crucial role in public investment (40 per cent).[32]

In Latin America, decentralization has progressed significantly since the 1980s. Local governments represent on average 19 per cent of public expenditure and 23 per cent of public revenues and play an important role in public investment (39 per cent, albeit with great variations between countries and cities). However, in many countries, decentralization has experienced periods of stagnation and setbacks, while in others evolution has been slow. Overall, local governments have been important players in improving the coverage of basic services, either directly or in partnership with other levels of government, the private sector and communities. Although inequalities in cities have decreased globally during the past decades, they persist or have worsened in some cities of the region, impacting access to and the quality of public goods and services by poor households.[33]

In the Asia-Pacific region, urbanization has helped millions escape poverty and rapid urbanization is putting the region at the forefront of urban innovation. Urban development processes advanced during the past three decades in parallel with decentralization processes. In 2016, local and regional governments represented approximately 33 per cent and 34 per cent of public expenditure and revenue, respectively, and 37 per cent of public investment, but with huge differences according to each country's economic development levels. Countries with higher economic development correlate with more favourable institutional environments for local governments, as well as with higher quality of local public services and wellbeing outcomes. In emerging countries like Indonesia and the Philippines, decentralization processes are more recent yet relatively advanced. In China, taking advantage of their relative autonomy and national support, local governments have boosted rapid urban development and succeeded in delivering key infrastructure and services. In the rest of the region, local government reforms are still at an early stage, and in many cases, local administration could more effectively be described as "deconcentrated" rather than decentralized. The progress made in the promotion of access to public

services has been impressive, although middle- and low-income countries are still lagging behind.[34]

Waves of decentralization have periodically swept across Africa since the 1990s, yet levels of decentralization vary between as well as within countries. As of 2019, 17 countries had signed the 2014 African Charter on Values and Principles of Decentralization, Local Governance and Local Development, but a significant gap remains between de jure decentralization and the reality on the ground. The participation of African local governments in public expenditures and revenues is among the lowest levels of all regions. They represent on average 15 per cent and 17 per cent of public expenditure and revenue respectively, and only 15.5 per cent of public investment. The 2018 UCLG Africa assessment shows that only 14 countries appear to have a stable "enabling institutional environment" or a "rather enabling" environment for their local governments. Meanwhile, 33 countries either still require significant reforms to achieve a favourable environment for their local governments or show stagnant or regressing reform policies.[35] Most African cities have serious deficits in access to quality public services, while access remains limited in informal settlements.[36]

Since the end of the Soviet Union, the Commonwealth of Independent States (CIS) underwent several reforms that have either strengthened or reduced local government's autonomy, leading to strong spatial inequalities. The region's intermediary cities face big challenges, including the "shrinking cities" phenomenon, while they have little control over market-driven urban development. Local and regional governments have made significant efforts to improve public services that degraded in the 1990s. The level of decentralization varies from highly centralized systems in Central Asian countries to relatively autonomous local self-government in Caucasus countries at the municipal levels to the two-tiered system of local self-government in Russia. Subnational governments in the region have substantial budgets and investment capacities (41.9 per cent of public investment on average). However, in practice, they have rather limited control of their expenditure policy.[37]

The countries of the Middle East and West Asia are also characterized by a high degree of centralization, except

Turkey and to a lesser extent Palestine (where local governments account for 10.1 per cent and 10.8 per cent of total public spending respectively, and 18 per cent of public investment).[38]

7.2.2. Uneven fiscal decentralization and evolution of services delivery models

Notwithstanding overall global progress on decentralization, however uneven, financing remains the dimension where progress is more constrained, raising several paradoxes. One is that cities concentrate around 80 per cent of global GDP, but many rapidly growing cities fail to capture the wealth they create and continue to struggle with insufficient budgets and accumulate infrastructure deficits.[39] A second paradox stems from the disconnect between the considerable amount of funds "available" at the global level and the increasing investments being made in global cities despite the lack of financing reaching those cities and territories most in need.

Cities concentrate around 80 per cent of global GDP, but many rapidly growing cities fail to capture the wealth they create and continue to struggle with insufficient budgets and accumulate infrastructure deficits

Across all regions, there is a critical mismatch between the increase of transferred responsibilities and the revenues allocated to local governments. Effective financial empowerment of local governments for the achievement of the SDGs and the NUA is the commitment corresponding to paragraph 34 of the Addis Ababa Action Agenda adopted by United Nations Members States. Therefore, current local fiscal systems should be adapted to foster an incremental approach based on a dynamic and buoyant local tax system that ensures a fairer share of national fiscal revenues through regular and transparent intergovernmental transfers and enhances responsible borrowing to allow local governments to deliver quality public services and support sustainable development.

However, this scenario is far from reality. For example, local governments' access to borrowing, although formally allowed, is in practice strictly limited for most local

A street scene from Georgetown, Guyana. © UN-Habitat/Kirsten Milhahn

governments, especially in developing countries. A global study identified only 22 countries where municipalities are allowed to borrow without very restrictive controls.[40] Reforms that improve the rationality of assigned powers, capacities and resources to local governments are one of the most critical dimensions that can boost urban governance. Local governments must be empowered to take proactive decisions on urban development and infrastructure investments, rather than perpetuating the status quo. Local

Reforms that improve the rationality of assigned powers, capacities and resources to local governments are one of the most critical dimensions that can boost urban governance

policy priorities need to be included in an enhanced and coordinated financing strategy that incorporates other tiers of government and the international sphere in order to diversify sources of development finance.[41]

In recent years, different local government initiatives have advanced better ways of mapping and matching projects with financial opportunities. Numerous city-focused project preparation facilities have supported cities' climate project pipelines to meet bankability standards. Among these facilities are the C40 Cities Finance Facility and ICLEI's Transformative Actions Programme. The African Territorial Agency championed by UCLG Africa and the International Municipal Investment Fund, set up by the UN Capital Development Fund (UNCDF) and UCLG in collaboration with the Global Fund for Cities Development

(FMDV), are also in the process of development. The Global Covenant of Mayors and the European Investment Bank have come together to help "prepare and fast track financing of urban climate action projects."[42]

Facilitated by limited local resources, market deregulation and the primacy of financial economy, public service delivery models have evolved to respond to urban expansion and the accompanying demand for infrastructure. This evolution has also been supported by the continual expansion of private sector participation in service provision (e.g. in water and sanitation, waste management, transport and energy). This expansion has occurred through different externalization models, such as concessions, public-private partnerships (PPPs) and privatization that have, in effect, transitioned from a system of universal service provision (often with a publicly-backed operator monopoly) to a more fragmented market for access with different distribution modes (from public utilities, using a large number of subcontractors, to small private operators, NGOs and informal delivery).

Once most prevalent in developed countries, this process has since expanded to developing countries, particularly large cities.[43] Results vary widely, with positive and negative outcomes depending on the sector and context. In reaction to some negative experiences with service accessibility and the necessity to foster multi-service synergies and multi-stakeholder equalization, many cities and communities are seeking alternatives by bringing essential public services back in-house through a process referred to as "remunicipalization." Research from 2019 listed 1,408 such cases since 2000 that involve 2,400 municipalities in 58 countries in relation to water, energy, waste, telecommunications, transport, health and social care, education and other local government services.[44]

7.2.3. The metropolitan challenge

The context of metropolitan areas, in the so-called "metropolitan century," demands special consideration. Despite the above-mentioned recent reforms in metropolitan governance in many regions (e.g. Australia, Bolivia, Brazil, Colombia, France, Italy, Japan, South Africa and the UK, among others), their pace has not followed the speed of metropolitan expansion and socioeconomic transformation. Today, metropolitan governance is becoming more complex; large cities are usually governed through power-sharing schemes that involve different levels of government, agencies and utilities, both public and private, who operate with varying levels of legitimacy and transparency, all while competing for resources. This convoluted governance landscape poses daunting problems for spatial, political and social integration, which is reflected in the often fragmented way that urban areas are managed and services are delivered.[45] As highlighted in Chapter 3, such inefficient governance systems impacts urban economies negatively.

Paradoxically and with few exceptions (e.g. South Africa), top-down attempts to create new metropolitan governments have frequently been politically and operationally cumbersome, with voluntary cooperation between municipalities in many cases proving more effective. Depending on how it is implemented or applied, metropolitan governance can pose challenges to local democracy if institutional legitimacy and accountability are not well addressed. It can also perpetuate socioeconomic fragmentation and inequalities or aggravate environmental sustainability. It is therefore to important implement appropriate and effective metropolitan governance arrangements—such as metropolitan government or stronger coordination mechanisms that cover the full metropolitan functional area, depending on the local and national context. These arrangements should be transparent, accountable and have institutions that enable citizen participation, all of which are important elements in delivering an integrated vision of sustainable urbanization.

In the UK, the Cities and Local Government Devolution Act 2016 provides for the election of mayors for the areas of, and confers additional functions on, combined authorities.[46] Eight combined authority areas—made up of 44 local authorities and covering nearly 12 million people—now have elected metro mayors.[47] In Chile, Santiago has consolidated into a metropolitan government. In the US, debates have also played out over proposals for city/county consolidation in Syracuse, New York. Across the world, the

Existing institutional environments and local governance systems are currently not fit for purpose. Further evolutions are needed to unlock local government's potential to build a sustainable future.

boundaries of city governance are in flux and the way these examples, among others, adapt to their new governance structures has broader relevance for cities grappling with similar shifts.[48]

As shown in this section, the varied power dynamics—including the type of institutional environments in which local governments operate—define local autonomy in the management of cities. In general terms, existing institutional environments and local governance systems are currently not fit for purpose. Further evolutions are needed to unlock local government's potential to build a sustainable future. These reforms, including the revision of legislative, regulatory and fiscal frameworks, will have to go beyond sectoral policies; foster a balanced distribution of powers, capacities and resources; and enhance cooperation between different spheres of government as well as the involvement of non-state actors to support a policy environment that enables the adoption of a truly sustainable approach to development.

7.3. Local Governments as Pillars for the Coalescence of the Transformative Local Forces

The existing legal and institutional frameworks for local governance and urban planning, a key local government competence, are entry points for stronger citizen participation and collaborative governance. The latter, in particular, is a key determinant for cities to drive the coalition of forces needed to deliver on the New Urban Agenda and realize the added value of sustainable urbanization.

7.3.1 Planning and the global agendas: Contradictory trends

In the NUA, urban and territorial planning are introduced as key levers to promote sustainable urban development.[49] The global agendas recognize planning's ability to spur necessary changes and drive towards sustainable development, which has led to a planning resurgence in public policy.[50] During the past decade, UN-Habitat has supported the reinvention of urban planning principles and methodologies to foster a more integrated and participatory approach.[51] The *International Guidelines for Urban and Territorial Planning*

The global agendas recognize planning's ability to spur necessary changes and drive towards sustainable development, which has led to a planning resurgence in public policy.

recognize the political dimension of planning and its central relevance for local decision-making and long-term development agreements. In the NUA, planning is acknowledged as the lever to promote economic growth, environmental sustainability and social equity, and as a key local competence to address the different challenges that cities face, such as the need to reduce urban sprawl, strengthen resilience, foster mitigation and adaptation to climate change and improve quality of life.

Certain cities are on the vanguard of revising their policies or developing strategic plans in order to localize the global development agendas. In doing so, they have been effective at breaking down existing silos between entrenched city government departments by encouraging collaboration through consultative processes. Mexico City, for example, involved members of the government, officials and representatives of the city's main institutions to introduce the SDGs as the roadmap for the new planning process that began after the 2018 municipal elections.[52] The Berlin Strategy/Urban Development Concept Berlin 2030 provides an inter-agency model for the long-term sustainable development of the capital and was developed following the participative process "Shaping the City Together," which involved more than 100 associations, local authorities and institutions from the Berlin-Brandenburg region.[53] In eThekwini, South Africa, the alignment of the 2030 Agenda with the metropolitan plan was carried out using a bottom-up approach as part of the city's strategic approach to sustainability and has focused on four main pillars: human rights, people, the planet and prosperity. In 2019, New York City released its "OneNYC 2050" strategic plan that outlines eight goals and 30 initiatives aligned with the SDGs.[54] Similarly, Kitakyushu (Japan), Santana de Parnaíba (Brazil) and Seoul (Republic of Korea) —as illustrated in Box 7.4— are among other cities that have aligned their planning processes with the global development agendas.[55]

Box 7.4: Seoul: Urban planning and the global agendas

Since 1995, after the first mayoral election, the Seoul Metropolitan Government has led sustainability actions in many areas: participatory urban planning, new technologies, social inclusion and climate change mitigation. In recent years, it has aligned those efforts with the global agendas. In 2015, the city established the Master Plan for Sustainable Development (2016–2035) and also adopted a comprehensive strategy to fight climate change, "The Promise of Seoul, Taking Actions against Climate Change," which outlines efforts around energy, air quality, transport, waste, ecology, urban agriculture, health, safety and urban planning. In 2017, the 2030 Seoul Plan for the implementation of the SDGs was adopted using a bottom-up approach. To realize this 2030 vision, five core issues were identified: "people-centred city without discrimination; dynamic global city with a strong job market; vibrant cultural and historic city; lively and safe city; and stable housing and easy transportation, community-oriented city."

(Source: Seoul Metropolitan Government, 2015; Seoul Metropolitan Government, 2018.

However, the existence of planning instruments and capacities, although vital, does not necessarily guarantee the achievement of local public goals. UN-Habitat has established that local governments face numerous barriers when using conventional urban management and planning tools. Moreover, in many countries, particularly in developing ones, cities' capacities and tools to promote adequate planning are deficient or non-existent. Planning tools need to be linked and backed up to financial and legal frameworks. The dominance of informality further determines the capacity of local institutions to guide urban development forms. At the same time, the study calls for a transformation of the approach to urban planning: learning to work with informality. For instance, tapping informality as a development force and guiding it towards the making of better cities means, in essence, taking advantage of alternative "non-formal" modalities created by communities in their neighbourhoods.[56]

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Regional differences in planning approaches are significant. In Europe and North America, and to some extent Latin America, planning systems are generally mature.[57] An important stimulus to positive reforms and cultural change in planning came to these regions during the past decades in the form of strategic and integrated planning, promoting integrated development by combining urban policies with economic development, inclusive policies and management strategies.[58] Nevertheless, not all strategic plans are successful, neither in formulation nor in implementation. Oftentimes, development priorities are contested and there is the risk of meaningful citizen participation being jeopardized by some government decisions or private investment interests (e.g. by elites). In addition, "splintered" urban fabric is evident across many cities of the world, with serious implications for urban governance and contradictory impacts on sustainability.[59]

In Latin America, some cities are at the frontline of strategic planning approaches with the support of international agencies like the Inter-American Development Bank, which has assisted 61 secondary cities with the preparation of city action plans.[60] Such multilateral support is necessary because in smaller cities and middle-sized towns there is often a lack of human resources and funding to plan effectively. Social exclusion and inequalities often undermine the adoption of inclusionary planning processes. Contrasts between residential and gated communities and marginal neighbourhoods are aggravated, fuelled by social crises and the expansion of urban violence.

In Asia, although traditional top-down planning approaches are still present, new approaches such as those favouring urban renewal are now emerging in the region. Countries in the region are moving forward with national spatial frameworks, city-region planning and local planning for

urban regeneration. At the same time, cities are incorporating strong environmental and resilience dimensions to their long-term visions.[61] China has moved rapidly to decentralize certain planning functions, although state control remains. In India, planning tends to concentrate at the state rather than the local government level.[62] Less economically developed countries are slowly transitioning from older systems with top-down approaches to newer decentralized systems for development policy and planning.

In CIS countries, the role of both local government and civil society in the actual planning of urban development is quite limited. With few exceptions, there is a persistence of top-down master planning, weak plan implementation at the local government level and little control on market-driven urban development. In the Middle Eastern and Western Asia Region, urban plans are often developed by central governments or district commissioners, assigning consultative or follow-up roles to local government, as is the case of Lebanon and Iran, respectively.

In Africa, urban planning systems remain highly centralized in most countries, with cities being under-resourced and oftentimes operating within outdated or inappropriate urban legal frameworks. While larger cities such as Dakar (Senegal), eThekwini (South Africa), Johannesburg (South Africa), Lagos (Nigeria), Maputo (Mozambique), Marrakesh (Morocco) and Nairobi (Kenya) are bright spots, overall, there is a lack of planning professionals and tools to enforce planning and land-use regulations. In the midst of these challenges, collaborative partnerships with slum dweller organizations and communities have emerged.[63] A critical urgency in Sub-Saharan Africa is to develop new planning modalities and capacities to accommodate rising numbers of urban dwellers.

It is worth noting that, in the framework of the SDGs, local governments in all regions are being encouraged to design local development plans aligned with the SDGs, including SDG 11. In Colombia, for example, local governments have been required to develop local management plans since 1997. Consequently, the majority of provincial capitals have since aligned their plans with the SDGs.[64] In other Latin American countries, efforts to align the SDGs with local development plans have also intensified in recent years with the adoption of more integrated urban and land management approaches (e.g. Bolivia's Participatory Municipal Planning System and Ecuador's Decentralized Participatory Planning System).[65]

Similarly, in Africa, where local development plans are also mandatory, countries are revising their national planning systems to support local governments' alignment efforts (e.g. Benin, Burkina Faso, Ghana, Rwanda and South Africa). In Asia, alignment processes are also advancing in countries such as Australia, China, Indonesia, Japan, Republic of Korea, New Zealand and the Philippines.[66] In China, for example, pilot cities have been selected—Guilin, Shenzhen and Taiyuan—to promote innovation and drive policy learning and change, while many others are also updating their sustainability policies.[67] Some cities adopted the SDGs as a reference framework to revise their development strategies and plans, for example, eThekwini (South Africa), Mannheim (Germany) and Seoul (Republic of Korea) among others. This effort is expected to have a positive impact on planning processes.

Although enabling institutional environments determined some degree of planning outcomes, the capacity of cities to plan in a participatory and inclusive way depends strongly on their local leadership and their ability to bring together heterogeneous local interests in a shared vision, then mobilize the means to implement that vision. Local leaders that adopt strategic approaches accounting for the systemic tensions between inclusion and sustainability are better positioned for success. The likelihood of achieving the expected outcomes is maximized if such visionary leadership is underpinned by strong urban governance, institutional coordination and broad coalitions that support and ensure continuity of execution and implementation. As argued in the World Cities Report 2016, "a city that plans" allows local actors to learn and adapt on a continuous basis to face uncertainties and risk, as well as to support innovation

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systems that connect institutions, businesses, academia and social movements, while embracing the views of various stakeholders in the quest to build the collective citizens' preferred future.[68]

7.3.2   Participatory policies

Participatory approaches to policymaking can create virtuous circles of engagement between citizens and local institutions that foster positive social forces and drive sustainable urban development. Worldwide, many cities have institutionalized different forms of citizen, private sector and community participation, and these modalities are being expanded as part of the localization efforts for the global agendas. In almost all regions, local governments are developing consultations, workshops and labs to involve citizens in localization plans.

Bogotá, for example, used the SDGs to open up new platforms for citizen participation. Amsterdam hosted a two-day Global Goals Jam in 2017, which brought together local creative teams of designers and developers alongside the council's technical staff to work on innovative ideas to contribute to the SDGs. Jakarta has integrated the priorities of Indonesia's national plan and the SDGs into its mid-term plan (RPJMD), supported by a participatory electronic budgeting and planning approach known as *e-Musrenbang*. Latin America has a longer and more consolidated tradition of citizen participation, most notably Porto Alegre's pioneering work with participatory budgeting. In Africa, citizen participation in municipal planning is more incipient, although city development strategies in Ouagadougou (Burkina Faso) and Douala (Cameroon), as well as Uganda's municipal development forums, are some

On-site meeting with Saida Municipality's technical office for data validation. © UN-Habitat

examples of dynamic participatory mechanisms that have been established. The approach remains very limited in the Middle East, West Asia and the CIS region. On the whole, the International Observatory on Participatory Democracy—which collects experiences developed by local governments across different continents through different modalities—has established that there is notable progress in participatory experiences across the world. For example, various jurisdictions have adapted and reconfigured "participatory budgets" or developed a broad set of mechanisms to involve inhabitants in local decision-making processes.[69]

Some countries are going one step further and mandating participatory planning, like Dominican Republic. Meanwhile, citizen participation modalities are evolving to new techniques like score cards for community-based monitoring in different cities in Africa and Asia, with the support of United Nations agencies and international cooperation. E-democracy has also transformed participation in the past two decades by supporting citizen involvement in different stages of decision-making through channels such as *Smart Citizen* and *Digital Civics*, among others.[70] In that vein, Argentina, Estonia, Italy, Indonesia, Philippines and Mexico are among the countries where open government practices are being promoted in partnership between local governments and NGOs.[71] Private sector involvement in local forums and dialogues on policymaking, planning and implementation can also help to stimulate sustainable changes in business behaviour. Their engagement in efforts like the United Nations Global Compact Cities Programme creates incentives to adopt more socially responsible and sustainable principles, promote decent work and ensure access to financing to support the transition towards sustainability.[72]

The integration of multiple participation channels is a way of diversifying citizen engagement, accommodating different interests and increasing the number of participants. For example, Canoas developed 13 innovative tools to encourage public participation through its Citizen Participation System, which have since engaged over 185,000 residents. In Seoul, the metropolitan government recently promoted the Citizens' City Hall Programme that combines an open-door policy for ideas and opinions with site visits, allowing the public administration to discover solutions through direct community engagement.[73]

Participatory and rights-based approaches are developing a new framework for the co-creation of cities and territories in terms of urban design and service delivery—for example, housing policies in partnership with NGOs such as the Asian Coalition for Housing Rights or the Know Your City initiative developed by Slum/Shack Dwellers International to integrate slums in local planning processes.[74] The notion of participation, however, is not a panacea. Participatory budget experiments, for example, span a broad spectrum from symbolic participatory gestures with little transformative impact to meaningful generators of structural change in urban governance systems that allocate significant sums of public money to address different groups' needs.[75] Some experiences have been criticized for limiting citizens' sphere of engagement, favouring already privileged social groups instead of those most excluded from public discourse, creating or strengthening clientelist networks, weakening popular organizations and risking political manipulation.[76] In other cities, participatory budgeting driven by a good governance logic have contributed to reconfiguring relationships and responsibilities among actors and institutions in the public domain, leading to measurable improvements in the overall quality of life of their citizens.[77]

The concept of participation in urban governance is changing as it moves beyond simple consultation to the co-creation of a space that will contribute to rebalancing the distribution of decision-making powers in society

The concept of participation in urban governance is changing as it moves beyond simple consultation to the co-creation of a space that will contribute to rebalancing the distribution of decision-making powers in society. This shift requires local governments to respect some basic conditions, such as the empowerment and autonomy of social movements and local stakeholders. Enablers of citizen engagement need to be simple, reciprocal, representative, inclusive and people-oriented. They need to recognize formal participation procedures with transparent and shared rules that are complemented by collaborative partnership, take privacy rights and citizens' initiatives seriously and endow citizens with real decision-

making powers. Furthermore, local governments must develop an increasing number of participatory processes, online and offline, which are balanced and implemented with regularity and continuity. Alongside an active participatory democracy, transparency and accountability are the key pillars for new urban governance.[78]

7.3.3 Multilevel governance

While it is the responsibility of local governments to ensure the effective leadership and coordination of development policies in their cities and territories, functions relevant to urban governance and planning are usually spread across several departments and spheres of government, as well as across private and civil society sectors. Vertical and horizontal policy collaboration between different levels of governance (local, regional and national levels) and across institutions at the same level (e.g. inter-municipal cooperation) are vital to ensure the coherent development of urban areas. Policy coherence and collaboration lie at the core of the NUA and are critical to achieve the "whole of government" and "whole of society" approaches called for by the SDGs. In recent times, public health crises that have a strong territorial dimension and require an effective integrated response (like the COVID-19 pandemic) have increased the necessity for multilevel governance approaches.

Multilevel governance arrangements are instrumental for the effective localization of the global agendas, as well as for creating synergies, reducing overlapping and critical gaps between institutions, and promoting trust and accountability that enhance policy coherence. The progress in decentralization processes that has been observed across the different regions has led to greater administrative, financial and socio-economic interdependence between central and sub-national governments. Yet it has also increased the complexity of decision-making and consensus-building, as more actors and initiatives have become part of the process. Well-tailored multilevel governance arrangements can

Multilevel governance arrangements are instrumental for the effective localization of the global agendas, as well as for creating synergies, reducing overlapping and critical gaps between institutions

facilitate the involvement of local institutions and actors, and create local ownership, while fostering innovation and experimentation that allows for the adapting of national strategies to local realities.[79]

In this regard, national urban policies (NUPs), understood as "a coherent set of decisions through a deliberate government-led process of coordinating and rallying various stakeholders to maximize the benefits of urbanization," are a critical part of the process of building multilevel governance systems, as recognized in the NUA.[80] The implementation of the NUA and the 2030 Agenda undoubtedly represents an opportunity to extend the processes of change and tackle many of the existing challenges in relation to strengthening and expanding multilevel governance.

The evolution of the institutional frameworks to facilitate multilevel governance follows many of the patterns described above regarding decentralization processes. In Europe, multilevel governance is especially well-developed in countries showing a high degree of decentralization and includes long-standing structures for dialogue between central and local/regional governments in a wide range of areas such as spatial planning, environment, infrastructure, transport, technology and development, as well as multilevel fiscal coordination. European countries also have a tradition of NUPs as levers to improve coordination and ensure policy coherence.[81] Europe is also the region where local governments are most involved in national coordination mechanisms for the implementation of the SDGs (a trend observable in 20 of the over 37 European countries that have reported to the HLPF since 2016).[82] Finally, the European Union places particular emphasis on the concept of multilevel urban governance. The Urban Agenda for the EU (Pact of Amsterdam) was adopted in 2016, taking into consideration the New Urban Agenda and the SDGs, with the objective of addressing the adoption of an integrated and sustainable urban development approach in a broad multilevel framework.[83]

In Latin America, progress toward multilevel governance has often been challenged by political cycles and instability. Brazil developed a sophisticated multilevel approach in the 2000s through the creation of the Ministry of Cities and the National Conference of Cities, although following recent political changes both of those pioneering efforts

have faced increased headwinds.[84] Other countries developed mechanisms for dialogue, planning and cooperation and made progress in framing national urban policies (for example, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and El Salvador). The examples of Colombia and Ecuador illustrate the complexity of developing multilevel governance systems. The two countries face coordination problems—not only between national and local governments, but also between local governments—that range from political sensibilies to important gaps in capacities and access to financing. In the region, 14 out of 19 countries have NUPs in the implementation stage, with different levels of local government involvement in their definition.

At the regional level, ECLAC, in cooperation with national governments and UN-Habitat, has adopted a Regional Action Plan for the Implementation of the New Urban Agenda in Latin America and the Caribbean (RAP), and proposed the creation of the Latin American and Caribbean Urban and Cities Platform to facilitate the follow-up and monitoring processes. However, local governments' involvement is still limited in both this regional initiative and the national coordination mechanisms for the implementation of the SDGs (only 6 out of 17 Latin American countries have reported on their progress to the High Level Political Forum since 2016).

In the Asia-Pacific region, a few countries have developed systematic multilevel governance mechanisms, like the Council of Australian Governments, the Local Government Commission in New Zealand and the Union of Local Authorities in the National Economic and Development

As of 2018, 24 out of 43 countries in the Asia-Pacific region have NUPs in the implementation stage or beyond

Authority in the Philippines. Others, like Indonesia, have promoted coordination mechanisms at provincial or regional levels. In China, multilevel governance arrangements are critical in many dimensions, for example, in addressing the rights and living conditions of the more than 200 million internal migrants that move between rural and urban areas under the *hukou* system.[85]

At the same time, countries are developing dedicated policies to strengthen coordination with cities and local governments to implement the global agendas. For example, the Government of Japan involved local governments in its multi-stakeholder SDG Promotion Roundtable. It also provides intensive support to selected local governments in their implementation of the SDGs and the NUA through different programs, such as the Future City and Ecomodel City.[86] In the Republic of Korea, the new government designed a roadmap in 2018 to implement the SDGs and launched a five-year Urban Regeneration New Deal; while a handful of cities—such as Seoul, Gwangju, Suwon and Daegu—are concurrently advancing in their localization efforts. Indonesia and the Philippines also strengthened vertical coordination between different levels of government and non-state actors for SDG implementation and monitoring.[87] In both countries, there are obstacles and gaps to harmonizing these different processes, such as overlapping roles between agencies and local public enterprises, different planning timelines, insufficient technical support, weak local capacities, problems with data and indicators and financing issues. Coordination is particularly arduous in the main metropolitan cities, resulting in weak planning and delivery of services in places like Jakarta (Indonesia) and Manila (Philippines).[88]

It should be noted that as of 2018, 24 out of 43 countries in the Asia-Pacific region have NUPs in the implementation stage or beyond. Participation by stakeholders has been highly uneven across the region—reflecting diverse political arrangements.[89] Each country determines its own approach to improving its multi-level urban governance, but very few make the connection between urban strategies and the global agendas.

In Africa, multilevel governance approaches, although incipient, have made progress. Countries across the African continent, such as Benin, Kenya and South Africa,

21 out of 38 African countries have NUPs in the implementation stage or beyond, but many countries lack the resources and technical capacity to deploy comprehensive NUPs

have started promoting an "all of society" approach to the implementation of the SDGs and the NUA through the creation of multilevel governance frameworks. While some challenges have emerged, like incomplete fiscal decentralization accompanied by a lack of coherence between local policy guidelines, the different global agendas and their follow-up and review mechanisms, it is notable that all of these countries have NUPs in place. Following a consultative process, the South African national government adopted the Integrated Urban Development Framework in 2016 to coordinate and guide urban management.

Multilevel collaboration is also making progress in terms of climate adaptation policies. In the eThekwini area, coordination is envisioned vertically and horizontally between contiguous local governments and involving local stakeholders.[90] Various countries are taking advantage of national coordination mechanisms created for the SDGs to ensure greater collaboration between national and subnational levels. Benin, for example, involved local governments in the National Steering Committee for Planning and Development for the SDGs and made significant strides in the integration of the SDGs in national and local plans in 10 of the country's 12 departments. In Kenya, the secretariat of the Council of Governors established an SDG liaison office and focal points in all 47 counties to improve coordination between the two levels of government. Ghana and Burkina Faso, among other countries, are taking advantage of their decentralized planning system to ensure better coordination of the SDGs, strengthen regional coordination and support the alignment of local plans with national ones, while also focusing on specific

Houses built on the ruins of South Africa's oldest slums, Cape Town, South Africa. © Authentic Travel/Shutterstock

local priorities. Efforts to adopt and implement NUPs are underway across the continent (21 out of 38 African countries have NUPs in the implementation stage or beyond), but many countries lack the resources and technical capacity to deploy comprehensive NUPs.[91]

7.3.4 Monitoring urban policies

Admittedly, there are still significant problems in many countries in the production of disaggregated data as well as joint indicators for national and local governments. Both of these factors make it difficult to monitor the implementation of the SDGs and the NUA, and to ensure national and local planning processes are founded on realistic targets. Many local governments currently have no access to localized data and thus do not have the capacity to make informed decisions that allow them to better prioritize local policies, as well as ensure effective implementation.

This limitation, combined with the difficulties that local governments in all regions have encountered in being included in reporting processes at the national level, makes monitoring and reporting one of the core, urgent challenges for localization. UN-Habitat, international organizations, and countries including Belgium, Colombia, Indonesia and South Africa are developing solutions. UN-Habitat's City Prosperity Index, for instance, provides a flexible monitoring framework for the SDGs, applied in more than 400 cities in all regions.[92] In addition, UN-Habitat has developed the New Urban Agenda Platform, an online platform to facilitate monitoring, reporting and information sharing on progress on the implementation of the NUA and SDGs (Chapter 9). In parallel, local governments and their networks are also promoting initiatives to support monitoring. For example, in Germany, a coalition of public and private partners built a national platform to collect SDG data from municipalities. In Brazil, the National Confederation of Municipalities developed an SDG dashboard called *Mandala ODS*. In Africa, the *Know Your City* initiative has long collected data across informal settlements that can now inform local monitoring efforts.[93] More than 40 local governments have devised their own Voluntary Local Reviews that complement their countries' Voluntary National Reviews with local on-the-ground information, oftentimes including different sets of indicators (Box 7.1).[94] The European Commission and the

OECD have also developed different proposals to support local data and indicators to monitor the SDGs and facilitate benchmarking.[95]

The task of monitoring and evaluating the implementation of the SDGs and the New Urban Agenda will require the support of national statistical offices in collaboration with local governments, stakeholders and international organizations to ensure the follow-up of public policies. National governments should promote the involvement of local governments and stakeholders in the definition, implementation and monitoring of urban policies and plans, as well as in the disaggregation of data and indicators.

Finally, despite the notable progress highlighted in this section, much more work remains to be done as there is still a long way to go in achieving the effective transformation of urban governance. Many urban areas suffer from inadequate multilevel governance schemes, unclear distributions of responsibilities between different spheres of government and weak cooperative mechanisms. It is also worth noting that the participation of local governments in the national coordination mechanisms for SDG implementation is still limited and their involvement varied in the definition and development of national urban policies.[96] Such ineffective multi-level governance systems compromise planning processes and hinder the engagement with civil society and key stakeholders. Creating a culture of co-operation is thus crucial to achieving effective multilevel governance and paving the way for the effective implementation of the NUA and the SDGs.

Creating a culture of co-operation is thus crucial to achieving effective multilevel governance and paving the way for the effective implementation of the NUA and the SDGs

7.4. Concluding Remarks and Lessons for Policy

This rapid review of local governments' initiatives, opportunities and challenges to contribute to leveraging the potentialities of sustainable urbanization offers a

promising but heterogeneous picture. This timely review comes at the onset of a decade that is marked by an ambitious call for action to deliver the SDGs by 2030, the Decade of Action. The discussions in this chapter indeed show that local governments and their associations have a pivotal role in mobilizing actions to accelerate sustainable solutions, particularly on the three fronts of this ambitious call: global, local and people action.

Local governments have been leading the efforts to localize the global agendas. Cities on the forefront with visionary leaders and local government networks are contributing to shifting development patterns along many dimensions, such as climate change mitigation, urban resilience, alternative economic models, social inclusion policies and mainstreaming human rights-based approaches. They have been, and continue to be, on the frontlines during the COVID-19 crisis to ensure the continuity of essential public services and respond to emergencies by providing the public with necessary information and protection as well as facilitating provision of food and transitory shelter to those in need. In the aftermath of the pandemic, their role will also be critical to pursuing a resilient, inclusive, gender-equal and green economic recovery that is indispensable to achieving the SDGs.[97] Cities are already playing a crucial role as experimental hubs and their experiences can be used to inform policies that are scaled at the national level.

Yet from a global perspective that takes into account the magnitude of the challenges, the scope of local government's actions could be perceived as piecemeal, geographically concentrated and subjected to conflicts and adverse economic cycles. Clearly, the global movement that local governments are leading has made important progress in the last four years, yet this progress is still partial and should be reinforced. At the same time, in many regions the institutional environments are not fit for achieving this purpose, hindering local governments' capacity to expand and scale up the most ambitious and innovative actions. Local governments cannot act alone, but they can be the pillars that support coalescing transformative forces that advance sustainable urbanization.

Thus, the need is urgent to strengthen efforts to **galvanize the forces of localization of the global agendas in**

cities and territories. Localization strategies should be mainstreamed in all plans, programmes and budgets from the national to the local level. Cities need to adopt the SDGs and the New Urban Agenda as reference frameworks to guide their policies and plans, as well as ensure coherent and integrated implementation. Countries need to integrate or strengthen robust localization approaches into their sustainable development strategies and action plans to expand the involvement of local governments and actors, accelerating and scaling up sustainable urban development. Coordinated strategies for the global agendas—New Urban Agenda, SDGs, Paris Agreement and Sendai framework—are an imperative. No single agenda can be addressed in isolation.

Strong and capable local governments are key levers to unleash the value of sustainable urbanization. To enhance their involvement in these efforts and strengthen their capacities, local governments and their networks, international organizations and national governments should **join forces to strengthen the dissemination of the global agendas, boost knowledge-sharing and training and take advantage of peer-to-peer learning and decentralized cooperation** in order to assist local governments and local actors in the development, implementation and follow-up of localization strategies.

To harness the transformative potential of local governments' actions and adequately leverage the possibilities of urbanization, countries should ensure an **enabling institutional environment for local action.** Effective decentralization policies strengthen local authorities' capacities to effectively contribute to sustainable urban development. These policies are particularly urgent in developing countries where urban growth will concentrate in the coming decades, so as to allow local governments to contribute to improving access to basic services as essential rights and manage urban expansions in a sustainable way, thus preventing the derailment of the global agendas.

As part of the empowerment of local governments, special attention should be given to **fiscal decentralization and adequate financing flows to support urban investments.** As acknowledged by the Addis Ababa Action Agenda (paragraph 34) and already stressed in previous chapters of this report, local governments need strengthened local

tax systems, including the power to capture part of land and property added-value, a better allocation of national fiscal revenues through intergovernmental transfers and access to responsible borrowing. Equalization funds are also necessary to ensure the adequate redistribution of resources to support intermediary cities and small towns so as to avoid leaving any territory behind. A suitable spectrum of debt finance options needs to be adapted and made accessible to cities of different sizes and financial capacities, contemplating multiple sources of financing and innovative financial instruments.

Sustainable participatory urban and land planning are critical to harness the co-creation of cities and support the momentum for sustainable urban transformation. An integrated planning approach, as reflected in the New Urban Agenda, is imperative to strengthen the inclusive dimension of cities, facilitate climate adaptation and mitigation and strengthen urban resilience strategies, thus multiplying the benefits of existing interlinkages between urban and territorial areas. Inclusive and participatory planning are key levers to involve local actors in the definition of a shared vision and support the coalescence of transformative local forces. Deep reforms of planning regulations and frameworks are a critical part of SDG localization and the New Urban Agenda. Urgent actions to boost urban planning are needed in regions where rapid urban growth will be concentrated (Sub-Saharan Africa, South Asia and South-East Asia).

It is also of great importance to create strong **multilevel governance frameworks as one of the pillars of the New Urban Agenda,** built around institutionalized mechanisms for vertical and horizontal collaboration and coordination and enshrined in broad consultative processes. Effective multilevel governance requires clear legal and institutional structures, which are based on the principles of subsidiarity and decentralization, as well as the adequate intergovernmental allocation of financial resources. Effective multilevel governance is essential to build robust national urban policies that are well-articulated with the SDGs and national and territorial policies that promote balanced and polycentric urban systems.

Strong metropolitan governance is a key component of new urban governance. National governments should enable metropolitan governance, ensuring the involvement of both local and regional governments in the reform process. At the same time, the lack or the inadequacy of policies for intermediary cities prevents the creation of strong systems of cities and, thus, balanced regional socioeconomic development.

A new culture of participation involves the clear recognition of citizens' rights and, more specifically, of their right to the city. Local governments should promote an increasing number of participatory processes, both online and offline, that manage to engage organized civil society in all its forms (grassroots organizations, NGOs, private sector, social partners, academia, etc.) and that pays special attention to specific groups (e.g. women, the youth, the elderly, people with disabilities, vulnerable minorities and the urban poor). These processes should be based on transparent and shared rules, endow citizens with real decision-making power and be implemented with regularity and continuity. Formal participation procedures should be complemented by collaborative partnerships which go beyond formal consultation, recognizing civil society groups as active partners in new urban governance. This mindset requires public institutions to respect some basic conditions, such as the empowerment and autonomy of social movements and local stakeholders.

The effective involvement of local governments is critical to **strengthen the participatory governance of the New Urban Agenda and the SDGs** and contribute to the value of sustainable urbanization. At the national level, there is much to do in terms of effectively involving local governments and stakeholders in the national coordination mechanisms for the implementation of the SDGs, as well as in terms of strengthening their involvement in the definition, implementation and monitoring of national urban policies. Limited consultations and uncoordinated decision-making presently hinder the policy coherence necessary to achieve the SDGs and the New Urban Agenda and reduce local ownership. The **production and dissemination of disaggregated data for monitoring, evaluation and impact evaluation of the localization of the global agendas** is key to ensuring that planning processes at all levels are founded on realistic targets and that effective implementation can be monitored, as well as to ensure accountability and citizen follow-up.

Endnotes

1. The GTF brings together the main 25 global and regional organizations of local and regional governments. The GTF supports to the strong engagement of local leaders in the preparation of the Post-2015 Agenda, as well in during the COP process. UCLG President, the Mayor of Istanbul, was nominated by Ban Ki-moon as member of the High-Level Panel of Eminent Personalities for the Post-2015 Agenda in 2012. For more information, visit: https://www.global-taskforce.org/.

2. Localization is described as 'the process of defining, implementing and monitoring strategies at the local level for achieving national, regional and global sustainable development goals and targets.' More specifically, it takes into account sub-national contexts in the achievement of the 2030 Agenda, from the setting of goals and targets to the determination of the means of implementation and the use of indicators to measure and monitor progress. See: GTF and UCLG (2019); UNDP, UN-Habitat and GTF (2016), Roadmap for Localizing the SDGs: Implementation and Monitoring at Sub-national Level; UN Development Group (2014), Localizing the Post2015 Agenda (the outcome of the global UN dialogue process that took place from June 2014 to October 2014

3. Urbanization is not only the result of the expansion of cities but also the result of the transformation of former small towns and rural areas, called 'in situ urbanization'. Half to two thirds of urban population growth from 1980 to 2000 in China and roughly 30 per cent of China's GDP was produced in these in situ urbanized areas at the peak of their development at the end of 1990s (Yu Zhu, 2017

4. United Nations, 2020.

5. Cities for Global Health (https://www.citiesforglobalhealth.org/).

6. The C40 Knowledge Hub, 2019a.

7. The C40 Knowledge Hub, 2019b.

8. NUA 63-64; SDG 11.6.

9. NUA 13, 37, 53, 67, 100; SDG 11.7.

10. In 2020, Members of the 100 Resilient Cities program officially reunited under a new city-led network, the Global Resilient Cities Network (GRCN).

11. NUA 43-62; NUA 59, 100.

12. Several sharing economy networks have emerged like the Sharing Cities Alliance that started in 2012. A global social and solidarity economy network emerged from the 2013 Global Social Economy Forum (GSEF) held in Seoul. In 2016, the GSEF launched the International Center for Innovation and Knowledge Transfer on the Social and Solidary Economy. See: https://sharingcitiesalliance.com; http://www.gsef-net.org/en

13. C40 and EIT Climate-KIC, 2018.

14. Urban Sustainability Exchange, undated.

15. This is in line with NUA 156, SDG 8 & 9; UCLG Committee Digital and Knowledge-Based Cities and Bilbao, 2017.

16. ARUP, undated.

17. Cities Coalition for Digital Rights (https://citiesfordigitalrights.org).

18. NUA 5 and 136.

19. See, for example: Sustainable Food Cities in the UK, Red de ciudades por la Agroecología in Spain, Rete Città Sane in Italy, City Deal: Food on the Urban Agenda in the Netherlands, BioStädte network in Germany, AgroEco Cities European Network and ICLEI-RUAF CITYFOOD network. One of the most meaningful initiatives is the Milan Urban Food Policy Pact, with 203 signatory cities from every continent representing 450 million inhabitants since 2015.

20. NUA 14.a, 25-42, 70, 91 and 99; SDGs, particularly 1, 6 and 11.

21. Mejoramiento Integral de Barrios Project (http://isvimed.gov.co/programa/mejoramiento-integral-de-barrios); Mukuru slum project, (https://www.iied.org/special-approach-slum-upgrading-special-planning-area-mukuru-nairobi).

22. The declaration was signed by: Amsterdam, Barcelona, Berlin, Birmingham, Buenos Aires, Durban, Geneva, Jakarta, Lisbon, London, Mexico, Medellin, Montreal, Montevideo, New York, Paris, Seoul, Strasbourg, Taipei and Vienna.

23. NUA 13.b, 14.c, 92.

24. Metropolis, 2018.

25. United Nations, 2017.

26. https://www.uclg-cisdp.org/en/right-to-the-city/world-charter-agenda. The European Coalition of Cities Against Racism (ECCAR) gathers more than 100 European local authorities and has worked on non-discrimination issues over more than a decade. Similar regional coalitions exist in different continent after the umbrella of ICCAR, a partner entity of UNESCO whose name was recently transformed to that of International Coalition of Inclusive and Sustainable Cities (See: https://www.eccar.info/).

27. Role of local government in the promotion and protection of human rights – Final report of the Human Rights Council Advisory Committee [A/HRC/30/49 (2015)]; Local government and human rights [A/HRC/RES/33/8(2016)].

28. NUA 10, 26, 124; SDG 4, 11.4.

29. Culture 21: Agenda 21 for Culture (http://agenda21culture.net/sites/default/files/files/culture21-actions/c21_015_en.pdf); A database with case studies is available at (http://obs.agenda21culture.net/en/home-grid).

30. OECD and UCLG, 2019; These figures are based on a sample of 106 countries for expenditure, 104 countries for revenue and 99 countries for direct public investment.

31. UN-Habitat, 2016.

32. OECD and UCLG, 2019.

33. UN-Habitat, CAF and Fundación Avina, 2014; ECLAC Stat: Gini coefficient in urban areas move from 0.51 in 1990 to 0.46 in 2014(see: https://cepalstat-prod.cepal.org/cepalstat/tabulador/ConsultaIntegrada.asp?idIndicador=250&idioma=i).

34. UCLG ASPAC, Cities Alliance, UNDP, 2018.

35. UCLG Africa, Cities Alliance, 2018.

36. UCLG, 2019a.

37. UCLG, 2019a.

38. UCLG, 2019a.

39. OECD and UCLG, 2019.

40. Ivanyna,. and Shah, 2014, p. 14. The study includes 160 countries. Local borrowing rules are more accommodating in Europe and Latin America.

41. Inter-agency Task Force on Financing for Development, 2018.

42. Contribution of C40 to GTF and UCLG, 2019; European Investment Bank "Global Climate City Challenge.2019"

43. UCLG, 2014.; Villes en Développement n. 111 (2019).

44. S. Kishimoto et al, 2019.

45. OECD, 2015; Gómez Álvarez et al,2017.

46. Combined authorities may be set up by two or more local authorities. They may take on statutory functions transferred to them by an Order made by the Secretary of State, plus any functions that the constituent authorities agree to share (https://commonslibrary.parliament.uk/research-briefings/sn06649/)

47. Local Government Association, undated; Centre for Cities, 2019.

48. Harkness. and Katz, 2017.

49. UN General Assembly (2017), particularly section "Planning and managing urban spatial development", par. 93-103; UN-Habitat, 2016.

50. Bhan et al, 2018.

51. UN-Habitat, 2009; UN-Habitat, 2015a.

52. See: https://proyectoallas.net/2018/03/02/fortalece-cdmx-trabajo-de-la-agenda-2030-de-desarrollo-sostenible/

53. Senate of Berlin, 2018.

54. OneNYC 2050 (https://onenyc.cityofnewyork.us/).

55. UCLG,2019; GTF and UCLG (2018, 2019).

56. UN-Habitat, 2010c.

57. UN-Habitat, 2016; Bhan, et al, 2018; In OECD countries national governments provide enabling legislation for planning and carry out strategic spatial national and regional planning, with local governments undertaking land use planning. In federal countries (especially the US) planning operates primarily at state and local level.

58. UN-Habitat, 2016; Strategic plans have flourish in cities in all regions, such, Barcelona (since the 90s), Dar-es-Salaam, Johannesburg, Lima, London, Melbourne, Nairobi, New York, Quito, Seoul, Shanghai or, Tokyo and in cities from all sizes. Strategic planning and Cities Development Strategies were also propelled by cities networks and international agencies with the aim to give a voice to residents on the future of their cities (e.g. Cities Alliance or currently by different partners, for example, the Medinatouna project in nine middle-size cities in Tunis).

59. UCLG, 2016; Graham and Marvin. 2001; Sassen, 2018.

60. https://www.iadb.org/es/desarrollo-

urbano-y-vivienda/programa-ciudades-emergentes-y-sostenibles: Programa de ciudades emergentes y sostenibles

61. UNESCAP and UN-Habitat, 2019.
62. V. Watson, Contribution to the local and regional governments report to the HLPF in 2018 (unpublished)
63. SDI and Know Your City, 2018.
64. POT, which include spatial and environmental development, land use, risk prevention, infrastructures and housing, etc. Gobierno de Colombia (2017 and 2019); UCLG, 2019a; In order to encourage the implementation of the SDGs, the government proposed to strengthen the use of various mechanisms such as plan contracts (to encourage co-financing from central and local governments and private sector) and projects financed through the General System of Royalties (UN-Habitat, 2017).
65. https://observatorioplanificacion.cepal.org/es/territorial-planning, Countries with territorial and urban mandatory plans at local levels: Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, México, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela). See also UN-Habitat, 2017.
66. Republic of Indonesia, 2019
67. UCLG, 2019a.
68. UN-Habitat, 2016.
69. The International Observatory on Participatory Democracy collects thousands of experiences developed by local governments across different continents through different modalities (e.g. neighbourhood committees and assemblies, open town council meetings, councils for the elderly and the youth, participatory budgeting and planning, referenda and e-democracy, among others) [IOPD (https://oidp.net/en/)]; These experiences are in Brazil, China, Republic of Korea, Russia,

the US, as well as African, Arab and European countries (Cabannes, 2018).
70. UN-Habitat, 2015b.
71. https://www.opengovpartnership.org/stories/new-approaches-new-opportunities-expanding-the-reach-of-local-open-government/; https://opengov.uclg.org/
72. See. UN Global Compact.
73. More information on the Voice of the Mayors programme, the Seoul case, and the activities of Metropolis are available online: http://www.metropolis.org/voice-mayors. https://www.uclg.org/en/media/news/citizen-participation-part-everyday-life-city-canoas
74. Asian Coalition for Housing Rights (ACHR), Report on Housing Policies in Asia Region, (report prepared for UCLG-GOLD); https://knowyourcity.info/wp-content/uploads/2018/02/SDI_StateofSlums_LOW_FINAL.pdf.
75. A large number of innovative solutions have been experimented to include and benefit specific excluded and disadvantaged social groups: homeless (i.e. Paris, São Paulo), LGBT+ (various Brazilian experiences), migrant workers (i.e. Taoyuan, Taiwan Province of China), youth (multiple experiences, e.g. Valongo, Portugal), women (e.g. Solo/Surakarta, Indonesia, Seville, Spain), ethnic minorities in cities (i.e. São Paulo, Brazil or Rosario, Argentina), extreme poor (i.e. Yaoundé, Cameroon), disabled (i.e. Sanxia district, Taiwan Province of China; La Serena, Chile); rural communities in cities (i.e. Quito or Cuenca, Ecuador; Chengdu, China) etc.
76. S. Langelier, 2011; Ghertner (2011; Allegretti et al, 2016; UN-Habitat,2016, p.110
77. Cabannes and Lipietz, 2017.
78. Allegretti et al,2016; EIP-SCC,2015.
79. UNDESA, 2018.
80. NUA paragraphs 89 and 149; UN-

Habitat (2016), p.117
81. OECD, 2017; UN-Habitat and OECD,2018; 10 countries in Europe and North America adopted explicit NUPs and 23 partial NUPs.
82. GTF and UCLG, 2019.
83. For more information, see: Urban Agenda for the EU (https://ec.europa.eu/regional_policy/sources/policy/themes/urban-development/agenda/pact-of-amsterdam.pdf); The Belgian Presidency of the EU in 2010 published a handbook for multilevel urban governance in Europe (http://www.europarl.europa.eu/doceo/document/TA-8-2018-0273_EN.html)
84. Based on the legal frame created by the Statute of Cities (2001) and supported through the Ministry of Cities, Brazil promoted a national participatory dialogue - through the National Conference of Cities— comprising national and local governments and civil society organizations to support national urban development and promote multilevel cooperation. But in 2017, the national government limited the powers of the National Council of Cities and postponed the national conference (Decree 9076/2017. See: UN-Habitat (2016) p. 106; E. Fernandez, "Urban Planning at a crossroads, A critical assessment of Brazil's City Statute, 15 years later," in Gautam Bhan et al (2018), pp. 48-57.
85. For more details see Zhu and Lin, 2011; Multilevel arrangements are necessary for the design of policies concerning their rights, social security and public services provision and financing.
86. See: https://www.mofa.go.jp/policy/oda/sdgs/pdf/about_sdgs.pdf
87. UCLG, 2019a.
88. UN-Habitat, 2015c.
89. UN-Habitat and OECD,2018.
90. Leck and Simon ,2013.
91. UN-Habitat and OECD, 2018; Cartwright et. all. (2018) identify the following 18 African countries

as having dedicated urbanization strategies in their NUPs: Algeria, Benin, Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Gabon, Kenya, Malawi, Mali, Morocco, Niger, Nigeria, Rwanda, Senegal, South Africa, Swaziland and Uganda.
92. UN-Habitat (http://urbandata.unhabitat.org/partners).
93. For more information, see for Germany (https://sdg-portal.de/); for Brazil (http://ods.cnm.org.br/mandala-municipal); for Africa (https://knowyourcity.info/wp-content/uploads/2018/02/SDI_StateofSlums_LOW_FINAL.pdf.).
94. See: https://sustainabledevelopment.un.org/sdg11/local; The first VLRs were elaborated by New York, and the Japanese cities of Toyama, Kitakyushu and Shimokawa. Buenos Aires, Barcelona, the Basque Country, Bristol, Canterbury, Helsinki, La Paz, Los Angeles, Mexico City, Málaga, Mannheim, Oaxaca, Santana de Parnaíba, Sydney, Suwon, Taipei, Valencia followed suit.
95. OECD ,2020; EC-JRC, 2020.
96. GTF and UCLG,2019; Only in 47 countries out of the 142 countries that presented their VNR to the HLPF between 2016 and 2919, local governments are associated or consulted by the national coordination mechanisms for the SDGs follow-up. With regard NUPs, a survey realized by UCLG IN 2016 show some involvement in Latin American countries, but limited involvement in Asia and in Africa.
97. United Nations, 2020.

Chapter 8

Investing in the Value of Sustainable Urbanization

Significant investments are required to enhance the economic, environmental, social value of urbanization, including the intangible conditions of cities, all of which are critical for to realizing sustainable urbanization. Just like all aspects of development, sustainable urbanization requires adequate financing. The extent to which cities and countries attract and leverage the public and private investments required to achieve SDG 11 and the New Urban Agenda is key to enhancing the value of sustainable urbanization. Closing the investment gap requires coordination and co-operation among diverse stakeholders, including all levels of government, the private sector, and bilateral and multilateral development institutions.

Quick facts

1. Adequate investment in urban infrastructure including physical assets, human capital, institutions, effective governance structures and innovative technology is central to enhancing the value of sustainable urbanization.

2. Delivering on the urban dimension of the SDGs will cost US$38 trillion. The financial resources are available globally, but they are not channelled to areas where they are most needed.

3. The investment needs of cities and countries required to achieve sustainable urbanization vary, and depend on city size, demographic trends, urban configurations, geographic location, the country's level of economic development and the quality of existing urban assets.

4. The COVID-19 pandemic has created an uncertain investment climate as only five per cent of public and private sector leaders believe that investments will "increase significantly" following the pandemic.

5. Local governments still face multiple constraints regarding urban finance. These include insufficient and unpredictable transfers from central government, weak fiscal management, poor revenue generation and legal constraints.

Policy Points

1. Local governments must be empowered to tap their endogenous potential to innovatively increase and diversify own-source revenues, which in the long-run enhances local autonomy and financial sustainability.

2. Policy coherence between global, regional, national and local stakeholders is crucial for meeting urban investment needs to enhance the value of urbanization.

3. A multiplicity of actors and collaborative ventures is required to adequately fund urban infrastructure.

4. Institutions for public investment management should be strengthened to achieve desired outcomes while maintaining quality and efficiency in spending on the city's physical assets.

5. Urban policies and investments to enhance the value of urbanization should be evidence-based and grounded on realistic targets that can be monitored.

The Decade of Action to deliver the SDGs by 2030 represents a defining moment in the global development agenda and in the drive toward sustainable urbanization through the implementation of the New Urban Agenda. This requires significant investment in the economic, environmental, social and intangible conditions of cities, all of which are critical components to realize the value of sustainable urbanization. These investments include the physical assets, human capital, institutions, effective governance structures and innovative technology that are the foundation of sustainable cities.[1]

Given the interlinkages of Goal 11 with other SDGs and the NUA, investments in the various dimensions of the value of urbanization as discussed in this Report are necessary to achieve the broader 2030 Agenda for Sustainable Development. For example, investments in adequate and affordable housing, basic services and slum upgrading have direct impacts on at least three-quarters of the SDGs.[2] Likewise, investment in modern, affordable, reliable, sustainable energy projects helps to achieve SDG 7. Investment in capacity building of local government staff and institutions contributes to SDG 16. Today, however, there is a shortfall in the investments required to achieve the sustainable development objectives of these agendas, including the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction. While the shortfall is global in nature, it is more pronounced in developing regions with insufficient domestic revenues.

Sustained financial commitments to economic, environmental and social infrastructure are key to achieving inclusive urbanization that provides vital public services and social protection for vulnerable urban populations discussed in Chapters 2 and 5. Action by local governments is critical, but on their own, they cannot generate the required financial investments to fully harness the value of sustainable urbanization. Closing the investment gap requires coordination and cooperation among diverse stakeholders, including all levels of government, the private sector, and bilateral and multilateral development institutions. The trends highlighted in Chapter 1 and subsequent chapters of this Report indicate an urgent

Running tram at Bahnhofstrasse Street of Zurich city center, Zurich, Switzerland. © Roman Babakin/Shutterstock

need to address the insufficient investment in sustainable urban development. The COVID-19 pandemic has further amplified the urgency of addressing issues such as poverty, hunger, precarious housing, health systems and climate change through the SDG framework.

As pointed out in this Report, cities generate over 80 per cent of global GDP. However, many rapidly growing cities do not directly benefit from the wealth created within their jurisdictions and continue to struggle with insufficient budgets and accumulating infrastructure deficits. Additionally, as pointed out in Chapter 7, while there is a considerable amount of funds 'available' at the global

Many rapidly growing cities do not directly benefit from the wealth created within their jurisdictions and continue to struggle with insufficient budgets and accumulating infrastructure deficits

level and increasing investment in global cities, adequate financing is not directed to sustainable urbanization in the cities and territories where resources are needed the most. This skewed distribution is also visible in the investment patterns supporting scientific and technological research underpinning the innovation economy (Chapter 6), as well as investments in monitoring and reporting mechanisms that should underpin policies and actions geared toward sustainable urban development (Chapter 7).

This chapter addresses how cities and countries attract and leverage available public and private financing to create and maintain the investments required to achieve SDG 11 and implement the NUA, so as to enhance the value of sustainable urbanization. While there are no easy answers, the path forward is clear: domestic revenues, official development assistance and private sector investments need to increase. Further, coordination between global, national and local stakeholders must improve to ensure that the financial facilities available are contextually

appropriate so that investments are efficient and directed where they are most needed. While the current investment climate is characterized by uncertainty due to the COVID-19 pandemic, the need remains as critical as ever. The investment decisions made today will determine how cities will look and function tomorrow.

8.1. Urban Investments Demand

Presently, the global development agendas—SDGs, the NUA, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction—are being implemented without financial resources flowing at the speed and scale required to realize their goals.[3] Endorsed in 2015 by the United Nations General Assembly, the Addis Ababa Action Agenda (AAAA) provides the framework to finance the collective ambitions for sustainable development. As in the preceding Monterrey Consensus, the AAAA recognizes that financing for the SDGs is not just about more financial flows, but also depends on public policies that strengthen national and international fiscal environments.[4] Both frameworks call on governments and multi-stakeholder partners, including businesses, foundations and individuals, to mobilize financial resources in a more coordinated manner in pursuit of economic growth that enhances human well-being and preserves the environment, particularly in developing countries.[5]

Notably, five years after the AAAA was established, the promised surge in finances available for countries to achieve the SDGs and related development agendas has not materialized. Globally, government revenues are still the primary source of financing for urban development, but the average in low-income countries remains below the 15 per cent of GDP threshold considered essential for effective state functioning.[6] The global supply of resources to developing countries, where development goals are

> A retreat from multilateralism, discontent with and distrust of globalization, heightened risk of debt distress and more frequent and severe climate shocks have made sustainable financing more difficult

particularly pertinent, declined due to the global economic crash in 2008 and never fully recovered.[7] Further, in recent years, a retreat from multilateralism, discontent with and distrust of globalization, heightened risk of debt distress and more frequent and severe climate shocks have made sustainable financing more difficult.[8]

While the full impact (economic, social and environmental) of the COVID-19 pandemic will not be known for some time, it is quite clear that the economic and financial shocks associated with the pandemic threaten to further derail SDG implementation.[9] Due to the ongoing pandemic, there will be a likely increase in development needs with a concomitant decline in funds available for investment, particularly in making cities inclusive, safe, resilient and sustainable. For instance, estimates show that the pandemic will push between 71 and 100 million into extreme poverty.[10] At the same time, revenues for local authorities are predicted to drop between 15 to 25 per cent in 2021.[11] This contrast will not only make it difficult for cities to deliver much-needed services, but also constrain the resource base crucial for improving economic, environmental and social conditions for vulnerable populations, such as those living in informal settlements and slums. Given the multidimensional impacts of COVID-19 on both public health and economic output, countries have been forced to reallocate their domestic resources to deal with the immediate needs of the pandemic. Simultaneously, investors have fled emerging markets for safer investments, which has sapped the developing world of necessary revenue to tackle those domestic needs.[12]

Yet, demand remains high for investments in adequate housing, basic services, sustainable transport systems, urban environmental management and other needs that advance sustainable urban development, especially in developing regions with rapidly growing urban populations (Chapter 1). Different countries will have different investment needs depending on their specific characteristics. However, the common underlying factor is that these investments are related to the economic, environmental, social and intangible dimensions required for functioning urban systems (Table 8.1). UN-Habitat estimates the total investments needed for the urban dimension of the SDGs and development of infrastructure at US$38 trillion for the years 2020–2030 (Box 8.3).[13]

To leverage the full potential of sustainable urbanization, investments made in hard and soft infrastructure must be compatible with the 2030 Agenda, NUA and other development agendas

To leverage the full potential of sustainable urbanization, *investments made in hard and soft infrastructure must be* compatible with the 2030 Agenda, NUA and other development agendas. The goal should not merely be more spending, but rather more efficient spending while prioritizing sustainability. These investments should be grounded on the integrated and indivisible dimensions of sustainable development and have the potential to improve quality of life in meaningful, visible and tangible ways.[14]

Economically, these investments support countries around the world to capitalize on the full potential of agglomeration economies and structural transformation in cities. Environmentally, these investments have the potential to impact local, regional and global environments by reducing greenhouse gas emissions, improving natural resource efficiency, mitigating the negative impacts of climate change and safeguarding critical ecosystems and biodiversity.[15] Socially, these investments promote inclusion and foster access to equal opportunities. Finally, these investments in the three dimensions of sustainable urbanization are managed by institutions at various levels of government that are well-resourced.

Table 8.1: Investments required to enhance the value of sustainable urbanization

Value of sustainable urbanization	Elements of investments	Example of projects*
Economic	Investments in physical assets, systems, and facilities that support the functioning of the urban economy	Capital projects such as housing, roads, bridges, high-speed railways, water and sanitation, public space and amenities, as well as technologies that contribute to efficient management of cities
Environmental	Investments that protect and improve the urban ecosystem, reduce greenhouse gas emissions and air pollution, improve natural resource efficiency, mitigate the negative impacts of climate change and other natural hazards, safeguard critical ecosystems and biodiversity	Renewable energy projects, retro-fitting buildings, sustainable waste management, sustainable land use, nature-based solutions, biodiversity conservation, sustainable transport and climate adaptation projects
Social	Investments that promote inclusion and are oriented toward ending poverty. These are investments not only aimed at ensuring that cities are just by promoting equal rights and opportunities, they are vital for enhancing integration, liveability, health and well-being in the urban space.	Affordable housing, slum upgrading, local government facilities, human capacity, health care, youth development, employment and training programmes, accessible transport for all, technologies and innovative solutions that improve social cohesion and targeted services to specific population groups (such as children, youth, the elderly, families, women, seniors, migrants, indigenous people, etc.)
Intangible	Investments in good urban governance (that is characterized by the following norms that are interdependent and mutually reinforcing: subsidiarity, equity, efficiency, transparency and accountability, civic engagement, security, promotion and protection of cultural diversity). Investments that leverage culture and cultural diversity for sustainable urban development.	Developing governance structures, institutions, legal and regulatory frameworks, technical capacity, monitoring and reporting systems and network collaboration. Projects that safeguard and promote cultural infrastructures and facilities.

Notes: Some investments fall in more than one dimension

8.1.1. The diverse nature of cities' investment needs

A range of investments across multiple sectors is needed for sustainable urban development (Table 8.1). The quantum of these investment depends on numerous factors including city size, demographic trends, urban configurations, geographic location, the country's level of economic development, municipal revenue generation and ability to mobilize domestic financial resources, as well as the quality of existing urban assets. This diversity of investment needs based on city and country-specific characteristics is aptly illustrated by a recent pilot study by UN-Habitat and AidData on investments needed for achieving SDG 11 (Box 8.1).

The current needs of cities in most advanced economies, for instance, are the necessary upgrades to modernize or replace ageing and increasingly outdated physical infrastructure such as bridges, power transmission and distribution systems, water and sewerage pipelines, and new investments in sustainable transport infrastructure. Available evidence suggests that only a limited number of countries, such as Australia and Japan, have invested sufficiently over the past several years to meet or exceed their infrastructure needs and will arguably be able to spend less going forward as a share of GDP than they have in the past.[16] In contrast, countries such as Germany, the UK, and the US face major gaps between their current spending commitments and estimated needs.[17]

Further, investments in urban transport infrastructure continue to be driven largely by the demands of car culture. In Europe, for example, roads account for more than half of transport infrastructure investment.[18] In recent years, though, there have been shifts towards sustainable mobility by investing in infrastructure and policies to encourage non-motorized transport, digital technologies that enhance efficiency across the whole transport system, shared mobility solutions, clean vehicles and alternative fuel. The region estimates that, by 2025, about one million public recharging and refuelling stations will be needed for the 13 million zero- and low-emission vehicles anticipated on European roads.[19]

As pointed out in Chapter 1, there is an urgent need for adequate and affordable housing globally. Established megacities such as London, New York and Paris have seen demand for housing outstrip supply. These cities need to boost new supply of affordable housing so as to avoid becoming prohibitively expensive to the younger workforce.[20] Both public authorities and the real estate sector will have to collaborate (e.g. on regulations and incentives) to drive investment into the housing sector to increase the rate of housing supply. For such cities to maintain their competitive business climate and ensure affordability for new entrants, deliberate and aggressive investments are required in innovative, affordable and flexible office solutions to accommodate growing innovation sectors.[21]

In major cities in emerging economies, such as Bangkok, Delhi, Jakarta, Lagos, Mumbai and São Paulo, a very different set of economic and social infrastructure challenges persists. These cities are experiencing a rising pool of middle-class residents and workers. Although infrastructure systems are the backbone of city competitiveness and long-term success, these cities still have deficits of both hard and soft infrastructure. These cities have an increasing demand for investments in sustainable transport, particularly in well-functioning mass rapid transit systems. Traffic congestion costs Mumbai and Delhi an avoidable cost of US$4.8 billion and US$9.6 billion, respectively, while São Paulo residents spend one month per year— or 2.4 hours per day— in traffic.[22] São Paulo, for example, is currently making investments to boost the quality of urban transport services through the implementation of Aricanduva BRT corridor project and the phased construction of São Paulo Metro Line—which is already yielding significant travel time gains.[23]

Similarly, cities in emerging economies need to enhance environmental sustainability. The Yangtze River Delta Region, the most prosperous region in China but also responsible for a large proportion of Chinese energy consumption and carbon emissions, has strong demand for investment in environmental sectors.[24] For 2018–2020, the investment need for environmental protection sectors in the Shanghai Metropolitan Area and surrounding lower-tier cities alone amounts to about US$41.2 billion.[25]

Cities in emerging economies also require investments in public amenities and social infrastructure such as affordable housing, child care, schools and health facilities.[26] Given the growing transition to a knowledge-based economy, cities in emerging economies also require upfront capital investment in digital and utilities infrastructure. These

investments enhance competitiveness and efficiency as well as provide a solid platform for future development.[27] Investment in research, technology development and innovation are essential for countries and their cities to transition to a green economy.[28]

On the whole, in developing regions, especially in LDCs, the quality, quantity and accessibility of infrastructure in cities lags significantly behind cities in advanced economies along several fronts: housing; utilities (electricity, water supply, ICT, sewerage and waste management); public works (roads, waterways, ports and airports); institutional capacity and governance structures. Some regions, such as Sub-Saharan Africa, have historically had inadequate

infrastructure, with urban population growth far outpacing capital investment, leading to compounding shortages of all types of infrastructure.[29]

The need for adequate and affordable housing is even more pronounced in these regions; housing deficits are growing as cities are overstretched to meet the demands of expanding urban populations. Several countries, however, are making strides in addressing affordable housing shortages for low- and middle-income groups in urban areas. In Sri Lanka, the Urban Development Authority plans to construct 50,000 units.[30] Kenya's Affordable Housing Programme aims to provide 500,000 EDGE-certified homes in a bid to address the country's two million unit housing deficit (Figure 8.1).[31]

Figure 8.1: Housing deficits in Africa

Country	Deficit
Nigeria	17,000,000
Egypt	3,500,000
Tanzania	3,000,000
Democratic Republic of the Congo	3,000,000
South Africa	2,300,000
Mozambique	2,000,000
Madagascar	2,000,000
Kenya	2,000,000
Angola	1,900,000
Ghana	1,700,000
Uganda	1,600,000
Zambia	1,500,000
Zimbabwe	1,250,000
Cameroon	1,200,000
Algeria	1,200,000
Ethiopia	1,000,000
Central African Republic	1,000,000
Morocco	600,000
Côte d'Ivoire	600,000
Mali	400,000
Libya	350,000
Togo	250,000
Liberia	200,000
Gabon	200,000
Chad	200,000
Sierra Leone	166,000
Guineas	140,000
Congo	140,000
Senegal	125,000
Rwanda	109,000
Niger	100,000
Malawi	100,000
Burkina Faso	100,000
Cabo Verde	80,000
Namibia	80,000
Mauritania	50,000
Benin	50,000
Burundi	30,000
Swaziland	20,000
Mauritius	20,000

Source: Bah et al, 2018.

Besides the much-needed hard infrastructure, developing countries also need to invest in building and improving human capacity, effective institutions, technology and innovation, and sound governance structures in order to meet the complex challenges presented by the sustainable urbanization imperative. Several Arab countries, for example, have experienced not only the loss of urban assets due to destruction but also loss the skilled human resources in government institutions due to violence and migration.[32]

Given the diverse investment needs of cities, adequate internal coordination is imperative so that shared priorities and consistent objectives are established between the various levels of government. Multilevel governance should ensure coherence between the sectoral priorities of national government departments and those of local and regional governments (Chapter 7). In addition, enabling metropolitan governance, where appropriate, also ensures a more integrated and efficient approach to territorial development through cooperation of various municipalities who jointly assess their needs.[33] Evidence-based decision-making is essential to prioritize investment needs (Box 8.2). It is also vital to assess the direct and indirect impacts of investments (both short-term and long-term) so as to ensure that there is a wider benefit—that is, ensuring inclusive prosperity and opportunities for all.

Aerial shot of a public mass housing Neighbourhood in Lagos Nigeria. © Tayvay/Shutterstock

Box 8.1: Financing Sustainable Urbanization: Counting the Costs

To fill the knowledge gap on investments for achieving SDG 11, UN-Habitat and AidData devised a two-phase effort to develop a systematic, replicable and scalable approach to capture both the "hard" and "soft" costs to support sustainable cities in run-up to 2030. This calculation takes a city-centric view of the costs of urban sustainability, as opposed to previous studies that have looked at costs on the national and global scale. The costing methodology takes into account both physical and institutional infrastructure needs (e.g. city planning capacity and citizen engagement). It assesses the anticipated costs of realizing SDG 11 targets related to five thematic areas: housing, transport, waste management, public spaces, and urban governance and planning.

The study undertook to establish the average annual cost of achieving SDG 11 from 2019–2030 for six pilot countries: Cote d'Ivoire, India, Malaysia, Colombia, Bolivia and Sweden. However, estimates were realized for only four countries in the sample (Bolivia, India, Malaysia and Colombia). These results should be interpreted keeping in mind that the sample size is small for this costing estimation. In total, 129 cities of varying scale are included in the final sample. Results from the four sampled countries show that the total average annual cost for small cities to achieve SDG 11 ranges from US$18 million in Malaysia to US$54 million in Bolivia. For medium-sized cities, the total average annual cost ranges from US$144 million in India to US$516 million in Malaysia. For the large cities sampled, the total annual averages range from US$645 million in Bolivia to about US$5.29 billion in Malaysia.

Table A: Estimated Average Annual Cost for Achieving SDG 11 in Small Cities (<100k Inhabitants). Millions of USD.

Country	Sample Size	Housing - Public Cost (US$ m)	Transport (US$ m)	Solid Waste (US$ m)	Public Space (US$ m)	Governance and Planning (US$ m)	Total (US$ m)
Bolivia	8	18.81	29.13	0.63	4.36	1.36	54.29
India	7	4.70	9.38	1.69	17.82	0.84	34.43
Malaysia	7	0.06	16.43	0.18	0.09	1.72	18.48
Colombia	18	15.44	19.26	0.38	2.79	1.09	38.96

Table B: Estimated Average Annual Cost for Achieving SDG 11 in Medium-Sized Cities (100k - 1 Million Inhabitants). Millions of USD.

Country	Sample Size	Housing - Public Cost (US$ m)	Transport (US$ m)	Solid Waste (US$ m)	Public Space (US$ m)	Governance and Planning (US$ m)	Total (US$ m)
Bolivia	11	79.5	62.9	3.49	40.4	4.66	190.95
India	18	16.28	42.74	9.3	72.66	2.81	143.79
Malaysia	12	23.43	424.05	3.69	58.75	5.88	515.8
Colombia	25	107.3	202.17	2.91	26.81	3.71	342.9

Table C: Estimated Average Annual Cost for Achieving SDG 11 in Large Cities. (>1 Million Inhabitants). Millions of USD.

Country	Sample Size	Housing - Public Cost (US$ m)	Transport (US$ m)	Solid Waste (US$ m)	Public Space (US$ m)	Governance and Planning (US$ m)	Total (US$ m)
Bolivia	1	308.73	259.98	14.54	47.81	13.6	644.66
India	17	397.28	626.01	167.26	817.37	8.22	2016.14
Malaysia	1	27.48	1617.58	26.16	3597.22	17.37	5285.81
Colombia	4	1324.57	1503.96	49.68	217.05	10.88	3106.14

This preliminary study shows that different countries will have different investment needs depending on country-specific characteristics. This study, however, indicates that for a small city in a developing country, total average annual costs can be expected in the range of US$20 million to US$50 million. For a medium-sized developing city, the costs range from around US$140 million to more than US$500 million. Large developing cities can expect an average annual cost from around US$600 million to over US$5 billion, with most country average results being in billions of US dollars per city, annually.

Lessons Learned

This study shows that costs are contextual. No one size fits all and translating a standard methodology to different countries requires significant adjustments to which inputs to consider. Secondly, the baselines for least developed, developing and developed countries are very different. This was illustrated by the case of Sweden, where expenditures are geared towards advanced sustainability objectives, such as bike lanes and digital infrastructure for smart cities. In contrast, developing countries are working towards creating basic bus services for their urban residents. Meanwhile, least developed countries lack basic records and data on public services and, therefore, do not have actionable plans to achieve established targets.

Thirdly, the total required investments for achieving SDG 11 rises as cities grow, mainly because of the total population. Many cities in our sample will transition in size from small to medium or medium to large over the next decade. To maximize the economies of scale that sustainable urbanization offers in terms of dollars needed per capita to provide basic services, housing, transport etc., making strategic investments now before cities grow larger is essential.

Source: UN-Habitat, 2020e.

8.1.2. The case for investing in urban infrastructure

Over 70 per cent of the global demand for infrastructure is in urban areas.[34] Closing the investment gap will not be easy, but it is necessary, possible and urgent. The economic, environmental and social case for investing in improved and more sustainable urban infrastructure is compelling. Investments in urban infrastructure can unlock endogenous growth potential. Estimates suggest that an additional one per cent of GDP spent on infrastructure investment can have a multiplier effect of 1.0–2.5 on the original investment, and this multiplier effect could be more substantial for emerging and developing economies.[35] For instance, in Africa, infrastructure investment is estimated to boost GDP per capita growth by an additional 2.2 per cent a year; no investment impairs growth by two per cent.[36] In Latin America, three per cent of GDP is being invested in infrastructure. However, an assessment by the Development Bank for Latin America (CAF) suggests that the region must invest at least five per cent to take the leap toward competitiveness.[37] For advanced economies, the IMF estimates that if countries invest an extra one per cent

of GDP in infrastructure, it yields on average a 1.5 per cent increase in GDP within four years.[38]

By and large, investment in urban infrastructure has tremendous implications for countries at all stages of development. Investment in economic, environmental and social infrastructure in cities is essential to reducing poverty and strengthening resilience to climate change and extreme natural events.[39] For developing countries, infrastructure investment is indispensable for economic development and poverty reduction. It provides access to basic services, education and work opportunities that improve quality of life. There are extensive studies that demonstrate public capital spending fosters growth, especially in developing countries with large infrastructure gaps.[40]

With the growing number of people residing in urban and peri-urban areas, providing adequate and affordable housing, sustainable transport, access to electricity and environmental infrastructure such as water, sanitation, drainage and solid waste management are critical to

A market at Dharavi slum during a nationwide lockdown as a preventive measure against the spread of the COVID-19, Mumbai/India. © Manoej Paateel/Shutterstock

building better livelihoods and enhancing quality of life. Investment in sustainable urban infrastructure yields both short- and long-term return. The COVID-19 pandemic has underscored the importance of this type of urban infrastructure, as public health guidelines were almost impossible to implement in informal settlements, especially in developing countries.[41] Basic services can also contribute to climate resilience; a lack of adequate water and sanitation infrastructure is closely linked to disease outbreaks after severe weather events.[42]

Housing infrastructure is a vital part of the urban economy. Without adequate and affordable housing for all urban dwellers, economic development is inhibited. Investments in housing have been shown to have direct positive effects on employment, income generation, savings, labour productivity and regional development.[43] Moreover, as mentioned earlier, investments in adequate, safe and affordable housing, basic services and slum upgrading have direct impacts on at least three-quarters of the SDGs.

Investments in sustainable transport systems, public spaces and parks that are safe, inclusive and accessible for use by all, regardless of sex, age or disability, improve the attractiveness of the city. The scope of investments, as well as the type and scale of infrastructure, have major implications for environmental sustainability. Despite the uncertainties often associated with the amount of investment needed, estimates should always be considered

Estimates should always be considered alongside the substantial short- and long-term benefits unlocked by sustainable urban infrastructure investment

Figure 8.2: Investment opportunity across regions for green buildings

Source: IFC, 2019

savings alone, within relatively manageable investment payback periods.[45] A study by McKinsey Institute also demonstrates that, although green-district technologies may at times cost more than the conventional alternative, their internal rates of return range from 18 to 30 per cent—which translates to a breakeven rate of three to five years, depending on the region and technologies deployed.[46] In the US, the National Institute of Buildings Sciences also found a national average benefit-cost ratio (BCR) of 4:1 for a variety of common building retrofit measures, a BCR of 4:1 for a select number of utilities and transport infrastructure and a BCR of US$6 for every US$1 in grants spent on hazard mitigation.[47]

The combined investment decisions that local, national and international stakeholders take during the Decade of Action regarding urban infrastructure will determine whether the value associated with sustainable urbanization can be realized in all regions. Adequate financing, including overcoming key market and governance failures impacting sustainable urban infrastructure investment, is imperative to the decade's success.[48] Indeed, the propensity to underinvest in urban infrastructure is not confined to developing regions; cities in both developed and developing countries face a backlog of infrastructure demands. Due to decades of underfunding, developed countries face the challenge of upgrading and replacing ageing and increasingly outdated infrastructure. In less developed regions, degraded neighbourhoods, urban sprawl, growth of slum areas and weak institutions and governance structures are the consequence of, and catalyst for, the ongoing social, economic and environmental costs of inadequate investment.

While there are individual costs for each underfunded sector, these chronic investments deficits compound one another and often lead to exponentially greater human

The combined investment decisions that local, national and international stakeholders take during the Decade of Action regarding urban infrastructure will determine whether the value associated with sustainable urbanization can be realized in all regions

alongside the substantial short- and long-term benefits unlocked by sustainable urban infrastructure investment.

Investments in resilient and resource-efficient infrastructure are central to sustainable urbanization. Today, there is an increasing potential market for green buildings across all regions (Figure 8.2). In advanced economies, studies indicate that retrofitting 20 per cent of buildings over the next five years is projected to reduce CO_2 emissions from heating by around one-fifth.[44] Similarly, a study by New Climate Economy in 2015 shows that even when high-end incremental investment costs are considered, investing in sustainable urban infrastructure can reduce emissions and generate a global economic opportunity worth approximately US$17 trillion by 2050 (in net present value terms), based on energy

Delays in investments and ongoing spending inefficiencies create mounting economic, social and environmental pressures, as well as higher mitigation costs to address increasingly degraded environments and disruptions to society and economies

and financial costs if not urgently addressed. Delays in investments and ongoing spending inefficiencies create mounting economic, social and environmental pressures, as well as higher mitigation costs to address increasingly degraded environments and disruptions to society and economies.[49] Since underinvestment in infrastructure produces no immediate negative effects besides distortion of aggregate demand,[50] oftentimes urban infrastructure continues to be a casualty of fiscal adjustments and austerity. Today, as the world grapples with the ravages of the COVID-19 pandemic, well-structured infrastructure spending should be among priority measures to jumpstart economies. Governments can directly stimulate aggregate demand through infrastructure-based stimulus packages that increase construction activity and employment.[51]

While urban infrastructure accounts for a relatively large portion of national investment in most countries, the economic costs of insufficient investment and spending inefficiencies in new infrastructure as well as deficient maintenance of existing infrastructure is high.[52] Inadequate urban infrastructure increases inequality and often threatens the competitiveness and productivity of cities and national economies. It negatively affects production costs and the overall productivity of firms, potentially leading to decisions to relocate or not scale up their presence.[53] Underinvestment in infrastructure, particularly in cities, constrains the national economies in developing countries as indicated above. In addition, poorly maintained infrastructure often leads to economic inefficiencies and has significant financial repercussions in the long run in terms of rehabilitation costs or investments in new facilities, as is the case of large cities in developing countries around the world.

While the need for new capital investments is undeniable and urgent, existing unmet needs in service provision and the

maintenance of existing infrastructure have negative social, economic and environmental impacts if not addressed today. Further, inefficiencies in investments are impacting health outcomes and decreasing educational enrolment in emerging market economies and low-income developing countries.[54] The lack of service delivery and social infrastructure frays the social contract between residents and their local governments, impacting revenue generation. Without adequate resources, municipal authorities are further unable to deliver services.[55] This vicious cycle affects urban quality of life and the ability of municipal authorities to attract the investment necessary to improve the city's prospects.

Inadequate urban infrastructure increases inequality and often threatens the competitiveness and productivity of cities and national economies. It negatively affects production costs and the overall productivity of firms, potentially leading to decisions to relocate or not scale up their presence

Station platform full of people unable to get space in an over crowded train, Jodhpur, Rajasthan, India. © Hari Mahidhar/Shutterstock

8.1.3. Investing in human and institutional capacity

Making cities inclusive, safe, resilient and sustainable not only requires physical assets in cities, it also calls for investing in effective urban governance, sound legal and institutional frameworks, and strengthened capacities (individual, societal and institutional) to formulate, enhance, manage, monitor and evaluate the implementation of public policies for sustainable urban development.

The lack of adequate institutional capacity—whether in the form of well-trained personnel, local leadership skills or structures that ensure transparency, accountability and participation—pose immense challenges in advancing sustainable urban development. Institutional fragmentation and bloated bureaucracies, among other issues plaguing urban governance, often translate into missed opportunities, inefficiencies, waste and delays. As discussed in Chapter 7, strong and capable local governments, as well as strong multilevel governance frameworks that facilitate vertical and horizontal collaboration and coordination, are key levers to unleash the value of sustainable urbanization. These create an enabling institutional environment for local action, particularly when there is a consistent implementation of the principle of subsidiarity.

The extent to which local governments can effectively address urban challenges is significantly determined by how well-resourced they are with human capital. Decentralization of responsibilities to local authorities must be accompanied by enhanced capacity in the institutional and technical capacity for effective urban and territorial planning and management. Boosting the personnel capacity for urban administration, for instance, is a prerequisite for sustainable urban development and the successful implementation of transformative processes that unlock the power of cities.[56] These investments are especially important for institutional capacity in revenue generation, financial management and the structuring of capital investment funding. Investments are also needed to strengthen administrative capacity in order to harness the possibilities offered by advances in digital technology and innovation in urban service delivery and realization of the SDGs. Investments that strengthen the statistical capacities of various levels of governments promote evidence-based urban governance (Box 8.2). Investments are needed to boost cities' capacity for effective policy formulation as

well as to build robust legislative frameworks that support effective urban management and development.

Investment in human capital formation is vital for inclusive and sustainable urban development and aligns with SDG 8 to promote productive employment and decent work for all. These investments help build and strengthen productive capacities, thus enabling the economic value of urbanization to be realized for all (Chapter 4). They also build a healthy labour force with the skills and knowledge to contribute to an innovative and competitive urban economy.[57] A stronger human capital base adapts faster to technological change and advancement.[58] It also improves the climate adaptive capacity of a community.[59] While measuring the returns of human capital is challenging as investments in human capital may not produce economic returns in the short term, targeted investments in the areas of education, health and technological proficiency have a significant impact on future growth.[60]

A stronger human capital base adapts faster to technological change and advancement. It also improves the climate adaptive capacity of a community

Inequalities of opportunity, however, constrain the pool of human capital that makes cities productive and inhibits advancement toward sustainable urban development. It is thus important that gender disparities in education, pay and opportunities as well as discrimination against ethnic minorities, people with disabilities and immigrants be addressed.[61]

8.2. The Urban Finance Challenge

Financing sustainable urbanization is an investment in the present and future wellbeing of all nations. With the continuous increase in urban population, local governments all over the world face the daunting task of providing the necessary infrastructure and services to meet the growing demand. However, lack of resources for investment in sustainable urban development poses a serious dilemma for most developing countries, particularly in LDCs. A

Box 8.2: Investing in sustainable urbanization through effective monitoring and reporting

Policies and actions geared toward sustainable urban development should be underpinned by effective monitoring and reporting mechanisms. It is thus necessary to ensure that urban policies at all levels are evidence-based and founded on realistic targets that can be monitored, and that systems are in place to ensure accountability and allow for follow-up from all stakeholders. In this regard, UN-Habitat is at the forefront of providing direct and indirect support to various levels of government (cities, regional and national) across many countries in effective monitoring and reporting of progress toward sustainable urbanization. UN-Habitat—through the Data and Analytics Unit (DAU), formerly Global Urban Observatory (GUO)—has been developing and refining methodologies and tools for supporting data collection and monitoring of sustainable urban development at the local level.

In supporting SDG 11 and other urban-related indicators monitoring, UN-Habitat has been leading and coordinating activities from various partner organizations in developing, refining and disseminating the methodologies that support assessment of progress in implementing the 2030 Agenda for Sustainable Development. In addition, UN-Habitat is providing technical support and capacity development programmes to help countries generate relevant and accurate data for monitoring the SDGs and NUA. Some of these customized trainings are delivered by DAU to countries and cities using a variety of tools that offer step-by-step guides on how to implement different data generation workflows. Today, the Unit oversees 143 urban observatories in Asia, 130 in Latin America and the Caribbean and 101 in Africa.

Besides maintaining a global urban indicators database, UN-Habitat has developed the City Prosperity Index, a data-based framework that allow cities to collect, collate and analyse data on urban prosperity. All these are integral to formulating proper policies, designing and implementing programmes and monitoring progress toward sustainable development at the local level.

Financing sustainable urbanization is an investment in the present and future wellbeing of all nations

survey of about 100 cities globally found that 55 per cent of municipalities cited lack of public funding as a barrier to sustainable urban growth.[62]

Local governments face multiple constraints regarding urban finance, such as insufficient and unpredictable transfers from central government, weak fiscal management, poor revenue generation and legal constraints. These challenges and other institutional constraints pose enormous barriers. For example, most local governments have restricted access to capital markets based on credit rating criteria (Figure 8.3).[63] By improving creditworthiness, cities embed the principles of good financial management and transparency.[64] Only four per cent of the 500 largest

cities in developing countries are deemed creditworthy by international financial markets, and only 20 per cent are creditworthy in local markets.[65] In addition, cities face challenges in accessing resources for pre-investment activities such as financial structuring necessary to bring forth bankable projects and pilot projects that demonstrate the capabilities of local government.[66]

8.2.1. Fiscal management

As discussed in Chapter 7, the decentralization of administrative and fiscal authority has been uneven, and intergovernmental systems of financial transfers and jurisdictional cooperation are often plagued with problems. In most developing countries, financial devolution and local share of revenues are woefully inadequate. Poorly functioning transfer systems further disincentivize effective revenue generation and are an impediment to local government expenditures. These hurdles are further compounded by a lack of adequate institutional capacity

Figure 8.3: Sample of rating agency criteria

National & Local Institutional factors

Institutional Framework
- Predictability
- Revenue & Expenditure Balance
- Transparency & Accountability

Individual Local Government Credit Profile

Economy
- Income Levels
- Economic diversification
- Growth prospects
- Accountability
- Socioeconomics & demographic profile

Financial Management
- Political & managerial strength
- Long-term capital & financial planning
- Revenue & expenditure management
- Debt & Liquidity management

Liquidity
- Internal cash flow generation
- Availability of external liquidity from capital markets & - other sources

Budgetary Performance
- Operating Balance
- Balance after capital accounts

Budgetary Flexibility
- Revenues flexibility (tariffs asset sales)
- Operating & capital expenditures flexibility

Debt Burden
- Debt stocks
- Volatility of cost of debt
- Other potential liabilities

Contingent Liabilities
- Guarantees to other entities
- PPPs
- Securitizations
- Litigations

Rating (AAA to CCC-)

Notes: Rating agencies often categorize their criteria as being either "institutional framework" or under the "individual credit profile" of a city. Institutional framework includes all those factors that constitute transparent, accountable and predictable government at both the local and national level. Individual credit profile constitutes the set of factors—economic, managerial and performative—that relate to the local authority's financial capacity to pay its debt obligations.

Source: UN-Habitat, 2017c.

at the local level and overreliance on investment decisions by higher levels of government.

As highlighted in various sections of this Report, strengthening the institutional capacities of local governments is integral to facilitating local financial sustainability. Strengthening financial management frameworks and expertise, for instance, is vital to the efficient allocation and use of public resources. Today, a large portion of investments is lost to inefficiency and addressing this is critical to achieving the SDGs—in other words, there should not only be more spending, but better spending.[67] Some ways in which this efficiency can be enhanced in urban investments include embracing technology through cost-efficient IT deployment, ensuring that decisions are data-driven and evidence-based, eliminating duplication or overlapping roles and responsibilities in multilevel governance arrangements, engendering transparency and accountability, promoting integrated approaches and

Strengthening the institutional capacities of local governments is integral to facilitating local financial sustainability

reviewing institutional processes to eliminate waste. In 2011, New York City's Metropolitan Transit Authority launched a strategic procurement initiative aimed at realizing savings of at least US$100 million.[68] In South Africa, the cities of Tshwane, Cape Town, Ekurhuleni, Johannesburg and Nelson Mandela Bay Metropolitan Municipality are implementing sustainable public procurement practices that not only achieve value for money but also drive toward sustainability. Several national governments have also launched online portals to enhance transparency and efficiency in procurement processes. In India, for example, the Government e-Marketplace portal provides details of projects, policies, timelines, schemes and spending on infrastructure.[69]

8.2.2. Poor revenue generation

Most cities in developing countries are dependent on transfers from the central government and often have limited financial instruments and mechanisms for revenue generation. In a majority of regions, local governments have low levels of autonomy with regard to revenue sources and financial management.[70] Oftentimes, the more lucrative sources of revenue potentially suitable for financing urban development, such as income taxes, sales taxes and business taxes, are controlled by central governments—leaving city authorities with lesser revenues derived from property taxation and service charges, which often need strengthening. In addition, the high level of informality in the economy negatively impacts own revenues. As pointed out in Chapter 3, this scenario leaves most cities in developing countries financially constrained as what is annually generated from local government revenue systems ranges from US$100 to US$500 per inhabitant, and even much lower (less than US$50) in smaller cities of Africa and South Asia. In contrast, locally-based revenues exceed US$3,000 per capita each year in cities of advanced countries such as New York, Stockholm, Seattle and Tokyo.[71] Notably, the subnational taxes in developing countries are approximately 2.3 per cent of GDP compared to 6.4 per cent in advanced countries.[72] In most low-income countries, the ineffective systems for
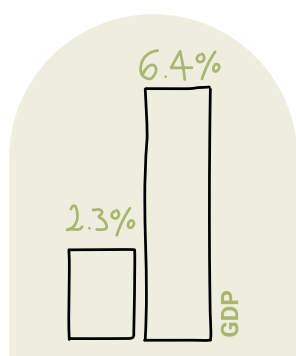
The subnational taxes in developing countries are approximately 2.3 per cent of GDP compared to 6.4 per cent in advanced countries

revenue generation contribute to an inability to develop investment-grade credit ratings.[73]

A city's ability to maximize its leverage of endogenous resources is subject to appropriate institutional arrangements, as well as its technical capacity for planning, accessing and administering the full range of financing instruments (see examples of land-based instruments in Table 8.2). The scale and efficiency of revenue generation by employing such instruments is largely determined by urban planning and management, the enforcement of land use policy (improved property rights via land registration), productive capacities, political support and commitment to implement instruments, as well as financial management expertise.

A city's ability to maximize its leverage of endogenous resources is subject to appropriate institutional arrangements, as well as its technical capacity for planning, accessing and administering the full range of financing instruments

In most developing countries, property taxes are not efficiently administered and collected as most local governments lack adequate capacities to systematically maintain and coordinate their physical and fiscal cadastre; at times the political will to administer the property tax is lacking across various levels of government. In OECD countries, property taxes constitute about two per cent of GDP, while across African countries the figure averages 0.38 per cent (Figure 8.4).[74] Across LDCs, high-value properties are sometimes undervalued or absent from city databases. Even when local governments do possess the technical capacity to bring these properties into the tax fold, often the political will to do so is lacking. In addition, some taxes need to be reformed as they do not reflect current circumstances, capabilities or best practice. Several cities that have reformed their property tax regimes have seen an increase in revenues vital for investments in urban infrastructure. In Sierra Leone, the cities of Bo, Kenema and Makeni increased local revenues by 200–450 per cent between 2007 and 2011 by implementing a simplified and transparent system of property valuation.[75] Similarly, authorities in Bangalore instituted measures to improve

Figure 8.4: Property taxes as a percentage of GDP in selected African countries, (around 2012)

Country	Value
Morocco	1.75
South Africa	1.6
Mauritius	1.39
Egypt	0.83
Mozambique	0.7
Mali	0.7
Lesotho	0.7
Tunisia	0.53
The Gambia	0.53
São Tomé & Príncipe	0.32
Congo	0.32
Togo	0.24
Benin	0.24
Namibia	0.15
Liberia	0.15
Angola	0.15
Senegal	0.1
Rwanda	0.1
Central African	0.1
Burkina Faso	0.1
Tanzania	0.08
Côte d'Ivoire	0.07
Niger	0.06
Madagascar	0.06
Botswana	0.06
Swaziland	0.05
Sierra Leone	0.05
Zambia	0.03
Equatorial	0.03
Kenya	0.01

Source: Franzsen and McCluskey, 2017.

the assessment of property tax in 2000, which immediately increased the city's property tax collection by one-third.[76] Benin has been implementing Registre Foncier Urbain (Urban Land Registry) in Cotonou, Porto-Novo, Parakou and in smaller cities; this land information system has positively impacted local finances.[77]

Besides property taxes, many cities across the globe are leveraging their local assets to generate revenue and finance their investment needs. For instance, in Cairo, the auction of 3,100 hectares of desert land for a new town in 2007 raised US$3.12 billion—an amount 117 times greater than Egypt's total urban property tax collections and about one-tenth the size of national government revenue—to finance internal infrastructure and build a connecting highway to Cairo's ring road. Similarly, Mumbai raised US$1.2 billion in 2006–2007 by selling 13 hectares of land in the new Bandra-Kurla Complex financial centre to finance urban infrastructure projects identified by the

Metropolitan Transportation Plan. In Istanbul, the 2007 sale of an old bus station and government building raised US$1.5 billion, an amount more than the city's total 2005 fiscal expenditures and infrastructure investments.[78] In Shanghai, 46 per cent of urban growth has been funded through land-based financing mechanisms by which the city sold developed land to operators of commercial or industrial zones.[79] In Saint Lucia, revenue generated from the sale of serviced lots has been used to establish the Sites and Services Revolving Fund (SSRF).[80]

Since the early 2000s, there are many successful examples of cities using land value capture to finance urban projects in Tokyo, Hong Kong, New York, London, Delhi, Nanchang, and São Paulo. In Hong Kong and Tokyo, for instance, land value capture financing schemes have helped them not only to generate funds for transit investment and operational and maintenance costs but also to advance sustainable urban development through transit-oriented development.[81]

View of Shibuya Crossing, one of the busiest crosswalks in the world. Tokyo, Japan. © Sean Pavone/Shutterstock

Table 8.2: Land-based finance instruments

Instrument	Description	Timing	Initial incidence	Minimum requirements
Recurring land/ building value tax (property tax)	▪ Recurring tax based on estimated value of land or building	▪ Assessed annually ▪ Can be collected in instalments	▪ Either the landowner or the occupant	▪ Appropriate enabling legal framework ▪ Fiscal cadastre (land registry) that includes all taxable land plots ▪ Appropriate estimate of taxable value ▪ Administrative ability to calculate tax due, deliver bills and collect tax
Betterment levies	▪ Charges assessed in connection with specific infrastructure improvements ▪ Limited to recovery of actual costs incurred	▪ Assessed and collected as a one-time charge	▪ Existing landholders whose land benefits from the improvements	▪ Appropriate enabling legal framework ▪ Identification of all land plots whose value is affected by the improvements ▪ Estimated impact of the improvements on the land value of each affected plot ▪ Accurate estimate of the cost of the improvements ▪ Method for allocating the improvement costs to individual plots based on the share of benefit received ▪ Adequate one-time billing and collection system
Special assessments	▪ Charges assessed in connection with specific infrastructure improvements ▪ Limited to recovery of actual costs incurred	▪ Assessed once ▪ Collected over a period, often as a temporary addition to the recurring property tax	▪ Existing landholders whose land benefits from the improvements	▪ All requirements for betterment levies ▪ Adequate instalment billing and collection system ▪ Agreement of a majority of landowners
Developer exactions	▪ Charges assessed in connection with development approval ▪ Can be paid in cash, in land or in kind	▪ Assessed once ▪ Collected as project is approved and completed	▪ Land developers seeking city approval	▪ Appropriate enabling legal framework ▪ Estimate of the impact of the proposed development on existing infrastructure ▪ Administrative coordination with city planning functions ▪ Method for calculating the amount of exaction due ▪ Adequate billing, collection and project monitoring system
Land value increment tax	▪ Tax assessed as a percentage of the increase in land value due to public actions or general market trends	▪ Can be assessed when land title transfers or when specific public actions result in increased land values ▪ Collected when land title transfers or by special billing	▪ Either the original title holder, the new title holder or both if tied to title transfer ▪ Existing landholders if by special billing	▪ Appropriate enabling legal framework ▪ Estimate of the "before" and "after" land values ▪ Administrative capacity to identify when the tax is due ▪ Adequate billing and collection system
Sale of development rights	▪ Payments received in exchange for permission to develop or redevelop land at higher density or changed land use ▪ Rights can either be sold at auction or at fixed price ▪ Rights may be transferable to other locations or resold	▪ Collected once	▪ Purchaser of the development right	▪ Appropriate enabling legal framework ▪ Effective control of existing development rights ▪ Demand for additional development rights ▪ Administrative and planning capacity to determine acceptable amount of additional development ▪ Capacity to manage the process of selling additional development rights as well as to monitor use and any resale of rights sold

Instrument	Description	Timing	Initial incidence	Minimum requirements
Sale of public land	▪ Payment received in exchange for freehold title to public land	▪ Collected once	▪ Purchaser of the land	▪ Appropriate enabling legal framework ▪ Administrative and planning capacity to determine which lands should be privately developed ▪ Capacity to manage a transparent and fair sales process as well as to allocate and manage sales proceeds
Lease	▪ Payment received in exchange for right to occupy and benefit from public land ▪ Permitted land use is specified ▪ Terms vary from 2 to 99 years	▪ Assessed and collected once or recurring basis depending on the contract specifications	▪ Purchaser of the leasehold (lease)	▪ Appropriate enabling legal framework ▪ Administrative and planning capacity to determine which lands are available for lease ▪ Appropriate estimate of market value of land to be leased ▪ Administrative capacity to solicit and negotiate leases; monitor leases for the duration of the lease; and to allocate and manage lease proceeds
Transfer taxes and stamp duties	▪ Charge assessed for recording the transfer of a land title from one private party to another ▪ Can be either a fixed fee or a percentage of the value of the property being transferred	▪ · Assessed and collected once	▪ Either the original title holder, the new title holder or both	▪ Appropriate enabling legal framework ▪ Effective land registration system ▪ Administrative capacity to identify when the tax is due ▪ Capacity to estimate taxable value ▪ Adequate billing and collection system

Source: Adapted from UN-Habitat, 2016f.

UN-Habitat has been providing technical assistance to local authorities for improving their revenue generating capacity by, among other measures, employing land-based financing mechanisms (Table 8.2). In Afghanistan, for example, UN-Habitat has been strengthening municipal capacities in creation and maintenance of *safayi* tax records. This municipal revenue generation system resulted in a 15 per cent increase in revenue in some cities and 30 per cent for the national government in 11 major cities and municipalities where implemented.[82] Through the Joint Programme on Local Governance, UN-Habitat has been strengthening capacities for municipal revenue generation in Somalia over the past decade with positive results. Hargeisa Municipality, for instance, saw an increase in

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revenue from US$1.3 million in 2018 to US$1.6 million in 2019, which has facilitated the delivery of social and physical infrastructure. Similarly, with increased revenue, Berbera municipality implemented 30 development projects in 2019, including construction of roads and improvements to the health and education sectors. UN-Habitat has also developed a Rapid Own-Source Revenue Analysis (ROSRA) tool, first piloted in Kisumu (Kenya), to support local governments in optimizing their own source revenues. The tool quantifies revenue leakages and deconstructs known bottlenecks to identify root causes and entry points for reform.

Oftentimes, with limited resources generated, local governments tend to spend their existing revenue on recurrent costs, neglecting maintenance of infrastructure and leaving little for capital investments that have the capacity to improve productivity. These types of investments enhance competitiveness, which attracts people and firms—the key elements vital for increasing overall revenue. Yet, cities can improve revenue by endogenous growth. As has been highlighted, urban areas have a tremendous amount of assets that can be unlocked

Urban areas have a tremendous amount of assets that can be unlocked for investments and local economic development. Local authorities must also find ways to link revenue generation with their ongoing activities and with urban growth in order for local finances to be sustainable in the long term

for investments and local economic development. Local authorities must also find ways to link revenue generation with their ongoing activities and with urban growth in order for local finances to be sustainable in the long term.[83]

8.2.3. Legal constraints

Building a strong local revenue base depends on empowering local governments to grow and diversify their own-source revenues to leverage external financial flows. There is a diversity of legal and institutional frameworks across and within countries, which either incentivize or inhibit cities' capacity to increase their local resource base and efficiency. In most developing countries, there is need for national and local reforms to ensure appropriate legal or institutional mechanisms are in place for cities to maximize their leverage of endogenous resources. Also, these frameworks constrain the effective use of exogenous sources of finance as borrowing is prohibited by law. As a result, many local governments are not financially or institutionally empowered for their larger role in service delivery, which is key to achieving the Global Goals.

Equally important is the mandate empowering local governments to spend. Central governments' tight control over spending and conditionalities tied to intergovernmental fiscal transfers often carry the risk of

Central governments' tight control over spending and conditionalities tied to intergovernmental fiscal transfers often carry the risk of forcing local governments to spend funds in ways that do not match local needs, undermining a key objective of decentralization

forcing local governments to spend funds in ways that do not match local needs, undermining a key objective of decentralization.[84] As pointed out in Chapter 7, countries should ensure an enabling institutional environment for local action through effective decentralization policies to realize the value of sustainable urbanization. The quality of financial decentralization, for instance, significantly impacts the investment capacities of local governments. National governments have to demonstrate the political will to make necessary intergovernmental structural changes and ensure that enabling legal frameworks are in place for cities to be active participants in line with the principle of subsidiarity.

8.3. Mobilizing Financing for Sustainable Urbanization

Investing in sustainable urban development requires mobilization of financial resources from a range of actors. However, a persistent challenge facing most developing countries is how to establish an enabling environment for local governments to mobilize financial resources from a wide array of players. National governments play a pivotal role in determining the fiscal, regulatory, policy, institutional, investment and credit environments in which local governments operate, and consequently the scale of resources raised for sustainable urban development (Figure 8.5). As the vast urban investment need will not be met entirely through the means of the public sector or traditional financing, the path to long-term sustainable financing is to diversify sources using public finances and assets as leverage. Thus, the various dimensions of the private sector must play a critical role in advancing sustainable urbanization. A recent UN-Habitat study shows that while the necessary funding to meet the investment need exists—as the total public and private investment capacity far surpasses the total investment need—this funding is not currently flowing into the right areas (Box 8.3). Local governments therefore need to work harder at understanding the private sector approach to doing business in order to demonstrate how projects will deliver value to both users and investors. Other needed improvements include stronger public financial management, better creditworthiness to access financial markets and more efficient local bureaucracy.

Box 8.3: Cities: Investment need vs. public and private investment capacity

Successful achievement of the development agendas in cities requires substantial investment in urban areas across the world. UN-Habitat estimates the total investment need for infrastructure and the SDGs at US$38 trillion for the years 2020–2030. Further, estimates based on investment trends from the pre-pandemic period indicated that there would still be an investment gap of US$5.6 trillion. With COVID-19 effects still unfolding, the gap may widen as the investment trend towards developing countries might take a downturn for some years, leaving the estimated investment gap wider.

In emerging markets and developing countries, reports show that only about half of SDG investment needs are being covered. The magnitude of the investment need in cities underpins the urgency to utilize innovative mechanisms and new tools to finance development in cities—not just the traditional source of subnational funding, such as taxes, fees and intergovernmental transfers. An evolving landscape of financing offers many opportunities to mobilize resources, including public, private, domestic, international and experimental schemes. New development partners, finance institutions, public-private funds, philanthropic organizations and private impact investors have emerged or expanded their activities in recent years and now work actively alongside traditional donors.

To showcase the full capacity from global financial actors, UN-Habitat also developed an estimation quantifying the total public and private investor assets. While there is a large SDG and infrastructure investment need, results from this estimation show that the total public and private investment capacity—totalling US$98 trillion—far surpasses the total investment needs. Commercial banks have an investment capacity of more than US$33 trillion, which is almost as large as the total investment need for 2020–2030. Investment banks manage over US$24 trillion, while insurance companies and private pensions manage almost US$22 trillion. The world's 82 largest sovereign wealth funds jointly manage over US$6.7 trillion and remain largely underutilized for realizing sustainable development.

Total Public and Private Investment capacity (2020-30) $98 Trillion
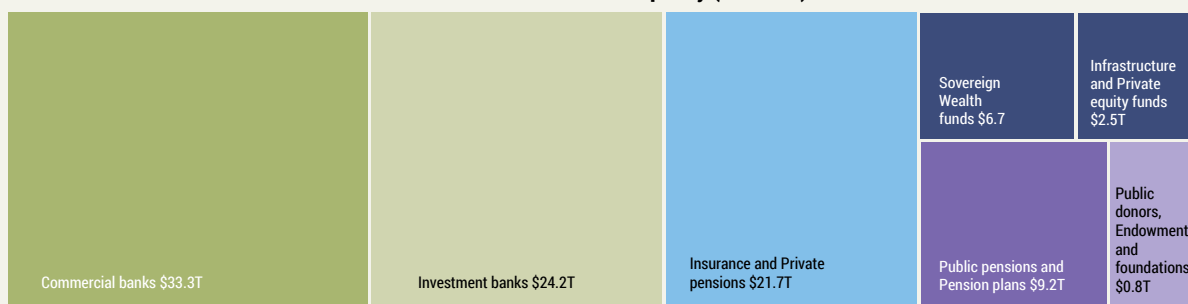
Investment need vs. public and private investment capacity 2020-2030 (US$ Trillions)
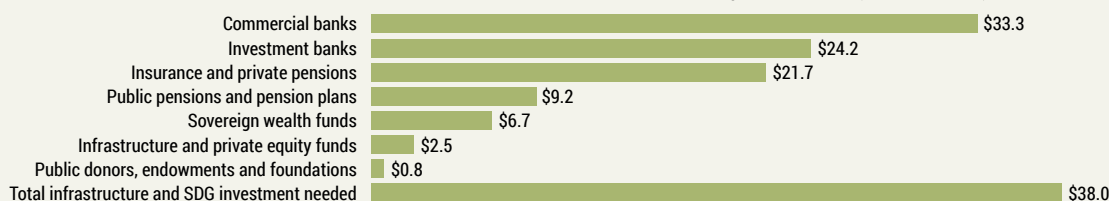
Infrastructure and private equity funds (totalling at US$2.5 trillion in managed assets) and public donors, endowments, and foundations (US$0.8 trillion) by themselves lack the capacity to meet this need, or even the gap highlighted above. However, institutional investors manage assets that far exceed the total investment needed.

Traditional financing is not enough to cover the total investment need for infrastructure and the SDGs, but combined institutional investor assets could be sufficient. In other words, while financing capacity indeed does exist, it is currently not flowing into the right areas to meet this need. Redirecting even a part of these assets would make a significant difference, but it is imperative that these assets are matched to infrastructure and SDG projects to close the current investment gap. If investment is put on hold, the yearly needs will continue to grow over time due to a cumulative effect. In other words, there are significant and rising opportunity costs incurred by delaying investments into infrastructure and the SDGs. The onset of the Decade of Action to achieve the SDGs combined with the opportunity to build back better post-COVID-19 constitutes a unique opportunity to invest in sustainable development.

Source: UN-Habitat 2020e.

Improving financing for sustainable urban development also requires a coordinated and coherent approach. One that effectively harnesses various fiscal instruments within the frameworks set by strong national urban policies which have been designed through a collaborative process (Chapter 7 and 9).[85] This approach should ensure that investment policies are aligned with the global development agendas and funding frameworks. With the growth of potential investment partners including development finance institutions, public-private funds, philanthropic organizations and private impact investors now working alongside the public sector, it is imperative to consider how best to unleash the capacity of these investors by channelling their capital and activities toward achieving sustainable development outcomes in cities.

As discussed in Chapter 2, policy coherence between global, regional, national and local stakeholders is a foundational

Policy coherence between global, regional, national and local stakeholders is a foundational requirement necessary to deliver the needed transformations toward sustainable urbanization

requirement necessary to deliver the needed transformations toward sustainable urbanization. This ensures coordinated actions that leverage collective impact. In financing sustainable development (FSD) systems, for instance, policy coherence ensures alignment of financing for sustainable development with country development strategies as well as with the SDGs, thus bringing better economic, social and environmental returns on each investment.[86] As the number of actors increases, so does the possible combination of resources and leveraging of each actor's comparative advantage. At the same time, challenges arise. For example, there are discrepancies between project design and available financing, as well as the question of whether impact investments are aligned with sustainability as envisioned by the global development agendas.

To address some of these challenges, UN-Habitat launched the Cities Investment Facility, a technical assistance and matchmaking platform that helps cities structure urban development projects so that they are bankable and attractive to potential investors. In addition, UN-Habitat also developed the SDG Project Assessment Tool, an interactive guide that integrates a comprehensive set of sustainability principles to help align urban projects with the SDGs and the New Urban Agenda. The tool is designed to improve the effectiveness, inclusiveness and sustainability of projects by facilitating dialogues between public and private sector partners.

Figure 8.5: Creating an enabling environment for scaling-up investment
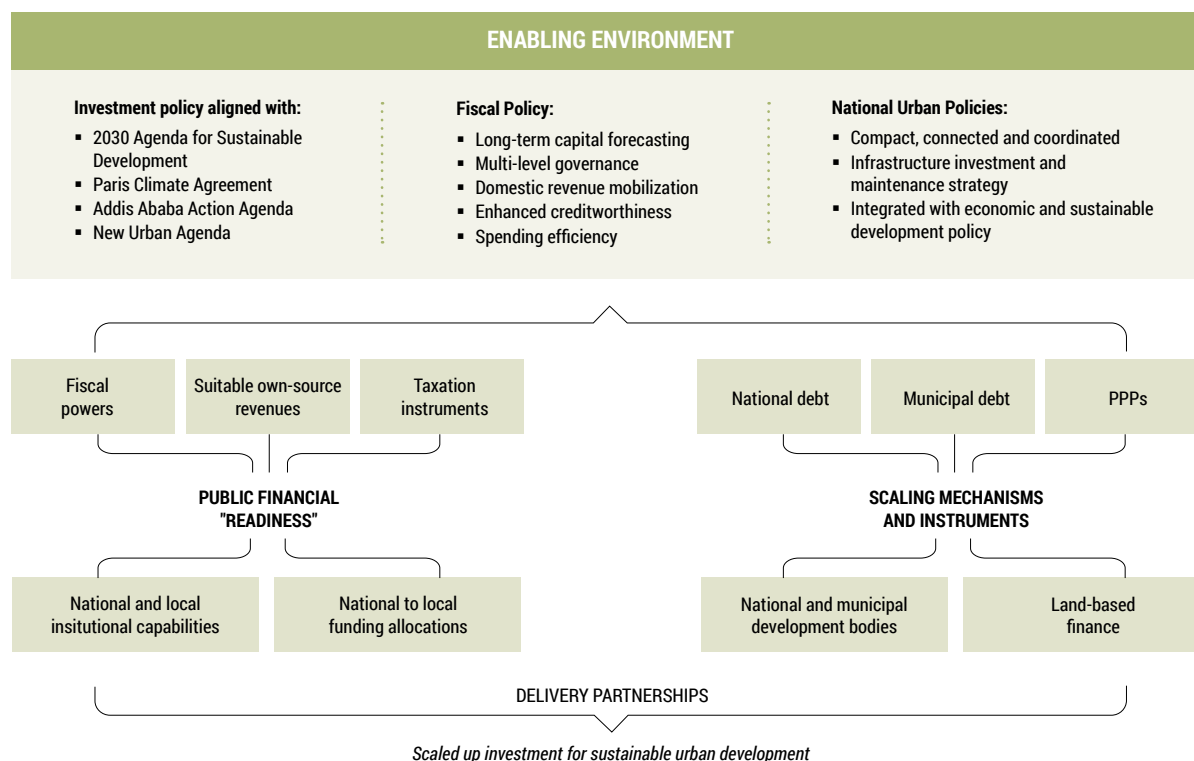
Source: Adapted from Ahmad et al, 2019.

Sustainable urbanization requires local governments to establish a diverse portfolio of revenue streams and move away from being overly dependent on any given revenue flow, especially national government resources. Local governments must be empowered to tap their endogenous potential to innovatively increase and diversify own-source revenues. This diversity in revenue sources enhances local autonomy and long-term sustainability.[87] Internally generated revenues ensure that a city's economic base is resilient to external shocks as well as assisting local authorities to develop and meet competing priorities.

Local governments must be empowered to tap their endogenous potential to innovatively increase and diversify own-source revenues

Building a diverse local revenue portfolio to finance sustainable urban development is especially critical in the current economic environment where national and subnational governments are facing enormous budgetary deficits and significant debt levels that may leave them unresponsive to local needs, particularly those of low-income and slum residents across cities who consequently have to seek capital from alternative finance systems to meet needs such as affordable shelter (Box 8.4).

8.3.1. Strengthening public finance systems

Strengthening the various legal, institutional, and procedural elements of public investment management must precede discussions on diversified investors, public debt and/or guarantees.[88] Domestic revenue mobilization is a critical first step that both requires and demonstrates the reforms necessary to catalyse external investment. Globally, cities receive varying portions of their revenue from central government transfers, and as stated in previous

Box 8.4: Urban poor funds: Leveraging community finance

In recent years, alternative finance systems developed by the urban poor—which revolves around local savings schemes—are challenging traditional development assistance practices. Some development assistance agencies and governments have recognized their potential in mobilizing resources for local development interventions such as land acquisition, basic service provision, new housing and housing improvements.

Today, external finance from donors is blended with such community-based savings to enable more sizeable investments. The Urban Poor Fund International and Asian Coalition for Community Action are two major decentralized funds established to address urban poverty that have enabled organized urban poor communities to improve access to housing and basic services.

The Urban Poor Fund International is a subsidiary of Shack/Slum Dwellers International that provides capital to member national urban poor funds while the Asian Coalition for Community Action fund was set up by the Asian Coalition for Housing Rights.

Source: Walnycki, 2015; Asian Coalition for Housing Rights (http://www.achr. net/about-whatwedo.php); Urban Poor Fund International (http://www.upfi. info/home/).

For urban infrastructure, direct budgetary contributions from national government remains a key source of finance, contributing about 40 per cent of infrastructure investment in developed countries and 60–65 per cent in emerging and developing countries

Domestic revenue is an essential component of the spending needed to achieve the development agendas in cities. Therefore, strengthening domestic resource mobilization in line with SDG 17 is essential. Approximately half of low-income developing countries and nearly one-third of emerging market economies have a tax-to-GDP ratio of less than 13 per cent, which is considered a threshold for development. It is thus imperative that countries need to own responsibility for achieving the SDGs by building tax capacity through well-designed tax policies.[92] These revenue optimization strategies should be socially acceptable, have minimal adverse impact on the economy—e.g. not raising the cost of living nor negatively affecting the competitiveness of the city—and be easy to implement.[93]

Additionally, various levels of government need to strengthen the effectiveness of their tax systems by identifying and closing any existing loopholes. Existing data show diminishing tax contributions from multinational companies. This decline has been attributed to the "race to the bottom" culture of corporate tax policies designed to attract new investments.[94] For instance, from 2005 to 2017, global corporate tax rates fell from an average of 27.5 per cent to 22.9 per cent.[95] Meanwhile, the net profits of the world's top ten global corporations have more than tripled in real terms, generating profits larger than the combined domestic revenues of 180 of the world's poorest countries.[96] Along with declining corporate rates, less developed countries have a weak ability to effectively collect taxes.

Corporate tax evasion is further complicated by the prevalence of practices such as profit-shifting and tax havens. Estimates suggest that profit-shifting through creative accounting and transfer pricing with affiliated firms costs host countries upwards of US$500 billion per year worldwide.[97] However, development partners are already aiding countries to fix the loopholes in their tax

sections, these are not always predictable and most often insufficient for delivering infrastructure and services. The share of these funds in local government finance varies between countries and regions. The share is much higher in developing countries, around 70–72 per cent, compared to 38–39 per cent in developed countries. This share has seen a decline in some countries.[89] In OECD countries, for instance, central government funding as the share of total municipal revenue fell by approximately 12 per cent, on average, between 2010 and 2016.[90] For urban infrastructure, direct budgetary contributions from national government remains a key source of finance, contributing about 40 per cent of infrastructure investment in developed countries and 60–65 per cent in emerging and developing countries.[91]

A covered market in Addis Ababa, Ethiopia. © Andy Wasley/Shutterstock

systems. The Platform for Collaboration on Tax (PCT), launched in 2016 by the IMF, OECD, the United Nations and the World Bank, is supporting countries to achieve the SDGs by strengthening collaboration on domestic resource mobilization.[98] The Addis Tax Initiative, launched in 2015 at the Third International Conference on Financing for Development in Addis Ababa, is also helping build capacity and foster partner countries' efforts to increase reliance on domestic revenue to fund their development agenda and meet the SDGs by 2030.[99] Studies show that the LDCs could mobilize around US$36 billion annually in additional revenues at current corporate tax rates if

The LDCs could mobilize around US$36 billion annually in additional revenues at current corporate tax rates if properly enforced, and up to US$50 billion per year if global cooperation also leads to higher corporate tax rates, plus the phaseout of corporate tax havens

properly enforced, and up to US$50 billion per year if global cooperation also leads to higher corporate tax rates, plus the phaseout of corporate tax havens.[100]

While optimizing revenue mobilization matters, improving value for money from investment is equally important. This calls for strengthening institutions for public investment management so as to achieve desired developmental outcomes while, at the same time, achieving quality and efficiency in spending on a city's physical assets. Efficient use of assets is also important, for instance by providing sufficient financial resources for operating and maintaining new and existing infrastructure. In Tanzania, for example, the national government, in collaboration with UNCDF, has trained 177 members of investment committees from 60 local government authorities on public investment management.[101] Similarly, the African Development Bank is assisting Dakar, Senegal, to improve financial and administrative management systems as well as helping them to create financial mechanisms to attract new investments for sustainable urban development.[102]

While optimizing revenue mobilization matters, improving value for money from investment is equally important
▬

In the Asia-Pacific region, Cities Development Initiative for Asia (CDIA), a regional initiative conceived by the Asian Development Bank, with financial support from development partners, is providing investment management assistance to medium-sized cities that is key for bridging the gap between their development plans and implementation of their infrastructure investments. The initiative has worked with 125 cities in 17 countries in Asia, providing needed support **from strategic master planning to concrete policies and specific projects**, as well as support for cities to meet the requirements of financial institutions for well-formulated infrastructure projects.[103]

8.3.2. Catalysing private investment
Today, private sector enthusiasm for sustainable development is strong and growing. There is a drive for private sector businesses, philanthropic institutions and individuals to help fulfil the global development agendas. However, translating interest into action in cities has been challenging. In spite of this challenge, there is an increasing appreciation of the role of private investment in closing the financing gap for hard and soft investments necessary for sustainable urban development. The major source of private

finance comes from corporate profits which can be invested via the finance industry, banks or other financial institutions such as pension funds, insurance companies, hedge funds and even foundations.[104] The Ontario Teachers' Pension Plan (Canada), for example, has stakes in infrastructure investments like airports, utility companies, high-speed rail and toll roads in various regions of the world.[105]

In addition to domestic investment, overseas private investment flows will be required to meet infrastructure funding needs in many developing and emerging countries, including foreign direct investment (FDI) which is vital in generating new economic activities. In order to attract private investments in sustainable urbanization, countries must create an enabling environment with robust national urban policies, urban and territorial planning frameworks, and financial and legal systems. The availability of private investments for sustainable urban development depends on these pre-existing criteria to incentivize a greater share of the total available finance to be directed to cities.

In order to attract private investments in sustainable urbanization, countries must create an enabling environment with robust national urban policies, urban and territorial planning frameworks, and financial and legal systems
▬

Institutional investors hold enormous assets and represent a potential source of substantial new capital (Box 8.3). The redirection of some of these assets would more than adequately finance sustainable urban development. One of the critical challenges, however, is to match available assets with infrastructure and SDG projects in a way that meets the needs of institutional investors and leverages the appropriate characteristics within their portfolios.

Of the many infrastructure financing methods, public-private partnerships (PPPs) have shown much promise in recent decades, especially when they are well-structured.

Institutional investors hold enormous assets and represent a potential source of substantial new capital
▬

The fact that private capital flows have remained above the official development assistance flows since 2005—except 2015 and 2016—has sustained the interest of many parties in searching for profitable and impactful investment opportunities in urban environmental services.[106] However, executing PPPs is rife with challenges such as: "(i) functioning of public sector and political systems; (ii) private sector and commercial realities; and (iii) opposition to private sector involvement."[107] If PPPs have to play an important role in regard to investing in the value of sustainable urbanization, it will require action on at least two important and interrelated fronts: first is *addressing the mayors' dilemma* about the choice of PPPs to improve urban environmental services, and second is *assessing the performance of all partners*.[108]

Additionally, there are numerous ways that all levels of governments can work with the private sector to mobilize investment using various public-private partnership structures to bring value to the public. Besides leveraging fiscal resources, PPPs offer other potential benefits such as introducing private sector technology and innovation, as well as securing private sector capabilities in the financing, design, construction and management of large projects.[109]

To grow investments will require a focus on developing impact metrics and consolidating impact frameworks that are understood in both the public and private sectors. As mentioned above, in emerging and low-income developing countries, strengthening fiscal management and governance institutions must precede discussions of PPPs, for instance, to manage risk and avoid unexpected costs that undermine fiscal sustainability.[110]

8.3.3. Tapping innovative financial resources

Besides strengthening the traditional source of subnational funding (such as taxes, fees and intergovernmental transfers), sustainable financing for urban development necessitates identifying and employing new revenue options. Today, there are several types of innovative financing mechanisms and instruments that could leverage sustainable resources for urban development.

Blended finance: The strategic use of catalytic capital from public and philanthropic sources to mobilize additional private sector investment has emerged as an important approach to financing the SDGs.[111] Sub-Saharan Africa has been the most frequently targeted region in blended finance transactions, a reflection of the significant needs of the continent as it relates to the SDGs (Figure 8.6).[112] The potential of this mechanism is visible in UN-Habitat's Participatory Slum Upgrading Programme (PSUP) where the European Commission is piloting blended financing mechanism to finance slum upgrading for cities in Africa, the Caribbean, and the Pacific. The approach combines EU grants with loans or equity from public and private financiers with over €23 billion worth of EU funds financing around 280 projects.[113] In the context of blended financing for infrastructure, the Sustainable Development Solution

Blended finance use should be anchored to a development rationale, designed to increase commercial finance, tailored to a local context, designed to ensure effective partnering and monitored for transparency and results

Figure 8.6: Blended finance: Number of deals and average deal size by region

Proportion of deals targeting region	Average deal size
Sub-Saharan Africa — 42%	$125M
Latin America & the Caribbean — 20%	$186M
Middle East & North Africa — 18%	$229M
Global — 18%	$699M
South Asia — 16%	$108M
East Asia & Pacific — 10%	$150M
Europe & Central Asia — 4%	$1,905M
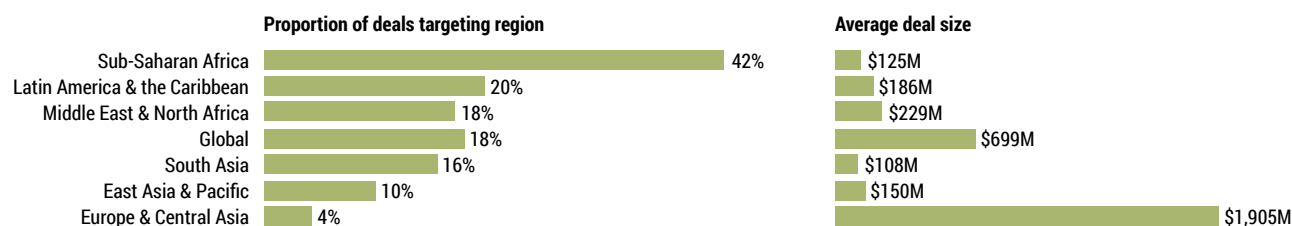
Note: "Global" refers to blended finance transactions that do not have a regional focus
Source: Convergence, 2018.

Network (SDSN) estimates that about US$50 billion per year in market financing of infrastructure projects could be raised through private debt and equity.[114] The OECD principles on blended finance provide a guiding framework to ensure that sustainability is achieved. Blended finance use should be anchored to a development rationale, designed to increase commercial finance, tailored to a local context, designed to ensure effective partnering and monitored for transparency and results.[115]

Pooled financing mechanisms (PFMs): These entail a collaborative effort involving gathering the borrowing needs of a group of municipalities and raising the combined debt on the capital market or from other sources of finance. PFMs can be a viable way for most medium-sized and small local governments to access long-term and adequately priced debt financing. This is accomplished either through a state agency or through cooperation among local authorities.[116] The pooling of assets allows for a diversification of risks for investors. PFMs offer the following potential advantages:

- Give small and medium size local authorities access to capital markets;

- Reduce the cost of borrowing;

- Reduce the processing costs;

- Reduce risk through diversification, even for big cities;

- Reduce risk by providing financial expertise;

- Give incentives to improve creditworthiness;

- Are a conduit for the transfer of knowledge; and

- Increase transparency.[117]

PFMs take many different forms depending on the context. In Europe, local government funding agencies (LGFAs) are the most common type of pooled financing vehicles prevalent. They include Kommuninvest (Sweden), Kommunekredi (Denmark), Bank Nederlandse Gemeenten (The Netherlands), Kommunalbanken (Norway), Munifin (Finland), Agence France Locale (France) and UK Municipal

Bond Agency (UK). These are special-purpose agencies owned and guaranteed by local authorities and, in some instances, with minority shareholding by central government or other public stakeholders. LGFAs issue bonds in capital markets and on-lends the proceeds to local authorities that are members or shareholders of the agency.[118] Similarly, in the Veneto Region of Italy, local municipal water utilities pooled individual mini bonds into a special purpose vehicle (SPV) in order to issue a €150 million bond on the market. The SPV structure was supported by a regional finance agency and utilities within the SPV, then enabled by a cornerstone investor (European Investment Bank).[119]

The Municipal Finance Authority of British Columbia (Canada) has seen its objectives and mandate expanded over time to include pooled investment funds (PIFs) in 1989 and equipment financing in 1995. In 2019, the authority issued over Can$1.2 billion of long-term securities and Can$4.7 billion of short-term securities in the capital markets.[120]

In India, the Central Government approved the Pooled Finance Development Fund Scheme in 2006 to provide credit enhancement to "urban local bodies" (municipalities) to access alternative sources of funding for their bankable projects.[121] In 2019, China launched an innovative financial intermediary facility—the Shanghai Green Urban Financing and Services Co., Ltd—that allows small cities and towns in the Yangtze River Delta Region to access commercial funding by pooling their investment demand.[122] PFMs are emerging in South Africa as an additional tool for mobilizing revenue. In sum, PFMs can be prioritized as a source of financing urban infrastructure needs in developing countries by giving local authorities access to domestic and international capital markets and by providing institutional investors with a new, attractive asset class.[123]

Investment platforms: In recent years, investment platforms have emerged as a way to tap private capital and channel it into much needed projects. Such platforms have the advantage of matching investors with appropriate infrastructure projects and reducing transaction costs for investors. These platforms can operate at both municipal and national levels. Investment platforms are currently in operation in some major cities such as Chicago, where authorities have set up the Chicago Infrastructure Trust (CIT) to match public infrastructure projects to private

investors. The city administration is paying for the CIT's US$2.5 million running costs, while private financial institutions have committed to investing US$1.7 billion in the scheme.[124] Presently, investment platforms exist primarily in megacities, but smaller cities can benefit from regional and national platforms, such as the West Coast Infrastructure Exchange in the United States and the Green Investment Bank in the UK.[125] The aforementioned Cities Investment Facility will connect partners from the private and public sectors to catalyse investments that will help achieve the urban dimensions of the SDGs. As

the Decade of Action calls for accelerating sustainable solutions, these types of investment platforms will be instrumental to showcase a pipeline of bankable projects and assist cities in attracting private sector investment. Additionally, they are avenues for resource pooling, as earlier discussed.

Green bonds: Green bonds are increasingly being mobilized to deliver low-carbon infrastructure development. Global green bond and green loan issuance reached US$257.7 billion in 2019, up by 51 per cent from 2018.[126] Currently,

A busy street in downtown Chicago, USA © BrandonKleinVideo/Shutterstock

green municipal bonds account for a very small share of the broader US$3.7 trillion bond market, but the market is expected to grow as issuers look to diversify their buyer base and appeal to the expanding investor class using environmental, social and governance criteria to screen their investments. The need for energy efficient and clean technologies globally, especially in emerging economies where there is high demand, will help drive issuance going forward.[127] If managed properly, the green bond market can provide an important source of finance for sustainable infrastructure projects. Green bond financings by public and/or private entities have the potential to reduce financing costs, given strong receptive demand driving or encouraging environmentally supportive projects and economic growth.[128]

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The bulk of green municipal bond issuance is presently in the United States, Europe and Asia.[129] Other regions such as Africa and Latin America have the opportunity to develop innovative projects to tap into the green bond market, but the issuance of green bonds will depend on local market conditions, such as the administrative regulatory environment, project type and investor appetite. Further, green bonds are more expensive relative to traditional bonds and involve complex issuance processes. Local governments require strong capacity to engage in green bonds issuance, as well as monitor their environmental impacts.

8.3.4. Leveraging official development assistance

International development assistance remains a significant source of external finance for the implementation of the global development agendas; it makes up a significant amount of infrastructure funding throughout LDCs. The AAAA commits to reverse the decline in official development assistance (ODA) to such countries and encourages developed countries to make ODA commitments of 0.2 per cent of GNI to LDCs. To achieve the goals of the 2030 Agenda and the NUA, ODA and other forms of

To achieve the goals of the 2030 Agenda and the NUA, ODA and other forms of international public finance must be deployed and utilized more effectively. They should be aligned to local priorities and development interventions should carry a measure of local ownership

international public finance must be deployed and utilized more effectively. They should be aligned to local priorities and development interventions should carry a measure of local ownership. They should be country-led and specific to local needs and context. Thus, the strategies for development partners who are focused on supporting sustainable urban development need to evolve and adapt to local situations— which means, among others, using local systems, including results frameworks and public financial management and procurement systems. International assistance can play a pivotal role in enhancing local institutional capacities, which is an essential element of local ownership.

Finance is required not just for investments in physical assets, but also for project preparation, implementation, technical assistance, capacity building and the structuring of capital investment funding.[130] Further, international assistance could include supporting access to capital markets through soft funding and grants to blend with loans. The Swedish International Development Cooperation Agency (SIDA) guarantee instrument is playing a vital role in generating additional resources; the instrument is promoting sustainable development, inclusive economic growth and poverty reduction by unlocking existing financial resources and facilitating access to credit to target groups. In 2014, for instance, SIDA facilitated the Palestine Housing Guarantee Facility of US$20 million to promote lending from Palestinian banks to SMEs in East Jerusalem, Gaza and in Area C in the West Bank where the availability of credit is limited. The instrument also promotes housing financing in East Jerusalem and Gaza. The guarantee is provided to the Middle East Investment Initiative (MEII), which in turn guarantees local banks.[131]

Since 2010, the Green Climate Fund (GCF) has emerged as an important player in ODA. The United Nations Framework Convention on Climate Change (UNFCCC)

established GCF in 2010 "as an operating entity of the financial mechanism of the Convention to support global climate action by promoting a low-emission and climate-resilient transition in developing countries"[132] GCF is supporting resilient and sustainable urban development projects around the world, such as the metro network in Tbilisi (Georgia);[133] the development, construction and commissioning of renewable energy projects in nine energy-poor African countries through the Climate Investor One (CIO) facility;[134] renewable energy and energy-

efficient technologies in Mongolia;[135] and the transition to low-carbon and climate-resilient development in Shandong Province, China, through the Shandong Green Development Fund (Figure 8.7).[136]

In recent years, China's foreign aid and development spending have grown in prominence. Within the context of Belt and Road Initiative, China is providing loans, grants, and other resources for infrastructure investments across several countries (see Box 8.5).

Figure 8.7: Shandong Green Development Fund: Portfolio distribution

Climate Change Mitigation

Address the main sources of GHG Emissions in Shandong

75%

Renewable Energy 51%
Green Buildings 13%
Urban Transport 6%
Energy Efficiency 5%

Climate Change Adaptation

Improve people's climate resilience

25%

Coastal protection 10%
Flood control 6%
Drought/Agriculture 5%
Heat/greening 4%
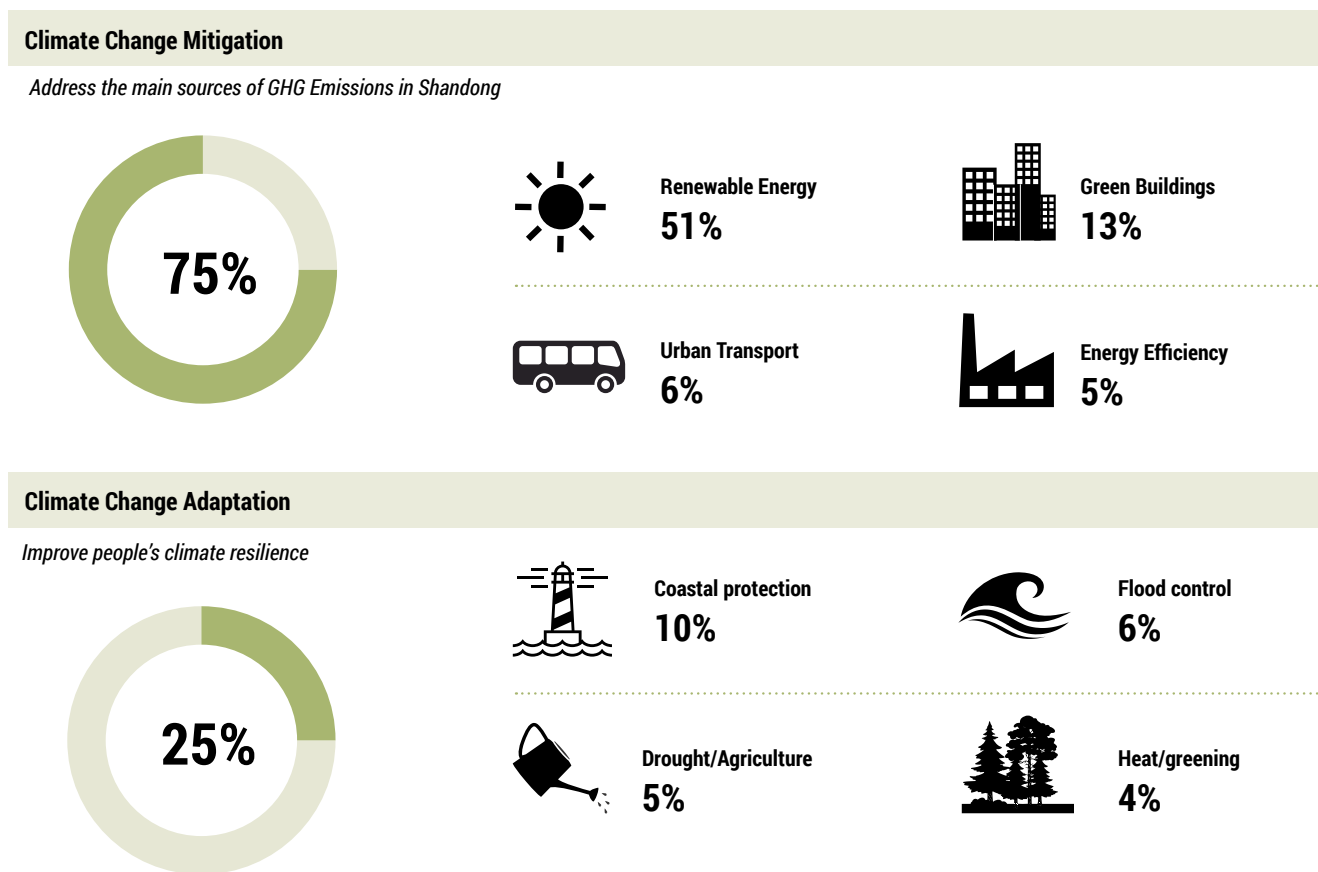
Source: Jenny et al, 2020.

Box 8.5: **China's Belt and Road Initiative**

China is bolstering global efforts in investment infrastructure through the Belt and Road Initiative (BRI). The BRI aims to build connectivity and co-operation across six main economic corridors encompassing China and: Mongolia and Russia; Eurasian countries; Central and West Asia; Pakistan; other countries of the Indian subcontinent; and Indochina. The BRI-participating economies represent more than one-third of global GDP, and over half of the world's population. The initiative is a large project aimed at improving regional cooperation through better connectivity among countries lying on the ancient Silk Road and beyond. It includes the Silk Road Economic Belt on land and the 21st Century Maritime Silk Road at sea. BRI investment projects are estimated to add over US$1 trillion of outward funding for foreign infrastructure over the decade from 2017–2027.

China has proposed a holistic implementation of the BRI, covering a number of broad aspects that will be important for achieving the SDGs. Thus, while infrastructure investment is a key aspect of the BRI, China states that it is much broader in its objectives, encompassing all aspects of sustainable growth for itself and including more balanced regional growth, the upgrading of its industry and greener economic growth at home.

The main sources of funding are the Chinese development banks: China Development Bank, Industrial and Commercial Bank of China, Bank of China, China Exim Bank, China Construction Bank, Silk Road Fund, New Development Bank, and Asian Infrastructure Investment Bank (AIIB), where China has voting rights.

Given the global infrastructure financing deficit, there is little doubt that the BRI is, by far, the most significant contribution to meeting these needs. Between 2005 and 2018, China's global construction projects (mainly infrastructure) across the globe amounted to US$814.3 billion. US$480.3 billion was in BRI-participating economies, US$170.7 billion in Sub-Saharan Africa, US$63.4 billion in Latin America and US$34 billion in the Middle East and North African countries not part of the BRI. Chinese construction projects are relatively smaller in OECD countries, with Australia having the most significant at around US$17.1 billion.

Chinese outward investment in the construction sector, cumulative notional amount expressed in billions of USD, 2005-2018

Legend:
- BRI-participating economies
- North America
- Sub-Saharan Africa (excluding Sub-Saharan African economies identified in the BRI)
- Latin America
- European Union (excluding EU economies identified in the BRI)
- Middle East & North Africa (excluding MENA economies identified in the BRI)
- Australia
- Other economies
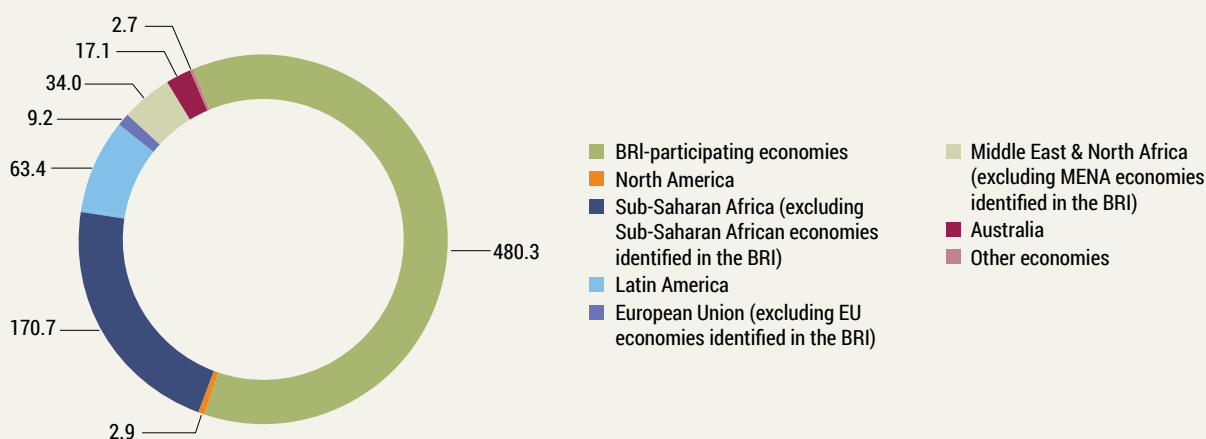
Source: OECD, 2018.

An aerial view of Canterbury informal settlement, Montego Bay, Jamaica. © UN-Habitat/Kirsten Milhahn

8.4. Concluding Remarks and Lessons for Policy

The COVID-19 pandemic has undeniably created an uncertain investment climate. The global economic consequences of the pandemic have shaken confidence in infrastructure investment with only five per cent of public and private sector leaders believing that investments will "increase significantly" following the pandemic, a sharp decline from 34 per cent before the crisis.[137]

This temporary setback notwithstanding, the amount of funding required to meet the investment need in order to achieve the ambitions of the NUA and infrastructure-related SDGs is available. The challenge then globally is that these funds are not being invested in urban areas to the extent necessary to achieve sustainable urban development. In fact, investment levels decreased around the financial crisis of 2008 and have remained stagnant. There is no simple answer to closing the investment gap, but there are tangible actions that, if taken in a coordinated fashion, will create the necessary enabling environment

for governments to mobilize domestic revenues and build credit-worthiness so that they can attract increased private sector investment. Global institutions have a significant role to play in supporting LDCs. There is also a need for countries to ensure that investments in cities are aligned with the global development agendas.

The need for private-sector investment highlights competing priorities between maximizing economic returns and optimising environmental and social benefits on the other. Moving forward, the broad policy principles within the NUA and the SDGs must continue to be revisited and used as a guide to balance competing tensions (Figure 8.8). While the AAAA laid out investment targets, there is a need to focus targets in areas that have the largest investment needs, yet at the same time, have the least conducive investment climates, if cities and human settlements are to be inclusive, safe, resilient and sustainable for all. LDCs will require focused and strategic work from policymakers to improve public financial management and catalyse domestic revenues in order to attract investment. This work requires policy coherence

Figure 8.8: Sustainable urban investments: Key challenges and policy options for LDCs

KEY CHALLENGES	POLICY OPTIONS
Need for a common framework and policy principles between public and private sectors	**Cross-sector guiding principles for sustainable infrastructure development:** Increasing the private-sector involvement in sustainable infrastructure investment aligned with SDGs need to be guided by policy that addresses public vs private responsibilities with an agreed-upon set of broad policy principles.
Need to stimulate investments in areas of significant need	**Attract investments to LDCs:** Policymakers and other stakeholders must focus their efforts on catalysing investments in the areas of most need and significant gap in infrastructure development.
Need to ensure policy coherence for investments	**Align macro- and micro-economic policy:** Guidelines are required to ensure policy coherence between international, national, and local priorities and investment policies.
Global decision-making on investments in sustainable development must include vulnerable countries	**Multi-agency technical assistance facility to support LDC involvement:** Technical assistance will be required to ensure the countries with the most significant infrastructure investment gaps are participating in the decisions being made at the global level. Financing solutions and private-sector partnership arrangements are complex, requiring significant technical capabilities and strong institutions. International discussion on private-sector investment in sustainable development is dispersed among many organizations, institutions and forums, each addressing specific areas of interest. There is a need for a common platform to discuss goals, approaches and mechanisms for mobilizing of finance and channelling investment into sustainable development.

Source: Adapted from UNCTAD, 2014.

across jurisdictions and levels of government, as well as globally, with internationally supported investments. The policy aims will not be fully responsive to the priorities of any one stakeholder, but global platforms that continue to bring public and private sectors together are crucial (Figure 8.8). In order to ensure that the most vulnerable countries are represented, and their needs recognized, international organizations must continue to provide technical assistance and capacity building across levels of government.

Although progress is being made in some contexts, action to realize the SDGs is not yet advancing at the speed or scale required to ensure that no one is left behind by 2030. Among the key aims of the Decade of Action is to mobilize movement toward attainment of the SDGs and unlocking financing for investment, especially in cities where the vast proportion of the global population resides. As has been discussed throughout this chapter, raising adequate finance requires concrete efforts. Some salient policy options are recounted below.

▪ *Sustainable municipal financing*: To realize the investments necessary for sustainable urbanization, municipal finance needs to move towards a position of self-sustainability. This calls for cities to have a diverse portfolio of revenue sources (and an improved capacity for revenue collection) as well as harness tools and innovative mechanisms (e.g. pooled financing mechanisms, blended finance, green municipal bonds and land-based finance instruments) to mobilize the resources needed to finance necessary infrastructure. Discussions about diversifying revenue sources necessitate a continued focus on public financial management practices at all levels of government, but particularly within local government. Involving the private sector and attracting investment funds will require evidence of efficient financial management.

▪ *Accelerated actions*: The time to realize the transformative commitments of the NUA and achieve the urban-related SDGs is short; five years have

already lapsed. It is thus imperative for policymakers to catalyse actions to support adequate investment in the four dimensions of the value of sustainable urbanization including human capital, institutions, innovation and technology that are crucial for making cities safe, inclusive, resilient, and sustainable. If investments are well planned and managed, they can accelerate city-led economic growth and serve as a bridge to ongoing involvement in the global market and in return create productive environments that attract additional investment.

- *Policy coherence*: Globally, urbanization is shaped by international cooperation policies and decisions made at all levels of governance. For cities to leverage investment for the development of sustainable infrastructure, they require alignment between international frameworks and domestic policies. Investing in sustainable urbanization calls for a policy framework that realigns local financial flows with local public goals. Urban governance should be underpinned by well-coordinated fiscal, political and administrative decentralization efforts, where local expenditure responsibilities are backed by reliable intergovernmental transfers and fiscal empowerment (e.g., the legal and technical capacity to levy taxes). Sustainable urbanization must be responsive to national context and sensitive to political and cultural context while guided by a lens of inclusiveness and equity. The NUA and the SDGs provide a broad framework guiding investment, but international actors must work with and support national and local governments to collaborate on decision-making in regard to achieving these international development agendas in a way that is responsive to local realities.

- *Precise estimate of needs:* The fiscal needs and combination of potential sources is unique for each country. Countries need to conduct precise estimates of their financing needs. They also require technical assistance to develop a national reform agenda that maps the infrastructure needs and the SDGs to national circumstances and aligns the complementary roles the various development partners can play in financing infrastructure development and maintenance needs.

As discussed in this chapter, the investment need in urban areas is significant and the need to meet it is urgent. While there is no simple answer to the challenges facing countries around the world, there are clear and critical first steps to securing investment. Globally, national governments, in association with their respective lower levels of government, must be empowered and equipped to build their own optimal financing mix in support of their efforts to invest in sustainable urban development. Creating the appropriate enabling environment for such investments demands a coordinated and coherent approach to sustainable urban development. Importantly, strengthening the various legal, institutional and procedural elements of public investment management must precede discussions of public debt and guarantees. The investment need will not be addressed by any actor in isolation; rather, it requires an impact-focused ecosystem of actors including the private and financial sector, public sector, civil society, residents and communities.

Endnotes

1. This chapter uses infrastructure in its comprehensive sense, covering both hard (physical assets) and soft (institutions that are vital to the economy and quality of life such as health, education, financial, security, legal, regulatory and cultural).
2. SDGs 1-10, 12, 13, 17.
3. United Nations, 2019e.
4. UNDESA, 2015.
5. OECD, 2019b.
6. In 2016, for instance, the tax revenues in developing countries amounted to US$4.3 trillion (OECD, 2019b).
7. OECD, 2019b.
8. United Nations, 2020.
9. United Nations, 2020.
10. Mahler et al, 2020.
11. United Nations, 2020.
12. Brooks et al., 2020.
13. UN-Habitat, 2020e.
14. The Inter-American Development Bank, for instance, defines sustainable infrastructure as "infrastructure projects that are planned, designed, constructed, operated, and decommissioned in a manner to ensure economic and financial, social, environmental (including climate resilience), and institutional sustainability over the entire life cycle of the project." (IADB, 2018).
15. Godfrey and Zhao, 2016.
16. Woetzel et al, 2017.
17. Woetzel et al, 2017.
18. European Environment Agency, 2016.
19. European Commission, 2019.
20. UN-Habitat, 2017c.
21. UN-Habitat, 2017c
22. Boston Consulting Group, 2018; Zottis, 2014.
23. World bank, 2019f.
24. UN-Habitat, 2019e.
25. World Bank, 2019g.
26. UN-Habitat, 2017c.
27. UN-Habitat, 2017c
28. UNDP, 2012.
29. Hommann and Lall, 2019.
30. Government of the Democratic Socialist Republic of Sri Lanka, 2018.
31. Government of Kenya, 2018; -EDGE (Excellence in Design for Greater Efficiencies).
32. UN-Habitat, DERASAT and UNDP, 2020.
33. Global Taskforce of Local and Regional Governments, 2016.
34. Cities Climate Finance Leadership Alliance, 2015.
35. Godfrey and Zhao, 2016.
36. 2.2 per cent when benchmarked against Mauritius (the regional leader in infrastructure); catching up with the Republic of Korea would increase per capita growth by 2.6 percentage points (Foster and Briceño-Garmendia, 2010).
37. CAF, 2017.
38. The New Climate Economy. 2016.
39. UN-Habitat, 2017c.
40. Gaspar et al., 2019; Romp and de Haan, 2007; Hague and Kim, 2003.
41. UN-Habitat and UNICEF, 2020.
42. UN-Habitat, 2017c.
43. Tibaijuka, 2009.
44. IEA, 2020b.
45. Godfrey and Zhao, 2016.
46. Bouton et al, 2015.
47. National Institute of Building Sciences, 2019.
48. Godfrey and Zhao, 2016.
49. Societe Generale and UNEP FI, 2018; IMF, 2015.
50. Walter (ed.), 2016.
51. ILO, 2020f; Lieuw-Kie-Song, 2020.
52. Good maintainance of physical assets in urban areas generate substantial savings from reduced total lifecycle cost.
53. World Bank, 2010.
54. Grigoli and Kapsoli, 2018; Grigoli, 2015.
55. UN-Habitat, 2017c.
56. WBGU—German Advisory Council on Global Change, 2016.
57. United Nations Conference on Housing and Sustainable Urban Development, 2017.
58. World Bank, 2018c.
59. Monslave and Watsa, 2020.
60. World Bank, 2018c; Jamison and Summers, 2013; Hanushek and Woessmann, 2008; Barro, 2001.
61. Midgley, 2020.
62. Floater et al, 2017.
63. UN-Habitat, 2017c.
64. UN-Habitat, 2016e.
65. World Bank, 2013a.
66. UN-Habitat, 2017c; Bonilla and Zapparoli, 2017.
67. A large portion of the expected returns from spending on health, education, among other infrastructure is lost due spending inefficiencies (Gaspar, et al., 2019).
68. McKinsey & Company, 2013.
69. Government e-Marketplace (https://www.india.gov.in/topics/ infrastructure).
70. UCLG, 2010.
71. UN-Habitat, 2017b.
72. UN-Habitat, 2017c.
73. Ahmad et al., 2019.
74. OECD.Stat (https://stats.oecd.org/l); Franzsen and McCluskey, 2017: In OECD countries recurrent property taxes constitute about one per cent of GDP, which is more than two and half times higher than the value in African countries.
75. Collier et al, 2018.
76. Godfrey and Zhao. Page 13; UN-Habitat, 2011d.
77. UN-Habitat, 2012b.
78. World Bank, 2013; UN-Habitat, 2017c.
79. UN-Habitat, 2017c.
80. UN-Habitat, 2020f.
81. Suzuki et al, 2015.
82. UN-Habitat, 2019f.
83. UN-Habitat, 2017c.
84. Hart and Welham, 2016.
85. National Urban Policies typically identify new policy actions that require funding. The need for funding in turn requires a suitable financing framework that can achieve funding objectives according to the capacities of actors at various scales (national, regional and local). How funding is raised and allocated has a bearing on the efficacy of urban policies (UN-Habitat, 2019g).
86. OECD, 2019b.
87. Godfrey and Zhao, 2016
88. IMF, 2015.
89. Alam, 2014.
90. AlMujadidi et al, 2019.
91. Godfrey and Zhao, 2016.
92. Gaspar, et al., 2019: IMF recommends that countries increase their tax-to-GDP ratio by 5 percentage points of GDP over this decade (Gaspar, et al., 2019).
93. AlMujadidi et al, 2019.
94. SDNS, 2019.
95. Jahnsen and Pomerleau, 2017.
96. SDSN, 2019; McKinsey 2015; Global Justice Now, 2015.
97. SDSN, 2019.
98. The Platform for Collaboration on Tax (https://www.tax-platform.org/ who-we-are).
99. SDNS, 2019; Addis Tax initiative (https://www.addistaxinitiative.net/ about).
100. SDSN, 2019.
101. United Republic of Tanzania, 2019; UCLG, 2019b.
102. AfDB, undated.
103. Bonilla and Zapparoli, 2017.
104. OECD, 2019b.
105. See: https://www.otpp.com/home.
106. Dahiya and Gentry, 2020.
107. Dahiya and Gentry, 2020.
108. Dahiya and Gentry, 2020.
109. Ahmad, et al., 2019; World Bank, 2016.
110. Irwin et al, 2018.
111. Convergence, 2018.
112. Convergence, 2018.
113. UN-Habitat, 2016g.
114. SDSN, 2019.
115. OECD Blended Finance Principles (https://www.oecd.org/dac/ financing-sustainable-development/ blended-finance-principles/).
116. UN-Habitat, 2017c.
117. Andersson, 2015.
118. UN-Habitat, 2017c; Andersson, 2015.
119. Oliver, 2016.
120. Municipal Finance Authority of British Columbia (https://mfa.bc.ca/ about-us/history); Municipal Finance Authority of British Columbia, 2020.
121. Government of India, undated.
122. World Bank, 2019g.
123. UN-Habitat, 2017c.
124. Godfrey and Zhao, 2016.
125. Godfrey and Zhao, 2016.
126. Climate Bonds Initiative, 2020.
127. UN-Habitat, 2017c.
128. Investment Industry Association of Canada, 2019.
129. See: GIZ, 2017; IISD and DRC, 2015.
130. UN-Habitat, 2017c.
131. SIDA, 2017; SIDA 2006.
132. Green Climate Fund, 2019.
133. Green Climate Fund, 2020b.
134. Green Climate Fund, 2020c.
135. Green Climate Fund, 2020d.
136. Jenny et al, 2020; Green Climate Fund, 2020e.
137. The Construction Specifier, 2020.

Chapter 9

The New Urban Agenda and the Value of Sustainable Urbanization

Sustainable urbanization generates economic, environmental, social and intangible value that can be harnessed for the wellbeing of all. This message can and should guide development efforts during the Decade of Action to achieve the SDGs and as the world recovers from the COVID-19 pandemic. Fortunately, there is a road map to sustainable urbanization in the New Urban Agenda, which provides a comprehensive framework for unlocking the value inherent in well-planned, managed and financed cities.

Unlocking the value of sustainable urbanization is a multisectoral and multi-stakeholder endeavour. National governments must create an enabling environment for cities to thrive. Local authorities must seize the opportunities given to them and govern their territories effectively, as called for in the New Urban Agenda. The private sector must invest in sustainable urban development, from affordable housing to climate-friendly infrastructure. Civil society must strengthen institutions and create a welcoming environment for a diverse citizenry. Philanthropy must fill in the gaps to support the most vulnerable. Universities must educate the next generation and foster research and development opportunities for innovation and inclusive prosperity. When all the interlocking parts operate in harmony and are supported by appropriate institutions and policies, cities will thrive and their value will be enhanced and shared by all.

Policy points

1. There should be a sense of urgency and a long-term commitment to implement the New Urban Agenda as the basis for achieving sustainable urbanization.

2. The effective implementation of the New Urban Agenda through supportive urban governance structures, urban and territorial planning, and effective means of implementation—adequate financing, capacity development, information, technology and innovation— will harness value of sustainable urbanization in all its dimensions.

3. Unlocking the value of sustainable urbanization is a multisectoral and multi-stakeholder endeavour.

4. Collaboration and cooperation across scales is central to enhancing the value of sustainable urbanization.

5. Cities should undertake periodic audits and map their efforts onto the transformative commitments of the New Urban Agenda, SDG 11 and the urban dimensions of the other SDGs.

6. Appropriate institutional frameworks and urban legislation need to be in place to support effective multilevel governance and enhance the value of sustainable urbanization.

7. Participatory data platforms and effective monitoring systems are integral to enhancing the value of sustainable urbanization

8. Cities need to feature prominently in the stimulus packages and economic recovery plans following the outbreak of COVID-19.

9. Government at all scales will have to implement the New Urban Agenda at least in the short- to medium-term, within the context of the impacts and uncertainty associated with the COVID-19 pandemic.

10. COVID-19 provides cities a unique opportunity to build back better, by focusing on greener, more sustainable business and consumption patterns, digital economies and quality urban spaces.

This chapter discusses how the effective implementation of the New Urban Agenda can contribute to the economic, environmental, social and intangible value of urban areas and thus enhance the value of sustainable urbanization. This Report has demonstrated that well-planned and managed urbanization can generate interconnected value for sustainable development. But there is a sense of real urgency as well as the need for long-term commitments to implement the New Urban Agenda as the basis for achieving sustainable urbanization, particularly SDG 11, indicating that the NUA is an accelerator of prosperity and development for the different targets of Goal 11 and the urban dimension of the SDGs.

This Report has demonstrated that well-planned and managed urbanization can generate interconnected value for sustainable development

For all urban stakeholders, inaction is no longer a plausible or expedient option. Regardless of data deficiencies or resource constraints, there are many appropriate and essential steps that must be taken urgently in every context by individuals, communities, local authorities, national governments and international bodies. Only by acting consistently and collaboratively across administrative and political boundaries at all scales, from local communities to international organizations, can the global scope of the challenge for sustainable urbanization be tackled. The costs of inaction are too high and, as highlighted earlier in this Report, particularly in Chapters 4 and 7, profound and transformative rethinking to formulate appropriate action is urgent.[1] The survival of humankind and our increasingly urban planet as a whole are at stake.

As articulated in Chapters 1 through 5, the value of sustainable urbanization is conceptualized as the totality of a city's economic, environmental, social and intangible (institutional, governance, political, cultural and civic

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perception) conditions, features or outcomes that have the potential to meaningfully improve residential quality of life. This definition provides sufficient flexibility to accommodate regional and cultural diversity, as well as differing legal notions of what constitutes "value." This concept resonates closely with the three transformative commitments of the NUA, namely social inclusion and ending poverty; sustainable and inclusive urban prosperity and opportunities for all; and environmentally sustainable and resilient urban development. By synthesizing key messages from the previous chapters, this chapter demonstrates how implementation of these commitments can accelerate achievement of the NUA and SDGs. This chapter also uses UN-Habitat's definition of prosperity as encompassing productivity; infrastructure development; quality of life; social inclusion and environmental sustainability.[2]

As explained in Chapter 1, understanding the relationship between the NUA and SDGs is crucially important, particularly SDG 11 and the urban-related elements of the other goals. which are articulated in the Secretary-General's Quadrennial Report on the New Urban Agenda.[3] Since that report in 2018, UN-Habitat has documented 550 cities that are working on improvements to their NUA and SDG monitoring tools.[4] However, those efforts are merely the starting point. Through specific examples, policy pointers and tools under development, this chapter goes a step further by offering practical action to achieve the SDGs and accelerate the value of urbanization through changes in the way cities are planned, built, managed and financed. Fulfilling the transformative commitments of the NUA and achieving the SDGs are not ends in and of themselves but rather means to achieving the ends of urban sustainability. Accordingly, this chapter develops a positive, forward-looking argument about the need for a close relationship between the NUA and SDGs, as the NUA lacks a specific, formal monitoring and evaluation framework while the SDGs have precise targets and indicators.

Fulfilling the transformative commitments of the NUA and achieving the SDGs are not ends in and of themselves but rather means to achieving the ends of urban sustainability

To that end, UN-Habitat developed a valuable monitoring tool known as the City Prosperity Index (CPI). This tool is a composite statistical index that includes all the indicators of SDG 11 and selected components of other SDGs to cover the dimensions of urban prosperity, namely productivity; infrastructure development; quality of life; equity and social inclusion; environmental sustainability; and governance and legislation.[5] This index has the potential to synchronize progress on the NUA, in all its breadth and ambition, with the more detailed and specific SDG reviews for the benefit of Member States, subnational entities and ultimately all urban residents. Over 500 cities use the CPI, which suggests that there is widespread anticipation that it will be a useful tool to help implementation of the global sustainable development agendas and hence enhancement of the value of sustainable urbanization.[6]

Implementing the NUA, with all the supporting tools, stakeholders will go a long way towards achieving sustainable urbanization

Hence, in implementing the NUA, with all the supporting tools, stakeholders will go a long way towards achieving sustainable urbanization. Drawing on case studies and evidence from preceding chapters, this chapter shows that the value of sustainable urbanization can be enhanced by implementing the NUA through a dedicated action framework that encapsulates key critical components such as national urban policies, regulations, governance and urban and territorial planning.

This chapter also considers pathways to implement other international agreements. The newfound sense that the planet is in a "climate emergency" is proof that the climate change agenda is now paramount (Chapters 1, 4 and 5) with a rapidly growing number of local governments declaring a climate emergency in order to galvanize concerted action. Similarly, the Coalition for Urban Transition's 2019 report "Climate Emergency, Urban Opportunity" makes a strong case for investment in compact, connected cities powered by clean energy to generate prosperity—and by extension enhance the material value of urbanization—while addressing the climate emergency.[7]

Downtown Reykjavik. © Alexey Stiop/Shutterstock

The remainder of this chapter is divided into four sections, each addressing the following fundamental questions for leaders and policymakers:

a. Why should we seek rapidly to harness the value of sustainable urbanization?

b. What needs to be done to enhance the value of urbanization?

c. How can we harness the value of sustainable urbanization?

d. Concluding reflections—implementing the NUA in the context of uncertainty and unprecedented global challenges

9.1. Towards the Decade of Action: Rapidly Harnessing the Value of Sustainable Urbanization

The United Nations global agreements and agendas adopted since 2015 represent a landmark recognition of the responsibilities of all countries, regardless of geographical location, historical circumstances and present-day conditions, to promote sustainable development (Chapter 1). Additionally, these agreements recognize the importance of urban areas in achieving sustainable development, given that most of the world's population lives in urban areas. Crucially, the agreements also recognize that local and regional governments alongside other urban stakeholders must play important roles as national governments cannot achieve sustainable development alone.

The Brundtland Commission defined sustainable development as ensuring that current generations leave our children and grandchildren a world in which their prospects are not adversely affected by our own and previous activities.[8] This formulation has often been regarded as a largely rhetorical commitment. However, as noted in previous chapters, especially Chapter 4, future generations are already holding those in power to their word. Worldwide protests by schoolchildren and youth since May 2019 under the banner of Fridays for Future underline their fear that the world is heading on a dangerous course.

As we herald the Decade of Action for accelerating sustainable solutions to the world's biggest challenges—including those associated with urbanization like poverty, gender-based inequality and climate change—Member States owe it to their citizens and future generations to make a real difference now. Indeed, the room for manoeuvre and timeframe for action are shrinking.[9] Both morally and practically, inaction is no longer an option: the economic, human and ultimately social and political costs are already rising and will rapidly and increasingly outweigh the costs of undertaking mitigation, adaptation and transformative action. As shown in previous chapters, relevant examples already exist in different urban contexts, where local governments and stakeholders are innovating solutions to address extreme weather events; chronic health problems brought on by changes in disease patterns and air pollution; and the loss of low-lying homes, land and associated livelihoods.

Member States owe it to their citizens and future generations to make a real difference now

The level of voluntary Nationally Determined Contributions to global greenhouse gas emission reductions agreed in the Paris Agreement on climate change at COP21 in December 2015 were known at the time to be inadequate to keep the mean global temperature at a sustainable level. Hence, COP25 in Madrid in December 2019 called for new and more ambitious Nationally Determined Contributions to be presented at COP26, which has been postponed to 2021 due to the coronavirus disease (COVID-19) pandemic. The most ambitious countries announced their intentions to

commit to carbon neutrality sometime between 2040 and 2050. By the end of COP25, 73 national governments, 14 regions, 398 cities, 786 businesses and 16 investors were working towards achieving net-zero CO_2 emissions by 2050.[10] These commitments underline the important role that subnational governments—especially cities—and non-state actors are already playing in an arena traditionally seen as the sole preserve of national governments.

Meanwhile, the 2030 Agenda for Sustainable Development provides a 15-year timeline from 2016–2030 to achieve sustainable development across the range of targets within each goal. As noted in Chapter 1, with ten years left to achieve the SDGs, the importance of sustainable urbanization as an entry point for ensuring progress across multiple goals of the 2030 Agenda needs to be reemphasized by mobilizing action globally, locally, individually and collectively; demanding urgency and ambition in harnessing the value of sustainable of urbanization; and driving sustainable innovation, financial investment and technology. While urban-focused Goal 11 and the urban components of many other SDGs are important, these goals are most effective when pursued in relation to the broad strategic framework for urban sustainability by 2036 as enshrined in the New Urban Agenda.

For the sake of clarity in making the case for urgent and integrated action for sustainable urban development, Box 9.1 summarizes the essential normative ambition of the NUA (see Chapter 1 for further details) through its effective implementation, which is explored and exemplified in this chapter by drawing on key messages from earlier chapters.

The broad outlines and many key parameters of the integrated actions required in any context are well known. The World Urban Campaign and a coalition of urban stakeholders clearly articulated that vision in *The City We Need 2.0*, a manifesto prepared as the New Urban Agenda was negotiated in 2016.[11] Shortly thereafter, UN-Habitat's *Action Framework for the Implementation of the New Urban Agenda* refined that vision in the wake of the agenda's adoption at the Habitat III conference in Quito.[12]

This Report is published four years into the lifespan of the NUA and five years into that of the SDGs. As a result of uncertainty within many national governments about how best to proceed (Chapter 1), coupled with the lead

Box 9.1: Harnessing the New Urban Agenda to Accelerate the Value of Urbanization

While broad in scope, the Means of Implementation section of the NUA contains a set of integrated guidelines to facilitate achievement of the value of urbanization (paragraphs 131–141):

- All levels of government should deploy context-sensitive approaches to financing urbanization and enhancing financial management capacities through the adoption of specific instruments and mechanisms to achieve sustainable urbanization.

- Endogenous resources and revenues generated through the capture of the benefits of urbanization, along with the catalysing effects and maximized impact of both public and private investments, should be mobilized.

- Businesses should apply their creativity and innovation to solving urban sustainable development challenges.

- With appropriate support, subnational and local governments should register and expand their potential revenue base, e.g. through multi-purpose cadastres, local taxes, fees and service charges, in a socially just and equitable manner.

- Promote sound and transparent systems for making financial transfers from national to subnational and local governments based on the latter's needs, priorities, functions, mandates and performance-based incentives.

- Develop vertical and horizontal models of distribution of financial resources to decrease inequalities across subnational territories, within urban centres and between urban and rural areas, as well as to promote integrated and balanced territorial development.

- Promote best practices to capture and share increases in land and property value generated through urban development processes, infrastructure projects and public investments.

- Support subnational and local governments in their efforts to implement transparent and accountable expenditure control instruments for assessing the necessity and impact of local investment and projects, based on legislative control and public participation.

- Support the creation of robust legal and regulatory frameworks for sustainable national and municipal borrowing, on the basis of sustainable debt management, as well as sustainable municipal debt markets where appropriate.

- Support the development of appropriate and affordable housing finance products and encourage participation by diverse kinds of external financial institutions to invest in all forms of affordable and incremental housing.

- Consider establishing urban and territorial transport infrastructure and service funds at the national level.

Source: UN, 2017, paragraphs 131–141

time required to prepare guidance documentation by UN-Habitat and the Sustainable Development Solutions Network, the start-up phase of implementation has been slow, but the pace now needs to accelerate rapidly. While there might be specific situations requiring more detailed research or data, these factors are not plausible pretexts for general delay. As outlined in Chapter 4, harnessing the environmental value of urbanization in contexts of limited data and resources requires effective mobilization of existing data from varied sources, but also necessitates delivering

strategic action through collaboration of multiple actors and mapping current capabilities, critical knowledge gaps and information relevant to specific forms of urban change. As highlighted in the first *Quadrennial Report on the New Urban Agenda*, of particular importance is drawing on multiple innovate data sources such as community-led data and enumerations like the Know Your City global initiative of Shack/Slum Dwellers International, which helps to strengthen data and statistical capacities of governments at all levels and provide a foundation for enhancing the value of urbanization.[13]

The efforts of national and subnational governments in implementing the NUA are being supported by a diverse set of UN-Habitat programmes and activities at the global, regional, national, subnational and local levels

The efforts of national and subnational governments in implementing the NUA are being supported by a diverse set of UN-Habitat programmes and activities at the global, regional, national, subnational and local levels, many of which were implemented before 2016. The global category includes Phase III of the Participatory Slum Upgrading Programme in Africa, the Caribbean, and the Pacific; Phase III of the Global Land Tool Network; and Integrated and Participatory Urban Plans and Public Space for Compact, Connected and Inclusive Cities. These programmes are providing concrete ways to address the convergent and common needs of the relevant Member States.[14]

These examples highlight the important point that progress does not necessarily require entirely new and dedicated activities because many pre-existing or continuing programmes and projects are fully appropriate. Hence, undertaking a public policy audit and mapping onto the three transformative commitments of the NUA and the 17 SDGs is an important first step that will demonstrate what is already being done and thereby help to identify key weaknesses and gaps on which to focus new interventions and appropriate resources. Many development interventions and actions can also address several goals and targets simultaneously, thereby reinforcing the need for harmonization and policy coherence from the global to local scales (Chapter 2).

Being able to demonstrate progress early on even without dedicated new investments has twin added benefits: It reduces the scale of new costs relative to starting afresh, and also makes it easier to gain support from elected national representatives and officials who must make trade-offs between diverse competing resource demands.

9.2. Enhancing the Economic Value of Sustainable Urbanization

Urbanization creates economic value through the provision of decent jobs, income and equal opportunities for all (Chapters 2 and 3). Ensuring access to sustained productive employment, enhancing innovation and productivity, nurturing the talent and skills required to thrive in a modern urban economy, developing creative industries and utilizing viable forms of municipal finance all have a key role to play in enhancing and sustaining the economic value of urbanization. It is therefore imperative that governments at all levels develop programmes and policies to harness the economic value of urbanization to ensure sustainable prosperity for all. Governments policies must be accompanied by the creation of appropriate governance, institutional and legal frameworks.

It is therefore imperative that governments at all levels develop programmes and policies to harness the economic value of urbanization to ensure sustainable prosperity for all

Employment generation is extremely important for enhancing the economic value of urbanization. Cities by their nature offer significant opportunities for both formal and informal employment; this is especially true for urban areas that are planned, managed and effectively governed as discussed throughout this Report. For instance, Chapter 3 shows that urban areas create employment opportunities that build on their comparative advantage and unique characteristics. The World Bank estimates that the private sector (including informal sector jobs) accounts for 9 out of 10 jobs globally, most of which are in urban areas.[15] Ensuring

adequate employment in urban areas is crucial if countries are to meet SDG 8 on full and productive employment and decent work for all, which are crucial ingredients to avoid social disruptions and unrest created by unemployment and inequality.[16] Furthermore, when urban dwellers are fully employed, they are able to fulfil their tax obligations. This endogenous source of revenue provides governments with the necessary financial resources to provide basic municipal services.

Employment is the potential gateway out of poverty for billions of urban residents and an important cornerstone of economic and social development.[17] Employment is also a key determinant of peoples' satisfaction with city life. Rapidly urbanizing countries endowed with an abundance of employable young people can integrate into the global economy and generate extensive employment opportunities, especially in light manufacturing and the outsourcing of services. East Asia has pursued this strategy over the last five decades. More recently, large Bangladeshi cities such as Chittagong and Dhaka have boomed with the garment industry.[18] Higher order economic activity can also employ young people in the creative industries, which are at the crossroads of the arts, culture, business and technology.[19]

The creative industry stands out as exceptionally urban. It contributes significantly to the global, regional and urban economy. It is estimated that the creative industry is worth over US$2.2 trillion worldwide, which is equivalent to 3 per cent of the world's GDP. It employs 29.5 million people or one per cent of the world's economically active population.[20]

Notwithstanding the employment generation capacity of urban areas, unemployment can be particularly challenging, as cities are often associated with a high concentration of unemployed people, a phenomenon referred to as the "urban paradox."[21] In the Decade of Action to deliver the SDGs, the urgency of job creation is clear as the global unemployment rate stood at 5.4 per cent in 2019.[22] That figure is likely to increase dramatically due to the impacts of COVID-19. More than 600 million additional jobs will be needed by 2030 to keep pace with new entrants to the labour market, mostly in urban areas.[23]

The unemployment challenge affects both the developing and developed world. About 60 per cent of unemployment in the UK, Japan, Republic of Korea, Netherlands and the US is concentrated in urban areas.[24] As the world economy is adversely impacted by the COVID-19 pandemic, cities

Fishing in Accra, Ghana. © UN-Habitat/Kirsten Milhahn

Cities need to feature prominently in national stimulus packages and economic recovery plans following the outbreak of COVID-19

will bear a disproportionate burden of the unemployment crisis. For instance, the Las Vegas metropolitan area experienced an unemployment rate in May 2020 of 29 per cent, the highest of any US urban area at a time when every major city has seen steep, sudden gains in unemployment.[25] Chapter 1 clearly shows that job loss due to the pandemic is most acute in the sectors closely associated with the economic wellbeing of cities, with women, young people and migrants being disproportionately affected. Consequently, COVID-19 stimulus packages designed to jumpstart economies should specifically address urban economic sectors. Cities need to feature prominently in national stimulus packages and economic recovery plans following the outbreak of COVID-19.

In this uncertain economic context, proactive local economic development efforts will be crucially important in facilitating urban livelihoods and harnessing the economic value of urban areas. Local economic development efforts should seek to enhance economic competitiveness, increase sustainable growth, ensure inclusive growth and produce tangible benefits for local communities. Besides stimulating economic growth and creating employment, a key goal of local economic development initiatives should include specific efforts aimed at poverty reduction and increasing quality of life for all. Local development efforts will yield the desired results if they are broad-based, with multiple actors working together to stimulate and improve the local economy of a given area. Local governments should lead the effort, but include civil society, the private sector, public institutions and community-based organizations.[26]

Appropriate urban policies, supported by effective governance systems, human capacity, sound institutions, long-term urban and territorial planning, and innovative and sustainable financing frameworks act as catalysts for sustained and inclusive economic growth

At the national level, a stable macroeconomic environment is crucial for enhancing urban productivity; in practice, this enabling environment requires governments to remove bottlenecks to investments in urban projects. Equally important is adequate investment in the dimensions that are the foundation of sustainable cities: physical assets, human capital, institutions, effective governance structures and innovative technology. The drivers of change identified in the NUA are central to harnessing the economic value of sustainable urbanization (Chapter 3). In this regard, appropriate urban policies, supported by effective governance systems, human capacity, sound institutions, long-term urban and territorial planning, and innovative and sustainable financing frameworks act as catalysts for sustained and inclusive economic growth They provide an enabling framework for new economic opportunities, regulation of land and housing markets, and the timely provision of adequate infrastructure and basic services. The way cities are planned and spatially organized provides an indication of how the economic value of urbanization can be harnessed, as planning processes can either facilitate or hinder development. For instance, if housing and transportation costs are high due to poorly defined property rights and land use regulations that limit housing supply, the economic value of urban areas will be severely constrained.

Sustainable urbanization and productive cities go hand in hand. In seeking to enhance the economic value of urbanization, efforts should be made to ensure that economically productive cities are also environmentally sustainable, resilient, socially inclusive and safe. Through strong urban-rural linkages, they should also foster sustainable rural transformation. This vision aligns with the 2030 Agenda, especially the goal to make cities and human settlements inclusive, safe, resilient and sustainable.[27]

Dedicated policy actions to enhance urban productively will in part depend on a city's level of development.[28] The management of urban growth is particularly important for rapidly expanding cities in the relatively early stages of development to enable them to fully capitalize on the advantages of agglomeration economies and productivity benefits, and to reduce future inefficiencies. Ineffective land management, inadequate investment in infrastructure and basic services, distorted taxation schemes and cumbersome business and regulatory environment are detrimental to urban productivity.

It is important to identify the impediments that prevent cities from maximizing their productivity potential. Thus, addressing traffic congestion and other diseconomies of agglomeration, enhancing mass transit options and providing efficient, reliable services are key drivers of urban productivity. In addition, cities at intermediate levels of development should enhance their technological capacities with a sharper focus on nurturing talent pools and developing human capacity broadly.

Cities at intermediate levels of development should enhance their technological capacities with a sharper focus on nurturing talent pools and developing human capacity broadly

To sustain higher wages and better standards of living, more advanced cities need to tap into innovation-driven productivity gains enabled by big data and other technological developments such as increasing automation, artificial intelligence, IoT, nanotechnologies and blockchain (Chapter 6). To attract and nurture talent, experience from cities like Bangalore, Boston, Dubai, London, Munich, New York, Shenzhen, Tokyo and Vienna points to the importance of supporting R&D in quality higher education and research institutions with both public and corporate investment.[29]

But the value of sustainable urbanization cannot be realized without improving municipal finance mechanisms. Harnessing the value of urbanization requires revitalized funding partnerships, effective mobilization from multiple sources and a strong commitment from government, the
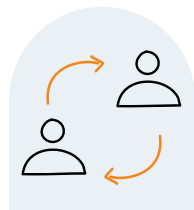
Harnessing the value of urbanization requires revitalized funding partnerships, effective mobilization from multiple sources and a strong commitment from government, the private sector and various development partners

private sector and various development partners (Chapter 8). Countries and cities need to mobilize revenue from a wide range of domestic and external sources to invest in the value of urbanization. The issue of municipal finance needs to be addressed decisively and urgently to enable cities to finance public expenditures and provide a wide range of public goods and services. Similarly, the revenue generated from endogenous sources and through the capture of the benefits of urbanization should be integrated into legal and policy frameworks that improve the financial conditions for urban development and facilitate access to additional sources. The mobilization and effective use of domestic resources are central in enhancing the value of sustainable urbanization.[30]

Finally, sound business and financial plans can generate the revenues required to support urbanization which, in turn, can be a source of further value generation. Local government can reap some of the benefits of this process, which translates into higher land and property values and can be captured by various taxation mechanisms. This virtuous cycle requires appropriate financial frameworks and effective governance structures, which includes the capacity of city governments to finance and deliver infrastructure plans; effective institutions with clear roles and adequate human and financial capacities; fiscal mandates and capacity to raise revenues through land and property tax; and clear regulatory and legal frameworks that guarantee accountability and transparency in the use of the resources.[31]

9.3. Enhancing the Environmental Value of Urbanization

The following discussion focuses on how the NUA can enhance the environmental value of urbanization, with important economic and social co-benefits. Several chapters in this report have provided important examples. One central requirement for accelerating urban sustainability and enhancing the environmental—but, crucially, also the economic—value of urbanization is for all stakeholders to take the green or circular economy seriously and to make proactive strides in promoting it, "… while facilitating ecosystem conservation, regeneration, restoration and resilience."[32]

Solar panels and wind generators against city view on sunset. © Artjazz/Shutterstock

One central requirement for accelerating urban sustainability and enhancing the environmental—but, crucially, also the economic—value of urbanization is for all stakeholders to take the green or circular economy seriously and to make proactive strides in promoting it

Promoting the green economy does not imply a trade-off with overall employment and economic growth, as sceptics often claim, as there is no necessary or linear relationship between increasing urbanization and conventional economic development.[33] Instead, over recent years, there has been mounting evidence from diverse contexts across all regions that appropriately targeted and calibrated green economic interventions can generate important synergies and co-benefits, including generating a net increase in employment.[34] Indeed, this evidence provides both the basis for the integrated approach to urban sustainability represented by the SDGs and NUA and the incentive for implementing appropriate measures to accelerate achievement of the environmental value of urbanization, while simultaneously enhancing the social and economic values of urbanization.

The circular economy, or a systemic approach to economic development that is regenerative rather than linear, offers a vision whereby economic and environmental value are mutually reinforcing. Urban stakeholders should take this method more seriously over traditional "make-take-waste" models. There are ever-increasing resources available to

policymakers and officials to assist in transitioning to the circular economy, such as the Circular Economy in Cities initiative of the Ellen MacArthur Foundation.[35]

As explained in Chapter 4, global governance regimes like the 2015 UNFCCC Paris Agreement can—despite their voluntary nature—provide powerful collaborative and also competitive impetus once a few ambitious governments set more ambitious NDC targets, which others then feel compelled to match or improve upon. A good example is how OECD and some other national (e.g. UK), regional (e.g. California in the US and Helsinki-Uusima, in Finland) and local governments are ratcheting up their emissions reduction target levels or deadlines, including by bringing forward the date by when sale of new petrol and diesel vehicles will be banned, as part of the commitments to be reviewed at the next United Nations Climate Change Conference. Ultimately, cities must develop locally appropriate pathways to climate transformation.[36]

National and subnational governments should play a catalytic role by providing effective incentives to promote green industries, products and activities

National and subnational governments should play a catalytic role by providing effective incentives to promote green industries, products and activities. They should also disincentivize older technologies, products and activities that are carbon-intensive, polluting and non-recyclable. Increased capacity building for strengthening government's ability to effectively manage, deploy and regulate the use of technology is required for effective implementation of the NUA and for enhancing urban sustainability (Chapter 6). Moreover, evidence from around the world demonstrates that proactive urban greening leads to a net gain in employment across diverse skill categories, thus ameliorating fears about job losses from phasing out polluting and unsustainable products and services.[37] For example, in recent years China has placed increasing policy emphasis on green economic efficiency and nature-based solutions to addressing climate change, such as in the 2016 Development Plan for the highly industrialized Yangtze River Delta Urban Agglomeration.[38]

Such broad-based green economic credentials are often fostered by city networks like the C40 Cities Climate Leadership Group and 100 Resilient Cities (as well as its successors the Global Resilient Cities Network and Resilient Cities Catalyst). They are rapidly becoming a source of civic pride and city competitiveness, thereby encouraging others to follow. But while nature-based solutions are a key integrated approach to enhancing environmental value, addressing the structural drivers of vulnerability will require more transformative processes of socio-ecological change, including improved social protections, critical services and infrastructure (Chapter 4).

Diverse policy instruments are available to accelerate green economic investment, such as regulations, fiscal incentives or penalties, direct interventions in production and activities to raise public awareness. The need for these instruments will vary by context, including the balance between ownership (e.g. public or private) and operational control (e.g. via outsourcing, subcontracting or public–private partnerships) over direct production and service provision in areas like transport and utilities.

Many environmental interventions driven by personal behaviour work on the basis of "nudge theory," or the principle that most people do not behave perversely and will "do the right thing" when encouraged and shown how. They change their behaviour modestly without the need for more formal interventions. Such behaviour-changing interventions work best when they are widely explained and justified to the public, and where they respond to public pressure to protect endangered species, conserve green spaces, regulate pollution or eliminate waste. The sudden international trend since 2018 away from single-use plastics, especially those that endanger wildlife like plastic drinking straws, illustrates this phenomenon. The resulting aggregate impact of innumerable small progressive changes can be considerable.

Subnational governments, particularly those of large cities in developed countries, have considerable powers to enact local regulations and taxes that lead the way in implementing measures to support and enhance the environmental value of sustainable urbanization consistent with the NUA. Indeed, since they face the impacts of environmental challenges directly, many local

Subnational governments, particularly those of large cities in developed countries, have considerable powers to enact local regulations and taxes that lead the way in implementing measures to support and enhance the environmental value of sustainable urbanization

governments have already adopted progressive climate change mitigation and adaptation measures at a faster pace than their respective national governments. Many are also setting examples through their own procurement policies and practices, energy generation portfolios and demonstration activities. Examples implemented by public and private sector actors include retrofitting municipal buildings and public housing, incentivizing green walls and roofs, installing grey water recycling and encouraging neighbourhood community gardens.

Local authorities can maximize impact with coherent policies and programmes of integrated and complementary interventions rather than relying on isolated actions. Solid waste management provides a case in point. Small deposits on glass, plastic and aluminium drinks containers create a financial incentive to return those items. Kerbside "single stream" recycling encourages higher participation once households no longer have to sort their recyclable waste, thereby reducing landfill utilization. Municipal composting centres likewise reduce the amount of organic waste sent to landfills, while providing a ready supply of compost for sale and municipal use. Each of these schemes also generates local employment. The most appropriate mix of publicly-run and privately-contracted or outsourced collection and operation will vary, but partnerships can be effective. Residents can be encouraged with targets and regular feedback on how well they have performed.

One unresolved debate is how far the implementation of incremental reforms, such as those embodied in the SDGs, can achieve the required rate and scope of change to keep global warming within safe limits. Indeed, full implementation of the 2030 Agenda and the NUA would require very substantive changes to the status quo—as recognized in the frequent reference

to the need for "transformation" and "transformative commitments" for achieving sustainable urbanization in the *Action Framework for the Implementation of the New Urban Agenda* (AFINUA). This is often termed adaptive transformation or transformative adaptation.[39] It implies step changes in investment, inequality reduction and major reorientations of urban planning processes, including changing outdated zoning and building regulations as well as encouraging multi- rather than mono-functional zones in order to change mobility paradigms to reduce the number and distance of intra-urban journeys. Such major reorientations are anticipated by paras 77–81 of the NUA. Indeed, para 81 is explicit that these "transformative commitments" will require different approaches from those currently used. It will take time and considerable effort to build such a groundswell and make the required legal and regulatory changes, so it should be commenced now to avoid frustrating bottlenecks towards the end of the lifetime of these global agendas. It is helpful to develop locally appropriate pathways to transformation, including how to address climate change in each city and region.[40]

Urban greening initiatives for sustainability have numerous added co-benefits that can support simultaneous achievement of multiple developmental goals and targets, thereby enhancing the overall value of urbanization. For example, safe green spaces that are designed in a gender-sensitive manner can help address discrimination in support of SDG 5 on gender equality and SDG 16 on peaceful and inclusive societies, as well as support improvements in health and community cohesion (Chapter 5). Moreover, as alluded to above, protection and enhancement of green spaces and infrastructure can support disaster risk reduction, climate change adaptation goals and provide employment, all of which are key to maintaining and enhancing the value of urbanization.

Protection and enhancement of green spaces and infrastructure can support disaster risk reduction, climate change adaptation goals and provide employment, all of which are key to maintaining and enhancing the value of urbanization

Effective integrated development planning for urban areas requires critical attention to the interconnectedness between vulnerability, risk exposure, development and resilience. These are core concerns in the SDGs, NUA and the Sendai Framework for Disaster Risk Reduction, as elaborated in Chapter 4. Processes of risk accumulation are driven by social, political, economic and cultural dynamics, and may be highly differentiated across urban spaces. Accordingly, by addressing cycles of urban risk accumulation and reducing vulnerabilities, the value of sustainable urbanization will be strongly enhanced. The most vulnerable people in cities live predominantly in the most vulnerable urban spaces.[41] Consequently, development-oriented approaches to disaster risk management are key and critical attention to the risk-development-climate change adaptation nexus is required. Disaster prevention measures and responses are critical determinants of urban resilience and the extent to which cities can recover from a disaster, with considerable co-benefits for citizens' health and wellbeing.

9.4. Enhancing the Social Value of Urbanization

Improving equity, enhancing social inclusion and ending poverty are central to unlocking the social value of urbanization. Public policy goals toward that effort include upgrading slums and informal settlements, addressing spatial inequalities, creating youth employment, promoting women's empowerment and supporting internally displaced persons (IDPs), migrants and refugees (Chapters 2 and 5). These efforts should adopt an intersectional lens that recognizes the overlapping conditions and identities leading to social vulnerability and marginalization. While strongly acknowledged in the SDGs and NUA, these issues require greater inclusion in the design of national and local policies and actions for urban sustainability and resilience. Local authorities should consult the World Bank's authoritative new "Handbook for Gender-Inclusive

Improving equity, enhancing social inclusion and ending poverty are central to unlocking the social value of urbanization

Urban Planning and Design" to fill in their gaps on how to translate principles into practice.[42]

The NUA acknowledges the "right to the city" and the importance of citizens actively shaping value of urbanization in their communities and beyond. Most existing smart city initiatives are designed as elite enclaves linked to the world economy but unsustainable in resource terms and of little relevance to the poor, who are often the majority population in cities (Chapters 2 and 5). Technocratic-inspired models can further embed social inequalities and overlook structural factors that shape urban inequalities in their quest to access future technologies (Chapter 5). Furthermore, technology-based smart city initiatives need to be people-centred and -driven (Chapter 6).

The NUA acknowledges the "right to the city" and the importance of citizens actively shaping value of urbanization in their communities and beyond

Gender dynamics and norms are strongly shaped by processes of urbanization and while experiences vary considerably across diverse contexts, women and men experience different challenges and opportunities in cities, with women often facing additional threats and discrimination. Examples include more frequent physical violence and harassment in public spaces, exclusion from decision-making, higher unemployment rates and instances of unpaid or exploitative work.[43] Women's health care is also often deprioritized relative to that of family units and men.[44] Additionally, youth and gender non-binary people are still commonly marginalized in urban policy, decision-making and interventions (Chapter 5).

IDPs and migrant groups are also often omitted from consideration in urban sustainability planning, possibly because they are regarded as being temporary or transitory residents (Chapters 1 and 5). However, in urban areas near conflict and post-conflict zones, they can constitute a significant proportion of the population. As such, they contribute significantly to all aspects of urban life and integrating them into their host cities is key to enhancing sustainable urbanization. Yet, in practice, due to discrimination or perceived transient status, they are

almost invariably amongst the most vulnerable residents and thus concerned principally with short-term survival rather than long-term sustainability.[45] Large influxes of refugees or IDPs can add substantially to urban populations, thereby creating additional pressures on local governments for the provision of key infrastructure and services (Chapters 1 and 5). If guided by the appropriate policy frameworks and the NUA, migration can be a key mechanism for addressing poverty and enhancing the value of sustainable urbanization, both in places of origin and destination (Chapter 1).

The political will to change urban governance structures is required to address the above crosscutting issues that underpin the social value of urbanization (Chapters 2 and 5). This transformation is already taking place across diverse

contexts. In Africa, Kenya, Namibia, Rwanda, South Africa, Eswatini, Tanzania, Tunisia, Zambia and Zimbabwe have all introduced legal provisions for community and citizen participation with a specific focus on gender equality.[46] Commitment to addressing gender inequality at the continental level is underpinned by the African Charter for Local Gender Equality. Yet, the rights of residents identifying outside of binary gender definitions are not recognized and protected in most African countries, and indeed are sometimes still criminalized.[47]

The Asia-Pacific region has also recently implemented varied innovative gender-sensitive policies and services. For example, following a spate of high profile attacks, eight cities in India have committed to the Home Ministry's Safe City project to combat sexual harassment, and in

Immigrant contract laborers work at a construction site, Dubai, United Arab Emirates. © Rob Crandall/Shutterstock

Bhopal transport access and safety has been improved for women.[48] Furthermore, in 2015, Kerala introduced a policy for transgender people; the first state in India to do so.[49]

Cities are also beginning to recognize the rights of migrants, from so-called "sanctuary cities" in the US where local law enforcement does not inquire about individuals' migratory status to the Solidarity Cities network in Europe that shares ideas between cities on the front line of the global refugee crisis. However, many obstacles remain to migrant protection and integration, from populist animosity in national politics to a lack of resources amidst other pressing social needs. To achieve the SDGs through the effective implementation of the NUA, the above tensions and inequalities need to be factored into all aspects of urban policy, decision-making and interventions to support meaningful and inclusive participation of all marginalized groups. Such efforts will enhance the social value of urbanization by empowering the most vulnerable and reducing underlying social, cultural and political drivers of risk for marginalized groups in urbanization processes so that no one is left behind and all can contribute to the best of their abilities.[50]

Increasing numbers of IDPs and migrants also contribute to the prevalence of informal settlements and informal economic activity in many regions (Chapter 1). Access to affordable housing is a major challenge for many cities, resulting in a proliferation of unplanned settlements, particularly across Latin America, Africa and the Asia-Pacific region. Urban landscapes are strongly shaped by these largely underserviced and often vulnerable areas. In many cases, informal economies also contribute significantly to national economies. Effective and equitable governance of informal sectors, spaces and actors with cooperation between formal, traditional and informal actors and associations representing those actors is important for achieving the SDGs, especially Goal 11, and advancing the NUA to enhance the value of sustainable urbanization.

When adequately planned and managed, urbanization can play a key role in ending poverty

When adequately planned and managed, urbanization can play a key role in ending poverty. This prosperity can occur through access to improved infrastructure and services facilitated by large-scale public investment, effective multilevel governance, higher levels of productivity, provision of employment opportunities and improved quality of life via better education and health. In East Asia, planned urbanization helped millions escape poverty.[51] However, the reduction in poverty associated with urbanization will not happen by chance (Chapter 5). Rather, it depends on how urban growth and its evolving challenges are managed, and the extent to which the benefits accruing from urbanization are equitably distributed. Instituting the necessary governance, planning and finance policies as outlined in the NUA and 2030 Agenda are vital preconditions for enhancing the social value of urbanization, and by extension, ending poverty in all its forms.

Enabling citizen participation to co-create the city is essential to achieving the social value of urbanization. In such an arrangement, civil society and governments engage in joint action, for example to co-produce housing and infrastructure in informal settlements. This methodology has been pursued in Johannesburg to create green open spaces, improve drainage and pave pedestrian areas and in Kampala to build community sanitation blocks that reduce disease outbreaks.[52] Urban planning and development initiatives where the relationship between the state and the citizen have been reformed and strengthened support implementation of the NUA.

Residents of urban informal settlements continue to face critical challenges without official recognition and government support. Collaborative planning and service co-production to reduce urban sprawl, support informal economies, upgrade informal settlements and provide other key urban functions are critical for improving the value of urbanization and governance of the urban commons. One of the more successful examples of an inclusive approach to slum upgrading is the Baan Mankong programme in Thailand implemented by the national Community Organizations Development Institute in partnership with civil society and supported by local government. Over the past decade, the programme has secured land and housing for over 96,000 households in 1,800 communities, despite concerns about

financial sustainability.[53] There is considerable potential to learn from and build upon such initiatives in implementing the NUA and enhancing the value of sustainable urbanization across diverse contexts worldwide. Informality exists in various forms, and sometimes even thrives in OECD countries, albeit with different political dynamics than in more developing countries.[54]

The AFINUA emphasizes such state-civil society collaboration and community-led initiatives in service delivery. Alliances and networks such as those described above help to strengthen the voices and enhance the capacities of vulnerable and marginal groups while simultaneously addressing multiple urban sustainability goals. Such efforts collectively enhance the value of urbanization. As detailed in preceding chapters, achieving urban justice for all and harnessing the value of urbanization requires planning with urban dwellers who have detailed, place-based knowledge for building sustainability and significantly add to government's capacities at all scales to enhance the value of urbanization. Such equity and social inclusion considerations are crosscutting and underpin all efforts to enhance the value of sustainable urbanization.

9.5. Governance, Institutional Frameworks and Urban Legislation

The importance of multilevel governance in facilitating progress towards sustainable urbanization has been emphasized throughout this Report (Chapter 7). The NUA calls for a paradigm shift committing to multi-stakeholder partnerships and cooperation among all levels of government to support sustainable and integrated urban development across all relevant administrative boundaries. Cooperation across scales and meaningful, inclusive participation from urban citizens are essential aspects of sustainable urban development and planning. Yet, effective multilevel governance has proved challenging under prevailing conditions.

There are several interrelated reasons. The powers, responsibilities and available resources at particular levels and categories of government are often mismatched. Governments inadequately prioritize complex, diffuse,

longer-term challenges like climate change and sustainability relative to more local and immediate calls on resources. Political rivalries driven by election cycles lead to short-termism both horizontally among leaders of adjacent local governments and vertically among leaders of different levels of authority.[55]

Appropriate institutional frameworks and urban legislation need to be in place to support effective multilevel governance and enhance the value of sustainable urbanization

Appropriate institutional frameworks and urban legislation need to be in place to support effective multilevel governance and enhance the value of sustainable urbanization. Local governments are central to multilevel governance; they are key agents in facilitating multi-stakeholder cross-scalar partnerships and planning in implementing the SDGs and NUA (Chapter 7). In this context, UN-Habitat has emphasized the importance of national urban policies as a framing for national action and produced guidelines for tackling climate change in the context of such policies.[56]

Much emphasis has been placed on the "localization" of global agendas and the centrality of cities in this process.[57] In light of the NUA, this spatial disaggregation is also now sometimes referred to as a territorial approach. The approach is exemplified in a recent OECD report on SDG implementation; as a prelude to a checklist of recommended public actions, the report summarizes research showing just how much OECD cities and regions still have to do to reach the targets on almost all goals, and hence how much urban value remains to be realized.[58]

The recent emergence of Voluntary Local Reviews (VLRs) marks a notable initiative by a growing number of city governments to enhance their efforts to implement the SDGs and meet the objectives of the 2030 Agenda. The movement started with the declaration by New York City in 2018 that it would undertake a local equivalent of the Voluntary National Review (VNR), which Member States present annually to indicate their progress toward the SDGs. This initiative caught the imagination of other

The recent emergence of Voluntary Local Reviews (VLRs) marks a notable initiative by a growing number of city governments to enhance their efforts to implement the SDGs and meet the objectives of the 2030 Agenda

mayors and municipalities worldwide. By the time that the Second High Level Local and Regional Government Forum adopted the New York City Declaration on Voluntary Local Reviews in September 2019, over 20 cities in 15 countries had committed to undertake such formal reviews of how their local activities, plans and targets align with the SDGs,[59] while many more signed up during the World Urban Forum in February 2020.

VLRs should assess local urban sustainability issues that might require additional data; if robust and forward-looking, they could also help to increase the level of ambition in VNRs— another example of effective collaborative multilevel governance. Resources are gradually being provided to assist cities wishing to undertake a VLR, as exemplified by a guide for British cities published in late 2019 by Bristol, the first city in the UK to undertake one.[60] The Institute for Global Environmental Strategies has also developed an Online Voluntary Local Review Lab to assist local governments as they undertake their reviews.[61] These processes are key to further embed the centrality of local and regional governments in implementing the SDGs and NUA, particularly since they were only included in the preparation of VNRs in 11 out of 28 countries that reported between 2016 and 2019.[62]

Convening multi-stakeholder workshops or forums can act as catalysts for change, bringing the public sector, private sector and civil society together to explain needed changes, gauge reactions and explore transdisciplinary and collaborative pathways forward. This approach includes understanding the benefits of integrated and targeted interventions that can maximize co-benefits to unlock the social, environmental and economic value of sustainable urbanization. Deeper forms of multi-sectoral co-creation and co-production are demonstrating significant improvements in appropriate public service provision as well as in research and practice for improved sustainability

(Chapters 4, 5 and 7).[63] Effective participatory multilevel governance fosters social cohesion and inclusivity, thereby strengthening the intangible value of urbanization.

9.6. How Can We Harness the Value of Sustainable Urbanization?

This section considers how the NUA can enhance the value of sustainable urbanization when implemented through effective frameworks of action at different institutional and spatial scales. The AFINUA is the key roadmap for all stakeholders to follow. It provides insights into UN-Habitat's approach, encapsulating 35 foundational elements divided into five key interrelated elements of urbanization: national urban policies; urban legislation, rules and regulations; integrated urban design and territorial planning; urban economy and municipal finance; and local implementation (Chapter 1).[64] Informed by the underlying values of inclusion, innovation and integration, the framework is guided by the three crosscutting principles of participation, governance and transparency.

Complementing the AFINUA is *Leading Change: Delivering the New Urban Agenda through Urban and Territorial Planning*, an important and insightful overview of UN-Habitat's guidelines for how urban and territorial planning should drive urban sustainability through implementation of the NUA.[65] For example, a recent analysis of sustainability and climate exposure of Mexican cities concluded that urban territorial planning, together with effective ecological restoration strategies, should be prioritized, with clear supporting policy, to avoid sprawl and maximize use of green open spaces.[66] These general guidelines are true for national systems of cities all over the world. Nevertheless, as with all measures, territorial approaches and city-region models need to be carefully considered in relation to context-specific characteristics such as administrative

Territorial approaches and city-region models need to be carefully considered in relation to context-specific characteristics such as administrative boundaries, governance capacities and networked urban economies

Légende

Batiment
Zone bâtie
Zone agricole
Zone verte

Réseau routier

Route Nationale
Voie de liaison
Voie locale
Voie résidentielle

Route vers Dame Marie

Route vers Les Cayes

0   0.5   1   1.5 km

kilomètres

Echelle: 1:20.000 sur format A3
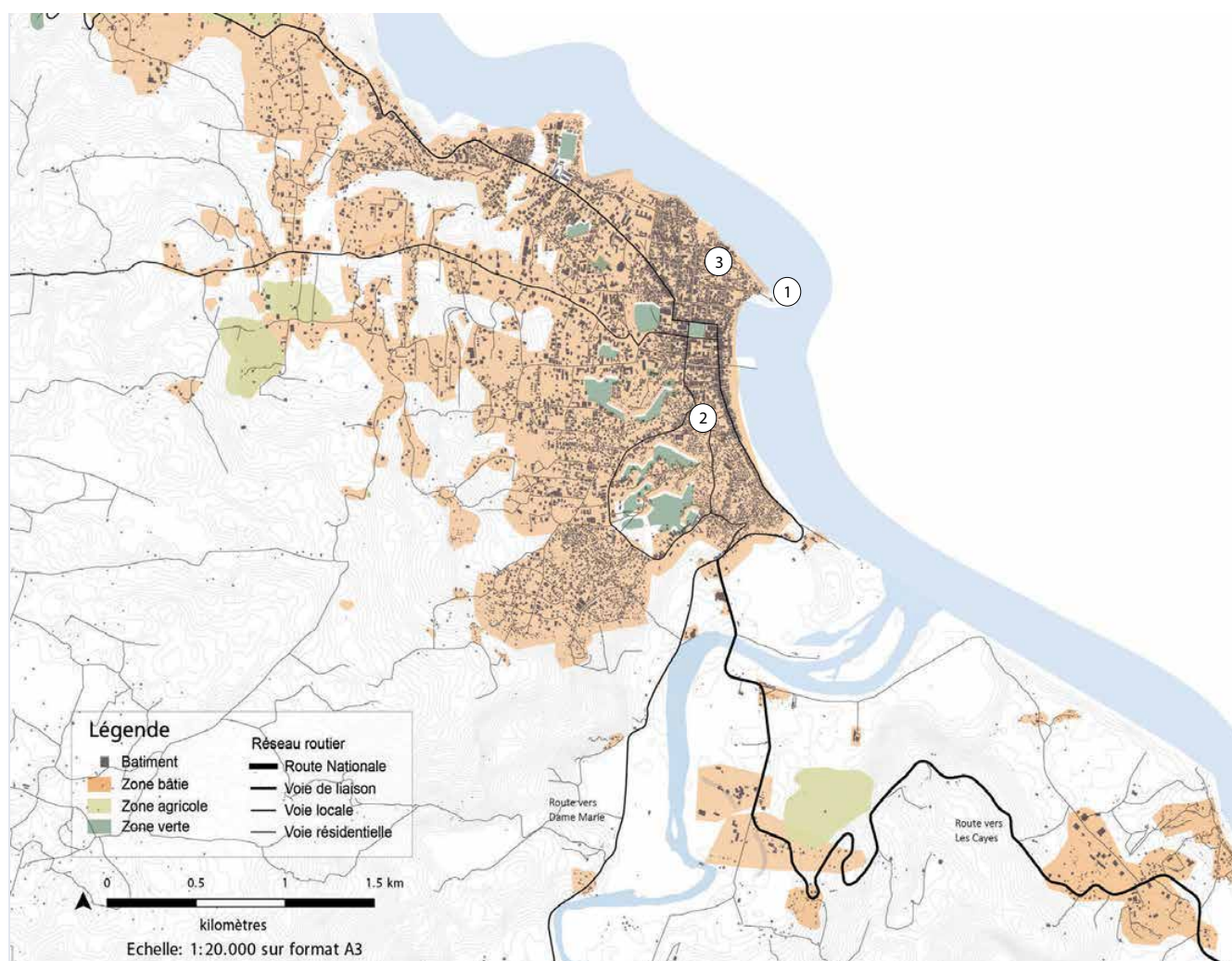
National Urban Policies are the basis of plan-led urban development. The urban structure of the city of Jeremie, Haiti, is an example of this bottom-up approach

boundaries, governance capacities and networked urban economies.[67] A key objective of such assessments should include guidance on how to utilize and adapt these institutions and structures appropriately in order to achieve the value of sustainable urbanization most effectively.

The following four subsections provide coverage of initiatives and recommendations in terms of how implementation of the sustainable development agenda, especially the NUA and SDGs, but also relevant elements of the Sendai Framework on Disaster Risk Reduction, can enhance the overall value of urbanization at the regional, national, subnational and local levels.

9.6.1. Regionally focused initiatives

In an effort to boost awareness, enthusiasm and uptake of global sustainability agendas in more regional contexts, several regional commitments and action frameworks have been produced over the last decade, often resulting from work between UN-Habitat, United Nations regional commissions and other partners. Such action plans and frameworks can serve as key guidance for the creation and implementation of national and local frameworks and support mainstreaming of the SDGs and NUA into decision-making so as to maximize the value of sustainable urbanization in regionally appropriate ways.[68]

Important examples include *the Regional Action Plan for the Implementation of the New Urban Agenda in Latin America and the Caribbean (2016–2036)*, which was prepared by several regional and international bodies, including UN-Habitat.[69] Furthermore, European nations signed the Pact of Amsterdam in May 2016 to launch the Urban Agenda for the EU , which promotes multilevel cooperation between Member States, cities, the European Commission and other stakeholders on urban issues.[70] As a notable antecedent,

the Leipzig Charter on Sustainable European Cities of 2007 emphasized similar core issues such as city-region development and cooperative governance.[71] This lineage reiterates the importance of building on progress achieved through pre-existing programmes and frameworks, while addressing the gaps and shortfalls thereof. Similarly, the *Harmonized Regional Framework for the Implementation of the New Urban Agenda (NUA) in Africa,* is aligned with the goals of the African Agenda 2063, as well as other regional and global commitments, including the Sendai Framework for Disaster Risk Reduction and 2030 Agenda for Sustainable Development.[72]

Additional key regional efforts include the ESCAP Regional Partners Forum that began meeting in 2017 as an immediate regional follow-up and review effort following the adoption of the NUA, which eventually led to the establishment in 2019 of the Penang Platform for Sustainable Urbanization. That platform will serve as a regional reporting mechanism and feed into the global reporting on the New Urban Agenda. Other framework documents include the Arab Strategy for Housing and Sustainable Urban Development and the Pacific Urban Agenda. The latter illustrates the long and sometimes difficult trajectory of impactful regional thinking around urbanization. The first Pacific Urban Agenda was prepared in 2003 and integrated into the Pacific Plan in 2005. In 2007, the outcomes of the second Pacific Urban Forum were refined into a Regional Action Framework supported by UN-Habitat, among others. Yet, as with other long-standing regional attempts to advance sustainable urbanization, the Pacific Urban Agenda has not been a priority. It lacks funding, resourcing and political support.[73] A new Pacific Urban Agenda was developed in 2015 as a regional input to Habitat III, with the aim of generating greater support from multiple agencies across scales and emphasises key issues linked to the NUA including social equity, environmental resilience, urban governance and the urban economy. More recently, partners in the Asia-Pacific region created the City Enabling Environment Rating as an important method for measuring the presence of policies, law, institutions, systems of governance, fiscal autonomy and levels of public engagement necessary for creating enabling environments that contribute to implementation of the NUA.[74]

Finally, some regional initiatives are tied less to geography and more to specific sectors, such as the Milan Urban Food Policy Pact and Monitoring Framework. The purpose of the Monitoring Framework is "to serve as an instrument for cities and urban food stakeholders to identify food-related policy and programme priorities and to support implementation of Agenda 2030."[75] Two-hundred and nine cities across most regions have signed up to the Milan Pact since its formulation in 2015, with a notable absence of Asian cities outside China.[76] Prioritizing locally appropriate food policies and programmes supports urban economies through produce sales, improves health outcomes by increasing access to fresh fruits and vegetables, encourages cultural and ecological diversity by supporting native plants and reduces food transport costs and carbon emissions by growing food locally. Collectively, these impacts of the food policy pact and monitoring framework enhance the value of urbanization.

9.6.2. National urban policies and other development plans

Over the last decade, national urban policies (NUPs) have returned to prominence as important guiding instruments to promote coherent and consistent urbanization within a country's boundaries. Earlier generations of such policies fell into disrepute and were largely abandoned by the 1980s as being too narrowly technocratic, prescriptive and unrealistic. This state of affairs left individual cities on their own. Some had the capacity to market themselves on the global stage while others languished. Large-scale uncoordinated movements of people to cities often exacerbated inequalities and problems, which no official body had a clear remit to address. The case for a new generation of NUPs is widely accepted; national governments must fill the void and provide more coherent and enabling frameworks, particularly in view of the urgency of tackling poverty, inequality and climate change.[77] By

Over the last decade, national urban policies (NUPs) have returned to prominence as important guiding instruments to promote coherent and consistent urbanization within a country's boundaries

2018, 76 countries worldwide had adopted explicit NUPs, while 74 had partial policies. Implementation has commenced in 92 of these countries, while the other 58 were still in the development stage.[78]

NUPs feature prominently in the NUA: national governments committed to their formulation and implementation in order to promote collaborative and effective multilevel governance for accelerating achievement of national development targets (paras 15, 21, 87, 89, 130 and 149) that enhance the value of urbanization. Moreover, NUPs should be designed through a collaborative process including subnational and local governments, along with civil society and the private sector. In poorer countries, resource constraints hamper the development and implementation of NUPs. In those instances, UN-Habitat and other agencies can provide technical support within the remit of technical assistance programmes.

Well-formulated and targeted NUPs will provide enabling mechanisms to achieve these objectives via six key components, as elaborated in the AFINUA, each addressing one or more indicators within SDG 11 and linked to several paragraphs of the NUA:

- Formulating medium- and long-term urban demographic projections and trends, with geographic disaggregation, taking into consideration the interplay of economic, social and environmental forces;

- Establishing national rules to determine land suitability for urbanization and for environmental and cultural heritage protection, disaster risk reduction and sustainable and resilient development while considering its equitable distribution and accessibility;

- Defining the roles and jurisdictional responsibilities of all levels of government and local governments regarding urbanization, urban planning and management;

- Aligning NUPs with national and sectoral development plans and policies at all territorial levels to harness the transformative power of urbanization with urban plans for energy, water, transport and other infrastructural corridors;

- Adopting a framework to reduce urban and territorial disparities; and

- Promoting jurisdictional co-ordination and coherence.[79]

Multi-stakeholder partnerships across the sectors identified above can greatly facilitate implementation of NUPs. Two additional prerequisites for effective implementation are that resources for each level of government should match their respective roles designated in the NUPs, and that subnational and local governments should be able to fulfil their respective roles and responsibilities without political interference.

The principles of policy alignment (Chapter 2) and using NUPs to frame collaborative multilevel governance are well illustrated by an authoritative new report from the Coalition for Urban Transitions on how national governments can deliver affordable housing and compact urban development simultaneously through joint interventions even though housing provision is not a national responsibility in most countries.[80] It has three complementary policy recommendations and associated mechanisms.

1. Design fiscal incentives to foster compact and inclusive cities:

    - Redesign property taxes to incentivize more efficient land use through higher-density housing development.

    - Discourage low-density housing construction at the periphery by adopting a development tax or impact fees that internalize the real cost of sprawl for property developers.

2. Unlock the potential of the rental market:

    - Establish clear and balanced tenant-landlord regulations to enhance transparency and ensure that both parties have equal access to information and legal recourse.

    - Develop measures to support social rental housing and ensure adequate tenure protection without hampering residential mobility.

3. Strengthen institutional capacity and build coherent
    policy frameworks:

    ▪ Craft national urban policies that align different
      ministries and levels of government behind a shared
      vision for cities, and design policy frameworks that
      enable subnational governments to promote denser,
      mixed-use development.

    ▪ Introduce mechanisms for better inter-municipal
      collaboration for both demand-side and supply-side
      housing policies.

    ▪ Increase local capacity to establish a diverse
      portfolio of revenue streams, including property
      taxes, by reviewing tax exemptions and
      strengthening national systems to identify taxable
      properties and assess property values.

Several countries around the world have already developed
or revised their NUPs to facilitate streamlining of NUA
implementation across scales and support effective
multilevel governance. For example, South Africa initiated
a national discussion on how to localize the New Urban
Agenda in 2018.[81] This conversation is aligned with the
country's Integrated Urban Development Framework
and Action Plan that includes local implementation
structures. One notable such structure is eThekwini's
Municipal Spatial Development Framework 2019-2020,
which aims to align with the NUA, SDGs and other key
international agreements to achieve progress towards
sustainable urbanization for the city.[82] Critical here is that
locally developed solutions for implementing the NUA and
enhancing the value of urbanization are facilitated through
national policies that recognize the varying needs of local
governments shaped by locality, size, tax base and existing
sustainability characteristics.

Sweden has been a European leader in this respect, and
has introduced an important national document aimed at
policy development: "Local Implementation of the SDGs
and New Urban Agenda: Towards a Swedish National
Urban Policy."[83] The report reflects on the relevance of
the NUA and SDGs to the Swedish context, in which
large cities have great autonomy. The policy aims to

facilitate sustainability at local scales and provide a
platform for local and national actors to share good
practices and lessons learned through global networks,
thereby strengthening the value of urbanization across
urban Sweden.

The comprehensive OECD and UN-Habitat study of
NUPs reveals some significant regional differences of
priorities (Figure 9.1).[84] Case studies of Rwanda, Ecuador
and Jordan reveal important conclusions that are helpful
for other countries seeking to develop, extend or update
NUPs to maximize the value of urbanization and urban
development:

▪ Low levels of urbanization, like in Rwanda, can be
  advantageous for strategic planning and management
  of urban development

▪ Rwanda's urban development strategies feature
  centrally in national development strategies,
  demonstrating the centrality of effective urban
  management to its economic development

▪ Despite placing the highest priority on economic
  development, Rwanda's NUP integrates and
  coordinates all sectors, including urban form and
  environmental protection, and strengthens subnational
  and local governments to fulfil their respective roles

▪ Constitutional recognition of the right to the city and
  other human development principles provides a legal
  basis for incorporation into Ecuador's NUP and greatly
  assists addressing the needs of the urban poor and
  other marginalized stakeholders

▪ Active citizen and civil society involvement in Ecuador
  provides greater legitimacy for NUPs

▪ Political stability and security concerns substantially
  affect the development of Jordan's NUP

▪ Decentralization of responsibilities to local
  governments in Jordan can help maximize local
  appropriateness and must be accompanied by capacity
  enhancement.

Figure 9.1: High and low thematic priorities in NUPs, by region

Themes that receive extensive NUP attention per region

Region	Economic development	Spatial structure	Human development	Environmental sustainability	Climate resilience
Africa	35	23	38	12	4
Asia and the Pacific	39	61	32	36	14
Arab States	13	50	13	14	13
Europe and North America	44	34	28	31	16
Latin America and the Caribbean	57	64	50	21	0

Themes that receive low NUP attention per region

Region	Economic development	Spatial structure	Human development	Environmental sustainability	Climate resilience
Africa	35	35	19	50	62
Asia and the Pacific	32	18	14	14	46
Arab States	50	13	13	13	38
Europe and North America	22	16	9	22	41
Latin America and the Caribbean	0	0	14	21	79

■ Economic development   ■ Spatial structure   ■ Human development
■ Environmental sustainability   ■ Climate resilience

Source, OECD and UN-Habitat, 2018, pp. 28-29.

Finally, several complementary global efforts have been implemented and funded in recent years to monitor progress on SDG 11 and the NUA regionally. For example, the Global Land Indicators Initiative is centred around developing a common framework for tracking progress on land issues and encourages uptake of comparable data collection and recording methods for monitoring. This effort is significant as SDG 11 and the NUA highlight the centrality of land in urban development and the need for effective land governance, which will enhance the value of urbanization.

9.6.3. The role of subnational governments

Although not highlighted by means of a separate section within the AFINUA, subnational regional institutions provide the middle link between national and local scales.

Their precise powers, responsibilities and resourcing vary by country, but regional policies and instruments provide the essential glue in effective and collaborative multilevel governance for sustainable development and urbanization. This subsection provides some pertinent examples and recommendations for appropriate subnational government action.

Subnational governments play important roles in each of the components of NUPs identified earlier. Along with local governments, they should lead the elements of territorial urban design and planning processes identified in the AFINUA. Similarly, they are one of the lead actors in relation to the six elements of urban economies and municipal finance to establish principles

Subnational and local governments are responsible for significant public investments in critical infrastructure, human capacity, institutional development and municipal services

for enhancing the roles of local governments and assist the latter to design and implement appropriate financial frameworks, local economic development tools and systems for ensuring equitable access to utilities and public services.[85]

Subnational and local governments are responsible for significant public investments in critical infrastructure, human capacity, institutional development and municipal services; yet, the resources devolved from the national level are often inadequate. Effective implementation of the NUA thus requires a supportive enabling environment, including appropriate autonomy and effective national policies that facilitate adequate funding and thereby strengthen subnational capacities.

As detailed in a recent OECD report, subnational governments are increasingly prioritizing the tracking and measuring of city and regional progress against the SDGs.[86] The study revealed that about 70 per cent of European-based respondents currently implementing the SDGs track progress, while about 58 per cent use indicators to monitor progress.[87] Important collaborations are being formed to support subnational monitoring systems and accountability. For example, the Brazilian state of Paraná, in partnership with a public company and UNDP, has created a platform that collates 67 environmental and social indicators at multiple scales. Those indicators are then used in 114 municipalities across 14 states to monitor progress of the SDGs at multiple scales.[88] Such cross-scalar monitoring systems facilitate implementation and accountability for social and environmental indicators, thereby enhancing the value of urbanization.

Public transport in Bugis, Singapore city. © By 2p2play/Shutterstock

National statistical offices worldwide are focusing on localizing data to support urban and regional monitoring of progress towards the SDGs. For example, the Government of Ireland—in partnership with Ordnance Survey Ireland, the Central Statistics Office and the Environmental Systems Research Institute—has created an online SDG platform that includes data and maps at the regional scale for several of the indicators under the United Nations indicator framework.[89] Similarly, the Government of Mexico in partnership with the *Instituto Nacional de Estadísticas y Geografía* collates state-level data in a national platform, Information System of Sustainable Development Goals (SIODS in Spanish), to track and monitor the evolution of Mexican states across various indicators relating to the SDGs. The territorial focus often adopted in these monitoring systems limits direct international comparability. However, general good practices and information sharing across cities and regions can still be very effective and support the achievement and enhancement of sustainable urbanization.[90]

9.6.4. Urban initiatives: Enhancing the value of urbanization through local implementation

Cities are vital to national economies and are uniquely placed as key hubs for connecting local to global actors (Chapters 2 and 3). Within the required effective multilevel governance for appropriate and sustainable urban development, urban local governments must play a pivotal role (Chapter 7). In many countries, national, regional, state or provincial policies and regulations provide parameters within which local governments must operate; but in others, individual local governments have greater autonomy. In general, the higher the degree of local government reliance on subvention from regional and/or national government, as is common in low- and middle-income countries, the greater the prescriptiveness of such requirements. Capitals and other large cities with a strong and diversified local revenue base often have greater autonomy and hence ability to become innovative leaders, perhaps even acting faster and going further than national policy.

The division of powers and responsibilities in the federal system of the US provides a good example of the scope for practical action by subnational governments to promote sustainable development. Following the announcement in June 2017 that the US would withdraw from the Paris Agreement on climate change, various states and cities declared that they would, nevertheless, adhere to the terms of the agreement and, in some cases, even make more substantive emissions reductions.

By the end of October 2019, at least 25 states and territories had joined the US Climate Alliance alongside the over 400 city leaders who comprise the Climate Mayors. Most of those cities and states have signed the "We Are Still In" pledge to affirm their support for the Paris Agreement, along with 2,200 businesses, 350 universities and 200 faith groups. Collectively, these actors represent over half the country's economy, half its population and 37 per cent of its greenhouse gas emissions. In 2018, an authoritative study concluded that existing commitments by those subnational actors could achieve two-thirds of the emissions reductions in the country's Nationally Determined Contribution targets of the Paris Agreement.[91]

This powerful subnational, private sector and civil society coalition demonstrates how important these actors are in achieving decarbonization initiatives, albeit against the modest Nationally Determined Contributions pledge by the US, and thereby to reduce the direct and indirect costs of current urbanization and to promote the value of increased sustainability. The example of the US shows that if the necessary enabling institutional and administrative environment are created for subnational and local governments, these entities can play a leading role in advancing the value of sustainable urbanization even in the absence of national leadership. Notwithstanding the potential for progress by subnational actors in the US, urban energy transitions and decarbonization are not a straightforward or easy win, requiring city-specific negotiation and navigation of the complex interrelations among carbon, capital and infrastructure, as recent research around the world has demonstrated.[92] After all, energy powers all dimensions of urbanism and urbanization, not least economic efficiency and development.

Moreover, including additional spheres of local action like reducing emissions from solid waste, updating ageing urban infrastructure, shifting travel modes from private to public transport and accelerating urban greening would considerably increase the potential scale of emissions reduction. Recent research indicates that there are major

infrastructure investment gaps for achieving the SDGs—and by extension the NUA goals—estimated at US$38 trillion for the years 2020-2030 (Chapter 8).[93] However, financial resources are increasingly becoming available from new sources like public-private funds and previously uninvolved development partners and finance institutions as well as innovative financing mechanisms such as pooled financing, blended finance, green municipal bonds and land-based finance instruments, among others.[94] Harnessing this capacity to address the financing gap requires considerable commitment and willingness from both state and non-state actors (Chapter 8). The costs of inaction are high: exacerbated environmental and socio-economic pressures, compounded by increased mitigation and adaptation costs for tackling more degraded environments and fractured economies and societies.[95]

Ultimately, local governments are key agents of change for achieving the NUA's objectives.   However, the evidence base for implementation and monitoring remains somewhat limited and uneven, with many examples still in their infancy. Indeed, Mistra Urban Futures conducted a longitudinal comparative study from 2017–2019 of how seven local governments on four continents are engaging with and attempting to implement the SDGs. It found that only one city had addressed the NUA at all, and even then only in rhetorical terms.[96]

Despite the emergence of VLRs and increasing efforts by individual local governments, these responses reflect generally low levels of awareness of the NUA and perceptions of its importance relative to the SDGs. In some cases, officials also cited a lack of, or intention to wait for, national guidance on engaging with the NUA.[97] This reluctance highlights the need for ongoing inclusive processes of engagement with city governments of all sizes and between cities and national governments in order to deliver the NUA's wide-ranging objectives and identifying appropriate indicators to assess progress.

City networks are playing a leading role in sharing experience, knowledge and good practices in relation to climate action and sustainable urban development

Despite the relatively low penetration of the New Urban Agenda four years after its adoption, the growing membership ranks of city networks are playing a leading role in sharing experience, knowledge and good practices in relation to climate action and sustainable urban development (Chapter 7). Many countries have long had local government associations that lobby of central government. There are also important local government organizations with international membership, most notably United Cities and Local Governments, ICLEI – Local Governments for Sustainability and Metropolis.[98] The Commonwealth Local Government Forum deserves special consideration for recently reorienting its strategic thrust to prioritize localization of SDG solutions by strengthening local democracy and implementing urban sustainability.[99]

Transnational networks of individual cities are a recent phenomenon, attesting to the recognition that city leaders and managers in diverse parts of the world share common problems and appreciate the value of sharing knowledge and good practices. These networks also represent a forum for innovation dissemination and upscaling to accelerate urban implementation of the global sustainable development agenda in locally appropriate terms. The largest network is arguably the C40 Cities Climate Leadership Group. Established in 2005 and now boasting 96 members worldwide, it focuses primarily on tackling climate change.[100] The Rockefeller Foundation-funded 100 Resilient Cities network, established in 2013, created the city government position of chief resilience officer and led many cities to produce their first resilience strategies. It disbanded in mid-2019 due to shifting priorities at the foundation.[101]

Several innovative sharing and scaling mechanisms have recently been developed to support streamlining and collaboration. These tools range from online platforms and portals to global-local alliances between diverse actors in support of achieving the SDGs and the goals of the NUA. For example, the Latin American and Caribbean Urban and Cities Platform is being developed to support implementation and monitoring of the NUA in the region by facilitating peer-to-peer learning and exchange of best practices and capacity building.[102] The platform will have an urban observatory and virtual platform to support this learning.

Several innovative sharing and scaling mechanisms have recently been developed to support streamlining and collaboration

The UN-Habitat Country Activities Report for 2019 is also general in thrust and—perhaps inevitably at this early stage of mobilizing support and action by Member States—focuses largely at the national level.[103] The subnational and local levels receive little attention. While UN-Habitat does have a portal of examples that includes cities across diverse contexts that are reportedly implementing the NUA, to date most of these examples focus on specific programmes, like the Safer Cities initiative in eThekwini (South Africa), and do not appear necessarily to be being implemented through a dedicated action framework.

UN-Habitat launched enhanced features on the Urban Agenda Platform at the Tenth Session of the World Urban Forum in February 2020. Designed for compatibility with the New Urban Agenda Reporting Guidelines and implementation reporting process, as well as the SDG targets and indicators framework, the platform will

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Box 9.2: Main features of the Urban Agenda Platform

1. **Voluntary Reporting:** A centralized, virtual reporting mechanism based on the New Urban Agenda Reporting Guidelines accessible for the Member States will facilitate the preparation of country reports. The reports will provide qualitative and quantitative analysis. To the extent possible, the inputs of other key stakeholders and processes will be incorporated where appropriate.

2. **Knowledge Management:** Build on existing and new knowledge platforms and resources to leverage the collective experience and knowledge of partners to avoid duplication, facilitate knowledge generation and share in support of NUA and SDG implementation.

   - **Data**: Linkage to Global Urban Indicators Database; provide an interactive mechanism to visualize data from progress and demonstrate impact of the implementation of the NUA and SDGs.

   - **Best Practice Database:** Hosting and management of over 5,500 best practices with advanced search function to encourage sharing and uptake. A uniform, decentralized storage of data and documentation will capture inspiring breakthroughs, share success stories, demonstrate results, measure impact and identify practices that can be scaled-up.

3. **Expanding the work of knowledge** platforms to reinforce collaboration and coherence in thematic areas such as housing with Habitat for Humanity-coordinated Urban Housing Practitioners and to strengthen regional-level platforms being developed through United Nations regional commissions (such as the Penang Platform and the Latin America and Caribbean Urban and Cities Platform).

4. **Synergies** with regional and thematic platforms are intended to improve stakeholder engagement and create a knowledge legacy through a feature-rich suite of digital collaboration and communication tools.

5. **Learning and Capacity Development:** Support evidence-informed, country-level action for impact through capacity development and curated, state of the art knowledge. Provide a complementary set of webinars, virtual learning, workshops, technical support, expanding resources and publications.

Sources UN-Habitat, 2020g;UN-Habitat, 2020h.

facilitate monitoring, reporting and information sharing on progress. Consequently, it should facilitate and accelerate the implementation of the NUA and SDGs in order to maximize the value of sustainable urbanization (Box 9.2). Evaluation and enhancements will take place through the remainder of 2020, so that the system can play a central role in the preparation process for national submissions to the Second Report on Implementation of the NUA.

As part of the Global Future Cities Programme funded by the UK, UN-Habitat has also developed and launched its SDG Project Assessment Tool. This tool is designed to enable local governments to enhance the quality, implementability, long-term viability and alignment of individual urban projects to the SDGs within the frame of the NUA. A city government will work with delivery partners and UN-Habitat to optimize the outcome through five successive phases, namely defining a set of principles, reviewing the project, discussing the results,

providing recommendations and improving the project within the broader context.[104] This framing is important in "joining up" individual projects to increase coherence and hence leverage multipliers so that the whole becomes more than the sum of its parts, which is another way to think of the enhanced value of sustainable urbanization.

9.7. Concluding Reflections: Implementing the New Urban Agenda in Times of Uncertainty and Unprecedented Global Challenges

We are now firmly in the Decade of Action to deliver the SDGs by 2030. That ten-year time window has initiated a call to action and cultivated a sense of urgency, not least because the costs of inaction are already significant and escalating. The climate crisis continues unabated. Income inequality continues to ravage the world's poor. Global

A school affected by Cyclone Idai in Mozambique. © UN/Eskinder Debebe

Ignoring the need for sustainable solutions to humanity's predominantly urban challenges is no longer plausible

migration and its consequences continue at record levels. Nationalism and populism threaten the rules-based international order, including the global economy that has created today's urban configurations. Amidst these pressing challenges of the last four years, the coronavirus pandemic has multiplied and exacerbated many of these interlocking issues. Ignoring the need for sustainable solutions to humanity's predominantly urban challenges is no longer plausible.

UN-Habitat has provided the global urban community with the normative tools and global platform necessary both to take decisive action and contribute to the international movement for better cities. As shown throughout this Report, governments at all levels and civil society globally are already acting decisively and impactfully to implement the 2030 Agenda for Sustainable Development and the NUA. However, progress still needs to be made with respect to overcoming the barriers that impede the effective implementation of the NUA in all contexts.

By drawing on how preceding chapters have explained the value created by sustainable urbanization while summarizing global efforts to galvanize support for sustainable urban development, this chapter has demonstrated how the effective implementation of the SDGs and the New Urban Agenda can strengthen the integrated economic, environmental, social and intangible value of urban areas. As an aid to sustainable policymaking and implementation, Table 9.1 synthesizes key messages and requirements discerned from the respective chapters for enhancing the value of sustainable urbanization through addressing the core integrated elements of sustainability. The relevant aspects of the effective implementation of the NUA to facilitate achievement of the value of sustainable urbanization are presented alongside these key messages. Several of these messages are crosscutting and apply to all elements of sustainable urbanization.

Enabling environments at all scales are key prerequisites to ensure policy coherence and effectively implement the NUA. Despite the progress highlighted throughout this Report, key elements of enabling environments, including adequate finance at all levels, capacity development and data availability, remain major gaps to be addressed. As shown in Table 9.1, this Report emphasizes several crosscutting issues central to achieving the NUA. These include concepts such as the need to mainstream and expand gender equality, cultural diversity, legal protections under the rubric of the "right to the city," the rights of marginalized groups more broadly, multilevel governance underpinned by equitable and collaborative planning and decision making processes, deployment of appropriate technology in urban planning and management, the critical role of local governments linked to international networks, and the need for sustainable financing and innovative data collection and application processes.

Despite the progress highlighted throughout this Report, key elements of enabling environments, including adequate finance at all levels, capacity development and data availability, remain major gaps to be addressed

The urgency—and profound challenges—of making rapid progress towards urban sustainability have been thrown into stark relief by the extraordinary speed with which COVID-19 spread to become a deadly pandemic due to our highly integrated global economy and mobile lifestyles. While the world scrambles to understand the disease's virology and epidemiology, deploy antigen and antibody tests, and ultimately develop an effective vaccine, efforts to control its spread required increasingly stringent restrictions on mobility and behavioural change. This pandemic spread along major transport corridors, initially within China and then worldwide. Urban areas became the epicentres of community transmission, followed by diffusion to peri-urban and rural areas. The challenges of imposing and maintaining lockdowns have also been greatest in urban areas, from maintaining food supplies, operational public utilities and adequate personal protective equipment for health and other key workers, to maintaining observance of social distancing and staying at home except for essential purposes.

Proactive, high-calibre urban leadership in implementing a comprehensive suite of countermeasures have been crucial, as demonstrated by Seoul, an early infection hotspot.[105] The pandemic has affected citizens across the socioeconomic spectrum, but nowhere have the challenges been more extreme than where poverty, inequality, exclusion and insecurity affect large sectors of urban populations, namely informal settlements and slums, as well as displaced persons and refugee camps, on account of high levels of overcrowding, the impossibility of adequate physical distancing, undernutrition and vulnerability to chronic environmental hazards and disease.[106]

The global sustainable development agenda provides a unique framework and opportunity to invest for the future and build up resilience against pandemics as the world will have to adapt to and cope with COVID-19 and other highly contagious disease for the long term. COVID-19 is not the first, nor will it be the last, pandemic that cities will face. Cities have led the recovery and redesign after previous pandemics, and they will be required to do so in the aftermath of COVID-19. Given the ongoing pandemic's global nature, recovery will require a new kind of leadership from city governments; one that is proactive by developing policies and programmes to adequately build up resilience against future public health threats. Across the world, COVID-19 has clearly shown that it is in the interest of all countries to have a robust health system to cope with pandemics. Cities can help galvanize resources from multiple sources to invest in health infrastructure as part of city resilience development programmes and ensure that public health is an integral aspect of urban development, management and governance, especially in developing countries.

COVID-19 will most likely have long-lasting impacts on the design of the built environment. The pandemic has highlighted that the enormous amount of public space

The global sustainable development agenda provides a unique framework and opportunity to invest for the future and build up resilience against pandemics as the world will have to adapt to and cope with COVID-19

COVID-19 will most likely have long-lasting impacts on the design of the built environment

dedicated to private vehicles needs to be reconsidered and prioritized for safe public transportation systems and other uses like pedestrian walkways, outdoor seating for restaurants and display areas for businesses. Although some of these shifts may be challenging initially, they give cities an opportunity to plan and manage their urban environment based on the tenets of the NUA. For instance, COVID-19 provides a valuable lesson on having ample public space to enable physical distancing. Moving forward, an important lesson from COVID-19 is that safe and green transportation systems should be at the heart of cities' recovery plans.

COVID-19 provides cities a unique opportunity to build back better, by focusing on greener, more sustainable business and consumption patterns, digital economies and quality urban spaces

As cities reopen, authorities should devise creative ways to reduce congestion on roads and ensure that pollution is minimized. COVID-19 provides cities a unique opportunity to build back better, by focusing on greener, more sustainable business and consumption patterns, digital economies and quality urban spaces that are adequately designed to cope with future pandemics and looming climate-related crises. Globally, cities are already rethinking and reimagining the overall vision and design of their urban environments. Amsterdam has embraced the "doughnut economics" model to ensure that the post-COVID-19 city is sustainable, inclusive and circular.[107] Similarly, in Bristol, UK, the mayor has proposed a unified city plan with the Sustainable Development Goals as the basis for city planning. In Melbourne, Australia, urban planners are exploring ways to expand the greening of public spaces to better prepare for future pandemics.[108]

The devastating effects COVID-19 have been inequitable (Chapter 1). In developed countries, millions of workers

in low-wage service jobs were rendered jobless and forced to make difficult decisions about putting themselves at risk by returning to the labour market. In developing countries, millions of informal workers fell into poverty with no social protection. Worldwide, it is difficult to accurately measure the economic, social and health impacts on the most vulnerable populations because many are undocumented, informally employed and lack safety nets or social protection. Moving forward, this social imbalance needs to be corrected.

Cities can play a leading role in developing the capacity and institutional framework to understand the lived realities of their most vulnerable residents and address the disproportionate impacts of COVID-19 and future pandemics at the local level. This role, for instance, can be in the form of developing new systems of social protection for vulnerable and marginalized groups. Such new systems can, for example, take the form of a citizen's basic income that is sufficient to meet essential needs in a given locality. This idea has emerging support which has already been piloted at different scales, with cities creating models that could scale up to the national level.[109] Along with safety net measures, cities should urgently address the economic, environmental and social infrastructure needs of slums and informal settlements to avoid the unbearable conditions faced by these areas during future pandemics.

COVID-19 has starkly reminded the world of the need for an effective coordination of multilevel governance and policy coherence at all levels of government as called for in the New Urban Agenda

COVID-19 has starkly reminded the world of the need for an effective coordination of multilevel governance and policy coherence at all levels of government as called for in the New Urban Agenda. Addressing the present and future pandemics has a strong territorial dimension. City-level governments, given their proximity to residents, are the best placed to address many pandemic-related issues in contextually appropriate ways. Cities have a critical role to play in creating pathways to how these challenges are met. The lessons from COVID-19 can be used in reimagining urban sustainability and human security as the basis for making the required systematic changes to public expenditure and investment. Indeed, how cities respond to these challenges will determine our urban futures and the perceived value of increasing urbanization for many years to come.[110] Humans have always responded to pandemics by rebuilding their cities. The New Urban Agenda is the roadmap for the world's post-pandemic recovery. With locally appropriate pathways, we can build back better by implementing the New Urban Agenda across all contexts.

Table 9.1: Enhancing the value of urbanization: Key messages and implementation mechanism

Core Integrated Elements of Sustainable Urbanization	Key requirements and messages	NUA Means of Implementation
Unpacking the Value of Sustainable Urbanization (Chapter 2)	▪ National prosperity and development are largely dependent on the economic performance of urban areas ▪ Harmonious and balanced development, actively preserving natural features, protecting biodiversity and reinforcing environmental assets ▪ Spatially just resource distribution that provides individual and group political agency, and social, economic and cultural diversity. ▪ A sense of individual and collective civic pride in the culture of a city, which provide a superstructure for the value of urbanization to be fully realized ▪ Coherent policy, proper planning, effective management and sound urban governance ▪ People-centred, inclusive and rooted in equity ▪ Priority focus to address the unique needs of underrepresented populations	▪ Urban areas must be planned and managed to enhance the value of sustainable urbanization ▪ Sustainable urbanization requires a coordinated effort across all scales ▪ Policy coherence is needed to enhance the value of sustainable urbanization

Core Integrated Elements of Sustainable Urbanization	Key requirements and messages	NUA Means of Implementation
The Economic Value of Sustainable Urbanization (Chapter 3)	▪ High levels of efficiency and productivity and accelerators of economic growth ▪ Effective city financing is integral to equitable planning and development ▪ Inclusive prosperity and equal opportunities for all ▪ Clearly defined property rights and land use regulations ▪ Equitable access to well-functioning infrastructure and transportation systems ▪ Sustainability and productivity are closely interlinked ▪ Urban and territorial planning is crucial for the delivery of inclusive urban prosperity ▪ Effective multilevel governance systems generate increased economic activity	▪ Support the creation of robust legal and regulatory frameworks for sustainable national and municipal borrowing based on sustainable debt management, as well as sustainable municipal debt markets where appropriate ▪ Consider establishing urban and territorial transport infrastructure and service funds at the national level
The Environmental Value of Sustainable Urbanization (Chapter 4)	▪ Equitable, collaborative and context-specific urban planning ▪ Recognition of urban commons and integration of ecological and social needs for feedback loops in long-term processes of urban development planning ▪ Urban optimism coupled with pragmatism whereby urban actors demonstrate the effectiveness of existing actions ▪ Addressing securitization and fragmentation to deliver benefits for all ▪ Mobilization of environmental data and delivering effective strategic action within current data constraints ▪ Addressing the structural drivers of environmental degradation and how they shape people's lives	▪ Develop vertical and horizontal models of distribution of financial resources to decrease inequalities across subnational territories, within urban centres and between urban and rural areas, as well as to promote integrated and balanced territorial development ▪ Implement integrated and balanced territorial development polices ▪ Implement sustainable multimodal public transport systems including non-motorized options
The Social and Intangible Value of Sustainable Urbanization (Chapter 5)	▪ Urban economies of scale can foster social inclusion and integration ▪ The "right to the city" is a key policy instrument for supporting equal rights, opportunities and fundamental freedoms ▪ Good governance, regulations and appropriate institutions help support well-planned and managed urbanization through democratic and participatory processes ▪ Address inequalities within and between urban centres to foster inclusivity ▪ Equitable and appropriately implemented social policy promotes social integration ▪ Effective participatory multilevel governance fosters social cohesion and inclusivity ▪ Rights-based approach to housing supports access to adequate and affordable housing ▪ Prioritization of the needs of vulnerable and marginalized groups means leaving no one behind with a key focus on gender and cultural diversity	▪ Support the development of appropriate and affordable housing finance products and encourage participation by diverse kinds of external financial institutions to invest in all forms of affordable and incremental housing ▪ Support subnational and local governments in their efforts to implement transparent and accountable expenditure control instruments for assessing the necessity and impact of local investment and projects, based on legislative control and public participation ▪ Implement participatory, age- and gender-responsive approaches to urban policy and planning ▪ Achieve women's full participation in all fields and all levels of decision-making
Innovation, Technology and the Value of Innovation (Chapter 6)	▪ Multidimensional role of innovation and technology in urban areas in (re)shaping social relations, labour markets and governance ▪ Innovation and technology help to enhance productive innovation systems ▪ Capacity building for strengthening government's ability to effectively manage, deploy and regulate the use of technology ▪ Smart city technologically-based initiatives need to be people-centred and people-driven ▪ Digital divides and exclusion need to be addressed	▪ Businesses should apply their creativity and innovation to solving urban sustainable development challenges ▪ Implement digital tools, including geospatial information systems to improve urban and territorial planning, land administration and access to urban services ▪ Implement digital tools, including geospatial information systems, to improve urban and territorial planning, land administration and access to urban services

Core Integrated Elements of Sustainable Urbanization	Key requirements and messages	NUA Means of Implementation
Local Governments and the Value of Sustainable Urbanization (Chapter 7)	▪ Local and regional governments play a key role in localization and implementing global development agendas ▪ Enabling institutional environments are critical for urban governance ▪ Committed city leaders are key to the advancement of sustainable urbanization ▪ Fiscal decentralization and adequate financing flows are needed to support urban investments ▪ Strong multilevel governance frameworks are needed to foster vertical and horizontal cooperation ▪ Strengthened and locally appropriate monitoring and evaluation is key ▪ Mainstreaming localization and streamlining goals of various global strategies from national to local levels ▪ Effective decentralization policies are key to fostering an enabling institutional environment for enhancing the value of sustainable urbanization ▪ Proactively address the disconnect between available funds and lack of financing for sustainable urbanization ▪ Integrated planning is crucial to create inclusive cities and strengthen linkages between urban and rural areas ▪ Establish a new culture of participation by acknowledge every citizen's rights, especially their right to the city	▪ With appropriate support, subnational and local governments should register and expand their potential revenue base in a socially just and equitable manner, e.g. through multi-purpose cadastres, local taxes, fees and service charges ▪ Promote sound and transparent systems for making financial transfers with performance-based incentives from national to subnational and local governments based on the latter's needs, priorities and functions ▪ Build capacity of local governments to effectively monitor the implementation of urban development policies ▪ Build the capacity of local government to work with vulnerable groups to participate effectively in decision-making about urban and territorial development
Investing in the Value of Sustainable Urbanization (Chapter 8)	▪ Greater and more sustainable funding is required to achieve the NUA, the SDGs and other development goals relevant to sustainable urbanization ▪ There is a shortfall in funding required to achieve the SDGs, the NUA and other development goals relevant to sustainable urbanization ▪ Accelerated action on closing finance gaps and investment in the value of urbanization is urgently required ▪ Urban areas have divergent investment needs and varying abilities to mobilize financial resource ▪ Local governments face interlinked challenges of inadequate and unpredictable transfers from central government, poor tax collection and weak fiscal management ▪ High social, economic and environmental cost of inadequate infrastructure ▪ Investment in various aspects of human development/capital is vital for inclusive and sustainable urbanization in rapidly growing urban areas ▪ Multiple and diverse actors and collaborative ventures are required for adequate funding of urban infrastructure ▪ Realignment of financial frameworks with local public goals and priorities is key	▪ All levels of government should deploy context-sensitive approaches to financing urbanization and enhancing financial management capacities through the adoption of specific instruments and mechanisms to achieve sustainable urbanization ▪ Mobilize endogenous resources and revenues generated through the capture of the benefits of urbanization, along with the catalysing effects and maximized impact of both public and private investments ▪ Promote best practices to capture and share increases in land and property value generated through urban development processes, infrastructure projects and public investments ▪ Sustainable financing requires an impact-focused ecosystem of actors including the private sector, public sector, development partners, civil society, residents and communities ▪ Ensure policy coherence: inter-jurisdictional across cities, intergovernmental across levels of government and globally with internationally-supported investments

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Statistical Annex

General Disclaimer: The designations employed and presentation of the data in the Statistical Annex do not imply the expression of any opinion whatsover on the part of the Secretariat of the United Nations concerning the legal status of any country, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

Table A.1: Urban Population Size and Rate of Change

Region, subregion, country or area	Urban Population at Mid-Year by Country, 2015-2030 (thousands)				Average Annual Rate of Change of the Urban Population by Country, 2015-2030 (per cent)			Percentage of Population at Mid-Year Residing in Urban Country and Area, 2015-2030				Average Annual Rate of Change of the Percentage Urban by Country, 2015-2030 (per cent)		
	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
WORLD	3,981,498	4,378,994	4,774,646	5,167,258	1.90	1.73	1.58	53.9	56.2	58.3	60.4	0.82	0.75	0.71
More developed regions	979,089	1,003,640	1,027,097	1,049,699	0.50	0.46	0.44	78.1	79.1	80.2	81.4	0.24	0.27	0.30
Less developed regions	3,002,409	3,375,354	3,747,549	4,117,558	2.34	2.09	1.88	49.0	51.7	54.3	56.7	1.09	0.97	0.88
Least developed countries	305,951	372,038	449,498	538,529	3.91	3.78	3.61	32.0	34.6	37.4	40.4	1.60	1.56	1.50
Less developed regions, excluding least developed countries	2,696,458	3,003,315	3,298,051	3,579,029	2.16	1.87	1.64	52.1	55.1	57.8	60.4	1.10	0.97	0.87
Less developed regions, excluding China	2,201,145	2,473,276	2,763,104	3,071,076	2.33	2.22	2.11	46.8	48.8	50.9	53.1	0.82	0.83	0.85
High-income countries	955,213	988,586	1,019,399	1,048,879	0.69	0.61	0.57	80.9	81.9	82.8	83.9	0.22	0.24	0.26
Middle-income countries	2,825,252	3,144,887	3,456,425	3,756,587	2.14	1.89	1.67	50.8	53.7	56.5	59.0	1.11	0.99	0.90
Upper-middle-income countries	1,659,611	1,821,036	1,957,223	2,068,825	1.86	1.44	1.11	64.1	68.2	71.7	74.8	1.23	1.01	0.82
Lower-middle-income countries	1,165,641	1,323,851	1,499,202	1,687,762	2.55	2.49	2.37	39.2	41.6	44.2	47.0	1.16	1.20	1.22
Low-income countries	198,536	242,877	296,030	358,848	4.03	3.96	3.85	30.9	33.2	35.7	38.3	1.40	1.44	1.45
Sub-Saharan Africa	375,827	458,670	555,123	666,165	3.98	3.82	3.65	38.8	41.4	44.2	47.0	1.33	1.28	1.22
AFRICA	**491,531**	**587,738**	**698,149**	**824,014**	**3.58**	**3.44**	**3.32**	**41.2**	**43.5**	**45.9**	**48.4**	**1.09**	**1.08**	**1.06**
Eastern Africa	106,096	132,520	164,482	202,579	4.45	4.32	4.17	26.6	29.0	31.6	34.5	1.74	1.75	1.74
Burundi	1,232	1,637	2,147	2,780	5.68	5.43	5.17	12.1	13.7	15.5	17.6	2.53	2.51	2.48
Comoros	221	255	296	345	2.87	2.97	3.06	28.5	29.4	30.7	32.5	0.63	0.89	1.14
Djibouti	718	781	844	906	1.67	1.56	1.42	77.4	78.1	78.9	80.0	0.17	0.22	0.26
Eritrea	1,852	2,246	2,699	3,210	3.86	3.67	3.47	38.2	41.3	44.6	47.8	1.58	1.50	1.40
Ethiopia	19,403	24,463	30,487	37,496	4.63	4.40	4.14	19.4	21.7	24.2	26.9	2.21	2.16	2.11
Kenya	12,120	14,975	18,372	22,383	4.23	4.09	3.95	25.7	28.0	30.6	33.4	1.74	1.77	1.78
Madagascar	8,529	10,670	13,200	16,102	4.48	4.26	3.97	35.2	38.5	41.9	45.2	1.81	1.68	1.53
Malawi	2,867	3,535	4,407	5,551	4.19	4.41	4.62	16.3	17.4	18.9	20.9	1.32	1.66	1.96
Mauritius	516	519	527	539	0.11	0.28	0.45	41.0	40.8	41.0	41.9	- 0.12	0.14	0.39
Mayotte	113	125	139	157	2.05	2.19	2.41	47.0	45.8	45.3	45.7	- 0.53	- 0.18	0.18
Mozambique	9,636	11,978	14,811	18,195	4.35	4.24	4.12	34.4	37.1	39.9	42.9	1.50	1.47	1.44
Réunion	858	893	927	956	0.82	0.73	0.62	99.3	99.7	99.8	99.9	0.06	0.03	0.01
Rwanda	1,977	2,281	2,660	3,144	2.86	3.07	3.34	17.0	17.4	18.3	19.6	0.50	0.96	1.40
Seychelles	52	55	58	61	1.26	0.99	0.81	55.4	57.5	59.7	61.7	0.76	0.72	0.69
Somalia	6,015	7,431	9,169	11,229	4.23	4.20	4.05	43.2	46.1	49.1	52.1	1.30	1.25	1.20
South Sudan	2,240	2,749	3,378	4,164	4.10	4.12	4.18	18.9	20.2	21.9	24.1	1.38	1.66	1.90
Uganda	8,856	11,775	15,431	19,914	5.70	5.41	5.10	22.1	25.0	28.0	31.2	2.47	2.31	2.15
United Republic of Tanzania	17,035	22,113	28,245	35,529	5.22	4.89	4.59	31.6	35.2	38.9	42.4	2.16	1.96	1.76
Zambia	6,747	8,336	10,257	12,549	4.23	4.15	4.03	41.9	44.6	47.5	50.5	1.26	1.25	1.22
Zimbabwe	5,109	5,700	6,430	7,370	2.19	2.41	2.73	32.4	32.2	32.9	34.2	- 0.09	0.38	0.83
Middle Africa	73,632	90,619	110,579	133,728	4.15	3.98	3.80	47.9	50.6	53.4	56.2	1.11	1.07	1.03
Angola	17,676	21,937	26,848	32,437	4.32	4.04	3.78	63.4	66.8	69.9	72.5	1.04	0.89	0.75
Cameroon	12,463	14,942	17,740	20,857	3.63	3.43	3.24	54.6	57.6	60.5	63.2	1.06	0.98	0.90

Table A.1: Continued

Region, subregion, country or area	Urban Population at Mid-Year by Country, 2015-2030 (thousands)				Average Annual Rate of Change of the Urban Population by Country, 2015-2030 (per cent)			Percentage of Population at Mid-Year Residing in Urban Country and Area, 2015-2030				Average Annual Rate of Change of the Percentage Urban by Country, 2015-2030 (per cent)		
	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
Central African Republic	1,831	2,077	2,452	2,918	2.52	3.32	3.48	40.3	42.2	44.7	47.6	0.93	1.14	1.29
Chad	3,154	3,830	4,701	5,819	3.88	4.10	4.27	22.5	23.5	25.0	27.1	0.87	1.25	1.60
Congo	3,274	3,857	4,524	5,290	3.28	3.19	3.13	65.5	67.8	70.1	72.3	0.69	0.65	0.62
Democratic Republic of the Congo	32,567	40,848	50,723	62,343	4.53	4.33	4.13	42.7	45.6	48.7	51.8	1.31	1.29	1.23
Equatorial Guinea	830	1,028	1,232	1,445	4.28	3.62	3.18	70.6	73.1	75.3	77.2	0.69	0.59	0.50
Gabon	1,701	1,938	2,171	2,403	2.61	2.27	2.03	88.1	90.1	91.6	92.7	0.44	0.33	0.24
Sao Tome and Principe	137	162	188	215	3.33	2.96	2.67	70.2	74.4	77.6	80.0	1.16	0.85	0.62
Northern Africa	115,705	129,068	143,026	157,849	2.19	2.05	1.97	51.4	52.5	53.8	55.3	0.41	0.49	0.58
Algeria	28,248	31,951	35,292	38,232	2.46	1.99	1.60	70.8	73.7	76.2	78.3	0.80	0.66	0.54
Egypt	40,123	44,041	48,427	53,613	1.86	1.90	2.03	42.8	42.8	43.4	44.8	- 0.00	0.31	0.60
Libya	4,942	5,376	5,780	6,140	1.68	1.45	1.21	79.3	80.7	82.2	83.6	0.36	0.37	0.34
Morocco	21,164	23,552	25,869	28,069	2.14	1.88	1.63	60.8	63.5	66.2	68.7	0.88	0.81	0.75
Sudan	13,099	15,349	18,220	21,775	3.17	3.43	3.56	33.9	35.3	37.2	39.7	0.79	1.07	1.31
Tunisia	7,672	8,281	8,854	9,372	1.53	1.34	1.14	68.1	69.6	71.2	73.0	0.44	0.47	0.49
Western Sahara	455	519	583	647	2.61	2.34	2.08	86.5	86.8	87.3	87.8	0.07	0.10	0.13
Southern Africa	39,358	43,688	47,900	51,909	2.09	1.84	1.61	62.1	64.6	67.1	69.4	0.81	0.75	0.68
Botswana	1,484	1,712	1,937	2,151	2.87	2.47	2.10	67.2	70.9	74.1	76.8	1.08	0.89	0.72
Lesotho	585	674	774	887	2.83	2.77	2.71	26.9	29.0	31.4	34.0	1.52	1.56	1.60
Namibia	1,138	1,403	1,684	1,972	4.20	3.64	3.16	46.9	52.0	56.7	60.8	2.08	1.71	1.39
South Africa	35,844	39,551	43,113	46,457	1.97	1.72	1.49	64.8	67.4	69.8	72.1	0.76	0.71	0.65
Swaziland	307	348	393	442	2.48	2.42	2.38	23.3	24.2	25.2	26.5	0.73	0.87	1.00
Western Africa	156,740	191,842	232,162	277,949	4.04	3.82	3.60	44.5	47.7	50.7	53.6	1.39	1.25	1.11
Benin	4,833	5,869	7,076	8,461	3.89	3.74	3.57	45.7	48.4	51.2	54.1	1.16	1.13	1.10
Burkina Faso	4,986	6,398	8,113	10,163	4.99	4.75	4.51	27.5	30.6	33.8	37.1	2.12	1.99	1.86
Cabo Verde	343	378	414	450	1.97	1.83	1.65	64.3	66.7	68.8	70.9	0.72	0.64	0.58
Côte d'Ivoire	11,426	13,532	16,022	18,912	3.38	3.38	3.32	49.4	51.7	54.1	56.7	0.89	0.92	0.93
Gambia	1,171	1,435	1,731	2,055	4.07	3.75	3.43	59.2	62.6	65.7	68.5	1.10	0.97	0.84
Ghana	14,918	17,626	20,539	23,641	3.34	3.06	2.81	54.1	57.3	60.5	63.4	1.17	1.06	0.95
Guinea	4,249	5,071	6,083	7,300	3.54	3.64	3.65	35.1	36.9	39.0	41.4	0.96	1.10	1.22
Guinea-Bissau	746	884	1,038	1,209	3.41	3.22	3.03	42.1	44.2	46.3	48.5	0.96	0.94	0.91
Liberia	2,242	2,659	3,150	3,722	3.41	3.39	3.33	49.8	52.1	54.6	57.3	0.89	0.94	0.97
Mali	6,986	8,907	11,191	13,850	4.86	4.57	4.26	40.0	43.9	47.7	51.2	1.87	1.64	1.42
Mauritania	2,137	2,647	3,207	3,808	4.28	3.84	3.44	51.1	55.3	59.2	62.7	1.59	1.35	1.14
Niger	3,233	4,003	5,068	6,542	4.27	4.72	5.11	16.2	16.6	17.4	18.7	0.46	0.94	1.40
Nigeria	86,673	107,113	130,312	156,300	4.23	3.92	3.64	47.8	52.0	55.8	59.2	1.65	1.41	1.19
Saint Helena	2	2	2	2	0.73	0.98	1.12	39.5	40.1	41.1	42.7	0.27	0.52	0.75
Senegal	6,869	8,277	9,904	11,778	3.73	3.59	3.47	45.9	48.1	50.6	53.2	0.96	1.00	1.02
Sierra Leone	2,955	3,454	4,017	4,651	3.12	3.02	2.93	40.8	42.9	45.3	47.8	1.00	1.06	1.11
Togo	2,974	3,588	4,296	5,106	3.76	3.60	3.46	40.1	42.8	45.6	48.6	1.30	1.29	1.26
ASIA	**2,119,873**	**2,361,464**	**2,589,655**	**2,802,262**	**2.16**	**1.84**	**1.58**	**48.0**	**51.1**	**54.0**	**56.7**	**1.26**	**1.10**	**0.98**
Eastern Asia	**977,010**	**1,078,435**	**1,160,857**	**1,222,479**	**1.98**	**1.47**	**1.03**	**59.8**	**64.8**	**69.2**	**72.8**	**1.63**	**1.31**	**1.02**
China	775,353	875,076	956,554	1,017,847	2.42	1.78	1.24	55.5	61.4	66.5	70.6	2.03	1.58	1.21
China, Hong Kong SAR	7,246	7,548	7,769	7,987	0.82	0.58	0.56	100.0	100.0	100.0	100.0	0.0	0.0	0.0
China, Macao SAR	601	652	701	746	1.63	1.46	1.23	100.0	100.0	100.0	100.0	0.0	0.0	0.0
China, Taiwan Province of China	18,064	18,802	19,421	19,902	0.80	0.65	0.49	76.9	78.9	80.8	82.4	0.52	0.46	0.40
Dem. People's Republic of Korea	15,469	16,120	16,816	17,531	0.82	0.85	0.83	61.3	62.4	63.8	65.6	0.36	0.45	0.54
Japan	116,944	116,100	114,646	112,710	- 0.14	- 0.25	- 0.34	91.4	91.8	92.2	92.7	0.09	0.10	0.10

Table A.1: Continued

Region, subregion, country or area	Urban Population at Mid-Year by Country, 2015-2030 (thousands)				Average Annual Rate of Change of the Urban Population by Country, 2015-2030 (per cent)			Percentage of Population at Mid-Year Residing in Urban Country and Area, 2015-2030				Average Annual Rate of Change of the Percentage Urban by Country, 2015-2030 (per cent)		
	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
Mongolia	2,031	2,203	2,363	2,514	1.63	1.40	1.24	68.2	68.7	69.5	70.6	0.12	0.23	0.33
Republic of Korea	41,302	41,934	42,587	43,241	0.30	0.31	0.30	81.6	81.4	81.6	82.0	- 0.05	0.03	0.12
South-Central Asia	**661,808**	**745,069**	**835,323**	**931,437**	**2.37**	**2.29**	**2.18**	**35.0**	**37.1**	**39.4**	**42.0**	**1.17**	**1.23**	**1.28**
Central Asia	33,057	35,681	38,432	41,414	1.53	1.49	1.49	48.1	48.3	49.1	50.5	0.09	0.33	0.56
Kazakhstan	10,151	10,829	11,494	12,186	1.29	1.19	1.17	57.2	57.7	58.6	60.0	0.17	0.32	0.48
Kyrgyzstan	2,098	2,323	2,574	2,862	2.03	2.05	2.12	35.8	36.9	38.6	40.9	0.59	0.90	1.18
Tajikistan	2,286	2,606	2,988	3,444	2.62	2.73	2.85	26.7	27.5	28.8	30.8	0.56	0.94	1.30
Turkmenistan	2,800	3,167	3,541	3,917	2.46	2.23	2.02	50.3	52.5	55.1	57.9	0.86	0.95	1.00
Uzbekistan	15,720	16,756	17,836	19,005	1.28	1.25	1.27	50.8	50.4	50.7	51.8	- 0.13	0.13	0.40
Southern Asia	**628,751**	**709,388**	**796,892**	**890,024**	**2.41**	**2.33**	**2.21**	**34.5**	**36.6**	**39.1**	**41.7**	**1.22**	**1.27**	**1.31**
Afghanistan	8,368	9,904	11,705	13,818	3.37	3.34	3.32	24.8	26.0	27.6	29.6	0.96	1.18	1.38
Bangladesh	55,305	64,815	74,838	84,689	3.17	2.88	2.47	34.3	38.2	42.0	45.6	2.14	1.90	1.67
Bhutan	305	353	401	444	2.98	2.51	2.05	38.7	42.3	45.6	48.6	1.80	1.51	1.25
India	429,069	483,099	542,743	607,342	2.37	2.33	2.25	32.8	34.9	37.4	40.1	1.27	1.36	1.42
Iran (Islamic Republic of)	58,217	63,421	67,760	71,205	1.71	1.32	0.99	73.4	75.9	78.1	80.1	0.67	0.59	0.51
Maldives	161	187	210	231	2.93	2.34	1.88	38.5	40.7	42.8	45.0	1.08	1.04	1.00
Nepal	5,318	6,226	7,266	8,408	3.15	3.09	2.92	18.6	20.6	22.8	25.4	2.07	2.09	2.09
Pakistan	68,227	77,438	87,777	99,360	2.53	2.51	2.48	36.0	37.2	38.7	40.7	0.62	0.81	0.99
Sri Lanka	3,781	3,945	4,193	4,528	0.85	1.22	1.54	18.3	18.7	19.6	21.1	0.49	0.97	1.42
South-Eastern Asia	**299,412**	**334,419**	**369,699**	**404,497**	**2.21**	**2.01**	**1.80**	**47.2**	**50.0**	**52.8**	**55.6**	**1.16**	**1.09**	**1.03**
Brunei Darussalam	320	348	374	397	1.66	1.44	1.21	76.7	78.3	79.7	81.1	0.41	0.37	0.34
Cambodia	3,443	4,050	4,721	5,458	3.25	3.06	2.90	22.2	24.2	26.5	29.0	1.76	1.80	1.82
Indonesia	137,635	154,189	170,361	185,755	2.27	1.99	1.73	53.3	56.6	59.8	62.8	1.21	1.09	0.98
Lao People's Democratic Republic	2,206	2,600	3,019	3,452	3.28	2.99	2.68	33.1	36.3	39.6	42.9	1.84	1.73	1.61
Malaysia	22,801	25,362	27,845	30,109	2.13	1.87	1.56	74.2	77.2	79.7	81.8	0.78	0.64	0.52
Myanmar	15,647	17,068	18,722	20,615	1.74	1.85	1.93	29.9	31.1	32.8	35.0	0.84	1.07	1.26
Philippines	47,078	52,009	57,606	63,844	1.99	2.04	2.06	46.3	47.4	49.0	50.9	0.48	0.64	0.79
Singapore	5,535	5,935	6,157	6,342	1.39	0.74	0.59	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Thailand	32,746	35,698	38,344	40,676	1.73	1.43	1.18	47.7	51.4	55.0	58.4	1.51	1.35	1.20
Timor-Leste	366	433	511	600	3.35	3.31	3.23	29.5	31.3	33.2	35.2	1.20	1.18	1.16
Viet Nam	31,635	36,727	42,039	47,248	2.98	2.70	2.34	33.8	37.3	40.9	44.5	1.99	1.83	1.66
Western Asia	**181,644**	**203,541**	**223,776**	**243,848**	**2.28**	**1.90**	**1.72**	**70.4**	**72.3**	**73.8**	**75.4**	**0.55**	**0.41**	**0.42**
Armenia	1,840	1,861	1,882	1,906	0.22	0.23	0.25	63.1	63.3	64.1	65.5	0.07	0.26	0.43
Azerbaijan	5,262	5,696	6,101	6,491	1.58	1.38	1.24	54.7	56.4	58.4	60.8	0.61	0.71	0.79
Bahrain	1,221	1,520	1,679	1,828	4.38	1.99	1.71	89.0	89.5	90.1	90.8	0.11	0.14	0.15
Cyprus	777	807	838	873	0.75	0.76	0.81	66.9	66.8	67.2	68.1	- 0.04	0.11	0.26
Georgia	2,270	2,318	2,359	2,394	0.42	0.35	0.30	57.4	59.5	61.6	63.9	0.69	0.71	0.72
Iraq	25,252	29,423	34,039	39,208	3.06	2.91	2.83	69.9	70.9	72.1	73.6	0.28	0.34	0.40
Israel	7,434	8,068	8,698	9,337	1.64	1.51	1.42	92.2	92.6	93.0	93.5	0.09	0.10	0.10
Jordan	8,267	9,333	9,802	10,364	2.43	0.98	1.12	90.3	91.4	92.4	93.2	0.26	0.21	0.17
Kuwait	3,936	4,303	4,603	4,874	1.78	1.35	1.14	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Lebanon	5,155	5,353	5,033	4,864	0.75	- 1.23	- 0.68	88.1	88.9	89.8	90.6	0.19	0.19	0.18
Oman	3,417	4,443	4,990	5,407	5.25	2.32	1.61	81.4	86.3	89.5	91.7	1.18	0.74	0.47
Qatar	2,455	2,770	3,011	3,217	2.41	1.66	1.32	98.9	99.2	99.4	99.5	0.06	0.04	0.02
Saudi Arabia	26,249	29,256	31,843	34,143	2.17	1.69	1.40	83.2	84.3	85.4	86.5	0.26	0.26	0.25
State of Palestine	3,514	4,083	4,708	5,371	3.00	2.85	2.64	75.4	76.7	78.2	79.7	0.36	0.38	0.39
Syrian Arab Republic	9,774	10,498	13,736	16,423	1.43	5.38	3.57	52.2	55.5	58.7	61.7	1.23	1.12	1.01
Turkey	57,617	63,803	67,446	70,951	2.04	1.11	1.01	73.6	76.1	78.3	80.2	0.67	0.57	0.49

Table A.1: Continued

Region, subregion, country or area	Urban Population at Mid-Year by Country, 2015-2030 (thousands)				Average Annual Rate of Change of the Urban Population by Country, 2015-2030 (per cent)			Percentage of Population at Mid-Year Residing in Urban Country and Area, 2015-2030				Average Annual Rate of Change of the Percentage Urban by Country, 2015-2030 (per cent)		
	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
United Arab Emirates	7,843	8,542	9,207	9,865	1.71	1.50	1.38	85.7	87.0	88.2	89.2	0.32	0.27	0.23
Yemen	9,361	11,465	13,802	16,330	4.06	3.71	3.36	34.8	37.9	41.1	44.4	1.72	1.63	1.51
EUROPE	**547,147**	**556,684**	**565,026**	**572,890**	**0.35**	**0.30**	**0.28**	**73.9**	**74.9**	**76.1**	**77.5**	**0.28**	**0.32**	**0.36**
Eastern Europe	**203,146**	**203,296**	**203,360**	**203,271**	**0.01**	**0.01**	**- 0.01**	**69.3**	**69.9**	**70.9**	**72.2**	**0.18**	**0.28**	**0.37**
Belarus	7,321	7,484	7,590	7,631	0.44	0.28	0.11	77.2	79.5	81.5	83.3	0.59	0.50	0.43
Bulgaria	5,311	5,253	5,179	5,082	- 0.22	- 0.28	- 0.38	74.0	75.7	77.4	79.0	0.45	0.44	0.42
Czechia	7,791	7,875	7,953	8,009	0.21	0.20	0.14	73.5	74.1	74.9	76.1	0.16	0.23	0.30
Hungary	6,898	6,922	6,938	6,940	0.07	0.05	0.01	70.5	71.9	73.5	75.1	0.40	0.43	0.44
Poland	23,065	22,782	22,598	22,533	- 0.25	- 0.16	- 0.06	60.3	60.0	60.5	61.5	- 0.08	0.14	0.35
Republic of Moldova	1,728	1,722	1,729	1,749	- 0.07	0.09	0.23	42.5	42.8	43.9	45.5	0.17	0.46	0.74
Romania	10,711	10,507	10,431	10,456	- 0.38	- 0.15	0.05	53.9	54.2	55.1	56.6	0.11	0.34	0.54
Russian Federation	106,549	107,486	108,062	108,337	0.18	0.11	0.05	74.1	74.8	75.8	77.1	0.19	0.27	0.34
Slovakia	2,931	2,931	2,955	2,998	- 0.00	0.17	0.28	53.9	53.8	54.3	55.6	- 0.05	0.22	0.47
Ukraine	30,841	30,335	29,924	29,537	- 0.33	- 0.27	- 0.26	69.1	69.6	70.5	71.7	0.16	0.25	0.34
Northern Europe	**83,943**	**87,488**	**90,892**	**94,053**	**0.83**	**0.76**	**0.68**	**81.4**	**82.6**	**83.8**	**85.0**	**0.30**	**0.29**	**0.28**
Channel Islands	51	52	54	56	0.46	0.68	0.88	31.0	31.0	31.4	32.2	0.00	0.26	0.52
Denmark	4,979	5,108	5,248	5,389	0.51	0.54	0.53	87.5	88.1	88.8	89.4	0.13	0.15	0.15
Estonia	900	900	899	895	0.01	- 0.03	- 0.08	68.4	69.2	70.2	71.4	0.24	0.29	0.33
Faeroe Islands	20	21	22	23	0.74	0.89	1.05	41.6	42.4	43.4	44.8	0.36	0.48	0.60
Finland	4,672	4,772	4,874	4,970	0.42	0.42	0.39	85.2	85.5	86.0	86.6	0.07	0.11	0.14
Iceland	309	322	334	345	0.81	0.74	0.64	93.7	93.9	94.1	94.4	0.04	0.05	0.06
Ireland	2,939	3,111	3,295	3,484	1.14	1.15	1.12	62.5	63.7	65.1	66.8	0.35	0.44	0.51
Isle of Man	43	45	48	50	0.89	0.97	1.04	52.2	52.9	54.0	55.4	0.25	0.39	0.53
Latvia	1,355	1,293	1,250	1,222	- 0.93	- 0.68	- 0.46	68.0	68.3	69.0	69.9	0.10	0.19	0.28
Lithuania	1,971	1,941	1,929	1,920	- 0.31	- 0.12	- 0.10	67.2	68.0	69.2	70.6	0.24	0.33	0.41
Norway	4,217	4,522	4,830	5,130	1.40	1.32	1.20	81.1	83.0	84.6	86.1	0.46	0.40	0.34
Sweden	8,451	8,905	9,309	9,669	1.05	0.89	0.76	86.6	88.0	89.2	90.3	0.33	0.28	0.24
United Kingdom	54,035	56,495	58,799	60,899	0.89	0.80	0.70	82.6	83.9	85.1	86.3	0.31	0.29	0.27
Southern Europe	107,618	109,342	110,832	112,280	0.32	0.27	0.26	70.6	72.1	73.8	75.4	0.43	0.44	0.45
Albania	1,679	1,827	1,949	2,038	1.69	1.29	0.90	57.4	62.1	66.1	69.5	1.57	1.25	0.99
Andorra	69	68	68	69	- 0.31	0.11	0.12	88.3	87.9	87.7	87.8	- 0.10	- 0.04	0.02
Bosnia and Herzegovina	1,668	1,715	1,768	1,824	0.55	0.61	0.62	47.2	49.0	51.2	53.6	0.77	0.85	0.92
Croatia	2,379	2,369	2,375	2,394	- 0.08	0.05	0.16	56.2	57.6	59.3	61.5	0.49	0.61	0.70
Gibraltar	34	35	36	36	0.45	0.28	0.22	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Greece	8,755	8,850	8,897	8,926	0.22	0.11	0.06	78.0	79.7	81.3	82.8	0.42	0.39	0.36
Holy See	1	1	1	1	- 0.05	0.0	- 0.10	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Italy	41,394	42,007	42,569	43,161	0.29	0.27	0.28	69.6	71.0	72.6	74.3	0.42	0.44	0.45
Malta	404	412	417	420	0.38	0.28	0.11	94.4	94.7	95.1	95.4	0.07	0.07	0.07
Montenegro	413	425	435	443	0.54	0.45	0.37	65.8	67.5	69.2	70.9	0.50	0.49	0.48
Portugal	6,617	6,776	6,926	7,049	0.47	0.44	0.35	63.5	66.3	68.9	71.4	0.86	0.78	0.69
San Marino	32	33	34	34	0.67	0.41	0.28	96.7	97.5	98.0	98.4	0.16	0.11	0.07
Serbia	4,930	4,913	4,924	4,953	- 0.07	0.04	0.12	55.7	56.4	57.6	59.3	0.27	0.42	0.56
Slovenia	1,116	1,148	1,179	1,211	0.56	0.54	0.53	53.8	55.1	56.8	58.8	0.49	0.60	0.70
Spain	36,933	37,544	37,996	38,420	0.33	0.24	0.22	79.6	80.8	82.1	83.3	0.30	0.31	0.30
TFYR Macedonia	1,194	1,221	1,259	1,303	0.45	0.61	0.69	57.4	58.5	60.3	62.7	0.37	0.61	0.80
Western Europe	**152,441**	**156,558**	**159,942**	**163,286**	**0.53**	**0.43**	**0.41**	**79.4**	**80.2**	**81.2**	**82.2**	**0.21**	**0.24**	**0.26**
Austria	5,009	5,159	5,338	5,531	0.59	0.68	0.71	57.7	58.7	60.1	61.8	0.35	0.46	0.56
Belgium	11,048	11,397	11,614	11,811	0.62	0.38	0.34	97.9	98.1	98.3	98.4	0.04	0.04	0.03

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Region, subregion, country or area	Urban Population at Mid-Year by Country, 2015-2030 (thousands)				Average Annual Rate of Change of the Urban Population by Country, 2015-2030 (per cent)			Percentage of Population at Mid-Year Residing in Urban Country and Area, 2015-2030				Average Annual Rate of Change of the Percentage Urban by Country, 2015-2030 (per cent)		
	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
France	51,343	53,218	55,019	56,789	0.72	0.67	0.63	79.7	81.0	82.3	83.6	0.33	0.33	0.32
Germany	63,078	63,930	64,346	64,871	0.27	0.13	0.16	77.2	77.5	78.0	78.9	0.07	0.15	0.23
Liechtenstein	5	6	6	6	0.81	1.15	1.44	14.3	14.4	14.8	15.5	0.16	0.54	0.91
Luxembourg	511	552	593	629	1.55	1.43	1.17	90.2	91.5	92.4	93.2	0.28	0.22	0.17
Monaco	38	39	40	41	0.51	0.50	0.52	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Netherlands	15,274	15,847	16,319	16,671	0.74	0.59	0.43	90.2	92.2	93.7	94.8	0.45	0.32	0.22
Switzerland	6,133	6,409	6,668	6,937	0.88	0.79	0.79	73.7	73.9	74.5	75.4	0.05	0.15	0.24
LATIN AMERICA AND THE CARIBBEAN	**505,392**	**539,427**	**571,254**	**600,480**	**1.30**	**1.15**	**1.00**	**79.9**	**81.2**	**82.4**	**83.6**	**0.31**	**0.30**	**0.28**
Caribbean	**30,319**	**32,251**	**34,069**	**35,729**	**1.24**	**1.10**	**0.95**	**70.0**	**72.2**	**74.3**	**76.2**	**0.61**	**0.57**	**0.52**
Anguilla	15	15	16	16	0.90	0.47	0.28	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Antigua and Barbuda	25	26	27	28	0.55	0.87	1.15	25.0	24.4	24.4	24.8	- 0.46	- 0.06	0.35
Aruba	45	47	48	50	0.67	0.77	0.87	43.1	43.7	44.7	46.2	0.27	0.46	0.63
Bahamas	320	339	356	373	1.13	1.02	0.89	82.7	83.2	83.9	84.7	0.12	0.16	0.19
Barbados	89	90	92	95	0.20	0.46	0.70	31.2	31.2	31.7	32.8	- 0.04	0.32	0.67
British Virgin Islands	14	16	17	19	2.42	1.73	1.52	46.6	48.5	50.6	52.8	0.81	0.84	0.85
Caribbean Netherlands	18	20	21	21	1.37	0.88	0.81	74.8	75.0	75.6	76.5	0.08	0.16	0.23
Cayman Islands	60	64	68	71	1.27	1.13	1.00	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Cuba	8,813	8,874	8,957	9,048	0.14	0.19	0.20	76.9	77.2	77.8	78.7	0.08	0.16	0.23
Curaçao	141	146	150	154	0.62	0.57	0.52	89.4	89.1	89.1	89.3	- 0.07	- 0.00	0.06
Dominica	51	53	56	58	0.94	0.84	0.67	69.6	71.1	72.6	74.2	0.43	0.43	0.42
Dominican Republic	8,272	9,169	9,950	10,618	2.06	1.64	1.30	78.6	82.5	85.5	87.8	0.99	0.71	0.51
Grenada	38	40	42	44	0.76	0.86	0.87	36.0	36.5	37.5	38.9	0.30	0.52	0.72
Guadeloupe	443	442	441	442	- 0.08	- 0.04	0.04	98.4	98.5	98.6	98.7	0.01	0.02	0.02
Haiti	5,616	6,492	7,343	8,144	2.90	2.47	2.07	52.4	57.1	61.3	64.9	1.70	1.41	1.16
Jamaica	1,575	1,640	1,707	1,770	0.82	0.79	0.73	54.8	56.3	58.2	60.3	0.53	0.65	0.74
Martinique	343	344	344	344	0.02	0.03	0.00	89.0	89.1	89.5	90.1	0.04	0.08	0.13
Montserrat	0	0	1	1	0.64	0.94	1.20	9.0	9.1	9.4	9.9	0.16	0.58	0.98
Puerto Rico	3,439	3,416	3,395	3,376	- 0.14	- 0.12	- 0.11	93.6	93.6	93.7	94.0	- 0.01	0.03	0.06
Saint Kitts and Nevis	17	18	18	20	0.92	1.06	1.22	30.8	30.8	31.4	32.4	0.01	0.34	0.66
Saint Lucia	33	34	36	38	0.80	0.98	1.14	18.5	18.8	19.5	20.4	0.35	0.64	0.92
Saint Vincent and the Grenadines	56	59	62	64	1.03	0.94	0.84	51.0	53.0	55.2	57.3	0.80	0.78	0.76
Sint Maarten (Dutch part)	39	41	44	46	1.31	1.16	0.98	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Trinidad and Tobago	725	733	742	753	0.22	0.23	0.30	53.3	53.2	53.7	54.8	- 0.04	0.19	0.40
Turks and Caicos Islands	32	35	37	40	1.77	1.46	1.24	92.2	93.6	94.6	95.3	0.30	0.21	0.15
United States Virgin Islands	100	101	100	99	0.10	- 0.11	- 0.29	95.4	95.9	96.4	96.8	0.12	0.10	0.07
Central America	**127,304**	**138,768**	**149,898**	**160,493**	**1.72**	**1.54**	**1.37**	**73.7**	**75.4**	**76.9**	**78.5**	**0.44**	**0.41**	**0.40**
Belize	163	183	205	230	2.32	2.30	2.23	45.4	46.0	47.1	48.6	0.27	0.46	0.63
Costa Rica	3,695	4,074	4,391	4,647	1.95	1.50	1.14	76.9	80.8	83.7	85.8	0.99	0.71	0.50
El Salvador	4,400	4,759	5,085	5,371	1.57	1.33	1.09	69.7	73.4	76.6	79.2	1.05	0.84	0.66
Guatemala	8,121	9,284	10,568	11,963	2.68	2.59	2.48	50.0	51.8	54.0	56.4	0.73	0.82	0.88
Honduras	4,943	5,672	6,421	7,169	2.75	2.48	2.20	55.2	58.4	61.4	64.3	1.13	1.02	0.92
Mexico	99,813	108,074	115,926	123,198	1.59	1.40	1.22	79.3	80.7	82.1	83.5	0.36	0.35	0.33
Nicaragua	3,521	3,787	4,071	4,387	1.45	1.45	1.49	57.9	59.0	60.5	62.3	0.38	0.49	0.58
Panama	2,647	2,935	3,230	3,528	2.06	1.92	1.77	66.7	68.4	70.3	72.2	0.51	0.53	0.55
South America	**347,768**	**368,409**	**387,288**	**404,258**	**1.15**	**1.00**	**0.86**	**83.5**	**84.6**	**85.6**	**86.5**	**0.25**	**0.24**	**0.23**
Argentina	39,728	41,920	44,010	45,994	1.07	0.97	0.88	91.5	92.1	92.7	93.2	0.13	0.13	0.12
Bolivia (Plurinational State of)	7,335	8,095	8,887	9,700	1.97	1.87	1.75	68.4	70.1	71.9	73.7	0.50	0.50	0.50

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	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030	2015	2020	2025	2030	2015-2020	2020-2025	2025-2030
Brazil	176,654	186,217	194,452	201,296	1.05	0.87	0.69	85.8	87.1	88.2	89.3	0.30	0.27	0.23
Chile	15,517	16,206	16,850	17,446	0.87	0.78	0.69	87.4	87.7	88.2	88.8	0.08	0.11	0.14
Colombia	38,469	40,892	43,011	44,804	1.22	1.01	0.82	79.8	81.4	82.9	84.3	0.41	0.37	0.33
Ecuador	10,235	11,124	12,063	13,049	1.66	1.62	1.57	63.4	64.2	65.3	66.7	0.24	0.34	0.44
Falkland Islands (Malvinas)	2	2	2	2	0.76	0.53	0.34	76.3	78.5	80.4	82.0	0.58	0.48	0.40
French Guiana	227	261	296	334	2.78	2.55	2.38	84.5	85.8	87.0	87.9	0.31	0.26	0.22
Guyana	203	212	223	236	0.83	1.01	1.12	26.4	26.8	27.5	28.6	0.26	0.51	0.76
Paraguay	4,033	4,394	4,771	5,154	1.71	1.64	1.55	60.8	62.2	63.8	65.7	0.47	0.53	0.58
Peru	24,272	26,082	27,880	29,643	1.44	1.33	1.23	77.4	78.3	79.4	80.5	0.24	0.27	0.29
Suriname	365	382	399	417	0.90	0.88	0.86	66.1	66.1	66.7	67.6	0.03	0.16	0.28
Uruguay	3,262	3,338	3,405	3,461	0.46	0.40	0.33	95.0	95.5	95.9	96.3	0.10	0.09	0.08
Venezuela (Bolivarian Republic of)	27,465	29,284	31,038	32,722	1.28	1.16	1.06	88.2	88.3	88.6	89.0	0.03	0.07	0.10
NORTHERN AMERICA	**290,616**	**304,761**	**319,702**	**334,780**	**0.95**	**0.96**	**0.92**	**81.6**	**82.6**	**83.6**	**84.7**	**0.22**	**0.24**	**0.26**
Bermuda	62	61	60	59	- 0.44	- 0.20	- 0.26	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Canada	29,212	30,670	32,164	33,663	0.97	0.95	0.91	81.3	81.6	82.1	82.9	0.07	0.13	0.19
Greenland	49	50	51	51	0.42	0.41	0.21	86.1	87.3	88.4	89.3	0.28	0.24	0.21
Saint Pierre and Miquelon	6	6	6	6	0.36	0.75	0.75	89.9	90.0	90.2	90.5	0.02	0.05	0.08
United States of America	261,288	273,975	287,421	301,001	0.95	0.96	0.92	81.7	82.7	83.7	84.9	0.24	0.26	0.27
OCEANIA	26,938	28,919	30,860	32,831	1.42	1.30	1.24	68.1	68.2	68.5	68.9	0.03	0.07	0.11
Australia/New Zealand	24,381	26,095	27,724	29,319	1.36	1.21	1.12	85.8	86.3	86.9	87.7	0.12	0.14	0.16
Australia	20,397	21,904	23,335	24,740	1.43	1.27	1.17	85.7	86.2	86.9	87.6	0.13	0.15	0.17
New Zealand	3,984	4,191	4,388	4,579	1.01	0.92	0.85	86.3	86.7	87.2	87.8	0.08	0.12	0.14
Melanesia	1,903	2,138	2,418	2,757	2.33	2.46	2.63	19.2	19.6	20.3	21.4	0.46	0.72	1.01
Fiji	488	529	567	601	1.62	1.37	1.17	54.7	57.2	59.7	62.0	0.90	0.83	0.76
New Caledonia	187	205	224	242	1.89	1.72	1.56	69.4	71.5	73.5	75.3	0.61	0.54	0.48
Papua New Guinea	1,031	1,168	1,351	1,592	2.51	2.91	3.28	13.0	13.3	14.1	15.2	0.51	1.04	1.55
Solomon Islands	131	160	191	225	3.91	3.57	3.28	22.4	24.7	26.9	29.1	1.97	1.76	1.56
Vanuatu	66	75	85	97	2.55	2.55	2.58	25.0	25.5	26.3	27.4	0.45	0.62	0.80
Micronesia	353	375	397	421	1.21	1.18	1.14	67.9	69.2	70.4	71.5	0.37	0.33	0.31
Guam	153	160	167	173	0.92	0.84	0.72	94.5	94.9	95.3	95.7	0.09	0.08	0.07
Kiribati	58	68	78	88	3.19	2.77	2.36	51.6	55.6	59.1	62.2	1.48	1.23	1.01
Marshall Islands	40	41	43	45	0.61	0.61	1.09	75.8	77.8	79.5	81.1	0.52	0.44	0.38
Micronesia (Fed. States of)	23	25	27	29	1.05	1.52	1.86	22.5	22.9	23.7	24.9	0.42	0.70	0.96
Nauru	11	11	11	11	- 0.06	0.18	0.22	100.0	100.0	100.0	100.0	0.0	0.0	0.0
Northern Mariana Islands	50	51	52	53	0.29	0.36	0.35	91.4	91.8	92.3	92.8	0.10	0.10	0.11
Palau	17	18	20	21	1.77	1.59	1.36	78.2	81.0	83.3	85.0	0.71	0.55	0.43
Polynesia	301	312	321	334	0.67	0.57	0.83	44.5	44.4	44.5	45.0	- 0.04	0.05	0.22
American Samoa	48	49	49	50	0.07	0.26	0.37	87.2	87.2	87.3	87.8	- 0.02	0.04	0.10
Cook Islands	13	13	14	14	0.37	0.52	0.48	74.4	75.5	76.6	77.8	0.29	0.30	0.31
French Polynesia	171	180	186	195	1.01	0.65	0.91	61.7	62.0	62.6	63.5	0.09	0.19	0.29
Niue	1	1	1	1	1.69	1.43	1.61	42.6	46.2	49.5	52.5	1.64	1.38	1.15
Samoa	37	36	36	37	- 0.47	- 0.03	0.51	18.9	17.9	17.4	17.3	- 1.11	- 0.61	- 0.07
Tokelau	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tonga	25	26	27	29	0.71	0.99	1.36	23.3	23.1	23.3	23.8	- 0.15	0.15	0.47
Tuvalu	7	7	8	9	2.27	2.08	1.83	59.7	64.0	67.6	70.5	1.39	1.09	0.84
Wallis and Futuna Islands	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision.

Table B.1: Population (%) living in households with Improved Water, Improved Sanitation and Other Urban Basic Services in Urban Areas, Selected Countries

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Angola	2006	43.0	94.9	14.7	1.4	84.0	...	87.8	...	...	100.0	82.6	45.9	66.6	86.3
Angola	2011	62.0	95.9	...	19.3	88.7	...	88.3	85.7	97.8	61.8	...	92.8	82.9	88.5
Angola	2015	52.0	86.6	58.6	11.7	87.3	60.9	76.9	72.2	98.0	64.5	4.1	86.3	66.4	80.3
Benin	2001	66.8	78.0	71.6	6.1	35.9	14.4	80.8	62.6	88.7	...	10.4	...	51.2	1.8
Benin	2006	61.7	79.4	74.1	0.1	27.2	10.0	78.1	64.4	90.3	69.1	6.8	45.1	54.7	7.3
Benin	2011	62.1	84.1	79.7	...	22.4	...	80.8	74.4	87.0	59.5	...	...	66.7	10.7
Botswana	2015/16	96.8	98.2	...	36.3	74.3	...	96.1	92.2	97.7	77.2	...	...	79.2	71.4
Burkina Faso	2003	86.4	94.2	82.4	8.2	77.8	44.3	93.4	...	...	...	19.8	...	53.9	10.1
Burkina Faso	2006	87.6	98.4	...	...	9.5	8.7	96.7	54.6	96.6	79.3	17.9	58.7	61.9	14.3
Burkina Faso	2010	78.1	94.7	85.4	1.9	81.9	49.3	86.2	75.8	92.1	76.8	12.4	87.3	50.2	14.1
Burkina Faso	2014	79.3	94.0	70.0	1.7	92.3	51.9	83.2	74.7	96.0	76.4	7.2	96.9	59.4	25.3
Cameroon	2004	67.7	85.5	73.9	15.7	57.2	36.6	75.9	...	...	80.4	4.6	...	76.9	22.6
Cameroon	2005	68.3	86.5	...	22.3	97.4	...	80.2	84.6	95.1	75.2	...	...	79.5	29.2
Cameroon	2006	67.6	89.4	...	1.7	51.1	37..7	72.9	0.0	94.8	80.8	3.9	59.3	82.3	24.0
Cameroon	2011	65.2	90.3	75.9	1.5	83.3	55.4	82.1	83.6	94.8	79.6	5.8	89.9	87.4	28.2
Central African Republic	2000	52.1	88.1	64.4	1.9	23.8	...	37.1	93.4	71.8	99.9	...	...	19.9	...
Central African Republic	2006	56.6	88.8	65.6	0.7	65.8	42.0	33.5	97.9	74.1	99.8	3.5	25.7	25.4	1.1
Central African Republic	2010	50.2	85.3	45.9	0.1	73.4	42.1	35.3	64.5	73.8	97.8	1.6	73.6	27.2	0.4
Chad	2000	...	55.5	59.8	0.9	35.4	...	79.1	...	...	56.6	...	...	...	...
Chad	2004	44.9	59.6	39.0	7.0	19.5	...	21.3	95.4	82.2	61.9	4.3	...	20.2	...
Chad	2010	23.2	52.4	21.4	0.8	15.3	10.5	7.0	53.5	21.8	95.8	1.1	46.6	6.4	1.7
Chad	2014	48.7	87.5	67.9	0.0	52.5	27.7	30.3	70.7	79.5	56.8	2.0	87.9	36.6	13.2
Congo	2009	84.1	96.6	...	6.7	76.3	17.9	92.5	71.9	98.4	75.1	1.6	91.1	53.3	19.9
Congo	2011	78.8	95.8	78.9	2.5	59.4	17.9	91.0	76.4	99.4	67.7	1.8	93.7	58.9	25.5
Congo	2014	68.7	98.6	88.6	23.7	76.0	31.5	94.1	88.6	99.4	100.0	2.9	96.9	80.2	39.2
Cote divoire	2000	68.5	95.8	79.9	28.1	65.7	...	76.8	...	...	56.2	...	...	...	...
Cote d'ivore	2005	76.7	82.4	...	33.9	42.9	...	96.8	...	...	...	48.0	...	87.5	...
Cote divoire	2006	69.3	96.1	16.2	6.2	84.8	40.2	97.3	92.8	97.1	99.2	10.9	62.6	88.5	22.1
Cote d'ivore	2012	73.3	96.5	92.5	15.0	77.6	...	97.5	...	...	...	5.9	...	89.7	...
Cote divoire	2016	74.5	95.0	91.2	11.0	77.1	48.4	98.4	95.3	95.7	100.0	3.4	97.4	93.1	53.5
Democratic Republic of the Congo	2000	43.5	66.1	64.4	4.1	57.4	...	99.9	75.4	95.8	35.3	...	...	...	...
Democratic Republic of the Congo	2007	60.8	80.6	57.9	14.9	53.6	21.4	49.4	...	74.0	...	1.4	51.1	38.9	10.8
Democratic Republic of the Congo	2010	61.8	83.1	17.4	0.9	35.9	13.9	55.5	71.4	81.6	61.6	2.5	69.9	44.7	8.7
Democratic Republic of the Congo	2014	36.3	84.9	58.9	0.8	56.5	24.4	51.5	67.3	79.5	60.2	2.2	82.4	43.2	5.3
Equatorial Guinea	2000	18.8	60.4	45.8	30.6	92.28	...	82.94	...	...	68.61	...	...	...	...
Ethiopia	2000	80.3	85.3	57.2	2.4	4.2	2.2	33.6	...	86.8	...	11.0	...	77.4	1.7
Ethiopia	2005	89.5	93.5	75.8	1.4	52.3	22.6	54.6	18.1	93.8	49.9	35.5	14.5	86.1	2.5
Ethiopia	2011	85.6	94.6	69.8	2.8	45.4	18.4	49.8	19.1	94.1	58.5	24.7	67.2	83.7	4.2
Ethiopia	2016	86.8	97.6	59.1	2.8	51.5	20.3	66.5	24.9	93.3	64.4	18.2	90.1	92.4	25.9
Gabon	2000	92.4	93.4	77.4	31.8	58.7	38.0	89.9	96.7	99.1	76.1	20.2	...	90.8	80.0

Table B.1: Continued

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Gabon	2012	94.8	97.3	62.5	38.0	64.6	40.9	92.5	99.3	99.7	76.6	2.4	97.4	97.8	90.6
Gambia	2000	90.7	94.6	46.1	19.1	47.58	...	81.5	69.91	96.26	75.36	...	...	50.97	...
Gambia	2006	87.5	91.2	60.0	7.7	93.34	50.68	93.87	75.04	97.56	72.38	33.1	74.46	55.24	3.03
Ghana	2003	72.2	88.8	78.6	22.7	61.8	15.4	96.1	...	...	...	17.1	...	77.1	15.9
Ghana	2008	67.1	96.4	88.7	3.8	86.7	17.9	95.5	90.5	97.0	65.8	7.2	80.4	83.8	23.0
Ghana	2008	59.4	99.0	91.7	10.2	93.9	28.6	96.0	96.8	99.4	71.8	12.4	91.2	90.5	44.2
Ghana	2011	50.0	69.6	...	2.9	72.6	18.0	94.1	95.3	82.3	70.3	3.7	91.0	81.8	24.2
Ghana	2014	41.5	96.5	86.7	12.9	85.6	20.4	98.1	89.4	98.6	68.8	2.8	93.7	90.3	35.2
Ghana	2016	42.6	96.0	89.3	0.9	88.5	22.7	87.7	83.7	98.5	68.4	1.0	96.1	89.9	34.0
Guinea	2005	66.3	77.9	68.9	7.6	59.9	25.8	90.5	...	...	...	23.7	...	63.1	0.6
Guinea	2012	70.2	95.2	74.2	7.5	86.1	39.5	94.1	92.4	96.8	68.9	1.8	95.6	75.4	0.6
Guinea	2016	64.3	98.4	46.1	2.7	87.42	43.26	97.29	97.44	97.25	58.8	...	96.67	83.37	1.65
Guinea Bissau	2000	36.4	71.5	48.0	2.8	11.61	2.31	99.79	92.56	77.53	43.77	...	...	...	...
Guinea Bissau	2006	45.7	82.3	56.1	13.0	28.81	21.69	75.91	44.63	87.81	55.63	11.62	56.68	36.57	2.46
Guinea Bissau	2014	58.7	91.7	71.6	1.7	49.3	25.93	75.9	19.91	96.65	67.28	1.51	98.13	35.9	1.43
Kenya	2003	70.2	77.9	51.5	39.1	50.4	25.7	77.5	...	89.6	66.5	37.4	...	51.5	13.3
Kenya	2008	76.8	93.0	75.4	33.9	82.8	35.0	88.2	79.6	96.4	69.9	8.1	85.1	64.9	22.8
Kenya	2014	65.9	88.7	70.0	18.2	75.3	30.9	80.2	69.2	97.0	65.7	0.8	94.7	65.1	22.6
Kenya	2015	60.4	91.6	65.9	21.1	76.8	38.2	83.0	67.8	95.7	72.7	1.9	96.6	72.6	...
Lesotho	2000	81.9	88.9	70.7	4.9	65.8	...	84.4	...	...	77.3	...	...	13.5	...
Lesotho	2004	88.6	94.9	79.9	8.4	47.3	24.9	93.1	...	...	...	46.8	...	28.7	65.9
Lesotho	2009	82.4	90.7	68.9	3.3	59.6	31.2	95.3	89.6	97.7	73.9	17.7	89.1	48.6	73.1
Lesotho	2014	92.8	96.3	81.1	3.7	94.1	49.3	94.0	93.2	97.5	80.4	7.8	96.5	65.1	78.5
Liberia	2007	19.3	88.8	83.9	7.5	47.0	23.2	82.7	65.0	90.9	56.1	...	65.9	7.0	0.1
Liberia	2009	17.7	93.6	...	5.0	63.7	0.0	77.5	68.8	90.6	52.2	0.0	74.6	3.4	0.0
Liberia	2011	14.5	84.6	76.0	1.2	53.2	19.4	84.0	78.1	95.1	52.2	...	81.7	7.9	0.4
Liberia	2013	5.0	90.2	78.0	1.7	58.2	26.3	76.7	71.7	95.5	60.6	...	83.8	17.0	0.2
Liberia	2016	14.9	95.1	85.6	2.0	67.7	30.1	81.3	78.1	97.0	60.8	...	81.4	32.0	0.4
Madagascar	2000	72.5	77.5	48.9	10.1	22.5	18.6	58.5	...	...	41.5	...	...	...	...
Madagascar	2003	63.9	72.7	62.6	6.9	73.7	25.5	59.0	...	...	...	11.9	...	52.2	3.2
Madagascar	2008	74.2	87.6	81.9	0.5	19.2	10.6	70.0	66.4	86.0	55.0	9.6	75.4	69.4	2.6
Madagascar	2011	69.2	87.4	...	0.2	21.2	9.2	64.7	68.5	76.9	57.7	6.6	73.7	63.7	1.6
Madagascar	2013	54.9	80.9	...	1.3	35.2	14.8	62.3	48.7	74.1	58.4	5.4	70.0	60.5	1.8
Madagascar	2016	71.3	87.3	73.6	0.9	32.2	13.0	67.1	69.1	81.8	57.8	3.2	73.4	68.2	1.4
Malawi	2000	84.4	95.0	73.6	18.8	19.8	17.4	69.8	...	...	...	...	...	32.5	15.6
Malawi	2004	75.0	91.4	77.1	17.9	20.3	17.4	66.2	...	...	75.6	26.7	...	34.0	11.0
Malawi	2006	78.3	96.0	48.6	1.0	38.4	22.0	64.9	82.5	73.9	99.9	5.8	35.6	30.2	7.3
Malawi	2010	76.0	92.1	70.1	10.7	36.3	22.0	68.7	83.5	80.0	78.0	8.6	76.0	37.0	9.0
Malawi	2012	69.3	91.9	83.0	14.2	45.1	32.8	69.3	95.0	82.1	73.9	7.1	76.7	37.1	10.3
Malawi	2014	84.4	95.9	87.7	14.1	52.2	29.1	78.3	94.0	89.0	77.2	5.5	81.3	47.4	9.9
Malawi	2014	88.7	95.9	77.1	2.4	84.8	49.0	76.9	82.9	88.3	98.3	6.4	85.6	48.0	10.4
Malawi	2017	89.7	65.3	65.4	2.8	55.4	31.2	81.0	87.8	91.2	81.1	5.3	86.5	57.6	9.5

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Table B.1: Continued

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Mali	2001	61.1	71.9	70.7	14.5	35.6	18.3	61.5	...	...	...	13.1	...	41.5	0.8
Mali	2006	69.4	79.3	78.3	6.4	47.9	22.9	57.9	...	...	67.3	13.7	46.5	49.0	0.7
Mali	2012	74.4	94.0	91.2	6.8	86.5	45.3	64.3	70.2	88.0	75.8	7.8	95.2	77.3	1.5
Mali	2015	77.7	91.3	85.7	3.5	81.9	52.8	74.6	84.6	86.9	100.0	6.4	97.8	79.0	2.2
Mali	2015	81.3	96.1	92.6	2.4	89.0	57.4	74.2	84.7	93.4	71.4	8.3	98.6	85.1	0.8
Mauritania	2001	76.8	91.0	63.9	4.1	12.7	9.6	57.8	...	...	34.8	8.0	...	50.6	...
Mozambique	2003	62.6	71.8	60.2	8.2	8.2	8.0	62.1	...	...	72.7	6.1	...	29.8	6.7
Mozambique	2009	63.2	79.8	...	4.2	54.0	42.4	58.4	68.1	63.8	82.7	2.9	60.0	47.7	6.0
Mozambique	2011	71.7	84.8	67.9	0.0	47.4	39.3	57.9	49.0	69.9	78.7	2.4	71.8	59.3	2.1
Mozambique	2015	76.5	92.2	63.6	26.0	47.3	40.3	68.9	59.4	79.1	76.0	2.5	84.3	73.2	2.8
Namibia	2000	97.9	98.1	88.3	78.7	80.6	57.1	86.2	...	...	73.2	43.7	...	74.6	...
Namibia	2007	96.5	97.4	84.2	73.1	80.2	61.9	83.3	81.8	81.1	77.8	34.4	79.5	78.4	76.3
Namibia	2013	96.6	97.9	85.7	63.6	73.8	53.5	78.5	91.1	92.6	80.4	15.8	95.9	74.1	72.0
Niger	2006	90.8	93.4	84.2	6.9	40.9	24.7	60.1	...	...	51.8	5.0	40.5	50.5	3.1
Niger	2012	94.1	97.0	72.1	2.8	77.9	40.2	72.2	40.8	56.7	54.8	4.4	84.8	62.7	3.9
Nigeria	2003	32.4	74.9	60.6	27.9	33.2	18.2	86.7	...	...	65.9	11.7	...	83.9	46.7
Nigeria	2008	20.1	83.8	75.2	10.2	76.6	37.5	88.2	85.8	92.9	63.6	4.1	77.5	84.2	3.3
Nigeria	2010	20.2	81.6	...	17.1	61.5	...	81.0	75.9	89.2	69.2	1.6	81.2	78.0	2.2
Nigeria	2013	15.7	89.8	74.9	8.6	76.9	42.7	85.0	86.0	96.5	66.5	4.1	89.1	83.0	4.6
Nigeria	2015	17.1	92.6	84.3	14.3	75.8	48.1	87.4	88.8	93.0	66.7	3.5	91.2	82.0	9.1
Nigeria	2016	16.9	82.9	...	11.5	77.6	49.4	84.1	89.8	96.3	65.0	4.0	91.0	86.3	16.9
Rwanda	2000	77.1	81.5	55.9	8.1	41.3	28.9	64.4	...	...	...	10.2	...	42.6	1.6
Rwanda	2005	56.7	62.0	47.2	6.3	54.9	40.5	51.1	...	...	...	6.1	...	27.4	0.4
Rwanda	2008	60.3	64.4	52.2	4.3	44.5	35.0	50.2	...	...	...	5.8	47.2	30.0	0.0
Rwanda	2010	65.0	89.2	63.7	3.8	88.1	56.3	58.5	69.1	98.7	83.0	1.9	76.1	47.3	0.2
Rwanda	2013	73.4	97.6	72.4	0.0	85.8	53.6	62.4	77.2	99.7	86.8	0.7	84.6	61.9	0.9
Rwanda	2015	81.4	90.4	69.4	7.4	86.6	49.7	70.4	69.5	99.8	87.4	1.2	88.4	73.9	1.3
Senegal	2005	88.3	90.7	60.5	64.3	25.1	18.5	89.4	...	...	1.0	...	56.9	81.9	74.9
Senegal	2006	77.9	99.9	...	9.6	96.4	73.6	93.7	...	...	62.4	35.2	81.9	84.8	74.7
Senegal	2008	85.4	93.5	...	15.4	90.2	...	87.3	90.4	96.0	68.2	22.9	91.5	85.7	68.3
Senegal	2011	89.1	94.1	69.7	19.0	80.3	61.7	87.2	93.0	96.1	65.1	23.0	97.2	89.5	57.1
Senegal	2012	86.7	92.2	64.1	12.7	87.1	63.6	92.3	92.0	95.6	64.3	12.3	97.9	87.7	40.9
Senegal	2014	86.8	91.9	63.3	11.7	85.5	65.3	90.1	92.8	94.9	63.1	9.3	97.5	87.5	40.4
Senegal	2015	81.0	89.5	63.4	13.6	86.6	60.7	93.7	92.3	97.7	68.2	8.6	98.1	88.7	39.8
Senegal	2016	85.0	93.7	45.2	11.3	89.7	65.7	92.9	92.3	98.4	75.9	7.5	98.2	89.8	49.0
Sierra Leone	2008	43.6	81.9	60.5	0.3	75.1	26.1	75.2	61.3	89.4	68.4	2.1	67.4	31.0	0.1
Sierra Leone	2013	44.6	88.9	71.2	0.7	76.7	21.9	81.8	78.9	95.5	60.7	0.9	86.0	41.7	0.2
Sierra Leone	2016	37.9	91.4	81.1	1.2	76.8	28.1	78.5	86.7	93.6	62.5	0.5	90.4	43.9	0.7
Sierra Leone	2017	27.4	86.6	...	2.0	72.9	70.2	85.1	0.0	99.0	75.3	1.0	89.4	39.1	0.9
South Africa	2016	97.4	99.6	98.4	81.5	88.6	71.9	98.7	94.1	97.8	83.4	10.0	97.3	93.7	90.7
Eswatini	2006	86.6	93.3	71.1	49.2	60.4	42.6	97.4	87.8	99.0	78.2	27.7	78.1	65.2	69.5
Eswatini	2014	93.7	95.5	...	30.3	91.8	50.8	99.4	94.1	99.7	83.4	19.2	98.8	81.0	78.3

Table B.1: Continued

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Tanzania	2004	67.5	85.0	80.4	10.1	22.8	14.5	70.7	51.5	86.7	0.8	31.7	...	39.0	0.9
Tanzania	2007	67.9	86.7	76.2	0.0	28.1	14.8	72.5	70.1	91.3	0.8	3.3	65.5	42.2	1.6
Tanzania	2010	58.5	82.3	60.0	1.4	48.6	29.5	76.7	48.6	93.0	0.8	5.5	80.9	46.9	4.7
Tanzania	2011	70.0	91.1	85.5	2.0	71.6	40.9	78.5	91.0	94.5	81.9	2.0	89.4	47.1	2.4
Tanzania	2015	61.3	92.3	82.5	1.8	91.0	54.8	81.0	91.8	94.7	80.2	1.2	94.0	55.6	7.6
Togo	2010	55.1	87.3	...	0.4	73.1	28.0	95.2	93.2	97.0	71.1	12.4	86.1	76.0	5.6
Togo	2013	49.5	91.4	89.1	0.1	78.5	28.0	96.6	91.2	98.8	68.0	6.2	92.6	84.1	12.4
Uganda	2001	62.1	89.1	77.4	10.9	19.7	12.1	74.9	64.8	93.9	...	18.6	...	47.6	6.2
Uganda	2006	56.8	90.3	62.6	8.3	64.0	21.0	72.2	58.9	82.4	56.9	3.7	54.5	41.0	1.0
Uganda	2009	50.2	93.9	...	9.5	72.5	...	79.9	78.8	93.4	63.3	6.7	80.6	46.4	2.5
Uganda	2011	67.6	94.0	79.6	9.1	78.2	25.9	79.4	73.6	91.4	62.1	4.8	86.9	54.8	3.8
Uganda	2014	62.4	90.6	84.1	2.8	70.0	31.6	67.4	67.7	91.9	63.8	2.3	89.3	50.9	1.5
Uganda	2016	67.6	91.5	78.1	2.6	70.0	31.8	72.1	73.9	90.3	67.8	3.0	91.2	57.7	2.1
Zambia	2002	82.7	90.4	84.4	46.9	49.0	37.3	80.1	...	...	...	11.3	...	50.2	...
Zambia	2007	76.3	82.2	79.7	28.4	72.0	44.2	84.4	91.0	92.3	63.7	6.4	68.1	52.4	41.5
Zambia	2013	73.3	89.3	83.2	24.9	73.3	39.3	85.7	92.4	92.7	69.5	3.1	91.4	62.9	25.1
Zimbabwe	2005	97.5	99.6	99.0	85.7	98.2	65.1	99.1	99.2	99.6	79.3	24.9	38.8	92.1	88.4
Zimbabwe	2010	76.7	95.6	93.1	76.4	93.8	49.9	97.0	97.8	98.8	76.8	12.1	92.1	84.7	74.3
Zimbabwe	2015	65.0	97.4	93.6	75.5	95.6	52.3	97.2	97.5	99.1	81.5	9.3	97.4	81.3	73.0
Algeria	2012	76.0	94.6	...	91.7	97.7	91.5	22.6	91.7	97.1	74.6	32.8	97.5	99.3	99.8
Egypt	2000	98.8	99.7	81.0	55.1	58.8	57.5	95.1	...	...	93.0	43.6	...	99.4	95.0
Egypt	2003	99.6	99.9	92.1	63.9	64.9	64.8	96.2	...	...	95.8	64.1	...	99.8	98.0
Egypt	2005	98.4	99.9	86.3	67.9	69.5	68.8	97.6	...	...	95.5	73.7	40.1	99.7	98.9
Egypt	2008	98.7	100.0	74.0	74.5	75.8	75.3	98.1	...	...	96.4	63.6	56.4	99.9	...
Egypt	2014	96.8	99.8	88.3	91.7	99.8	98.9	98.7	...	...	92.2	29.4	94.9	99.9	...
Morocco	2004	96.1	98.0	...	98.0	98.6	91.3	92.6	...	...	78.5	67.9	...	94.8	99.1
Sudan	2014	73.0	94.8	68.6	2.1	69.3	57.0	26.8	50.2	52.9	55.9	3.7	88.1	73.0	48.5
Afghanistan	2015	30.4	92.1	74.0	9.9	69.2	55.6	89.6	61.3	29.4	0.5	5.8	94.2	93.0	81.8
Bangladesh	2004	30.2	97.1	...	...	50.1	...	48.1	70.5	25.2	0.6	18.2	...	77.8	33.1
Bangladesh	2007	28.8	99.6	...	8.6	61.2	41.1	56.8	80.0	97.5	68.2	8.0	57.8	82.9	2.9
Bangladesh	2011	43.4	99.5	95.2	10.9	73.8	46.9	67.0	88.3	98.7	75.1	8.5	91.0	90.3	3.8
Bangladesh	2014	29.8	99.6	92.2	10.8	84.4	53.8	66.3	89.8	99.5	75.5	4.5	94.5	90.8	5.2
India	2006	69.5	96.1	85.0	28.1	77.1	54.7	80.0	89.3	92.3	53.0	28.0	38.0	93.1	59.3
India	2016	67.9	97.7	88.7	22.4	85.3	71.2	84.9	92.7	92.7	63.7	7.4	97.2	97.6	79.5
Iran	2006	84.0	92.1	...	98.4	98.4	...	32.5	...	...	90.6	71.6	...	97.7	91.0
Maldives	2009	56.9	99.3	34.1	99.2	99.9	97.5	98.8	98.4	99.6	61.3	48.2	99.6	99.9	99.3
Nepal	2001	52.9	87.0	86.7	57.5	65.4	38.2	58.0	...	...	...	20.7	...	86.4	25.5
Nepal	2006	47.7	90.4	92.3	20.4	77.0	42.5	68.1	79.1	93.9	67.9	31.2	23.6	89.8	43.4
Nepal	2012	53.0	94.9	94.7	26.5	87.8	58.0	76.6	82.6	96.6	81.2	28.6	92.8	96.9	64.1
Nepal	2016	50.3	95.9	94.6	11.2	86.3	64.9	50.2	58.5	53.4	83.1	11.0	95.8	94.6	44.1
Pakistan	2012	58.9	98.7	85.6	68.6	95.1	87.3	91.9	95.8	92.4	42.2	18.8	95.6	99.8	85.2
Kazakhstan	2015	87.4	90.7	...	65.3	99.9	97.6	99.7	93.0	99.5	92.9	79.9	98.4	100.0	99.8

Table B.1: Continued

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Krygystan	2012	92.1	96.0	94.5	35.5	98.7	91.7	81.2	72.9	76.6	88.2	47.0	97.6	99.8	93.7
Kyrgyztan	2014	96.3	97.7	...	35.3	99.6	94.6	98.8	71.3	99.2	83.6	44.8	99.1	99.9	89.6
Nepal	2014	56.1	93.3	...	19.6	91.3	66.2	68.9	72.6	95.8	83.8	24.1	97.0	96.1	61.8
Pakistan	2014	27.3	87.8	...	40.3	81.6	72.7	82.1	88.3	81.3	54.0	10.9	87.2	90.0	69.5
Palestine	2014	57.0	98.4	...	62.0	99.7	98.5	61.3	99.3	99.9	73.7	36.9	48.7	99.9	1.1
Tajikistan	2005	89.8	93.1	...	55.3	97.5	89.4	86.8	74.4	91.1	82.5	54.7	26.3	94.0	89.3
Turkmenstein	2015	97.7	85.7	...	55.4	100.0	98.2	99.4	99.9	99.8	92.4	87.0	99.2	99.9	100.0
Uzbekistan	2006	98.4	99.8	...	45.9	99.9	97.7	99.0	99.0	98.8	89.5	62.3	22.0	99.7	99.1
Mongolia	2013	43.7	91.7	...	32.6	92.7	64.1	40.1	55.0	67.2	86.2	13.0	93.6	92.4	58.1
Cambodia	2000	35.0	67.0	24.3	35.8	35.8	30.5	35.5	84.4	...	...	18.7	...	62.0	16.0
Cambodia	2004	55.1	64.6	...	75.5	77.9	...				48.2	3.7	75.8	83.7	36.1
Indonesia	2002	29.3	82.8	72.8	...	83.4	...	86.0	77.3	96.9	...	26.4	...	98.0	19.8
Indonesia	2007	28.4	82.1	40.6	...	88.6	77.4	88.7	99.1	98.8	...	63.6	...	98.2	21.5
Indonesia	2012	18.4	63.0	39.5	...	90.7	...	91.2	97.6	98.3	84.7	12.4	93.6	99.3	73.6
Myanmar	2016	11.3	93.3	82.0	0.9	78.9	67.6	54.5	52.3	93.6	67.2	12.9	94.2	92.8	57.7
Philippines	2003	66.7	98.4	92.1	92.2	93.8	...	73.9	...	...	...	54.8	52.2	92.2	...
Philippines	2008	42.9	98.2	89.3	3.5	93.8	75.3	82.3	79.9	95.0	61.9	21.5	83.1	93.8	52.2
Philippines	2013	35.5	98.4	92.6	6.9	94.1	73.8	84.3	80.6	95.7	63.2	13.7	92.4	94.2	56.0
Thailand	2015	39.2	97.5	...	11.2	99.6	97.6	71.8	96.3	99.2	84.8	18.9	70.5	99.3	3.7
Timor Leste	2009	63.2	88.6	85.7	19.9	82.9	65.9	70.3	62.9	93.0	71.0	1.8	75.6	84.4	8.3
Timor Leste	2016	55.8	97.0	94.6	0.0	88.9	76.8	85.0	69.1	95.1	79.1	14.6	97.5	98.4	21.9
Vietnam	2002	76.4	96.9	25.8	82.8	86.5	...	94.8	...	97.5	71.8	58.5	...	99.4	...
Vietnam	2005	63.7	98.3	...	80.8	86.9	83.3	96.2	94.4	98.6	80.5	68.4	...	99.6	67.4
Vietnam	2013	53.4	98.2	98.1	2.1	92.0	89.4	99.1	95.4	99.4	84.5	37.7	97.1	99.9	78.3
Iraq	2018	53.8	76.6	...	0.0	99.6	96.4	98.1	63.5	98.7	99.9	61.0	...	...	...
Jordan	2002	87.8	99.8	...	0.9	91.8	...	100.0	...	...	0.7	59.2	35.9	1.0	99.8
Jordan	2007	71.6	99.7	...	64.6	99.8	96.8	99.9	99.4	...	0.7	38.7	93.5	99.0	99.9
Jordan	2009	61.2	99.8	...	67.4	100.0	98.6	100.0	99.8	...	0.7	25.0	98.7	99.5	99.8
Jordan	2012	52.3	99.8	...	68.7	99.9	99.7	100.0	99.7	99.0	0.8	20.2	99.2	99.5	100.0
Syria	2006	87.6	94.1	...	91.5	94.4	91.3	93.9	92.6	94.5	78.7	75.1	61.5	94.5	94.6
Turkey	2004	68.9	94.6	12.9	91.3	96.9	95.4	87.7	...	...	83.1	81.7	76.4	...	...
Yemen	2006	53.9	74.8	...	39.7	97.2	90.4	82.3	...	...	50.7	54.2	61.6	95.5	95.4
Yemen	2013	42.0	96.7	95.0	64.5	90.6	86.3	94.2	92.4	37.6	56.0	39.1	95.0	98.6	93.9
Armenia	2000	98.1	98.4	40.9	89.7	90.1	84.3	61.8	...	...	...	75.4	...	99.4	90.4
Armenia	2001	96.9	98.0	...	90.7	90.7	...		0.1		0.9	26.8	...	...	52.8
Armenia	2005	99.1	99.5	74.4	93.9	99.0	97.6	75.9	...	...	0.9	0.9	0.5	1.0	99.2
Armenia	2010	97.9	99.9	95.1	95.8	98.1	97.0	83.7	98.6	99.2	0.9	91.0	93.4	99.8	99.8
Armenia	2011	95.5	96.9	...	93.8	93.8	...		0.1		0.9	78.4	...	...	...
Armenia	2016	98.7	100.0	98.5	95.3	96.7	96.2	88.5	93.7	99.8	0.9	79.3	98.2	100.0	99.7
Azerbaijan	2006	77.6	97.4	76.4	71.0	92.2	82.0	21.2	93.3	98.8	75.6	75.7	67.1	99.7	98.9
Austria	2001	100	100	...	100	100	100	...	...	...	99.72	...	...	...	...
Italy	2001	93.9	99.2	...	...	99.0	...	...	...	...	...	85.8	...	...	...

Table B.1: Continued

Country	Year	Water Connection to piped water	Improved water	Access to basic drinking water services[b]	Sanitation Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable housing Durable floor material	Durable wall material	Durable roof material	Sufficient living area	Other basic services Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Switzerland	2000	...	...	...	...	...	...	...	...	...	99.68	...	...	...	...
Moldova	2005	73.3	98.9	...	67.1	91.6	84.7	88.1	99.5	99.1	1.0	89.3	23.3	99.5	99.0
Ukraine	2007	82.0	99.6	...	69.9	99.2	95.8	71.5	96.8	97.8	98.0	70.4	82.4	99.9	97.9
Argentina	2001	96.6	99.1	...	46.8	99.1	...	95.8	93.5	95.5	85.3	58.3	27.6	...	96.4
Argentina	2011	86.3	98.3	...	...	...	...	97.55	...	...	91.46	55.49	88.64	88.64	...
Barbados	2012	99.1	99.9	30.2	7.0	98.51	95.1	85.14	90.93	98.23	97.83	...	94.85	99.09	99.81
Belize	2006	38.0	99.2	36.1	24.2	96.11	89.9	90.83	88.91	99.44	85.52	45.52	72.32	98.44	95.11
Belize	2011	26.3	99.5	99.8	22.7	98.34	92.9	70.71	90.12	98.48	89.19	29.83	94.35	96.94	96.51
Belize	2015	21.9	97.4	97.4	19.3	96.75	92.9	74.67	87.32	98.96	89.21	17.21	97.6	97.36	95.27
Bolivia	2000	91.7	95.9	26.5	68.8	78.37	...	99.16	...	...	62.97	...	...	...	...
Bolivia	2001	85.8	94.7	...	81.3	81.3	...					36.9	...	...	86.2
Bolivia	2004	89.6	93.2	43.7	56.9	56.9	17.0	85.3	61.9	40.1	62.2	29.5	35.8	93.8	90.1
Bolivia	2008	93.8	96.9	29.5	55.2	79.7	56.0	75.1	96.2	97.8	68.6	30.6	80.2	97.6	94.1
Colombia	2000	97.8	98.5	59.7	89.0	95.5	79.0	94.5	...	...	82.7	67.1	...	99.4	94.4
Colombia	2005	91.9	98.1	31.1	91.0	97.8	12.7	58.7	92.5	...	84.0	69.5	...	99.4	95.1
Colombia	2005	89.5	95.1	...	95.4	100.0	...	95.3	91.6		92.1	66.0	...	98.3	9.4
Colombia	2010	91.9	98.3	45.0	90.6	98.0	89.0	61.0	93.4	...	88.4	51.4	...	99.4	96.5
Colombia	2015	89.7	98.7	61.6	92.9	98.6	92.7	70.8	95.0	...	93.5	47.1	97.8	99.8	98.5
Costa Rica	2000	98.0	99.1	...	34.7	97.9	...	98.2			98.6	...	...	99.2	96.1
Costa Rica	2011	99.5	99.7	99.7	31.5	97.19	95.1	93.71	91.19	97.43	94.66	62.31	94.44	99.74	98.84
Costa Rica	2011	...	98.9	...	26.5	96.9	...	98.3	64.2	98.8	98.9	62.7	92.8	99.4	60.7
Cuba	2006	82.5	98.3	44.5	52.8	97.06	92.7	...	...	...	...	...	...	...	...
Cuba	2010	84.6	98.6	91.5	56.7	96.24	92.9	...	...	...	...	...	...	...	...
Cuba	2014	86.4	98.1	86.6	58.8	95.8	91.6	...	...	...	...	...	...	...	...
Dominican Republic	2000	34.6	98.0	98.0	74.6	81.0	68.8	97.9	92.5	99.5	81.0	...	...	99.4	1.6
Dominican Republic	2002	28.7	98.8	80.2	70.4	89.0	81.9	97.1	94.9	39.3	80.7	50.0	...	98.9	95.4
Dominican Republic	2007	18.5	99.4	98.0	78.3	96.1	86.8	98.3	95.7	47.0	86.2	36.0	78.2	98.9	95.0
Dominican Republic	2013	7.0	99.2	90.5	82.6	96.5	86.4	98.0	95.3	47.0	86.3	...	93.4	99.5	93.2
Dominican Republic	2014	6.4	98.4	44.8	27.8	94.7	84.1	98.5	92.5	99.5	88.9	32.9	95.0	99.0	95.4
El Salvador	2007	91.7	98.1	...	56.1	62.7	...	86.8	92.5	65.9	80.9	49.8	69.1	94.9	2.7
El Salvador	2014	68.1	99.2	85.5	53.8	99.02	89.8	91.51	91.26	99.59	82.52	37.73	96.82	98.22	91.28
Guatemala	2002	89.0	96.6	...	69.2	94.4	...	84.6	85.5	98.8	70.8	...	...	94.5	3.6
Guatemala	2014	49.5	99.4	80.4	73.4	89.9	78.9	86.3	84.8	99.6	0.7	20.2	93.6	96.5	62.2
Guyana	2000	72.8	84.6	9.4	71.4	72.34	...	...	...	...	76.77	...	...	...	54.88
Guyana	2005	45.8	99.4	99.2	8.7	94.8	82.6	76.2	83.0	98.9	79.5	59.1	71.2	81.4	68.1
Guyana	2006	55.1	98.0	90.7	8.7	99.4	89.4	88.21	94.19	99.52	79.71	57.02	71.48	81.76	98.12
Guyana	2009	30.4	98.6	71.6	11.7	96.1	90.7	73.2	95.7	96.0	85.4	78.2	90.8	90.2	75.9
Guyana	2014	34.0	99.0	48.9	7.4	97.84	91.0	87.71	53.95	99.7	86.45	72.58	95.95	93.75	80.73
Haiti	2000	82.3	90.4	82.9	8.8	76.0	33.4	87.6	...	...	...	11.6	...	82.3	4.6
Haiti	2003	27.5	88.8	...	10.6	84.4	...	86.8	90.9	98.4	69.1	15.6	...	57.9	0.1
Haiti	2006	51.9	93.1	81.8	3.0	51.0	27.8	89.6	92.4	99.1	61.0	10.3	37.5	69.2	5.7
Haiti	2012	36.3	94.2	85.7	2.0	82.3	38.8	86.5	85.6	93.6	59.3	3.7	92.8	72.7	6.1

Table B.1: Continued

Country	Year	Water			Sanitation			Durable housing			Sufficient living area	Other basic services			
		Connection to piped water	Improved water	Access to basic drinking water services[a]	Connection to sewerage	Improved sanitation	Access to basic sanitation services[b]	Durable floor material	Durable wall material	Durable roof material		Fixed telephone	Mobile telephone	Connection to electricity	Clean cooking fuel
Haiti	2017	25.3	98.4	90.8	0.6	79.5	47.0	90.2	91.5	96.6	66.2	1.2	92.3	76.4	8.7
Hondurus	2005	50.6	96.6	46.8	57.0	87.7	77.1	47.0	74.7	99.2	69.5	44.5	54.4	...	65.0
Hondurus	2012	39.7	98.4	50.5	60.3	91.3	80.1	50.3	76.4	99.0	75.8	35.0	93.2	...	68.1
Jamaica	2000	82.5	82.5	...	...	...	...	...	...	...	88.87	...	...	...	...
Jamaica	2005	85.5	95.9	40.2	10.7	97.21	83.2	...	...	...	...	...	...	...	...
Jamaica	2011	88.1	99.2	77.2	14.5	98.58	87.8	88.81	85.92	99.55	90.7	23.58	97.61	95.48	89.66
Nicaragua	2001	90.3	95.9	95.1	29.2	71.8	66.9	67.4	61.7	98.9	54.3	19.3	11.8	94.3	56.1
Panama	2013	98.1	99.9	88.6	45.4	95.98	88.3	95.76	99.86	99.98	86.14	39.12	95.81	98.5	...
Paraguay	2016	71.6	98.6	71.5	14.8	95.67	91.8	93.12	94.55	99.29	87.65	23.86	98.44	99.89	82.84
Peru	2000	88.0	94.3	93.3	75.8	83.7	76.5	72.3	66.4	55.1	74.0	37.7	...	93.1	59.7
Peru	2004	92.4	95.2	93.6	83.9	89.6	78.6	78.4	74.1	90.7	78.9	46.4	...	96.5	74.6
Peru	2007	81.6	90.6	...	...	89.5	...	49.2	84.9	...	0.9	39.2	54.3	89.4	73.5
Peru	2012	86.6	95.5	94.5	80.5	89.6	80.0	79.3	70.7	92.2	0.8	39.3	92.5	98.4	86.8
Saint Lucia	2012	75.6	99.8	86.2	11.0	93.15	89.09	86.04	68.09	99.41	95.96	46.45	94.31	96.39	96.85
Suriname	2000	91.2	98.2	2.5	84.3	99.08	79.7	99.28	...	...	...	...	...	...	...
Suriname	2006	81.5	98.2	12.6	0.6	97.95	89.86	82.96	97.92	99.28	88.55	46.47	81.49	95.22	89.74
Suriname	2010	81.3	99.1	49.1	1.7	97.79	87.67	85.85	98.21	99.55	90.1	42.66	96.51	97.28	93.67
Trinidad and Tobago	2000	83.0	92.7	9.4	31.3	71.04	62.92	...	96.78	...	89.02	...	...	...	...
Trinidad and Tobago	2006	83.4	95.7	35.1	19.2	98.67	92.07	80.18	92.07	99.48	94.44	67.52	91.22	97.47	99.6
Uruguay	2013	94.3	99.9	93.8	59.5	98.37	94.38	95.85	94.78	98.12	93.87	66.22	94.83	98.96	99.81
Venezuela	2000	87.3	93.0	92.1	69.2	87.86	90.87	99.96	96.51	99.53	80.18	...	...	...	97.15
Canada	2001	...	...	...	...	...	...	...	...	...	99.97	...	...	...	...
USA	2000	...	...	...	...	...	...	...	...	...	95.32	...	97.64	...	...
USA	2005	...	...	...	...	...	...	...	...	...	98.38	...	95.55	...	...
USA	2010	100	100	...	...	...	...	...	...	...	98.37	...	97.89	...	...
Fiji	2007	97.2	98.7	...	0	99.6	...	0	73.4	0	87.6	52.5	81.9	93.3	0.0

Notes:
[a] Access to basic drinking water services (Improved water source is available with collection time no more than 30 minutes for a round trip)
[b] Access to basic sanitation services (improved facilities not shared with other households)

Source: United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2020

Table B.3: Regional Slum Estimates, 1990 - 2018

	Slum proportion										Slum Population (thousands)[a]									
	1990	1995	2000	2005	2007	2010	2012	2014	2016	2018	1990	1995	2000	2005	2007	2010	2012	2014	2016	2018
World	43.3	40.4	28.0	25.9	25.2	24.4	24.1	23	23.5	24.0	723,023	779,678	817,221	853,740	945,943	925,965	940,120	928,063	1,003,083	1,033,545
Australia and New Zealand								0.03	0.01	0.01	-	-	-	-	-	-	-	7	7	8
Europe and Northern America			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-	764	787	815	820	824	833	842	1,022
Northern Africa and Western Asia	28.4	25.0	23.0	19.8	19.6	19.4	19.0	22	22.6	25.6	44,194	44,701	46,335	45,217	51,275	52,061	52,354	63,814	71,720	83,052
Latin America and the Caribbean	33.7	31.5	29.0	25.7	25.0	23.9	23.5	21	20.8	20.9	106,118	112,253	115,148	111,311	117,263	113,942	113,790	104,652	112,602	114,207
Eastern and South-Eastern Asia	46.6	42.7	38.0	33.8	31.8	30.0	29.6	28	28.0	27.2	284,293	307,593	317,123	332,067	360,326	348,756	352,708	349,409	364,684	369,967
Central and Southern Asia	57.1	51.7	46.0	40.3	38.3	35.3	35.0	32	32.3	31.2	193,216	201,838	205,661	206,888	224,040	212,024	214,952	206,704	223,643	226,780
Oceania (excluding Australia and New Zealand)	24.1	24.1	24.0	24.1	24.2	24.1	24.1	24	23.6	23.7	386	430	468	514	565	572	583	602	648	670
Sub-Saharan Africa	70.0	67.6	65.0	63.2	62.7	62.1	61.7	56	55.6	56.2	94,816	112,864	131,716	156,950	191,653	197,782	204,901	202,042	228,936	237,840

Note:
[a] Slum population calculated based on World Urbanization Prospects: The 2018 Revision

Source: United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2020

Table B.4: Urban Population Living in Slums in Selected Countries, 1990-2018

Country	Proprotion of urban population living in slum area								Urban Slum Population (thousands)a							
	1990	1995	2000	2005	2010	2014	2016	2018	1990	1995	2000	2005	2010	2014	2016	2018
Sub Saharan Africa																
Angola	...	...	86.5	86.5	65.8	55.5	48.4	47.0			7,123	9,471	9,197	9,372	8,947	9,476
Benin	79.3	76.8	74.3	71.8	69.8	61.5	59.6	59.2	1,361	1,667	1,956	2,324	2,767	2,857	2,993	3,216
Burkina	78.8	72.4	65.9	59.5	...	65.8	58.5	56.6	960	1,105	1,366	1,720		3,117	3,071	3,283
Burundi	...	...	...	64.3	...	57.9	48.6	50.5				447		674	634	738
Cameroon	50.8	49.6	48.4	47.4	46.1	37.8	27.1	24.6	2,362	2,843	3,364	4,008	4,751	4,533	3,499	3,422
Central African Republic	87.5	89.7	91.9	94.1	95.9	93.3	97.5	98.5	947	1,119	1,299	1,479	1,660	1,683	1,819	1,930
Chad	98.9	96.4	93.9	91.3	89.3	88.2	87.0	86.6	1,227	1,449	1,695	2,005	2,334	2,678	2,851	3,065
Comoros	65.4	65.4	65.4	68.9	...	69.6	69.6	69.6	75	88	100	118		150	159	168
Congo	...	...	...	53.4	49.9	46.9	48.0	47.3				1,211	1,385	1,487	1,624	1,708
Cote d'Ivoire	53.4	54.3	55.3	56.2	57.0	56.0	59.2	61.1	2,575	3,254	3,979	4,662	5,501	6,188	6,995	7,733
Djibout	...	...	...	...	...	65.6	65.6	65.6						463	480	496
Democratic Republic of Congo	...	...	...	76.4	61.7	74.8	79.1	80.4				15,678	15,930	23,260	26,988	30,018
Equatorial Guinea	...	...	...	66.3	...	66.2	66.1	66.1				290		524	575	626
Ethiopia	95.5	95.5	88.6	81.8	76.4	73.9	65.9	66.2	5,794	7,565	8,693	9,855	11,597	13,670	13,413	14,775
Gabon	...	...	...	38.7	...	37.0	36.6	36.5				448		608	641	674
Gambia	...	...	...	45.4	...	34.8	26.0	24.3				341		391	318	322
Ghana	65.5	58.8	52.1	45.4	40.1	37.9	30.4	29.2	3,490	3,955	4,335	4,630	4,983	5,457	4,696	4,826
Guinea	80.4	68.8	57.3	45.7	...	43.3	49.2	50.7	1,361	1,597	1,557	1,427		1,781	2,162	2,392
Guinea Bissau	...	...	...	83.1	...	82.3	78.9	78.2				438		592	609	647
Kenya	54.9	54.8	54.8	54.8	54.7	56.0	46.5	46.1	2,151	2,739	3,429	4,279	5,335	6,500	5,887	6,354
Lesotho	...	...	...	35.1	53.7	50.8	59.7	61.9				152	272	289	359	394
Liberia	...	...	...	...	68.3	65.7	70.3	66.6					1,289	1,425	1,630	1,654
Madagascar	93.0	88.6	84.1	80.6	76.2	77.2	67.7	73.3	2,541	3,078	3,598	4,259	5,148	6,289	6,042	7,164
Malawi	66.4	66.4	66.4	66.4	68.9	66.7	67.0	66.9	724	873	1,104	1,303	1,626	1,837	1,999	2,172
Mali	94.2	84.8	75.4	65.9	65.9	56.3	47.0	46.0	1,860	2,078	2,344	2,706	3,578	3,743	3,451	3,720
Mauritania	...	...	...	...	...	79.9	79.5	79.5						1,630	1,777	1,936
Mozambique	75.6	76.9	78.2	79.5	80.5	80.3	76.7	76.9	2,505	3,333	4,112	4,990	6,208	7,403	7,719	8,444
Namibia	34.4	34.1	33.9	33.9	33.5	39.4	42.3	42.8	134	169	209	252	303	428	503	554
Niger	83.6	83.1	82.6	82.1	81.7	70.1	61.8	61.1	1,030	1,242	1,518	1,816	2,176	2,176	2,081	2,238
Nigeria	77.3	73.5	69.6	65.8	62.7	50.2	53.9	53.3	21,859	25,554	29,675	35,706	43,227	41,618	48,788	52,605
Rwanda	96.0	87.9	79.7	71.6	65.1	53.2	45.5	44.1	376	513	955	1,089	1,129	1,024	925	949
Sao Tome & principe	...	...	...	...	...	86.6	86.6	86.6						115	123	132
Senegal	70.6	59.8	48.9	43.3	38.8	39.4	29.5	28.4	2,075	2,071	1,950	2,033	2,195	2,604	2,102	2,185
Sierra Leone	...	...	...	97.0	...	75.6	59.8	59.6				2,026		2,164	1,824	1,936
Somalia				73.5	73.6	73.6	73.6	73.6				2,778	3,488	4,245	4,618	5,025
South Africa	46.2	39.7	33.2	28.7	23.0	23.0	26.3	26.4	9,030	9,104	8,637	8,342	7,382	8,067	9,639	10,059
Sudan South	...	...	...	...	...	95.6	97.3	97.3						2,053	2,272	2,467
Swaziland	...	...	...	...	...	32.7	32.7	32.7						98	103	108
Tanzania	77.4	73.7	70.1	66.4	63.5	50.7	41.7	40.2	3,720	4,537	5,343	6,504	8,230	8,184	7,484	8,021
Togo	...	...	...	62.1	...	51.2	53.0	53.3				1,242		1,465	1,639	1,776
Uganda	75.0	75.0	75.0	66.7	60.1	53.6	47.5	46.0	1,449	1,980	2,666	3,230	3,949	4,476	4,460	4,838
Zambia	57.0	57.1	57.2	57.2	57.3	54.0	63.3	63.3	1,804	1,936	2,096	2,545	3,124	3,491	4,458	4,853
Zimbabwe	4.0	3.7	3.3	17.9	24.1	25.1	28.3	29.0	118	133	137	790	1,129	1,257	1,475	1,579
Western Asia & Northern Africa																
Armenia	...	...	...	...	...	14.4	9.3	8.2						264	172	152
Egypt	50.2	39.2	28.1	17.1	13.1	10.6	4.1	3.1	12,525	10,680	8,415	5,649	4,740	4,169	1,672	1,296
Georgia						34.1	34.1							774	781	

Table B.4: Continued

Country	Proprotion of urban population living in slum area								Urban Slum Population (thousands)a							
	1990	1995	2000	2005	2010	2014	2016	2018	1990	1995	2000	2005	2010	2014	2016	2018
Iraq	16.9	16.9	16.9	52.8	52.8	47.2	46.4	46.4	2,059	2,350	2,730	9,806	11,224	11,526	12,109	12,865
Jordan	...	...	...	15.8	19.6	12.9	21.1	20.7				718	1,212	1,023	1,807	1,862
Morocco	37.4	35.2	24.2	13.1	13.1	13.1	10.1	9.0	4,503	4,927	3,716	2,206	2,463	2,709	2,186	2,042
Palestine							39.3	20.5	-	-	-	-	-	-	1,424	787
Sudan	...	...	...	...	...	91.6	93.6	93.7						11,646	12,644	13,470
Syria	...	...	...	10.5	...	19.3	15.3	13.8				1,033		1,909	1,494	1,369
Tunisia	...	...	...	...	...	8.0	8.0	8.0						604	624	643
Turkey	...	...	...	26.0	27.0	25.0	8.1	7.0				11,977	13,831	14,073	4,769	4,320
Yemen	...	...	...	67.2	...	60.8	56.4	56.0				4,002		5,452	5,511	5,937
Eastern Asia and South-Eastern Asia																
Cambodia	...	...	...	78.9	...	55.1	47.7	45.6				2,008		1,833	1,697	1,733
Indonesia	50.8	42.6	34.4	26.3	23.0	21.8	30.9	30.4	28,188	30,281	30,597	27,347	27,822	29,275	43,593	44,859
Lao PDR	...	...	...	79.3	...	31.4	20.8	18.5				1,240		671	473	451
Mongolia	68.5	66.7	64.9	57.9	...	42.7	38.3	37.1	853	871	889	914		850	792	792
Myanmar	...	...	...	45.6	...	41.0	56.6	57.1				6,178		6,312	9,012	9,404
Philippines	54.3	50.8	47.2	43.7	40.9	38.3	43.5	44.3	15,812	16,513	16,998	17,233	17,363	17,672	20,884	22,144
Thailand	...	...	...	26.0	27.0	25.0	24.6	24.5				6,364	7,958	8,029	8,222	8,471
Timor Leste							34.0	30.1							129	122
Viet Nam	60.5	54.6	48.8	41.3	35.2	27.2	14.4	13.5	8,360	9,107	9,544	9,499	9,473	8,336	4,683	4,670
Central Asia and Southern Asia																
Afghanstan	...	...	...	...	...	62.7	71.3	73.5						5,050	6,180	6,813
Bangladesh	87.3	84.7	77.8	70.8	61.6	55.1	49.4	47.6	18,366	21,811	24,134	27,225	28,550	29,454	28,254	29,025
India	54.9	48.2	41.5	34.8	29.4	24.0	35.4	34.8	122,141	123,237	120,910	116,324	111,937	100,560	155,434	160,330
Iran							23.9	23.9							14,175	14,681
Kazakhstan							16.1	10.5							1,658	1,112
Kyrgystan							9.7	8.5							208	189
Maldives							32.1	32.1	-	-	-	-	-	-	54	57
Nepal	70.6	67.3	64.0	60.7	58.1	54.3	51.0	49.3	1,172	1,567	2,035	2,358	2,631	2,796	2,799	2,882
Pakistan	51.0	49.8	48.7	47.5	46.6	45.5	40.8	38.0	16,792	19,487	22,235	24,843	27,796	30,240	28,531	27,954
Tajikistan							26.0	23.6							611	583
Uzbekistan							52.2	58.5							8,314	9,556
Latin America and The Carbbean																
Argentina	30.5	31.7	32.9	26.2	20.8	16.7	14.7	14.7	8,683	9,780	10,868	9,234	7,802	6,559	5,891	6,022
Belize	...	...	...	...	...	10.8	5.1	3.5						17	8	6
Bolivia	62.2	58.2	54.3	50.4	47.3	43.5	49.5	49.9	2,369	2,607	2,799	2,951	3,114	3,126	3,708	3,882
Brazil	36.7	34.1	31.5	29.0	26.9	22.3	16.3	15.2	40,468	42,949	44,889	44,878	44,711	38,933	29,082	27,826
Colombia	31.2	26.8	22.3	17.9	14.3	13.1	28.1	28.5	7,433	7,197	6,675	5,890	5,137	4,972	10,941	11,383
Costa Rica	...	...	...	10.9	...	5.5	3.9	3.6				304		199	148	141
Cuba							6.6	6.6	-	-	-	-	-	-	583	584
Dominican Republic	27.9	24.4	21.0	17.6	14.8	12.1	14.8	14.3	1,106	1,111	1,110	1,093	1,081	978	1,249	1,260
Ecuador	...	...	...	21.5	...	36.0	20.3	17.1				1,822		3,622	2,117	1,839
El Salvador	...	...	...	28.9	...	28.9	22.4	19.8				1,074		1,250	1,002	915
Guatemala	58.6	53.3	48.1	42.9	38.7	34.5	31.0	31.0	2,278	2,424	2,541	2,635	2,741	2,727	2,587	2,729
Guyana	...	...	...	33.7	33.2	33.1	32.6	32.5				70	66	67	67	68
Haiti	93.4	93.4	93.4	70.1	70.1	74.4	65.9	77.8	1,891	2,380	2,843	2,769	3,330	4,047	3,819	4,777
Honduras	...	...	...	34.9	...	27.5	40.4	40.5				1,250		1,321	2,054	2,179
Jamaica	...	...	...	60.5	...	60.5	59.8	59.6				877		945	950	962
Mexico	23.1	21.5	19.9	14.4	...	11.1	16.0	15.1	14,082	14,835	15,125	11,919		10,892	16,281	15,803

Table B.4: Continued

Country	Proprotion of urban population living in slum area								Urban Slum Population (thousands)a							
	1990	1995	2000	2005	2010	2014	2016	2018	1990	1995	2000	2005	2010	2014	2016	2018
Nicaragua	89.1	74.5	60.0	45.5	...	45.5	43.2	41.8	1,960	1,872	1,665	1,368		1,579	1,542	1,537
Panama	...	...	...	23.0	...	25.8	22.1	21.3				488		669	596	601
Peru	66.4	56.3	46.2	36.1	...	34.2	33.8	33.1	9,987	9,604	8,746	7,479		8,175	8,320	8,396
Saint Lucia	...	...	...	11.9	...	11.9	11.9	11.9				4		4	4	4
Suriname	...	...	...	3.9	...	7.3	5.9	5.5				13		26	22	21
Trinidad & Tobago	...	...	...	24.7	...	24.7	5.4	1.9				176		179	39	14
Venezuela	...	...	...	32.0	...	32.0	34.9	35.8				7,538		8,670	9,703	10,218
Northern America and Europe																
Albania							13.2	13.2							226	234
Austria							6.1	6.1							308	311
Belarus							45.2	45.2							3,328	3,358
Bosnia and herzegovina							7.6	8.3							128	140
Greece							3.0	3.0							263	264
Hungary							13.6	13.6							939	940
Ireland							1.1	1.1							33	33
Italy							7.2	7.2							2,989	3,007
Macedonia							8.3	6.4							99	77
Moldova							63.5	70.4							1,095	1,213
Montenegro							27.1	27.1							113	114
Portugal							3.6	3.6							239	242
Romania							14.4	14.4							1,535	1,523
Serbia							3.6	3.6							177	177
Slovenia							3.7	3.7							42	42
Spain							7.8	7.8							2,886	2,907
Ukraine							19.0	18.0							5,839	5,497
Oceania																
Fiji							10.8	10.8							5	55

Notes:
a Slum population calculated based on World Urbanization Prospects: The 2018 Revision

Source: United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2020

Table C.1: Spatial Urbanization Indicators in Selected Cities, 2000-2015

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Australia	HobartCity	0.43	1.50	0.287	574	489	6.69
Australia	Cessnock	0.55	1.52	0.363	736	637	8.61
Australia	Cairns	0.66	1.52	0.435	491	432	10.40
Australia	Sydney	1.19	1.61	0.737	276	260	18.11
Australia	Shepparton	1.28	1.57	0.817	691	662	21.19
Australia	Melbourne	1.24	1.51	0.821	441	424	20.51
Australia	Darwin	1.28	1.53	0.836	523	503	21.16
Australia	Laucenston	1.36	1.51	0.901	589	576	22.71
Australia	Gold Coast	1.48	1.52	0.974	471	468	24.87
Australia	Canberra	1.60	1.50	1.064	433	439	27.11
Australia	Bunbury	1.54	1.43	1.074	709	721	26.00
Australia	Wollogong	1.80	1.50	1.196	482	503	30.94
Australia	Muswellbrook	1.72	1.28	1.342	605	646	29.42
Australia	Adeliade	2.11	1.51	1.400	405	444	37.31
Australia	Geelong	2.25	1.52	1.482	453	506	40.16
Australia	Kingaroy	2.56	1.56	1.646	831	966	46.90
Australia	Brisbane	2.59	1.51	1.714	273	321	47.41
Australia	Alice Spring	2.68	1.47	1.825	433	519	49.45
Australia	Perth	3.06	1.52	2.017	357	450	58.27
New Zealand	Auckland	0.84	1.50	0.559	301	272	13.40
New Zealand	Wellington	0.75	1.21	0.619	228	213	11.94
New Zealand	Palmerston	0.59	0.78	0.751	396	384	9.20
New Zealand	LowerHutt	0.50	0.42	1.214	352	356	7.86
New Zealand	Tauranga	2.35	1.77	1.328	308	336	42.23
New Zealand	Napier	1.27	0.82	1.552	397	425	21.07
New Zealand	Hamilton	3.28	1.64	2.002	341	436	63.51
New Zealand	Dunedin	1.49	0.54	2.780	375	433	25.04
New Zealand	Christ Church	1.83	0.06	30.474	315	411	31.66
Afghanistan	Kabul	2.85	4.15	0.688	62	51	49.11
Afghanistan	Herat	5.40	4.82	1.120	52	56	124.73
Afghanistan	Lashkar Bah	5.24	4.38	1.195	72	81	119.31
Afghanistan	Charikar	2.83	2.34	1.208	28	30	52.80
Afghanistan	Jalalabad	5.58	3.76	1.486	69	91	131.08
Afghanistan	Pol-e Khomri	2.94	1.64	1.799	46	57	55.50
Afghanistan	Kandahar	6.22	3.42	1.818	65	100	154.27
Afghanistan	Farah	8.46	4.42	1.915	69	127	255.99
Afghanistan	Mazar-e Sharif	5.12	2.15	2.381	95	148	115.67
Afghanistan	Khanabad	7.61	…	…	11	44	213.31
Bangladesh	Dhaka	3.47	3.28	1.060	19	19	68.37
Bangladesh	Rajshahi	3.78	1.42	2.668	53	67	45.90
Bangladesh	Saidpur	5.62	1.24	4.516	26	45	107.65
India	Parbhani	0.73	1.71	0.427	50	44	9.15
India	Sitapur	1.20	1.72	0.694	18	16	18.23
India	Ahmedabad	1.87	1.80	1.035	33	33	27.46
India	Jaipur	2.67	2.02	1.323	49	54	45.39
India	Mumbai	1.69	1.24	1.362	24	25	24.49
India	Vijayawada	0.57	0.40	1.430	37	38	8.37
India	Jalna	1.81	1.17	1.549	35	39	28.87
India	Hyderabad	2.82	1.48	1.901	47	58	52.69

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
India	Pune	6.86	3.52	1.948	37	52	98.49
India	Kanpur	1.26	0.55	2.289	36	40	20.76
India	Singrauli	5.46	2.13	2.568	37	52	72.60
India	Coimbatore	2.23	0.78	2.850	53	65	36.70
India	Malegaon	4.85	1.27	3.817	11	18	97.32
India	Kolkata	3.77	0.74	5.082	27	38	51.36
India	Belgaum	5.23	0.77	6.796	19	35	108.02
India	Hindupur	5.78	0.28	20.382	14	31	124.56
India	Kozhikode	6.41	0.17	38.693	32	72	130.10
Iran	Eshfana	0.76	2.43	0.314	93	73	12.12
Iran	Gorgan	1.31	3.90	0.337	122	85	20.18
Iran	Bandar Abbas	1.28	3.14	0.408	108	82	21.16
Iran	Bojnurd	2.16	2.68	0.805	56	52	38.18
Iran	Shadegan	1.96	2.34	0.838	81	77	34.18
Iran	Qom	4.54	4.21	1.077	82	84	50.44
Iran	Ahvaz	1.91	1.62	1.180	99	103	30.64
Iran	Kashan	2.57	2.00	1.283	162	177	47.03
Iran	Piranshahr	3.82	2.30	1.661	69	87	77.24
Iran	Sanandaj	4.05	2.36	1.718	62	80	83.51
Iran	Kashmar	2.55	1.46	1.741	76	89	46.51
Iran	Babol	3.29	1.46	2.246	125	165	63.76
Iran	Salmas	2.24	0.95	2.353	70	85	39.97
Iran	Aradabil	2.70	1.07	2.512	55	70	49.88
Iran	Arak	1.76	0.20	8.692	59	75	30.28
Iran	Sari	1.74	0.11	16.270	109	139	29.88
Iran	Tehran	1.97	...	...	60	65	21.80
Iran	Dehdasht	4.02	...	...	22	73	82.81
Kazakhstan	Shymkent	3.33	4.22	0.791	227	202	54.26
Kazakhstan	Astana (Nur-Sultan)	4.46	5.08	0.878	122	112	95.35
Kazakhstan	Aktobe	3.18	3.29	0.967	151	149	61.11
Kazakhstan	Almaty	3.22	2.46	1.308	119	133	61.98
Kazakhstan	Oskemen	1.79	...	...	120	166	30.75
Kazakhstan	Pavlodar	1.90	...	...	113	140	33.05
Kazakhstan	Qaragandy	1.48	...	...	151	175	24.87
Kazakhstan	Semei	3.33	...	...	151	215	64.71
Kazakhstan	Taraz	3.38	...	...	142	209	65.92
Nepal	Pokhara	1.95	...	...	50	72	28.94
Pakistan	Sialkot	1.06	1.96	0.542	53	47	15.99
Pakistan	Mardan	1.30	2.08	0.625	57	51	21.52
Pakistan	Hyderabad	1.34	1.91	0.698	37	34	22.19
Pakistan	Karachi	1.72	2.23	0.772	31	29	25.09
Pakistan	Gujranwala	1.66	2.06	0.807	52	49	28.35
Pakistan	Peshawar	1.91	1.78	1.075	96	97	33.20
Pakistan	Daska	1.87	1.67	1.123	36	37	32.37
Pakistan	Shikarpur	1.26	0.84	1.507	34	36	20.79
Pakistan	Lahore	3.25	1.87	1.733	28	34	52.55
Pakistan	Islamadad	4.77	2.56	1.866	59	83	104.67

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Pakistan	Multan	3.51	1.77	1.981	54	70	69.36
Pakistan	Faisalabad	3.98	1.81	2.196	35	49	81.74
Pakistan	Quetta	4.37	0.67	6.482	78	136	92.69
Pakistan	Khanpur	2.72	0.15	17.584	82	120	50.43
Pakistan	Sargodha	1.90	...	...	51	67	33.08
Pakistan	Jhang	2.27	...	...	70	100	40.47
Pakistan	Layyah	2.57	...	...	121	234	46.96
Pakistan	Turbat	2.26	...	...	30	40	40.46
Pakistan	Nawabshah	2.81	...	...	91	123	52.52
Sri-Lanka	Chilaw, Ferry Street	0.16	0.24	0.686	277	274	2.49
Sri-Lanka	Hambantota	1.28	1.61	0.794	304	290	21.14
Sri-Lanka	Anuradhapura	0.75	0.48	1.564	223	232	11.99
Sri-Lanka	Embilipitiya	2.57	0.95	2.718	210	268	47.07
Sri-Lanka	Jaffna	1.42	0.41	3.505	203	237	23.74
Sri-Lanka	Haputale	2.10	...	...	167	259	36.95
Sri-Lanka	Batticaloa	2.49	...	...	165	242	45.27
Uzbekistan	Nukus	2.43	3.32	0.732	133	116	43.98
Uzbekistan	Kokand	1.06	1.38	0.767	239	228	17.25
Uzbekistan	Qarshi	1.07	1.28	0.834	174	169	17.40
Uzbekistan	Tashkent	0.75	0.55	1.355	179	184	11.01
Uzbekistan	Denau	2.29	1.47	1.556	135	152	40.94
Uzbekistan	Andijan	2.22	1.40	1.586	206	233	39.41
Uzbekistan	Bukhara	2.35	1.31	1.791	313	359	35.74
Uzbekistan	Navoi_Karmana	4.35	0.85	5.117	205	346	92.11
Uzbekistan	Bekobod	2.57	...	...	279	376	47.03
China	Beijing, Beijing	3.11	4.01	0.776	130	117	45.23
China	Shanghai, Shanghai	2.63	3.22	0.817	136	124	48.28
China	Shenzhen, Guangdong	4.06	4.23	0.959	68	66	69.46
China	Zhuji, Zhejiang	1.62	1.29	1.257	361	377	23.39
China	Haikou, Hainan	5.42	3.41	1.592	51	64	91.73
China	Kaiping, Guangdong	1.36	0.85	1.597	78	84	20.93
China	Hong Kong, Hong Kong	0.79	0.49	1.617	21	21	10.81
China	Zhengzhou, Henan	4.18	2.35	1.781	152	199	87.10
China	Guangzhou, Guangdong	4.32	2.30	1.881	95	126	83.15
China	Jinan, Shandong	2.80	1.33	2.101	106	128	43.93
China	Tianjin, Tianjin	6.46	2.89	2.236	90	143	131.68
China	Wuhan, Hubei	4.19	1.65	2.539	85	119	72.46
China	Changzhou, Jingsu	4.83	1.86	2.601	110	167	96.56
China	Chengdu, Sichuan	9.13	3.43	2.663	67	112	127.35
China	Hangzhou, Zhejiang	5.90	2.19	2.691	109	177	115.30
China	Yucheng, Zhejiang	2.60	0.94	2.769	148	187	43.89
China	Taipei, Taiwan	3.13	0.95	3.288	58	77	50.17
China	Pingxiang, Jiangxi	1.84	0.50	3.644	161	194	29.38
China	Qingdao, Shandong	7.44	1.49	5.005	81	176	163.15
China	Yanggu, Shandong	3.66	0.58	6.275	167	257	67.01
China	Yulin, Guangxi	5.50	0.67	8.168	105	162	64.02
China	Tangshan, Hebei	4.17	0.50	8.402	140	226	71.92

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
China	Changzhi, Hunan	1.77	0.08	20.948	129	164	28.15
China	Anqing, Anhui	7.16	0.19	37.855	61	152	153.66
China	Xingping, Shaanxi	5.01	0.05	101.751	69	132	91.88
China	Yiyang, Hunan	4.13	...	...	87	166	78.23
China	Chengguan, Guizhou	5.19	...	...	30	70	96.37
China	Guixi, Chongqing	7.08	...	...	32	99	189.04
China	Xucheng, Jiangsu	10.20	...	...	69	266	276.56
China	Suining, Sichuan	5.73	...	...	24	56	110.56
China	Zunyi, Guizhou	6.85	...	...	32	84	127.39
China	Bicheng, Chongqing	11.19	...	...	34	165	328.21
China	Gaoyou, Jiangsu	5.54	...	...	90	228	142.47
China	Leshan, Sichuan	4.15	...	...	101	188	71.43
Democratic People's Republic of Korea (North Korea)	Sinuiju	0.64	1.12	0.568	34	32	10.03
Democratic People's Republic of Korea (North Korea)	Kanggye	1.76	1.36	1.294	28	30	30.15
Democratic People's Republic of Korea (North Korea)	Chongjin	1.24	0.47	2.646	36	40	20.53
Democratic People's Republic of Korea (North Korea)	Songnim	2.75	0.91	3.027	30	39	50.98
Democratic People's Republic of Korea (North Korea)	Ranson	2.79	0.30	9.218	41	59	51.93
Democratic People's Republic of Korea (North Korea)	Hamhung	2.57	0.15	16.852	26	38	47.07
Democratic People's Republic of Korea (North Korea)	Pyongyang	0.08	...	...	47	50	1.07
Indonesia	Kendari	3.32	3.48	0.953	124	121	64.48
Indonesia	Jambi	2.95	2.53	1.166	111	118	55.58
Indonesia	Parepare	2.02	1.25	1.608	52	58	32.62
Indonesia	makassar	2.82	1.60	1.767	66	79	52.75
Indonesia	Bandung	3.80	1.50	2.533	48	68	76.69
Indonesia	Medan	3.57	1.16	3.069	76	101	53.57
Indonesia	Purwakarta	4.02	1.25	3.228	62	94	82.82
Indonesia	Garut Kota	2.97	0.75	3.941	26	36	56.20
Indonesia	Subang	5.06	1.20	4.207	49	87	113.75
Indonesia	Surabaya	3.20	0.75	4.249	59	85	61.59
Indonesia	Semarang	3.19	0.71	4.493	67	97	61.28
Indonesia	Bengkulu	5.10	0.66	7.764	66	129	115.05
Indonesia	BandaAceh	2.61	0.13	20.034	148	215	47.99
Indonesia	Cirebon	6.19	0.18	34.894	26	60	138.03
Indonesia	Pekalongan	3.99	...	...	59	112	82.06
Indonesia	Palembang	1.96	...	...	85	113	26.54
Indonesia	Pati	2.78	...	...	69	124	51.75
Indonesia	Pematangtiantar	1.16	...	...	49	67	16.20

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Indonesia	Pemalang	2.84	…	…	50	89	53.19
Indonesia	Jombang	4.14	…	…	68	124	85.96
Japan	Tokyo	1.73	0.66	2.628	112	130	27.41
Japan	Osaka	0.54	0.09	5.890	108	114	7.28
Japan	Fukuoka	0.82	0.03	25.275	146	161	11.23
Japan	Okayama	0.57	…	…	328	366	8.28
Japan	Yamaguchi	0.32	…	…	406	473	4.97
Malaysia	Ipoh	1.81	1.61	1.126	315	323	24.29
Malaysia	Rawang	2.22	1.80	1.234	234	247	33.44
Mongolia	Ulaanbaatar	2.99	4.85	0.618	150	118	47.58
Myanmar	Lashio	0.44	3.26	0.134	153	100	6.76
Myanmar	Mandalay	0.21	1.03	0.203	76	67	3.20
Myanmar	Myitkyina	0.94	3.55	0.265	240	163	15.14
Myanmar	Tachiliek	0.66	2.15	0.306	179	143	10.34
Myanmar	Yangon	1.58	3.85	0.410	88	62	26.69
Myanmar	Loikaw	0.74	1.48	0.501	172	154	11.80
Myanmar	Taunggyi	1.38	2.34	0.589	114	98	22.91
Myanmar	Pathein	0.67	1.00	0.666	95	91	10.56
Myanmar	Myeik	3.79	2.67	1.419	35	40	51.66
Myanmar	Mawlamyine	0.59	…	…	74	81	9.28
Myanmar	Myede	1.63	…	…	38	49	27.69
Philippines	Manila	0.99	1.77	0.559	42	38	14.85
Philippines	Bacolod	0.71	0.97	0.734	89	86	9.71
Philippines	Cebu City	3.16	3.77	0.839	61	56	55.71
Republic of Korea (South Korea)	Cheonan	2.90	3.07	0.946	185	180	50.14
Republic of Korea (South Korea)	Seoul	2.66	1.11	2.394	69	86	45.07
Republic of Korea (South Korea)	Gwangju	3.13	0.84	3.744	75	106	59.86
Republic of Korea (South Korea)	Jinju	4.75	…	…	172	363	94.41
Republic of Korea (South Korea)	Busan	1.83	…	…	67	88	26.78
Singapore	Singapore	1.18	3.24	0.363	62	50	13.82
Thailand	Bangkok	3.33	3.35	0.994	111	111	59.34
Thailand	ChiangMai	2.86	1.14	2.509	175	226	53.49
Thailand	Chaam	7.04	…	…	221	641	187.68
Thailand	Khon Kaen	3.31	…	…	145	261	64.21
Thailand	ChiangRai	3.30	…	…	132	225	64.05
Thailand	Chumpon	5.78	…	…	71	173	138.07
Thailand	Phattalung	2.26	…	…	82	138	40.39
Vietnam	Ho Chi Minh City	3.73	3.41	1.094	58	61	81.50
Vietnam	Vinh Long	10.55	…	…	30	131	337.96
Cuba	Las Tunas	2.89	0.84	3.431	53	72	54.16
Argentina	Buenos Aires	1.51	1.35	1.112	101	103	21.61
Argentina	Cordoba	1.25	0.48	2.595	151	167	17.67
Bolivia	Cochabamba	2.20	2.42	0.911	152	148	33.15
Brazil	Palmas	1.87	5.72	0.327	396	240	27.50
Brazil	Ribeirao Preto	1.12	1.98	0.565	197	176	15.63

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Brazil	Sao Paulo	0.58	0.91	0.643	90	86	8.52
Brazil	Belo Horizonte	0.91	1.33	0.684	119	114	9.50
Brazil	Florianopolis	2.13	2.23	0.955	154	152	34.79
Brazil	Curitiba	1.99	1.27	1.574	143	159	32.19
Brazil	Jequie	0.69	0.28	2.522	173	183	9.45
Brazil	Ilheus	1.36	...	...	81	127	17.69
Chile	Santiago	1.36	1.10	1.231	90	93	20.97
Costa Rica	Liberia	2.65	2.79	0.950	186	182	48.77
Costa Rica	Puerto Limon	1.63	0.94	1.738	138	154	27.77
Costa Rica	Cartago	3.53	1.27	2.773	115	162	69.92
Costa Rica	San Hose	2.62	0.92	2.838	119	154	48.12
Costa Rica	Puntar Arenas_ Barranca	2.19	0.16	13.432	133	181	38.97
Cuba	Holguin	0.25	0.68	0.368	81	77	3.30
Cuba	Bayamo	2.01	0.77	2.615	40	48	35.23
Cuba	Cienfuego	1.28	0.43	2.973	55	63	21.25
Cuba	Guantanamo	1.28	0.43	2.973	55	63	21.25
Cuba	Santa Clara	1.91	0.12	15.287	63	82	33.09
Cuba	Camaguey	2.45	...	...	78	114	44.42
Cuba	LacHabana	1.12	...	...	70	92	18.21
Cuba	Santiago De Cuba	1.16	...	...	64	76	18.92
Ecuador	Quito	4.00	2.17	1.841	76	96	68.19
El Salvador	San Salvador	1.88	...	...	77	104	32.62
Guatemala	Guatemala City	2.27	1.32	1.720	85	96	31.28
Mexico	Reynosa	2.34	2.87	0.815	190	177	35.48
Mexico	Tijuana	2.17	1.89	1.146	154	160	35.42
Mexico	Guadalajara	2.02	1.18	1.721	93	106	35.49
Mexico	Culiacan	2.35	1.34	1.751	130	150	38.95
Mexico	Mexico City	2.95	0.54	5.462	57	80	51.12
Nicaragua	Leon	1.96	...	...	87	113	21.64
Uruguay	Maldonaldo	1.38	2.67	0.518	387	319	23.05
Uruguay	LasPiedras	0.58	0.32	1.782	196	203	9.03
Uruguay	Tacuarembo	1.51	0.67	2.249	196	222	25.34
Uruguay	Paysandu	2.86	0.62	4.609	181	253	53.54
Uruguay	Salto	2.59	0.55	4.707	144	196	47.53
Uruguay	Montevideo + CiudadDeLaCosta	0.76	0.13	5.738	154	169	12.06
Uruguay	Melo	2.31	0.25	9.271	131	178	41.38
Uruguay	Mercedes	1.39	...	...	133	167	23.10
Uruguay	Riviera	1.31	...	...	156	205	21.71
Venezuela	Cabimas	1.13	1.66	0.682	192	178	17.18
Venezuela	Caracas	0.58	0.40	1.443	54	55	7.84
Austria	Vienna	0.82	1.00	0.819	185	180	11.27
Belarus	Gomel	0.55	0.38	1.444	175	179	7.44
Belarus	Hrodna	1.73	0.46	3.733	139	169	29.69
Belarus	Minsk	4.82	0.88	5.451	68	122	106.05
Belarus	Brest	4.43	0.59	7.499	159	283	94.28
Belarus	Viciebsk	3.51	0.15	23.749	129	213	69.37

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Belarus	Kobyrn	3.56	...	...	228	422	70.47
Belarus	Salihorsk	1.92	...	...	277	413	33.47
Belarus	Polack	6.50	...	...	124	376	164.94
Belarus	Mazyr	7.97	...	...	84	291	230.32
Belarus	Babrujsk	0.90	...	...	197	239	14.51
Belgium	Antwerp	0.99	0.72	1.386	355	368	13.80
Canada	Victoria	0.82	0.89	0.928	414	411	11.31
Canada	Montreal	0.94	0.83	1.133	258	262	13.07
France	Paris	1.17	0.58	2.014	164	178	17.83
France	Toulousse	3.24	1.18	2.738	249	339	62.56
France	Lyon	1.90	0.53	3.584	179	220	33.04
France	Nimes	0.93	0.25	3.725	266	295	14.90
France	Grenoble	0.57	0.15	3.760	269	287	8.89
France	Nantes	1.31	0.28	4.718	228	266	21.80
France	Marseille	1.75	0.34	5.072	200	247	29.96
France	Strasbourg	1.68	0.14	12.201	162	204	28.70
France	Nice	2.09	0.11	19.066	182	244	36.74
France	Le Mans	0.37	...	...	305	343	5.28
France	Metz	0.48	...	...	287	316	7.46
France	Besancon	0.59	...	...	239	266	9.28
France	Lille	0.85	...	...	192	218	13.55
Germany	Oldenburg	1.89	0.13	14.391	188	241	30.37
Germany	Berlin	1.82	0.03	52.160	140	177	26.73
Germany	Halle	0.95	...	...	251	292	11.01
Greece	Thessaloniki	2.60	0.16	16.396	94	124	33.11
Hungary	Budapest	2.52	0.99	2.556	187	221	31.97
Italy	Milan	3.30	0.76	4.350	213	275	39.08
Italy	Palermo	2.12	...	...	118	158	31.75
Lithuania	Kaunas	0.39	...	...	195	273	5.59
Netherlands	Zwolle	0.90	1.07	0.847	288	281	13.47
Poland	Lomza	1.44	0.40	3.572	439	513	24.17
Poland	Warsaw	1.97	0.24	8.081	167	209	29.12
Poland	Poznan	0.76	0.03	26.812	264	294	12.07
Poland	Mielec	3.06	...	...	168	269	58.31
Poland	Lodz	2.44	...	...	80	133	44.20
Poland	Lublin	3.95	...	...	75	141	80.95
Poland	Wroclaw	2.66	...	...	95	145	48.93
Romania	Bucharest	1.28	...	...	127	167	21.11
Romania	Targu Jiu	0.88	...	...	225	352	14.09
Romania	Craiova	0.59	...	...	158	224	9.27
Romania	Falticeni	0.46	...	...	200	274	7.17
Romania	ARad	0.50	...	...	230	313	7.77
Romania	Reghin	0.80	...	...	276	376	12.80
Romania	CampiaTurzii	2.12	...	...	227	368	37.38
Romania	Navodari	0.79	...	...	208	280	12.64
Romania	Mangalia	0.80	...	...	310	416	12.67
Russia	Moscow	1.25	1.34	0.938	142	140	17.72

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Russia	Saint Petersburg	1.14	0.64	1.782	131	141	17.30
Russia	Tyumen	1.55	0.55	2.845	197	223	20.46
Russia	Astrakhan	0.68	0.05	14.363	234	254	9.31
Russia	Berezniki	0.55	...	...	299	367	7.36
Russia	Dzerzhinsk	0.98	...	...	225	286	10.32
Serbia	Novi Sad	0.71	0.81	0.884	219	216	11.30
Serbia	Novi Pazar	4.55	1.17	3.898	77	129	97.93
Serbia	Borca	3.26	0.80	4.085	92	132	63.14
Serbia	Belgrade	0.95	...	...	98	114	13.14
Serbia	Nis	4.64	...	...	81	165	100.60
Serbia	Kragujevac	2.95	...	...	136	225	55.68
Serbia	Kikinda	5.72	...	...	141	449	135.79
Serbia	Zrenjanin	1.92	...	...	186	307	33.39
Spain	Madrid	4.28	2.03	2.110	88	105	40.81
Switzerland	Wetzikon	0.17	1.84	0.092	317	247	2.58
Switzerland	Zurich	0.44	1.17	0.377	210	188	6.86
Switzerland	Winterhur	0.76	1.39	0.544	249	226	12.02
Switzerland	Lausanne	1.05	1.29	0.814	227	220	15.79
Switzerland	Emmen_Lucerne	0.76	0.74	1.032	222	223	12.14
Switzerland	Fribourg	1.70	1.57	1.078	226	231	28.98
Switzerland	Neuchatel	1.03	0.54	1.910	243	261	16.67
Switzerland	Bern	0.50	0.26	1.969	198	206	7.85
Switzerland	St Gallen	2.28	0.45	5.088	174	229	40.70
Switzerland	Basel	1.45	0.23	6.384	206	248	24.24
Ukraine	Rovno	1.50	...	...	163	206	23.41
Ukraine	Nikolaev	0.05	...	...	149	161	0.67
United Kingdom	Manchester	0.32	1.32	0.246	205	189	2.63
United Kingdom	London	0.34	1.22	0.277	171	153	4.48
United Kingdom	Sheffield	0.36	0.67	0.533	240	232	4.03
United States	Gainesville, FL	0.79	1.26	0.625	469	441	10.80
United States	Houston	2.07	2.32	0.893	500	483	33.66
United States	Raleigh	3.12	3.37	0.927	606	587	50.07
United States	Portland, OR	1.38	1.42	0.973	450	448	21.29
United States	Los Angeles	0.61	0.60	1.021	304	304	8.98
United States	New York	0.28	0.27	1.033	407	407	3.11
United States	Killeen	2.54	2.29	1.109	700	723	39.19
United States	Modesto	1.62	1.41	1.152	470	484	25.52
United States	Minneapolis	0.79	0.65	1.213	532	542	11.66
United States	Chicago	0.72	0.31	2.298	557	587	9.86
United States	Philadelphia	1.49	0.35	4.284	441	517	23.17
United States	Springfield, MA	1.18	0.11	10.908	599	696	18.00
United States	Toledo	2.06	...	...	499	697	33.36
United States	Cleveland	2.23	...	...	449	653	33.56
Fiji	Suva	1.20	1.14	1.057	141	143	19.77
Angola	Luanda	4.96	18.68	0.265	411	60	100.12
Benin	Kandy	0.98	5.19	0.190	159	85	15.90
Benin	Parakou	1.22	4.26	0.286	341	216	20.04

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Benin	Djougou	0.76	2.32	0.328	187	148	12.11
Benin	Natitingou	1.33	2.09	0.637	151	135	22.06
Benin	Bohicon-Abomey	3.63	2.27	1.600	246	301	72.45
Congo Dem. Rep.	Lubumbashi	3.96	7.08	0.559	118	74	81.13
Congo Dem. Rep.	Kinshasa	3.51	1.00	3.502	43	60	57.77
Ethiopia	Adama Nazreth	2.59	3.20	0.810	97	89	47.51
Ethiopia	Gondar	4.55	2.65	1.721	45	60	98.03
Ethiopia	Addis Ababa	5.16	2.95	1.750	47	59	67.50
Ethiopia	Dire Dawa	4.17	2.28	1.830	39	52	86.85
Ethiopia	Harar	4.81	2.32	2.073	35	50	105.73
Ethiopia	Awassa	8.97	2.95	3.046	37	90	284.25
Ethiopia	BahirDar	6.06	1.86	3.260	26	49	148.19
Ghana	Accra	3.56	3.35	1.062	134	138	64.57
Kenya	Eldoret	1.25	3.43	0.365	137	99	20.70
Kenya	Malaba	1.79	2.09	0.858	91	87	30.83
Kenya	Nairobi	2.73	2.86	0.954	97	95	50.52
Kenya	Kisumu	2.38	1.63	1.454	100	112	42.81
Kenya	Nakuru	4.73	3.23	1.464	81	100	93.80
Kenya	Meru	6.20	1.40	4.424	96	197	153.33
Kenya	Nyeri	7.00	1.07	6.515	58	142	185.62
Madagascar	Mahajanga	0.86	4.95	0.174	222	120	13.79
Madagascar	Marovoay	0.76	2.32	0.329	100	79	12.11
Madagascar	Toliara	1.47	4.21	0.349	638	423	24.68
Madagascar	Antsiranana	3.55	4.35	0.817	360	319	70.44
Madagascar	Taolanaro	1.19	1.18	1.009	101	101	19.47
Madagascar	Antsirabe	2.72	1.71	1.585	295	343	50.27
Madagascar	Antananarivo	8.87	4.66	1.906	62	117	278.50
Madagascar	Toamasina	8.42	4.12	2.047	356	679	253.79
Madagascar	Amparafaravola	1.53	0.42	3.646	82	96	25.85
Madagascar	Fianarantsoa	3.27	...	...	870	1,439	63.35
Malawi	Mzuzu	2.04	4.28	0.476	266	190	35.76
Malawi	Blantyre	4.58	2.52	1.817	79	108	98.72
Mali	Bamako	4.37	6.43	0.679	80	61	76.45
Mozambique	Nacala Porto	0.42	2.46	0.172	207	152	6.56
Mozambique	Alto Molocue	1.11	4.48	0.247	95	57	18.05
Mozambique	Nampula	1.19	4.19	0.285	154	99	19.63
Mozambique	Mocuba	0.80	2.78	0.287	95	71	12.69
Mozambique	Gurue	1.22	2.99	0.408	51	39	20.06
Mozambique	Manhica	1.99	2.79	0.713	240	213	34.80
Mozambique	Maputo	2.07	2.71	0.763	213	193	36.37
Mozambique	Maxixe	1.07	1.18	0.909	339	333	17.45
Mozambique	Pemba	4.91	4.79	1.025	78	79	108.87
Mozambique	Beira	1.49	0.81	1.838	97	107	23.23
Niger	Agadez	5.84	25.16	0.232	1,863	103	140.28
Niger	Maradi	3.36	4.33	0.776	55	47	65.55
Niger	Dosso	2.40	2.29	1.045	18	18	43.28
Niger	Zinder	4.26	3.79	1.124	27	29	89.41

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Niger	Niamey	3.71	3.00	1.238	70	78	74.47
Nigeria	Lagos	2.05	2.91	0.705	55	50	30.61
Nigeria	Ibadan	2.19	3.01	0.728	129	116	32.92
Nigeria	Oyo	3.84	2.09	1.836	62	79	71.12
Nigeria	Gombe	6.54	3.28	1.996	70	107	134.03
Rwanda	Ruhengeri	1.66	3.87	0.427	88	67	21.97
Rwanda	Gisenyi	5.17	5.48	0.943	77	74	85.98
Rwanda	Gitarama	3.82	2.85	1.339	40	45	58.07
Rwanda	Kigali	7.73	3.33	2.319	51	99	219.04
Rwanda	Butare	4.42	1.74	2.542	43	64	94.10
Rwanda	Kayonza	7.99	1.71	4.681	35	90	231.43
Rwanda	Cyangugu	2.62	...	...	24	35	48.04
Senegal	Ziguinchor	0.81	2.59	0.314	120	92	12.96
Senegal	Diorbel	1.21	2.54	0.476	64	52	19.86
Senegal	Dakar	1.61	2.81	0.571	63	52	27.25
Senegal	SaintLouis	0.47	0.59	0.797	62	61	7.36
Senegal	Kaolack	2.87	2.75	1.044	62	63	53.74
Senegal	Louga	2.63	2.35	1.122	106	110	48.37
Senegal	MBour	4.21	2.62	1.608	66	84	88.13
Senegal	Touba	9.28	2.82	3.286	53	140	302.11
Senegal	Thies	6.26	1.66	3.776	45	90	155.68
Tanzania	Arusha	5.41	5.12	1.058	41	42	81.35
Uganda	Kampala	2.84	5.17	0.549	110	83	40.61
Uganda	Lira	2.26	3.78	0.598	148	118	40.37
Uganda	Mbarara	2.04	2.79	0.732	132	118	35.88
Uganda	Mbale	3.74	3.77	0.992	87	87	75.25
Uganda	Gulu	3.81	3.53	1.080	61	63	77.14
Uganda	Kasese	2.95	2.50	1.180	87	93	55.71
Uganda	Masaka	4.35	3.50	1.242	118	133	92.15
Uganda	Jinja	3.44	1.80	1.906	91	116	67.52
Zambia	Ndola	2.16	3.10	0.695	122	109	29.52
Algeria	Tolga	1.15	2.53	0.454	108	88	18.80
Algeria	Djelfa	3.75	5.52	0.679	76	59	75.53
Algeria	Chlef	1.34	1.59	0.840	124	119	22.21
Algeria	Blida	2.09	2.31	0.904	105	101	36.81
Algeria	El Khroub	4.42	4.61	0.960	95	93	94.13
Algeria	Tebessa	2.18	2.02	1.077	115	118	32.68
Algeria	Algiers	2.85	2.22	1.283	75	81	44.76
Algeria	Oran	3.04	1.87	1.628	72	86	57.83
Algeria	Khemis Miliana	2.45	1.07	2.293	77	95	44.40
Algeria	Tamanrasset	3.90	1.50	2.595	185	265	79.39
Algeria	Tiaret	4.61	1.57	2.929	62	98	99.70
Algeria	M'Sila	6.57	1.91	3.434	65	130	167.89
Algeria	Batna	3.96	0.96	4.126	60	94	81.03
Algeria	Mila	4.62	1.07	4.307	68	116	100.09
Algeria	Annaba	0.92	0.21	4.307	89	99	14.79
Azerbaijan	Baku	2.03	1.73	1.174	97	101	30.19

Table C.1: Continued

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Bahrain	Al Manamah[i]	2.52	4.78	0.528	185	132	45.98
Egypt	Asyut	1.46	2.06	0.710	46	42	24.51
Egypt	Al_Manshah	1.68	1.91	0.880	55	53	28.64
Egypt	Alexandria	2.02	1.72	1.176	48	50	32.67
Egypt	Port Said	2.03	1.68	1.207	32	34	35.52
Egypt	Al_zaqaziq	2.46	1.87	1.314	32	35	44.67
Egypt	Diyarb Najm	3.00	1.95	1.538	56	66	56.95
Egypt	Cairo	4.29	2.57	1.666	42	50	53.53
Egypt	Al_Qhurdaqah	3.86	1.36	2.828	167	243	78.35
Iraq	Baghdad	1.57	1.65	0.950	109	108	24.56
Israel	Tel Aviv	1.71	1.99	0.859	134	129	27.03
Jordan	Irbid	2.20	2.86	0.771	130	118	39.19
Jordan	Amman[i]	3.28	2.85	1.151	82	88	63.45
Kuwait	Kuwait[ii]	2.26	...	...	135	96	40.37
Lebanon	Beirut	1.74	4.88	0.357	119	74	29.83
Lebanon	Tripoli	2.40	4.30	0.557	211	159	43.28
Lebanon	Zahle	1.98	3.13	0.631	323	272	34.54
Lebanon	Baalbek	3.39	3.03	1.118	164	173	66.37
Lebanon	Sidon	5.52	4.02	1.372	48	60	128.84
Lebanon	Tyre	5.34	2.02	2.637	37	61	122.73
Morocco	Aitemelloul	1.39	2.35	0.593	68	59	23.24
Morocco	Temara	2.15	3.51	0.612	82	67	38.09
Morocco	Sidi slimane	1.04	1.53	0.678	76	71	16.84
Morocco	Tanger	2.42	2.94	0.823	70	64	43.71
Morocco	Midelt	0.91	1.10	0.826	60	58	14.65
Morocco	Fez	1.45	1.44	1.006	53	53	24.32
Morocco	Oujda	2.05	1.36	1.506	83	93	36.00
Morocco	Safi	0.96	0.59	1.635	59	63	15.45
Morocco	Marrakesh	4.04	2.43	1.663	83	101	62.33
Morocco	Casablanca[iii]	2.16	1.22	1.769	43	49	38.32
Morocco	Maknes	2.95	1.46	2.020	54	68	55.68
Morocco	Sefrou	1.18	0.52	2.295	47	52	19.43
Morocco	Fikh Ben Salah	2.70	0.77	3.501	50	67	49.96
Morocco	Azrou	3.35	0.57	5.898	39	59	65.17
Morocco	Oulad teima	4.73	0.60	7.889	38	71	103.20
Oman	Sohar	2.75	5.33	0.516	93	63	51.06
Oman	Salalah	3.19	3.18	1.000	146	146	61.24
Oman	Muscat[iv]	6.84	5.03	1.360	79	104	179.02
Oman	Al Buryami	2.89	...	...	80	90	54.26
Palestinian territories	Al-Quds	0.38	1.53	0.249	180	151	5.89
Palestinian territories	Rafah	3.95	2.97	1.330	74	85	80.84
Palestinian territories	Jenin	3.46	1.84	1.879	99	126	67.99
Palestinian territories	Nabulus(Nablus)	5.84	2.56	2.283	60	98	140.27

[i] Including surrounding neighborhoods
[ii] Includes: Az-zarqa, Ar-Rusayfah, Al-Quwaysimah,Tila al-Ali, Wadi as-sir, Al-Jubayhah, Khraibat as-suq and Sahab
[iii] Includes all the major cities Hawallī, Al-Farwānīyah, Al-Fintās, Al-Jahrā', Janūb al-Kuwayt, Al-Manqaf, Al-Firdaws and Mubarāk al-Kabīr
[iv] Includes Mohammedia town
[v] Includes: Bawashar, Matrah, Aseed (Assib)

Table C.1: Continued

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Palestinian territories	Khān Yūnis (includes Dayr al Balah)	5.84	2.56	2.283	60	98	140.27
Palestinian territories	Al-Khalīl	3.44	1.47	2.342	136	183	67.59
Palestinian territories	An-Nu ayrāt	8.64	2.95	2.933	36	85	265.52
Qatar	Doha	3.24	8.74	0.371	420	184	62.67
Qatar	Al Shahaniya	6.22	9.46	0.658	567	349	154.19
Qatar	Mesaieed	6.35	8.45	0.752	793	579	159.34
Qatar	AlKhor_AlThakhira	6.69	8.70	0.768	183	136	172.71
Saudi Arabia	Jiddah including Al Khubar	1.20	2.44	0.492	167	139	19.73
Saudi Arabia	Al-Jubayl	1.34	2.56	0.522	462	385	22.19
Saudi Arabia	Makkah	1.31	2.11	0.623	125	111	21.76
Saudi Arabia	Al- awiyah	1.54	2.28	0.676	197	176	26.01
Saudi Arabia	Al-Madinah	1.94	2.13	0.909	164	159	33.77
Saudi Arabia	Al-Kharj	2.55	2.60	0.980	188	186	46.64
Saudi Arabia	Ar-Rass	2.68	2.35	1.139	520	546	49.43
Saudi Arabia	Riyadh	5.02	3.60	1.396	132	159	92.08
Saudi Arabia	Tabuk	2.68	1.77	1.514	103	118	49.43
Saudi Arabia	Al-Hufuf	5.30	2.86	1.851	127	183	121.30
Saudi Arabia	Al-Khafji	4.91	2.57	1.911	315	447	108.73
Saudi Arabia	Ha'il	3.63	1.87	1.947	182	238	72.41
Saudi Arabia	Rafha'	3.67	1.73	2.127	101	135	73.42
Saudi Arabia	Ad-Dammam	6.31	2.76	2.287	123	209	157.57
Saudi Arabia	'Ar'ar	3.17	1.33	2.375	88	116	60.79
Saudi Arabia	At-Ta'if	6.38	2.24	2.854	60	113	160.48
Sudan	Bur Sudan	2.52	4.57	0.551	136	100	45.87
Sudan	Alfashir	4.32	3.57	1.211	62	69	91.14
Sudan	Wad Madani	2.21	1.53	1.444	69	77	39.32
Sudan	Khartoum	3.71	2.46	1.503	77	91	68.01
Sudan	Dunqula	3.13	1.78	1.759	123	151	59.82
Sudan	Atbara	2.83	1.40	2.026	97	120	52.81
Sudan	Kassala	4.05	1.84	2.204	51	71	83.45
Sudan	Sannar	4.38	1.50	2.924	56	87	92.81
Sudan	Sinjah	5.41	1.55	3.478	50	89	125.00
Sudan	Al Qadarif	2.77	0.76	3.632	90	122	51.54
Tunisia	Susah	1.15	2.42	0.475	125	104	18.87
Tunisia	Monastir	1.23	2.38	0.518	149	125	20.26
Tunisia	Banzart	0.90	1.38	0.654	144	134	14.51
Tunisia	Tozeur	1.19	1.81	0.657	399	363	19.49
Tunisia	Al_Qayrawan	1.43	1.17	1.228	133	138	24.01
Tunisia	Tunis (includes At-Tadamun and Sukrah)	2.46	1.44	1.710	88	102	44.68
Tunisia	Qabis	2.59	1.39	1.859	82	98	47.47
Tunisia	Safaqia	2.31	0.98	2.363	115	140	41.40
Turkey	Ankara	1.47	2.96	0.495	96	77	24.61
Turkey	Agri	0.93	1.69	0.550	145	129	14.91
Turkey	Gaziantep	2.87	4.20	0.682	80	65	53.70
Turkey	Balikesir	1.48	2.02	0.731	153	142	24.80

Table C.1: Continued

Country	Cities	Land Consumption Rate 2000 - 2015 (%)	Population Growth Rate 2000 - 2015 (%)	Ratio of Land consumption rate to Population growth rate 2000 - 2015	Built-up area per capita 2000 (m² per capita)	Built-up area per capita 2015 (m² per capita)	Change in total built-up area 2000 - 2015 (%)
Turkey	Denzili	2.82	3.64	0.775	145	128	52.61
Turkey	Kayseri	3.94	4.72	0.834	134	121	66.85
Turkey	Elbistan	1.07	1.20	0.896	171	167	17.45
Turkey	Corum	1.92	2.07	0.927	144	141	33.32
Turkey	Konya	3.70	3.96	0.935	257	247	74.21
Turkey	Sanliurfa	3.98	4.09	0.973	105	103	81.77
Turkey	Bursa	3.85	3.69	1.043	96	98	78.18
Turkey	Antalya	2.44	2.30	1.061	182	186	44.26
Turkey	Adapazari	3.02	2.69	1.124	205	216	57.23
Turkey	Sivas	3.38	2.48	1.362	86	99	65.92
Turkey	Istanbul	4.60	2.97	1.547	60	72	65.85
Turkey	Malatya	1.39	0.58	2.404	108	121	21.41
Turkey	Carasamba	3.80	1.20	3.175	65	96	76.81
Turkey	Adiyaman	7.44	1.42	5.244	49	122	205.19
Turkey	Uzunköprü	2.99	...	...	183	298	56.67
Turkey	Tarsus	2.77	...	...	100	160	51.42
Turkey	Viransehir	2.47	...	...	54	92	44.87
Turkey	Izmir	1.83	...	...	67	81	31.62
UAE	Dubai[v]	5.01	8.15	0.614	159	99	111.90
UAE	Al Ain	3.17	4.92	0.644	202	155	60.88
UAE	Al Fujayrah	6.23	6.52	0.956	189	181	154.57
UAE	Ras Al Khaymah	5.16	5.06	1.019	245	248	116.84
UAE	Abu Dhabi	10.63	5.25	2.025	96	216	392.57
Yemen	Adan	0.47	2.94	0.161	75	52	7.38
Yemen	Al Hudaydah	1.03	2.71	0.382	59	46	16.78
Yemen	Yarim	3.85	5.02	0.767	30	25	78.09
Yemen	Radaa	1.85	2.39	0.773	55	51	31.93
Yemen	Sana	2.65	2.95	0.900	91	87	44.96
Yemen	Dhamar	5.37	4.46	1.203	62	71	123.62
Yemen	Taizz	3.75	3.04	1.233	37	41	75.54
Yemen	Tarim	3.44	2.49	1.381	65	75	67.51
Yemen	Amran	7.32	1.86	3.943	18	42	200.04

v Includes Ajman and Ash Shariqa

Notes:
Land consumption rates are estimated based on classification of Landsat imagery for the years 1990, 2000 and 2015
Population data used to compute the population growth rate is GHS-POP
City/urban area used in the analyis has been generated using a classification approach based on the Urban Extent or the Degree of Urbanization concepts to city definition

Source: United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2020

Table C.3: Open Space Indicators in Selected Cities, 2019

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Australia	Sydney	2.28	11.22	13.50	33.38
Australia	Wollogong	3.45	9.71	13.16	46.40
Australia	HobartCity	6.92	9.54	16.46	65.09
Australia	Laucenston	7.69	8.62	16.31	71.74
Australia	Adeliade	6.25	12.56	18.80	72.15
Australia	Brisbane	8.02	12.04	20.06	80.55
Australia	Muswellbrook	7.70	7.87	15.57	80.78
Australia	Shepparton	6.49	9.15	15.64	84.08
Australia	Melbourne	8.50	11.87	20.36	84.43
Australia	Alice Spring	7.30	9.63	16.93	85.20
Australia	Perth	7.60	13.56	21.16	85.62
Australia	Bunbury	9.13	9.71	18.84	85.91
Australia	Darwin	7.06	10.12	17.18	86.74
Australia	Gold Coast	12.21	9.32	21.52	88.21
Australia	Geelong	8.86	11.15	20.01	88.86
Australia	Cairns	11.37	9.63	21.00	93.18
Australia	Canberra	14.48	15.19	29.67	97.52
New Zealand	Dunedin	5.23	15.07	20.30	76.83
New Zealand	LowerHutt	4.79	16.18	20.98	78.14
New Zealand	Wellington	9.08	19.21	28.28	82.46
New Zealand	Christ Church	8.71	17.65	26.36	83.37
New Zealand	Tauranga	8.04	15.15	23.18	83.93
New Zealand	Hamilton	7.69	16.41	24.10	86.43
New Zealand	Palmerston	7.65	13.70	21.35	87.07
New Zealand	Auckland	9.23	16.19	25.43	88.44
New Zealand	Napier	8.56	20.28	28.84	90.28
Afghanistan	Kandahar	1.06	11.22	12.28	11.22
Afghanistan	Kabul	0.50	12.95	13.45	13.04
Afghanistan	Herat	2.66	7.30	9.96	20.99
Afghanistan	Mazar-e Sharif	0.78	15.88	16.66	39.08
Afghanistan	Charikar	1.38	16.60	17.98	44.58
Afghanistan	Lashkar Bah	1.58	9.82	11.40	49.16
Afghanistan	Jalalabad	1.71	9.96	11.67	51.29
Afghanistan	Khanabad	2.60	11.04	13.63	59.61
Bangladesh	Saidpur	33.18	7.17	40.36	18.41
Bangladesh	Dhaka	1.26	12.24	13.50	31.38
India	Jaipur	4.37	16.78	21.15	18.51
India	Coimbatore	0.40	11.16	11.56	18.85
India	Singrauli	4.89	8.25	13.15	27.96
India	Ahmedabad	1.13	11.67	12.80	29.38
India	Pune	2.24	12.07	14.32	30.83
India	Mumbai	1.77	11.26	13.04	35.35
India	Belgaum	1.52	11.44	12.96	39.68
India	Hyderabad	1.51	19.42	20.93	40.18
India	Vijayawada	4.22	17.11	21.33	45.74
Iran	Sari	0.81	11.76	12.57	31.17
Iran	Bojnurd	2.36	15.92	18.28	45.19
Iran	Qom	2.28	15.27	17.55	47.50

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Iran	Gorgan	1.86	12.34	14.19	49.16
Iran	Eshfana	1.83	16.99	18.82	50.78
Iran	Kashan	2.89	13.26	16.15	51.42
Iran	Salmas	1.83	12.87	14.70	51.88
Iran	Ahvaz	3.11	11.96	15.07	52.33
Iran	Piranshahr	1.36	11.81	13.18	52.48
Iran	Shadegan	0.88	10.61	11.49	53.88
Iran	Sanandaj	3.91	13.55	17.46	54.82
Iran	Bandar Abbas	2.46	19.96	22.43	59.52
Iran	Tehran	4.57	15.50	20.07	61.14
Iran	Dehdasht	1.67	15.19	16.86	64.78
Iran	Arak	5.56	16.77	22.33	67.66
Iran	Kashmar	2.26	13.52	15.77	73.33
Iran	Aradabil	4.06	18.24	22.31	79.45
Kazakhstan	Shymkent	0.98	12.29	13.26	7.35
Kazakhstan	Taraz	1.24	13.60	14.85	10.96
Kazakhstan	Semei	1.47	10.69	12.17	19.84
Kazakhstan	Astana (Nur-Sultan)	4.42	15.13	19.54	26.21
Kazakhstan	Almaty	2.29	13.34	15.62	28.08
Kazakhstan	Oskemen	2.25	12.88	15.13	29.50
Kazakhstan	Qaragandy	3.79	14.44	18.23	35.40
Kazakhstan	Pavlodar	3.45	12.21	15.66	38.94
Kazakhstan	Aktobe	2.95	13.68	16.63	44.82
Nepal	Pokhara	4.65	9.09	13.74	74.46
Pakistan	Sialkot	0.41	10.45	10.86	14.77
Pakistan	Sargodha	1.72	8.31	10.02	28.46
Pakistan	Islamadad	3.55	9.88	13.43	31.27
Pakistan	Faisalabad	1.30	13.02	14.32	34.08
Pakistan	Layyah	1.34	8.82	10.16	37.12
Pakistan	Hyderabad	1.70	14.24	15.94	43.38
Pakistan	Karachi	3.14	15.46	18.60	45.39
Pakistan	Lahore	2.89	16.75	19.64	47.29
Sri-Lanka	Haputale	1.66	10.72	12.38	33.93
Sri-Lanka	Anuradhapura	2.32	9.49	11.81	51.37
Sri-Lanka	Batticaloa	1.69	10.84	12.53	55.75
Uzbekistan	Tashkent	0.56	12.94	13.51	4.20
Uzbekistan	Navoi_Karmana	1.46	8.96	10.42	12.18
Uzbekistan	Nukus	1.13	15.97	17.10	13.28
Uzbekistan	Qarshi	1.43	12.80	14.23	15.89
Uzbekistan	Bukhara	0.94	9.46	10.40	16.47
Uzbekistan	Andijan	0.96	11.31	12.27	17.22
Uzbekistan	Bekobod	4.99	9.94	14.92	54.02
China	Shenzhen, Guangdong	4.74	13.08	17.83	21.94
China	Zunyi, Guizhou	8.23	8.21	16.44	25.37
China	Jinan, Shandong	3.04	8.31	11.35	26.08
China	Beijing, Beijing	3.11	7.21	10.31	26.13
China	Qingdao, Shandong	3.64	8.51	12.15	28.49
China	Kaiping, Guangdong	0.66	9.91	10.57	34.66

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
China	Taipei, Taiwan	1.63	16.70	18.32	35.07
China	Hong Kong, Hong Kong	6.51	24.98	31.49	89.11
Democratic People's Republic of Korea (North Korea)	Ranson	4.02	5.91	9.94	47.97
Japan	Yamaguchi	4.64	13.40	18.04	35.88
Japan	Okayama	8.28	14.92	23.19	64.02
Japan	Fukuoka	6.10	20.65	26.75	70.07
Japan	Osaka	4.74	22.96	27.70	72.21
Japan	Tokyo	3.49	19.66	23.15	74.82
Malaysia	Rawang	1.71	10.64	12.35	22.36
Malaysia	Ipoh	3.01	7.85	10.85	43.79
Myanmar	Yangon	0.96	11.24	12.20	16.24
Myanmar	Mawlamyine	1.18	10.50	11.68	37.17
Philippines	Cebu City	0.69	14.37	15.06	17.71
Philippines	Manila	1.56	20.68	22.24	28.75
Republic of Korea (South Korea)	Cheonan	2.28	10.61	12.89	31.16
Republic of Korea (South Korea)	Jinju	3.35	7.65	11.00	38.39
Republic of Korea (South Korea)	Busan	5.50	14.79	20.28	48.66
Republic of Korea (South Korea)	Seoul	3.03	12.70	15.73	48.75
Republic of Korea (South Korea)	Gwangju	7.05	15.62	22.68	65.37
Singapore	Singapore	7.46	19.42	26.87	70.26
Thailand	Bangkok	0.73	14.20	14.94	11.77
Thailand	Chumpon	0.53	9.46	9.99	16.45
Thailand	Khon Kaen	1.90	14.47	16.36	22.22
Thailand	ChiangRai	1.27	11.37	12.64	22.30
Thailand	Phattalung	2.14	12.81	14.95	29.98
Thailand	ChiangMai	1.44	13.38	14.82	37.05
Thailand	Chaam	4.25	8.43	12.68	48.03
Vietnam	Ho Chi Minh City	0.76	13.86	14.62	30.40
Cuba	Las Tunas	1.96	16.68	18.64	38.43
Argentina	Buenos Aires	1.83	21.61	23.45	49.55
Argentina	Cordoba	3.62	20.52	24.14	70.69
Bolivia	Cochabamba	1.80	15.99	17.78	63.62
Brazil	Belo Horizonte	5.30	16.55	21.85	41.55
Brazil	Sao Paulo	1.68	17.12	18.80	53.76
Brazil	Ilheus	2.41	14.14	16.55	54.72
Brazil	Jequie	0.75	15.67	16.42	60.31
Brazil	Ribeirao Preto	1.84	17.87	19.71	62.29
Brazil	Florianopolis	4.87	15.36	20.24	76.18
Brazil	Curitiba	5.46	14.66	20.12	83.75
Brazil	Palmas	8.96	18.39	27.35	93.45
Chile	Santiago	2.22	15.10	17.32	43.47
Colombia	Valledupar	2.21	21.10	23.31	35.44
Colombia	Bogota	6.31	23.01	29.32	87.50
Costa Rica	Cartago	1.77	15.16	16.93	50.60
Costa Rica	Puerto Limon	3.75	16.50	20.25	55.71
Costa Rica	San Hose	1.91	14.90	16.81	59.13
Costa Rica	Liberia	2.37	17.90	20.27	70.86

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Costa Rica	Puntar Arenas_Barranca	4.26	16.51	20.77	76.28
Cuba	Cienfuego	3.45	11.63	15.08	40.07
Cuba	Holguin	1.88	13.62	15.50	43.45
Cuba	Guantanamo	2.37	14.35	16.72	48.21
Cuba	Santiago De Cuba	2.41	14.91	17.32	53.72
Cuba	Camaguey	2.65	14.55	17.20	55.37
Cuba	Santa Clara	1.74	15.20	16.94	58.38
Cuba	Bayamo	4.45	17.50	21.96	64.77
Cuba	LacHabana	4.42	17.15	21.57	68.84
Ecuador	Quito	2.25	12.07	14.32	45.08
El Salvador	San Salvador	1.92	9.97	11.88	16.75
Guatemala	Guatemala City	1.71	11.69	13.39	31.95
Mexico	Reynosa	1.28	10.44	11.71	27.84
Mexico	Tijuana	0.87	12.31	13.18	29.47
Mexico	Mexico City	3.71	12.70	16.40	46.26
Mexico	Guadalajara	2.32	13.28	15.60	50.50
Mexico	Culiacan	3.56	13.83	17.38	72.51
Nicaragua	Leon	2.49	11.39	13.88	52.24
Uruguay	LasPiedras	0.68	13.62	14.30	49.83
Uruguay	Riviera	0.38	14.10	14.48	58.92
Uruguay	Salto	1.23	15.68	16.91	67.97
Uruguay	Melo	0.93	15.51	16.45	69.19
Uruguay	Tacuarembo	0.97	12.74	13.71	69.79
Uruguay	Paysandu	2.23	13.81	16.04	70.39
Uruguay	Mercedes	0.95	15.63	16.59	71.22
Uruguay	Maldonaldo	1.48	17.14	18.62	81.20
Uruguay	Montevideo+CiudadDeLaCosta	3.82	14.46	18.28	82.66
Venezuela	Cabimas	0.41	11.79	12.21	19.43
Venezuela	Caracas	4.97	13.54	18.51	38.10
Austria	Vienna	3.19	11.66	14.85	72.42
Belarus	Gomel	3.54	12.03	15.58	39.89
Belarus	Kobyrn	4.39	10.94	15.32	43.96
Belarus	Babrujsk	5.23	12.91	18.14	48.66
Belarus	Viciebsk	2.73	16.03	18.76	51.27
Belarus	Brest	7.99	13.70	21.70	53.03
Belarus	Salihorsk	4.57	14.61	19.18	55.38
Belarus	Polack	5.67	13.62	19.29	66.09
Belarus	Mazyr	8.66	13.04	21.70	72.11
Belarus	Hrodna	7.49	19.38	26.87	80.88
Belarus	Minsk	11.46	19.00	30.46	83.28
Belgium	Antwerp	3.04	11.96	15.00	39.76
Canada	Victoria	3.51	10.68	14.19	72.65
Canada	Montreal	8.64	13.84	22.49	89.17
France	Nice	0.24	11.39	11.63	8.04
France	Nimes	3.49	12.68	16.17	34.36
France	Metz	3.12	15.64	18.77	39.04
France	Marseille	5.62	14.00	19.62	46.50
France	Toulousse	2.48	15.84	18.32	47.21

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
France	Paris	3.65	12.46	16.10	51.58
France	Lyon	4.59	14.26	18.85	66.51
France	Lille	3.96	18.06	22.02	67.01
France	Nantes	5.93	15.32	21.25	67.57
France	Strasbourg	4.92	17.70	22.62	73.24
France	Grenoble	4.48	14.85	19.33	75.52
France	Le Mans	6.47	17.66	24.13	81.20
France	Besancon	6.45	20.55	27.00	91.07
Germany	Berlin	8.06	22.20	30.26	68.19
Germany	Halle	8.03	22.42	30.45	76.43
Germany	Oldenburg	7.63	26.19	33.82	90.56
Greece	Thessaloniki	1.62	14.47	16.09	65.70
Hungary	Budapest	2.96	17.59	20.55	58.84
Italy	Palermo	1.66	8.58	10.24	42.24
Italy	Milan	4.02	9.00	13.01	76.22
Lithuania	Kaunas	6.37	15.41	21.78	61.43
Netherlands	Zwolle	7.43	15.01	22.43	91.93
Poland	Lublin	2.89	19.12	22.00	49.11
Poland	Lodz	4.23	17.07	21.30	49.39
Poland	Katowice	3.46	15.34	18.81	50.70
Poland	Mielec	2.46	10.42	12.89	52.34
Poland	Wroclaw	4.88	17.42	22.30	55.98
Poland	Poznan	7.63	14.97	22.60	61.59
Poland	Warsaw	5.95	14.58	20.54	64.84
Poland	Lomza	3.04	18.43	21.46	67.12
Romania	ARad	2.54	8.65	11.19	41.44
Romania	Reghin	4.60	6.14	10.74	48.76
Romania	Bucharest	3.46	9.54	13.00	54.10
Romania	Mangalia	2.84	7.34	10.17	54.51
Romania	Craiova	4.73	8.07	12.80	60.63
Russia	Astrakhan	1.23	9.64	10.87	37.10
Russia	Saint Petersburg	3.24	21.76	25.00	40.94
Russia	Dzerzhinsk	4.41	11.96	16.37	60.83
Russia	Tyumen	5.05	18.25	23.31	64.24
Russia	Berezniki	9.42	13.75	23.17	73.73
Russia	Moscow	8.34	16.22	24.56	83.31
Serbia	Borca	5.94	8.12	14.06	36.82
Serbia	Pozarevac	3.79	8.86	12.65	37.56
Serbia	Kragujevac	5.69	8.46	14.15	44.96
Serbia	Novi Sad	4.43	10.75	15.18	52.92
Serbia	Nis	3.70	10.23	13.93	57.20
Serbia	Belgrade	23.41	12.48	35.89	63.83
Serbia	Novi Pazar	3.04	9.43	12.48	73.16
Spain	Madrid	6.70	17.25	23.94	63.13
Switzerland	Zurich	3.64	18.32	21.96	67.59
Switzerland	Neuchatel	2.97	17.33	20.29	70.09
Switzerland	Lausanne	5.05	18.55	23.60	76.89
Switzerland	Bern	6.17	19.61	25.78	77.11

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Switzerland	Fribourg	7.72	15.66	23.38	80.30
Switzerland	Basel	4.47	16.90	21.36	81.79
Switzerland	Winterhur	4.66	20.05	24.71	81.93
Switzerland	St Gallen	6.60	16.27	22.88	82.95
Switzerland	Wetzikon	3.05	16.36	19.41	85.43
Switzerland	Emmen_Lucerne	8.00	15.83	23.83	87.83
Ukraine	Nikolaev	3.69	6.77	10.46	49.39
United Kingdom	Sheffield	5.30	11.82	17.11	58.18
United Kingdom	London	12.94	11.95	24.88	81.29
United Kingdom	Manchester	8.98	13.21	22.19	81.56
United States	Raleigh	2.41	9.63	12.04	25.45
United States	Houston	3.36	11.81	15.17	27.00
United States	Toledo	2.22	9.29	11.51	27.54
United States	Cleveland	4.21	9.56	13.77	29.81
United States	Springfield, MA	2.88	7.41	10.29	36.84
United States	Philadelphia	2.93	9.98	12.90	37.30
United States	Modesto	2.16	9.76	11.92	41.36
United States	Gainesville, FL	5.34	13.04	18.38	43.11
United States	Chicago	6.10	9.83	15.93	47.85
United States	Minneapolis	6.14	11.84	17.98	54.77
United States	Portland, OR	4.35	13.42	17.78	57.45
United States	New York	9.10	9.76	18.86	71.03
Fiji	Suva	3.66	7.38	11.04	28.31
Angola	Luanda	0.62	18.35	18.97	17.31
Benin	Parakou	0.78	13.15	13.93	32.37
Benin	Kandy	0.43	13.10	13.53	35.15
Benin	Djougou	1.49	11.97	13.46	40.69
Benin	Natitingou	1.50	8.91	10.42	53.78
Congo Dem. Rep.	Lubumbashi	0.38	14.22	14.60	6.78
Congo Dem. Rep.	Kinshasa	1.42	16.61	18.03	17.31
Ethiopia	Dire Dawa	0.88	17.37	18.25	38.69
Ethiopia	Harar	1.17	11.25	12.42	40.00
Ethiopia	Gondar	1.40	12.82	14.22	40.32
Ethiopia	Addis Ababa	2.53	21.77	24.30	41.77
Ethiopia	Awassa	2.84	14.81	17.66	62.38
Ethiopia	Adama Nazreth	1.42	18.58	20.00	64.08
Ethiopia	BahirDar	1.41	14.36	15.78	89.99
Ghana	Accra	0.41	13.63	14.05	12.01
Kenya	Eldoret	0.51	11.17	11.68	10.82
Kenya	Kisumu	0.35	10.00	10.36	11.15
Kenya	Nairobi	1.02	11.13	12.14	17.93
Madagascar	Antsiranana	1.12	14.93	16.05	30.21
Madagascar	Toamasina	1.94	8.50	10.43	31.91
Madagascar	Marovoay	3.83	7.65	11.48	46.11
Madagascar	Taolanaro	3.04	7.92	10.96	68.59
Malawi	Blantyre	2.07	9.08	11.15	22.63
Malawi	Mzuzu	0.99	11.79	12.78	23.25
Malawi	Zomba	3.16	8.99	12.15	43.75

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Mali	Bamako	1.36	19.59	20.95	29.94
Mozambique	Nampula	0.21	9.90	10.11	9.31
Mozambique	Manhica	0.26	12.94	13.19	10.12
Mozambique	Maputo	0.83	14.97	15.80	15.35
Mozambique	Maxixe	0.42	10.64	11.06	25.50
Mozambique	Pemba	2.08	13.98	16.06	49.89
Niger	Zinder	0.84	19.21	20.05	13.78
Niger	Niamey	0.63	19.43	20.06	26.09
Niger	Maradi	2.89	19.11	22.00	32.04
Niger	Dosso	1.17	15.12	16.29	32.96
Niger	Agadez	1.21	16.99	18.20	45.76
Nigeria	Lagos	0.50	13.76	14.26	6.95
Nigeria	Ibadan	0.38	13.46	13.85	8.89
Nigeria	Oyo	0.77	12.99	13.76	13.48
Nigeria	Gombe	0.57	16.40	16.97	20.65
Rwanda	Cyangugu	0.05	10.02	10.07	4.81
Rwanda	Butare	0.24	12.05	12.30	6.40
Rwanda	Ruhengeri	0.13	10.06	10.19	9.47
Rwanda	Gisenyi	1.09	15.82	16.91	12.22
Rwanda	Kigali	0.74	11.19	11.93	18.11
Rwanda	Kayonza	0.45	11.13	11.58	21.59
Rwanda	Gitarama	1.00	10.16	11.16	21.76
Senegal	Touba	0.31	21.88	22.19	14.85
Senegal	Diorbel	0.93	21.08	22.01	32.04
Senegal	Kaolack	1.33	21.29	22.62	44.06
Senegal	Ziguinchor	1.22	16.58	17.80	44.37
Senegal	Louga	3.05	18.54	21.59	45.85
Senegal	Dakar	1.76	25.39	27.15	48.19
Senegal	Thies	1.12	20.03	21.15	55.66
Senegal	MBour	1.86	22.09	23.95	66.93
Senegal	SaintLouis	1.46	23.67	25.12	85.57
South Africa	Johannesburg	1.85	10.84	12.70	15.40
South Africa	Port Elizabeth	3.41	9.27	12.68	29.05
Uganda	Masaka	1.01	9.01	10.02	17.84
Uganda	Kasese	0.76	14.64	15.40	20.83
Uganda	Lira	1.50	11.55	13.05	33.76
Uganda	Gulu	4.65	11.12	15.76	76.02
Zambia	Ndola	0.26	11.14	11.40	7.95
Algeria	Tolga	0.31	11.84	12.15	13.37
Algeria	Tiaret	1.49	18.09	19.57	32.05
Algeria	Tebessa	3.74	10.61	14.35	34.86
Algeria	Algiers	2.49	12.39	14.89	41.23
Algeria	Batna	1.92	17.61	19.53	42.04
Algeria	Annaba	3.09	11.71	14.80	49.59
Algeria	Blida	2.00	12.66	14.66	54.01
Algeria	Oran	2.42	16.61	19.02	56.54
Algeria	Chlef	3.66	10.85	14.52	62.75
Algeria	M'Sila	2.82	14.21	17.03	65.33

Table C.3: Continued

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Algeria	El Khroub	3.07	11.91	14.98	67.46
Algeria	Tamanrasset	4.02	12.78	16.80	67.62
Algeria	Djelfa	3.40	21.26	24.66	70.55
Algeria	Khemis Miliana	1.84	16.24	18.07	74.51
Algeria	Mila	3.99	16.13	20.12	81.60
Azerbaijan	Baku	4.02	19.30	23.32	57.02
Bahrain	AlManamah	1.45	22.08	23.53	45.19
Egypt	Cairo	0.79	10.15	10.94	11.23
Egypt	Asyut	0.98	16.53	17.51	34.93
Egypt	Al_zaqaziq	0.59	17.62	18.21	38.99
Egypt	Al_Qhurdaqah	2.06	18.96	21.01	72.27
Egypt	Port Said	1.96	14.06	16.02	95.08
Iraq	Baghdad	1.32	13.37	14.69	20.33
Israel	Tel Aviv	4.30	12.61	16.91	75.85
Jordan	Amman[i]	1.31	17.96	19.27	33.88
Jordan	Irbid	0.63	21.97	22.60	55.04
Kuwait	Kuwait[ii]	1.53	22.52	24.05	49.42
Lebanon	Beirut	0.78	14.72	15.49	20.75
Lebanon	Zahle	0.68	12.06	12.75	36.62
Lebanon	Baalbek	1.02	12.79	13.81	45.14
Lebanon	Tyre	1.53	9.87	11.40	45.87
Lebanon	Sidon	0.88	12.76	13.64	61.16
Lebanon	Tripoli	1.36	11.54	12.90	72.81
Morocco	Aitemelloul	0.21	12.54	12.75	21.25
Morocco	Temara	2.56	13.84	16.39	25.65
Morocco	Casablanca[iii]	1.23	17.88	19.11	29.18
Morocco	Maknes	1.95	18.99	20.94	29.35
Morocco	Fez	1.37	17.91	19.28	32.55
Morocco	Oulad teima	1.44	9.42	10.87	34.77
Morocco	Sidi slimane	0.50	10.46	10.96	37.40
Morocco	Oujda	1.26	23.75	25.01	45.51
Morocco	Tanger	2.00	16.59	18.58	46.88
Morocco	Midelt	1.25	14.04	15.29	54.38
Morocco	Safi	4.71	17.56	22.27	55.23
Morocco	Fikh Ben Salah	1.63	16.93	18.56	55.85
Morocco	Marrakesh	1.64	13.24	14.88	61.32
Morocco	Sefrou	3.38	15.28	18.66	63.58
Morocco	Azrou	6.94	16.42	23.36	69.87
Oman	Al Buryami	0.43	11.75	12.18	13.20
Oman	Muscat[iv]	0.75	18.24	18.98	13.24
Oman	Sohar	1.01	13.92	14.93	18.19
Oman	Salalah	0.87	16.76	17.63	20.31
Palestinian territories	Jenin	1.11	13.41	14.52	4.91
Palestinian territories	Al-Khalīl	0.16	10.75	10.91	13.22
Palestinian territories	Nabulus(Nablus)	0.95	11.45	12.39	21.60

[i] Includes: Az-zarqa, Ar-Rusayfah, Al-Quwaysimah,Tila al-Ali, Wadi as-sir, Al-Jubayhah, Khraibat as-suq and Sahab
[ii] Includes all the major cities Hawallī, Al-Farwānīyah, Al-Fintās, Al-Jahrā', Janūb al-Kuwayt, Al-Manqaf, Al-Firdaws and Mubarāk al-Kabīr
[iii] Includes Mohammedia town
[iv] Includes :Bawashar, Matrah, Aseed(Assib)

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Palestinian territories	Ghazzah[v]	0.25	13.16	13.41	21.85
Palestinian territories	An-Nuṣayrāt	0.58	12.80	13.38	23.64
Palestinian territories	Rafa	0.36	13.75	14.10	30.53
Palestinian territories	Khān Yūnis[vi]	0.22	13.01	13.23	33.35
Palestinian territories	Al-Quds	4.97	12.29	17.26	39.96
Qatar	Doha	1.60	21.24	22.85	14.41
Qatar	Mesaieed	0.31	11.39	11.70	26.64
Qatar	AlKhor_AlThakhira	2.39	20.93	23.32	41.49
Saudi Arabia	Al-Kharj	0.47	15.86	16.33	9.88
Saudi Arabia	Riyadh	2.38	13.91	16.29	10.35
Saudi Arabia	Tabuk	0.68	17.06	17.73	13.40
Saudi Arabia	Al-Khafji	0.90	11.36	12.27	14.26
Saudi Arabia	Al-Madinah	1.46	15.18	16.64	17.62
Saudi Arabia	'Ar'ar	2.25	12.30	14.55	20.74
Saudi Arabia	Ha'il	3.15	14.62	17.76	22.16
Saudi Arabia	Makkah	0.83	16.81	17.64	22.40
Saudi Arabia	At-Ta'if	1.30	10.49	11.78	23.56
Saudi Arabia	Jiddah including Al Khubar	0.80	14.43	15.24	24.11
Saudi Arabia	Al-Jubayl	2.43	10.11	12.54	24.11
Saudi Arabia	Al-Hufuf	4.68	9.19	13.87	30.05
Saudi Arabia	Ad-Dammam	1.79	13.80	15.60	34.59
Saudi Arabia	Ar-Rass	3.20	15.89	19.09	47.59
Saudi Arabia	Rafha'	2.76	16.30	19.06	53.79
Sudan	Khartoum	0.86	23.23	24.09	14.81
Sudan	Kassala	0.79	22.65	23.45	30.74
Sudan	Atbara	0.42	20.90	21.33	32.07
Sudan	Sannar	0.96	20.33	21.29	32.78
Sudan	Alfashir	0.83	23.17	24.01	40.37
Sudan	Bur Sudan	1.29	21.65	22.94	44.17
Sudan	Wad Madani	1.71	21.33	23.03	47.90
Sudan	Sinjah	1.51	15.05	16.56	61.19
Sudan	Al Qadarif	2.41	21.14	23.55	67.15
Tunisia	Safaqia	0.33	15.31	15.64	27.46
Tunisia	Banzart	1.53	15.60	17.13	40.95
Tunisia	Tunis[vii]	2.92	22.20	25.11	45.30
Tunisia	Susah	1.26	19.42	20.68	53.85
Tunisia	Qabis	3.07	22.42	25.49	63.06
Tunisia	Al_Qayrawan	1.89	24.08	25.97	66.68
Tunisia	Monastir	2.50	21.57	24.07	71.79
Tunisia	Tozeur	14.97	21.92	36.89	90.96
Turkey	Adapazari	1.82	20.03	21.85	41.80
Turkey	Malatya	1.00	15.20	16.20	58.76
Turkey	Istanbul	3.07	23.81	26.87	59.78
Turkey	Elbistan	1.35	9.20	10.55	60.56
Turkey	Konya	3.00	19.22	22.21	65.32

[v] *Includes: Jabaiyah and Bayt Lāhīyā*
[vi] *Includes Dayr al Balah*
[vii] *Includes At-Tadamun and Sukrah*

Country	Cities	Share of urban area allocated to open public space (%)	Share of urban area allocated to streets (%)	Share of urban area allocated to streets & open public space (%)	Proportion of population living within convenient walking distance to open public space (%)
Turkey	Kayseri	2.04	17.84	19.87	66.70
Turkey	Uzunköprü	1.47	21.16	22.63	67.15
Turkey	Izmir	3.83	25.82	29.65	68.95
Turkey	Çerkezköy	1.19	18.30	19.49	69.21
Turkey	Antalya	3.66	16.33	20.00	69.79
Turkey	Tarsus	2.18	22.60	24.78	70.28
Turkey	Agri	1.59	15.07	16.65	70.56
Turkey	Bursa	2.89	27.01	29.90	70.68
Turkey	Samsun	2.70	22.67	25.37	71.21
Turkey	Nigde	1.44	15.11	16.55	71.46
Turkey	Sivas	1.80	21.25	23.05	71.99
Turkey	Denzili	3.81	25.11	28.92	76.71
Turkey	Ankara	5.12	21.07	26.19	76.78
Turkey	Carasamba	3.00	15.02	18.02	77.30
Turkey	Corum	2.58	18.87	21.46	80.34
Turkey	Gaziantep	6.00	27.55	33.55	83.10
Turkey	Sanliurfa	4.03	24.42	28.45	83.80
Turkey	Viransehir	3.22	20.00	23.21	84.13
Turkey	Adiyaman	2.92	22.04	24.96	84.62
Turkey	Balikesir	2.69	29.02	31.71	90.30
UAE	Abu Dhabi	2.72	19.45	22.17	37.57
UAE	Dubai[viii]	2.65	20.47	23.13	40.60
UAE	Al Ain	1.84	15.81	17.65	41.27
UAE	Ras Al Khaymah	0.61	19.12	19.73	41.46
UAE	Al Fujayrah	1.47	23.99	25.47	82.32
Yemen	Taizz	0.25	14.76	15.02	9.04
Yemen	Yarim	1.08	9.90	10.98	13.83
Yemen	Tarim	3.46	22.99	26.45	26.26
Yemen	Radaa	0.25	11.70	11.95	26.49
Yemen	Amran	0.77	16.05	16.82	27.70
Yemen	Dhamar	0.76	10.45	11.20	36.20
Yemen	Al Hudaydah	0.57	20.66	21.23	39.43
Yemen	Adan	1.93	22.94	24.86	51.74

[viii] Includes Ajman and Ash Shariqa

Notes:
Indicator is computed as share of urban land in streets and open pulbic space, as well as share of population who can access/live within a walking distance (along a street network) of 400 m to an open public space.
An open public space is defined as openly and freely accessible space for all (without any cost implication). Identification of open public spaces are based on data compiled from city land use plans as well as data available from open sources such as OSM and google.
Data used to estimate population with access to open public spaces is based on grid level population disaggregation directly from city/country data, HRSL (facebook and CIESIN) or WorldPop. Analysis year is 2019, which in some cases includes population data for 2018.
City/urban area used in the analyis has been generated using a classification approach based on the Urban Extent or the Degree of Urbanization concepts to city definition.
The urban/city area used for the indicator computation may be larger or smaller than the official municipality boundaries.

Source: United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2020

Table D.1: Gross Domestic Product (GDP) & Gini Coefficient in Selected Cities

GDP (Million USD, constant prices, constant PPP)			GDP of the metropolitan area as a share of the national GDP			Gini coefficient (at disposable income, after taxes and transfers)				
Country	Metropolitan areas	2017	Country	City/Region	2017	Country	City/region	2010	2015	2017
Australia	Greater Sydney	259,813	Australia	Greater Sydney	21.9	Kazakhstan	Akmola	0.27	0.27	0.27
Australia	Greater Melbourne	208,411	Australia	Greater Melbourne	17.6	Kazakhstan	Aktobe	0.27	0.27	0.25
Australia	Greater Brisbane	113,090	Australia	Greater Brisbane	9.5	Kazakhstan	Almaty	0.26	0.26	0.28
Australia	Greater Perth	135,365	Australia	Greater Perth	11.4	Kazakhstan	Almaty City	0.24	0.27	0.29
Australia	Greater Adelaide	53,531	Australia	Greater Adelaide	4.5	Kazakhstan	Atyrau	0.22	0.22	0.23
Australia	Canberra	23,198	Australia	Canberra	2.0	Kazakhstan	City of Astana	0.29	0.22	0.23
Austria	Vienna	159,274	Austria	Vienna	35.3	Kazakhstan	East Kazakhstan	0.28	0.28	0.31
Austria	Graz	33,854	Austria	Graz	7.5	Kazakhstan	Karaganda	0.27	0.29	0.30
Austria	Linz	35,496	Austria	Linz	7.9	Kazakhstan	Kostanai	0.26	0.25	0.25
Austria	Salzburg	24,247	Austria	Salzburg	5.4	Kazakhstan	Kyzylorda	0.23	0.21	0.24
Austria	Innsbruck	19,080	Austria	Innsbruck	4.2	Kazakhstan	Mangistau	0.18	0.21	0.17
Austria	Klagenfurt	11,632	Austria	Klagenfurt	2.6	Kazakhstan	North Kazakhstan	0.27	0.27	0.29
Belgium	Brussels	195,763	Belgium	Brussels	36.3	Kazakhstan	Pavlodar	0.25	0.23	0.25
Belgium	Antwerp	64,970	Belgium	Antwerp	12.0	Kazakhstan	South Kazakhstan	0.21	0.19	0.21
Belgium	Gent	34,082	Belgium	Gent	6.3	Kazakhstan	West Kazakhstan	0.25	0.26	0.28
Belgium	Charleroi	15,470	Belgium	Charleroi	2.9	Kazakhstan	Zhambyl	0.22	0.22	0.23
Belgium	Liege	27,780	Belgium	Liege	5.2	Philippines	Manila	..	0.39	..
Switzerland	Zurich	103,562	Switzerland	Zurich	18.9	Singapore	Singapore	0.40	0.39	0.38
Switzerland	Geneva	44,609	Switzerland	Basel	8.9	Thailand	Bangkok	..	0.31	0.32
Switzerland	Basel	49,010	Switzerland	Geneva	8.1	Vietnam	Can Tho	0.37	..	..
Switzerland	Lausanne	22,773	Switzerland	Lausanne	4.2	Vietnam	Da Nang	0.39	..	..
Chile	Antofagasta	24,763	Chile	Antofagasta	5.9	Vietnam	Ha noi	0.42	..	..
Chile	Coquimbo-La Serena	7,618	Chile	Coquimbo-La Serena	1.8	Vietnam	Hai Phong	0.41	..	..
Chile	Valparaiso	19,205	Chile	Valparaiso	4.6	Vietnam	Ho Chi Minh City	0.38	..	..
Chile	Santiago	161,134	Chile	Santiago	38.4	Vietnam	Vinh Long	0.36	..	..
Czech Republic	Prague	127,326	Czech Republic	Prague	33.5	Argentina	Buenos Aires	0.51	..	..
Czech Republic	Brno	24,819	Czech Republic	Brno	6.5	Argentina	Cordoba	0.51	..	..
Czech Republic	Ostrava	21,307	Czech Republic	Ostrava	5.6	Argentina	Formosa	0.45	..	..
Czech Republic	Plzen	11,537	Czech Republic	Plzen	3.0	Colombia	Armenia	0.53	0.49	0.45
Germany	Berlin	231,498	Germany	Berlin	5.7	Colombia	Barranquilla	0.50	0.44	0.44
Germany	Hamburg	197,838	Germany	Hamburg	4.8	Colombia	Bogota	0.53	0.50	0.50
Germany	Munich	237,829	Germany	Munich	5.8	Colombia	Bucamaranga	0.45	0.41	0.41
Germany	Cologne	121,399	Germany	Cologne	3.0	Colombia	Cali	0.53	0.48	0.46
Germany	Frankfurt am Main	184,622	Germany	Frankfurt am Main	4.5	Colombia	Cartagena	0.49	0.47	0.45
Germany	Stuttgart	185,964	Germany	Stuttgart	4.6	Colombia	Cucuta	0.48	0.44	0.43
Germany	Leipzig	40,869	Germany	Leipzig	1.0	Colombia	Floencia	0.48	0.49	0.47
Germany	Dresden	52,164	Germany	Dresden	1.3	Colombia	Ibagué	0.50	0.44	0.43
Germany	Dusseldorf	109,324	Germany	Dusseldorf	2.7	Colombia	Manizales AM	0.50	0.46	0.46
Germany	Bremen	61,115	Germany	Bremen	1.5	Colombia	Medellin	0.56	0.49	0.46
Germany	Hanover	69,146	Germany	Hanover	1.7	Colombia	Monteria	0.53	0.45	0.46
Germany	Nuremberg	78,727	Germany	Neubrandenburg	0.2	Colombia	Neiva	0.49	0.45	0.45
Germany	Bielefeld	16,163	Germany	Bielefeld	0.4	Colombia	Pasto	0.52	0.49	0.47
Germany	Halle an der Saale	16,613	Germany	Halle an der Saale	0.4	Colombia	Pereira AM	0.46	0.44	0.40
Germany	Magdeburg	19,193	Germany	Magdeburg	0.5	Colombia	Popayan	0.51	0.50	0.49
Germany	Wiesbaden	28,251	Germany	Wiesbaden	0.7	Colombia	Quibdó	0.53	0.53	0.53
Germany	Gottingen	19,285	Germany	Gottingen	0.5	Colombia	Riohacha	0.52	0.52	0.52
Germany	Darmstadt	25,731	Germany	Darmstadt	0.6	Colombia	Santa Marta	0.49	0.46	0.47
Germany	Trier	9,753	Germany	Trier	0.2	Colombia	Sincelejo	0.47	0.45	0.44
Germany	Freiburg im Breisgau	30,581	Germany	Freiburg im Breisgau	0.7	Colombia	Tunja	0.47	0.47	0.46

Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)		
Germany	Regensburg	27,537
Germany	Schwerin	10,954
Germany	Erfurt	21,315
Germany	Augsburg	31,184
Germany	Bonn	50,253
Germany	Karlsruhe	44,922
Germany	Monchengladbach	11,011
Germany	Mainz	24,235
Germany	Ruhr	204,334
Germany	Kiel	27,584
Germany	Saarbrucken	37,549
Germany	Koblenz	18,260
Germany	Rostock	16,268
Germany	Kaiserslautern	10,431
Germany	Iserlohn	19,029
Germany	Flensburg	11,328
Germany	Constance	12,059
Germany	Giessen	11,649
Germany	Aschaffenburg	18,712
Germany	Neubrandenburg	8,781
Germany	Rosenheim	14,313
Germany	Offenburg	21,286
Germany	Gorlitz	8,348
Germany	Schweinfurt	14,248
Germany	Wetzlar	10,505
Germany	Braunschweig-Salzgitter Wolfsburg	62,369
Germany	Mannheim-Ludwigshafen	67,466
Germany	Muenster	30,054
Germany	Aachen	25,854
Germany	Lubeck	17,339
Germany	Kassel	22,142
Germany	Osnabruck	23,899
Germany	Oldenburg (Oldenburg)	18,073
Germany	Heidelberg	33,935
Germany	Paderborn	13,682
Germany	Wurzburg	25,436
Germany	Bremerhaven	10,866
Germany	Heilbronn	29,142
Germany	Ulm	27,246
Germany	forzheim	13,809
Germany	Ingolstadt	38,034
Germany	Reutlingen	14,188
Germany	Siegen	18,218
Germany	Hildesheim	9,726
Germany	Zwickau	12,417
Germany	Wuppertal	16,134
Germany	Duren, Stadt	9,418
Germany	Bocholt, Stadt	16,814
Denmark	Copenhagen	116,136
Denmark	Aarhus	22,971

GDP of the metropolitan area as a share of the national GDP		
Germany	Regensburg	0.7
Germany	Schwerin	0.3
Germany	Erfurt	0.5
Germany	Augsburg	0.8
Germany	Bonn	1.2
Germany	Karlsruhe	1.1
Germany	Monchengladbach	0.3
Germany	Mainz	0.6
Germany	Ruhr	5.0
Germany	Kiel	0.7
Germany	Saarbrucken	0.9
Germany	Koblenz	0.4
Germany	Rostock	0.4
Germany	Kaiserslautern	0.3
Germany	Iserlohn	0.5
Germany	Flensburg	0.3
Germany	Constance	0.3
Germany	Giessen	0.3
Germany	Aschaffenburg	0.5
Germany	Nuremberg	1.9
Germany	Rosenheim	0.4
Germany	Offenburg	0.5
Germany	Gorlitz	0.2
Germany	Schweinfurt	0.3
Germany	Wetzlar	0.3
Germany	Braunschweig-Salzgitter Wolfsburg	1.5
Germany	Mannheim-Ludwigshafen	1.7
Germany	Muenster	0.7
Germany	Aachen	0.6
Germany	Lubeck	0.4
Germany	Kassel	0.5
Germany	Osnabruck	0.6
Germany	Oldenburg (Oldenburg)	0.4
Germany	Heidelberg	0.8
Germany	Paderborn	0.3
Germany	Wurzburg	0.6
Germany	Bremerhaven	0.3
Germany	Heilbronn	0.7
Germany	Ulm	0.7
Germany	Pforzheim	0.3
Germany	Ingolstadt	0.9
Germany	Reutlingen	0.3
Germany	Siegen	0.4
Germany	Hildesheim	0.2
Germany	Zwickau	0.3
Germany	Wuppertal	0.4
Germany	Duren, Stadt	0.2
Germany	Bocholt, Stadt	0.4
Denmark	Copenhagen	39.5
Denmark	Aarhus	7.8

Gini coefficient (at disposable income, after taxes and transfers)				
Colombia	Valledupar	0.51	0.45	0.46
Colombia	Villavicencio	0.47	0.45	0.45
Costa Rica	San Jose	0.47	..	..
Dominican Republic	Santo Domingo	0.58	..	..
Ecuador	Quito	0.51	..	..
El Salvador	San Salvador	0.41	..	..
Honduras	Resto Urbano	0.54	0.49	0.52
Honduras	San Pedro Sula	0.54	0.50	0.51
Honduras	Tegucigalpa	0.54	0.52	0.51
Mexico	Culiacan	0.37	..	..
Mexico	Guadalajara	0.42	..	..
Mexico	Mexico City	0.49	..	..
Mexico	Tijuana	0.50	..	..
Panama	Panama City	0.46	..	..
Paraguay	Asuncion	0.5	..	..
Peru	Lima	0.4	..	..
Uruguay	Montevideo	0.43	..	..
Venezuela	Caracas	0.38	..	..
United States	Ada	..	0.36	..
United States	Albany	..	0.32	..
United States	Albuquerque	..	0.43	..
United States	ampa-Pinellas	..	0.39	..
United States	Atlanta	..	0.39	..
United States	Boston	..	0.38	..
United States	Brevard	..	0.36	..
United States	Charleston	..	0.35	..
United States	Charlotte	..	0.38	..
United States	Chicago	..	0.41	..
United States	Cincinnati	..	0.36	..
United States	Columbus	..	0.36	..
United States	Cuyahoga	..	0.39	..
United States	Dallas	..	0.41	..
United States	Dane	..	0.34	..
United States	Dauphin	..	0.33	..
United States	Davidson	..	0.39	..
United States	Denver	..	0.37	..
United States	Detroit (Greater)	..	0.38	..
United States	Douglas (NE)	..	0.34	..
United States	East Baton Rouge	..	0.37	..
United States	El Paso (CO)	..	0.34	..
United States	El Paso (TX)	..	0.40	..
United States	Erie (NY)	..	0.33	..
United States	Fayette	..	0.37	..
United States	Forsyth	..	0.38	..
United States	Fresno (Greater)	..	0.40	..
United States	Greene	..	0.37	..
United States	Guilford	..	0.39	..
United States	Hamilton (TN)	..	0.37	..
United States	Hampden	..	0.36	..
United States	Hartford	..	0.35	..

Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)			GDP of the metropolitan area as a share of the national GDP			Gini coefficient (at disposable income, after taxes and transfers)			
Denmark	Odense	14,961	Denmark	Odense	5.1	United States	Hidalgo	..	0.43	..
Denmark	Aalborg	13,464	Denmark	Aalborg	4.6	United States	Houston	..	0.43	..
Spain	Madrid	332,275	Spain	Madrid	19.3	United States	Indianapolis	..	0.39	..
Spain	Barcelona	213,713	Spain	Barcelona	12.4	United States	Jackson (MO)	..	0.37	..
Spain	Valencia	57,081	Spain	Valencia	3.3	United States	Jacksonville	..	0.39	..
Spain	Seville	44,701	Spain	Seville	2.6	United States	Jefferson (AL)	..	0.38	..
Spain	Saragossa	30,131	Spain	Saragossa	1.8	United States	Jefferson (KY)	..	0.35	..
Spain	Malaga	22,857	Spain	Malaga	1.3	United States	Kent	..	0.36	..
Spain	Las Palmas	18,337	Spain	Las Palmas	1.1	United States	Kern	..	0.38	..
Spain	Valladolid	15,738	Spain	Valladolid	0.9	United States	Lancaster (PA)	..	0.31	..
Spain	Palma de Mallorca	28,999	Spain	Palma de Mallorca	1.7	United States	Las Vegas	..	0.39	..
Spain	Vitoria	14,748	Spain	Vitoria	0.9	United States	Lee	..	0.40	..
Spain	Pamplona	16,736	Spain	Pamplona	1.0	United States	Lehigh	..	0.34	..
Spain	Santander	13,476	Spain	Santander	0.8	United States	Los Angeles (Greater)	..	0.42	..
Spain	Bilbao	45,357	Spain	Bilbao	2.6	United States	Lucas	..	0.38	..
Spain	Vigo	16,795	Spain	Vigo	1.0	United States	Memphis	..	0.39	..
Spain	Santa Cruz de Tenerife	16,564	Spain	Santa Cruz de Tenerife	1.0	United States	Miami (Greater)	..	0.44	..
Spain	Granada	14,839	Spain	Granada	0.9	United States	Milwaukee	..	0.38	..
Estonia	Tallinn	18,112	Estonia	Tallinn	43.2	United States	Minneapolis	..	0.33	..
Finland	Helsinki	86,078	Finland	Helsinki	34.9	United States	Montgomery (OH)	..	0.37	..
Finland	Tampere	17,881	Finland	Tampere	7.2	United States	New Haven	..	0.43	..
Finland	Turku	14,903	Finland	Turku	6.0	United States	New Orleans	..	0.41	..
Finland	Oulu	9,344	Finland	Oulu	3.8	United States	New York (Greater)	..	0.42	..
France	Paris	891,730	France	Paris	31.7	United States	Oklahoma	..	0.39	..
France	Lyon	111,077	France	Lyon	4.0	United States	Onondaga	..	0.33	..
France	Toulouse	67,315	France	Toulouse	2.4	United States	Orange	..	0.38	..
France	Strasbourg	32,851	France	Strasbourg	1.2	United States	Philadelphia (Greater)	..	0.39	..
France	Bordeaux	51,565	France	Bordeaux	1.8	United States	Phoenix	..	0.40	..
France	Nantes	42,217	France	Nantes	1.5	United States	Pima	..	0.41	..
France	Lille	53,623	France	Lille	1.9	United States	Pittsburgh	..	0.38	..
France	Montpellier	24,786	France	Montpellier	0.9	United States	Polk	..	0.34	..
France	Saint-Etienne	16,169	France	Saint-Etienne	0.6	United States	Portland	..	0.36	..
France	Rennes	29,072	France	Rennes	1.0	United States	Providence	..	0.38	..
France	Amiens	10,981	France	Amiens	0.4	United States	Pulaski	..	0.36	..
France	Nancy	16,437	France	Nancy	0.6	United States	Richland	..	0.33	..
France	Reims	13,526	France	Reims	0.5	United States	Richmond (Greater)	..	0.36	..
France	Orleans	16,522	France	Orleans	0.6	United States	Rochester (NY)	..	0.34	..
France	Dijon	16,523	France	Dijon	0.6	United States	Sacramento	..	0.38	..
France	Poitiers	9,704	France	Poitiers	0.3	United States	Salt Lake	..	0.35	..
France	Clermont-Ferrand	18,737	France	Clermont-Ferrand	0.7	United States	San Antonio	..	0.39	..
France	Caen	15,764	France	Caen	0.6	United States	San Diego	..	0.39	..
France	Limoges	11,466	France	Limoges	0.4	United States	San Joaquin	..	0.37	..
France	Grenoble	26,525	France	Grenoble	0.9	United States	Sarasota	..	0.40	..
France	Fort-de-France	9,739	France	Fort-de-France	0.3	United States	Seattle	..	0.39	..
France	Toulon	16,173	France	Toulon	0.6	United States	Sedgwick	..	0.34	..
France	Tours	18,493	France	Tours	0.7	United States	Spokane	..	0.38	..
France	Angers	14,172	France	Angers	0.5	United States	St. Louis	..	0.40	..
France	Le Mans	13,160	France	Le Mans	0.5	United States	Stanislaus	..	0.38	..
France	Mulhouse	13,525	France	Mulhouse	0.5	United States	Summit	..	0.38	..
France	Perpignan	11,391	France	Perpignan	0.4	United States	Tampa-Hillsborough	..	0.40	..

Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)			GDP of the metropolitan area as a share of the national GDP			Gini coefficient (at disposable income, after taxes and transfers)				
France	Marseille	52,814	France	Marseille	1.9	United States	Tulsa	..	0.38	..
France	Nice	42,676	France	Nice	1.5	United States	Utah	..	0.34	..
France	Les Abymes	7,875	France	Les Abymes	0.3	United States	Ventura	..	0.37	..
United Kingdom	London	840,175	United Kingdom	London	29.2	United States	Virginia Beach	..	0.33	..
United Kingdom	West Midlands urban area	109,023	United Kingdom	West Midlands urban area	3.8	United States	Volusia-Daytona Beach	..	0.38	..
United Kingdom	Leeds	94,036	United Kingdom	Leeds	3.3	United States	Wake	..	0.34	..
United Kingdom	Glasgow	65,110	United Kingdom	Glasgow	2.3	United States	Washington (Greater)	..	0.36	..
United Kingdom	Liverpool	49,746	United Kingdom	Liverpool	1.7	United States	Washoe	..	0.40	..
United Kingdom	Edinburgh	48,815	United Kingdom	Edinburgh	1.7	Austria	Graz	..	0.27	..
United Kingdom	Manchester	133,767	United Kingdom	Manchester	4.7	Austria	Linz	..	0.25	..
United Kingdom	Cardiff	31,564	United Kingdom	Cardiff	1.1	Austria	Vienna	..	0.27	..
United Kingdom	Sheffield	35,998	United Kingdom	Sheffield	1.3	Belgium	Antwerp	..	0.30	..
United Kingdom	Bristol	44,820	United Kingdom	Bristol	1.6	Belgium	Gent	..	0.29	..
United Kingdom	Belfast	33,317	United Kingdom	Belfast	1.2	Belgium	Liege	..	0.31	..
United Kingdom	Newcastle upon Tyne	37,322	United Kingdom	Newcastle upon Tyne	1.3	Canada	Montreal	..	0.35	..
United Kingdom	Leicester	32,723	United Kingdom	Leicester	1.1	Canada	Calgary	..	0.45	..
United Kingdom	Aberdeen	27,351	United Kingdom	Aberdeen	1.0	Canada	Halifax	..	0.34	..
United Kingdom	Cambridge	17,312	United Kingdom	Cambridge	0.6	Canada	Hamilton	..	0.34	..
United Kingdom	Exeter	16,310	United Kingdom	Exeter	0.6	Canada	London	..	0.35	..
United Kingdom	Portsmouth	20,307	United Kingdom	Portsmouth	0.7	Canada	Saskatoon	..	0.36	..
United Kingdom	Coventry	33,872	United Kingdom	Coventry	1.2	Canada	Sherbrooke	..	0.30	..
United Kingdom	Kingston upon Hull	19,552	United Kingdom	Kingston upon Hull	0.7	Canada	Toronto	..	0.41	..
United Kingdom	Stoke-on-Trent	15,157	United Kingdom	Stoke-on-Trent	0.5	Canada	Vancouver	..	0.41	..
United Kingdom	Nottingham	32,578	United Kingdom	Nottingham	1.1	Canada	Victoria	..	0.35	..
United Kingdom	Wirral	7,940	United Kingdom	Wirral	0.3	Canada	Windsor	..	0.36	..
United Kingdom	Sunderland	10,844	United Kingdom	Sunderland	0.4	Canada	Winnipeg	..	0.36	..
United Kingdom	Medway	7,978	United Kingdom	Medway	0.3	France	Rennes	..	0.25	..
United Kingdom	Brighton and Hove	17,583	United Kingdom	Brighton and Hove	0.6	France	Bordeaux	..	0.26	..
United Kingdom	Plymouth	13,237	United Kingdom	Plymouth	0.5	France	Grenoble	..	0.27	..
United Kingdom	Swansea	12,606	United Kingdom	Swansea	0.4	France	Lille	..	0.28	..
United Kingdom	Derby	17,329	United Kingdom	Derby	0.6	France	Lyon	..	0.28	..
United Kingdom	Southampton	29,375	United Kingdom	Southampton	1.0	France	Marseille	..	0.29	..
United Kingdom	Milton Keynes	20,829	United Kingdom	Milton Keynes	0.7	France	Montpellier	..	0.28	..
United Kingdom	Northampton	20,569	United Kingdom	Northampton	0.7	France	Nantes	..	0.24	..
United Kingdom	Bournemouth	20,108	United Kingdom	Bournemouth	0.7	France	Nice	..	0.28	..
United Kingdom	Colchester	10,064	United Kingdom	Colchester	0.4	France	Paris	..	0.33	..
United Kingdom	Dundee City	8,421	United Kingdom	Dundee City	0.3	France	Rouen	..	0.27	..
United Kingdom	Blackburn with Darwen	10,447	United Kingdom	Blackburn with Darwen	0.4	France	Saint-Etienne	..	0.25	..
United Kingdom	Middlesbrough	16,843	United Kingdom	Middlesbrough	0.6	France	Strasbourg	..	0.27	..
United Kingdom	Oxford	25,596	United Kingdom	Oxford	0.9	France	Toulon	..	0.26	..
United Kingdom	Preston	11,744	United Kingdom	Preston	0.4	France	Toulouse	..	0.27	..
United Kingdom	Norwich	14,205	United Kingdom	Norwich	0.5	Italy	Bari	..	0.33	..
United Kingdom	Cheshire West and Chester	20,699	United Kingdom	Cheshire West and Chester	0.7	Italy	Bologna	..	0.31	..
Greece	Athens	132,525	Greece	Athens	44.9	Italy	Catania	..	0.29	..
Greece	Thessaloniki	24,856	Greece	Thessaloniki	8.4	Italy	Florence	..	0.31	..
Hungary	Budapest	129,911	Hungary	Budapest	46.4	Italy	Genoa	..	0.30	..
Hungary	Debrecen	6,759	Hungary	Debrecen	2.4	Italy	Milan	..	0.31	..
Hungary	Gyor	8,711	Hungary	Gyor	3.1	Italy	Naples	..	0.32	..
Hungary	Szekesfehervar	7,632	Hungary	Szekesfehervar	2.7	Italy	Padua	..	0.31	..
Ireland	Dublin	174,706	Ireland	Dublin	48.0	Italy	Palermo	..	0.30	..

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Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)		
Ireland	Cork	52,523
Italy	Rome	216,147
Italy	Milan	300,231
Italy	Naples	86,497
Italy	Turin	75,673
Italy	Palermo	25,111
Italy	Genoa	32,138
Italy	Florence	39,582
Italy	Bari	20,647
Italy	Bologna	41,747
Italy	Catania	15,283
Italy	Venice	22,239
Italy	Verona	22,899
Italy	Taranto	9,882
Italy	Cagliari	15,719
Italy	Padua	23,591
Italy	Prato	11,690
Italy	Parma	16,972
Italy	Reggio nell'Emilia	13,383
Italy	Rimini	10,057
Korea	Seoul	1,005,538
Korea	Gimhae	147,574
Korea	Dalseong	61,319
Korea	Gwangsan	47,546
Korea	Seo	45,337
Korea	Ulsan	67,566
Korea	Heungdeok	41,158
Korea	Jeju	17,392
Lithuania	Vilnius	24,836
Lithuania	Kaunas	9,809
Mexico	Mexico City	518,787
Mexico	Guadalajara	103,732
Mexico	Monterrey	158,951
Mexico	Queretaro	38,553
Mexico	Merida	23,541
Mexico	Cuernavaca	14,110
Mexico	Aguascalientes	21,581
Netherlands	The Hague	58,288
Netherlands	Amsterdam	195,944
Netherlands	Rotterdam	99,751
Netherlands	Utrecht	56,542
Netherlands	Eindhoven	45,572
Netherlands	Tilburg	14,088
Netherlands	Groningen	25,051
Netherlands	Enschede	16,721
Netherlands	Arnhem	18,964
Netherlands	Breda	19,048
Netherlands	Leiden	15,311
Netherlands	Zwolle	16,525
Netherlands	Alkmaar	11,203

GDP of the metropolitan area as a share of the national GDP		
Ireland	Cork	14.4
Italy	Rome	9.4
Italy	Milan	13.0
Italy	Naples	3.7
Italy	Turin	3.3
Italy	Palermo	1.1
Italy	Genoa	1.4
Italy	Florence	1.7
Italy	Bari	0.9
Italy	Bologna	1.8
Italy	Catania	0.7
Italy	Venice	1.0
Italy	Verona	1.0
Italy	Taranto	0.4
Italy	Cagliari	0.7
Italy	Padua	1.0
Italy	Prato	0.5
Italy	Parma	0.7
Italy	Reggio nell'Emilia	0.6
Italy	Rimini	0.4
Korea	Seoul	49.0
Korea	Gimhae	7.2
Korea	Dalseong	3.0
Korea	Gwangsan	2.3
Korea	Seo	2.2
Korea	Ulsan	3.3
Korea	Heungdeok	2.0
Korea	Jeju	0.8
Lithuania	Vilnius	27.7
Lithuania	Kaunas	11.0
Mexico	Mexico City	22.2
Mexico	Guadalajara	4.4
Mexico	Monterrey	6.8
Mexico	Queretaro	1.6
Mexico	Merida	1.0
Mexico	Cuernavaca	0.6
Mexico	Aguascalientes	0.9
Netherlands	The Hague	6.5
Netherlands	Amsterdam	21.9
Netherlands	Rotterdam	11.1
Netherlands	Utrecht	6.3
Netherlands	Eindhoven	5.1
Netherlands	Tilburg	1.6
Netherlands	Groningen	2.8
Netherlands	Enschede	1.9
Netherlands	Arnhem	2.1
Netherlands	Breda	2.1
Netherlands	Leiden	1.7
Netherlands	Zwolle	1.8
Netherlands	Alkmaar	1.3

Gini coefficient (at disposable income, after taxes and transfers)				
Italy	Rome	..	0.32	..
Italy	Turin	..	0.32	..
Italy	Venice	..	0.29	..
Italy	Verona	..	0.31	..
Norway	Oslo	..	0.27	..
Portugal	Lisbon	..	0.40	..
Portugal	Porto	..	0.39	..
Sweden	Gothenburg	..	0.28	..
Sweden	Malmo	..	0.33	..
Sweden	Stockholm	..	0.31	..
South Africa	Ekurhuleni	..	0.62	..
South Africa	Ethekwini (Durban)	..	0.62	..
South Africa	Johannesburg	..	0.67	..
South Africa	Port Elizabeth	..	0.65	..
South Africa	Tshwane (Pretoria)	..	0.67	..
Turkey	Istanbul	0.37	0.40	..

Source: OECD - http://stats.oecd.org/Index.aspx?DataSetCode=CITIES

Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)			GDP of the metropolitan area as a share of the national GDP		
Norway	Oslo	92,462	Norway	Oslo	28.5
Norway	Bergen	21,384	Norway	Bergen	6.6
Norway	Trondheim	13,880	Norway	Trondheim	4.3
Norway	Stavanger	18,167	Norway	Stavanger	5.6
Poland	Warsaw	192,249	Poland	Warsaw	17.4
Poland	Lodz	29,904	Poland	Lodz	2.7
Poland	Cracow	51,046	Poland	Cracow	4.6
Poland	Wroclaw	37,800	Poland	Wroclaw	3.4
Poland	Poznan	46,242	Poland	Poznan	4.2
Poland	Gdansk	39,841	Poland	Gdansk	3.6
Poland	Bydgoszcz	14,266	Poland	Bydgoszcz	1.3
Poland	Lublin	17,530	Poland	Lublin	1.6
Poland	Katowice	80,837	Poland	Katowice	7.3
Poland	Bialystok	10,005	Poland	Bialystok	0.9
Poland	Rzeszow	12,271	Poland	Rzeszow	1.1
Poland	Czestochowa	9,937	Poland	Czestochowa	0.9
Poland	Bielsko-Biala	10,764	Poland	Bielsko-Biala	1.0
Poland	Tarnow	5,586	Poland	Tarnow	0.5
Portugal	Lisbon	119,484	Portugal	Lisbon	36.8
Portugal	Porto	37,888	Portugal	Porto	11.7
Portugal	Coimbra	7,674	Portugal	Coimbra	2.4
Slovak Republic	Bratislava	32,700	Slovak Republic	Bratislava	19.1
Slovenia	Ljubljana	25,966	Slovenia	Ljubljana	36.8
Slovenia	Maribor	8,903	Slovenia	Maribor	12.6
Sweden	Stockholm	155,127	Sweden	Stockholm	30.8
Sweden	Gothenburg	50,143	Sweden	Gothenburg	10.0
Sweden	Malmo	28,943	Sweden	Malmo	5.8
Sweden	Uppsala	14,295	Sweden	Uppsala	2.8
United States	New York (Greater)	1,676,319	United States	New York (Greater)	8.8
United States	Los Angeles (Greater)	1,138,721	United States	Los Angeles (Greater)	6.0
United States	Chicago	641,022	United States	Chicago	3.4
United States	Washington (Greater)	949,948	United States	Washington (Greater)	5.0
United States	San Francisco (Greater)	785,176	United States	San Francisco (Greater)	4.1
United States	Philadelphia (Greater)	440,309	United States	Philadelphia (Greater)	2.3
United States	Dallas	477,088	United States	Dallas	2.5
United States	Houston	437,076	United States	Houston	2.3
United States	Miami (Greater)	334,968	United States	Miami (Greater)	1.8
United States	Atlanta	358,026	United States	Atlanta	1.9
United States	Boston	400,894	United States	Boston	2.1
United States	Phoenix	232,110	United States	Phoenix	1.2
United States	Detroit (Greater)	254,055	United States	Detroit (Greater)	1.3
United States	Seattle	350,638	United States	Seattle	1.8
United States	Minneapolis	242,197	United States	Minneapolis	1.3
United States	San Diego	224,202	United States	an Diego	1.2
United States	St. Louis	149,353	United States	St. Louis	0.8
United States	Denver	196,188	United States	Denver	1.0
United States	San Antonio	122,777	United States	San Antonio	0.6
United States	Portland	146,760	United States	Portland	0.8
United States	Cincinnati	129,939	United States	Cincinnati	0.7
United States	Las Vegas	111,336	United States	Las Vegas	0.6

Table D.1: Continued

GDP (Million USD, constant prices, constant PPP)			GDP of the metropolitan area as a share of the national GDP		
United States	Orange	127,120	United States	Orange	0.7
United States	Jackson (MO)	121,428	United States	Jackson (MO)	0.6
United States	Indianapolis	130,402	United States	Indianapolis	0.7
United States	Cuyahoga	124,990	United States	Cuyahoga	0.7
United States	New Haven	134,539	United States	New Haven	0.7
United States	Charlotte	137,241	United States	Charlotte	0.7
United States	Sacramento	133,623	United States	Sacramento	0.7
United States	Austin	132,970	United States	Austin	0.7
United States	Columbus	119,809	United States	Columbus	0.6
United States	Milwaukee	96,527	United States	Milwaukee	0.5
United States	Jacksonville	79,606	United States	Jacksonville	0.4
United States	Salt Lake	103,794	United States	Salt Lake	0.5
United States	Tampa-Pinellas	59,732	United States	Tampa-Pinellas	0.3
United States	Jefferson (KY)	71,194	United States	Jefferson (KY)	0.4
United States	Memphis	70,118	United States	Memphis	0.4
United States	Davidson	102,456	United States	Davidson	0.5
United States	Oklahoma	71,927	United States	Oklahoma	0.4
United States	Hartford	94,974	United States	Hartford	0.5
United States	Pittsburgh	103,144	United States	Pittsburgh	0.5
United States	New Orleans	69,980	United States	New Orleans	0.4
United States	Virginia Beach	64,715	United States	Virginia Beach	0.3
United States	Erie (NY)	64,742	United States	Erie (NY)	0.3
United States	Fresno (Greater)	49,785	United States	Fresno (Greater)	0.3
United States	Richmond (Greater)	73,909	United States	Richmond (Greater)	0.4
United States	Wake	74,061	United States	Wake	0.4
United States	Jefferson (AL)	58,265	United States	Jefferson (AL)	0.3
United States	Tampa-Hillsborough	82,215	United States	Tampa-Hillsborough	0.4
United States	Pima	41,257	United States	Pima	0.2
United States	Tulsa	52,923	United States	Tulsa	0.3
United States	Albany	60,515	United States	Albany	0.3
United States	Providence	51,281	United States	Providence	0.3
United States	Albuquerque	40,614	United States	Albuquerque	0.2
United States	Douglas (NE)	59,331	United States	Douglas (NE)	0.3
United States	Rochester (NY)	50,189	United States	Rochester (NY)	0.3
United States	Kern	46,490	United States	Kern	0.2
United States	Ventura	55,950	United States	Ventura	0.3
United States	El Paso (TX)	29,885	United States	El Paso (TX)	0.2
United States	East Baton Rouge	49,518	United States	East Baton Rouge	0.3
United States	Worcester	42,469	United States	Worcester	0.2
United States	Hidalgo	21,488	United States	Hidalgo	0.1
United States	Richland	40,128	United States	Richland	0.2
United States	Lehigh	37,453	United States	Lehigh	0.2
United States	Sarasota	31,293	United States	Sarasota	0.2
United States	Montgomery (OH)	36,118	United States	Montgomery (OH)	0.2
United States	San Joaquin	29,455	United States	San Joaquin	0.2
United States	Kent	41,839	United States	Kent	0.2
United States	Charleston	39,145	United States	Charleston	0.2
United States	Onondaga	38,896	United States	Onondaga	0.2
United States	El Paso (CO)	34,988	United States	El Paso (CO)	0.2

Source: OECD - http://stats.oecd.org/Index.aspx?DataSetCode=CITIES

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World Cities Report 2020

The Value of Sustainable Urbanization

The world we live in has been transformed in a manner not witnessed in recent times. The coronavirus pandemic has triggered what arguably is the worst public health crisis in a century and the worst economic downturn since the Great Depression. In a rapidly urbanizing and globalized world, cities have been the epicentres of COVID-19. The virus has spread to virtually all parts of the world; first, among globally connected cities, and now, through community transmission and from the city to the countryside.

The World Cities Report 2020 shows that the intrinsic value of sustainable urbanization can and should be harnessed for the wellbeing of all. The Report provides evidence and policy analysis of the value of urbanization from an economic, social and environmental perspective, including the unquantifiable value that gives cities their unique character; and also explores the role of innovation and technology, local governments, targeted investments and the effective implementation of the New Urban Agenda in fostering the value of sustainable urbanization.

The World Cities Report 2020 convincingly affirms that well-planned, managed, and financed cities and towns create value that can be harnessed to build resilient cities that can bounce back from the devastating impacts of pandemics, improve the quality of life of all residents, and can be leveraged in the fight against poverty, inequality, unemployment, climate change and other pressing global challenges.

As the world enters the Decade of Action to deliver the Sustainable Development Goals by 2030, the policy recommendations in this Report will be beneficial to governments at all levels, enabling them deliver programmes and strategies that enhance the value of sustainable urbanization, and in the process, contribute to achieving the Sustainable Development Goals through the effective implementation of the New Urban Agenda.