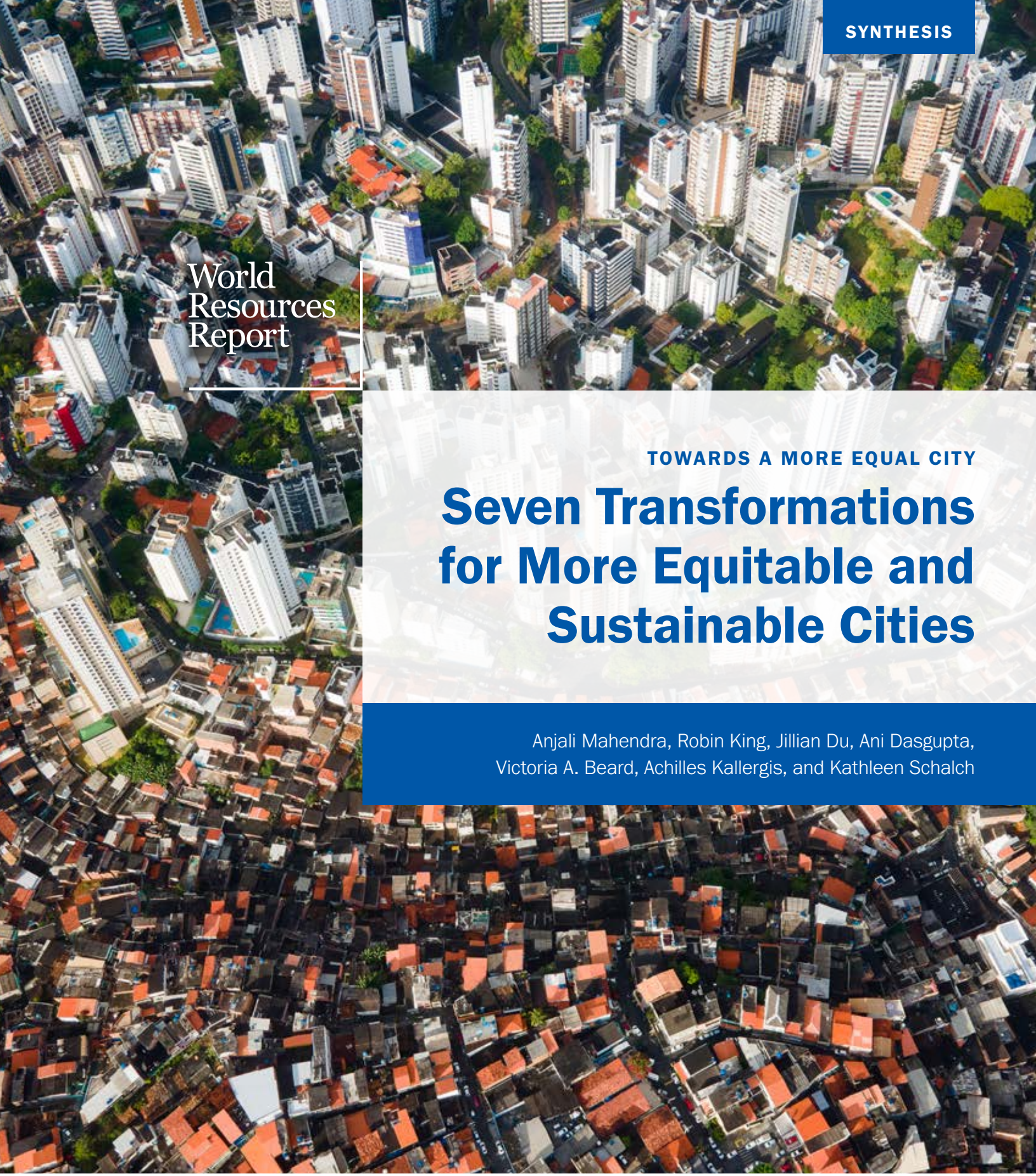


SYNTHESIS

World Resources Report

TOWARDS A MORE EQUAL CITY

Seven Transformations for More Equitable and Sustainable Cities

Anjali Mahendra, Robin King, Jillian Du, Ani Dasgupta, Victoria A. Beard, Achilles Kallergis, and Kathleen Schalch

WORLD RESOURCES INSTITUTE | ROSS CENTER

UKaid from the British people

ABOUT THE AUTHORS

Anjali Mahendra is Director of Global Research at WRI Ross Center for Sustainable Cities. She is a recognized expert on urban land-use, transport, and climate policies. Her research focuses on how cities in the global South can manage urban growth for equitable access to core services and infrastructure, and more resource-efficient economic and environmental outcomes. She leads the research agenda at WRI Ross Center, including the flagship World Resources Report series, Towards a More Equal City.

Robin King is Director for Knowledge Capture and Collaboration at WRI Ross Center for Sustainable Cities. She is an economist, and her research focuses on political economy, urban economics, comparative urban development, and inclusive transit-oriented development.

Jillian Du is a Research and Engagement Strategist at the Climate and Clean Energy Equity Fund. She previously was Research Manager for Inclusive Cities at WRI Ross Center for Sustainable Cities. Her analytical work focused on how cities can create resilient, equitable communities while tackling climate change and ensuring economic opportunities.

Ani Dasgupta is President and CEO of World Resources Institute, where he works to advance the institute's global vision to improve the lives of all people and ensure that nature can thrive. A widely recognized leader in the areas of sustainable cities, urban design and poverty alleviation, he developed his expertise in positions ranging from nonprofits in India to the World Bank, where he developed the Bank's first Knowledge strategy. He took the helm at WRI after seven years as Global Director of WRI's Ross Center for Sustainable Cities.

Victoria A. Beard is a Fellow at WRI Ross Center for Sustainable Cities and a Professor in the Department of City and Regional Planning and Associate Dean for Research Initiatives in the College of Architecture, Art, and Planning at Cornell University. Her research focuses on how planners and local people address urban poverty and inequality, access to core urban services, and the broader processes that create and sustain citywide transformation.

Achilles Kallergis is an Assistant Professor at the New School for Social Research and the Director of the Cities and Migration Project at the Zolberg Institute on Migration and Mobility. In this role, he coordinates the Research Platform on Cities, Migration and Membership—a collaboration of The New School and fifteen research institutions from around the world. His research focuses on urbanization, migration, and mobility in rapidly growing cities. It explores how locally generated data can provide new evidence on mobility patterns and contribute to improving living conditions in low-income urban settings through better provision of housing and services.

Kathleen Schalch is a journalist, writer, and editor who covered global economic development for National Public Radio, served in the Obama administration, and now works with researchers at WRI.

CONTRIBUTORS: Emily Matthews, Maria Hart, Emma Pearlstone, and Maeve Weston

DESIGN AND LAYOUT: Shannon Collins, Rosie Ettenheim, and Carni Klirs

---

Suggested Citation: Mahendra, A., R. King, J. Du, A. Dasgupta, V. A. Beard, A. Kallergis, and K. Schalch. 2021. "Seven Transformations for More Equitable and Sustainable Cities." World Resources Report, *Towards a More Equal City*. Washington, DC: World Resources Institute. https://doi.org/10.46830/wrirpt.19.00124.
Available online at publications.wri.org/transformations-equitable-sustainable-cities.
Updated on March 10, 2022.

TABLE OF CONTENTS

Foreword

Our planet needs successful cities—cities that are centers of innovation and productivity, cities where every family thrives, cities that realize the promise of low-carbon prosperity.

We are not yet building the cities we need. One in two people live in cities and 2.5 billion more will do so by 2050. Cities produce over 80% of GDP but also 70% of global GHG emissions. Our cities are growing, while inequality widens and livelihoods dwindle. Urban infrastructure is not keeping pace with the surge in residents. With many cities already struggling to meet people's basic needs, global development and climate challenges are increasingly urban challenges. A sustainable future depends on whether cities can transform. Is there a path to transformative change that can make cities more prosperous, more equal, and low-carbon at the same time?

The COVID-19 pandemic has devastated cities, exposing long-present inequalities. The urban poor are much more vulnerable to disease without even simple measures to protect themselves. And it is not only lives lost, but livelihoods. The pandemic pushed millions more people into urban poverty, often with no social safety net. The 2 billion informal workers who pick up waste, do construction, drive minibuses, sell goods on the street, and do domestic work are engines of growth and productivity in many places. Cities cannot function when informal workers are unable to participate fully in the economy. Cities must emerge from this crisis with a deliberate focus on tackling inequality.

The time is now for more sustainable urban development. There is a narrow window to limit global warming and adapt to climate impacts. We need radical shifts in the way we use energy, produce food, manage land, and live in cities. And we must invest much more in building resilience. Trillions of dollars of stimulus spending for COVID-19 recovery has opened a once-in-a-generation opportunity to reset and reshape our economies—but it must be a green recovery. We must invest in more equitable and sustainable cities that are better prepared for the next crisis.

Urban leaders should chart a new path with equity at its core. Historically, cities have been founts of innovation and leadership. A handful of forward-thinking cities have made breakthroughs in recent years. But most cities remain on the path of unequal, unsafe, polluting growth while re-creating known failures. We need to rapidly transform how all cities around the world are built, managed, and experienced.

This synthesis report is the culmination of six years of work from 160+ authors and reviewers across the globe. It offers a roadmap for how to unleash transformative change in cities. We present the best thinking on priority actions and investments that can create prosperity and improve livelihoods for everyone. It is as relevant for Houston or Madrid as it is for Delhi or Lagos.

When we began this research, we asked if cities could thrive by prioritizing the needs of the under-served. The answer is a resounding yes. In fact, we can create the cities we need only if we focus on ending inequality and invigorating livelihoods. But there is no time to waste.

Ani Dasgupta
President & CEO
World Resources Institute

WHY THIS REPORT MATTERS

"The pandemic has exacerbated existing spatial inequalities and exposed new vulnerabilities. We now need to address systemic inequality in cities head-on, going back to housing, public spaces, basic services, mobility, and connectivity to implement the New Urban Agenda in order to achieve the Sustainable Development Goals. This also means providing access to social safety nets and supporting cities to create financial resilience. Such an approach comes with a unique opportunity to invest in low-carbon and climate resilient infrastructure, while promoting multilevel coordination. This well-researched World Resources Report draws from diverse experiences in rapidly changing cities to ground this vision by proposing seven concrete transformative pathways to build a more just, green, and healthy future."

Maimunah Mohd Sharif
Executive Director, United Nations Human Settlements Programme (UN-Habitat),
& Under-Secretary-General of the United Nations

"Rapid and growing urbanization, increasingly concentrated in intermediate cities, raises questions of territorial equity and access to urban infrastructure, services, and opportunities. The COVID pandemic has highlighted the important role that local actors can play in providing rapid responses and solutions. We, at AFD, remain committed to supporting cities, alongside our partners such as WRI, in achieving the necessary urban transformations to meet these challenges and improve resilience to climate change. We thank WRI for the excellent report and recommendations and look forward to furthering our collaboration in this domain."

Rémy Rioux
Chief Executive Officer,
Agence Française de Développement (AFD)

"Quality of life in our cities is closely associated with the infrastructure that forms the fabric of daily urban life. WRI's striking report reminds us that globally, a third of city-dwellers have insufficient access to services such as decent housing, transport, energy, water, and sanitation.

The world is facing a climate emergency and it's vital that cities are equipped with the tools to tackle these challenges and address inequalities. The case studies and recommendations of this timely report do an excellent job of supporting that work, to help drive the global transformation we need."

Shirley Rodrigues
Deputy Mayor for Environment and Energy,
City of London, United Kingdom

"WRI's World Resources Report timeously confronts a world, and more specifically a global South, in a state of recovery from a devastating COVID-19 pandemic which has deepened the significant structural disadvantages which predated it. Poverty and inequality have increased across the board while the impacts of climate change and resource degradation continue to rise. City governments are at the frontline of programmatically addressing these challenges. The seven crucial urban transformations outlined in this report provide a great platform for leaders to critically analyze services offered to the most vulnerable while also attracting the much-needed investment to facilitate inclusive economic recovery and development."

Parks Tau
Member of the Executive Council (MEC), Gauteng Department of Economic Development,
Environment, Agriculture and Rural Development, South Africa

"COVID-19 has further exacerbated inequality in every aspect of urban life. People living in confined spaces with limited access to public infrastructure and services and depending on precarious working conditions have been hit harder by the pandemic. The report could not come at a more appropriate time. It addresses the pressing problem of inequality from a holistic perspective and undertakes the endeavour to find integrated solutions. It thus confirms our experience: lack of access to basic infrastructure and services is not only a major development obstacle but a growing impediment for creating climate-friendly and resilient urban space. Solving it requires integrated, multi-level and multi-stakeholder approaches."

Ingrid-Gabriela Hoven
Managing Director, Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

"Urban transitions are vital for people and the planet. Our cities hold the keys to liveability, sustainability, and the security of jobs and services for the majority of the world's people, but reform is urgent. Almost half of global carbon emissions can be eliminated if cities become carbon-free zones and use their procurement power to demand carbon-neutral production and services. Likewise, they can ensure people's rights and decent work within their boundaries and beyond, but they must be financed and municipal authorities must engage employers, workers, and communities in just transition plans. The World Resources Report lays out a critical roadmap."

Sharan Burrow
General Secretary,
International Trade Union Confederation (ITUC)

"This World Resources Report brings together a wide range of insights on pre- and post-COVID urban innovation, into a clear seven-step implementation framework. If local governments, businesses and citizens put their collective shoulders to these wheels, cities across the world could become more equal, prosperous and resilient, accelerating the transformation towards global sustainability."

Aromar Revi
Director, Indian Institute for Human Settlements (IIHS) and Co-Chair,
UN Sustainable Development Solutions Network (SDSN)

"Life on planet earth has suffered significant impacts on all sectors of the population because of COVID-19. The development of new models and adaptations for more equitable cities will be the best way to integrate and implement change strategies, leading to the transformation of our cities. This will require intelligent governance that provides a path to develop and implement development agendas with a clear vision of the future for cities and communities. The seven transformations provide such a framework. They apply technologies, knowledge, and digital capacity to processes, products, assets, and public policies to improve efficiency, improve quality of life, manage risk, and discover new income-generating opportunities."

Martha Delgado
Vice Minister of Multilateral Affairs and Human Rights,
Mexican Ministry of Foreign Affairs

"Towards a More Equal City does not shy away from the sobering and unvarnished truths about the impact of inequality on our world. However, this report provides tangible reasons to be hopeful about how the strategic development of our cities can be a path toward equality."

Majora Carter
CEO, Majora Carter Group LLC

"This WRI report starkly demonstrates the hidden toll of inequalities in access to public services in cities. Income alone, the report argues, is no longer a sufficient barometer for quality of life. The human, economic, and environmental costs of private vehicles, dirty energy, contaminated water, pollution, and climate risks are inextricably linked to issues of inequality. These challenges can all be tackled together through the research-based solutions and wealth of examples in this report. With the most vulnerable on the frontlines, partnering with communities on the ground to put the solutions outlined into practice must be an immediate priority."

Manish Bapna
President and Chief Executive Officer,
Natural Resources Defense Council (NRDC)

"India's urban population is projected to double by 2050 and the quality of this urbanization is critical to ensuring India meets the Sustainable Development Goals. For us, "smart cities" are livable and sustainable cities with economies that work for all, particularly the most vulnerable. Aligned with this report, I believe that the achievement of these outcomes hinges on effective use of data and technology, innovative financing, able governance, and integrated, climate-sensitive urban planning. The report offers practical knowledge on transforming urban practice on these tenets, with many examples to learn from. Its guidance on improving livelihoods for informal workers and engaging them in the vision for a better city is refreshing. I am glad to see Pune and Ahmedabad included as city case studies and am keen to advance this agenda in our future endeavors."

Kunal Kumar
Joint Secretary & Mission Director (Smart Cities Mission),
Ministry of Housing and Urban Affairs, Government of India

"At a time where cities have become major players in the field of sustainable development, this report helps identify key strategies to respond to the current challenges comprehensively. With a growing share of both people and economic activity in urban areas, low-carbon cities will certainly be key to reducing climate risks. But the way they handle it can exacerbate or minimize inequality. For instance, Africa cannot focus narrowly on climate mitigation alone; they must also find ways to reduce poverty, create decent jobs, and reduce pollution. It is therefore essential to identify low-carbon measures that also deliver real improvements in people's lives."

Carlos Lopes
Professor, Mandela School of Public Governance,
University of Cape Town

"The battle for a sustainable future will be won or lost in the world's cities. This superb report is a good news-bad news story. It shows how cities can dramatically transform themselves to become low carbon, inclusive, creative, and productive – and that this transition is good for people, planet, and even politics. But the shift isn't happening nearly fast enough. In most cities carbon emissions are still rising, along with inequality and congestion. City, national, community and corporate leaders should seize the opportunities this report offers while there is still time."

Andrew Steer
President and CEO
Bezos Earth Fund

"Emerging cities, particularly in India, are growing at an unprecedented rate. We must see them as an opportunity for effecting transformative positive change towards low carbon cities. Local, state, and national governments can play an important role with the private sector in delivering clean water and energy, housing, and transport. The right regulation and pricing can help control the waste of natural resources, while improving the health and livelihoods of all urban dwellers. Addressing fundamental issues of poverty and inequality in cities is essential to building resilience. We need a manual for a shift to low-carbon, sustainable, inclusive urban development, and the World Resources Report is that manual."

Jamshyd Godrej
Chairman and Managing Director,
Godrej & Boyce Mfg Co. Ltd.

"Chinese cities are undergoing unprecedented urbanization. 99% of the urban residents in Chinese cities have secured the access to clean water, public transport services, and grid connections and we must ensure these core services are available for residents in all new towns or redeveloped urban centers. The per capita housing area in cities has reached 40 square meters and through good spatial planning, we can ensure housing is well connected to services and opportunities for all people. Despite the progress, Chinese cities still confront serious impacts from climate change, urgency for low-carbon transitions to meet the country's 2060 carbon neutrality commitments, and amenity and service gaps for an aging society and emerging middle class. Through the release of World Resources Report, we hope to exchange best practices and lessons learnt with global peers towards a shared equal and sustainable future."

Qiu Baoxing
Former Vice Minister of Housing and Urban-Rural Development,
P. R. China and Counsellor of the State Council, P. R. China

"I am not hopeful. I am certain. We know what is causing climate change. Cities are clearly at the frontlines. A warming planet will have increasingly devastating effects on our lives, livelihoods, economies, health and security, disproportionally affecting those that have the least. Addressing inequalities must be central to our actions. We can absolutely avoid the worst and build a better world in the process. This is the single most important decade in human history to take urgent action to tackle inequality at the same level as the climate crisis. Global efforts hinge on how cities will meet this challenge."

Kitty van der Heijden
Director General for International Cooperation,
Ministry of Foreign Affairs, Netherlands


Túnel
José Roberto
Tanganiello Melhem
Av. Rebouças
Pinheiros
874C H. PENTEADO
874C
EMBARQUE PERMITIDO SOMENTE
COM USO DE MÁSCARA
8 2402
Piso Baixo
SP- SÃO PAULO
FJP-7366

Executive Summary

HIGHLIGHTS

- A different kind of urbanization is unfolding in the global South. Under-resourced cities are growing fast and haphazardly, with large swaths of city dwellers living in informal settlements and working in the informal economy.
- Globally, more than 1.2 billion people—or one in three urban residents—are under-served daily by core urban services (good-quality housing, transport, water, sanitation, and energy). Bridging the "urban services divide" can bring cascading benefits to the entire city and unleash citywide transformative change.
- Inequality is typically measured by analyzing differences in incomes, but this is only one dimension of the problem. Unequal access to essential infrastructure and services can have a much greater impact on lives, livelihoods, and long-term prospects than differences in earnings.
- This synthesis report is the culmination of the World Resources Report series, *Towards a More Equal City*, and shows how growing cities in the global South can ensure equitable access to urban services and opportunities and, in doing so, build city-wide prosperity and better environmental quality for all.
- We reveal seven crucial urban transformations that are needed in the areas of infrastructure design and delivery, service provision, data collection, urban employment, finance, land management, and governance.
- These transformations require decision-makers to break out of silos, build new coalitions, and embrace new resources, technologies, and policy innovations. Global efforts to fight poverty and climate change hinge on how cities will meet this challenge. The time to act is now.

THE URBAN SERVICES DIVIDE IN THE GLOBAL SOUTH

The coronavirus pandemic has laid bare the growing inequalities in cities between those who have money and options to remain safe and employed and those who do not. It has exacerbated the effects of a long-standing urban services divide, with disastrous consequences. On one side of that divide are city dwellers who have access to crucial urban services and infrastructure; on the other side are those who lack running water and sanitation, electricity, decent housing, transport, and other amenities. For them, even the most basic precautions—such as frequent hand washing and keeping a safe distance from others—are near impossible. Disease and job loss have stalked these communities in ways that most well-to-do urbanites can barely fathom. These communities are often made up of the essential workers who toil to keep cities running. The burdens they face impact the functioning of the entire city.

These inequalities are deepening and spreading, particularly in growing cities of the global South. The majority of city dwellers are already suffering from the consequences of the urban services divide, and that share is rising fast as urban populations increase. Today, more than 1.2 billion people live in urban slums and are among the under-served—representing about one-third of urban dwellers worldwide and two-thirds in low-income countries.[1] Solutions from the past may not apply in these challenging, yet dynamic contexts, so new approaches are needed.

Globally, more than 2 billion people work in the informal economy, which has been decimated by COVID-19, and these workers are not covered by social safety nets.[2] This represents almost 90 percent of the workforce in rapidly urbanizing countries such as Kenya and India.[3] In many cities, unequal access to services and insecure employment force many to struggle daily for life's most basic necessities and denies them the chance to improve their lives.

Those who are under-served by urban services suffer disproportionately, not only from disease outbreaks but also from threats of all kinds, including economic shocks, environmental degradation, and natural disasters. Even in normal times, the urban services divide does more than exacerbate inequality and punish those who are marginalized and vulnerable. It could lock cities into a cycle of poverty, low

productivity, and unhealthy living conditions for the rest of the century and beyond, undermining everyone's quality of life. Unless leaders can act decisively, these trends will be hard to stop, let alone to reverse.

Scholars have identified pervasive, growing urban social and spatial inequalities as the crisis of our times—one that impacts everyone and must be confronted if we are to meet the Sustainable Development Goals (SDGs) by 2030.[4] Yet inertia prevails, even as the consequences of ignoring this reality loom ever larger and more ominously.

Richer cities have been able to spearhead a host of innovations to improve services and tackle inequalities in access. But for the vast majority of the world's cities, these ideas and breakthroughs have not touched most of the 3.4 billion city dwellers in low- or middle-income countries. The tools, frameworks, and methods available to these cities are often inadequate, irrelevant, or, worse, detrimental. Replicating wealthy cities' experiments or following in their footsteps may be ill-advised. Of more than 4,200 cities in the world (with populations over 100,000 in 2010), most have not figured out a successful way forward.[5] They struggle with concurrent needs to increase quality of life, jobs, and resilience and to reduce carbon emissions. Transformative change is urgently needed, and a few cities have shown this is possible, despite challenges.

Our research explores this question: As the world continues to urbanize, how can growing cities in the global South ensure equitable access to urban services and opportunities and, in doing so, generate prosperity and environmental benefits for all? This flagship World Resources Report series, *Towards a More Equal City* provides answers. Over five years, we developed a knowledge base culminating in a road map for sweeping, durable, and transformative changes in the ways cities are built, managed, and experienced (see Box ES-1). This synthesis report builds on that work and presents new analysis that identifies common threads and effective strategies. The report synthesizes our sectoral research, in-depth case studies, and deep examination of how cities actually change. It documents breakthrough innovations that cities have pioneered and reveals not only which solutions must be our highest priorities but also how to implement them.

BOX ES-1: The World Resources Report series, *Towards a More Equal City*

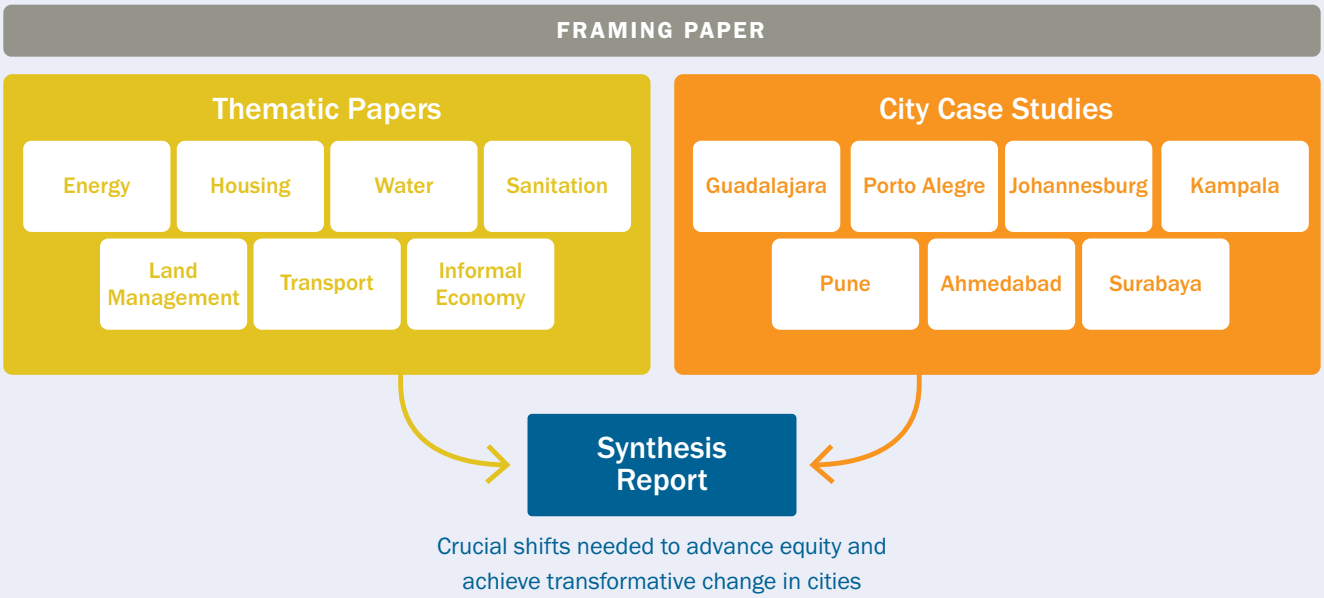
At World Resources Institute, we investigated the ways in which economic, demographic, and resource challenges can widen gaps in urban services. We then synthesized a large body of evidence on how providing equitable access to urban services and opportunities—land, housing, transport, energy, water, sanitation, and secure employment—can lead to more economically prosperous and environmentally sustainable cities for all (Figure BES-1.1). Seven **thematic papers** highlight sectoral interventions that have proven effective in cities around the world, with a focus on struggling and emerging cities.[a] They draw upon the deep experience of the authors in these sectors. We did not include waste management and telecommunications access as part of this series; however, evidence shows these sectors face many public provision challenges that are similar to the ones we discuss.

We identified **key conditions that trigger, enable, or inhibit positive change** at the city level. Confronting the urban services divide, however, is not only about providing better infrastructure. It also means transforming the fundamental levers of city life and creating a new dynamic that can support change—and not just change that is halting and incremental but change that is durable and transformative.

Seven **case studies**[b] offer examples of cities that have striven for and achieved transformative change by intentionally tackling inequities. They document the experiences of seven different cities in their advancement towards this goal, the opportunities they seized, and the constraints they faced. Cities can learn from one another's successes and failures to help bring about their own change.

This **synthesis report** presents the findings from the entire series, identifying crucial transformations needed in thinking and practice. It shows that addressing service and opportunity inequities in cities will yield cascading benefits for the city overall. It can bend trajectories of growth and development towards sustainability, shared prosperity, and a better quality of life for all urban residents.

Figure BES-1.1 | **This synthesis report draws from seven thematic papers and seven city case studies**



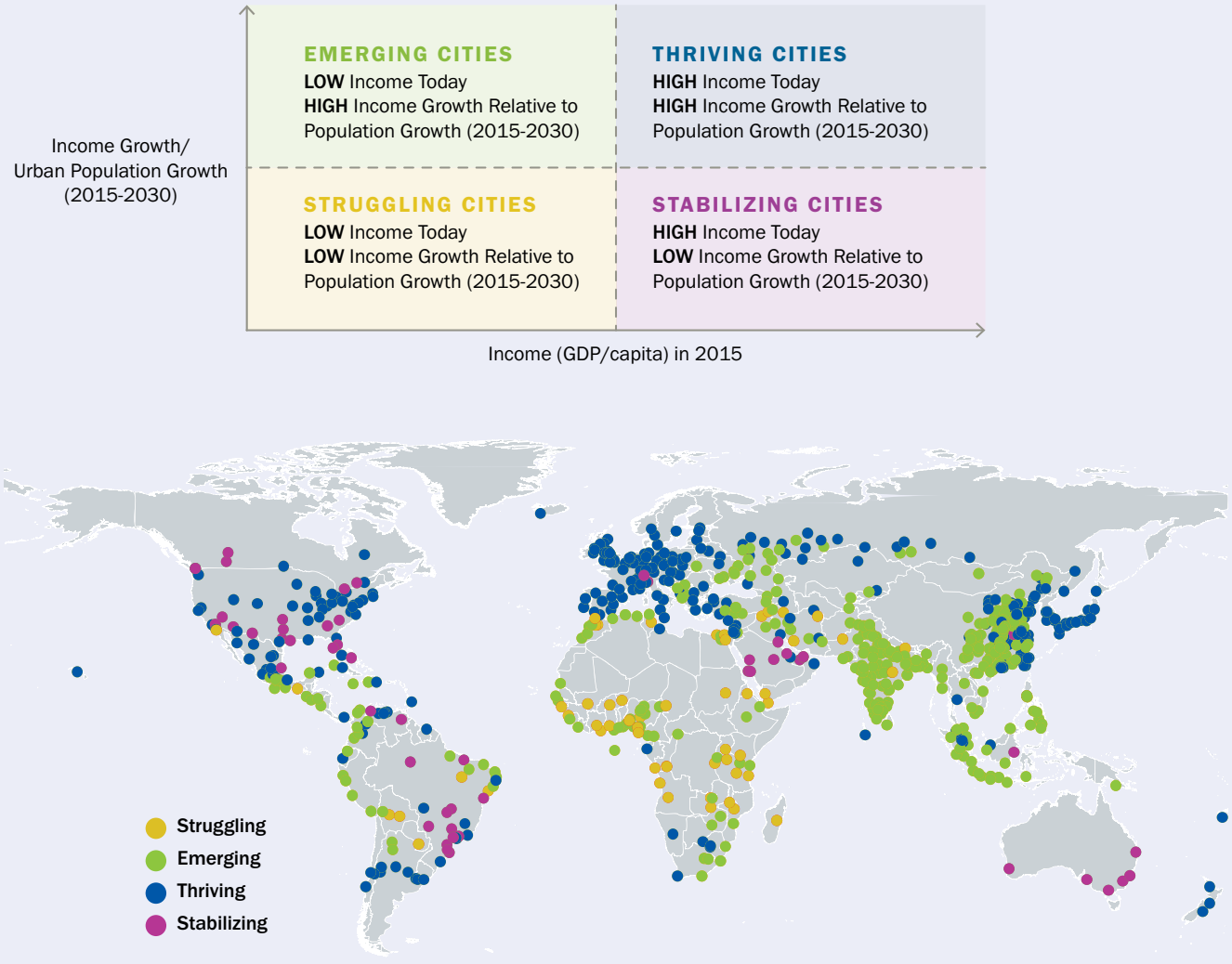
Note: To access the full set of publications, please visit www.citiesforall.org.

We also developed a global city categorization to allow us to identify the cities facing the greatest challenges and to consider approaches best suited for these contexts, recognizing that there are no one-size-fits-all solutions. We grouped cities according to their 2015 levels of income and the extent to which their urban economic growth might or might not keep pace with their population growth between 2015 and 2030 (Figure BES-1.2).[c]

BOX ES-1: The World Resources Report series, *Towards a More Equal City* (Cont.)

Struggling and emerging cities that still need to invest the most to provide necessary infrastructure and services will actually have the greatest opportunity to avoid the mistakes other cities have made and alter their development trajectory while considering risks such as climate change.

Figure BES-1.2 | Struggling, emerging, thriving, and stabilizing cities are regionally clustered



Notes: a. These are the seven World Resources Report thematic papers: Chen and Beard (2018), King et al. (2017), Mahendra and Seto (2019), Mitlin et al. (2019), Satterthwaite et al. (2019), Venter et al. (2019), and Westphal et al. (2017); b. These are the seven World Resources Report case studies: Abers et al. (2018), Das and King (2019), Kamath et al. (2018), Lwasa and Owens (2018), Mahadevia et al. (2018), Pieterse and Owens (2018), and Sarmiento et al. (2019); c. n = 769. The vertical line indicates median value of GDP per capita and the horizontal line indicates a value of 1.

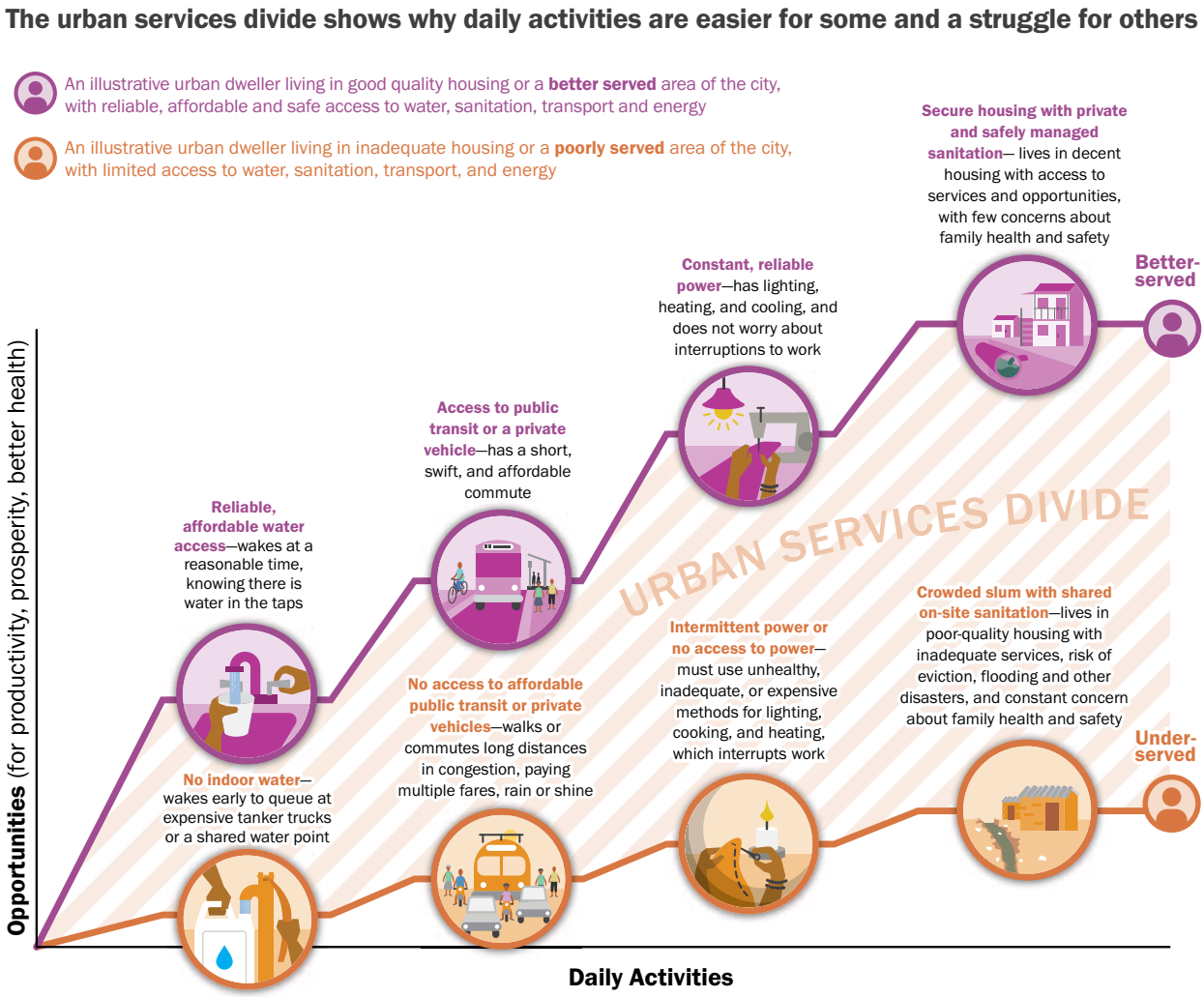
Sources: Oxford Economics, 2016; Beard et al., 2016.

THE LIVED EXPERIENCE OF AN UNEQUAL CITY

Most research analyzes poverty and inequality by measuring differences in incomes, but this is only one dimension of the problem. The way people experience a city is shaped by their access to services and opportunities—whether they have safe and affordable housing, clean water, adequate sanitation, reliable transport, and ways to get the employment, health care, education, and other amenities they need. Unequal access to essential infrastructure can have a much greater impact on lives, livelihoods, and long-term prospects than differences in earnings.[6]

Our research therefore took a new approach: examining urban inequalities by looking at the everyday lives of urban dwellers and the relative burdens they face in accessing core urban services. Figure ES-1 highlights the contrast between better-served and under-served groups. It shows how the urban services divide creates more opportunities for the better-served groups and higher burdens for the under-served in terms of time, cost, and ill health.

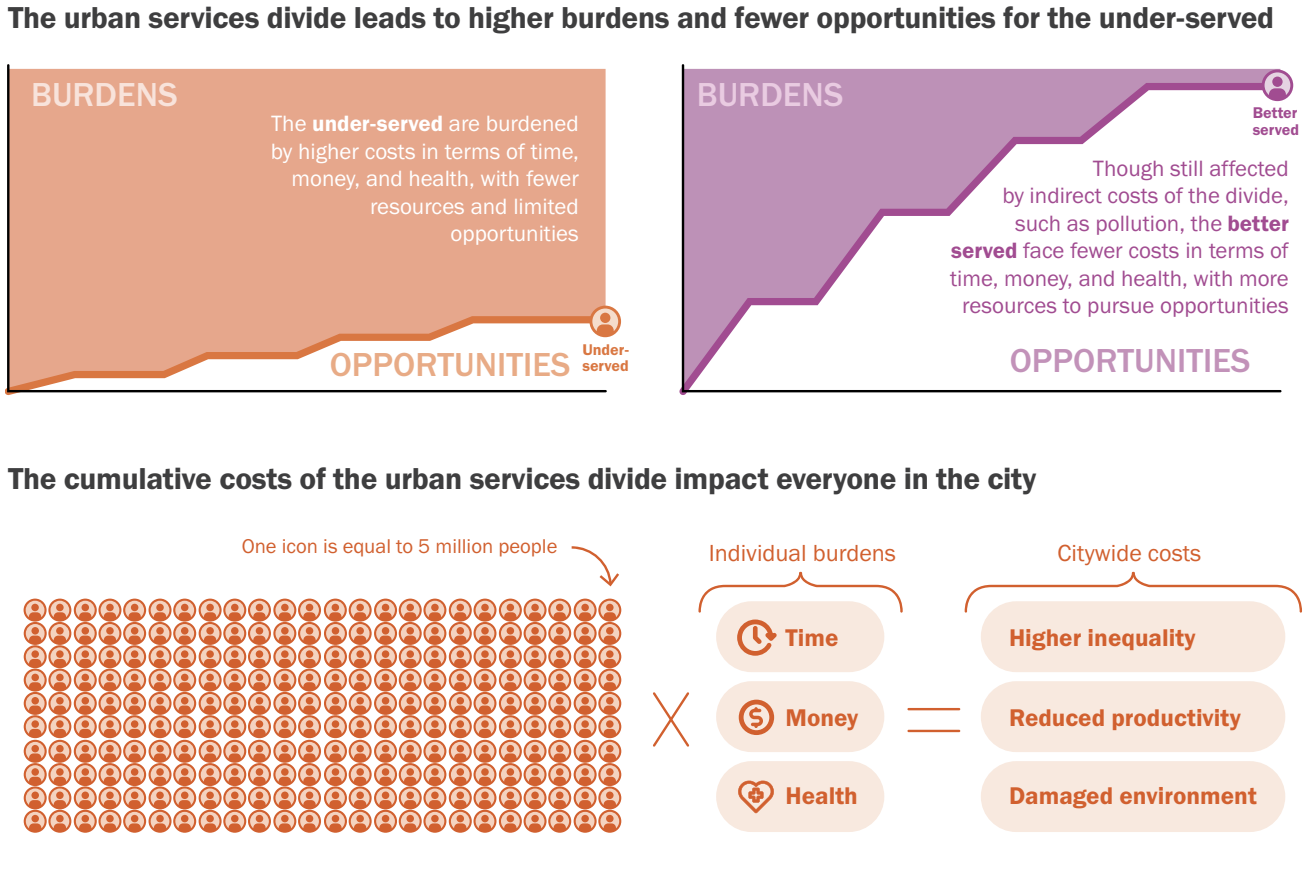
Figure ES-1A | **Inequities in access to services affect every part of people's lives**



Note: This is a conceptual diagram.

Source: Authors

Figure ES-1B | **Inequities in access to services affect every part of people's lives**



More than **1.2 billion urban dwellers** are under-served globally, representing **2 in 3 city residents** in low-income countries.[a]

Closing the urban services divide is beneficial for everyone.

Note: a. This figure is based on data from the World Development Indicators (2018b) on only the global population of slum dwellers in urban areas, and is therefore a minimum estimate of the under-served. A slum is defined as a group of individuals living under the same roof lacking one or more of the following conditions: access to improved water, access to improved sanitation, sufficient living area, and durability of housing. Not only are urban slum populations underestimated, the under-served in cities comprise many low-income people who may not live in slums.

Source: Authors.

Our findings reveal the enormous gap between the services accessible to the majority of urban residents and those available to the privileged few. Up to 70 percent (and in some cases more) of the urban population in the global South is reported to be under-served by municipal infrastructure (see Figure ES-2 for specific sectoral examples).[7] These people must rely on informal or alternative arrangements to procure core services such as housing, water, sanitation, transport, and energy.

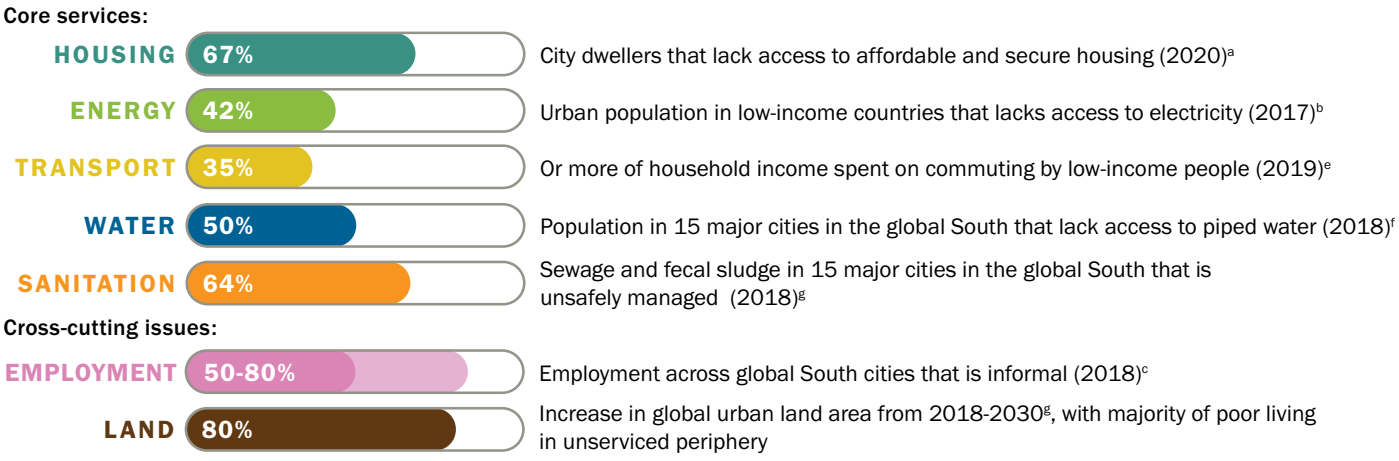
"Self-provision"[8] of this nature wastes time, exhausts resources, degrades the environment, jeopardizes health, and exacerbates inequalities. It forces people to rely on parallel or informal markets that are often unregulated, so the quality and price of urban services can vary widely. The alternative arrangements may be illegal, costly, unsafe, or exploitative, imposing heavy burdens on the environment, on individuals, and whole societies.

Self-provision harms low-income residents the most. They struggle every day to meet basic needs for water, sanitation, energy, and transport—and what they can get is often inferior to, and more expensive than, municipal services available to others.[9] They also may pay more, not just as a share of income but in absolute terms. This disproportionately burdens them, limits their opportunities to thrive, and can leave them further and further behind.

The well-to-do can be more resilient. They are the most likely to have running water piped into their homes and be connected to the electrical grid. But if their water is not clean or flows intermittently, they can supplement and purchase in-home water storage tanks, water treatment equipment, and bottled water. If the power goes out regularly, they can buy diesel generators and the fuel to run them. They can move to gated, privately serviced communities, insulated from the hardships that others endure.

The urban services divide has a stark spatial dimension. Unplanned or poorly planned urban expansion with little public investment often relegates those without wealth to informal settlements and to peripheral areas of cities where land is cheap. This creates long-term zones of disadvantage, where basic urban services are scant, inadequate, or missing altogether. Haphazard and sprawling development creates a vicious cycle. It makes neighborhoods harder to reach, which, in turn, can make connecting all parts of the city to good-quality infrastructure and services prohibitively expensive and difficult. The cumulative impact of lacking access to multiple services, day after day, is crippling. Individual families suffer, but our research shows that whole communities and cities also suffer when most citizens lack access to basic services.

Figure ES-2 | **High percentages of urban dwellers lack reliable, affordable, and safe access to core services and opportunities offered by cities**



Note: Analysis from the World Resources Report: *Towards a More Equal City* series, 2016 to 2019.

Sources: a. World Bank, 2018b; b. World Bank, 2016a; c. Venter et al., 2019; d. WRI, 2018; Mitlin et al., 2019; e. WRI, 2018; Satterthwaite et al., 2019; f. ILO, 2018b; g. Mahendra and Seto, 2019; Seto et al., 2012.

CURRENT URBANIZATION TRENDS EXACERBATE INEQUALITIES

The pace and scale of today's urbanization is unprecedented, and urban growth has shifted to low- and middle-income countries.[10] The world's urban population is expected to grow by 2.5 billion people by 2050, with almost 90 percent of the increase occurring in Africa and Asia.[11] Urban populations in countries of the global South will climb by about 75 percent by 2050, and most of the world's struggling and emerging cities are in these countries (see Box ES-1).

The historic link between urbanization and growing prosperity is breaking. In earlier decades, urbanization and rising incomes went hand in hand. Booming economies helped bankroll investments needed to tackle urban problems. But today, that link is weak or broken in many low- and middle-income countries. The fastest-growing cities currently face the most daunting problems and often have the fewest resources to deal with them. They are constrained by stagnant economies, weak institutions, and low capacity. Cities lack the revenue they need to build better infrastructure and improve access to services, which makes it harder to attract investment and spur economic growth.

The rise of informality means that a growing share of economic activity is taking place without government regulation or oversight. Informality—in the sense of the informal provision of services, informal settlement, and informal employment—is pervasive in the rapidly growing cities of the global South. Between 50 and 80 percent of urban employment is informal,[12] and about 29 percent of all urban residents globally live in informal settlements or slums[13]—a number considered to be a serious underestimation. Informality in its different forms is one of the less studied but most important trends that we examined. In many cities, decision-makers are ill-equipped to deal with informality in a constructive way, often ignoring or hobbling this sector and the primarily female workers who rely on it for their livelihoods.[14]

NATIONAL AND GLOBAL IMPLICATIONS OF THE URBAN SERVICES DIVIDE

Global efforts to fight poverty hinge on whether urban populations have access to services and opportunities. In many countries, poverty is increasingly shifting from rural to urban areas and, in a worrying change from historic trends, a growing share of the poor live in urban areas. This is particularly evident when measures of poverty go beyond income to include access to education and basic infrastructure such as electricity, water, and sanitation. Current patterns of urban development are making poverty an increasingly urban problem, with women and children bearing the brunt.

Environmental degradation and climate change are linked to urban problems too. Unplanned, sprawling development without basic infrastructure leaves residents stripping and burning forests for fuel, sitting in endless traffic jams, and discharging sewage into open pits. Valuable resources are being squandered, and air and water pollution are making people sick. If current trends continue, the cities of the global South will account for more than half of global urban carbon dioxide emissions by 2050.[15] In addition, their populations will face some of the gravest environmental risks and impacts of climate change. Low-lying and coastal cities, especially in Africa and Asia, will be flooded by rising seas and battered by more violent storms, and they will have only minimal capacity to adapt. Within these cities, large informal settlements are the most vulnerable to these risks. Much of the infrastructure is yet to be built in these cities, and so they hold a valuable opportunity for more climate-resilient development.

The stakes—for our economy, our planet, and our common future—could not be higher. Decisions made today can embed poverty, deny opportunity, and widen the urban services divide in ways that grow harder and harder to reverse. They also can lock in high energy consumption and carbon emissions for decades to come. But if done right, these decisions can also lead to transformative change for people, cities, and the environment.

THE CASE FOR TRANSFORMATIVE CHANGE

Prosperous cities are crucial for national economic development. For much of human history, cities have been reliable engines of economic growth. They have concentrated talent, incubated ideas, fueled productivity, and nurtured innovation. They have offered opportunities for work, study and entrepreneurship that have lifted the fortunes of whole nations. But today, unequal access to services could prove a fatal drag on this growth.

A new approach is needed for transformative change in cities and the time for short-lived, piecemeal solutions is over. Narrow, sectoral approaches are not going to be enough to help cities in the midst of unsustainable, unequal, ad hoc development that traps most residents in poverty. Transformative change is fundamentally more people centered. It starts with the lived experience of people and uses this as the metric of success rather than focusing only on income or carbon emissions. We have gathered evidence from across the world on how cities can start providing access to services and opportunities more sustainably and equitably.

To pursue transformative change, cities in the global South will need to depart from business as usual. This report includes numerous examples of innovative strategies from cities worldwide. While organizations and governments are piloting ideas and trying new approaches in fits and starts—in one sector, one neighborhood, or one city—we are not making the needed transformational course corrections because of the size of the problem and the momentum behind traditional ways of doing things. In this report, we have drawn together scattered experiences and insights that illustrate a new way to understand and implement sustainable urbanization, from top to bottom.

We define *transformative change* as lasting change that enhances access to urban services and opportunities while improving institutional practices and outcomes across multiple urban sectors and enduring across political administrations.[16] It will not be enough to channel more money into infrastructure and investments that fail to address gaping inequities in access to services.

This synthesis report highlights seven transformations cities can make to halt the current downward spiral. Through examples, we highlight how these transformations can alter current trajectories and galvanize action to achieve more equal, thriving, and sustainable cities. Making these transformations, narrowing inequities, and improving access to services can yield large dividends and cascading benefits that reach across sectors and institutions, improving life for a

broad swath of the population (see Figure ES-3).[17] For instance, each dollar invested in water and sanitation generates between US$4 and $34 in benefits by saving time, improving health, and raising productivity.[18] Improving transport for under-served populations is safer, saves time, reduces congestion and air pollution, and supports employment and economic development.[19] Fewer power outages mean less disruption of work, leading to higher incomes and output in both formal and, especially, informal enterprises, and electricity consumption per capita is positively correlated with a city's per capita gross domestic product (GDP).[20]

SEVEN CROSS-SECTORAL TRANSFORMATIONS TO ACHIEVE A MORE EQUAL, PROSPEROUS, AND SUSTAINABLE CITY

Five years of research enabled us to identify crucial transformations that would allow cities to close the urban services divide and move towards greater equality while driving overall sustainability (see Figure ES-4). The experiences of the cities we studied provide insights that are transferable and may be generalized, even if their stories of change are unique. The value of thinking in terms of these seven transformations is that they are broad and adaptable to different local contexts and needs. They are not mutually exclusive—and we have identified some of the linkages between them—but each represents a significant shift in mindsets and practices. Whatever the starting point for cities, these transformations provide pathways to improve the quality of life for all urban residents by **reimagining service provision**, **including the excluded**, and **enabling change**. We describe each of these transformations with examples in the next section.

- **Transformation 1: Infrastructure Design and Delivery**—Prioritizing the Vulnerable
- **Transformation 2: Service Provision Models**—Partnering with Alternative Service Providers
- **Transformation 3: Data Collection Practices**—Improving Local Data through Community Engagement
- **Transformation 4: Informal Urban Employment**—Recognizing and Supporting Informal Workers
- **Transformation 5: Financing and Subsidies**—Increasing Investment and Targeting Funds Innovatively
- **Transformation 6: Urban Land Management**—Promoting Transparency and Integrated Spatial Planning
- **Transformation 7: Governance and Institutions**—Creating Diverse Coalitions and Alignment

Figure ES-3 | **Closing the urban services divide can yield cascading benefits for cities (example of sanitation shown)**

Notes: All figures are in U.S. dollars.

Sources: a. Wee, 2018; b. WHO, 2012; c. Lwasa and Owens, 2018.

Figure ES-4 | **Seven transformations can help achieve a more equal, prosperous, and sustainable city**

Reimagine Service Provision

Infrastructure Design and Delivery

Prioritizing the Vulnerable

Service Provision Models

Partnering with Alternative Service Providers

Include the Excluded

Data Collection Practices

Improving Local Data through Community Engagement

Informal Urban Employment

Recognizing and Supporting Informal Workers

Enable Change

Financing and Subsidies

Increasing Investment and Targeting Funds Innovatively

Urban Land Management

Promoting Transparency and Integrated Spatial Planning

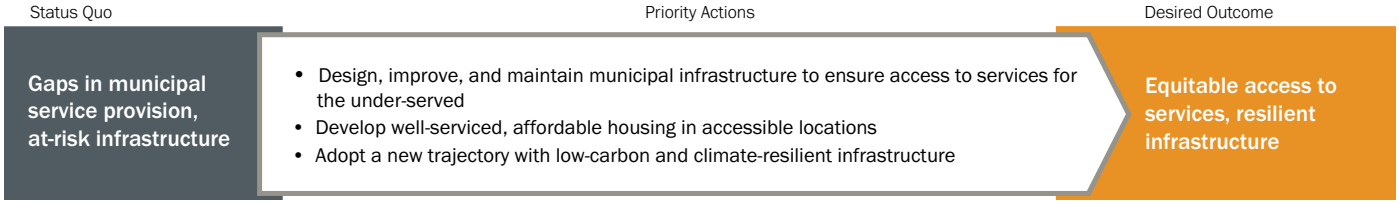
Governance and Institutions

Creating Diverse Coalitions and Alignment

Source: Authors.

TRANSFORMATION 1: INFRASTRUCTURE DESIGN AND DELIVERY—PRIORITIZING THE VULNERABLE

Municipal infrastructure must be designed and delivered to prioritize neglected populations, address backlogs, minimize carbon lock-in, and anticipate future risks.



What Must Change and Why

The majority of urban residents have limited or no access to municipal infrastructure that provides core services such as water, sanitation, transport, and energy. In many cities, decisions about infrastructure design and development ignore where new development and informal growth is actually occurring in the city. Unprecedented numbers of people are crowding into informal settlements devoid of basic services or in locations of the city that are under-serviced. Their needs are not being met, and the costs of even poor-quality services can be prohibitively high. Infrastructure design and investments are skewed to benefit more well-off populations. For instance, low-income commuters overwhelmingly depend on walking, cycling, and public transport, yet upwards of 95 percent of road space is typically allocated to cars and trucks (including on-street parking).[21] Frequent power outages—with as many as 25 outages per month in South Asian cities and every day in African cities—burden informal firms and settlements the most.[22] In some cases, the lack of coverage is a result of existing informality. For instance, **Addis Ababa, Ethiopia**, received a large loan from the World Bank to expand its sewer network, yet the share of the population served rose only from 10 to 20 percent because the utility would only extend sewer lines to households showing evidence of land tenure. With almost half the city being tenure insecure, most households were left unsafely disposing of human waste instead.[23] This shows how a lack of secure housing acts as a barrier to receiving services from utilities looking to recover costs.

Priority Actions

1. **Design, improve, and maintain municipal infrastructure to ensure access to services for the under-served**

Targeting improvements in quality, coverage, and affordability to under-served communities benefits everyone. Meeting their need for municipal services can make whole cities cleaner, safer, more livable, and more prosperous. **Colombo, Sri Lanka**; **Kampala, Uganda**; and **Nairobi, Kenya**, have shown how extending formal piped water and sewer networks in low-income neighborhoods protects public health and the environment and allows citizens to be more productive.[24] **Bogotá, Colombia**, and **São Paulo, Brazil**, demonstrated how cities can design safer streets that prioritize those who walk, cycle, and use public transport over private vehicles.[25] **Medellín, Colombia**, showed how investing in safe, affordable multimodal public transport services, including cable cars, can tame congestion and connect poor, peripheral, or hillside communities with jobs in the city center, reducing one-way commutes from two hours to 30 minutes in some cases.[26] Cities can improve access to clean, affordable, reliable energy by scaling up distributed renewable energy sources. Solar photovoltaic systems in **Bengaluru, India**,[27] and community solar in cities in **Kenya**, **Tanzania**, and **Uganda**,[28] for instance, have broadened access to energy and lowered costs for poor households while curbing air pollution and carbon emissions.

2. Develop well-serviced, affordable housing in accessible locations

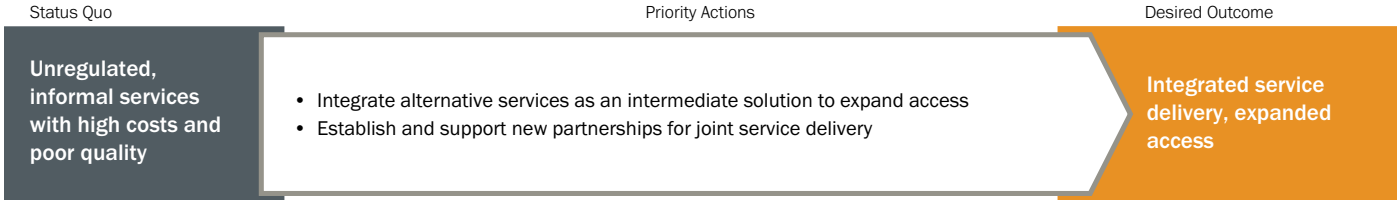
Location must be a key consideration in social housing policies, balancing affordability with livable density that provides adequate access to services and open space. Cities should prioritize building more rental units, converting under-utilized urban land to affordable housing,[29] and investing in public transport to connect housing with employment centers. Cities can upgrade informal settlements in otherwise secure locations through partnerships with communities that live there. Cities such as **Windhoek, Namibia**, and **Nairobi** are doing this by changing land-use regulations, improving infrastructure, and allowing for the incremental building of homes over time.[30] **Bangkok, Thailand**, partnered with community groups and nongovernmental organizations (NGOs) to upgrade informal settlements through the Baan Mankong program, creating a model that has scaled up to over 215 cities in 19 Asian countries.[31]

3. Adopt a new trajectory with low-carbon and climate-resilient infrastructure

Struggling and emerging cities have a huge opportunity to chart a new development model that both mitigates and adapts to threats posed by climate change. Shifting to cleaner cooking fuel and more energy-efficient buildings and appliances saves money and slows greenhouse gas (GHG) emissions. Public and active (nonmotorized) transport not only offers mobility to under-served populations but also reduces carbon emissions and other types of pollution.[32] Cities also need to fortify all core infrastructure, such as water, sanitation, and drainage, against climate impacts, including increased flooding, droughts, and heat waves.[33] **Durban, South Africa**, and **Rosario, Argentina**, are doing this by upgrading infrastructure in physically and socially vulnerable areas, such as flood-prone slums, and by planning for resilience.[34]

TRANSFORMATION 2: SERVICE PROVISION MODELS—PARTNERING WITH ALTERNATIVE SERVICE PROVIDERS

Cities must transform urban service provision, partnering with and integrating alternative service providers to increase access.



What Must Change and Why

In most growing cities in the global South, gaps in municipal public services are filled by a network of informal and semiformal providers, by community organizations, and by other private businesses.[35] These alternative service providers (such as van drivers or water vendors) provide vital services, but what they offer may sometimes be expensive or of poor quality, in part because government authorities provide limited oversight and rarely regulate them in ways that protect consumers. Informal service providers are often harassed or encumbered in ways that make it difficult for them to operate. Informal transport, or paratransit, serves the majority of travelers in many global South cities that lack reliable public transport.[36] Local authorities may bar these vehicles from certain routes but do nothing to ensure fair competition and pricing or to keep unsafe vehicles off the roads. Similarly, without government protection, customers who rely on private water tankers are vulnerable to poor water quality or price gouging when demand is high.[37]

City authorities in the global South often ignore or impede these informal services because they do not have the capacity to oversee and regulate numerous small-scale, independent formal and semiformal service providers. They may also lack the technical capacity and political will needed to set quality standards and enforce regulations to protect consumers or safeguard health, safety, and the environment.

Priority Actions

1. **Integrate alternative services as an intermediate solution to expand access**

Informal and small-scale operators and community-based organizations can help expand access in the short and medium term until the city can build, invest in, and expand infrastructure to fill gaps and meet basic needs. In some low-density peripheral areas of cities, alternative or decentralized modes of service provision may actually be more appropriate than extending municipal networks. National authorities and development agencies can invest in building the regulatory capacity of cities or utilities to help integrate alternative services while guaranteeing basic standards of service and affordability. **Kampala** has followed a performance-based management approach to integrate informal sanitation providers, and cities in **India** have organized the informal transit sector by issuing permits, regulating fares, and authorizing unions.[38]

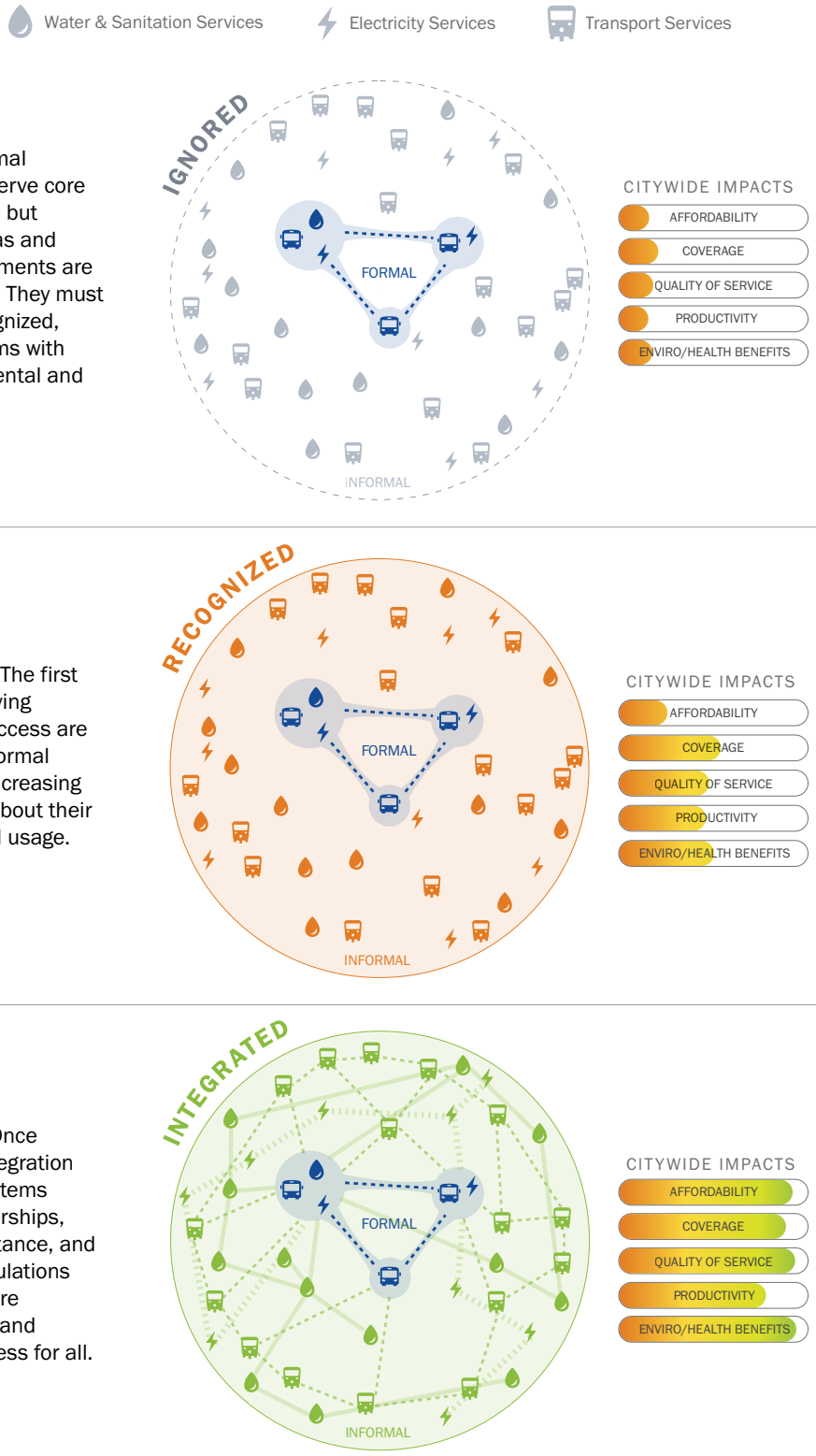
Informal service providers are often harassed or encumbered in ways that make it difficult for them to operate. Informal transport, or paratransit, serves the majority of travelers in many global South cities that lack reliable public transport.

2. Establish and support new partnerships for joint service delivery

Many cities have shown that partnering with communities and private entrepreneurs can expand services in ways that best match local needs. Communities can also help manage local operations while the city plans and expands its coverage of mainline infrastructure. Utilities in **Lilongwe, Malawi**, and **Nairobi**, for instance, collaborate with community-based organizations and water user associations to oversee prepaid water kiosks in informal settlements. Such arrangements give communities a say in how the service is delivered and where the facilities are built, and they create local employment opportunities as well.[39]

Figure ES-5 highlights how cities that shift from ignoring to recognizing and integrating these alternative solutions can enhance citywide access to services. In the case of urban transport, whereas some cities have banned alternative operators, others, such as **Cape Town, South Africa**; **Lagos, Nigeria**; and **Indore, India**, have integrated them into new transport systems, with financial assistance to upgrade vehicles and trainings to build new skills.[40]

Figure ES-5 | **Existing alternative services can be integrated with publicly provided services to enhance access for all**



Ignored — Formal systems may serve core neighborhoods but peripheral areas and informal settlements are not connected. They must rely on unrecognized, informal systems with high environmental and health costs.

Recognized — The first steps in improving services and access are recognizing informal systems and increasing transparency about their operations and usage.

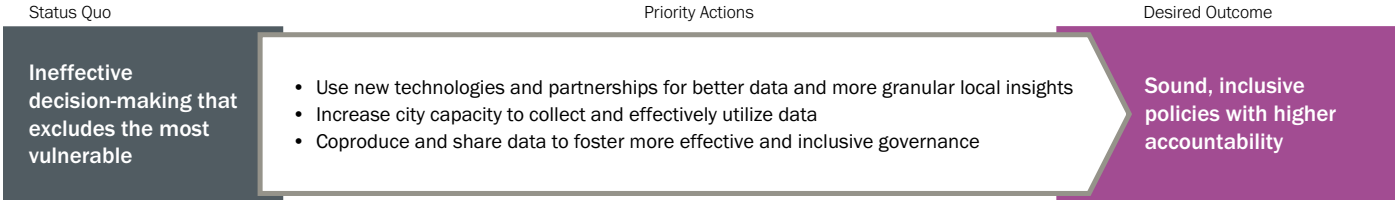
Integrated — Once recognized, integration with formal systems through partnerships, financial assistance, and supportive regulations can enable more efficient, safe, and affordable access for all.

Note: Citywide impacts are schematic.

Source: Authors.

TRANSFORMATION 3: DATA COLLECTION PRACTICES—IMPROVING LOCAL DATA THROUGH COMMUNITY ENGAGEMENT

Credible, open local data creates an opportunity to ensure sound policies and investments, understand their impacts on vulnerable communities, and improve governance processes in cities.



What Must Change and Why

Cities cannot solve problems that are poorly understood, and many cities have only limited information on the needs of their residents. Such large information gaps lead to misinformed, ineffective, or incomplete policy responses or to paralysis in choosing between competing priorities for action. Even where data exist, cities often lack the technical capacity to manage, share, and use data to guide decision-making. The lack of data is also an obstacle to holding governments accountable.

In struggling and emerging cities, where resources for data collection are limited, citywide surveys are conducted infrequently or not at all. They lack the granularity needed to draw meaningful inferences about groups that are vulnerable or do not have access to basic services such as water and sanitation. Cities often remain oblivious to the size of the informal workforce or the deprivations faced by residents of informal settlements because these groups remain uncounted in formal surveys and censuses.

Priority Actions

1. Use new technologies and partnerships for better data and more granular local insights

An explosion of new technologies is revolutionizing data collection. Data about service coverage and access can now be collected cost-effectively, frequently, and with high resolutions of spatial detail and disaggregation across socioeconomic groups. Tools to conduct rapid community surveys and gather crowdsourced information, anonymized mobile phone records, electronic transactions, and satellite imagery can generate unprecedented amounts of information. Cities in **China**, **India**, **Rwanda**, **Tanzania**, and some countries in Latin America are utilizing satellite imagery with other technologies for mapping land-use and development patterns.[41] Emerging sources of "big data" may miss low-income people who lack access to cell phones or bank accounts. But cities can partner with communities, universities, and the private sector to complement this data with other sources (see Figure ES-6).

2. Increase city capacity to collect and effectively utilize data

National and regional governments, as well as development agencies, can invest in building this capacity at the city level. They can provide the tools and training needed to gather, analyze, and share data and use it to inform policy. This can empower cities to help tackle regional challenges, such as curbing air pollution, managing water resources, mitigating climate risks, and conserving biodiversity and green spaces. It can also help them measure and understand the impacts of public policies, particularly on vulnerable populations.

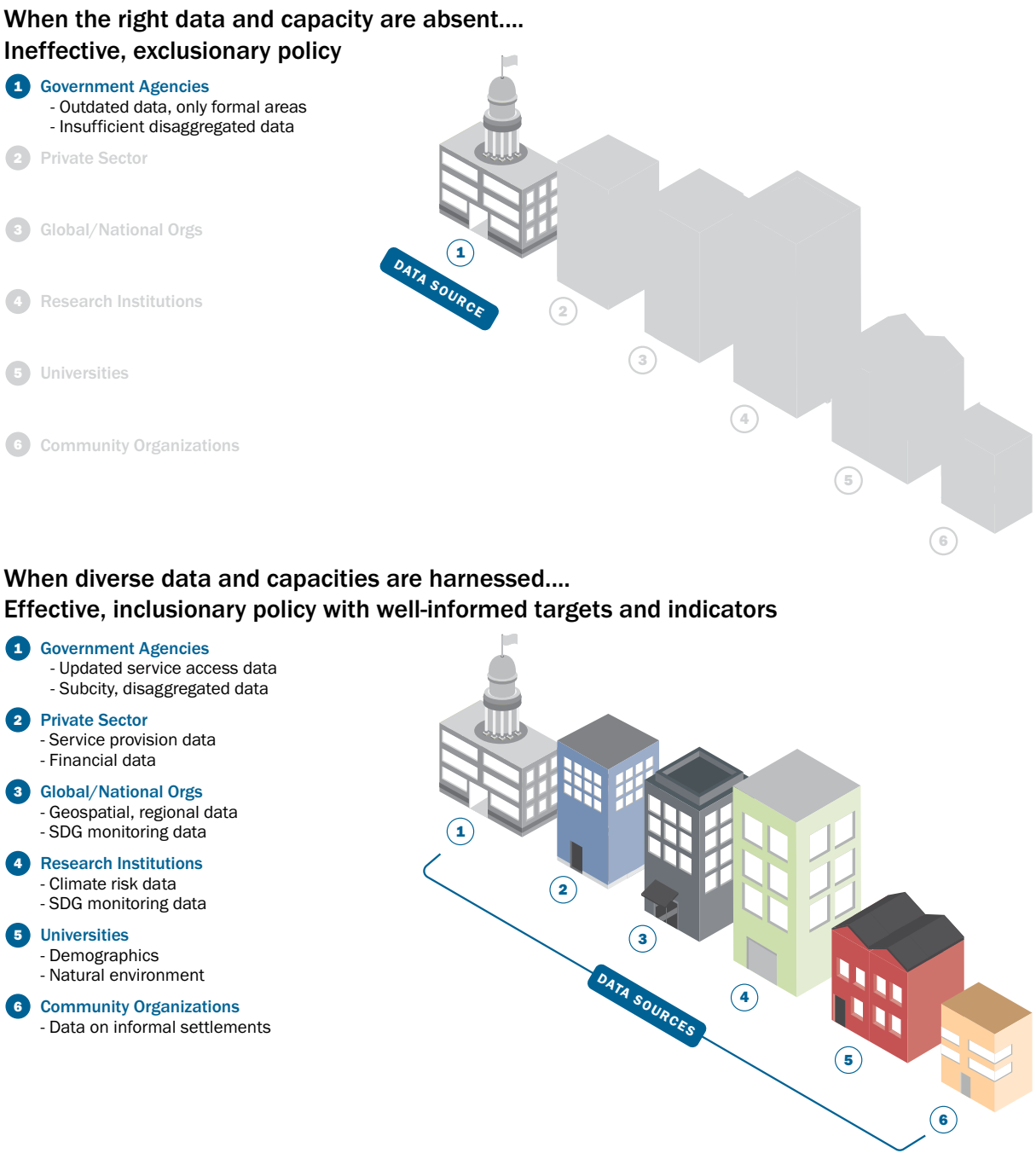
3. Coproduce and share data to foster more effective and inclusive governance

Investing in better data can enhance decision-making and has many payoffs over time—increasing efficiencies in resource use, helping plan for and avoid future risks, supporting citizen participation in policymaking processes, and enabling more equitable service provision. Democratizing data production and access by integrating community knowledge can expose gaps in government action. It can help communities identify problems and advocate for change. For example, under

the Know Your City initiative of the Slum/Shack Dwellers International, community-gathered data from thousands of informal settlements across approximately 500 cities are being used to upgrade core services and support planning.

In **Nairobi**, community groups mapped more than 50,000 households in the city, identified priorities, and were able to lobby the city's water and sewer company to provide convenient water sources.[42]

Figure ES-6 | **Data from multiple actors lead to more effective and inclusive decision-making**

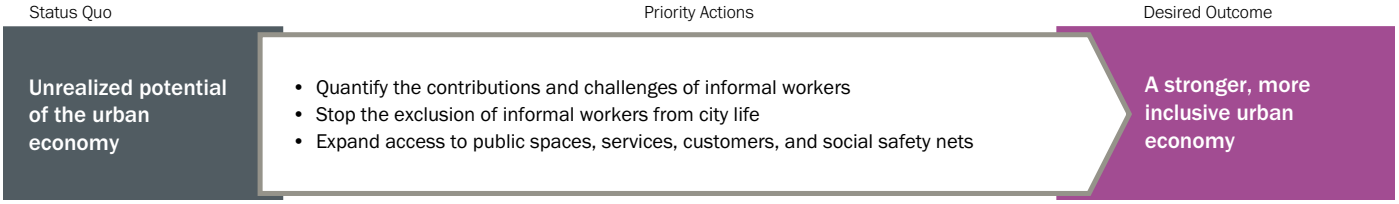


Note: SDG = Sustainable Development Goals.

Source: Authors.

TRANSFORMATION 4: INFORMAL URBAN EMPLOYMENT—RECOGNIZING AND SUPPORTING INFORMAL WORKERS

Informal economic activities must be supported because they not only provide livelihoods for the working poor but also supply goods and services that keep the city's formal economy running.



What Must Change and Why

The informal economy is like an invisible giant, too often overlooked, hamstrung, and deprived of what it needs to function efficiently. Worldwide, 2 billion workers operate in the informal economy. In cities across the global South, they represent over 50 percent of urban employment and, in some cases, up to 80 to 90 percent.[43] Mukuru, one of **Nairobi**'s largest informal settlements, has an informal economy that generates almost US$64 million annually, representing 4 percent of **Kenya**'s national budget and a fifth of the revenue of the Nairobi city authority.[44] Yet informal workers face severe inequities in access to urban services, which can drag down productivity and threaten livelihoods. Our research finds that poor access to public spaces, services, and opportunities harms small, informal enterprises the most. Increasing access to these, as well as credit for informal workers to grow their businesses, can be a powerful lever for inclusive economic growth and prosperity.[45]

Why this giant remains in the shadows: Information on urban employment and productivity focuses on the formal sector and ignores informal work. City officials who focus on conventional measures of employment often fail to recognize the importance of the informal workforce and the home-based workers crowded into informal settlements. Academic research, donors, and multilateral institutions, too, have concentrated on the formal sector.[46] Yet it is impossible to exclude this sector and effectively support the urban poor. The poor and women make up a disproportionate share of the informal workforce.[47] For example, women make up 88 percent of street vendors in **Ghana**, 68 percent in **South Africa**, and 63 percent in **Kenya**.[48]

Priority Actions

1. Quantify the contributions and challenges of informal workers

Cities must strive to assess the value generated by informal workers and enterprises located in informal settlements. Dharavi in **Mumbai**, **India**—often considered Asia's largest slum—has an active informal economy comprising about 20,000 small-scale enterprises producing leather, textile, and pottery products exported around the globe with an annual turnover of over $1 billion.[49] Reports show that 60 percent of Mumbai's segregated waste is processed in Dharavi, which is home to almost 30,000 waste pickers.[50] A study across 50 Indian cities found the total contribution of urban informal settlement dwellers to be 7.5 percent of national GDP.[51] A third to half of these residents lacked one or more urban services, a number that rose to 80 percent in lower-income Indian states. This affects the productivity and quality of life of these workers and has high shadow costs for the economy, with negative impacts on well-being and economic resilience, made clear during the pandemic.

2. Stop the exclusion of informal workers from city life

Recognizing the legitimacy of informal and home-based workers and granting them the same rights as others (Figure ES-7) can bolster the economic resilience of cities. Cities can boost the productivity and well-being of these workers by ensuring that they have decent housing, reliable energy and water, and transport connecting them with suppliers and markets. In Indian cities such as **Surat** and **Ahmedabad**, the Mahila Housing Trust does this by negotiating with city agencies and leveraging city funds on behalf of informal workers. These funds have been used to upgrade housing

conditions and access solar energy technologies to run refrigerators, soldering irons, and sewing machines for home-based businesses. This has raised incomes, saved money, and lowered energy consumption.[52] During the COVID-19 pandemic in 2020, as health restrictions kept informal transport operators off the roads, **Nigeria** committed almost $200 million as part of a survival fund to compensate informal workers.[53]

3. Expand access to public spaces, services, customers, and social safety nets

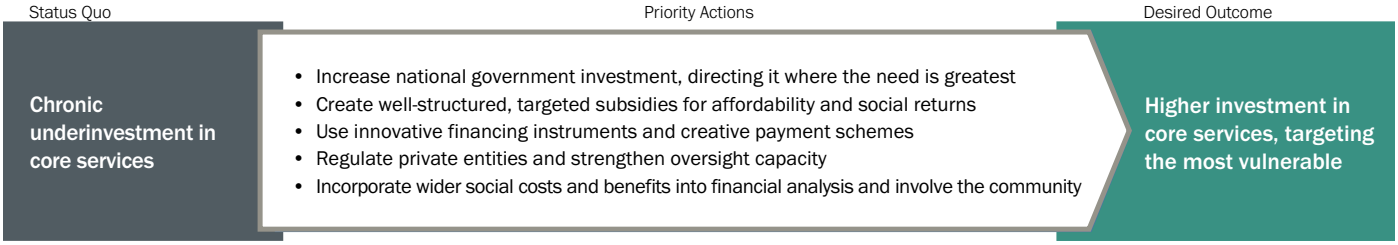
Cities can procure goods and services from informal workers, make their operations less costly and precarious, and ensure access to credit so that they can expand their businesses or invest in housing. Faced with many restrictions and fees, informal workers can pay a steep price for the right to operate. Easing costs and red tape can improve their job security and livelihoods while generating broader benefits for the city. For example, some cities have designated zones and improved markets for street vendors.[54] **Bengaluru** and **Pune** in **India**, as well as several cities across **Brazil**, **Colombia**, and **Argentina**, have signed contracts with previously informal waste picker cooperatives for door-to-door waste collection. This not only supports secure livelihoods but also citywide recycling and waste management, protecting the environment and reducing GHG emissions.[55] In Bengaluru, waste pickers pick up solid waste that would otherwise accumulate in streets, public spaces, urban waterways, landfills, or incinerators. They protect the environment and reduce GHG emissions.[56]

Figure ES-7 | **Cities can support informal workers in various ways for a more inclusive economy**

Source: Chen and Beard, 2018.

TRANSFORMATION 5: FINANCING AND SUBSIDIES—INCREASING INVESTMENT AND TARGETING FUNDS INNOVATIVELY

Cities, countries, and investors need to substantially increase investment and target it innovatively to fill the gap in affordable urban services.



What Must Change and Why

Cities are failing to make necessary investments to fill gaps in core services that would clearly serve the public interest and pay for themselves. The price tag for closing the urban services divide is often beyond what low- and middle-income cities can afford on their own. They cannot collect the tax revenue needed to fund big-ticket infrastructure projects, but failing to build them can exact an even larger toll.[57] According to the World Health Organization, providing all city dwellers with clean drinking water would cost $141 billion over five years,[58] but unsafe water and inadequate sanitation currently cost 10 times that much, mostly in time and health costs.[59]

Cities need national governments to help finance major infrastructure investments. National governments collect almost three-quarters of total public revenues worldwide,[60] but they do not provide the reliable fiscal support cities need to successfully plan and implement urban infrastructure projects. Many urban infrastructure projects rely on funds from international aid agencies, but cities cannot borrow directly. They need national governments to take out or guarantee loans.

Privatization has proved to be no panacea. To expand services, governments moved towards privatization during the 1990s. The idea was to tap into additional financial, technical, and management resources. Yet privatizing many urban services has not worked without government subsidies, especially for the poorest.[61] Businesses must charge enough to recover costs and make a profit, but the poor cannot access services priced beyond their reach. Experiments with privatization have also revealed the need for public sector supervision to ensure good performance and equitable access.

The status quo reflects the tragedy of the urban commons, which ignores the social and economic costs of failing to invest. The methods used to analyze urban infrastructure investments often calculate only short-term costs and do not factor in the actual long-term economic costs and benefits for the city as a whole.

Priority Actions

1. **Increase national government investment, directing it where the need is greatest**

The lumpy but long-lasting up-front capital and connection costs often require low-cost, long-term national government financing, sometimes in combination with other sources. Government finance must be seen as an investment because urban services are key to productivity. Examples include **Mexico**'s Federal Program to Support Mass Transit (Programa Federal de Apoyo al Transporte Urbano Masivo; PROTRAM), which offers grants to city, state, and regional government agencies for up to 50 percent of the infrastructure cost of urban mass transit projects; the **Kenya** Water Sector Trust Fund, which provides grants to counties to finance water and sanitation services in under-served areas; and in **India**, the national government's infrastructure financing program, the Atal Mission for Rejuvenation and Urban Transformation.[62] **Bangladesh** combined subsidies, microfinance, and

concessionary loans in 2003 to incentivize solar panel adoption by homeowners, with 3 million systems installed by 2014.[63]

2. Create well-structured, targeted subsidies for affordability and social returns[64]

Providing targeted subsidies for electricity and water connections for the neediest residents has proven effective and affordable, allowing residents to pay the up-front costs over time. Many cities in **Chile**, **Colombia**, and **South Africa** subsidize water for households below a certain income threshold, using existing socioeconomic classifications.[65] Such programs must be designed carefully, though, to ensure that the under-served derive the intended benefits. For example, in South Africa, free basic water is provided only to formal homeowners, which excludes informal tenants and those without formal title to their homes.[66] This leads to a situation of double jeopardy: the poor spend more on inferior services, and the publicly funded subsidies meant for low-income people instead go to higher-income groups.

3. Use innovative financing instruments and creative payment schemes

Combining national government finance with both traditional and innovative local financing instruments can support vital investments. Property taxes and subsidies can be combined with innovations such as land value capture techniques (described in Transformation 6) or green bonds. **Ouagadougou, Burkina Faso**, tapped funds from sewer bills for higher-income households to support safe on-site sanitation for low-income households, create a training program for safe emptying practices, and construct school latrines.[67] **Mexico City, Mexico**, issued its first green bond in 2016, with proceeds used for energy-efficient lighting, bus rapid transit improvements, and water infrastructure modernization.[68] Such innovative mechanisms are key to capturing value from public investments, generating potential sources of revenue, and enabling partnerships with the private sector. In **Chile**, the ABC program uses creative schemes for residents to access credit to finance housing. It uses their savings as a base to offer loans and subsidies to make housing more affordable.[69] Companies such as M-KOPA offer low-cost, pay-as-you-go access to solar power and have connected more than 280,000 homes in **Kenya**, **Tanzania**, and **Uganda** to electricity since 2012.[70]

4. Regulate private entities and strengthen oversight capacity

The private sector cannot serve the public interest without public sector regulation. Although the public sector is responsible for providing core urban services, governments may decide to contract private entities to build physical infrastructure and deliver services. Most regulatory authority lies with national authorities, but local officials can monitor service provision in their jurisdictions. They can more deliberately engage communities and civil society organizations to understand the access and affordability challenges facing the under-served. Regulators need training and capacity building to engage with utility managers and financiers to negotiate improved outcomes, along with authority and political will to enforce their decisions.

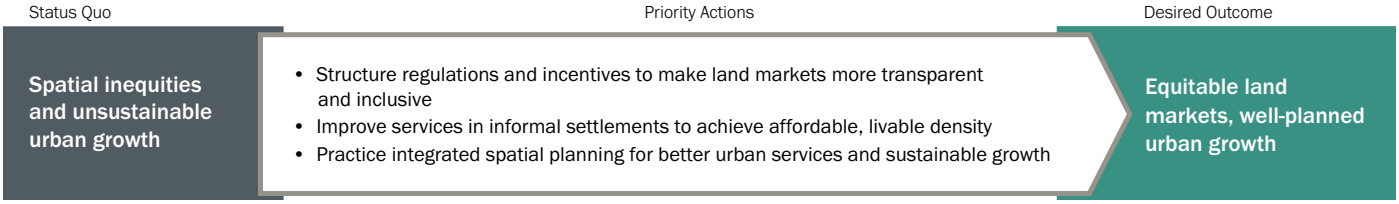
5. Incorporate wider social costs and benefits into financial analysis and involve the community

Infrastructure investment decisions should be based on long-term environmental and social benefits, such as impacts on productivity and health, not just on short-term financial considerations. For example, when considering the positive impacts on residents' livelihoods and health, economic gains, and avoided losses, the benefits of climate-resilient investments in infrastructure outweigh costs by four-to-one.[71] The best way to target and allocate public funds and plan infrastructure investment effectively is to involve local communities. Experience from **Porto Alegre, Brazil**, emphasizes how well-structured participatory budgeting can catalyze citizen involvement and agency to allocate these public funds to meet community needs.[72]

Providing targeted subsidies for electricity and water connections for the neediest residents has proven effective and affordable, allowing residents to pay the up-front costs over time.

TRANSFORMATION 6: URBAN LAND MANAGEMENT—PROMOTING TRANSPARENCY AND INTEGRATED SPATIAL PLANNING

Transparent, well-regulated land markets and effective integrated spatial planning are absolutely central for delivering services equitably and ensuring the long-term future of the city.



What Must Change and Why

In the global South, many land markets do not reflect the true value they hold for cities. This is because of a lack of transparency in land records and property rights, scant oversight, and ineffective regulation. This can allow private developers to buy land too cheaply and profit exorbitantly, capturing the gains in land value that result from public investments in infrastructure. Collusion between politicians and private developers is also known to contribute to this. Opaque land markets make it harder for local governments in the global South to tap into urban land as a key tax base and source of municipal finance.[73]

When city governments lack the authority, resources, or technical capacity to plan, development is driven by landowners' quest for profits rather than the best interests of the public. Globally, urban areas are expected to expand by 80 percent between 2018 and 2030,[74] yet in the fastest-growing cities, governments have little control over how and where this growth happens. Development plans are absent or poorly enforced, and private investors can build in distant locations disconnected from services and employment. Government policies driving investment in housing and special economic zones in peripheral areas, as well as restrictive density policies in central areas, are also a contributing factor.

Trying to retrofit unplanned, far-flung neighborhoods with public services can be prohibitively expensive for cities.[75] Retrofitting costs more than investing in or planning for infrastructure in advance. Cities pay a heavy price for fragmented development in long-term social and environmental costs. Unplanned expansion can take the form of formal or informal settlements. Informal or self-built settlements are growing across cities in the global South. They lack essential public services and suffer from poor housing quality, overcrowded living spaces, and often no land titles or tenure security, even if families may have lived there for multiple generations.

Priority Actions

1. Structure regulations and incentives to make land markets more transparent and inclusive

Cities can use an array of policies, regulations, and fiscal instruments to make land markets more inclusive, efficient, and responsive to the needs of the public.[76] They can establish incentives to steer development towards specific locations within cities, impose time limits on how long land can be held without being built upon, tax vacant land and buildings, and implement land value capture policies that benefit both private land developers and the city. To do this, cities need accurate, complete land records and new technology can help provide a clear picture of what is happening on the ground. Increasingly, cities in **China**, **India**, **Tanzania**, and some Latin American countries are using low-cost satellite imagery combined with drone surveys to monitor formal and informal growth, complete land cadasters or registries, and collect tax revenue.[77] Property taxes and land value capture schemes in cities such as **Bogotá** and **São Paulo**[78] allow city infrastructure to keep pace with growth. Cities such as **São Paulo**, **Mexico City**, and **Johannesburg, South**

Africa, provide incentives and national housing subsidies to developers to build affordable housing in designated zones based on access to core services and employment.[79]

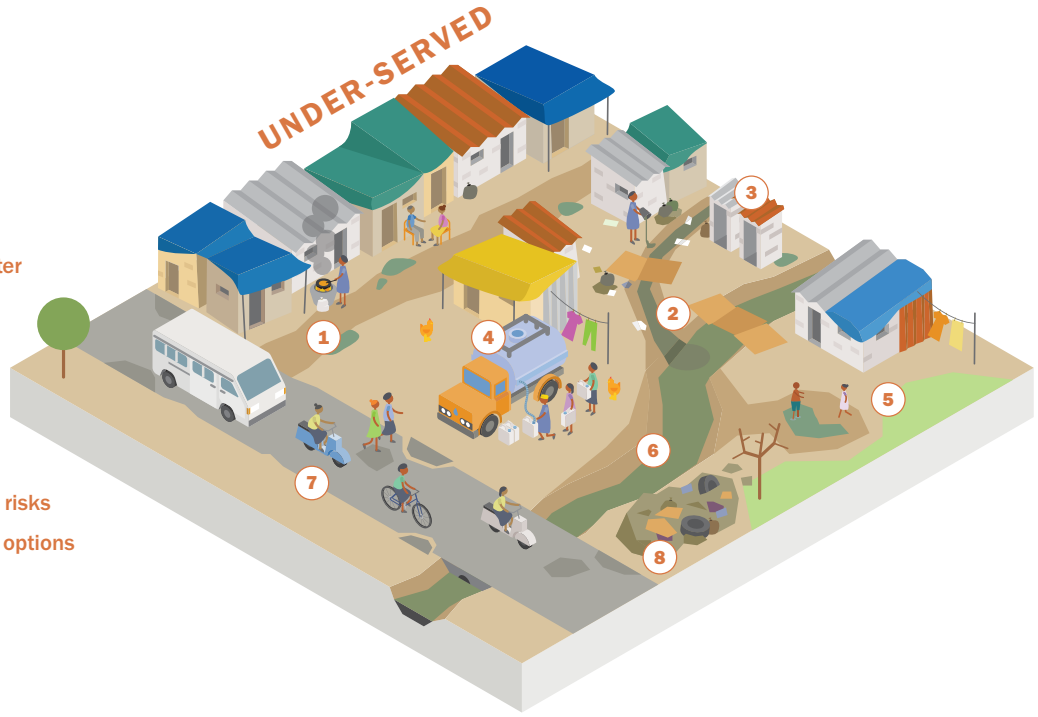
2. Improve services in informal settlements to achieve affordable, livable density

Affordable, livable density means a level of density that allows a good quality of life and well-being for all, especially the more vulnerable. It means no overcrowding in living spaces, good access to core services, and a human scale that achieves a balance between mid- to high-rise buildings, open public spaces, and street connectivity. For informal settlements, cities must prioritize upgrading infrastructure in place instead of displacing residents to housing in the urban periphery, as long as the locations chosen are safe from climate and related risks, are suitable for housing, and planning standards are flexible to keep housing affordable. As mentioned in Transformation 1 under affordable housing, the African cities of **Windhoek** and **Nairobi** collaborated with community groups to upgrade informal settlements with revised planning standards that kept housing affordable.[80] The Community Organizations Development Institute's Baan Mankong program in **Bangkok** is also a successful example of upgrading informal settlements at scale in over 215 cities in partnership with communities.[81] With significant proportions of people living under insecure land titles and unclear tenure, some cities are attempting to increase tenure security for vulnerable residents by accepting existing community-recognized titles and tenure systems.[82] **Botswana**, **Namibia**, **Rwanda**, and **Zambia** are recognizing tribal and customary landownership as part of formal land tenure systems and upgrading programs.[83]

3. Practice integrated spatial planning for better urban services and sustainable growth

Cities must develop density and land-use policies—aligned across spatial scales from metropolitan to regional to local—to guide citywide growth and development of neighborhoods.[84] New data from *Towards a More Equal City* showing urban growth patterns within and across about 500 cities highlight the need for a two-pronged approach when considering where to expand the supply of serviced land. Building upward moderately with higher density is the most efficient way to use land in well-connected but vacant, under-utilized, or sparsely settled areas that are safe from climate or other environmental risks (see Figure ES-8). But to build more affordable housing for growing populations, cities will need to extend infrastructure and add some serviced land at their periphery. In **India**, **Ahmedabad** and **Hyderabad** have implemented Town Planning Schemes to manage growth in this controlled way, just as cities such as **Seoul, South Korea**, have used land readjustment policies in the past. These policies generate serviced land for urban development projects in which landowners give up a portion of their land and the city provides the infrastructure and services.

Figure ES-8 | **Using land efficiently and ensuring its connectivity to employment and services brings great value to cities**



1. Dirty fuels for cooking/heating
2. Untreated sewage and wastewater
3. Unmanaged sanitation, absent or shared toilets
4. Expensive private water services with unreliable water quality
5. Vacant or inefficiently used land
6. Poor drainage and high flooding risks
7. Unsafe roads with few transport options
8. Accumulation of garbage with no waste management

1. Participatory upgrading in place, smaller lot sizes, mid-rise buildings
2. Paved streets with drainage
3. Open, community spaces
4. Shared water taps
5. Toilet blocks with managed sanitation, improved drainage
6. Partnerships with informal service providers
7. Utilization of vacant land
8. Safer streets for pedestrians and cyclists
9. Public transit access integrated with informal transit
10. Connections to the electricity grid, rooftop solar

Source: Authors.

TRANSFORMATION 7: GOVERNANCE AND INSTITUTIONS—CREATING DIVERSE COALITIONS AND ALIGNMENT

Cities need to transform governance to work for, with, and by the people. Diverse coalitions of public, private, grassroots, and civil society organizations can galvanize political action around a shared vision and achieve lasting change when empowered by coherent policies.

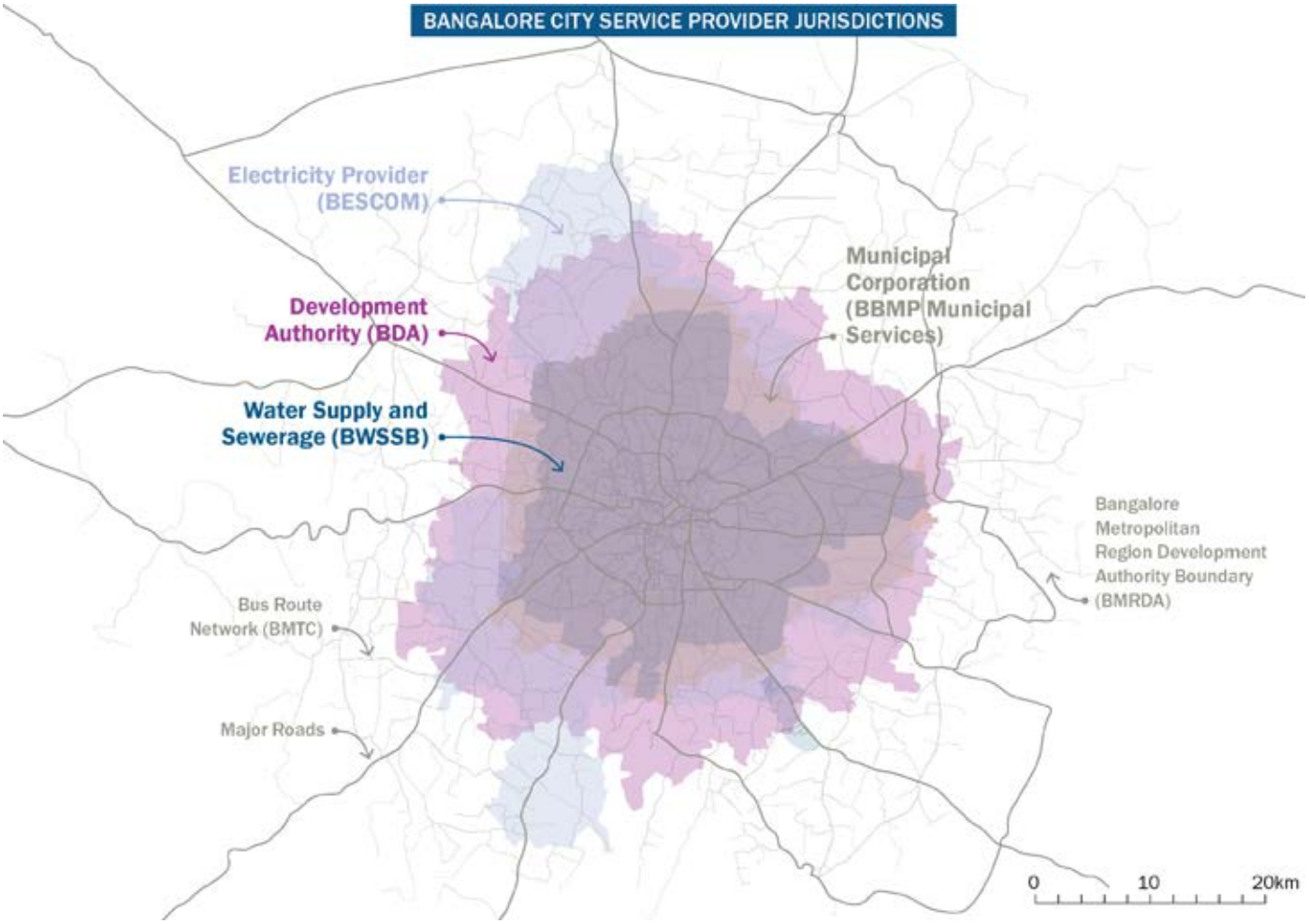
Status Quo	Priority Actions	Desired Outcome
Fragmented governance and conflicting interests	• Form and support coalitions of local actors with access to decision-making • Create incentives, resources, and mandates for policy alignment and collaboration	Effective governance supporting coalitions for change

What Must Change and Why

Cities and urban areas do not exist in isolation, and they may lack the power, jurisdiction, or resources to make needed changes on their own. Access to transport, energy, water, and sanitation often depends on metropolitan or regional agencies that plan these networks. City agencies need a shared vision or consensus to harness synergies across different urban investments and prevent waste, inefficiency, gaps, and duplication. Cities need cooperation from national and state governments and the participation of civil society to build lasting support for transformative change.

Alignment is lacking in part because institutional structures and processes, set up when cities were small, become obsolete and inadequate when they expand. Administrative jurisdictions no longer correspond to the situation on the ground, and government authorities tasked with providing services may lack awareness or control over natural resources or the built environment. Officials within different silos may have no mechanisms or incentives for coordinating their planning or investments and may end up working at cross purposes. For example, in **Nairobi** the water and sanitation utility installed water taps near a dense informal settlement, but the roads authority removed them just five years later in order to build new roads.[85] The areas of the city where different agencies provide services may not even match, as the map of **Bengaluru** in Figure ES-9 shows. In addition, collaboration and alignment are hindered by rigid, hierarchical bureaucracies; confused and inconsistent formal and informal processes; mistrust; political rivalry; and poor communication.

Figure ES-9 | **In Bengaluru, India, the jurisdictions of key service-providing agencies do not align**



Note: Bengaluru is the current name of the Indian city formerly known as Bangalore.

Source: Mahendra and Seto, 2019, contributed by WRI India.

Priority Actions

1. Form and support coalitions of local actors with access to decision-making

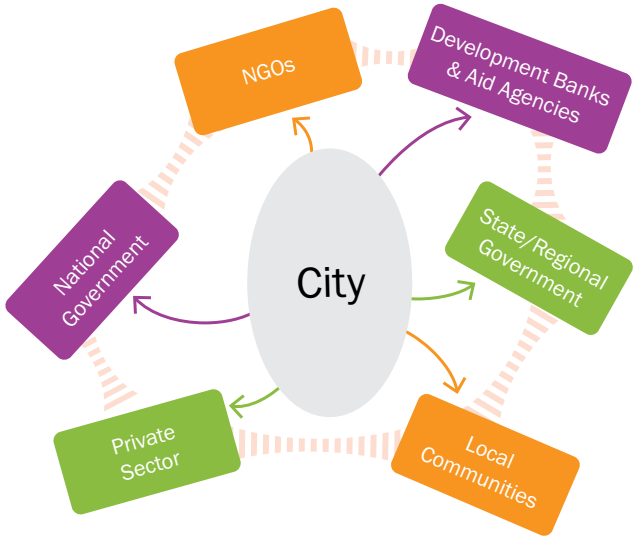
Civil society participation in making and implementing policies can offer valuable perspectives and catalyze broader political support for change. Transformative change requires a sustained, shared vision among diverse local stakeholder groups, including representatives of international or multilateral agencies operating locally. When city officials welcome and empower these groups, they can keep vital policies and programs from getting stalled or overturned when political leaders depart, commitment wanes, or resources dwindle. Our case studies on **Guadalajara**, **Mexico**; **Kampala**; and **Pune** show how coalitions of civil society and small business groups working together and with key government officials produced improved public space in Guadalajara, increased access to sanitation in Kampala, and better transport and solid waste management in Pune.[86] We found that transformative change is most likely when effective leaders pull together people and organizations in broad coalitions that move forward with a shared vision (see Figure ES-10).

2. Create incentives, resources, and mandates for policy alignment and collaboration

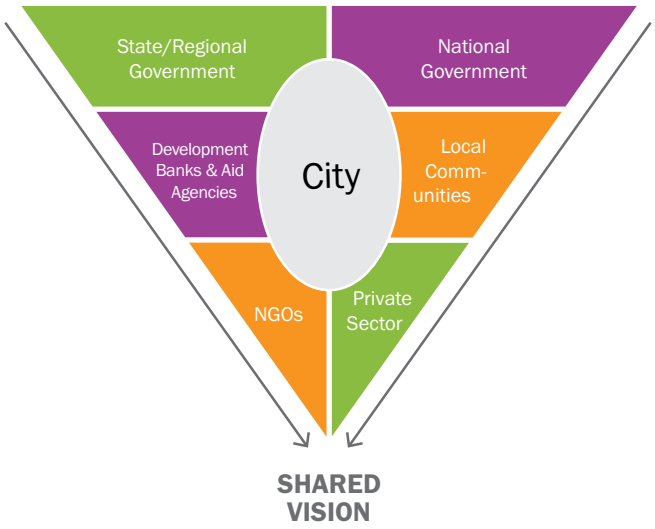
Policy alignment that is horizontal—across sectoral agencies and city jurisdictions—allows for integrated planning and tackling of regional challenges, such as preventing pollution and flooding or protecting biodiversity, wetlands, and forests. Vertical alignment—between local, regional, and national levels of government—keeps national policies from clashing with or neglecting urban needs and priorities. Higher levels of government can provide metropolitan agencies with the authority and resources they need to enforce development plans and the incentives they need to collaborate. For example, **Brazil**'s National Law on Urban Mobility, passed in 2012, required over 3,000 municipalities to adopt urban mobility plans by 2015. It was accompanied by a national financing program for urban mobility infrastructure that incentivized cities to coordinate across land-use and transport agencies and with other jurisdictions as they prepared these plans.[87] Working to align policies and create local coalitions drives collaboration and progress from both the top down and bottom up.

Figure ES-10 | **Policy alignment and a shared vision drive collaboration**

When actors are not aligned, the city suffers from the costs of conflicting agendas, uncoordinated investments, inefficiencies, and short-lived change.



When actors are aligned towards a shared vision, the city benefits from harnessing synergies, minimizing trade-offs, and increased collaboration between actors on implementation.



Note: This is an indicative set of actors with influence in cities.

Source: Authors.

A CALL TO URGENT ACTION AND A ROAD MAP FOR TRANSFORMATIVE CHANGE

This synthesis report was drafted while a global pandemic battered cities across the world, punishing low-income people most of all. With urban areas at the front lines of the crisis, we have watched the dangers highlighted in this report unfold in real time, making its recommended priority actions even more urgent.

The *Towards a More Equal City* series documents how more equitable access to core urban services not only makes life better for the majority of people but also generates citywide economic and environmental benefits. This key lesson emerges from the literature as well as from new evidence collected from multiple cities, sectors, and interventions. By committing to the SDGs (specifically SDG 11 on cities) and the New Urban Agenda in 2015 to 2016,[88] countries set ambitious goals: safer, more affordable, more accessible housing and transport for all; inclusive and integrated planning; and better air quality, sanitation, and other basic services. They promised to make cities more equitable, sustainable, and resilient in the face of risks posed by climate change. *Towards a More Equal City* series explores what countries and cities that share this vision must do to attain it. In addition to guiding efforts to recover from the pandemic and reduce inequities exposed by it, this body of knowledge can also contribute to climate justice and just transition goals in urban areas[89] (see Figure ES-11).

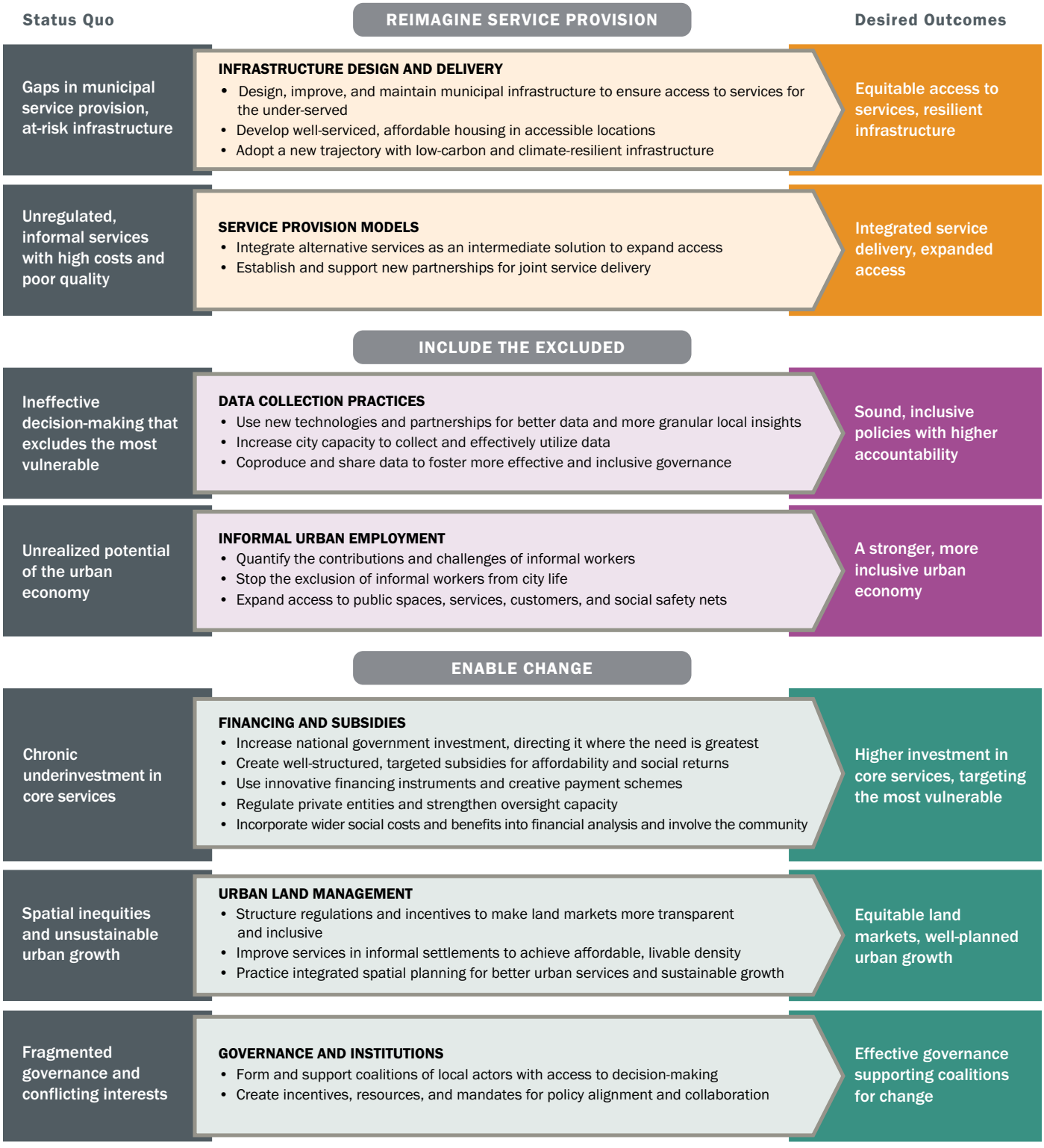
Solving these problems may seem like an uphill climb littered with obstacles, but innovative approaches and purposeful, sustained action can lead to breakthroughs. Scarce resources, limited capacity, competing needs, entrenched inequities, and short-term vested interests are just some of the obstacles facing cities. But failing to act now will allow these challenges to grow deeper and more intractable as time goes on. Implementing the transformations detailed in this synthesis report is an important start, but not all cities are starting from scratch; cities are at different points on the continuum represented by these transformations. However, retaining the status quo in much of the global South—urbanization that degrades the environment, economically benefits only the privileged and powerful, and leaves the majority of people behind—will incubate greater risks, including the kind of corrosive, intractable inequality that can ignite unrest and violence.

Cities are also key cogs in the global economic machine where the quest to increase incomes and competitiveness has led to an emphasis on creating high-skill jobs. Although important, this must be balanced with making physical urban infrastructure and services accessible to all residents in order to foster inclusive economic growth. This is why the seven transformations in this report are meant to complement and be embedded in the wider economic development, COVID recovery, and climate strategies that cities and national governments may implement.

The road map comprising seven transformations offers a set of priority actions under each and emphasizes how specific actors can implement them. It brings together numerous examples of cities that have made these changes amid difficult circumstances. Not all cities will follow the same path or find the same entry point. But wherever they begin, making these transformations will help propel them forward to a brighter and more resilient future.

By committing to the SDGs and the New Urban Agenda in 2015 to 2016, countries set ambitious goals: safer, more affordable, more accessible housing and transport for all; inclusive and integrated planning; and better air quality, sanitation, and other basic services.

Figure ES-11 | **This road map with seven cross-sectoral transformations can help achieve a more equal, prosperous, and sustainable city**



Source: Authors.

Part I

The Context: The Crisis of Inequality in an Urbanizing World

Chapter 1.
The Cities We Need

The current wave of urbanization is failing to address a growing divide between those who have access to services and opportunities and those who do not, with local and global consequences for sustainable development. Improving the lived experience of people in the city is a key lever for achieving transformative change.

1.1 THE WORLD IS WITNESSING A NEW KIND OF URBANIZATION

The world is urbanizing on a scale and at a pace that are unprecedented in human history. In 1950 fewer than one-third of the planet's population lived in cities.[90] Today more than half do, and by midcentury that share is expected to rise to two-thirds. In just three decades, another 2.5 billion people will become city dwellers.

Cities now generate 80 percent of global gross domestic product (GDP). As they have for millennia, cities drive advances in productivity, innovation, and culture. They can offer liberation as well as freedom from a rural life hemmed in by the daily struggle for subsistence. For some, they bring opportunity and a better, more prosperous life.

But today, this is no longer true for many city dwellers. Where urbanization is happening fastest, we are not building the cities we need. Between 2018 and 2050, nearly 90 percent of urban growth will take place in in Africa and Asia.[91] There, and elsewhere in the global South, millions crowd into cities where it is hard just to survive, let alone thrive, and where city governments are least equipped to help them. Core infrastructure is inadequate or crumbling, basic services are lacking, and inequality is deepening. In these fast-growing cities, an **urban services divide** separates those who have access to clean water, sewer systems, electricity, transport, decent housing, and jobs from those who do not. Most residents are already on the wrong side of that divide. This is robbing them of the chance to improve their lives.

The COVID-19 pandemic has cast a harsh spotlight on this urban services divide, underscoring what has always been true: sharing communal toilets and cramped, overcrowded houses without running water to wash your hands can spread diseases that kill you. It has reminded us that lacking basic infrastructure and services is not just a hardship but also a matter of life and death.

The urban services divide harms everyone

Those who lack basic infrastructure and services suffer disproportionately, not just from disease outbreaks but also from threats of all kinds, including economic shocks and natural disasters. And even in normal times, they pay a stiff penalty. They struggle every day to meet basic needs for housing, water, sanitation, energy, and transport—and what they can get is often inferior to, and more expensive than, municipal services available to others.[92] They may pay more too, not just as a share of income but also in absolute terms. Lacking services makes them less healthy and productive. Unequal access to essential infrastructure can have a much greater impact on lives and livelihoods than differences in earnings because it determines lifelong outcomes for generations.

The urban services divide does not just harm the poor, however; it worsens everyone's quality of life (see Box 1). The consequences include clogged streets, polluted water and air, vanishing natural resources, stalled productivity, and corrosive poverty. Unplanned, sprawling development without basic infrastructure leaves residents stripping and burning forests for fuel, sitting in endless traffic jams, and discharging sewage into open pits. Valuable resources are being squandered, and air and water are being polluted and making people sick.

Failing to close this divide could trap cities in a cycle of economic stagnation and environmental degradation for the rest of the century and beyond. Developing and emerging nations need cities to be economic locomotives that can pull them forward. Instead, these cities could actually drain their resources and even threaten their political stability.

Without urgent, decisive action, this situation will only worsen. In low- and middle-income countries of the global South, where the services gap is most acute, decision-makers struggle with scarce resources and mounting pressures to meet immediate needs. The long-term costs of each incremental choice may not be clear. But each decision may shape the built environment for generations, and the wrong choice could embed poverty, deny opportunity, and widen the services divide in ways that become harder to reverse.

The consequences are global

Global efforts to fight poverty and climate change hinge on what happens in these cities.[93] In many countries, poverty is shifting from rural to urban areas, a rising share of the urban population is poor, and poverty is deepening, with women

and children bearing the brunt. This is particularly striking when factoring in limited access to education and basic infrastructure. [94]

The struggle to slow climate change hangs in the balance as well. The decisions being made in cities today can lock in high energy consumption and carbon emissions for decades to come. If current trends continue, the cities of the global South will account for more than half of global urban carbon emissions by 2050.[95] And their populations will face some of the gravest environmental risks and impacts of climate change. Low-lying and coastal cities, especially in Africa and Asia, will be flooded by rising seas and battered by more violent storms, and they will have only minimal capacity to adapt.

The stakes—for our economy, our planet, and our common future—could not be clearer. Unsustainable, unequal cities pose risks for everyone, including corrosive poverty and inequality, faltering productivity, paralyzing congestion, toxic air and water, and natural disasters exacerbated by climate change that put millions of people in harm's way.

Scholars have identified pervasive, deepening urban social and spatial inequalities as the crisis of our times, which must be tackled if we are to achieve the Sustainable Development Goals (SDGs) by 2030.[96] Many leaders and policy experts recognize that current strategies and practices of city building are not working. Large cities and their political leaders have never received more international attention than they do today.

The 2015 Paris Agreement recognized cities as crucial to curbing greenhouse gas (GHG) emissions. SDG 11, which 193 countries adopted that same year, commits them to "make cities and human settlements inclusive, safe, resilient and sustainable."[97] Yet implementation has been spotty. Fewer than two in five countries that adopted SDGs have explicit national strategies for cities, and only a handful tackle both human development and climate action.[98]

Numerous networks have emerged to help cities share knowledge, create peer pressure, and grow in more sustainable ways, including the C40 Climate Leadership Group, ICLEI, United Cities and Local Governments, and others. The Habitat III conference on cities, held in Quito, Ecuador promoted "a new model of urban development that is able to integrate all facets of sustainable development to promote equity, welfare, and shared prosperity."[99] The text from Habitat III—the New Urban Agenda—lays out a vision for cities for the next 20 years.[100] Networks and conferences have showcased problems and solutions, especially for large cities that have the staff and capacity to take part.

However, the fastest-growing cities confronting the gravest challenges—which include most small and medium cities in the global South—have hardly benefited. Between 2018 and 2030, medium-sized cities with populations between 1 and 5 million will see the most population growth.[101] Cities with fewer than 10 million people will likely generate three-quarters of global economic growth. That is a larger slice of the global economy than all the megacities in the global North and South make up today.[102]

The fastest-growing cities of the global South will need to simultaneously build infrastructure, fight poverty and inequality, and protect the environment. They will have to contend with the glaring inequality that colonizers helped cement in place when they concentrated infrastructure and services where privileged classes lived and neglected everyone else. Many cities will be hobbled by scant resources and limited planning capacity. Today inertia prevails, taking them further and further into uncharted and hazardous terrain with no clear pathway out.

On top of this, the tools, frameworks, and methods available to guide them are inadequate at best and irrelevant at worst. Most were designed for richer cities—at different stages of industrial, technological, and institutional development—which could count on economic growth and urbanization going hand in hand. For many rapidly urbanizing poorer countries, this no longer holds true.[103] We are losing the battle to build the cities we need, even as the consequences loom ever larger and more ominously.[104]

A radical transformation is needed

Our research explored how this could be achieved. Over the past five years, World Resources Institute (WRI) has studied this question:

> **As the world continues to urbanize, how can growing cities in the global South ensure equitable access to urban services and opportunities and, in doing so, build prosperity and better environmental quality for all?**

The World Resources Report: *Towards a More Equal City* series provides answers (see Figure 1). It explains the causes and geography of the urban services divide, the lack of planning, and the patterns of urban growth that have fueled it. It looks at the repercussions of leaving under-served populations to fend for themselves. It sheds light on the need for government leadership to address market failures and on how investments in services and infrastructure can pay for themselves many times over. It identifies key sectors that cities should prioritize and strategies for achieving the best results. It lays out a road map for making sweeping, durable, and transformative changes in how cities are built, managed, and experienced and in restoring their power to lead societies to a more humane and hopeful future.

The fastest-growing cities of the global South will need to simultaneously build infrastructure, fight poverty and inequality, and protect the environment.

1.2 ABOUT THE WORLD RESOURCES REPORT: *TOWARDS A MORE EQUAL CITY* SERIES

To understand the challenges facing the cities of the global South, our research team developed a new approach and created a new body of knowledge on how cities can achieve durable, transformative change.

First, we analyzed how cities and their economies are projected to grow during the next two decades.[105] We focused on the divergence of economic growth and urbanization, categorizing cities according to their current income, projected population and economic growth, and potential to escape unsustainable patterns of urban development. We found that the cities likely to face the biggest challenges are in Africa, South Asia, and Southeast Asia, with smaller clusters in Central and Latin America and Eastern Europe (see Box 2). We revealed these findings in the series' framing paper at the Habitat III conference in 2016, and we turned our attention to the stark contrast between the few who enjoy multiple benefits from access to urban services and opportunities and the vast majority who do not.

Second, we drove the research from the perspective of how people experience the city every day. We documented people's struggles in seven cities of the global South (several of these cities feature in boxes throughout the text of this report), showing how people's experiences depend on the services they have or do not have. We found that reliable, affordable services, jobs, and land tenure depend on how cities plan and manage land markets, and that services are key to productivity, especially for vulnerable informal workers and small-scale entrepreneurs. We developed seven detailed papers on transport, water, sanitation, energy, and housing, as well as recommendations for making them more accessible to all. These thematic papers focus on specific approaches and sectoral interventions that cities have implemented to address deep inequalities in access to urban services.[106] They highlight strategies that have worked in cities of the global South and offer insights on key conditions that enabled positive change. Each thematic paper provides ample evidence that more equal cities are possible, and that greater equity can benefit everyone.

Third, we found that equity in access to core services and opportunities is a necessary (but not a sufficient) condition for urban prosperity. Cities need change at a deeper level—in

BOX 1 | Even for an affluent family outside of Nairobi, access to services is not a given

Andrew and his family live relatively well in the Ongata Rongai, a suburb of **Nairobi, Kenya**. Working as a self-employed energy management consultant, Andrew earns between US$776 and $1,455 per month, enough to have a housekeeper and her son live with his family. When he travels to work, he usually takes a combination of *tuktuk* (a semiformalized three-wheeled motorized vehicle service) and bus to get to the center of the city, which can take three to four hours. Roundtrip, Andrew can spend up to $13 per day on all transport costs.

In Andrew's peripheral neighborhood, water is distributed privately and power outages of up to five hours are common. None of the homes are connected to the city sewer system, and some families dump waste directly into the nearby river. As the city continues to expand outward, Andrew has concerns about the government's ability to keep up with service provision and infrastructure for its residents.

Andrew has witnessed big changes in Nairobi since he grew up in the city more than two decades ago. Multiple residential units have replaced single homes, traffic has grown all over the city, shopping malls have proliferated, and new construction has pushed the boundaries of the city farther and farther out. However, goods, services, jobs, and popular activities have remained in the center. Andrew would someday like to live in Kilimani, which is near Nairobi's center and is easily accessible without a car. But housing in Kilimani is expensive, and Andrew does not see himself moving there for several years.

Figure B1.1 | Andrew's self-constructed home is located in the urban periphery of Nairobi

Picture credit: Edith Alusa-Bosire, 2016.

Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

their governance and decision-making processes, power dynamics, institutions, and priorities of political leaders. This change, we argue, cannot be incremental. It must be transformative with sustained, cross-sectoral, citywide benefits. We used seven citywide case studies to uncover how this kind of change was triggered, advanced, and institutionalized in cities that attempted reforms.[107] These case studies *do not* describe "best practices"; rather, they document processes of change, highlighting the factors and actors that triggered, enabled, or inhibited the change at various points in a long-term process. We start from an assumption that transformative urban change will confront difficulties, setbacks, and false starts.

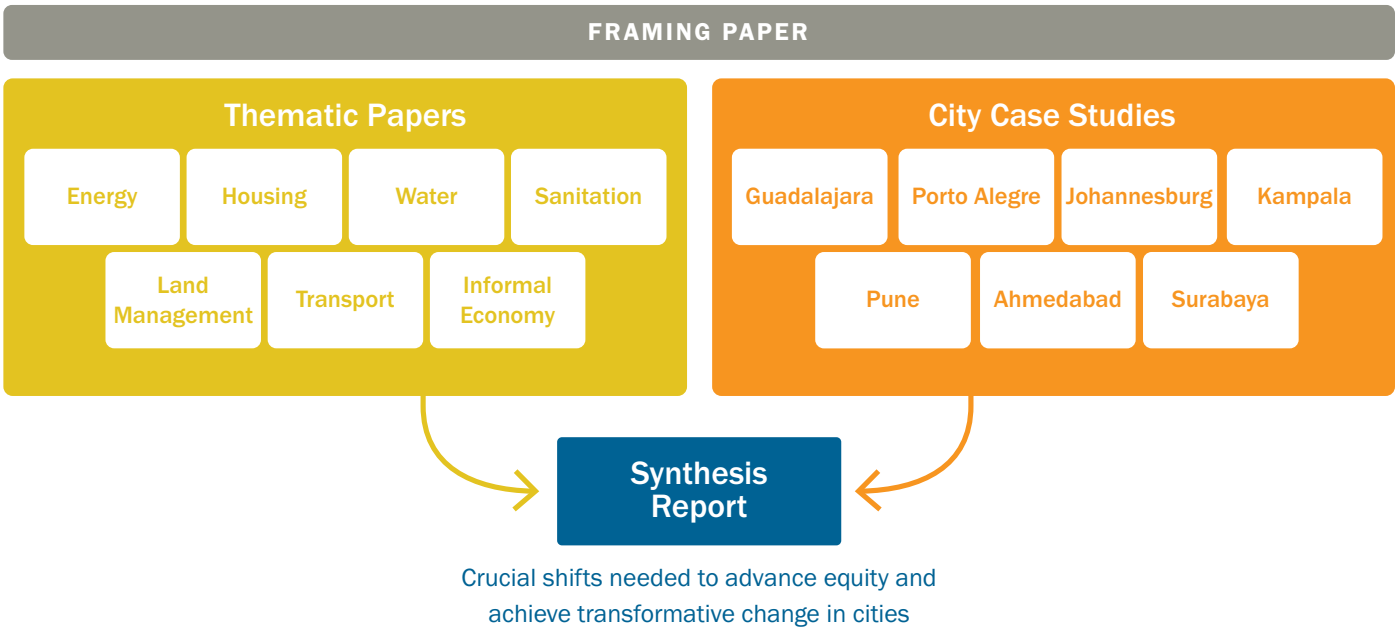
Finally, this report synthesizes the entire effort thus far, offering lessons from the complete research series and homing in on a set of crucial transformations in mindsets and actions needed for citywide transformative change, with priority actions under each. They are as follows:

- **Transformation 1: Infrastructure Design and Delivery**—Prioritizing the Vulnerable
- **Transformation 2: Service Provision Models**—Partnering with Alternative Service Providers
- **Transformation 3: Data Collection Practices**—Improving Local Data through Community Engagement
- **Transformation 4: Informal Urban Employment**—Recognizing and Supporting Informal Workers
- **Transformation 5: Financing and Subsidies**—Increasing Investment and Targeting Funds Innovatively
- **Transformation 6: Urban Land Management**—Promoting Transparency and Integrated Spatial Planning
- **Transformation 7: Governance and Institutions**—Creating Diverse Coalitions and Alignment

Figure 1 lays out the architecture of the entire *Towards a More Equal City* series.

The report is organized as follows: Chapter 2 analyzes the current nature of urbanization, how it diverges from the past, and what distinct challenges it presents. Chapters 3 and 4 examine the urban services divide and how bridging the divide can lead to transformative change in cities. Chapters 6 through 12 offer specific transformations to help foster a more equal city, with priority actions and tables showing roles for key actors to make progress on these. Chapter 13 concludes with a vision and call to action for urban change agents.

Figure 1 | **This synthesis report draws from seven thematic papers and seven city case studies**



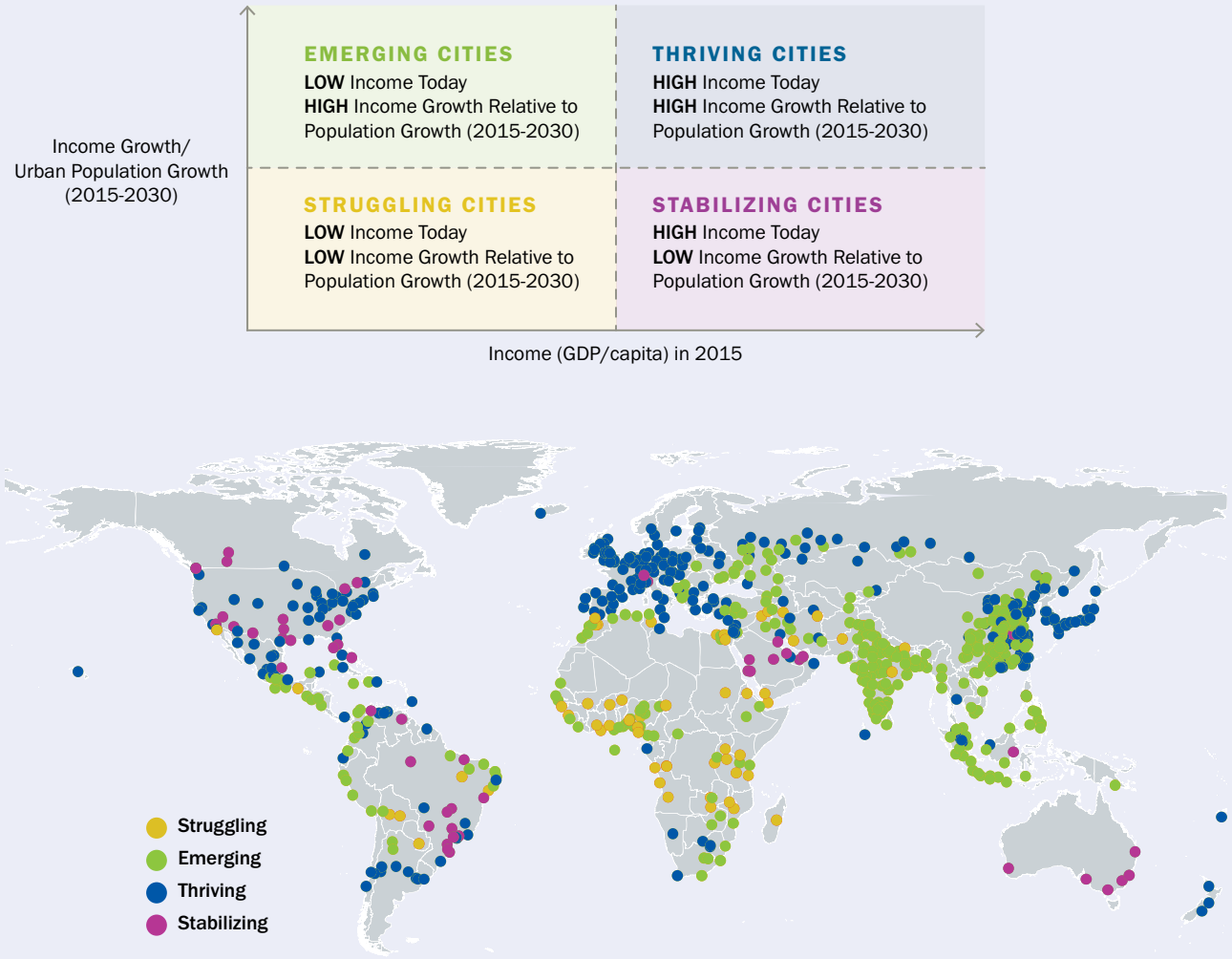
Source: Authors.

BOX 2 | *Towards a More Equal City* developed city categories that are regionally clustered

We developed an analytical approach to categorize cities as *struggling, emerging, thriving,* or *stabilizing* (see Figure B2.1), based on current income levels and whether their economic growth is likely to keep pace with their population growth between 2015 and 2030.

This categorization allowed us to identify the cities facing the most urgent challenges and to consider approaches best suited for these contexts. We focus especially on struggling and emerging cities with the fastest-growing populations, the lowest incomes, and the fewest resources. These are cities where the scale of investment needed in infrastructure and services creates an important opportunity. With the right enabling conditions, they can alter their development trajectory.

Figure B2.1 | Cities are categorized as struggling, emerging, thriving, or stabilizing



Notes: n= 769 cities with population above 400,000 inhabitants. The Oxford Economics database covers the United Nations list of urban agglomerations with at least 750,000 inhabitants and some other "strategically"important cities such as country capitals; GDP = gross domestic product.

Source: Beard et al. (2016), based on data from Oxford Economics (2016); Oxford Economics, 2014: 4


KB
KB
PLG
PLG

Chapter 2.
The Realities of Current Urbanization in the Global South

Macro-level trends show many regions of the global South urbanizing rapidly and leaving an increasing number of people behind. Urbanization characterized by low resources, high informality, and climate vulnerability needs a new approach.

2.1 URBANIZATION SHIFTING TO LOW- AND MIDDLE-INCOME COUNTRIES

Cities have long been laboratories of political, technological, and cultural innovation, where people with diverse skills and interests can exchange ideas, fulfill individual aspirations, and achieve collective goals. Urban services, amenities, and employment can boost productivity and allow residents to contribute to a thriving civic, economic, social, and cultural life.

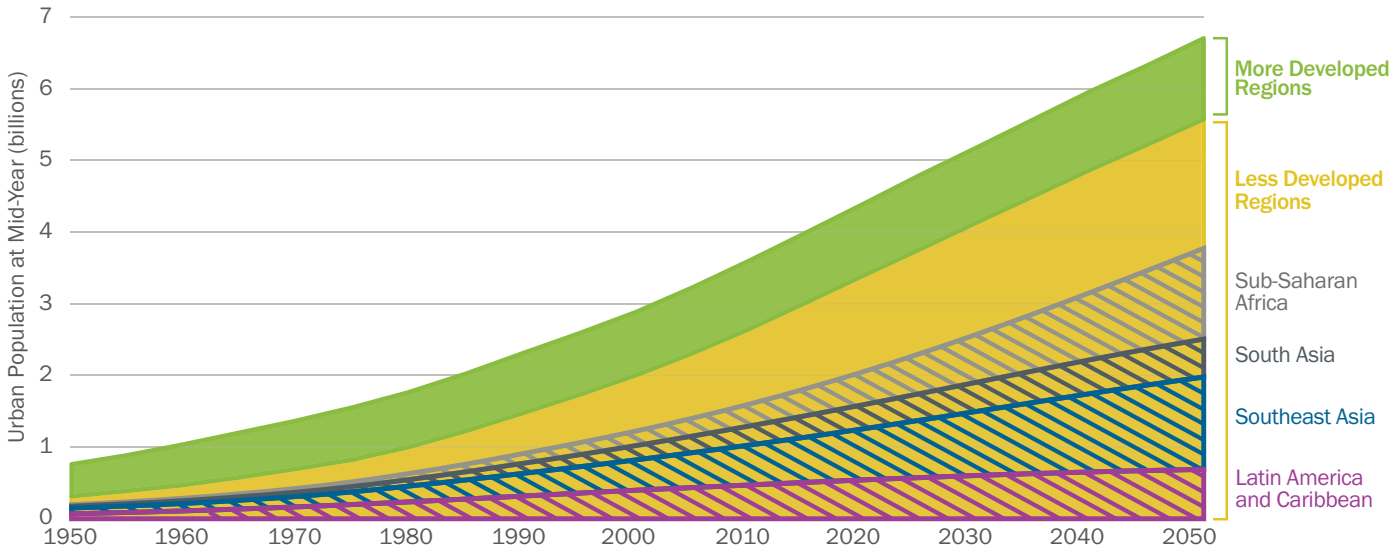
Yet this virtuous cycle depends on adequate infrastructure and services.[108] During the 19th and early 20th centuries, urbanization in the global North initially brought disease and poverty, especially in crowded slums with inadequate water and sanitation.[109] By the mid-20th century, many cities in industrialized countries were turning this around by investing in better infrastructure and services. This helped contain disease outbreaks and dramatically improved socioeconomic indicators such as income, life expectancy, and productivity.[110] Urban populations exploded while nations grew wealthier.[111] Vibrant cities, in turn, created value and spurred economic development. Urbanization and economic growth proceeded in tandem.

But there is no guarantee that this cycle will repeat itself. Today urbanization in the global South is unfolding differently. Populations and demand for urban services and amenities are skyrocketing, but many cities can neither raise the revenue nor make the investments needed to respond. There is a real risk that they will be stuck with inadequate infrastructure and services, or caught in a downward spiral, as population growth outstrips cities' ability to deliver what their residents need.

The world's urban population is expected to surge from 4.2 billion in 2018 to 6.7 billion in 2050.[112] Ninety percent of this growth is projected to take place in Africa and Asia. [113] Almost all urbanization is expected to take place in low- and middle-income countries, where the urban population will rise by about 75 percent (see Figure 2A).[114] Between 2015 and 2030, the largest increases will occur in East Asia and the Pacific (32 percent of the total), South Asia (22 percent), and Sub-Saharan Africa (21 percent).[115] The map in Figure 2B, shows the projected percentage change in urban population across regions between 2015 and 2030. Our city categorization shown in Box 2 corroborates this trend. In the cities we classify as *struggling*, urban populations are expected to grow by an average of 64 percent between 2015 and 2030. *Emerging* cities are expected to grow by an average of 18 percent.

Both Sub-Saharan Africa and Asia are urbanizing rapidly, but in different ways. From 2000 to 2010, rural-urban migration accounted for just 30 percent of urban population growth in Sub-Saharan Africa, and natural increase made up the other 70 percent.[116] By contrast, in Asia, rural-urban migration accounted for almost 60 percent, and natural increase made up just 40 percent.[117] Growth will continue there, but more slowly.[118]

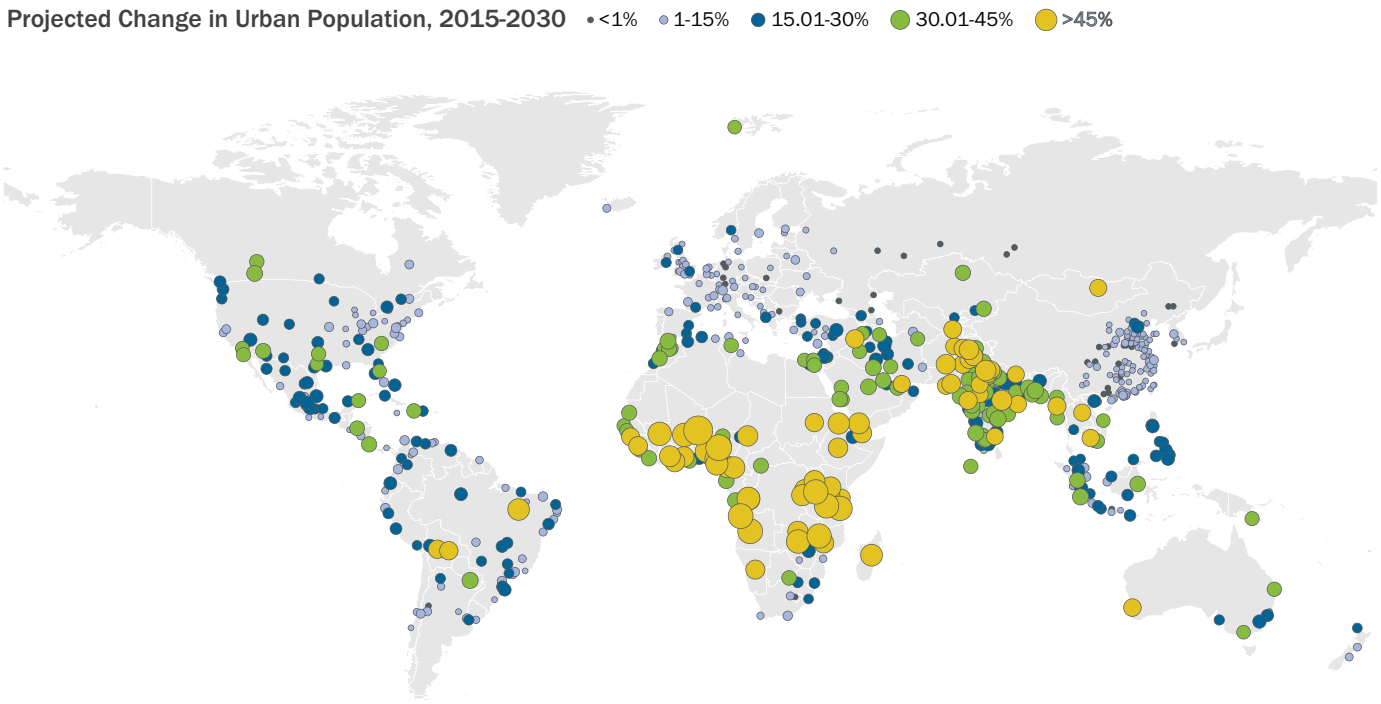
Figure 2A | **Urban population growth is concentrated in less developed regions over the next 30 years, primarily in Africa and Asia**



Note: For the classification of regions into "more developed regions" and "less developed regions" we follow the United Nations Populations Division, which states that "more developed regions" comprise all countries in Europe and North America, plus Australia, Japan, and New Zealand. The "less developed regions" comprise all countries in Africa, Asia (excluding Japan), Latin America and the Caribbean, plus Melanesia, Micronesia, and Polynesia.

Source: UN DESA, 2019.

Figure 2B | **Cities in Africa and Asia will experience the highest population growth between 2015 and 2030**



Note: n=769 cities

Source: Beard et al. (2016), based on Oxford Economics (2016).

2.2 WEAKER OR UNCLEAR LINKS BETWEEN URBANIZATION AND ECONOMIC GROWTH IN THE GLOBAL SOUTH

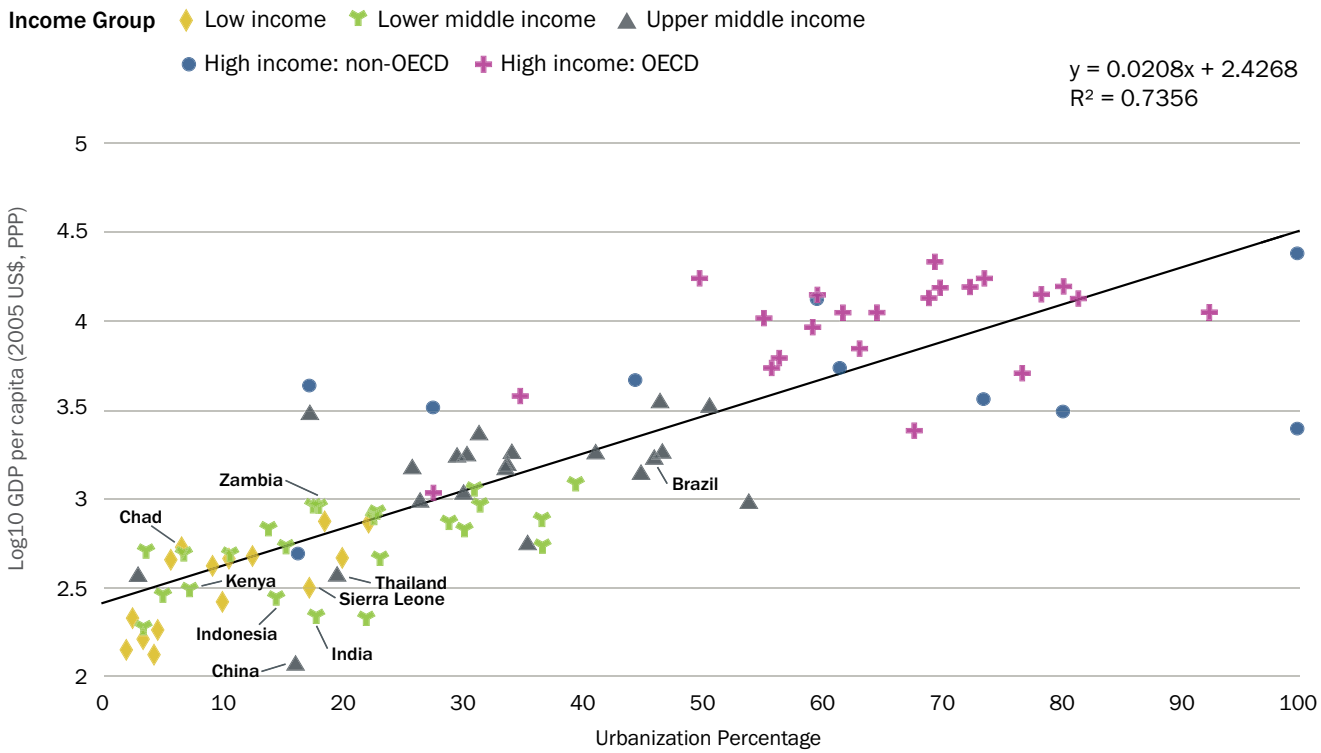
In 1960, few low-income countries were highly urbanized. By 2014, this had changed. Many more low-income countries were urbanizing fast, and the relationship between national income and urbanization had weakened (see Figures 3A and 3B).

Figure 3B shows that the level of urbanization explains a much lower share of the variation in national income in 2014 than it did in 1960.

Today, especially across Sub-Saharan Africa, cities are growing fast but incomes remain stagnant.[119] Between 1980 and 2020, the urban population rose faster than GDP per capita.[120] This well-studied phenomenon of urbanization without growth[121] suggests "the possibility that something fundamental has changed in the relationship of urbanization and development in the late 20th century compared to prior experience."[122] Economists link the rapid growth of low-income megacities in many countries to more open economic systems and poor agricultural yields, which have made rural livelihoods precarious and farmers desperate, fueling migration to cities.[123] In countries that depend heavily on resource exports, as many in Africa do, urbanization has progressed without industrialization and has been concentrated in "consumption

Figure 3A | **Urbanization and economic growth historically have gone hand in hand, but the relationship depends on country factors and has weakened in recent years (1960)**

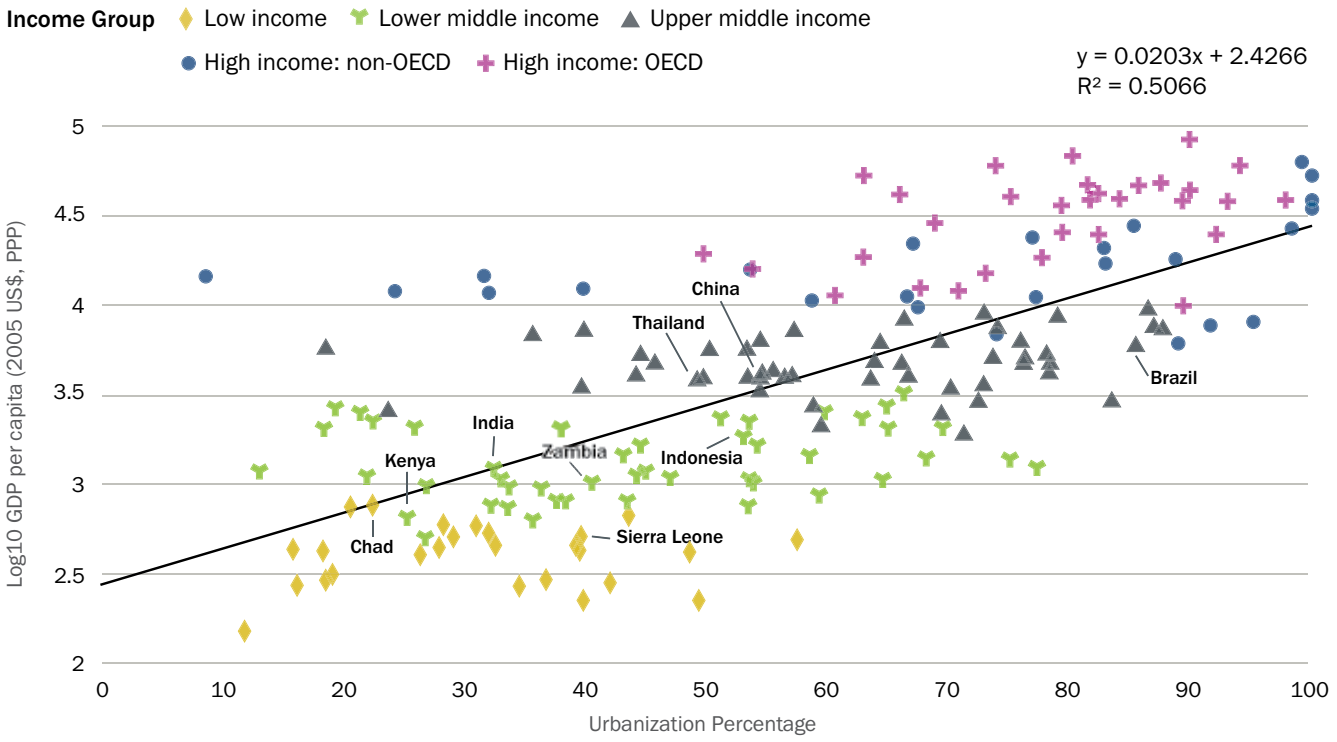
Few low-income countries were highly urbanized in 1960, and the relationship between urbanization and national income was stronger.



Note: The graph shows the relationship between the percentage of the population that is urban and the gross domestic product (GDP) per capita in 1960 for countries of the world. The country classification is based on the 2016 country classification. (RSE = 0.3213, n = 88, p-value: < 2.2e-16)

Figure 3B | **Urbanization and economic growth historically have gone hand in hand, but the relationship depends on country factors and has weakened in recent years (2014)**

More low- and middle-income countries were highly urbanized in 2014, and the relationship between urbanization and national income was weaker.



Notes: The graph shows the relationship between the percentage of the population that is urban and the GDP per capita in 2014 for countries of the world. (RSE = 0.4652, n = 175, p-value: < 2.2e-16); OECD = Organisation for Economic Co-operation and Development. Across countries, we find that the extent to which urbanization is associated with economic growth may depend on removing barriers to rural-urban mobility and ensuring supportive policies, markets, and infrastructure investments that sustain growing cities (Turok and McGranahan, 2013). Several factors, including geography, history, culture, governance, and institutions, are responsible for the differences in how this relationship plays out between countries, yet there are important lessons to learn from the urbanization trajectories of today's wealthier nations (Chen et al., 2014).

Source: Beard et al., 2016. Analysis based on World Bank DataBank and World Bank country classification in 2016.

cities," with local economies based on nontradable services and generally low welfare outcomes.[124] This pattern is very different from the growth of "production cities" in industrialized countries built around manufacturing.[125] Across low-income countries, urbanization is happening without industrialization or rising living standards for the majority of people.[126] Urbanization without economic growth hinders the ability of governments to provide the services and invest in the urban infrastructure that people depend on. This leads to a vicious cycle because the poor quality of urban infrastructure and services in turn constrains productivity and drags down economic growth.

2.3 RISING POVERTY IN URBAN AREAS WITH WOMEN AND CHILDREN BEARING THE BRUNT

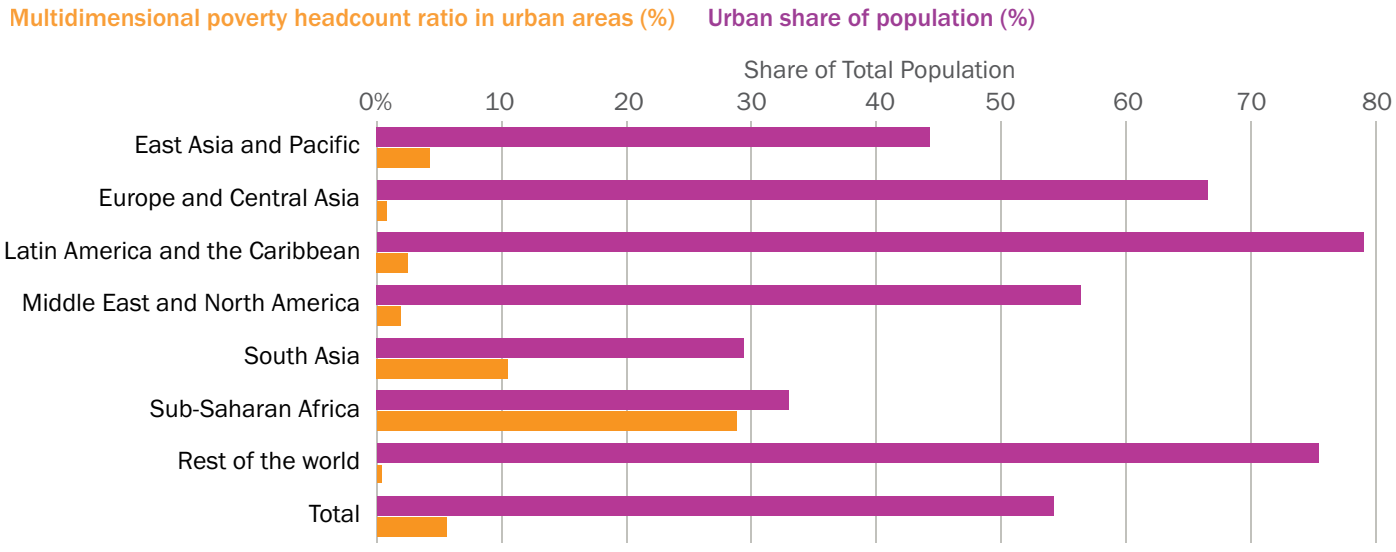
Poverty, once more prevalent in rural areas, is now increasingly shifting to cities. Based on income alone, poverty rates globally and in many nations are falling, but the spatial distribution of poverty is changing, with the share of poor people living in urban areas on the rise worldwide.[127] It is estimated that COVID-19 has pushed about 120 million people into extreme poverty so far, with most of the new poor in countries such as Bangladesh, Brazil, Mexico, Nigeria, and South Africa being urban dwellers.[128]

Income is just one dimension of poverty. To grasp its full implications, poverty must be measured more broadly, factoring in education and access to basic infrastructure such as electricity, water, and sanitation. Recent research on 119 countries (representing 45 percent of the world's population) shows that the multidimensional urban poverty rate in Sub-Saharan Africa is 11 times higher than in Latin America and the Caribbean, one of the world's most highly urbanized regions (see Figure 4).[129] In Sub-Saharan Africa, the fastest urbanizing region today, most urban residents are multidimensionally poor. These numbers are likely underestimated because migrants or slum dwellers are often not counted, and we know that, on average, slum populations are growing faster than urban populations as a whole.[130]

In most countries, adding indicators of access to services, education, health, and security to measures of poverty increases the share of the multidimensional poor who live in urban areas and in female-headed households. Recognizing multidimensional poverty has important implications for targeting poverty reduction efforts and resources to increase human wellbeing, not just income. When compared to a definition that focuses solely on monetary poverty, a multidimensional definition that includes consumption, education, and access to basic infrastructure results in the share of poor being approximately 50 percent higher at the global level.[131] Urban incomes may appear high until the deprivation of essential services is taken into account because it imposes the additional costs of accessing services and health burdens, particularly in the overcrowded informal settlements where the poor live when cities lack decent affordable housing.

Lacking access to clean water and adequate sanitation is a key driver of multidimensional poverty, and has a greater impact, particularly on women and children, than low incomes.[132] A study of 25 countries in Sub-Saharan Africa found that women collectively spent at least 16 million hours each day collecting drinking water, compared to 6 million hours for men and 4 million hours for children.[133] Women and girls also suffer disproportionately from lack of access to bathrooms and toilets as it exposes them to risks of sexual harassment and assault.[134]

Figure 4 | **The average percentage of people living in multidimensional poverty in urban areas is highest in Sub-Saharan Africa and South Asia**



Note: The measure of multidimensional poverty used here includes income as one dimension, along with access to basic services (such as electricity, water, and sanitation) and education as two additonal non-monetary dimensions of well-being. Specific indicators for each dimension are listed in Table 4.1 of World Bank, 2018a. Estimates are based on harmonized household surveys in 119 economies circa 2013 from the Global Monitoring Database (GMD) of the World Bank.

Source: Authors' analysis based on World Bank, 2018a, Table 4C.1.

2.4 THE GREATEST CHALLENGES AND THE FEWEST PUBLIC RESOURCES IN RAPIDLY GROWING CITIES

Building infrastructure and providing services for exponentially growing populations is in itself a daunting challenge, but doing so while ensuring low-carbon, resilient, and sustainable growth is even more difficult,[135] especially on a small budget. This is precisely the dilemma that rapidly growing cities in the global South will face. From now until 2050, about 40 percent of urban population growth is expected to occur in smaller and midsize cities that currently have populations of 1 to 5 million people, not the dominant metropolitan areas that typically have more capacity and receive more resources from national governments and external funding agencies.[136]

Budget per capita is a useful proxy for the financial resources available. Figure 5 compares city population size and the municipal budget per capita using data from a sample of 30 cities in different regions. It shows vast disparities in the resources cities can deploy. **Bengaluru, India**; **Wuhan, China**; and **New York City, United States**, are each home to about 8.5 million people. But Wuhan's per capita budget is 38 times as large as Bengaluru's, and New York City's is 164 times larger.[137]

2.5 HIGH, PERSISTENT, AND GROWING INFORMALITY IN COUNTRIES WHERE URBAN GROWTH IS CONCENTRATED

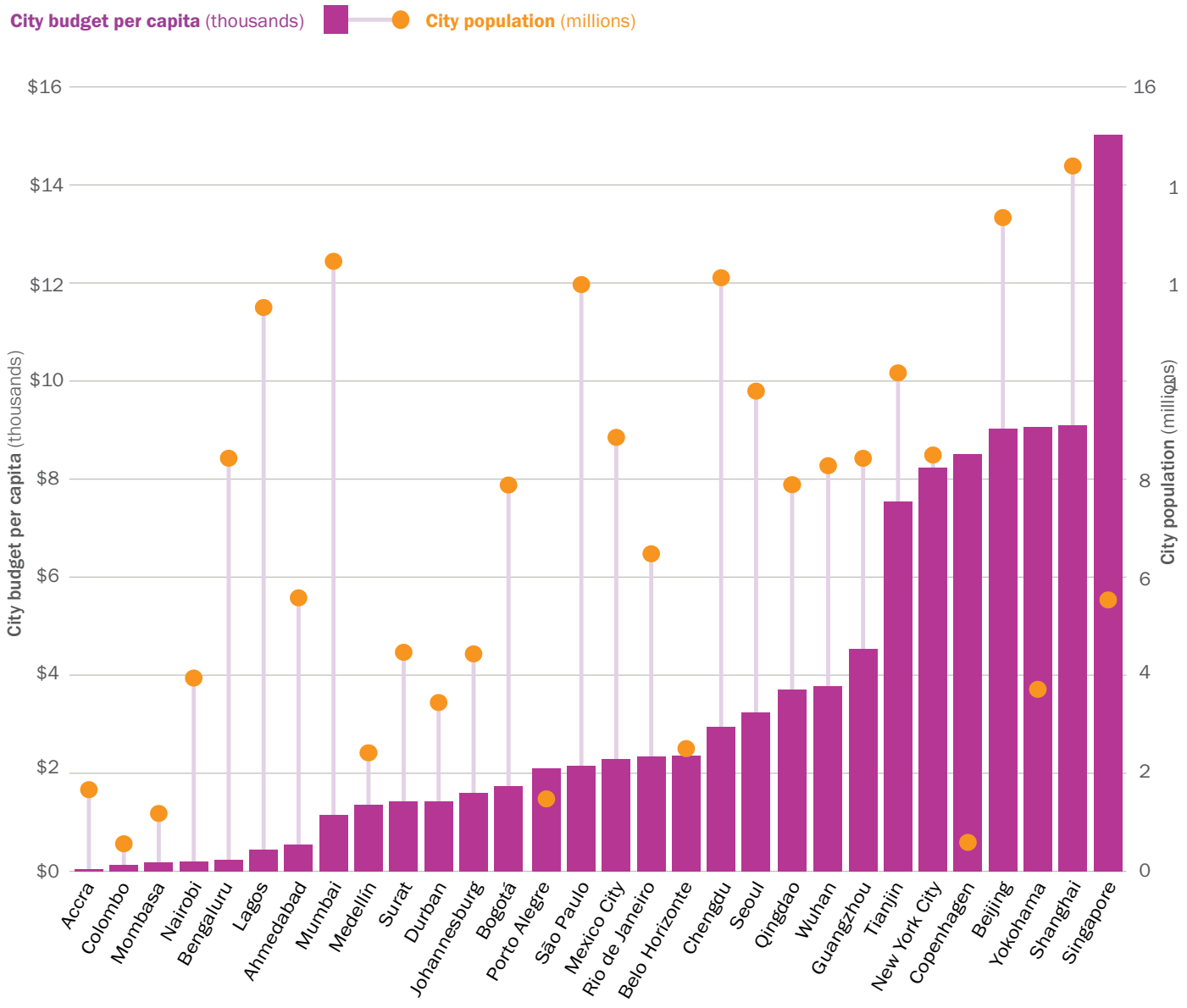
Over 1 billion people worldwide, representing a third of urban dwellers worldwide and two-thirds in low-income countries, occupy informal settlements that lack core services and secure tenure, and these settlements are a ubiquitous feature of cities across the global South.[138] Often they are self-built by low-income people who cannot afford housing in the city close to employment opportunities. Urban slums spring up where planning is lax and affordable housing is scarce as well as where cities have not used accessible, well-serviced land to create housing that can accommodate growing urban populations. The number of people living in slums climbed by 200 million between 1990 and 2014.[139] "Informal" housing or slums without tenure and services differ from legally constructed but inadequate formal housing, although both may be ramshackle, overcrowded, and lacking in access to services.

Whatever their drawbacks, informal settlements are centers of significant economic activity, encompassing numerous home-based microenterprises and informal labor.[140] Informal workers with poor, insecure, and irregular livelihoods represent between 50 and 80 percent of urban employment in the global South.[141] The majority of these informal workers work at daily wages, are self-employed, or contribute to small home enterprises.[142] Globally, more than 2 billion people work in the informal economy. This represents almost 90 percent of the workforce in rapidly urbanizing countries such as India and Kenya.[143]

In many urbanizing low- and middle-income countries, informality is pervasive and persistent. It can be seen not only in the high proportion of informal workers and settlements but also in the way people get essential services. Often it is informal workers and vendors who provide them. Figures 6A-6E present data from the thematic papers on informal employment, informal housing, and informality in the delivery of key urban services (transport, water, and sanitation). The figures highlight how these phenomena are generally concentrated in cities in Africa, Asia, and Latin America.

The pandemic has highlighted the fragility of life in this informal economy (see Box 3). Informal workers have faced the choice of either laboring under conditions that expose them to the virus or going hungry. Often these low-wage, gig workers are doing the essential work that keeps urban economies running, yet they lack the financial and social safety nets people need to ride out crises.[144]

Figure 5 | **Cities in the global South have significantly smaller municipal budgets per capita**



Note: City budget data are from years 2010 to 2016.

Source: Authors' compilation from various sources first published in Beard et al. (2016). Converted to exchange rates accounting for purchasing power parity as the original source used market exchange rates.

Figure 6 | **The global South has high levels of informality in urban labor, housing, and service delivery**

Figure 6A | **The informality of urban labor in the global South**

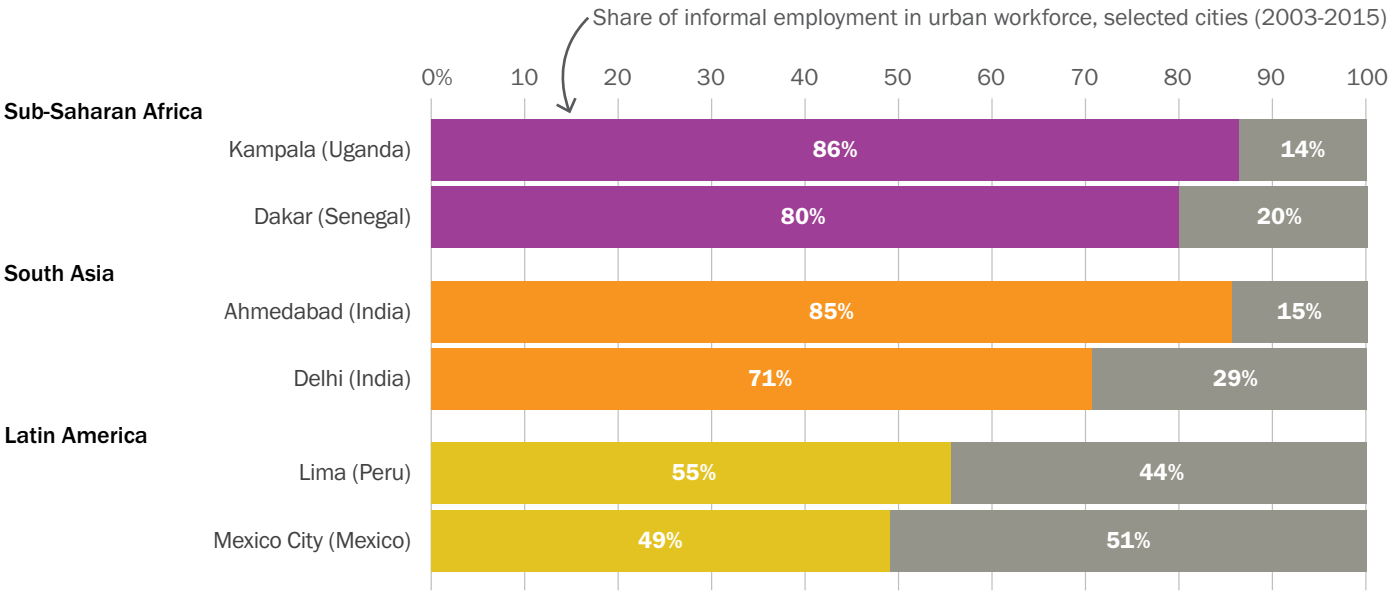


Figure 6B | **The informality of urban housing in the global South**

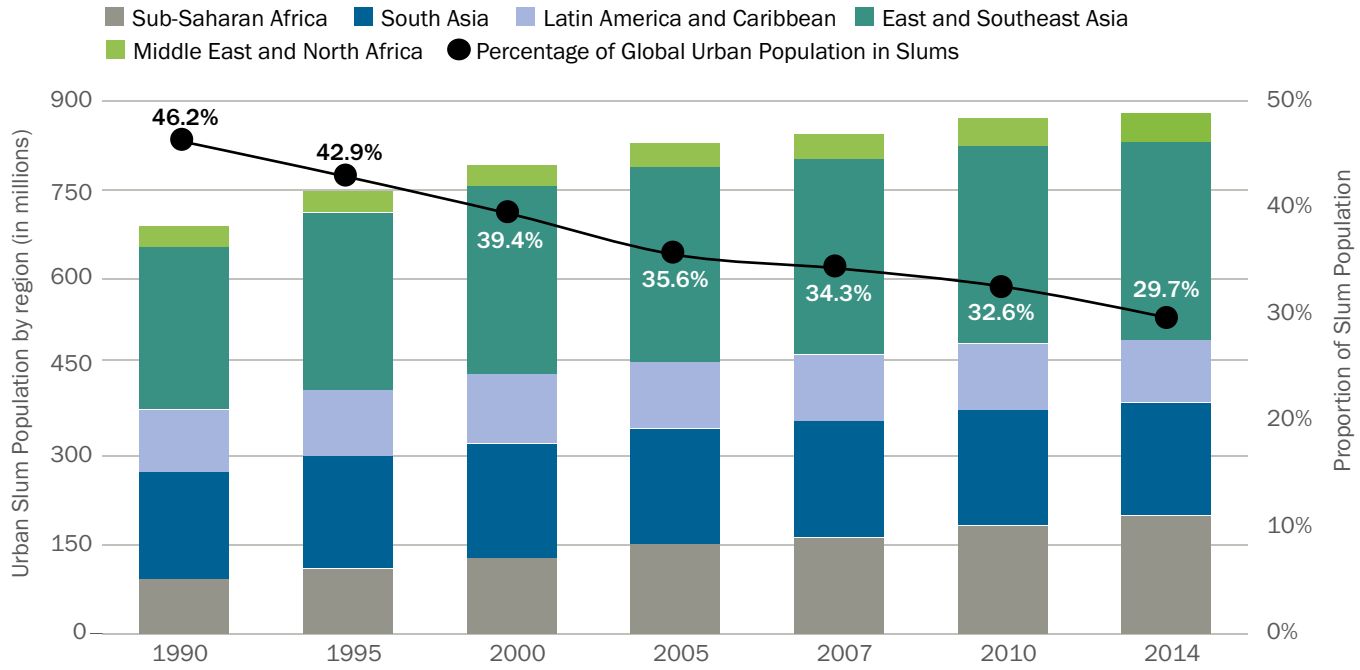


Figure 6C | **The informality of urban transport in the global South**

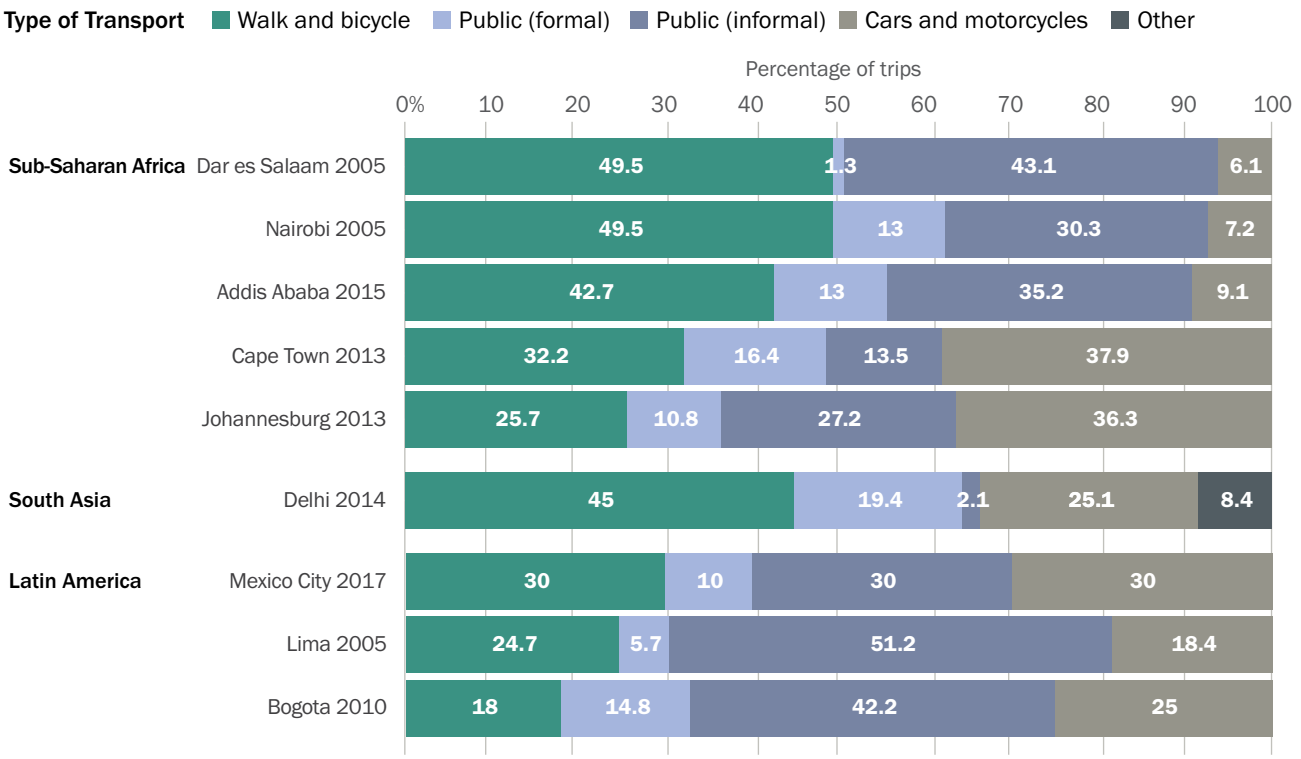


Figure 6D | **The informality of urban water supply in the global South: Other sources typically represent informal and alternative service provision**

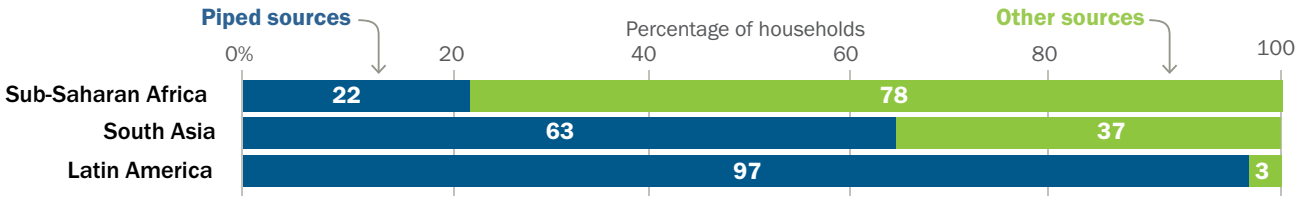
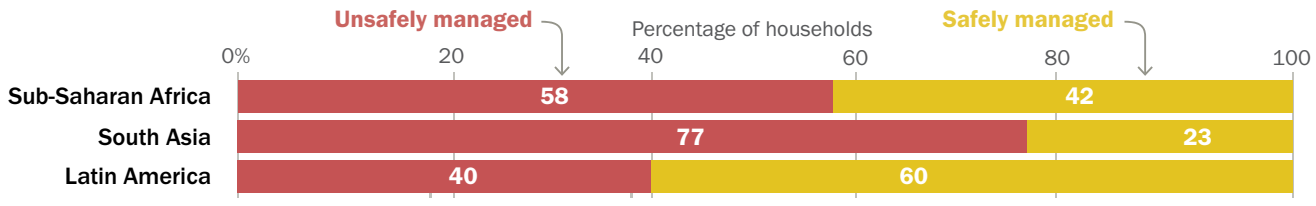


Figure 6E | **The informality of urban sanitation in the global South: Unsafely managed sanitation typically reflects informal and alternative service provision**



Notes: The majority of people in many global South cities rely on informal modes of urban transport or paratransit; For Panels 6D and 6E, the 15 cities included Bengaluru, India; Caracas, Venezuela; Cochabamba, Bolivia; Colombo, Sri Lanka; Dhaka, Bangladesh; Kampala, Uganda; Karachi, Pakistan; Lagos, Nigeria; Maputo, Mozambique; Mzuzu, Malawi; Mumbai, India; Nairobi, Kenya; Rio de Janeiro, Brazil; São Paulo, Brazil; and Santiago de Cali, Colombia. Figures for panels 6D and 6E are weighted by population.

Sources: Figure 6A: Chen and Beard, 2018; Figure 6B: King et al. (2017), based on estimates from UN-Habitat (2015a); Figure 6C: Venter et al., 2019; Figure 6D: Mitlin et al. (2019), based on WRI (2018); Figure 6E: Satterthwaite et al. (2019), based on WRI (2018).

BOX 3 | The COVID-19 pandemic has been calamitous for the informal urban workforce

In cities of the global South, as much as 50 to 80 percent of employment is informal, comprising street vendors, minibus drivers, construction workers, domestic workers employed in homes, security guards, migrant workers, and numerous workers and enterprises operating from their homes in informal settlements.[a] Many of these families are essentially surviving day to day, living in dense neighborhoods with unreliable and often shared access to basic services such as water, sanitation, and electricity. Many do not have bank accounts, basic employment contracts, or insurance. Their incomes and workplaces are not on any government agency's radar. In short, they lack the resources to survive without defying lockdown orders now applicable in most cities. Recognizing the stark reality of urban inequality and the lack of social safety nets for the informal workforce is essential for tackling the current pandemic and for cities to be more economically resilient to future crises.

A survey in **Bengaluru, India**—where over 70 percent of the workforce is informal—showed that although many low-income workers were afraid of contracting COVID-19, most felt compelled to continue working for fear of losing income, jobs, and the ability to feed their families.[b] Food insecurity is at an all-time high, and without support, residents are seeing only two choices: risk infection or starvation. A week of dropped wages could mean they will lose their housing. For some, their work is their place of shelter. Data from **Kampala, Uganda**, reveals serious impacts on over 600,000 jobs in the informal transport sector because of restrictions during the pandemic. This led to wider economic costs for the whole city because of the inability of millions of people to get to jobs and a loss of approximately US$1.2 billion (4.5 trillion Ugandan shillings) that the informal transport sector contributes annually to the local economy.[c]

Often invisible to governments and other urban residents in the best of times, what happens to informal workers such as street vendors and domestic workers during the COVID-19 pandemic could affect whole cities—rich and poor folks alike. In response to the Indian government's lockdown order, millions of urban migrant and informal workers have been fleeing back to their home villages.[d] This has accelerated the spread of infection across India, putting many rural areas with little health care in immediate danger.

In the long term, investing in basic infrastructure and services, education, skill training, and health care are necessary. But there are short-term strategies to help cities respond now to the crisis faced by informal workers. National governments can process fiscal transfers to states/cities so they can immediately distribute cash assistance—through more creative means than usual, if necessary—to those who need it most. Cash transfers can protect traditional supply chains for essential goods. In **Delhi, India**, for example, the local government is setting up shelters and food distribution points to stop rural migration, though not at a fast enough rate.[e] Governments should leverage existing systems to distribute subsidized food and other essential goods, but these need to be available for those without secure addresses or bank accounts. Through partnerships with private companies, cities can extend their ability to distribute essential goods to those who need them most. In Bengaluru, for example, a private food delivery platform has partnered with the state government, nongovernmental organizations (NGOs), and commercial kitchens to serve 500,000 meals daily.[f]

City governments must also coordinate closely with community leaders and NGOs that work in informal settlements and other at-risk communities, both to better understand what is happening on the ground and to communicate key health messages. Establishing deeper and more trusted partnerships with communities can lead to more responsive policies, budget allocations, and channels of communication. A robust data infrastructure can help identify high-risk locations—such as those where water access is dangerously low—to inform urban planning and create better preparedness for the future. Targeting assistance to these locations to close the urban services divide is a way for cities to build back differently and more equitably to better withstand the next crisis.

Sources: a. Chen and Beard, 2018; b. AICCTU, 2020; c. Hatchile Consult, 2020. Ugandan shillings were converted using the average exchange rate for U.S. dollars to Ugandan shillings for April 2020, when the survey of informal transport operators was done. The historic exchange rate was obtained from Currency Converter (2020); d. Agarwal, 2020; e. India Today Web Desk, 2020; f. PTI, 2020.

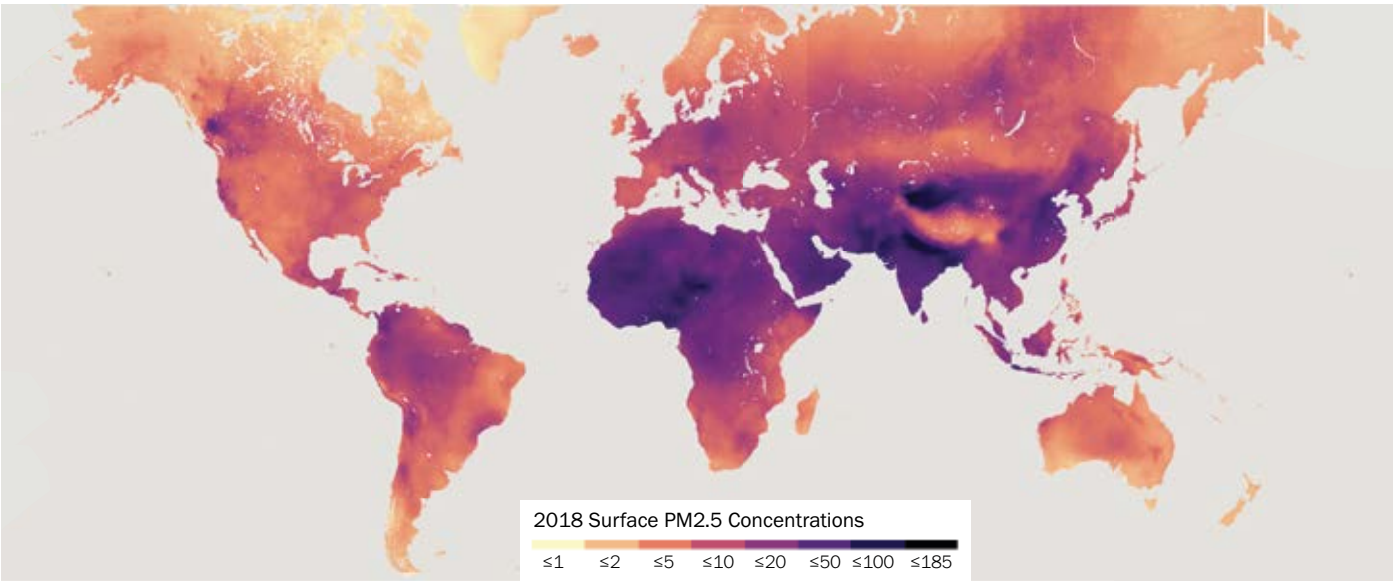
2.6 URBAN GROWTH PATTERNS ACCELERATING ENVIRONMENTAL DEGRADATION

Unless they can harness innovations to leapfrog the trajectories followed by developed nations, urbanizing low-income nations will experience urban population growth accompanied by a steep rise in consumption, environmental degradation, and GHG emissions.[145] To take one example, if car ownership in **Nigeria** approached the level of the **United States**, where about 90 percent of households own cars,[146] reducing local air pollution and slowing climate change enough to stave off catastrophic consequences would become significantly harder. Illness and premature deaths due to ambient air pollution in **Lagos**, Nigeria's largest city, caused losses of $2.1 billion in 2018, representing 2.1 percent of Lagos State's GDP.[147] With current carbon-intensive growth trends, the materials consumed to build and expand cities could more than double from their 2010 level by 2050, so cities need to be planned and built differently.[148]

The scale and pace of growth and lack of appropriate planning and regulation are already imposing heavy burdens on environmental resources and quality.[149] Freshwater and soils are being contaminated and spreading disease because sewage and wastewater treatment systems are nonexistent or inadequate. More than 80 percent of all sewage and most of the industrial wastewater in developing countries is discharged untreated into rivers, lakes, or the ocean.[150] Excessive groundwater extraction to meet growing demand is depleting aquifers and creating water scarcity.[151] Rampant unregulated construction in urban floodplains and wetlands has been causing disastrous flooding events across South Asian and African cities. Cities are encroaching on forests and prime agricultural land that have historically provided natural buffers against flooding. Some of this development also invades biodiversity hot spots.[152] Unmanaged urban expansion, with little regard for travel distances, hydrology, or protection of green cover, is driving up GHG emissions, air pollution, flooding risk, and urban heat island effects.[153] Weak land-use and environmental regulations exacerbate these challenges. The poor and those living in informal settlements are most vulnerable to natural disasters, pollution, and the impacts of climate change.[154]

Air pollution also imperils public health in rapidly urbanizing low- and middle-income countries. Air in these cities contains extremely high levels of $PM_{2.5}$ pollution. These fine particles, 2.5 microns or smaller, are able to bypass the body's defenses, making them especially dangerous. They can cause heart and lung disease and premature death.[155] Nearly everyone in these urban areas is exposed to $PM_{2.5}$ levels that exceed the air quality guidelines of the World Health Organization (WHO).[156] As shown in Figure 7, South Asian countries face the highest levels of $PM_{2.5}$ pollution in the world, followed by African and Middle Eastern countries.[157]

Figure 7 | **Rapidly urbanizing countries in Africa and Asia have the highest levels of air pollution**



Note: The figure shows the annual average $PM_{2.5}$ concentration in 2018 relative to the World Health Organization's guidelines.

Source: Based on Dalhousie University Atmospheric Composition Analysis Group data and Hammer et al. (2020), accessed through Resource Watch (August 8, 2021), www.resourcewatch.org.

2.7 HIGHEST CLIMATE VULNERABILITY AND INCREASING CARBON FOOTPRINTS IN POOR, RAPIDLY URBANIZING REGIONS

The poorest and most climate-vulnerable regions of the world are projected also to be the hot spots of in- and out-migration driven by climate change. Ninety percent of this migration will be in Sub-Saharan Africa and South Asia. By 2050, over 140 million people in Sub-Saharan Africa, South Asia, and Latin America could be forced to move within their own countries to escape the slow-onset impacts of climate change.[158] They will flee from parched rural areas where crops are failing and from coastal and low-lying areas menaced by rising sea levels and storm surges. But in cities, the often poor-quality, informal settlements where they live may not be safe either because they are extremely vulnerable to floods and storms.

As climate change propels urbanization, urbanization could also accelerate climate change. In 2010, the cities of the global South accounted for just over a quarter (27 percent) of global urban carbon dioxide emissions. If current trends continue, that share is expected to more than double to 56 percent by 2050.[159] However, a recent report shows that by using technically feasible and widely available mitigation measures, cities could cut their emissions in key sectors by almost 90 percent by 2050.[160] Planning cities in ways that conserve energy, reduce automobile use, and limit commuting distances can accomplish this. How urban growth is managed will determine whether low- and middle-income countries follow a high- or low-carbon trajectory. This will play a pivotal role in global efforts to avert catastrophic temperature rise and protect the natural ecosystems and resources that sustain life. If these efforts fall short, it is these same cities and their inhabitants who may suffer the most. Figure 8 shows that many countries across Africa, Asia, and Latin America are more vulnerable to climate change and are far less prepared to cope with it than Western Europe and North America.

Figure 8 | **Climate vulnerability and readiness to deal with climate risks vary by country**

Note: *Readiness* is measured by considering a country's economic, social, and governance ability to leverage investments for adaptation actions. *Vulnerability* of a country is measured by considering six life-supporting sectors: food, water, health, ecosystem services, human habitat, and infrastructure. Each sector is, in turn, represented by six indicators that represent three cross-cutting components: the exposure of the sector to climate-related or climate-exacerbated hazards, the sensitivity of that sector to the impacts of the hazard, and the adaptive capacity of the sector to cope or adapt to these impacts.

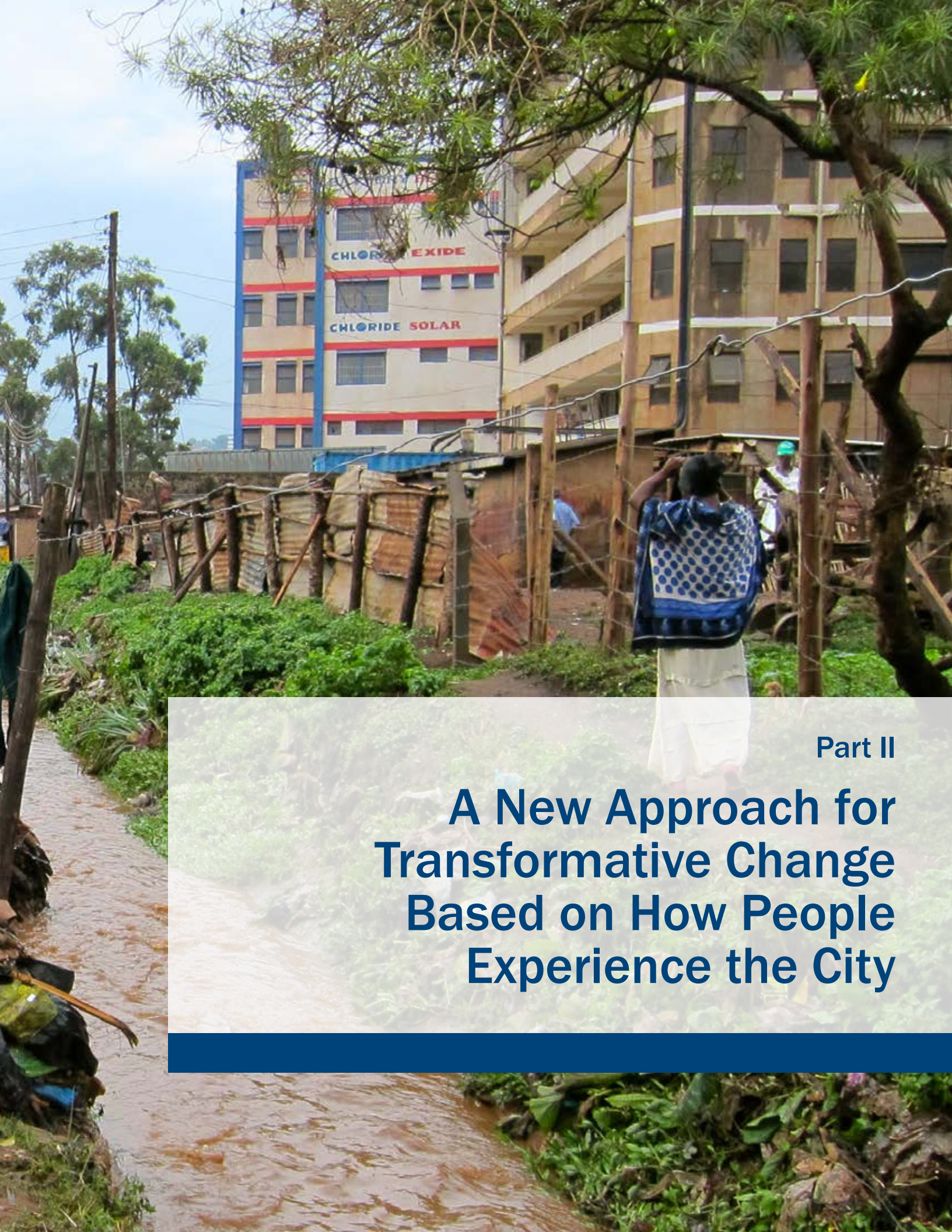
Source: ND-GAIN, 2018. For the full data set, see the Notre Dame Global Adaptation Initiative database, https://gain.nd.edu/our-work/country-index/matrix/.

2.8 A DIFFERENT KIND OF URBANIZATION REQUIRES A NEW APPROACH

In the coming decades, urbanization will accelerate, and the fastest-growing cities will be in low- and middle-income countries. These cities are luring millions of people desperate for a better life, but often their hopes wither. A rising share of people in the fastest-growing cities find themselves excluded from opportunity and locked in a precarious daily struggle just to sustain themselves and their families.

Freeing those trapped on the wrong side of the services divide—and unleashing their productive and creative potential—could help reinvigorate cities and whole nations. But the strategies that worked for rapidly urbanizing nations in the past are inadequate and often unfeasible today. Historically, GDP and income growth went hand in hand with urbanization and helped finance needed infrastructure and spread wealth. Today's urbanization often lacks this crucial backstop.[161]

Today's fastest-growing cities need new tools and approaches to succeed, built on a solid understanding of the economic and demographic conditions they face. The divergence between economic growth and urbanization is a critical point of departure. Daunting and cascading problems exist, but so do real opportunities to solve them. New mindsets and strategies hold the potential to make urbanization more inclusive, equitable, and sustainable, benefiting not just the poor, and not just city dwellers, but everyone on the planet.



Part II

A New Approach for Transformative Change Based on How People Experience the City

Chapter 3.
Why Access to Urban Services Matters

The urban services divide affects every aspect of people's lives. Those who are under-served by core services like housing, water, sanitation, transport, and energy face higher burdens and fewer opportunities in the short and long term than those who are better served or can provide for themselves.

3.1 THE URBAN SERVICES DIVIDE AND ITS CONSEQUENCES

To pursue transformative change that is fundamentally more people centered, cities must depart from business as usual. This means starting with the lived experience of people and using this as the metric of success rather than focusing only on income, carbon emissions, or another narrow metric.

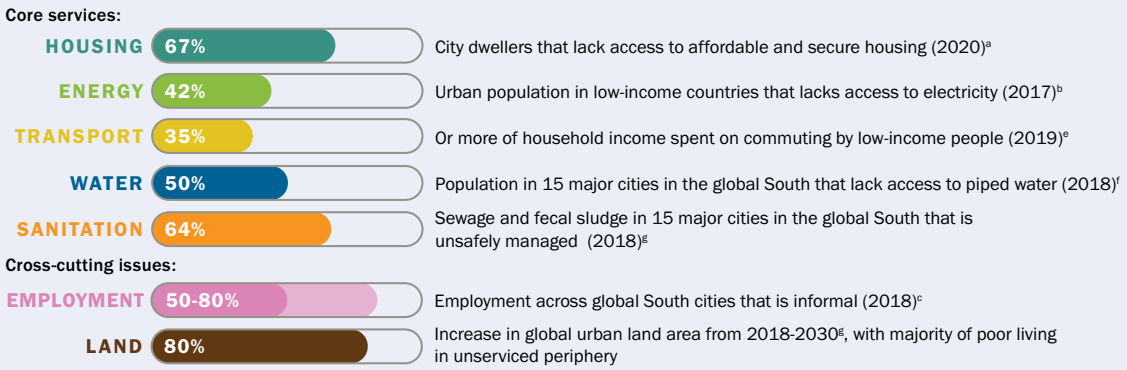
It is for this reason that we focus on the **urban services divide**—the gap between the "better served," who have access to good-quality services, and the "under-served," who do not. This gap lies at the core of rising poverty and inequity in cities (Box 4). Spotty, unequal access to core services is not just a symptom of urban inequality; it is a key cause of it because it widens the gap between "haves" and "have-nots," increases expenditures, reduces the income people can save, and curtails their opportunities for a better life.

Across countries of the global South, urban residents spend almost 25 to 50 percent of their household income on basic needs such as housing, energy, transport, water, and sanitation.[162] If these core urban services were more accessible and affordable, these households could instead spend this money on education, health care, and increasing their standard of living. Figure 9 contrasts the daily lives of better-served and under-served groups and highlights how the urban services divide creates more opportunities for the better served and greater burdens for the under-served in terms of lost time and expense.

BOX 4 | Existing estimates of access to urban services provide an incomplete picture

Past estimates show that up to 70 percent of the urban population in the global South is reported to be under-served by one or more core urban services: housing, water and sanitation, energy, and transport (see Figure B4.1 for sectoral examples).[a] For example, in 2012, more than 482 million urban residents lacked access to modern fuels; in 2017, 110 million lacked access to electricity and 615 million did not have reliable, clean water.[b] These global averages mask extreme deprivations across urban neighborhoods, cities, and countries, and they only consider the magnitude of access to these services, not their quality, reliability, or affordability for low-income urban residents. These estimates need to be improved and standardized to measure inequities in both the quantity and quality of access. Doing so will also help track progress against the Sustainable Development Goal targets. Globally, two in three urban dwellers in low-income countries live in slums, which are defined as places where people lack access to most of these services. Although this number is already high, the percentage of the urban population that lives in slums goes up to 77 percent in **Mozambique** and 88 percent in **Sudan**, to give just two examples.[c]

Figure B4.1 | **Billions of urban dwellers lack reliable, affordable, and safe access to these core services and opportunities offered by cities**

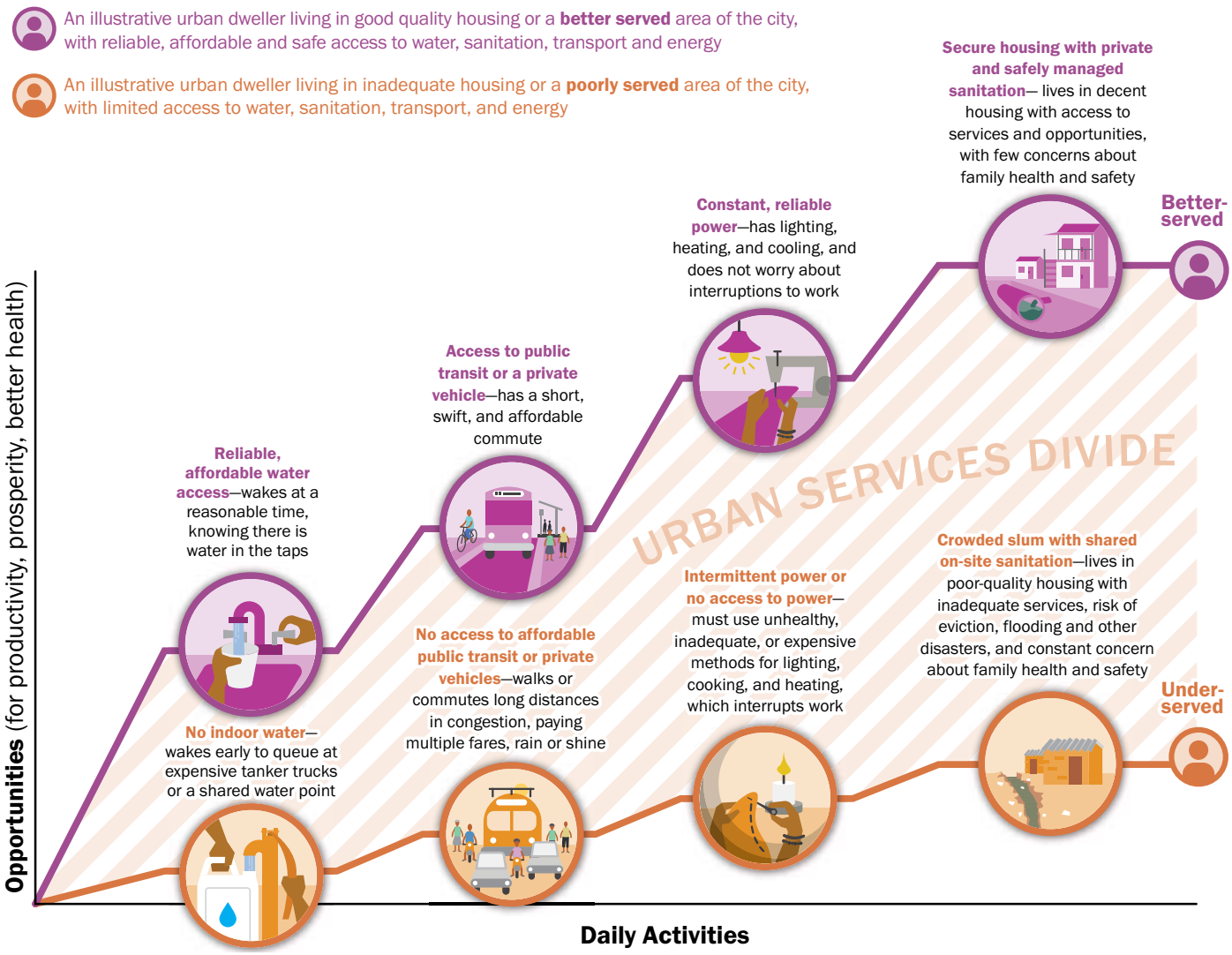


Note: Analysis from the World Resources Report: *Towards a More Equal City*, 2016 to 2019.
Figure Sources: a. World Bank, 2018b; b. World Bank, 2016a; c. Venter et al., 2019; d. WRI, 2018; Mitlin et al., 2019; e. WRI, 2018; Satterthwaite et al., 2019; f. ILO, 2018b; g. Mahendra and Seto, 2019; Seto et al., 2012.

Box Sources: a. Beard et al. (2016), based on data analyzed from PovcalNet database in 2015; Watson, 2009: 183; b. WHO and UNICEF, 2017; World Bank, 2016a; c. World Bank, 2018b.

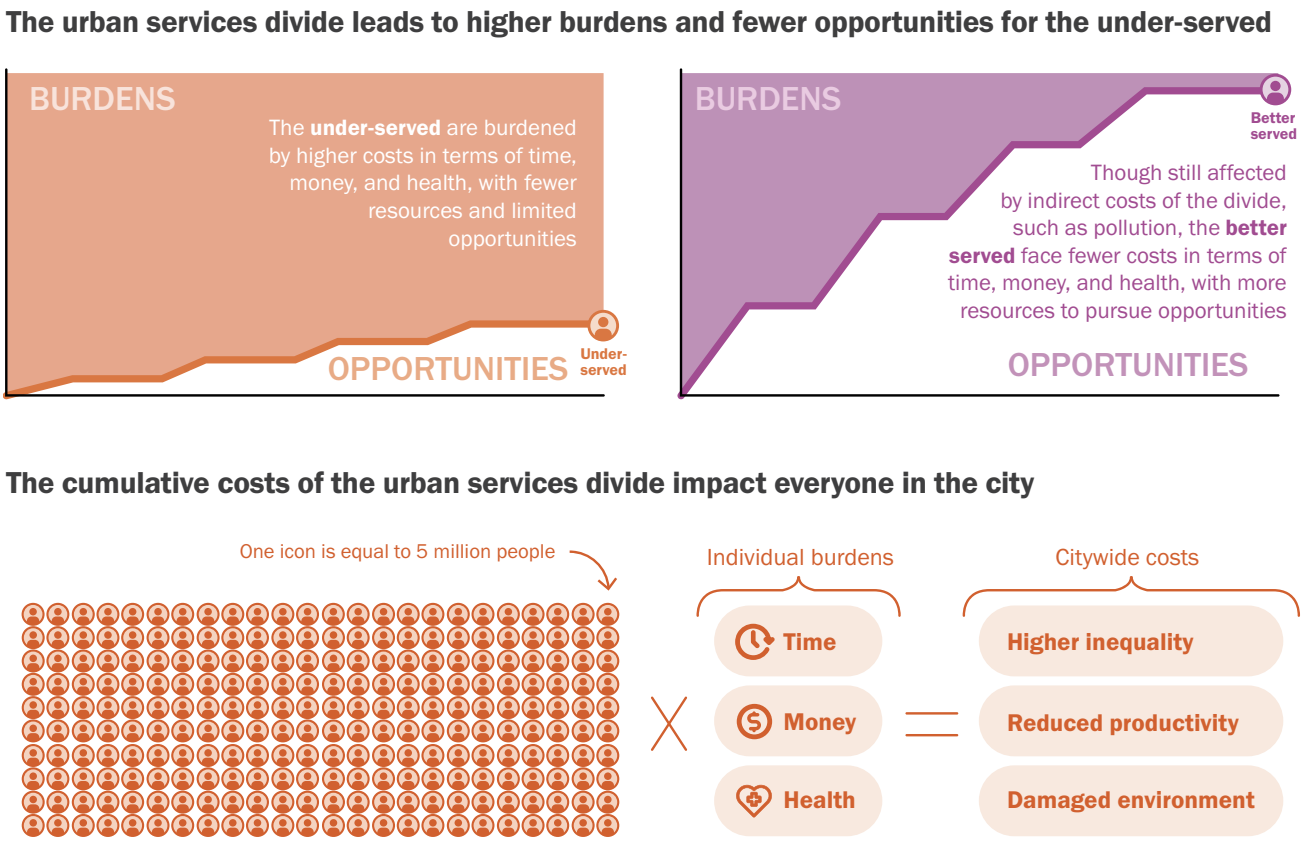
Figure 9A | **Inequities in access to services affect every part of people's lives**

The urban services divide shows why daily activities are easier for some and a struggle for others



Note: This is a conceptual diagram.

Figure 9B | **Inequities in access to services affect every part of people's lives**



Note: a. This figure is based on data from the World Development Indicators (2018b) on the global population of slum dwellers in urban areas. A *slum* is defined as a group of individuals living under the same roof lacking one or more of the following conditions: access to improved water, access to improved sanitation, sufficient living area, and durability of housing.

Source: Authors.

3.2 THE PERNICIOUS EFFECTS OF SELF-PROVISION

"Self-provision" is one direct consequence of scant and unreliable core city services. It exacerbates poverty and inequality while undermining the economic prosperity and environmental sustainability of the city as a whole.

Urban dwellers in the global South who are under-served by municipal infrastructure must rely on informal arrangements to meet basic needs.[163] Boxes 5 and 6 illustrate how families in African cities such as **Accra, Ghana**, and **Lagos** live through these challenges. In the absence of municipal services, residents of all income groups must make their own arrangements to gain access to housing, transport, water, sanitation, and energy. Because it can be inconvenient and expensive, self-provision harms everyone. It imposes high costs not only on individuals but also on society in the form of lost productivity, higher expenditures, environmental degradation, and poor health. Without access to clean fuel or sewage treatment facilities, people burn wood or charcoal for cooking and illegally empty pit latrines directly into rivers. Whether they are improvising, bribing, spending most of their income, or finding other ways to get what they need, making informal arrangements in unregulated markets adds extra time, cost, and uncertainty. Private service providers may be informal workers with unrecognized businesses, and the quality of services they offer may fall outside safe or acceptable standards.

Households that experience unreliable core service delivery but have sufficient economic means are better equipped to fend for themselves or get what they need through both formal and informal markets. If the power goes out frequently, they can purchase generators and the fuel needed to run them. If there is no train or bus, or service is unreliable, they can drive themselves or hire a car to pick them up. If the tap water smells bad or makes them sick, they can buy bottled water in bulk or drill their own bore well, as many gated communities often do. Those with better access have more opportunities for a productive, prosperous, and healthy life.

But for low-income people, having to self-provide can impose crippling burdens. For them, the quest for essential services can crowd out everything else. Often those who are least able to pay are actually forced to spend the most, even in absolute terms, for the same essential services. People who lack safe running water may end up paying fifty

times as much for bottled water as they would for piped tap water.[164] Families may have little left for other needs, such as food and education.

As more people with sufficient means find their own solutions and engage in self-provision by acquiring services through the market or personal networks, inequalities in access to services widen. They demand less of decision-makers, which erodes the incentive for public agencies to improve service delivery for everyone and undermines local accountability. The outcome of self-provision is a negative feedback loop of citizen resistance to any municipal finance reforms entailing higher service fees or taxes to improve urban services for everyone. This continues to perpetuate inequities in access to services and handicaps decision-makers and other urban change agents in fulfilling essential functions.[165]

BOX 5 | Lack of piped water in expanding outskirts of Accra increases household water stress

Victor lives with his family in Amrahia, a suburb of **Accra, Ghana**, that has grown rapidly in recent years, outpacing the establishment of basic services and infrastructure such as roads or a water distribution system. Like many families in Amrahia, Victor's family struggles every day to get good-quality water. Victor buys water from a local vendor and collects rainwater when he can, but the supply is inconsistent. From the private vendors, Victor fills up his 2,000-liter plastic water tank, which lasts approximately three weeks and costs about US$7.50, significantly more than water provided by the public system that does not reach his home. But sometimes the vendors take a long time to fill up his tank or refuse to provide the water, in which case Victor drives his taxi around town with a 25-liter can in search of water.

Leftover wastewater from cooking and bathing is sometimes used for the toilet, which is connected to a septic tank. Sometimes it is just thrown outside his house, posing threats to local water quality. Victor's family is one of many facing high household water stress year-round. They fear droughts and other weather-related disasters and other emergencies that could threaten their supply. As the community grows, residents hope that the city will install piped water and a drainage system to all homes.

Figure B5.1 | **Bottled or sachet water is commonly sold in the under-served neighborhoods of Accra**

Picture credit: World Bank

Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

Because it can be inconvenient and expensive, self-provision harms everyone. It imposes high costs not only on individuals but also on society in the form of lost productivity, higher expenditures, environmental degradation, and poor health.

BOX 6 | Energy access proves a daily struggle for low-income households in Lagos

For 29 years, Mrs. Arowojobe has lived in Pedro, a popular neighborhood for low-income families in **Lagos, Nigeria**. An estimated 70 percent of the population of Lagos lives in this type of neighborhood, with 66 percent of residents lacking secure land tenure. Only 15 percent of households are connected to an electrical grid, and there is no centralized sewage or wastewater management system for the city. Mrs. Arowojobe, 49, and her husband have two children and live on a combined income of roughly US$300 per month. Ten years ago, Mrs. Arowojobe left a job as a nurse in a private school to open a small frozen fish and meat stand outside her house. She enjoys the flexibility that this provides her and the time it allows for her to spend with her children. But sporadic access to electricity makes living and working difficult.

She currently pays the city utility, the National Electric Power Authority, a fixed monthly rate of $25, even though she can only rely on two hours of electricity daily. Blackouts that last up to three consecutive days are common.

Mrs. Arowojobe also struggles to obtain enough fuel to cook for her family. She normally travels two kilometers to refill her 12.5-kilogram container with propane every three months, which costs her nearly $18. She can purchase kerosene as a backup from hawkers outside her house, but she says, "I like the gas cooker because the kerosene stove darkens my pot and emits smoke that chokes me and makes my eyes shed tears." Mrs. Arowojobe urges her kids to stay in school, where they do not have to breathe in the smoke from cooking and have better access to electricity.

Figure B6.1 | **Mrs. Arowojobe at her home in Pedro, Lagos**

Picture credit: Abdulmutalib Yussuf, 2016.

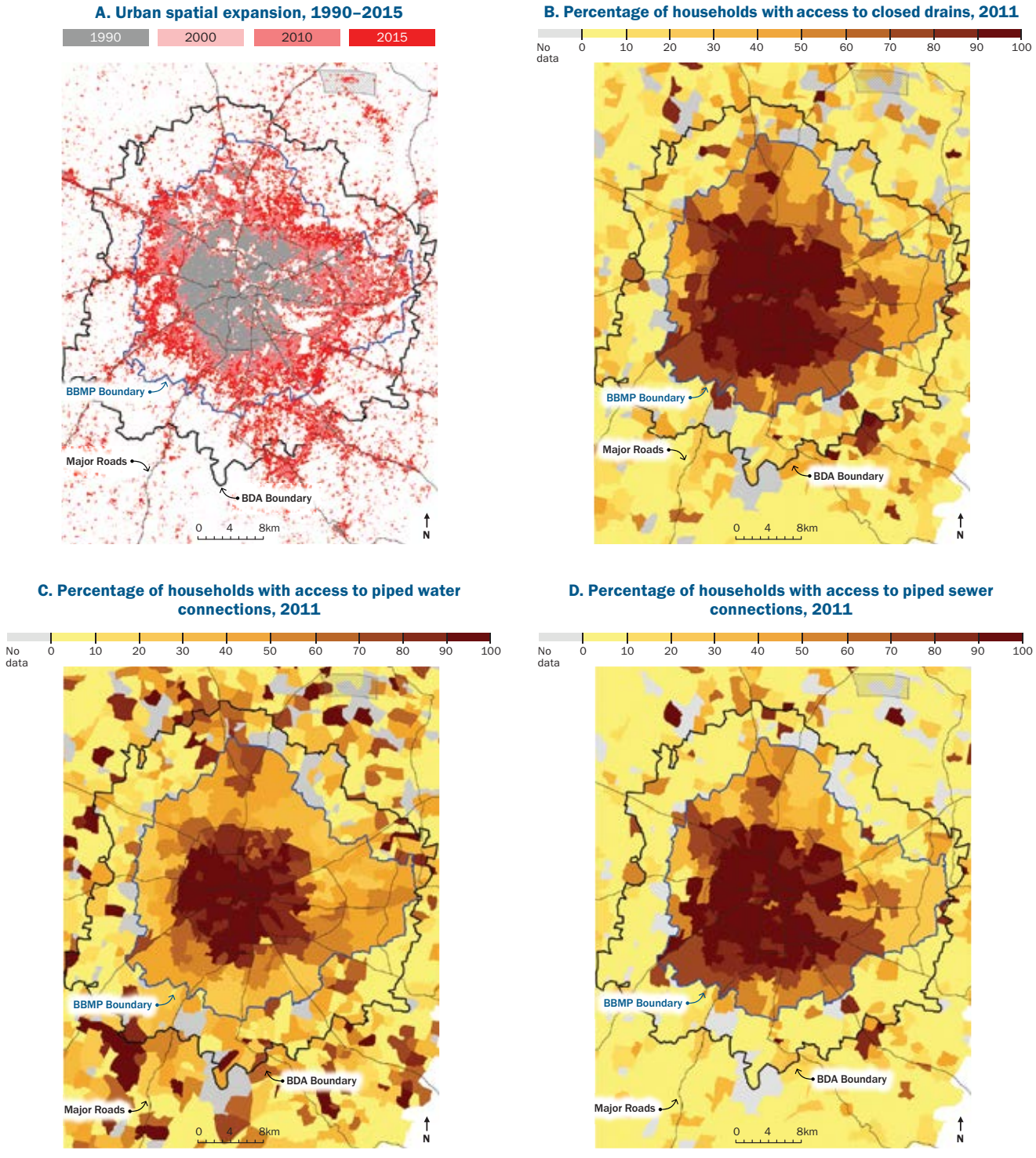
Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

3.3 THE GEOGRAPHY AND SPATIAL DIMENSION OF THE URBAN SERVICES DIVIDE

Where people fall on the spectrum from better served to under-served typically depends on where they live. This is no accident; instead, it is a result of the choices being made in the fast-growing cities of the global South. Urban areas are expected to triple in size between 2000 and 2030, and in these cities, much of the growth taking place now is basically unsupervised. It is not being planned or regulated by governments prioritizing the long-term interests of the majority of the population. Unmanaged urban expansion means large, new sections of cities are being built without services. Neighborhoods and informal settlements within cities have matured with no services and none coming any time soon. And once these patterns of development have taken hold, it is prohibitively costly and incredibly difficult—perhaps even impossible—to fix or reverse them.

One problem is that most of this haphazard, unplanned growth occurs not in a city's center but rather at its periphery. This is true of both formally constructed buildings and informal settlements. It happens because affordable housing inside cities is so scarce that lower-income people in particular are driven either to informal settlements or to peripheral areas where land and housing are cheaper. This fuels outward expansion, which, in turn, makes extending core services to these locations more expensive. Empirical evidence shows that, as cities spread and density falls, the per capita cost of providing public services soars and the likelihood of being linked to services falls. In Indian and African cities, access to multiple urban services drops sharply just five kilometers from the city center.[166] A look at **India**'s **Bengaluru** metropolitan region illustrates how the fastest-growing areas in the periphery have the highest proportions of households lacking access to basic services such as piped water, sewer connections, and drainage (Figure 10). The thematic paper on urban expansion shows similar data for **Mexico City, Mexico**, and highlights the spatial inequality seen in cities today while presenting new analysis of urban growth patterns over time for nearly 500 cities.[167]

Figure 10 | **Inadequate basic services in the rapidly expanding Bengaluru metropolitan area leave many without access**



Notes: BBMP = Bruhat Bengaluru Mahanagara Palike (the municipal corporation of the Greater Bengaluru metropolitan area); BDA = Bangalore Development Authority. Bengaluru is the new name of the city formerly known as Bangalore. Some city agencies retain the name Bangalore.

Sources: Mahendra and Seto (2019), based on data from the 2011 Census of India, the Bangalore Metropolitan Region Development Authority, the Bruhat Bengaluru Mahanagara Palike, and the Bangalore Metro Rail Corporation Limited as well as Global Land Survey and Landsat (U.S. Geological Survey) images for 1990, 2000, 2010, and 2015. Contributed by WRI India.

In addition to living without services, lower-income people in outlying areas must often travel long distances to find work (see Box 7 for an example from **Porto Alegre, Brazil**).

But urban peripheries are not the only areas lacking infrastructure and services. Informal and unplanned areas inside cities have also been growing denser—and without service provision—as people crowd into any housing they can find close to employment.[168] These residents often depend on fragile informal services to meet basic needs and demand can easily outstrip supply. The poor, who may have no choice about where they can live, pay exorbitant prices as a result. For example, the roughly 300,000 people packed into Mukuru, one of the largest informal settlements in **Nairobi**, face a "poverty penalty" for drinking water. They pay over four times more per cubic meter than those who live in formal areas of the city.[169] Up to 70 percent of urban residents in the global South rely on informal arrangements like these to procure core services.[170] Many also lack access to quality education, secure employment, and health care.

Unplanned outward expansion and informal settlement stem from a shortage of affordable housing inside cities, caused or exacerbated by weak urban planning and land governance, corruption, onerous and outdated regulations, and real estate and financial markets that serve private interests rather than the larger community. These problems are detailed in Part III, Transformation 6, of this report, which discusses how urban land management, spatial planning, and land governance practices must shift to reduce spatial inequalities.

Without careful planning and effective, integrated policies, fast-growing cities in low- and middle-income countries will struggle to reverse these trends. Unequal, inadequate infrastructure and services will perpetuate a vicious cycle that becomes harder and harder to escape. The urban services divide encumbers cities in ways that sap their economic vitality and raise the very real risk that, instead of propelling nations towards prosperity, rapidly growing cities will instead hold them back.

The *Towards a More Equal City* series dives deep into ways that cities can break this cycle. It explores the many consequences of the urban services divide for entire cities and their most vulnerable populations. It explains the causes and geography of the urban services divide, including the lack of planning and the patterns of urban growth that have fueled it. It looks at the repercussions of leaving under-served populations to fend for themselves and sheds light on the need for government leadership to address market failures. It points to the potential for investment in services and infrastructure to pay for themselves many times over, identifies key sectors to prioritize, and lays out strategies for achieving the best results. This report highlights numerous examples of how cities can provide access to services and opportunities more sustainably and equitably.

Unequal, inadequate infrastructure and services perpetuates a vicious cycle that becomes harder and harder to escape. The urban services divide encumbers cities in ways that sap their economic vitality and raise the very real risk that, instead of propelling nations towards prosperity, rapidly growing cities will instead hold them back.

BOX 7 | Long, unsafe commutes plague Porto Alegre residents

Jaime, a 51-year-old resident of **Porto Alegre, Brazil**, earns roughly US$378 per month as a supermarket supplier, but he has a long and sometimes dangerous commute to work. His job at Seradil, located in the Gravataí neighborhood, is 16 kilometers away from his home in Alvorada. To get there, Jaime walks to the bus stop, waits 20 to 30 minutes, catches an overcrowded bus for $0.97, then walks another 17 minutes to Seradil. The family spends a quarter of his income, roughly $93, on transport a month.

The cost is one problem. Safety is another. "There are many assaults," Jaime says. "We suffer almost daily assaults. We have to give thanks to God on the days when we are not robbed. They enter as ordinary passengers and take everything . . . because . . . some parts of the way are remote, with nobody around. Time and again, there are deaths, too, because sometimes they shoot, hit, and attack people." He continues, "Our security is zero. From one to 10, it is zero. It does not exist. We come down to the bus stop and we have to walk a lot in an empty area, by the highway, with the cars passing just next to us, because there are no sidewalks. It lacks infrastructure and structure—lighting, security, it lacks everything."

With the bus system so insecure, Jaime's family is hoping to buy a car soon, trusting that it will improve their quality of life. They already own one but want to upgrade. "It is the dream of everyone, right?" he says. "To improve life a little bit. We're trying to save money for a down payment and buy a car a little bigger, a little better." More cars on the road will increase traffic and congestion for the city as a whole, however, leading to potentially longer commutes for all and higher emissions.

Figure B7.1 | **Jaime waits at a makeshift bus stop to get to work**

Picture credit: Mariana Gil, 2016.

Note: These vignettes are based on analysis of in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

Chapter 4.
The Cascading Benefits of Closing the Urban Services Divide

Closing the urban services divide avoids economic costs, improves quality of life, and can trigger citywide transformative change with the right enabling conditions. Seven case studies from the global South demonstrate how cascading benefits can occur when cities extend infrastructure and services to the excluded. They provide valuable real-world lessons that other cities can learn from.

4.1 AVOIDED ECONOMIC COSTS FROM CLOSING THE URBAN SERVICES DIVIDE

The consequences of unplanned, unequal, unsustainable urban development stretch in so many directions that they are difficult to measure. They permeate every aspect of life. As detailed above, they include sprawl, congestion, wasted resources, pollution, deepening poverty, hobbled productivity, danger, disease, and accelerating, potentially catastrophic climate change. Closing or bridging the urban services divide can avoid these costs. It can also yield large dividends across sectors and institutions and improve life for a broad swath of the urban population.[171] Steps taken compound and build upon one another, with the whole process yielding more than the sum of its parts. These dividends can multiply from avoided economic costs, to quality-of-life benefits, and even to the potential for citywide transformative change (see Figure 11).

Many wider social and economic costs of the urban services divide mount over time because private markets and actions do not typically account for them. Private actors cannot recognize (or immediately monetize) the benefits that would flow from public investments to narrow the divide and make cities more equitable and sustainable. This is true even when investments in services and infrastructure can clearly pay for themselves many times over. One example is the economic case for extending sewer service to new neighborhoods.

Figure 11 | **Closing the urban services divide can yield cascading benefits for the entire city**

Note: GDP = gross domestic product.

Sources: a. Wee, 2018; b. AfDB, 2012; UN-Habitat, 2013; c. Rentschler et al., 2019; d. WHO, 2018; e. Mitlin et al., 2019; f. WHO, 2012; g. Gwilliam, 2002; Hook and Howe, 2005; h. King et al., 2017; Westphal et al., 2017; i. Beard et al., 2016; j. Das and King, 2019; k. Lwasa and Owens, 2018.

Doing this will create customers who will pay for the service. But it also delivers larger, more diffuse economic benefits by sparing people from being sickened by contaminated water.[172] Healthier residents need less medical care and are more productive. These types of payoffs can cascade and multiply in the long term in ways that are hard even to predict or calculate. That makes them risky and hard to justify to shareholders of companies looking for revenues and short-term profits. But research shows that the payoff is huge.[173]

In Sub-Saharan Africa, for instance, low-income households spend about one-third of their income on treating water-related illnesses. Globally, the lack of safely managed sanitation imposes $223 billion a year in health costs, lost productivity, and wages.[174] The scale of this challenge is clear when we consider that slums in cities such as **Nairobi** may have one toilet for every 500 people.[175] Each dollar invested in water and sanitation generates between $4 and $34 in benefits by saving time, improving health, and raising productivity.[176] Without water-related illnesses hampering people's productivity, hurting livelihoods, and slowing economic growth (see Box 8), more households would be able to thrive.[177]

Waterborne diseases are just one example of the costs of current patterns of urban development. Here are some more:

- Traffic congestion costs up to 10 percent of GDP for large cities such as **Beijing, China**, and **São Paulo, Brazil**.[178]
- Road accidents consume 5 percent of GDP across low- and middle-income countries.[179]
- Power outages lead to lost sales totaling $82 billion per year and additional coping costs of $65 billion per year for backup generators in developing countries.[180]
- Water shortages cause urgent and expensive citywide crises. In **Jakarta, Indonesia**, residents who lacked piped, potable water resorted to digging and extracting too much water from unregulated wells; as a result, the entire city is now sinking as it battles sea level rise and coastal flooding. The city has calculated that it may need to spend over $40 billion on a sea wall around Jakarta Bay.[181]
- A study conducted for **India** estimates that sprawled, disconnected, and poorly planned urbanization could cost between $330 billion and $1.8 trillion per year by 2050. That is equivalent to between 1.2 and 6.3 percent of the country's GDP. India's urban population is projected to nearly double to 800 million by then.[182] This means that by midcentury, better, smarter urban development could yield economic benefits worth up to more than 6 percent of India's entire GDP.[183]

The fact that so much economic activity takes place without adequate infrastructure, government oversight, or support takes a toll across the cities of the global South as well. Informal workers account for 50 to 80 percent of urban employment and generate from 25 to 50 percent of the (nonagricultural) GDP of the global South.[184] Yet home-based workers living in informal settlements, street vendors, transport operators, waste pickers, and other informal workers are largely excluded, not just from public infrastructure and services but also often from public spaces and public procurement contracts. This severely constrains their productivity. Power outages, water shortages, and unreliable infrastructure are bad for business. So is being harassed, fined, physically assaulted, or evicted from public spaces, as often happens. This, in turn, constrains output and earnings and makes the supply of goods and services less accessible, reliable, and affordable for everyone.

BOX 8 | Flooding causes sanitation, health, and financial challenges for Bengaluru's under-served neighborhoods

Many residents on the outskirts of **Bengaluru, India**, live in fear of the rainy season floods devastating their homes. Thulsimma, a 65-year-old woman whose family lives in a suburb of northwest Bengaluru, says, "Sometimes we cannot even sleep at night. We have to be very alert. . . . We protect whatever household items we can, but we can't remove everything when the rains suddenly come."

Because many low-income communities like Thulsimma's develop rapidly, often in low-lying, flood-prone areas, cities often fail to move quickly enough to provide adequate basic services such as water, electricity, sewer networks, and solid waste management, as well as the infrastructure needed to protect homes from natural disasters such as floods. Each year, Thulsimma and her family spend one to three months of their combined income repairing household flood damage. When the rains are very heavy, water backflow from nearby sewers inundates the *rajakluve*—a central drain connecting the neighborhood network of waterbodies and tanks. Pipes often get blocked by garbage and solid waste dumped into the drain, forcing residents to clean the drain themselves two to three times each year.

Bengaluru has invested more in piped water systems for peripheral neighborhoods in recent years, but the piped water supply is available only for four hours every other day and is stored in large drums. If this supply runs out, Thulsimma recruits help from her sons or neighbors to fetch water from the bore well at the top of a flight of stairs. This water is often "blackish, muddy, and has small worms and larvae in it," she says. As a result, Thulsimma's family prefers to buy bottled mineral water rather than using Tata Swach water filters, which must be replaced for US$7 to $9 every two months.

Figure B8.1 | Thulsimma's neighborhood in Bengaluru suffers from being in a low-lying, flood prone area and piped water is stored in large drums

Picture credit: Radha Chanchani, 2016.

Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

4.2 BETTER QUALITY OF LIFE FOR HOUSEHOLDS WITH CITYWIDE BENEFITS

Bridging the urban services divide will improve the quality of life in poor neighborhoods but can also improve prosperity, health, and well-being across whole cities. Inadequate sanitation harms even those who live in areas with better service. It can pollute drinking water, contaminate food, and unleash disease-spreading flies. Better sanitation also lifts productivity and incomes.[185]

Well-located, affordable housing near employment opportunities mitigates congestion, traffic hazards, and air pollution; benefits business; and helps attract investment and economic development. It also alleviates the pressure to locate housing on high-risk, environmentally fragile land. Makeshift housing precariously situated on hillsides or on or near dump sites regularly leads to landslide tragedies.

Improving transport for under-served populations also improves safety, reduces commute times, improves livelihoods, and protects the environment.[186] Low-income commuters can save upwards of 25 percent of their income with shorter commutes or more affordable options, and this does not account for lost wages due to time spent in long commutes.[187] Better transit options would save time and resources that are drained as millions of residents of sprawling cities sit in idling cars in ever-growing traffic jams. It could prevent disabilities and lives lost to traffic accidents, and it would reduce emissions from a growing vehicle fleet.

Figure 12 shows the difference across countries in the share of income spent on commuting by public transport from the periphery to the city center. Data are drawn from a sample of 200 cities and illustrate how residents in poor cities such as **Dhaka, Bangladesh**, spend an average of 29 percent of the median per capita income. In rich cities such as **Singapore**, commuters spend an average of only 3 percent of the median per capita income.[188]

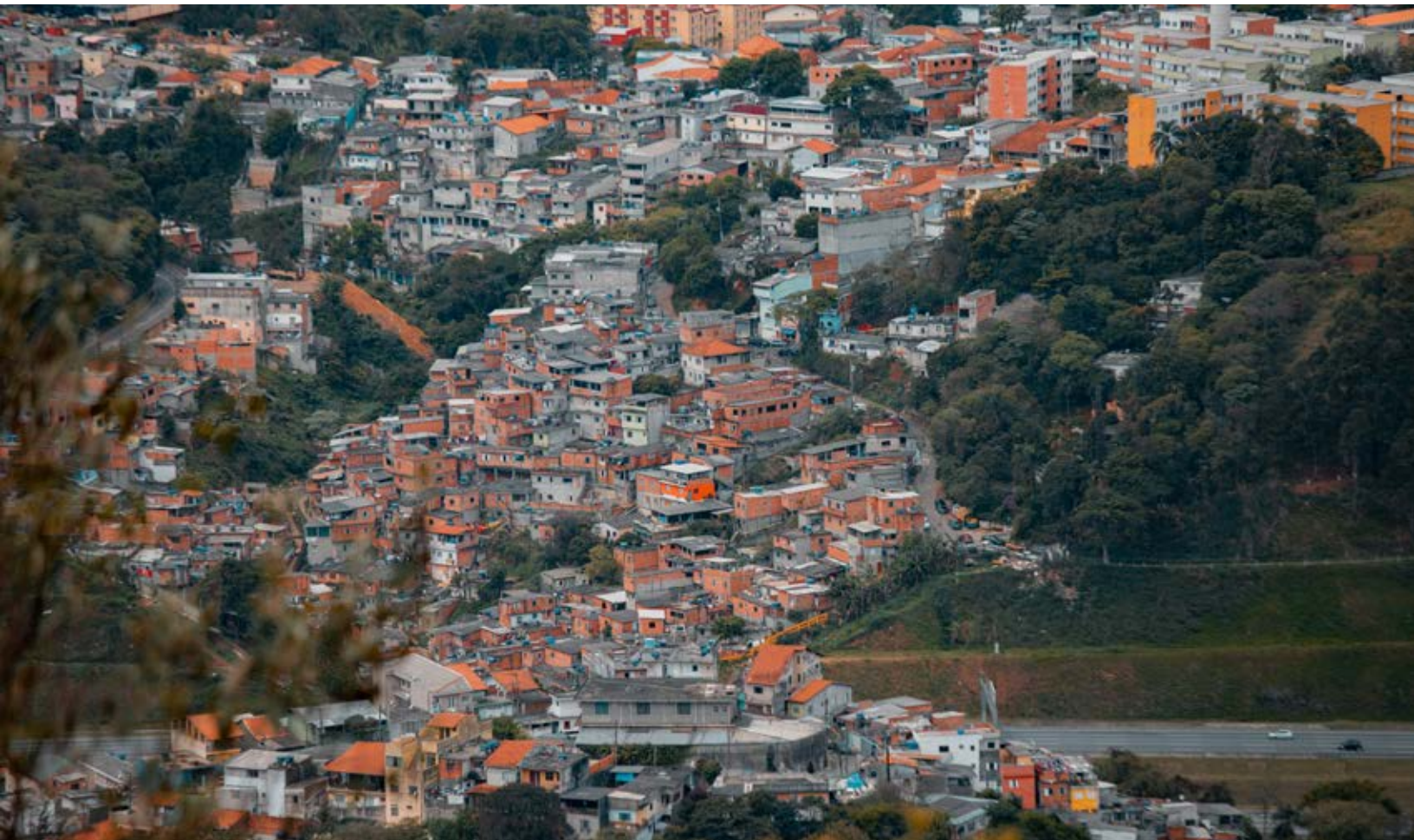
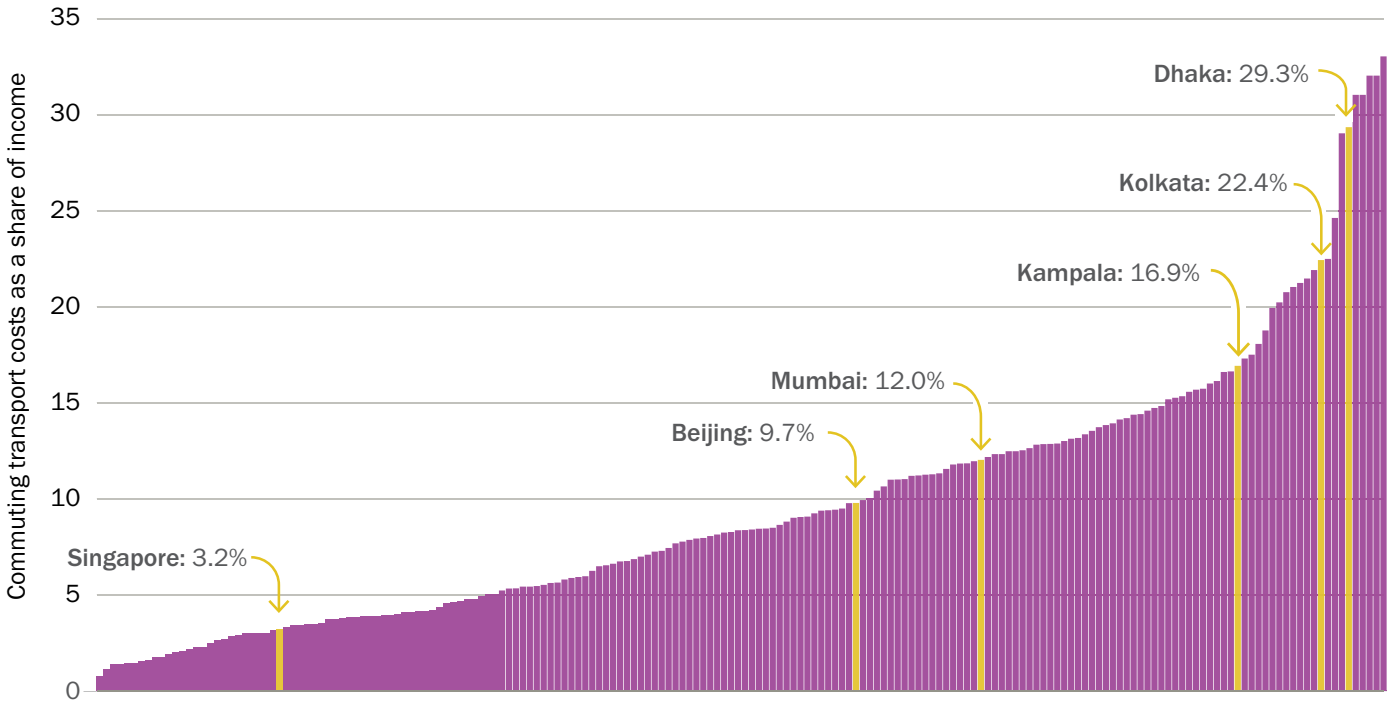


Figure 12 | **Residents of low-income cities spend high shares of their income on commuting**



Notes: Data are from a 200-city global sample with 192 cities reporting values. The data refer to trips from random points at the periphery of a city to the city center (or the central business district, based on the location of the city hall). We assume 60 trips per month on public transport and 7 round trips per week, which is the typical movement of the working poor (Carruthers et al., 2005). Average daily expenditure, expressed as a percentage of the median per capita income, is 10 percent. Beijing is at the average value, Dhaka's commuting costs are significantly higher, and Singapore has one of the lowest shares of income devoted to commuting. Compared to other developed cities, such as Hong Kong, London, and New York City, the average bus fare (S$0.63) and train fare (S$0.86) in Singapore are much lower on a nominal basis. The findings remain consistent after the average fares are adjusted using the purchasing power parity of the cities.

Source: Authors' analysis, based on the Land and Housing Survey in a Global Sample of Cities, New York University, Urban Expansion Program, 2016.

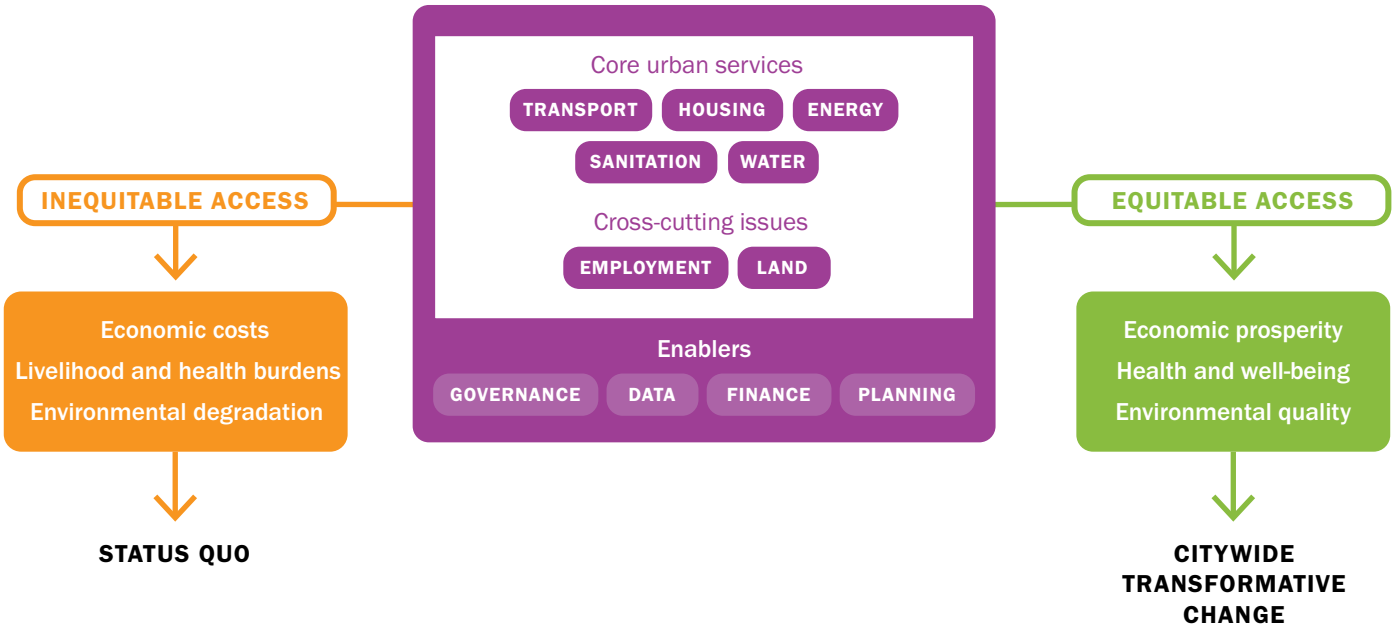
Improving access to clean energy has far-reaching benefits as well. Fewer power outages mean less disruption of work, leading to higher incomes and output in both formal and especially informal firms. Electricity consumption per capita is positively correlated with a city's per capita GDP.[189] Household air pollution from inefficient cooking practices and use of solid fuels causes nearly 4 million premature deaths worldwide every year.[190] Cleaner cooking could dramatically reduce indoor air pollution from fires burning coal, kerosene, wood, and other organic matter. These are a leading cause of lung and heart disease among women and children; close to half of deaths due to pneumonia among young children are caused by household air pollution. In low- and middle-income countries, WHO has found that 98 percent of cities with more than 100,000 inhabitants do not meet WHO's air quality guidelines.[191]

4.3 THE POTENTIAL FOR CITYWIDE TRANSFORMATIVE CHANGE

Initiatives that help bring core urban services to underserved groups can set processes in motion that can achieve transformative change—change that is durable, affects many sectors and institutions, improves life for a large swath of the population, and improves economic and environmental outcomes citywide (see Figure 13). We define *transformative change* as follows:

> **Change that enhances quality of life for a large segment of the population, affects multiple sectors and institutional practices, continues across political administrations, and is sustained for more than 10 years.**[192]

Figure 13 | **Equitable access to urban services can catalyze citywide transformative change**



Source: Authors.

Focusing on unmet needs in marginalized communities can build the momentum, coalitions, and mechanisms that make broad, durable, transformative change possible and put cities on the path to greater prosperity, sustainability, health, and well-being.

This approach has been adopted in cities around the world. In **Colombia**, for example, the city of **Medellín** began improving transport options for isolated hillside communities by building a cable car system. This helped create a coalition of political and private sector leaders interested in citywide change, fueling momentum in other sectors. It led to new schools, new public spaces, and changes to housing policy that legalized informal homes.

However, achieving transformative change is difficult. A city typically needs a strong coalition of leaders and advocates who share a vision and a long-term political commitment and also have the resources needed to take on an urgent problem and implement ambitious reforms. Setbacks and course corrections are common, and each city's path is unique, but we find that cities can learn from one another's successes and failures to help usher in their own transformations.

4.4 DIVING DEEPER INTO HOW TRANSFORMATIVE CHANGE OCCURS

This synthesis report draws on case studies and patterns that emerged from the *Towards a More Equal City* body of work. The authors distilled lessons from the long-term experiences of seven cities that initiated change in one or more sectors to ensure more equitable access (see Figure 14). Below are summaries and key lessons learned from each:

- **Ahmedabad, India**, introduced the Town Planning Scheme (TPS) to secure urban land for public purposes—specifically to provide services. The program succeeded in negotiating noncoercive land transfers from private landholders for public use. The city was able to obtain land for low-income housing, open spaces, streets, and utilities. The TPS enabled the city to avoid the haphazard, under-serviced expansion that characterizes so many other Indian cities. The program led to the construction of thousands of social housing units and the expansion of a well-planned road network that connects to India's largest bus rapid transit (BRT) system. The TPS is credited

Figure 14 | **A snapshot of *Towards a More Equal City* case studies—documenting how improving access to services for the under-served created pathways for citywide transformative change**

AHMEDABAD

Town Planning Scheme:
Innovative land management process and negotiations by the local authority ensured affordable housing in central locations and denser urban growth

GUADALAJARA

Via RecreActiva:
Civil society actors led a movement for car-free public space, acquired local power, and influenced long-term planning and investment decisions

JOHANNESBURG

Corridors of Freedom:
Transit-oriented development combated spatial inequality by aligning plans and policies across scales, but progress on affordable housing has been slow

KAMPALA

Fecal Sludge Management:
Pro-poor planning integrated informal service providers and improved access to sanitation, but projects suffered from short-term thinking

Figure 14 | **A snapshot of *Towards a More Equal City* case studies—documenting how improving access to services for the under-served created pathways for citywide transformative change (Cont.)**

PORTO ALEGRE

Participatory Budgeting:
Widely copied and well-structured process of participatory decision-making but not sustained due to lack of national-level support and funding

PUNE

Waste Pickers and Bus Rapid Transit:
Coalitions of civil society actors aligned with the local authority and supported by national policy drove change amid conflicting political agendas

SURABAYA

Kampung Shelter Upgrading:
Leadership collaborated with local university experts and supported a creative, flexible process of participatory upgrading

Source: Authors.

with increasing street density, reducing average trip lengths, and easing road congestion. It was also notable in the way that it accommodated informal settlements in the planning process.

- In **Guadalajara, Mexico**, the municipal government established Via RecreActiva, a *ciclovía* (bike path) connecting different parts of the city. In four of the metropolitan area's nine municipalities, more than 60 kilometers of major streets are closed to motor vehicle traffic every Sunday. Cyclists and pedestrians reclaim roads normally dominated by cars, making them broadly accessible as a public space. The idea came from a coalition of activists and civil society groups. They advocated for Via RecreActiva, and then they expanded their demands to include access to core infrastructure and services with reforms to allow more public participation in decision-making. The Via RecreActiva transformed the way public space is viewed and used in the city and made governance more inclusive. Though it has not reversed systematic inequality, it marked an important move towards prioritizing people over cars in Guadalajara, a trend that cities around the world are embracing.

- In **Johannesburg, South Africa**, in 2013, the city launched the Corridors of Freedom (COF), an effort to overcome the historic spatial inequality dating back to the apartheid period. COF sought to extend public transport networks to under-served areas and create transit-oriented development along these corridors, including affordable housing for the lower middle classes. The ultimate aim was to link these neighborhoods to better employment opportunities. The city expanded its BRT network to these areas, and the private sector is slowly starting to respond with new, affordable housing along these corridors. This effort was also notable for its success in aligning policy from the national to the local level.

- **Kampala, Uganda**, is a story of institutional reform and heroic efforts to increase sanitation service in a rapidly urbanizing environment, where the financial resources and local capacity to expand sewer service were nonexistent. The Kampala Capital City Authority and the National Water and Sewage Corporation overcame their historical differences and worked together. They reformed the institutional culture to adopt pro-poor policies, encourage innovation, and improve service delivery. These improvements grew partly out of the city's partnerships with nonprofits, community groups, and small business and partly out of its support for flexible, innovative approaches to delivering sanitation services. Between 2003 and 2015, the national utility expanded its sewer network only modestly but increased the amount of human waste it was treating more than 30-fold.

- **Porto Alegre, Brazil**, introduced participatory municipal budgeting and sustained this approach for nearly 30 years. The initiative built on the popularity of the workers' political party, which first gained political prominence at the municipal level, and later came to national power. Participatory budgeting was remarkable for its use of deliberative democracy principles at the local level to allocate municipal financial resources and for its annual reports on expenditures to strengthen accountability. Under-served communities would identify their urgent needs and propose these priorities for municipal funding. Participatory budgeting mobilized poor communities, improved access to small-scale infrastructure and services, and ultimately redefined what it means to be an urban citizen. This approach to budgeting became a model replicated around the world.

- The transformation in **Pune, India**, was built upon two sectors: public transport and solid waste management. It was led by a diverse coalition of civil society actors, supported by "open-minded" municipal officials, who were able to leverage supportive national policies. The sustainable transport efforts included India's first BRT

system and pro-pedestrian street design. Progress in the area of solid waste management centered around creatively integrating informal waste pickers into the city's solid waste management system. This enabled the city to provide door-to-door garbage collection and to segregate, process, and recycle waste. It also launched India's first fully self-owned waste pickers cooperative.

- In **Surabaya, Indonesia**, urban transformation grew out of a progressive vision and approach towards the *kampung*, a local term for informal settlers, the urban poor, and self-built housing and communities. The Surabaya approach represents transformative change because it defies the conventional approach that some governments have taken—that is, to make cities "slum free" by destroying informal settlements and forcibly relocating their residents to the peripheral areas. The approach is participatory and incremental, and it has been sustained over decades. It has allowed poor city dwellers to live in affordable, well-situated housing; preserved a traditional Indonesian urban form; and stabilized the livelihoods and social networks that underpin these communities.

We selected cities from different regions of the global South that had begun transformative interventions in different sectors to close the urban services divide, consulting with experts and practitioners to understand how they did it.[193] We looked at the opportunities they seized and the constraints they faced in delivering core services more equitably, the roles played by key actors, and the factors that triggered, enabled, and inhibited change over time. We found that transformative change is neither an outcome nor an end state. Instead, it is a dynamic process that requires a constant, sustained, collective effort. It requires the continuous commitment of political leaders working together with coalitions of diverse stakeholders.

When analyzing strategies and conditions that enable transformative change, key patterns emerge. They include effective governance, access to financing, land management, better data, policies inclusive of informality, coordination, and a shared vision (see Table 1, which maps the cases studies to several key issues, a step towards arriving at the transformations presented below).

Governance—in different ways—plays a central role in every single case. This includes changes in laws and administrative procedures, strong leadership that forges a powerful vision and facilitates coalitions, and alignment between and across different levels of government.

Access to finance is another common theme, with enablers ranging from improved (and wiser use of) access to increased finance, well-structured subsidies, and innovative combinations of instruments.

In several cases, land management—with the right data on land records—was crucial to shaping spatial patterns of development to minimize sprawl and incursion into sensitive environmental areas or vital farmlands while ensuring services as the city expands.

Informality emerges as something to be embraced, although not glamorized. Informally provided services should be seen as a vital part of the city; they provide key services to areas under-serviced by formal systems until improved citywide infrastructure systems can reach them. Policies that support informality can sustain livelihoods, encourage innovative approaches, and support much-needed services.

But even when cities do practically everything right, transformative change can be stalled, thrown into reverse, even derailed by forces beyond its control. A major threat to progress is a change in political leadership. New administrations often like to change course or rebrand policies to claim credit for them. In **Johannesburg**, **Porto Alegre**, and **Pune**, subsequent political leaders turned away from the visions and programs that had held out the promise of transformative change. For example, progress on Johannesburg's transit-oriented development corridors stalled, with investments delayed or canceled, when new political leaders decided to modify and rebrand it. Participatory budgeting (PB) in Porto Alegre suffered a similar fate. It arose when the Workers Party won power and was designed to align with the party's democratic socialist ideas. It lasted for almost three decades but, over time, national funding for PB waned and political change at both national and local levels led to its suspension in 2018, with less progressive and inclusive fiscal priorities. Coordination can be a challenge, too, especially when a large portion of the funding for major urban infrastructure projects comes from a patchwork of external grants and donor agencies without a longer-term, citywide plan, as seen in **Kampala, Uganda**, and Pune.[194]

4.5 FROM VICIOUS TO VIRTUOUS CYCLES

So far, this report has explained the urgent problems gripping fast-growing cities in low- and middle-income countries around the world, why these trends are accelerating, and why they must be tackled now. It has demonstrated how deepening poverty and inequality, stunted economic development, environmental degradation, and a worsening quality of life directly link to gaping inequities in access to core urban services, such as good-quality housing, water, sanitation, transport, and energy. These burdens weigh most heavily on the poor and excluded, but they harm everyone. Although closing this services gap is difficult, it can generate a multitude of benefits and broader outcomes that help cities meet the SDGs and goals of the Paris Agreement.

Table 1 | **Key factors enabling transformative change across *Towards a More Equal City* case studies**

CASE STUDY	EFFECTIVE GOVERNANCE	ACCESS TO FINANCE	LAND MANAGEMENT	BETTER DATA	POLICIES INCLUSIVE OF INFORMALITY
Ahmedabad	X	X	X	X	
Guadalajara	X		X		
Johannesburg	X	X	X	X	X
Kampala	X			X	X
Medellín	X	X			
Porto Alegre	X	X		X	
Pune	X	X			X
Surabaya	X	X	X	X	X
Surat	X	X		X	

Note: The table shows the key factors identified across the seven stand-alone *Towards a More Equal City* case studies of transformative change and two additional short case studies in the *Towards a More Equal City* framing paper by Beard et al. (2016). The rest of the findings in this report are based on both the case studies and the thematic papers, and they build on these factors.

Source: Authors.

Part I of this synthesis report highlighted the daunting challenges in today's growing cities of the global South, and Part II proposed a new approach for transformative change—an approach centered on closing the urban services divide and harnessing the cascading benefits from doing so. Change is possible, and many cities around the world are already innovating, as the next part of this report will demonstrate. Our unique focus on the services gap in cities offers both an explanation for many of their troubles and a way to escape them. The seven case studies our research analyzed demonstrate how cities can make progress in extending infrastructure and services to populations that have been excluded. They show how, under the right conditions, this can snowball. The knowledge, hope, coalitions, mechanisms, and political momentum marshalled to tackle inequality in one sector can unleash positive change on other fronts. With nations around the world focusing on economic recovery after the pandemic, the next part of this report focuses on an action agenda that can be embraced to emerge from this crisis stronger and build resilience to future crises.

Part III of this synthesis report delves more deeply into how cities can create the conditions necessary to bend their trajectories. These "transformations" build on the key patterns that emerged from our case studies. Evidence shows that prioritizing these transformations can arrest vicious cycles and begin virtuous ones, begin to solve what have been intractable problems, and open up a path to a more humane, just, prosperous, and sustainable future.

Part III

Seven Transformations for More Equal, Prosperous, and Sustainable Cities


106

Chapter 5.
A New Approach Highlighting Seven Cross-Sectoral Transformations

Cities have made progress by transforming practices related to urban infrastructure design and delivery, service provision, data collection, employment, finance, land management, and governance.

This synthesis report shows how cities can halt the downward spiral created by the urban services divide and the burdens it imposes. Through numerous examples, it highlights seven transformations to alter current trajectories and galvanize action to achieve more equal, prosperous, and sustainable cities. Making these transformations can narrow inequities, improve access to services, and yield cascading benefits that reach across sectors and institutions, improving life for a broad swath of the population.

Many cities have demonstrated new solutions and innovative approaches, as we have documented in this report, but although organizations and governments are piloting ideas and trying new approaches in fits and starts—in one sector, one neighborhood—the size of the problem and the momentum behind traditional ways of doing things have been daunting. Five years of research on multiple urban sectors, case study analysis, and stakeholder consultations have resulted in essential lessons about what it takes to reach transformative change. By pulling together lessons learned from cities that have made progress on narrowing the urban services divide and initiated transformative change, we identified seven essential shifts, or "transformations" as we call them (see Figure 15). These are as follows:

- **Transformation 1: Infrastructure Design and Delivery**—Prioritizing the Vulnerable
- **Transformation 2: Service Provision Models**—Partnering with Alternative Service Providers
- **Transformation 3: Data Collection Practices**—Improving Local Data through Community Engagement
- **Transformation 4: Informal Urban Employment**—Recognizing and Supporting Informal Workers
- **Transformation 5: Financing and Subsidies**—Increasing Investment and Targeting Funds Innovatively
- **Transformation 6: Urban Land Management**—Promoting Transparency and Integrated Spatial Planning
- **Transformation 7: Governance and Institutions**—Creating Diverse Coalitions and Alignment

The knowledge, insights, and guidance they offer are transferable, even though every city's story—the set of social, economic, and political constraints and opportunities it confronts—is unique. These lessons distilled through our work are broad enough to be adapted to different local contexts and needs. Depending on their level of development and capacity, cities may start with any of these. These transformations are not mutually exclusive, and in the discussion we identify some of the links between them, but each on its own represents a significant shift in mindsets and practice.

The seven transformations highlighted in Figure 15 are discussed in detail in the following sections with examples of how cities have brought them to fruition. The transformations aim to reimagine service provision, include the excluded, and enable change for more equal, prosperous, and sustainable cities.

Figure 15 | **Seven transformations can achieve more equal, prosperous, and sustainable cities**

Reimagine Service Provision

Infrastructure Design and Delivery

Prioritizing the Vulnerable

Service Provision Models

Partnering with Alternative Service Providers

Include the Excluded

Data Collection Practices

Improving Local Data through Community Engagement

Informal Urban Employment

Recognizing and Supporting Informal Workers

Enable Change

Financing and Subsidies

Increasing Investment and Targeting Funds Innovatively

Urban Land Management

Promoting Transparency and Integrated Spatial Planning

Governance and Institutions

Creating Diverse Coalitions and Alignment

Source: Authors.

5.1 THE BIG IDEAS UNDERPINNING THE TRANSFORMATIONS

The seven transformations fall under three overarching ideas:

1. **Reimagine service provision.** This involves transforming the **design and delivery of infrastructure and services** to prioritize under-served populations, address backlogs, minimize carbon lock-in, and anticipate future risks. Recognizing that large numbers of people access informal housing, water, sanitation, energy, and transport through alternative providers, cities in the global South must transform their **urban service provision models** by partnering with small, informal, and semiformalized service providers, at least in the short and medium term. These providers fill a key gap in parts of the city plagued by spatial inequalities in access to urban services and opportunities. They also serve low-income people who cannot afford urban services offered by the market or the public sector.

2. **Include the excluded.** This requires examining the impact of the urban services divide on under-served and vulnerable groups in the city and taking actions to ameliorate it. This can only be achieved by improving local data and transforming **data collection practices** to better engage impacted communities. Credible and open local data now becoming available demonstrably improves the diagnosis of challenges, policies to solve them, and the accountability of decision-makers. Including the excluded also requires recognizing and assessing the vastly underestimated contribution of informal workers to urban and national economies. They represent over half the urban workforce in the global South, and they are among those most vulnerable because their livelihoods and productivity directly depend on their access to urban services and opportunities. Transforming **employment practices** to **support informal workers** and improve their working conditions is in the best economic interest of cities.

3. **Enable change.** This requires preparing the ground for transformative change through solutions related to financing, planning, and governance. Financing must be transformed so that higher and better-targeted **financial investment** can get money where it is needed most while inviting participation from local communities who are best aware of the needs on the ground. **Urban land management practices** must be transformed so that land markets are more transparent and spatial planning is integrated with delivery of services, goal driven, and coordinated between regional, local, and neighborhood scales. Last but not least, to sustain change, **governance and institutions** must be transformed to create new coalitions for change, including public sector actors, civil society, and other local groups, supported by well-aligned policies at different levels of government.

Clustered under these three overarching ideas, readers can find each of the transformations explained in detail in the following chapters 6–12. Under each transformation, we first describe the current bottlenecks that exist today, discussing what must change and why. Next, we describe the corresponding priority actions that can help unclog one or more of these bottlenecks. We discuss how cities around the world have seen significant breakthroughs despite difficult circumstances when implementing these actions. The examples demonstrate that while challenges are daunting, progress is possible and there are concrete lessons that can be drawn from experiences elsewhere. For each transformation, we further elaborate the steps that different actors active in urban areas can take to implement and make these transformations a reality.

TRANSFORMATION 1

Chapter 6. Infrastructure Design and Delivery—Prioritizing the Vulnerable

Municipal infrastructure must be designed and delivered to prioritize neglected populations, address backlogs, minimize carbon lock-in, and anticipate future risks. Public infrastructure for housing, water, sanitation, transport, and energy has long fallen short of meeting the needs of the majority of urban populations in the struggling and emerging cities of the global South. Cities have a huge opportunity to build this infrastructure differently to not only improve the quality of life for the most vulnerable but also respond to threats that are exacerbating inequalities, such as climate change.

Status Quo	Priority Actions	Desired Outcome
Gaps in municipal service provision, at-risk infrastructure	• Design, improve, and maintain municipal infrastructure to ensure access to services for the under-served • Develop well-serviced, affordable housing in accessible locations • Adopt a new trajectory with low-carbon and climate-resilient infrastructure	**Equitable access to services, resilient infrastructure**

6.1 WHAT MUST CHANGE AND WHY

Infrastructure design and service delivery fall short, leaving many under-served

Urban infrastructure design and development have long ignored the stark reality that unprecedented numbers of people are crowding into informal settlements devoid of basic services or moving to the disconnected urban periphery. This has trapped many urban dwellers in places where their most fundamental needs are not being met. Coverage is inadequate, service is often poor and costs prohibitively high, and investments are skewed to benefit more well-off populations. Without purposeful change, the fast-growing cities of the global South will find it increasingly difficult to escape this trajectory. They risk continuing to expand in ways that embed poverty and inequality and harm all residents' quality of life.

The gulf between what is needed and what typically happens stretches across all sectors. In transport, the majority of urban residents in the global South rely on walking, cycling, and public and informal transport; yet practically everywhere, transport infrastructure, plans, and policies have favored private vehicle users.[195] Upwards of 95 percent of road space is typically allocated to cars and trucks (including on-street parking).[196] More and more private vehicles are clogging streets—with few, if any, controls—and disproportionate investment in constructing additional roads and highways serves the needs of the vehicle-owning classes, not the poor.[197] As a result, formal public transport is deficient or nonexistent, and planning often excludes or neglects the needs of pedestrians and cyclists.

Similarly, making electricity available, reliable, and affordable remains a vexing and overlooked urban problem in much of the global South. In recent years, millions of people have gained access to electricity; yet in low-income countries, the average levels of access to electricity in urban areas hovered around 70 percent in 2018. Less than half the urban population in countries such as **Sierra Leone**, **Chad**, **Liberia**, and **Niger** had access.[198] National-level data on energy access masks much worse conditions in individual cities and the fact that infrastructure is inefficient and electricity supply is often unreliable. Power outages are common, occurring as often as 25 times per month in South Asian cities and every day in African cities.[199] Outages burden informal enterprises and settlements the most. Unreliable electricity supplies force businesses and critical facilities with grid connections, such as hospitals and schools, to use dirty and expensive diesel generators to supplement their power. Likewise, billions of people around the world continue to cook with polluting solid fuels.[200]

Levels of access to piped city water and sewer systems vary widely across regions of the global South. Primary surveys conducted for the *Towards a More Equal City* series in 15 cities found that, on average, 58 percent of households had access to piped water citywide, and 46 percent had access to public sewer systems. These access levels fall dramatically to about half the citywide average in an informal settlement in the same cities.[201] In the 15 cities studied, almost two-thirds of sewage and human waste are unsafely managed. This problem is most acute in South Asia and Sub-Saharan Africa.[202] Even where safer sanitation infrastructure exists in these regions, the up-front costs of installing or connecting to it are often unaffordable for many households.

In some cases, privatizing these public goods in an effort to attract investment and shore up failing infrastructure has made matters worse. It has led to institutional structures, plans, and policies that routinely leave low-income households behind with no consideration of what they can actually afford to pay (further discussed in Transformation 5). For instance, alternative informal or private water services cost 18 times more in **Cebu, Philippines**, and 13 times more

Primary surveys conducted for the Towards a More Equal City series in 15 cities found that, on average, 58 percent of households had access to piped water citywide, and 46 percent had access to public sewer systems. These access levels fall dramatically to about half the citywide average in an informal settlement in the same cities.

in **Maputo, Mozambique**, than publicly provided water, and safely emptying a pit latrine in **Kampala** can cost as much as 8 percent of an average household's income, incentivizing many to dump directly into drainage channels or rivers instead. Market-based approaches often allow private companies to decide which neighborhoods to serve and which are too risky to recover costs. This explains why they rarely cover low-income areas and informal settlements.

Another reason for exclusionary water and sanitation policies is the legacy of colonialism. This is particularly acute in African cities, where transport, water, and sanitation systems that exist today were introduced during colonial regimes. Coverage was limited to majority-white neighborhoods and excluded the large majority of Africans in surrounding neighborhoods.[203] For example, in cities such as **Johannesburg**, racial inequities in municipal water and sanitation service charges, financing, and levels of investments are well documented.[204]

In some cases, the lack of coverage is intentional. Manipulating essential services such as water for temporary, short-term political gain is common in cities across Africa and South Asia.[205] In one case, parliament members seeking votes in an informal settlement in **Cairo, Egypt** promised to provide residents with running water. After the election, the city did install water lines, but it failed to ensure that water ran into them, leaving residents in a limbo of having formal access but without available water.[206] Politicians also fear that extending services to neighborhoods without tenure security would bolster claims that tenants have a right to be on the land. Often urban residents in informal settlements have no formal proof that they own their property. Thus, utilities deny them basic services as well, compounding their woes. For instance, **Addis Ababa, Ethiopia**, received a large loan from the World Bank to expand its sewer network, yet the utility would only extend sewer lines to households with documents proving land tenure, such as ownership or lease agreements. With almost half the city being tenure insecure, most households were left unsafely disposing of human waste instead.[207]

The affordable housing gap is growing

By 2025, the affordable housing gap will affect 1.6 billion people.[208] The rising number of people who lack adequate, secure, and affordable shelter demonstrates that existing housing and past policies have been insufficient. As informal settlements have proliferated, cities have often implemented harmful policy approaches, such as slum clearing or relocation to isolated areas. Cities have historically tried to become "slum free" by pushing out slum dwellers and obliterating their communities. Government policies towards informal settlements have evolved over time, and some have ended this practice.

Cities, however, still show a strong bias towards supply-driven, large-scale housing development that caters to higher-income populations. It is clear that this does not work.[209] It has failed to provide the quantity and quality of housing needed to adequately shelter and service low-income residents. The application procedures for housing often exclude the poorest, who do not meet income requirements, lack required documentation, or may be the wrong gender to qualify.[210] Many countries have national policies and subsidies that continue to incentivize mass private sector housing development. Examples include **Angola**'s My Dream, My Home program; **Brazil**'s My House, My Life (Minha Casa, Minha Vida); and **Ethiopia**'s Integrated Housing Development Program.

Even incentives for building affordable housing can misfire, especially if they focus on the price of land and housing, not on the cost—both personal and economic—of commuting long distances to work. Subsidies for housing construction in **South Africa** and **Chile** spurred public housing construction in the periphery of cities such as **Johannesburg** and **Santiago**, but they discouraged building closer in because they did not cover the expenses of building at higher densities.[211] In cities such as **Cape Town**, South Africa, and **Mexico City**, formally built, government-subsidized housing in distant, unserviced locations has created higher costs for households. Ambitious quantitative targets for social housing that are insensitive to location have been an important driver of unserviced urban expansion and have created a mismatch between where houses are built, where people want to live, and where services are available.

Governments have also overemphasized homeownership, which is simply not an option for the very poor or those who cannot qualify for mortgages or subsidies and lack access to credit.[212] Subsidies benefit people with regular, documented incomes, not the under-served or those who work in informal markets. The overemphasis on ownership also causes other policies to go unconsidered, ones that might promote more housing at all price levels that better meets the needs of

the poor.[213] People who cannot afford a home or need more flexible housing should have other options, but rental housing is often scarce, especially in the formal housing market, which tends to focus on individual private homes for the highest income brackets.[214]

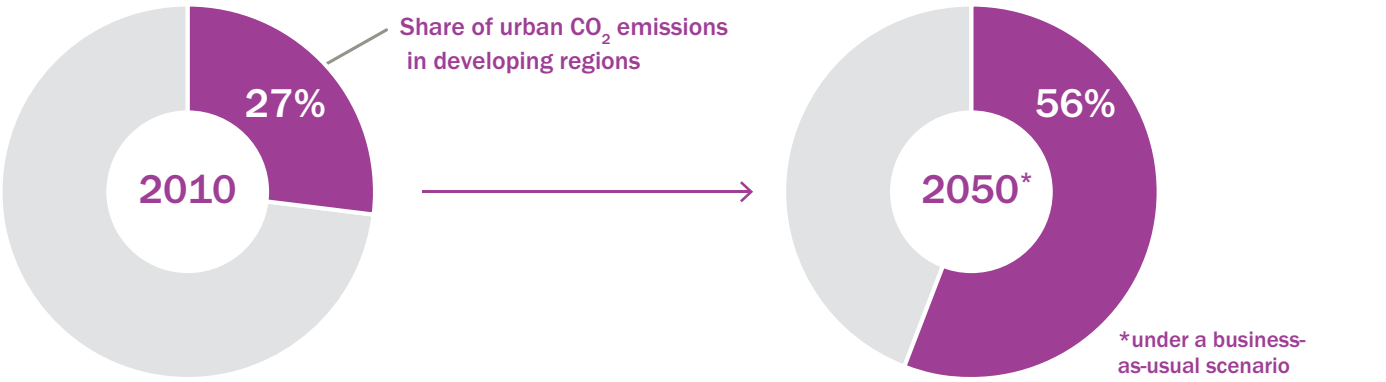
Although lawmakers in some countries voice support for the right to adequate housing, governments lack the resources, capacity, or political will to meet this glaring need. The problem can be especially severe for ethnic minorities, women, or those without a legal address. Women in many countries face severe discrimination and high barriers when it comes to access to housing and property rights. Laws may bar them from acquiring and owning a house, plot, or flat, and/or getting a loan to build, extend, or improve their housing. Their rights are often inextricably linked to male family members and marital status. All of these barriers rob poor and marginalized people of the chance to live in decent housing near jobs and other opportunities.

Carbon lock-in and vulnerabilities to climate hazards have reached dangerous levels

Global energy use is expected to shoot up by roughly 50 percent by 2050.[215] The vast majority of this new demand will come from rapidly urbanizing countries, especially in Asia. Urban areas are already responsible for the majority of global final energy use and the associated GHG emissions. For now, GHG emissions from cities in the global South remain far lower than in the global North, but in terms of absolute emissions, the picture is rapidly changing. In 2010, China and developing Africa, Asia, India, and Latin America contributed to about one-quarter of total urban CO_2 emissions from the core sectors of buildings, transport, and waste disposal.[216] In a business-as-usual scenario, their share of these emissions would more than double to about 56 percent by 2050 (see Figure 16). Business as usual would be catastrophic for human health, the environment, and the planet. For today's rapidly urbanizing nations, following the global North's fossil fuel–intensive model of development is not tenable. The risks this would pose are too great (see Chapter 2). Because the life cycle of built infrastructure spans decades, national and local governments must make decisions *now* about how to build the infrastructure they need without locking in inefficient, carbon-intensive urban development.

Climate change will put people and urban infrastructure in greater jeopardy, and today's development patterns are making rapidly growing cities more and more vulnerable. Often decision-makers are turning a blind eye.[217] The dangers loom larger every year. Poorly constructed shelters succumb to heat stress. Droughts deplete drinking water. Floods and sea level rise engulf low-lying areas crowded with informal settlements. Recent research shows that a 2°C increase in global temperature in 2050 will expose 2.7 billion people,

Figure 16 | **Steep increase expected in CO_2 emissions in developing regions will drive pollution, energy insecurity, and climate risks**



Note: CO_2 = carbon dioxide.

Source: Westphal et al. (2017), based on Erickson and Tempest (2014).

or 29 percent of the global population, to moderate or high climate-related risks, with 91 to 98 percent of the exposed and vulnerable population living in Asia and Africa.[218]

Sea level rise and storm surges alone could cost coastal cities $1 trillion each year by midcentury, affecting more than 800 million people.[219] The hardest hit will be populations with little or no access to core urban services, secure jobs, emergency reserves, or credit.[220] Migrants and people without tenure security, who are crowded into risk-prone informal settlements, may be especially vulnerable. These impacts not only threaten physical infrastructure and people's livelihoods but also the social networks that foster resilience and quality of life, especially for those living in poverty.

Failing to address backlogs, meet current needs, and plan for looming challenges will have grave consequences. City decision-makers will need to prioritize solutions that can both address the backlog and safeguard infrastructure, especially for the urban under-served.

6.2 PRIORITY ACTIONS

A. Design, improve, and maintain municipal infrastructure to ensure access to services for the under-served

Targeting improvements in quality, coverage, and affordability of municipal services to meet the needs of the under-served can act as a positive multiplier, catalyzing broader changes and cascading benefits.

Our research on each urban sector highlights a number of infrastructure design and delivery recommendations that can bridge the urban services divide. These are discussed below.

In pursuing sectoral priorities, cities that work across sectors in an integrated manner can do more with scarce resources, avoid costly mistakes, and harness synergies across different sectors to deliver services in a more efficient, inclusive way.[221] Cross-sectoral collaboration across agencies and integrated planning can help generate the cascading benefits we described earlier. (This is discussed further under Transformation 7.) For instance, investing in improved sanitation services for the under-served can result in citywide improvements in water quality. Planning housing or public transit in a way that reduces commute times for low-income residents can improve productivity, health and safety, and business opportunities. Building on a solid set of sectoral priorities while reaching across silos to address related challenges has helped cities do more with less resources.

Transport

Cities can design safe streets that put the needs of those who walk, cycle, and use public transport before the needs of private vehicles. In **São Paulo**, when streets were redesigned citywide to accommodate heavy pedestrian traffic and cycling around major intersections, traffic fatalities dropped by almost 32 percent and injuries from crashes fell by 33 percent in just two years (between 2014 and 2016).[222] Cities can also develop an integrated network of multimodal transport services with public transport as the backbone. **Medellín** showed how investing in multimodal public transport services, including cable cars, can tame congestion and connect poor, peripheral, or hillside communities with jobs in the city center. This cut one-way commute times by as much as three-quarters. For some, commutes fell from two hours to just 30 minutes.[223] Similarly, in **Bolivia**, public cable cars reduced travel time between **La Paz** and **El Alto** by 22 percent.[224] For these efforts to bear fruit, cities must manage the demand for private vehicles. Latin American cities, including **Bogotá, Colombia**; **Mexico City**; and São Paulo, have discouraged private vehicles and incentivized switching to public, shared, and active transport. A wider selection of examples can be found in the thematic paper on urban mobility.[225] Figure 17 highlights interventions in the transport sector that can increase access to jobs and other opportunities for the under-served while increasing productivity and reducing emissions citywide.

Figure 17 | **Priority actions for the transport sector**

TRANSPORT

1. Build complete and safe street networks
- Complete street networks to improve accessibility for all in the city
- Democratize streets by prioritizing road space for modes used by the majority – walking, cycling and public transport
- Improve safety and security for pedestrians and cyclists

2. Develop an ecosystem of integrated, user-oriented transport services
- Connect existing services into an integrated multimodal network
- Prioritize investment in affordable public transport to improve citywide access for the under-served
- Proactively upgrade and integrate informal operators
- Harness technology to improve productivity and the user experience

3. Manage the demand for private vehicle use
- Discourage private vehicle use in dense city cores
- Price car use and parking
- Promote shared mobility solutions
- Ensure new development is well connected to economic opportunities by public transit

For more info, see the thematic paper: From Mobility to Access for All: Expanding Urban Transportation Choices in the Global South.

Source: Venter et al., 2019.

In São Paulo, when streets were redesigned citywide to accommodate heavy pedestrian traffic and cycling around major intersections, traffic fatalities dropped by almost 32 percent and injuries from crashes fell by 33 percent in just two years.

Energy

Cities can accelerate the shift to cleaner cooking through the use of modern cooking fuels, such as liquefied petroleum gas (LPG), electricity, biogas, and ethanol. This could save over 550,000 lives lost due to indoor air pollution in urban areas and dramatically improve the health of the urban poor.[226] Cities can also scale up distributed renewable energy solutions such as solar photovoltaic (PV) systems to improve energy access while transitioning to a cleaner future. In 2015 the city of **Cape Town** introduced a net-metering scheme that allows residents and businesses to install rooftop solar PV systems to save power and sell any surplus energy they generate to the municipal grid system.[227] The cities of **Bengaluru** and **Delhi** in **India** have done the same to encourage the adoption of solar PV since 2014.[228]

Options that support the under-served to access solar power include flexible pay-as-you-go (PAYG) models, which alleviate high up-front costs, and community-shared solar, which is a business model that allows people to pool their resources and jointly purchase PV systems. These promising approaches are also key for providing more reliable power to home-based enterprises in informal settlements. As such, affordable and reliable solutions for clean energy access will not only curb air pollution and carbon emissions but also increase opportunities and productivity. Lastly, cities can develop and enforce building codes and appliance standards to increase energy efficiency and help reduce energy costs significantly for the under-served. This brings the additional benefits of improved comfort, health, and resilience to heat waves and other climate impacts. The thematic paper on urban energy access includes numerous examples of these strategies.[229] Figure 18 highlights actions in the energy sector to ensure access to affordable, reliable, and clean energy for the under-served while generating cost savings, health benefits, higher productivity, and reduced emissions.

Water and Sanitation

Cities can improve access to good-quality water and sanitation by eventually extending the formal piped water and sewer networks to serve all residents. Many scholars agree that in the long term, the most equitable solution is universal provision, overseen by the state.[230] In the meantime, cities can use safe technical solutions for intermittent water supply and on-site sanitation in water-insecure areas, which are discussed in detail in the thematic papers on water and sanitation.[231] They should prioritize the affordability of good-quality urban water access and safely managed sanitation services for low-income households, for which strategies such as targeted subsidies and flexible payment arrangements have been used. Our research in 15 cities showed that piped utility water was the most affordable option for low-income residents in cities. The cheaper alternatives—obtaining "free" water from often polluted natural sources and illegally dumping human waste—endanger public health. When considering network extensions, city decision-makers should prioritize the most under-served, water-insecure communities.

Figure 18 | **Priority actions for the energy sector**

ENERGY

1. Accelerate shift to cleaner cooking
- Move away from solid fuels to cleaner LPG, electricity, biogas, and ethanol to reduce indoor pollution
- Promote the use of low-emission and efficient cookstoves for solid fuels

2. Scale up renewable energy
- Encourage the use of distributed renewable energy such as solar PV, providing affordable, reliable clean energy access to the under-served.

3. Increase energy efficiency of buildings and appliances
- Develop and enforce energy-efficient building codes and appliance standards to save energy costs and reduce citywide emissions

For more info, see the thematic paper: Powering Cities in the Global South: How Energy Access for All Benefits the Economy and the Environment.

Note: LPG = liquefied petroleum gas; PV = photovoltaic.

Source: Westphal et al., 2017.

Colombo has done this. Pro-poor policy commitments made during the 1970s fueled the creation of the Samurdhi Program, which designates and targets improvements to under-served settlements. Today, although almost half of Colombo is made up of informal settlements, 98 percent of the city has access to piped water.[232] Therefore, rather than collecting water from public taps, more households are getting water piped into their homes, improving health and saving time. Upgrading informal settlements in place—when it is safe to do so—is a key way to improve water and sanitation services.

Local conditions can make extending the public water and sewer networks everywhere a challenge. Existing policies that exclude informal settlements and tenants may limit what utilities can do. Settlements clustered on hillsides or lowland areas with high water tables can make installing underground pipes or septic tanks difficult or unrealistic. Thus, some neighborhoods in cities in the global South will need off-grid alternative or complementary solutions (discussed in Transformation 2). Interventions in all sectors must be driven by the goal of increasing access to good-quality services and affordability for low-income households. A wider selection of examples can be found in the thematic papers on water and sanitation.[233] Figures 19 and 20 highlight interventions to improve access to good-quality, affordable urban water and sanitation services for the under-served, with significant economic, environmental, and health benefits at the household and city level.

Figure 19 | **Priority actions for the water sector**

WATER

1. Extend formal piped water network to improve access
- Universal access to piped water connections to the home or plot
- In the short and medium term, provide water standpipes and kiosks located close to homes for those who do not have access to piped water

2. Address context-specific causes of intermittent water service
- Universal use of water meters
- Improve billing systems
- Use technology to detect leaks
- Improve regular infrastructure maintenance to reduce leaks

3. Pursue diverse strategies to make water affordable, with special consideration for low-income consumers
- Affordable, water connections
- Strategies to make monthly water service affordable (including subsidized water, cross-subsidies, "free basic water," incremental block tariffs, and spatially targeted subsidies)
- Promote flexible payment arrangements for water and water connections

4. Support informal settlement upgrading to improve water access to the urban under-served
- Citywide participatory, in situ, informal settlement upgrading as a means to improve water access and quality of service

For more info, see the thematic paper: Unaffordable and Undrinkable: Rethinking Urban Water Access.

Source: Habtemariam et al., 2021; Mitlin et al., 2019.

Upgrading informal settlements in place—when it is safe to do so—is a key way to improve water and sanitation services.

Figure 20 | **Priority actions for the sanitation sector**

SANITATION

1. Extend the sewer and simplified sewer networks to household, communal, and public toilets
- Sewers and simplified sewers bring safe sanitation into densely populated urban areas and where residents live in multistoried buildings
- Sewers reduce individual and household responsibility and costs for sanitation
- Sewer systems need investment for construction and maintenance, and daily water supply to function well

2. In the absence of sewer systems, support and regulate on-site sanitation
- Shift the cost, responsibility, and associated risk for on-site sanitation systems away from households and private providers to the public sector
- Build capacity to regulate and enforce safe fecal sludge management at every step along the sanitation service chain

3. Take a citywide approach to upgrading informal settlements and include access to sanitation services
- Upgrading informal settlements should address sanitation needs
- Coordinate between citywide sanitation initiatives and locally determined sanitation practices
- Cities, community organizations, NGOs, and federations should work together to improve sanitation access, particularly for low-income households

4. Make sanitation services affordable for low-income households
- Subsidize household capital costs of sanitation facilities and provide affordable communal toilet blocks and public toilets
- Subsidize the cost of household sewer connections and connections to communal and public toilets
- Subsidize the costs of safe on-site sanitation management
- Ensure water is affordable for households

For more info, see the thematic paper: Untreated and Unsafe: Solving the Urban Sanitation Crisis in the Global South.

Notes: NGO = nongovernmental organization; Simplified sewer is a network or a line of sewers that is constructed using smaller pipes, at a shallower depth, and sometimes at a flatter gradient than conventional sewers.

Source: Satterthwaite et al., 2019.

B. Develop well-serviced, affordable housing in accessible locations

Good-quality, well-serviced housing near employment is key to connecting workers to jobs, attracting investment, and stimulating economic development. A home is the physical space where most of these services come together.

Cities can improve housing options for under-served urban dwellers by upgrading informal settlements. Evidence shows that in situ upgrading is preferable to relocation, except when people need to move for their own safety or to serve an overwhelming public need.[234] Upgrading housing in partnership with slum communities helps city leaders harness the typically untapped skills and experiences of these communities, increasing economic productivity, quality of life, and political agency. Adequate measures should be taken to ensure that beneficiaries are neither displaced nor priced out by gentrification.

Cities such as **Nairobi** and **Windhoek** are working with community groups to upgrade informal settlements. They are changing land-use regulations to increase infrastructure quality and access and allow for incremental building over time, which is often legally forbidden despite the reality that this construction is happening anyway.[235] **Bangkok** partnered with community groups and NGOs led by the Community Organizations Development Institute (CODI) to upgrade informal settlements through the Baan Mankong program, creating a model that has scaled up to over 215 cities in 19 Asian countries (see Figure 21). These community-led shelter services and community upgrades tapped into local knowledge, energy, and priorities while combining with government funds and approvals to serve as an innovative model throughout the region.[236]

Figure 21 | **Community-led slum upgrading efforts in Bangkok have produced well-serviced, affordable housing at scale**

A slum settlement in Charoenchai Nimitmai, Bangkok, before and after upgrading efforts that were led by Baan Mankong.

Photo credit: Asian Coalition for Housing Rights.

Upgrading housing in partnership with slum communities helps city leaders harness the typically untapped skills and experiences of these communities, increasing economic productivity, quality of life, and political agency. Adequate measures should be taken to ensure that beneficiaries are neither displaced nor priced out by gentrification.

Figure 22 | **Priority actions for the housing sector**

HOUSING

1. In situ participatory informal settlement upgrading
- In situ upgrading preferred over relocation programs, except where there are location-based risks
- Utilize upgrading programs to finance services, amenities, and security of occupancy rights, beyond merely shelter improvement
- Ensure programs are comprehensive, participatory and financially sustainable

2. Support rental housing markets
- Improve legal frameworks
- Avoid financial biases against renting
- Provide well-structured subsidies

3. Conversion of under-utilized urban land to affordable housing
- Realistic regulations and standards, allowing for incremental housing improvements and construction, community ownership
- Straightforward and easy-to-understand processes and zoning rules
- Tax under-utilized land and buildings, and provide incentives for production/conversion to affordable housing

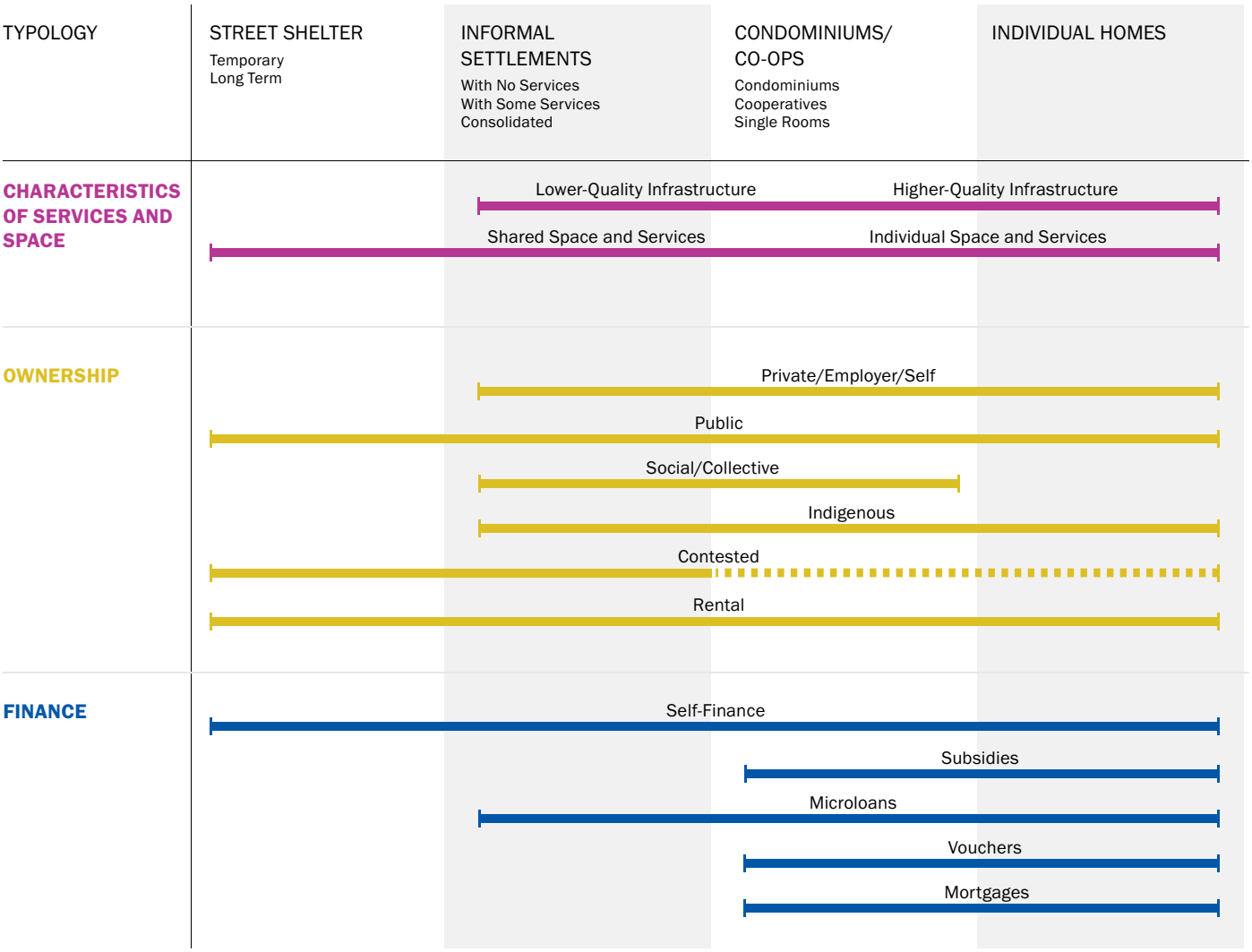
For more info, see the thematic paper: Confronting the Urban Housing Crisis in the Global South: Adequate, Secure, and Affordable Housing.

Source: King et al., 2017.

In Mukuru, a slum area home to more than 100,000 people, the Nairobi City Water and Sewerage Company, the Nairobi Metropolitan Service, and a coalition of community-based stakeholders are implementing an integrated planning approach to slum upgrading.[237] Such integrated approaches deliver better and more sustainable upgrading rather than disjointed efforts where previous progress is undone when the next sector's improvements occur. Indonesian cities such as **Jakarta** and **Surabaya** upgraded traditional housing via the Kampung Improvement Program over the last 50 years.[238] Residents in Sanjay Nagar in Ahmednagar (**Maharashtra, India**) used government funds to design their own housing, working with local foundations and experts rather than relying on developer-led redevelopment, creating more practical and attractive options.[239] In **Buenos Aires, Argentina**, residents in some of the *villas*, or informal settlements, have worked in their communities, sometimes with the city government, universities, and NGOs, to improve their settlements.[240] Community participation has also been a key element of **Medellín**'s application of the national Comprehensive Neighborhood Improvement Program (Programa Mejoramiento Integral de Barrios), which enabled the city to improve housing and services, spur new construction, and recuperate public and green spaces.[241] Figure 22 highlights strategies to ensure access to secure, well-serviced, and affordable housing for under-served and vulnerable groups, which is key to their prosperity and well-being as well as to a healthy urban environment.

Yet to meet everyone's needs, cities need to provide a spectrum of housing options. The types of buildings, the services they offer, how they are financed, and who owns them can vary widely (see Figure 23).[242] Supporting a range of rental possibilities in both informal and formal markets would reduce the financial and legal bias towards ownership. Cities can make rental housing more affordable and available for tenants of different income levels by creating formal rental policies, improving legal frameworks to tenants' and landlords' rights, avoiding financial biases that exclusively incentivize homeownership, and providing well-structured supply- and demand-side subsidies for renting. Rental housing possibilities include lump-sum rentals, rent-to-own mechanisms, and cooperative housing. In many Asian countries, including **India**, **Korea**, and **Thailand**, lump-sum rentals provide discounts to tenants who pay for one or more years in advance.[243] Rent-to-own initiatives are increasing housing security for low-income households with limited access to credit in **Chandigarh**, India; **Lagos**; the province of **Antioquia** in **Colombia**; and throughout **Chile** and **Nicaragua**.[244] The government of **Egypt** incentivizes housing cooperatives through loan subsidies and lower interest rates.[245]

Figure 23 | **People in cities rely on a spectrum of housing options to meet shelter needs**



Note: All types of housing conditions can range from short to long term. Although not represented in the diagram, homelessness is an important issue in some cities in the global South. The dotted line indicates the variability of this characteristic across cities.

Source: King et al., 2017.

Finally, spatial and economic development must be integrated to help distribute housing near employment centers and ensure good access to jobs. Location must be a key consideration in social housing policies, balancing affordability with livable density. Converting under-utilized urban land to affordable housing is an effective way to strike this balance. Close-in, affordable housing can head off urban sprawl in hard-to-service, risk-prone, and ecologically sensitive areas and reduce the cost of connecting homes to infrastructure. Linking investment in social housing and public transport can cut down on congestion and pollution, boost productivity, and improve people's quality of life by reducing the time and money they spend trying to get around.

C. Adopt a new trajectory with low-carbon and climate-resilient infrastructure

Struggling and emerging cities can chart a new model of development that limits carbon emissions and enhances climate resilience. Although these cities need support on capacity and financing, many proven technical and locally relevant solutions exist. They will need to invest differently in core urban infrastructure for water, sanitation, and drainage. New technologies and strategies make it possible to save money, improve people's quality of life, and avoid mistakes that have warmed the planet and polluted the environment.

This can be done by accelerating a shift to cleaner cooking, saving money over the long run with more energy-efficient buildings and appliances, and incentivizing energy conservation. Reliable and affordable clean energy offers under-served urban dwellers an alternative to burning diesel and kerosene, which are dirty and expensive but are currently relied on in cities across the global South. Evidence shows that fuel switching and more energy-efficient building could potentially slash GHG emissions in cities by more than 60 percent by 2050.[246] Energy efficiency measures can cut energy use by 50 to 90 percent in new buildings and 50 to 75 percent in existing buildings.[247] They save on energy costs, reduce the need for new power plants, and provide the greatest potential to reduce GHG emissions. Combining efficient buildings with a greener energy supply generates even more benefits.

As cities grow, incentives and investment for clean energy at scale can produce significant environmental and economic benefits. For example, **Brazil** encouraged households to shift from cooking and heating with dirty solid fuels such as firewood and charcoal to LPG or natural gas, which are cleaner alternatives. It created a national infrastructure and retail market for LPG production and distribution and provided subsidies to keep it affordable. In the 1960s, only 18 percent of Brazilian households had access to LPG, but by 2010, 100 percent of urban households did.[248] **Ecuador** has taken this policy a step further. Spurred by the fact that the country relies on imported LPG for 80 percent of its consumption and spends $700 million a year on subsidies,[249] the government is embarking on a campaign to urge citizens to switch from gas to electric induction stoves. The government is offering long-term, low-interest loans for purchasing electric stoves and installation kits and 80 free kilowatt-hours of electricity per month.

Better public and active transport infrastructure can both cut carbon emissions and improve resilience.[250] Researchers estimate that investing in mass transit and active transport infrastructure could potentially reduce GHG intensity in the transport sector by 20 to 50 percent by 2050, below a 2010 baseline.[251] Another study describes how a transition to clean transport would avert 86,000 deaths caused by air pollution and generate $76 to $224 billion in economic benefits.[252] With a focus on the under-served, city decision-makers can ensure that these benefits reach those most in need. For example, they can connect low-income urban dwellers—who increasingly live in minority- and female-headed households—to better jobs while improving the air quality of neighborhoods most exposed to pollution.

Investing in mass transit and active transport infrastructure could potentially reduce GHG intensity in the transport sector by 20 to 50 percent by 2050, from a 2010 baseline.

Cities will need to fortify themselves against climate impacts such as increased flooding, water scarcity, and heat waves.[253] City decision-makers should construct new buildings and infrastructure to withstand projected climate impacts and must retrofit existing infrastructure for this purpose. More climate-informed infrastructure planning and capital investments can lead to more innovative thinking around what can be done differently in the infrastructure cycle. Protecting built assets from extreme storms, flooding, and heat will reduce maintenance costs, safeguard users and tenants, and increase building and infrastructure lifetimes. In **South Africa**, for example, **Durban** is upgrading infrastructure in physically and socially vulnerable areas, such as flood-prone slums, and focusing on watershed restoration. Restoring ecosystems that cities depend on for their water supply improves both quality and quantity, leading to less downstream costs for water treatment.[254]

When longer-term environmental and social benefits, as well as economic gains and avoided losses, are taken into consideration, the benefits of climate-resilient investments in infrastructure outweigh costs by 4:1.[255] In coastal cities, for instance, studies found that the annual cost of global adaptation is one-tenth the total cost of no action.[256] These steps are not easy, but they offer major payoffs in future losses avoided, greater economic returns, lower infrastructure maintenance costs, and longer building and infrastructure lifetimes. Table 2 lists the actions and roles required of different actors to move Transformation 1 forward.

Table 2 | **Roles of specific actors in advancing Transformation 1: Infrastructure Design and Delivery**

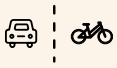
INFRASTRUCTURE DESIGN AND DELIVERY—PRIORITIZING THE VULNERABLE, BY SECTOR	
	City Government and Urban Sector Specialists
TRANSPORT 	■ **Build complete and safe street networks** □ Complete street networks to improve accessibility for all in the city □ Democratize streets by prioritizing road space for modes used by the majority—walking, cycling, and public transport □ Improve pedestrian safety and security ■ **Develop an ecosystem of integrated, user-oriented transport services** □ Connect existing services into an integrated multimodal network combining public, private, informal, and active (nonmotorized) transport modes □ Prioritize investment in affordable public transport to improve citywide access for the under-served □ Proactively upgrade and integrate informal operators □ Harness technology to improve productivity and user experience ■ **Manage the demand for private vehicle use** □ Discourage private vehicle use in dense city cores □ Price car use and parking to account for true social costs of driving □ Promote shared mobility solutions □ Ensure new development is well connected to economic opportunities by public transport
ENERGY 	■ **Accelerate the shift to cleaner cooking** □ Move away from solid fuels to cleaner liquefied petroleum gas, electricity, biogas, and ethanol to reduce indoor pollution □ Promote the use of low-emissions, efficient cookstoves for solid fuels ■ **Scale up renewable energy** □ Encourage the use of distributed renewable energy such as solar PV, providing affordable, reliable clean energy access to the under-served ■ **Increase the energy efficiency of buildings and appliances** □ Develop and enforce energy-efficient building codes and appliance standards to save energy costs and reduce citywide emissions
WATER 	■ **Extend formal piped water network to improve access** □ Increase piped water connections to the home or plot, where feasible, considering access gaps and climate risks as part of infrastructure planning □ In the short and medium term, provide water standpipes and kiosks located close to homes for those who do not have access to piped water □ Diversify water supply sources, conserve natural water resources, and integrate climate risk information into planning and design of resilient water supply systems ■ **Address context-specific causes of intermittent water service** □ Increase universal use of water meters, improve billing systems, and use technology to detect leaks □ Improve regular infrastructure maintenance to reduce leaks, manage demand with growth, and plan for climate risks such as flooding ■ **Pursue diverse strategies to make water affordable, with special consideration for low-income consumers** □ Increase affordable water connections □ Implement strategies to make monthly water service affordable (including subsidized water, cross-subsidies, "free basic water," incremental block tariffs, and spatially targeted subsidies) □ Promote flexible payment arrangements for water and water connections ■ **Support informal settlement upgrading in locations with low climate risk to improve water access to the urban under-served**

Table 2 | **Roles of specific actors in advancing Transformation 1: Infrastructure Design and Delivery (Cont.)**

INFRASTRUCTURE DESIGN AND DELIVERY—PRIORITIZING THE VULNERABLE, BY SECTOR	
SANITATION 	▪ **Extend the sewer and simplified sewer networks to household, communal, and public toilets**, with a focus on densely populated urban areas and where residents live in multistoried buildings ▪ **In the absence of sewer systems, support and regulate on-site sanitation** ▫ Shift the cost, responsibility, and associated risk for on-site sanitation systems away from households and private providers to the public sector ▫ Build capacity to regulate and enforce safe fecal sludge management at every step along the sanitation service chain ▪ **Take a citywide approach to upgrading informal settlements and include access to sanitation services** ▫ Coordinate between citywide sanitation initiatives and locally determined sanitation practices ▫ Cities, community organizations, NGOs, and federations should work together to improve sanitation access, particularly for low-income households ▫ Ensure availability and regular maintenance of stormwater drains in flood-prone locations ▪ **Make sanitation services affordable for low-income households** ▫ Subsidize household capital costs of sanitation facilities and provide affordable communal toilet blocks and public toilets ▫ Subsidize the cost of household sewer connections and connections to communal and public toilets ▫ Subsidize the costs of safe on-site sanitation management ▫ Ensure water is affordable for households
HOUSING 	▪ **Upgrade informal settlements in situ when located in low-risk, climate-secure locations** ▫ In situ upgrading is preferred over relocation programs, except where there are location-based risks ▫ Utilize upgrading programs to finance services, amenities, and security of occupancy rights, beyond merely shelter improvement ▫ Ensure programs are comprehensive, participatory, and financially sustainable ▪ **Support rental housing markets** ▫ Improve legal frameworks ▫ Avoid financial biases against renting ▫ Provide well-structured subsidies ▪ **Convert under-utilized urban land to affordable housing in accessible, well-serviced locations** ▫ Establish realistic regulations and standards, allowing for incremental housing improvements and construction as well as community ownership ▫ Create straightforward, easy-to-understand processes and zoning rules ▫ Tax under-utilized land and buildings, and provide incentives for production/conversion to affordable housing

National Government

- **Establish policy frameworks to support service provision for under-served communities**, such as national frameworks for informal settlement upgrading and national frameworks for land regulations and integrated urban planning
- **Establish pro-poor regulations and provide incentives** to encourage and enable utilities to extend service provision and maintain infrastructure
- **Enable the participation of local communities**, especially from the under-served, peri-urban, and/or smaller towns, in infrastructure planning, design, and delivery; this is particularly relevant for issues and strategies that extend beyond the administrative boundaries of the city
- **Collect independent information** about services and charges to better understand the realities of service provision (e.g., the utility's service area, associated risks and vulnerabilities, detailed socioeconomic and spatial data)
- **Raise commitments and investments** for low-carbon and climate-resilient infrastructure, recognizing the role of community and local knowledge; integrate these investments into national and regional climate adaptation and mitigation plans
- **Monitor and report on progress** for equitable service provision as part of national and global goals (e.g., Sustainable Development Goals); involve community groups or civil society organizations in monitoring, evaluation, and learning programs (e.g., water watch groups)

Table 2 | **Roles of specific actors in advancing Transformation 1: Infrastructure Design and Delivery (Cont.)**

INFRASTRUCTURE DESIGN AND DELIVERY—PRIORITIZING THE VULNERABLE, BY SECTOR
Civil Society, including Nongovernmental Organizations, Experts, and Researchers
▪ **Work with the public sector** to upgrade informal settlements and improve access to affordable and reliable services; ensure that strategies and solutions are locally determined and appropriate ▪ **Support strong community-based coalitions** to build political and social capital, establish government partnerships, and organize with other social movements ▪ **Harness community-based knowledge** and experience to guide decisions around infrastructure plans, service provision, and locally relevant strategies for climate-smart infrastructure and climate resilience ▪ **Bring forth issues of representation of marginalized communities** in multiple stakeholder engagement platforms and other decision-making forums
Private Sector
▪ **Work with the public sector and communities** to provide safe, reliable, and affordable services, especially for the under-served, in areas outside of formal networks and vulnerable to climate impacts ▪ **Support and build on existing, localized innovations** for delivering services in an affordable and sustainable way (e.g., rooftop solar, rainwater harvesting, mobile payments for water) ▪ **Consider large but under-served housing market segments**, engaging with the public sector and financial institutions to structure and undertake workable projects ▪ **Invest in low carbon, climate-resilient urban services infrastructure and affordable housing** in well-serviced, accessible locations
International Community, including Development Finance Institutions
▪ **Support funding schemes** that target improved service access for the urban poor, considering local needs ▪ **Articulate equity and justice criteria** within multilateral arrangements, projects, and financial documents, considering the local social, political, and economic context ▪ **Ensure that funding reaches local levels**, effectively impacting the most under-served ▪ **Prioritize strategies and programs** that incentivize equitable, low-carbon, and climate-resilient infrastructure design and delivery at scale

Note: Although we promote integrated planning and implementation, sectoral specialists and institutions are often responsible for implementing the above actions because of the way city and national government departments are organized. PV = photovoltaic.

Source: Authors.


GATWEKERA FOOTBRIDGE CONSTRUCTION
A JOINT FLOOD RISK INTERVENTION BY:
GATWEKERA COMMUNITY
NAIROBI CITY COUNTY
ROADS, PUBLIC WORKS AND TRANSPORT SECTOR
KDI KOUNKUEY DESIGN INITIATIVE
KIBERA PUBLIC SPACE PROJECT
GATWEKERA

TRANSFORMATION 2

Chapter 7.
Service Provision Models—Partnering with Alternative Service Providers

Cities must transform urban service provision to partner with and integrate alternative service providers to increase access. Informal, semiformal, or community-run alternative services are a fact of life in cities across the global South, and populations without access to municipal water, sanitation, energy, and transport rely on them. Supportive regulations and policies can make these services more affordable and reliable in the short and medium term, expanding access for more people.

Status Quo	Priority Actions	Desired Outcome
Unregulated, informal services with high costs and poor quality	• Integrate alternative services as an intermediate solution to expand access • Establish and support new partnerships for joint service delivery	**Integrated service delivery, expanded access**

7.1 WHAT MUST CHANGE AND WHY

Where there are gaps in public services in most growing cities in the global South, alternative service providers step in to fill the void. These providers include private, independent operators (such as minivan drivers or water vendors) as well as community-based organizations and small businesses that find ready markets for needed services.[257] Whereas some providers in the service delivery chain may be formal, with legally recognized status and permits to operate, others may be informal. Different aspects of their services span the formal-informal spectrum. For example, water vendors may legally buy water from utilities but then sell it informally at higher prices. Auto-rickshaw drivers in **India** hold permits for their vehicles but may not work on formal labor contracts.

The services provided by alternative providers may sometimes be more convenient than public services, but they come at a cost that the lowest income groups cannot afford. Still, many poor urban residents often have no choice but to rely on their services. For instance, many global South cities do not provide reliable public transport to many areas, so informal or paratransit services,[258] which offer the advantage of flexible and on-demand operations, are the only option for getting around. In many cities, they also offer shared rides to low-income people who split the fare so that it is more affordable.[259]

In addition to potentially high costs, the quality of these goods and services may be low or uncertain because there is little or no government oversight of operations. Thus, alternative water supplies may be unfit to drink, and alternative energy sources may be dangerous. In the case of alternative transport, for example, governments do not regulate these services or limit who can provide them. This results in severe on-the-street competition, with oversupply depressing profit margins and thereby forcing operators to reduce service or vehicle quality or to behave aggressively.[260] Alternatively, providers may collude to raise prices. Informal buses, minibuses, and auto-rickshaws also contribute to congestion and pollution, especially in denser city centers.[261]

Informal service providers meet otherwise unmet needs for urban services and operate almost universally without government subsidies.

In sum, supply gaps in cities, usually filled by the formal or informal private sector, can create health and safety risks and can sometimes drain large proportions of poor people's income. At the same time, these alternative vendors often provide the only opportunity for many households at the bottom end of the market to access basic urban services. Figuring out how to manage and regulate this diverse set of providers, make service delivery effective, and provide equitable access for all urban dwellers has been a key challenge.

Alternative or "informal" service providers are stigmatized or ignored

Despite serving as lifelines for marginalized urban communities, alternative service providers face hostility, obstacles, and operational challenges. This is especially true when they are seen as encroaching on the rights of conventional operators, and when they operate informally and without legal authority. Cities often respond by banning, restricting, and even harassing informal service providers to stop them from competing for customers or public space. This happens even when informal workers provide vital services. For example, informal waste pickers play an important role by collecting, sorting, and recycling waste in cities, serving the city, the economy, and the environment. A study of three cities found that waste pickers brought significant environmental benefits by recovering approximately 20 percent of all materials that entered the waste stream and reducing GHG emissions.[262] Yet in many cities, they often face stigma, harassment, eviction from using public spaces, and confiscation of the waste by city authorities or municipal street cleaners.[263] (We discuss the conditions and contributions of informal workers more in Transformation 4).

Cities may also tend to ignore informal arrangements because they can be a benefit, even if unacknowledged. They require no money or effort from governments that lack the resources and capacity to meet growing demand. They meet otherwise unmet needs and operate almost universally without government subsidies.[264] City authorities in the global South have neither the data nor the capacity to oversee and regulate numerous small-scale operators providing a

range of services in the city. They often lack the necessary technical information and political will to set standards for service quality or technology or to enforce regulations that safeguard health and the environment. Instead, arrangements and payments for informal service delivery in the global South often rest on handshake agreements between households and small-scale informal providers.[265] The government is spared any administrative involvement.

Alternative or "informal" providers are thus often viewed as a problem or are ignored; however, better regulation and performance standards that incentivize more efficient operations could make them part of the solution. Informal service providers are not going away any time soon. They will remain important, even as cities incrementally expand access to public infrastructure and services. Assuming responsibility for the patchwork of alternative, interim solutions that have sprung up in cities across the global South poses challenges. But this informal sector is too huge and vital to be stifled. A major mindset shift is needed for cities to support and regulate these services while recognizing their potential for local innovation and entrepreneurship.

Alternative or "informal" providers are often viewed as a problem or are ignored; however, better regulation and performance standards that incentivize more efficient operations could make them part of the solution.

7.2 PRIORITY ACTIONS

A. Integrate alternative services as an intermediate solution to expand access

Cities must build upon existing alternative modes of service delivery, integrating them into a citywide system instead of replacing them. City authorities must harness the vitality and diversity of multiple delivery modes, operated by conventional public utilities, local private entities (small firms, NGOs, individuals), informal and small-scale operators, and community-based organizations.[266] In making them part of the citywide system, city authorities have a responsibility to create standards of practice and performance, nudging them to operate better. As cities integrate alternative solutions and incrementally expand public infrastructure, they can set regulations to meet basic standards of service delivery, public health, safety, environmental quality, and affordability for under-served groups. They can consider hybrid service delivery configurations in the short and medium term. Under these, conventional networks should coexist or merge with alternative services within an appropriate regulatory framework that ensures equitable service delivery. It is useful for rapidly growing cities in the global South to consider a ladder of service delivery where different innovative options and technologies help provide good-quality, sufficient access for people at varying levels of income.

While improving citywide infrastructure and services over the longer term, cities may find that more decentralized, alternate solutions may serve demand well in specific locations, such as in low-density or disjointed peripheral areas. For example, formal and informal transport services can complement one another in many places. In the neighborhoods of **Johannesburg**, where public transport services such as BRT exist, residents wanted help getting to bus stops. They asked for and got three-wheeler *tuktuks* to pick them up and drop them off. This much-needed first-mile/last-mile service poses no threat to public transport and, in fact, encourages more customers to use it.[267]

In sectors such as transport, water, and sanitation, the emerging consensus is that the public sector is best placed to undertake the planning, regulation, and oversight of public services, and alternative operators must provide services through some form of organization that is accountable to users and regulators.[268] They can be required to meet service quality standards set by the city before their services are officially adopted and scaled to increase coverage. Regulating service delivery requires authorities to show flexibility and willingness to tailor approaches to the local context, engage with alternative service providers, and experiment with new approaches.

In cities with lower technical, political, and financial capacity, it may be more appropriate to upgrade informal services incrementally to improve productivity and service quality without requiring all-out formalization.[269] For instance, in the case of transport, gradual fleet renewal programs for informal operators, coupled with funding and institutional support, successfully replaced thousands of old and polluting vehicles

in **Alwar, India**; **Dakar, Senegal**; and **Kathmandu, Nepal**.[270] Given the scarcity of funding, these actions must be deliberate and creative. For example, operators qualifying for such support may also be given access to infrastructure (such as priority lanes at intersections and terminals) to help improve their operating efficiency without losing the flexibility and demand responsiveness of the informal transit model.[271]

B. Establish and support new partnerships for joint service delivery

Cities can partner with alternative or informal vendors to help reach under-served communities quickly and cheaply. Instead of trying to replicate the development trajectories of cities in the global North, struggling and emerging cities can establish new institutional structures for more organized, efficient, and equitable service delivery. Partnerships with communities and small vendors to create or coproduce new, hybrid formal-informal models of service delivery can accelerate progress without imposing prohibitive costs (see Box 9). In some cases, formalization may be necessary to "integrate" these service providers effectively into the service delivery system and practices so that they can bid and receive payment for government contracts. But it is important to integrate them in ways that are humane and supportive and will improve both their livelihoods and the quality of service. Figure 24 highlights how cities can shift from ignoring to recognizing and integrating these informal and alternative solutions to transform service provision and improve access to services for all.

Partnerships can work on multiple fronts and across sectors. For example, the Slum/Shack Dwellers International (SDI) federations in many cities in the global South comprise community groups in low-income neighborhoods that bring together residents, primarily women, to save, share their resources, and jointly address their collective needs. They combine their own savings and loan funds with funds from external agencies, such as local and national governments, to improve infrastructure and services in their settlements in collaboration with local authorities. These local groups and the larger federations to which they belong engage in many community-driven initiatives to collect data, link to other grassroots groups and social movements, build relations with local authorities, upgrade informal and squatter settlements, improve tenure security, and offer residents new development opportunities.[272]

Partnerships can extend water and sanitation services

Utilities in some cities have been working with private water providers to extend access more affordably. Even with access to the piped network, service is likely to be intermittent, so the additional water supply continues to be a critical lifeline. In **Hubli-Dharwad, India**, the utility has contracted private vendors to install kiosks in urban areas with no piped connections or clean water supply nearby. The kiosks draw and filter water from reservoirs, improving water quality so that it is suitable for drinking.[273] Utilities are also partnering with community-based organizations or water user associations to extend service into informal settlements. In **Ouagadougou, Burkina Faso,** the utility cooperates with small entrepreneurs to resell water at controlled prices to residents of informal settlements.[274] In the **Democratic Republic of the Congo**, Mercy Corps has worked with the government to rehabilitate and expand the Goma Water Network to reach 150,000 unserved residents while empowering communities to participate in water systems management.[275] In **Lilongwe**, **Malawi**, and **Nairobi**, utilities collaborate with community-based organizations and water user associations to oversee and manage service delivery through prepaid water kiosks in some informal settlements.[276]

Such arrangements give communities a say in how the service is delivered and where facilities are built, and they create local employment opportunities as well. These partnerships have also helped overcome residents' mistrust of the utility and have convinced more people to pay for services.[277]

In **Kampala**, our case study details how the city government successfully partnered with small businesses, community groups, and the national water and sanitation utility to improve fecal sludge collection from pit latrines. It supported the use of affordable, nontraditional technologies while creating new livelihood opportunities for community residents. One example of such a technology is the Gulper, a handheld vacuum pump used to empty latrines and transport the fecal sludge on smaller three-wheeled vehicles to large tanks, where paths are too narrow for large vacuum trucks, which is a common situation in informal settlements.[278] Between 2003 and 2015, **Uganda**'s national utility increased its fecal sludge treatment rate by 30-fold without a large increase in sewer coverage.[279]

BOX 9 | Coproduction between government, communities, and informal actors makes urban services more accessible

Coproduction has been defined as "a process through which inputs from individuals who are not 'in' the same organization are transformed into goods and services."[a] In many cities that were the focus of the *Towards a More Equal City* series, the vast majority of urban residents reside in informal settlements, and much of the urban fabric is informal. Formal systems of infrastructure and service delivery must coexist and coordinate with informal systems if these residents are to receive even basic services in the short to medium term.[b] For instance, due to intermittent municipal water supply, low-income households in **Lagos, Nigeria**, meet their water needs through both communal sources and small-scale private hawkers or cooperative providers.[c]

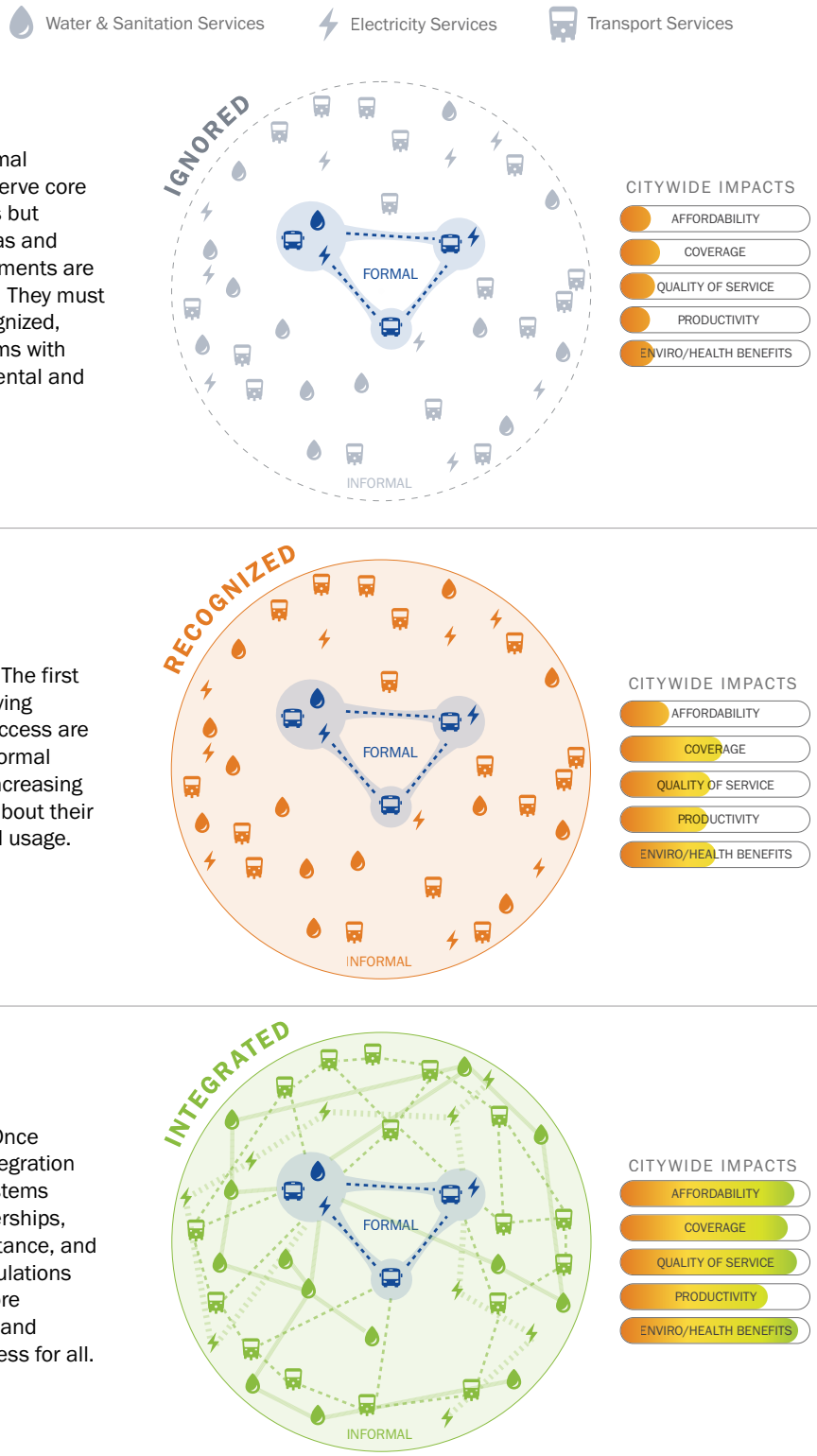
Side-by-side formal and informal service provision is common in the water and sanitation sectors. Extending access to piped water and sanitation infrastructure is usually thought to require coordinated urban planning, good governance, and substantial financial investment, but coproduction has, to a limited extent, addressed the access gaps. Specifically, in the case of low-cost, on-site sanitation systems such as pit latrines, collaboration between city governments or utilities and community residents (or their organizations) is needed to improve sanitation, partly because neither can do it alone and partly because collaboration enhances mutual accountability.[d]

Figure B9.1 | **A man sells water in Lagos, Nigeria**

Picture credit: Abdulmutalib Yussuf, 2016.

Sources: a. Ostrom (1996: 1073) cited in McGranahan and Mitlin (2016: 308) and McGranahan (2015: 245); b. Mitlin, 2008; c. Based on field observations in Lagos in 2016; d. McGranahan and Mitlin, 2016.

Figure 24 | **Existing alternative services, when appropriately integrated with formal public delivery systems, can expand access**



Ignored — Formal systems may serve core neighborhoods but peripheral areas and informal settlements are not connected. They must rely on unrecognized, informal systems with high environmental and health costs.

Recognized — The first steps in improving services and access are recognizing informal systems and increasing transparency about their operations and usage.

Integrated — Once recognized, integration with formal systems through partnerships, financial assistance, and supportive regulations can enable more efficient, safe, and affordable access for all.

Note: Citywide impacts are schematic.

Source: Authors.

In **India**, community organizations helped the city of **Mumbai** to rethink its approach to sanitation. Supported by Mahila Milan (the federation of women slum dwellers' savings groups), groups of women living in informal settlements or on sidewalks redesigned public toilets so they were managed by the community rather than the local government, providing improved facilities to half a million residents. The Mumbai government financed the toilets' construction, so the community pays only for operation and maintenance. Residents buy monthly passes that provide access to all household members for less than two dollars per month. People passing through the community can use the toilets for a higher fee. This helps cover maintenance costs and can allow the community to hire a full-time toilet manager to work on-site.[280]

In **Pakistan**, a local NGO, the Orangi Pilot Project (OPP), took the lead in improving **Karachi**'s sewage treatment through community-government partnerships. They built and financed OPP's model of simplified sewers across informal settlements in Karachi and other cities. OPP ran programs that helped over 15,000 households across 285 communities in Pakistan build these systems in their neighborhoods and connect them to city sewers and sewage disposal points built by the government.[281]

Partnerships can manage solid waste

Cities in **Brazil**—**Belo Horizonte**, **Porto Alegre**, **Santo Andre**, and **São Paulo**—were the first to integrate waste pickers and their cooperatives into city solid waste management systems.[282] Several cities across **Colombia** and **Argentina** have also integrated informal waste pickers into their solid waste management services to support door-to-door recycling, as have **Bengaluru** and **Pune** in **India**.[283] This has unlocked economic productivity as previously informal waste pickers now have better and more secure livelihoods, health insurance, and other benefits, and they provide waste collection services that reduce waste, pollution, health risks, and GHG emissions for the entire city through recycling. Our case study of Pune traces the story of how a waste picker cooperative (Solid Waste Collection and Handling) negotiated a contractual agreement with the municipal government to provide door-to-door waste collection for city households.[284]

The city of Pune creatively integrated informal waste pickers into its formal solid waste management system, with support from state and national policies and political commitment from the municipal government. Informal waste pickers were seen as making important contributions to door-to-door waste collection as well as to the environmental objectives of segregating, processing, and recycling waste materials. Some cities have invited informal workers to participate in relevant rule-setting and policymaking processes, which has increased their access to public services, public spaces, or public procurement opportunities that allow them to work for the city with reliable livelihoods.

Partnerships can provide transport

Although some cities have banned alternative operators, others have integrated them into new transport systems, with financial assistance to upgrade vehicles and training to build new skills.[285] In many cases, transport providers are "semiformal," meaning they are legally authorized with vehicle permits but operate under informal rules related to daily vehicle leasing and wages.[286] Some city governments have helped transport providers better organize themselves, form corporations, and formalize their operators.

Cities can improve access for the under-served by partnering with existing providers of informal transit, bus, rail, and cycling services for a better-connected transport network. This helps develop a more user-oriented multimodal transport network, improving both access and efficiency. Specific strategies include building integrated, pedestrian-friendly transfer facilities for travelers switching between modes; reorganizing minibus and informal transit routes so they better connect to fixed-route public systems; and promoting integrated fare-payment solutions to reduce the cost of transfers for travelers, which can particularly burden low-income commuters.

Approaches to integrate informal transport services have varied across cities. Although there is no single path for this, several short-term measures have reaped benefits for cities, including investing in dedicated infrastructure and transfer locations, changing concessions and service agreements, and training and supporting informal operators. Cities implementing large formal systems, such as BRT, can help incumbent informal operators preserve their livelihoods by forming operating companies and contracting them to run parts of the new formal services (such as the trunk services in **Lagos**, the feeders providing essential last-mile access in **Quito**, or a combination of both, as seen in **Cape Town** and **Santiago**).[287] Over time, they could move towards a competitive tendering regime (as in **Bogotá**; **Lima, Peru**; **Mexico City**; and **Rio de Janeiro, Brazil**).[288] Research in

Rio de Janeiro has shown that regulatory reform aimed at distributing route concessions among informal operators on the basis of competitive tendering confers significant benefits, especially to the poor, because of drastically lowered fares.[289]

Technology can be harnessed to improve productivity further and help knit services together. Mobile apps are already helping passengers travel affordably and efficiently by offering dynamic trip-planning features that consider multiple existing and emerging transport modes in cities. Examples include e-hailing for *boda-boda* motorcycle taxi services in **Uganda**, **Thailand**, and **Vietnam** or Ola motorcycle and auto-rickshaw services (aimed specifically at lower-income users) in more than 100 cities in **India**.[290] Ola has been innovative in its use of text messaging to get around poor Internet connectivity in India, and it has a technology platform that is available in nine regional languages because few drivers speak English.[291] Such technologies could enhance the productivity of informal transport operators by better matching supply with demand, especially in locations with poor accessibility.

Supporting and integrating informal transport services with appropriate regulations and investment has improved operators' productivity, livelihoods and quality of service.[292] This has also made cities safer and cleaner.[293] Although it costs money and political capital to regulate and integrate services in this way, the increased efficiency and improved access provided by such an integrated system yields positive outcomes and long-term benefits for the city as a whole, with great potential to unleash private investment and innovation.

Cities will need to build the capacity to collaborate with and effectively oversee a wide variety of informal and alternative service providers. They will need to regulate competition, set quality standards, and incentivize joint delivery of services.[294] This will require the following:[295]

- Creating institutional arrangements to integrate informal, alternative solutions instead of banning or trying to replace them and cutting crucial lifelines for many households
- Aligning incentives that encourage service providers to form coalitions based on clearly defined standards of service provision
- Enforcing these standards of service provision
- Overseeing operations of all service providers
- Segmenting the market by differentiating supply by service levels, providers, and tariffs and demand for services based on people's needs, ability to pay, and location in the city
- Investing to scale solutions that have proven effective, affordable, and safe
- Developing regulations that protect rather than repress and relocate alternative service providers

Accomplishing these goals will require a shift in the mindset of government officials and urban practitioners. They will need to recognize and value the contributions of alternative service providers, including those in the informal sector, and provide funding and institutional support to help create a more complete service provision ecosystem. Table 3 lists the actions and roles required of different actors to move Transformation 2 forward.

Table 3 | **Roles of specific actors in advancing Transformation 2: Service Provision Models**

SERVICE PROVISION MODELS—PARTNERING WITH ALTERNATIVE SERVICE PROVIDERS	
City Government and Urban Sector Specialists 	▪ **Recognize the role of informality in the city**, including how informal employment bolsters the formal economy, how informal settlements provide affordable shelter, and how informal service providers fill in service delivery gaps ▪ **Engage with community groups and alternative service providers** regularly to implement and manage shared services at the neighborhood level ▪ **Incentivize joint delivery of services** based on clearly defined standards of service ▪ **Pursue innovative partnerships** with communities, the national government, and the private sector to finance and provide core services to under-served areas and populations; ensure the urban services divide is addressed in pricing policies ▪ **Establish institutional structures to integrate informal and alternative service providers** into a unified service delivery system and enhance coverage, recognizing their livelihood concerns ▪ **Set regulations to meet basic standards** of service delivery, public health, safety, environmental quality, and affordability for under-served groups; prevent exploitative practices and regressive pricing
National Government 	▪ **Recognize the role of informality in the national economy**, including how informal employment bolsters the formal economy, how informal settlements provide affordable shelter, and how informal service providers fill in service delivery gaps ▪ **Legalize the integration of informal and alternative service providers** into a unified service delivery system, recognizing their livelihood concerns ▪ **Set regulations to meet basic standards** of service delivery, public health, safety, environmental quality, and affordability for under-served groups; prevent exploitative practices and reform regressive pricing policies ▪ **Incentivize joint delivery of services** based on clearly defined standards of service provision and appropriate governance structures ▪ **Pursue innovative partnerships to finance and provide** core services to under-served areas ▪ **Establish social safety nets and insurance programs** for small-scale or informal service providers and increase access to credit, public space, and public procurement opportunities
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Facilitate the engagement of informal worker associations and vulnerable communities with city agencies** to improve service delivery ▪ **Mediate to help increase community buy-in** to work with the government to improve services (e.g., water user associations operating water kiosks) ▪ **Participate in local coalitions** to advocate for access to credit, public space, services, and procurement opportunities and services to city leadership ▪ **Encourage a shift in the mindset** of government officials and urban practitioners to recognize and value the contributions of alternative service providers and the informal sector
Private Sector 	▪ **Work with city agencies to provide affordable services** to disconnected areas and under-served communities ▪ **Innovate on business models, products, and services** to meet the demands and needs of low-income consumers ▪ **Partner with small-scale informal or semiformal providers** to deliver services efficiently and at scale
International Community, including Development Finance Institutions 	▪ **Share knowledge and good practices** with practitioners and decision-makers to develop hybrid systems of service delivery, integrating formal, informal, and community-run systems and creating appropriate regulations to help achieve equitable access ▪ **Develop financing programs** that help cities integrate alternative service delivery solutions into a better-regulated system over time, meeting basic standards of service delivery, public health, safety, environmental quality, and affordability for under-served groups ▪ **Encourage a shift in the mindset of government officials and urban practitioners** to recognize and value the contributions of alternative service providers and the informal sector

Source: Authors.


ORLAB
mg/l
Fluo
0.0
0.5
1.0
1.5
2.0
3.0
PERMISSIBLE
सुरक्षित
ORLAB INSTRUMENTS PVT. LTD., Hyderabad
Using BARC Technology

TRANSFORMATION 3

Chapter 8. Data Collection Practices—Improving Local Data through Community Engagement

Credible, open local data creates an opportunity to ensure sound policies and investments, understand their impacts on vulnerable communities, and improve governance processes in cities. The lack of disaggregated local data that could help diagnose problems is a huge handicap for decision-makers. Cities should transform data collection practices to gather more granular local data with community participation. Good data need not be expensive to collect and can improve decision-making, regardless of the income level of the city.

Status Quo	Priority Actions	Desired Outcome
Ineffective decision-making that excludes the most vulnerable	• Use new technologies and partnerships for better data and more granular local insights • Increase city capacity to collect and effectively utilize data • Coproduce and share data to foster more effective and inclusive governance	**Sound, inclusive policies with higher accountability**

8.1 WHAT MUST CHANGE AND WHY

Local, spatially disaggregated data is lacking

Decision-makers may not understand the need for better local data on the availability and quality of urban services, infrastructure, jobs, education, health services, and other necessities. Failure to analyze granular information collected from different parts of the city can mask vast inequities. The socioeconomic indicators needed to track levels of access and quality are not consistently defined or measured, and they are rarely expressed spatially, making it harder to identify under-served locations within the city. Without spatially disaggregated data, cities rely either on nationally collected data, which are then downscaled to the city level based on population or other simple assumptions, or on citywide data, which do not capture or convey the heterogeneity across neighborhoods or disparities within them. Standard satellite-based methods of analysis cannot accurately characterize informal settlements or slums or the absence of services there, and censuses do not typically include such settlements. The majority of remote-sensing studies only document outward growth, ignoring inner-city redevelopment and increasing density.

Poor-quality or unavailable data hinders decision-making

Data gaps at city and neighborhood levels lead to misinformed, ineffective, or incomplete policy responses. Inadequate data make it impossible to diagnose the gaps in access to services across neighborhoods, the externalities these create, and the vulnerabilities of different populations.

Inadequate data make it impossible to diagnose the gaps in access to services across neighborhoods, the externalities these create, and the vulnerabilities of different populations. Importantly, it leads to an inefficient and possibly incorrect allocation of scarce resources.

Importantly, it leads to an inefficient and possibly incorrect allocation of scarce resources. Missing data hampers policymakers' ability to make crucial decisions amid political pressure and conflicting advice. In struggling and emerging cities, with limited resources for collecting data, citywide surveys are performed infrequently, and they typically lack the detail needed to draw meaningful inferences about vulnerable and under-served population groups (see Box 10). Often, data are not shared across public sector agencies or with other stakeholders because there are no mechanisms or platforms with basic standards for data quality or consistent metrics to allow wider access. Sometimes, city leaders hesitate to share or use data for political reasons.

Studies suggest that official statistics used by governments and international agencies understate the extent of urban poverty in most low- and middle-income nations.[296] Similarly, global efforts to monitor access to particular services, such as water and sanitation, underestimate the deprivations that urban dwellers face because they neglect to assess whether the services are of adequate quality.[297] Our research shows that data on informal housing, as well as widely used global indicators on access to water and sanitation, underestimate the extent of the urban water and sanitation crisis. This contributes to ineffective planning and management of these services. For example, the Joint Monitoring Programme (JMP) of the United Nations has created universal categories to measure, monitor, and compare progress on water access in connection with the SDGs. However, these categories fail to meaningfully consider water quality, regularity of supply, or affordability, and the data are not detailed or granular enough to identify urban populations at risk (see Box 10). Although the JMP reports that a growing proportion of the global population is gaining access to running water, the share of urban populations receiving piped water has actually fallen since 1990. In 2015, less than half of the urban population in many developing nations was receiving piped water on premises.[298]

Data on land-use regulations and planning processes across cities categorized as struggling and emerging often fail to track the type of urban growth that is occurring. Our research found that, when remote-sensing data is combined with

urban demographic and economic indicators, many lower-income cities are experiencing significantly more outward growth than upward growth. That is, they are sprawling outward at their periphery rather than building more mid- to high-rise buildings within existing city margins.

Better data would provide insights on what drives this often-unmanaged outward growth. These growth patterns have significant implications for providing services across the city, as well as access to both jobs and services for under-served populations. Figure 25 compares levels of access to jobs, education, and health care in the **Mexico City** metropolitan area within 30 minutes or less on foot or by public transit. It shows the stark difference in access to these opportunities between people living in one of the wealthiest neighborhoods of Mexico City and those living in the poorest areas. Wealth, in this case, is measured by the government's Urban Marginalization Index, which combines social, economic, demographic and access to services indicators.[299]

BOX 10 | Data challenges often hinder action or may lead to misinformed policies

To address the lack of comparable city-level data on water and sanitation access, we compiled data on 15 cities in the global South. The data illustrate the true costs for households of accessing water, dealing with sanitation, and pursuing coping strategies when public services do not exist. The study also found that available city-level data on water and sanitation can be inaccurate, misleading, or outdated.

For example, in **Mumbai, India**, the most recent publicly available statistics on municipal water coverage date from the last census conducted in 2011. It reported that 82 percent of households had access to piped water within their own or nearby premises. Several local experts believe these numbers overestimate access, especially considering that over 40 percent of the city is made up of informal settlements that typically lack formal water connections. Data from one centrally located informal settlement with over 2,000 households showed that not one of them was connected to the public piped network. Although it lies within the utility's jurisdiction, the city considers this settlement an "undeclared" slum, where households are not eligible for water connections.[a] Most households relied on buying water from tanker trucks, which cost 50 times more than piped water. In many other cities in the global South, residents of informal settlements also are denied access to piped water due to the politics of land use and informality.

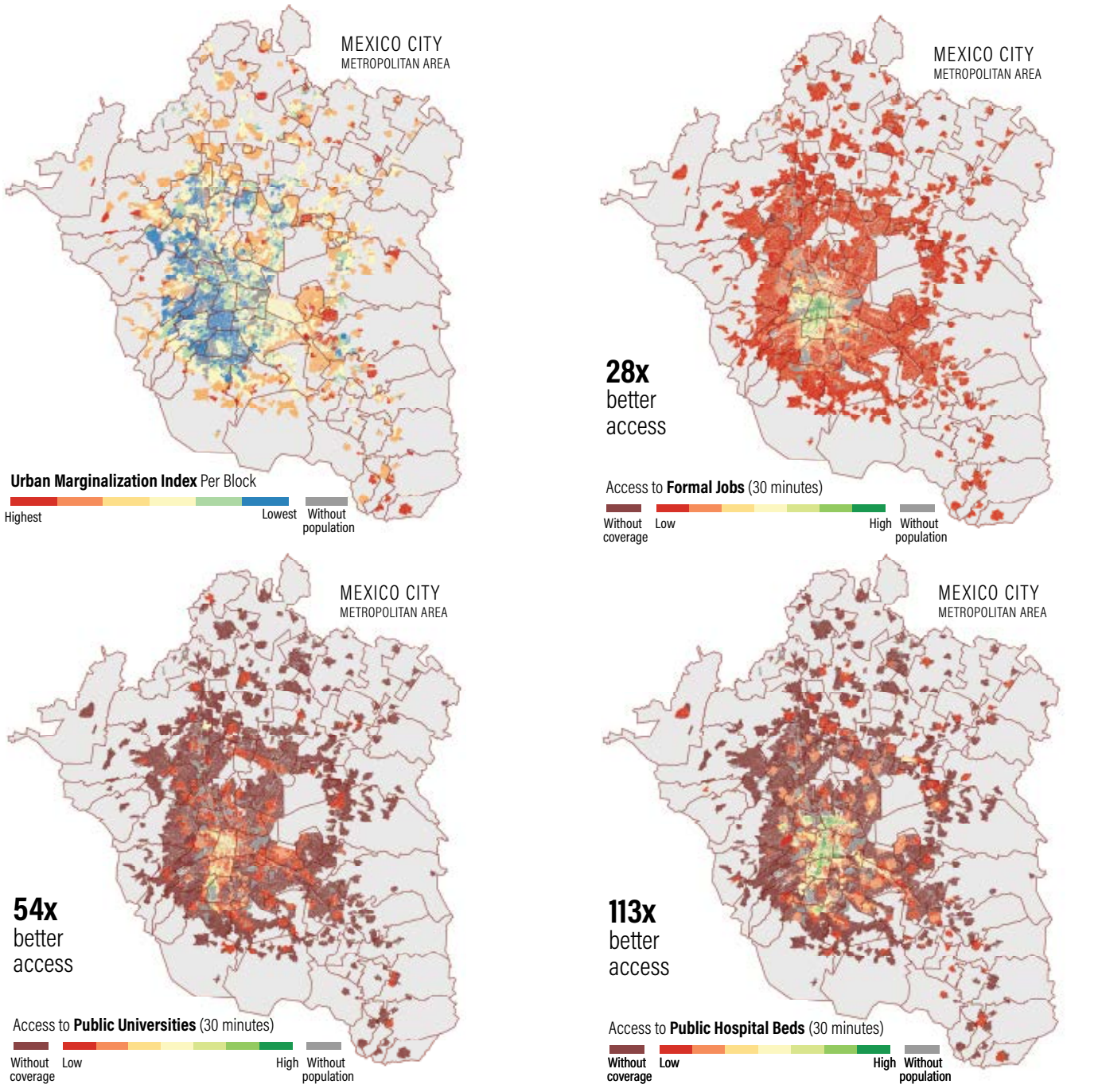
In addition to missing, outdated, and inaccurate data on basic coverage, cities contend with a lack of official data on access. They do not know if the water supply is dependable, affordable, or safe. Households that ostensibly have access to piped water may not always have water available in the pipes. In **Bengaluru, India**, the piped network is shown to cover at least 70 percent of the city, yet in many neighborhoods water is only available for three hours and for only three days of the week. Few cities capture information on the affordability and quality of water services, especially for lowest-income users. Low-income households in cities such as **Windhoek, Namibia**, and **Dar es Salaam, Tanzania**, spend 9 percent and 17 percent of their income, respectively, on piped water where this exists (to access the World Health Organization's recommended minimum quantity of water of 50 liters per person per day).[b] Where piped water does not exist, they spend even more—12 percent and 38 percent, respectively—on communal water supply.

Our study also highlighted how official city-level data fail to capture the prevalence of unsafe sanitation practices. For example, we know that many households dig a trench and discharge untreated human waste directly into a nearby waterway or stormwater drainage channel. The field researchers gathered data for our study in **Bengaluru**; **Caracas, Venezuela**; **Cochabamba, Bolivia**; **Colombo, Sri Lanka**; **Kampala, Uganda**; **Karachi, Pakistan**; **Lagos, Nigera**; **Nairobi, Kenya**; and **Santiago de Cali, Colombia**. All of them report that these self-provisioned drains for untreated sewage exist, but they acknowledge that there is no reliable way to estimate the percentage of households in the city that use them. **Dhaka, Bangladesh**, has self-provisioned drains, but these are primarily used in the urban periphery. **Maputo, Mozambique**, and **Mzuzu, Malawi**, do not have self-provisioned drains because households mainly use on-site sanitation in the form of pit latrines. The waste from a majority of these is discharged untreated into farms or streams, flooded out, or buried with high potential to contaminate surface and groundwater sources.[c] Ironically, some self-provisioned drains function as open sewers and are likely included in sewer estimates, thus leading to an overestimation of how many households have sewer access.

Without local, disaggregated, spatial, and up-to-date data to capture everyday realities, policies and approaches to improve access will not be effective.

Notes: a. Anand, 2017: 87; b. WHO and WEDC, 2013; c. Satterthwaite et al., 2019.
Source: WRI, 2018.

Figure 25 | **Access to jobs, education, and health care varies between wealthy and poor neighborhoods in the Mexico City metropolitan area**



Note: These maps measure access to services available within a 30-minute ride by public transport or walking combined with the government's Urban Marginalization Index. Better access is displayed in green, with red representing less access, and dark maroon representing neighborhoods with no coverage. Access to jobs is measured by the total number of formal jobs in each neighborhood from Mexico's Economic Census, and travel time was calculated using the street grid and public transit map.

Source: Brito et al., 2021.

Cities lack the capacity to manage, share, and use data

Cities may not be able to assemble the data they need without help. Collecting data on levels of access to different services across the city can be extremely challenging. This lack of data is often an obstacle to making improvements or holding governments accountable. Spatial data for access indicators are often missing and must be gathered, mapped, combined with other data, and shared across service-providing agencies to ensure more integrated and inclusive planning. Cities need standards for collecting, sharing, and using representative, good-quality data to inform decision-making. Without such standards, it is difficult to compare conditions across cities and neighborhoods within cities in a consistent way. This makes it hard to understand how exclusion from core services affects people's quality of life. Gauging the true costs of the services gap, for whole cities, regions, and nations, is difficult as well.

8.2 PRIORITY ACTIONS

A. Use new technologies and partnerships for better data and more granular local insights

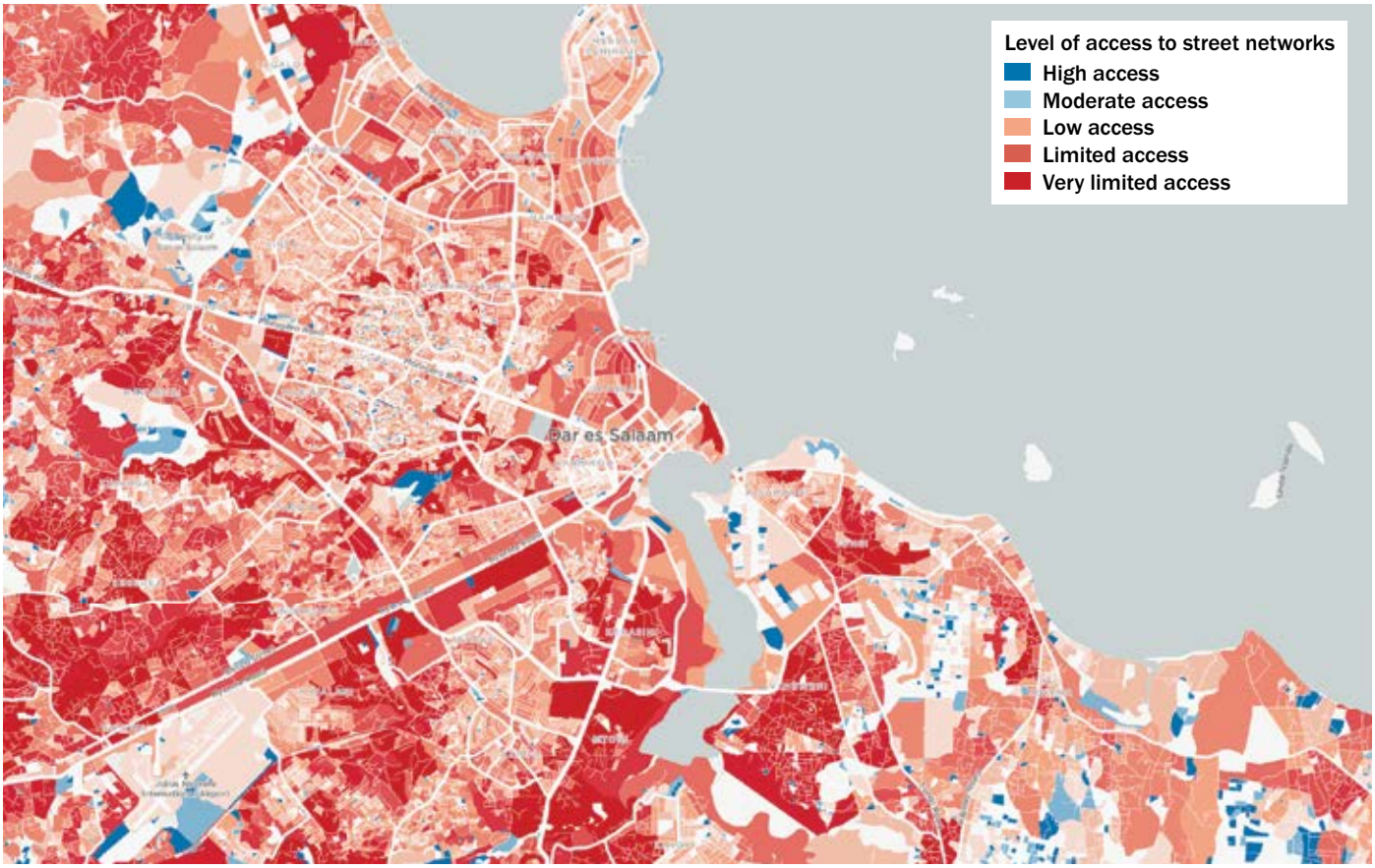
New technologies and partnerships now make it possible for cities to bring together the high-quality, disaggregated spatial and socioeconomic data they need to make better decisions, regardless of whether they are rich or poor. An explosion of new insights from various sources is revolutionizing data collection and presents a breakthrough opportunity for under-resourced cities in particular. Tools to do rapid community surveys and gather crowdsourced information, anonymized mobile phone records, electronic transactions, and satellite imagery can generate unprecedented amounts of precise, granular information. "Big data" is proliferating, on traffic flows, cell phone communications, Internet usage, and financial and other transactions. Some of this is available to the public. This data can now be collected cost-effectively, frequently, and at high resolutions of spatial detail and disaggregation across socioeconomic groups.[300] Cities can seize this opportunity to utilize different data sources, methods, technologies, and types of data. They can identify activity patterns, job growth locations, and levels of service coverage. Yet while ensuring that the needs of low-income populations are measured, cities must also ensure the protection of privacy for all. Better data creates an opportunity for all cities to become better equipped to diagnose and solve problems.

Ensuring that the data are disaggregated by population group and neighborhoods can help cities understand prevailing inequities. It can help identify gaps in access to services, especially in vulnerable communities and locations. For instance, under SDI's Know Your City initiative, community-gathered data from thousands of informal settlements across approximately 500 cities is being used to improve conditions and upgrade services (see Box 11). Based on evidence that "inclusive outcomes demand inclusive knowledge and action," the initiative trains residents of informal settlements in surveying, enumeration, and mapping so that they can bring these data to the attention of decision-makers and lobby for improved infrastructure and services.[301]

The United Nations' New Urban Agenda and SDGs recognize the importance of more accurate data. Both include commitments to improve the quality of actionable data for cities and development. The Million Neighborhoods Map, a new global tool designed to detect gaps in services in informal settlements, is valuable in helping to identify communities with limited access to street networks, which can be a good proxy for access to other services, such as power, water, sanitation, and other infrastructure (see example of **Dar es Salaam, Tanzania**, in Figure 26). Low-access neighborhoods are colored red, whereas those with high access to streets are colored blue. Zooming in on a city on the Million Neighborhoods Map quickly identifies areas most likely to be informal settlements that have sprung up with little planning and possibly little essential infrastructure.

An explosion of new insights from various sources is revolutionizing data collection and presents a breakthrough opportunity for under-resourced cities in particular.

Figure 26 | **New technologies help measure the level of access to street networks in Dar es Salaam, Tanzania**



Source: Mansueto Institute for Urban Innovation, Million Neighborhoods Map, https://millionneighborhoods.org.

Satellite imagery combined with aerial photography using drones provides a low-cost way to tackle the otherwise expensive exercise of land mapping. Increasingly, cities in **China**, **India**, **Rwanda**, **Tanzania**, and some Latin American countries are using these technologies to monitor development patterns, complete land cadasters, enforce land-use regulations, and collect tax revenue.[302] Detailed drone images combined with satellite imagery generated over time can help monitor growth patterns, service provision in informal settlements, and the condition of open spaces and environmentally vital areas. This type of data can be very useful to bring transparency in land records and transactions and enable spatial planning (see Transformation 6).

Combining advanced technologies such as satellite imaging and drone surveys with community-gathered data is helping shed light on conditions in informal settlements (see Box 11). Satellite imagery can detect where peri-urban and rural areas are being converted to urban land use—formally or informally—and whether new urban settlements have access to core services. With increasing use of artificial intelligence, satellite imagery is being used to "train" machine learning algorithms to provide citywide land-use maps, maps of vulnerable environmental sites, locations of slums, and more.[303] This has the power to drastically improve planning and policymaking in cities where technical capacity is limited and where even basic land-use maps do not exist or are not updated. However, these data obtained through satellite imagery and artificial intelligence need to be matched with fieldwork in a sample of locations to understand error rates and be checked against and supplemented with information obtained from communities and from ground-level surveys.

Satellite imagery provides only a rough sense of where informal settlements exist. Their type and form (shacks, tin or thatched roofs, mud huts) vary so much that algorithms

cannot yet make sense of them in any standardized way. This is why ground truthing through fieldwork is so important, and why satellite imagery must be combined with far more detailed drone surveys and/or data directly gathered by communities. These combined approaches provide powerful new insights on the under-served. For example, a recent seven-year study by researchers to map informal settlements in **Bengaluru** using satellite imagery and machine learning combined with ground truthing efforts recorded about 2,000 informal settlements in the city, whereas government records showed fewer than 600.[304]

BOX 11 | Using geospatial data with community mapping helps plan neighborhood improvements

Whenever official data are out of date or not available, as is often the case for the informal sector, cities can explore new data sets provided by other stakeholders. For instance, organizations such as Slum/Shack Dwellers International (SDI) or the Asian Coalition for Housing Rights have produced systematic and aggregated data on informal settlements. Data sets such as those developed under the Know Your City campaign, SDI's global initiative, can provide unique insights and complement existing official surveys. This geo-referenced community-collected survey data can provide information on tenure security, service density, housing quality, and other issues related to informal settlements where little empirical knowledge is currently available (Figures B11.1 and B11.2).

Figure B11.1 superimposes drawn imagery with community maps of all structures in the informal settlement of Westpoint in **Monrovia, Liberia**. The combination of high-resolution imagery and community data can improve the accuracy of maps and contributes useful information for planning that could not be obtained until recently. For instance, based on the maps and underlying data, we can provide metrics of total settlement population, population density estimates, and calculate the amount of built-up and open area per capita. Such metrics are necessary to understand current conditions and implement planning improvements. Figure B11.2 shows the location of different infrastructure services (water points, toilets, electricity transformers, streetlights, garbage disposal, etc.) as well as services of interest to the community (schools and religious institutions).

Figure B11.1 | **In the informal settlement of Westpoint in Monrovia, Liberia, community-gathered data are used with drone imagery to assess gaps in access to services**

Source: SDI, 2018; Kallergis, 2018.

BOX 11 | Using geospatial data with community mapping helps plan neighborhood improvements (Cont.)

Figure B11.2 | **A neighborhood map can pinpoint key services**

Source: SDI, 2018; Kallergis, 2018.

In practice, community members, especially women and youth, are trained in digital data collection, including the double-checking of entered data, as a core practice. The information gathered is geo-referenced and then provides spatial data for settlement borders; service points such as water taps, toilet facilities, and health clinics; and major identifying landmarks nearby. All profiles automatically require a time stamp, physical contours, and surveyors' names and contact information so information can be verified, assessed over time, and understood by third parties. Beyond producing geographic information, settlement profiling culminates with identifying risks and priorities for each community and careful enumerating of what can be broadly described as the social fabric of settlements (i.e., the presence of community leadership, the number of community-based organizations, savings groups, women and youth clubs, schools, churches, etc.).

B. Increase city capacity to collect and effectively utilize data

Credible spatial data disaggregated to identify vulnerable locations and communities and the ability to share such data publicly are key to creating a shared understanding of a problem. National and regional governments can help cities acquire the tools and build the capacity to gather, analyze, and share data while protecting people's privacy. National and regional governments must invest in building technical capacity in cities and setting standards for consistent data collection, sharing, and use. Sharing data across government agencies within cities and between local, regional, and national agencies can facilitate greater transparency in decision-making and support citizen innovation and engagement. This is especially important if cities are to play a key role in solving problems that are regional in scope, such as curbing air pollution, managing water resources, mitigating climate risks, and conserving biodiversity and green spaces.

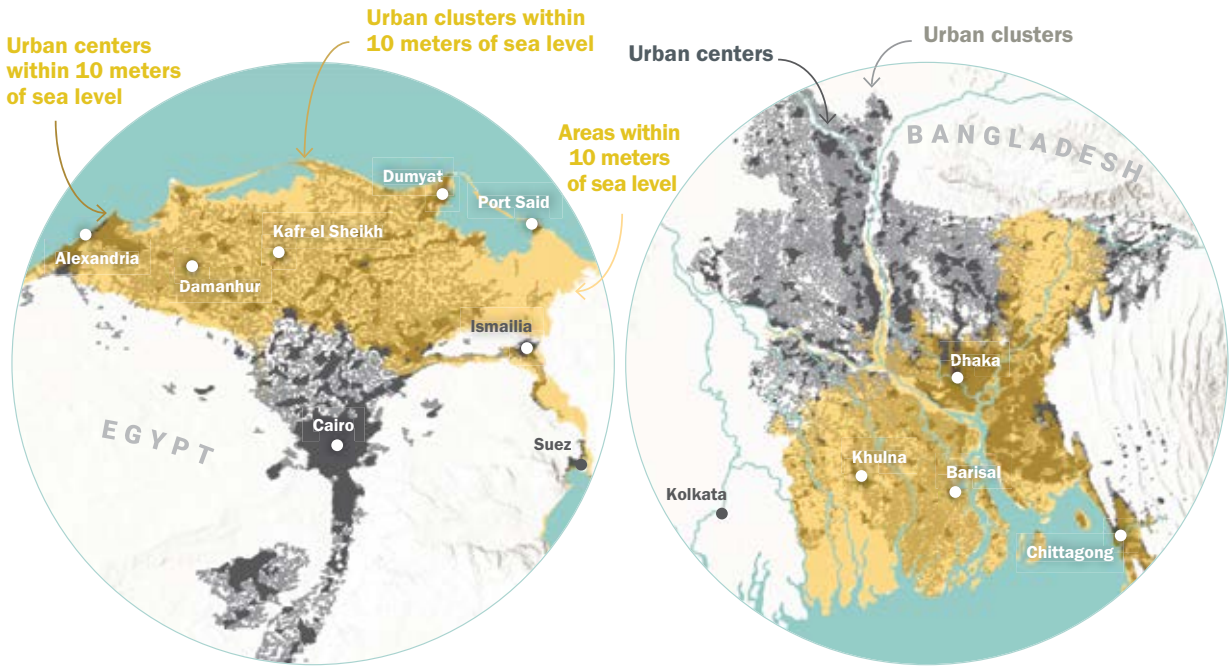
For example, Figure 27 shows how spatial data can usefully highlight areas in Egyptian and Bangladeshi cities to prioritize for adaptation measures against sea level rise.

New technologies coupled with adequate resources and data sharing can give governments and planners unprecedented insight into a wide range of problems and potential solutions. For example, given the growing use of digitized maps to plan major infrastructure projects, it is possible to overlay data on core infrastructure networks (transport, water, sanitation, electricity) with settlement data, allowing stakeholders to analyze the need for future investments to expand service provision. It is also possible to further overlay these service networks with data on job locations, education, health care, transport hubs, and green spaces to identify key challenges facing marginalized populations across the city. Investing in city capacity to develop better data systems can be an extraordinarily productive way to spur innovation and improve decision-making, if city leaders are willing to attack the problems exposed through better data.

C. Coproduce and share data to foster more effective and inclusive governance

Investing in better data has many payoffs over time. It can enhance decision-making, improve quality of life for all sections of the population, increase efficiencies in resource use, help plan for and avoid costs of future risks, and support citizen participation in policymaking processes. Broader participation can improve local and regional governance and support reforms promoting economic development, education and training, public health, economic and social welfare, and resilience. Data collection and monitoring needs to be a continuous capability that governments invest in over time because data are constantly changing. Data sources and outputs must be compatible with each other over time to produce meaningful insights. Keeping up to date data requires partnerships across key data providers, communities, the private sector, local researchers, and universities that bring the data they have access to and help sustain this capability (see Figure 28).

Figure 27 | **Coastal flooding risks from sea level rise may impact large swaths of built-up areas including in Egypt and Bangladesh**



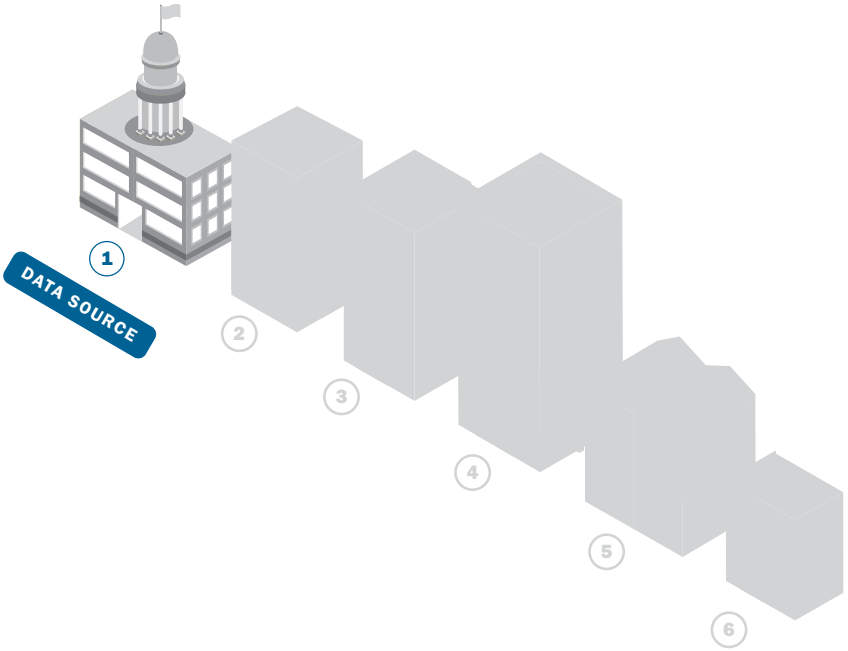
Note: "Urban centers" are cities and large urban areas; "urban clusters" are towns and suburbs or small urban areas.

Source: Center for International Earth Science Information Network (Columbia University), CUNY Institute for Demographic Research (City University of New York), and the Institute of Development Studies, 2019. For the Coalition for Urban Transitions and the Global Commission on Adaptation. Published in Chu et al., 2019.

Figure 28 | **Data from multiple actors can lead to more effective and inclusive decision-making**

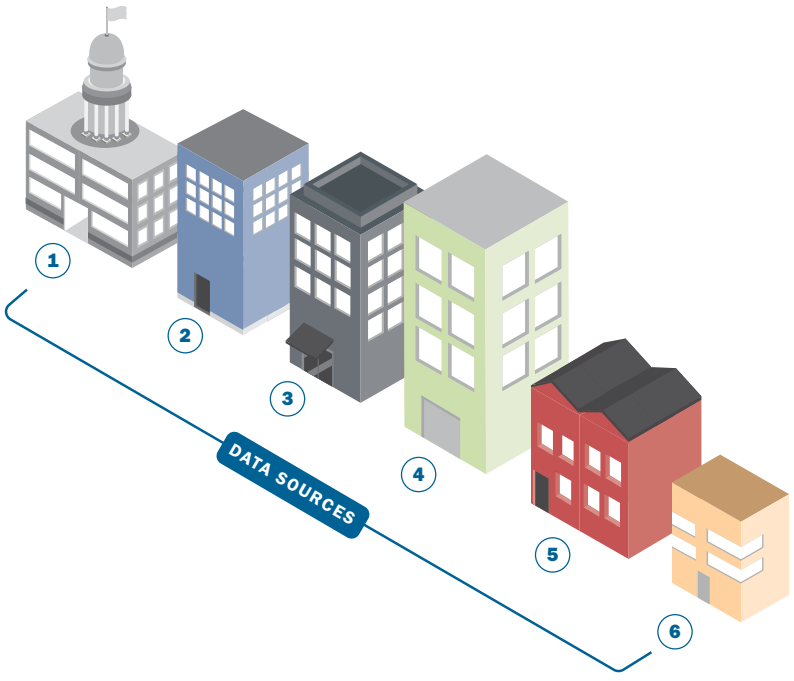
When the right data and capacity are absent....
Ineffective, exclusionary policy

1. **Government Agencies**
   - Outdated data, only formal areas
   - Insufficient disaggregated data
2. Private Sector
3. Global/National Orgs
4. Research Institutions
5. Universities
6. Community Organizations



When diverse data and capacities are harnessed....
Effective, inclusionary policy with well-informed targets and indicators

1. **Government Agencies**
   - Updated service access data
   - Subcity, disaggregated data
2. **Private Sector**
   - Service provision data
   - Financial data
3. **Global/National Orgs**
   - Geospatial, regional data
   - SDG monitoring data
4. **Research Institutions**
   - Climate risk data
   - SDG monitoring data
5. **Universities**
   - Demographics
   - Natural environment
6. **Community Organizations**
   - Data on informal settlements



Source: Authors.

Democratizing data production and access and integrating useful community knowledge can make governance and planning more inclusive. Beyond generating useful data, shifting to new paradigms of knowledge coproduction can lead to more inclusive outcomes for cities. Engaging community actors to produce and share data can both shed light on inequities and gaps in service and help craft policies to address them. But for this to work, data proliferation is not enough; the data must also be operationally useful. It needs to be organized, analyzed, and shared in ways that can help inform and mobilize support for better regulations and policies. The increasing availability of open data and common standards for data collection are making it easier to share crucial local-level information with multiple actors. Making such data more transparent can help energize citizen pressure and spark innovation for more sustainable growth. Self-enumeration projects conducted by SDI, NGOs, and community groups in **Nairobi** mapped over 50,000 households in the city, with community organizations collecting, producing, and using data to arrive at a common vision and set of priorities.[305] These groups were then able to lobby the city's water and sewer company to provide convenient water sources. In some of the largest informal settlements, such as Huruma, Kibera, Mathare, and Mukuru, residents were able to successfully challenge the city's evictions and slum-clearance efforts and negotiate upgrading schemes with landlords.[306]

In addition to helping communities and citizens to identify and meet needs, data can help them uncover problems. For example, they can monitor development that is illegal and environmentally detrimental, built by private developers without government approvals. Examples include huge gated communities that sprang up in a lakebed on the periphery of **Bengaluru**. Environmental groups and future residents who invested in the community raised the alarm when they found out it had been built without environmental clearances in a sensitive ecological zone.[307] Authorities may know illegal development is happening and ignore it. But making the data visible allows citizens to take action. The right information provides impetus for public action and allows coalitions of stakeholder groups to come together to make decisions around investment, set common objectives, negotiate mutual commitments, and lobby policymakers (see Figure 28). It enables them to monitor, track, and expose the impacts of public policies and private actions on equity and environmental sustainability and to hold decision-makers accountable. Data transparency and sharing can be politically empowering.

Data transparency and mandates to share data across jurisdictions and stakeholder groups can also help local authorities build trust and improve their performance. The *Towards a More Equal City* case study of **Johannesburg** describes the development of a comprehensive, publicly available database of landownership records in partnership with private developers and property owners.[308] The database proved valuable for the planning of an urban development zone meant to encourage economic growth and affordable housing in inner-city areas, along with the design of incentives for private developers.

Concerns have arisen in recent years around data privacy, private technology companies exploiting and selling data for profit, and taking the lead in driving the growth of "smart city" initiatives.[309] Technology companies are advancing into delivering urban services such as transport (e.g., Uber, Ola, EasyTaxi), managing energy and water infrastructure, and deploying sensors to measure air and water quality, among other smart systems within cities. This can leave public sector agencies with low capacity, scrambling to manage this transition and protect citizens. Some cities have begun setting conditions for the collection, use, and sharing of data generated about citizen needs and choices. For example, **São Paulo** passed an innovative regulation requiring all transport network companies operating in the city to provide the city with data on trip origins, destinations, times, distances, travel routes, prices charged, and service evaluation by the customer. The data remain confidential and secure and provide invaluable real-time information that the city can use to plan transport services and operate the road network more

Better data allows citizens to monitor, track, and expose the impacts of public policies and private actions on equity and environmental sustainability and to hold decision-makers accountable.

efficiently, as well as to charge fees from these companies for the use of public streets.[310] Although São Paulo has established a collaborative lab, MobiLab, involving transport professionals and computer and data scientists to analyze the data, many cities struggle with the technical capacity needed to draw insights from similar big data sources.

Relying on data generated by private companies may present other challenges. Data gathered from people's smartphones as they move around the city typically miss some of the most vulnerable, who do not own or use a smartphone. Phone data then does not capture the behavior and preferences of those most at risk and are unable to provide any insights on questions of equity. It is important to note that data gathered from any source, even highly accurate data, can be used for a variety of purposes. Some governments have used new mapping and technology to clear slums, further harming marginalized groups rather than looking for ways to help them. It is important that these technologies should be used to include—not to exclude—the under-served. They should support enabling regulations to improve their living and working conditions, and they should be used to promote data transparency.

Our research shows that combining the information provided by a wide set of stakeholders—community groups, universities, NGOs, and the private sector—can help ensure its credibility and bring new insights. Gathering, sharing, and using better data can drive transformative change. It creates an enormous opportunity to respond more effectively to many of the practical problems that cities and neighborhoods face today. Table 4 lists the actions and roles required of different actors to move Transformation 3 forward.

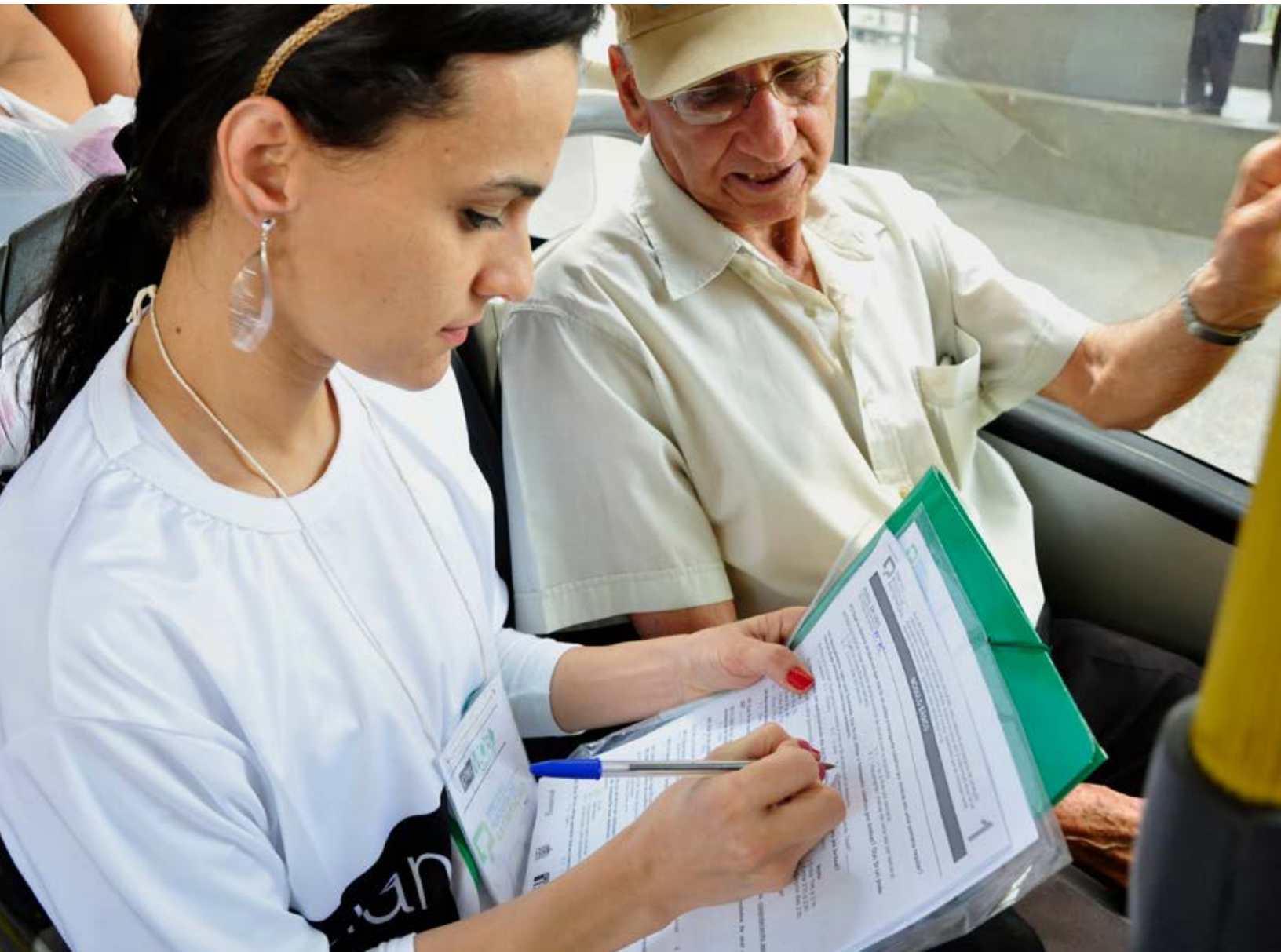


Table 4 | **Roles of specific actors in advancing Transformation 3: Data Collection Practices**

DATA COLLECTION PRACTICES—IMPROVING LOCAL DATA THROUGH COMMUNITY ENGAGEMENT	
City Government and Urban Sector Specialists 	▪ **Build capacity to bring together high-quality, disaggregated spatial and socioeconomic data** by harnessing new technologies and forging new partnerships ▪ **Utilize advanced technologies** such as satellite imaging and drone surveys, supplemented with community-gathered data to understand access gaps and inform decision-making ▪ **Engage community actors in producing and sharing data,** and integrate community knowledge in planning and governance processes ▪ **Democratize data access** to support citizen participation in policymaking, build trust, and diagnose gaps in government action
National Government 	▪ **Invest in building technical capacity in cities** and set standards for consistent data collection, sharing, and usage ▪ **Develop guidance on urban metrics and evaluation indicators** that can be used by regional and local agencies for inclusive planning ▪ **Invest in building inclusive governance practices informed by data gathered from vulnerable communities**, such as by engaging civil services staff to enforce rules on transparency under good budgeting, accounting, and reporting standards and with community input
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Support communities to gather data** on the quality and quantity of core services in informal settlements and neighborhoods where vulnerable groups reside ▪ **Advocate for data transparency and mandates to share data** across jurisdictions and stakeholder groups to expose gaps in government action and improve governance processes ▪ **Influence decision-makers to shift to new paradigms** of local planning and decision-making, based on coproducing and sharing knowledge across local community groups and a wider set of stakeholders, including universities and the private sector ▪ **Collaborate with public sector officials to help build technical capacity**, train staff, and develop new approaches for collecting and using data to inform decision-making
Private Sector 	▪ **Provide funds and expertise** for cocreation of knowledge and collection of good-quality, consistent data to inform decision-making ▪ **Increase the availability of open data**, new technologies to gather data, and the development of common standards for data collection ▪ **Partner with government bodies** to access and share disaggregated data to enable problem-solving
International Community, including Development Finance Institutions 	▪ **Create knowledge and develop tools and standards** to make spatial, disaggregated, socioeconomic data available at local, national, and global levels ▪ **Incentivize data transparency and mandates** to develop, maintain, and share data across jurisdictions and stakeholder groups in urban areas ▪ **Use peer exchange and knowledge networks to share lessons from good practices** in designing integrated urban actions and policies that help achieve multiple desired goals, such as the Sustainable Development Goals and climate action at local, regional, and global levels ▪ **Influence decision-makers to shift to new paradigms** of planning, governance, and operations, based on coproducing and sharing knowledge across community groups and a wider set of stakeholders, including universities and the global private sector ▪ **Provide financing to build technical capacity** in cities to use data for decision-making and to set standards for consistent data collection, sharing, and usage

Source: Authors.

Chapter 9. Informal Urban Employment—Recognizing and Supporting Informal Workers

Informal economic activities must be supported because they not only provide livelihoods for the working poor but also supply goods and services that keep the city's formal economy running. Transforming urban employment policies to recognize the hidden value of informal employment and support informal workers can increase their well-being and boost the economic resilience of cities.

Status Quo	Priority Actions	Desired Outcome
Unrealized potential of the urban economy	• Quantify the contributions and challenges of informal workers • Stop the exclusion of informal workers from city life • Expand access to public spaces, services, customers, and social safety nets	**A stronger, more inclusive urban economy**

9.1 WHAT MUST CHANGE AND WHY

Informal work is the cornerstone of the global South's economies

Worldwide, 2 billion workers operate in the informal sector, representing more than half the urban workforce in the global South. Informal workers supply many of the goods and services that keep cities running, "holding up the world" like the mythical giant Atlas, yet they are largely invisible to city administrations, and their working conditions remain unsafe and insecure.[311]

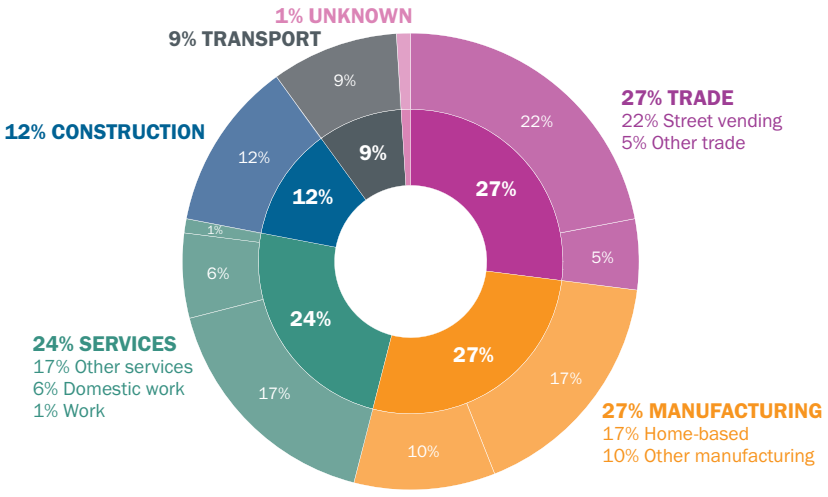
The informal sector refers to the production and employment that takes place in unincorporated or unregistered small enterprises.[312] Informal employment is employment without legal and social protection, both inside and outside the informal sector.[313] The informal economy encompasses all units, activities, and workers defined as such and the output from them.[314] These terms are often used interchangeably and imprecisely, yet it is clear that together, informal workers and enterprises form the broad base of the global workforce and economy.

Although most economic theorists predicted that the informal economy would decline as countries developed and urbanized, this has not happened. On the contrary, the informal economy has persisted and is growing and generally thrives in cities alongside robust formal sectors. The poor and women make up a disproportionate share of the informal workforce and may need to take these jobs because they have lower levels of education.[315] Many informal jobs trap workers in poverty and provide little protection or security.[316] But although the informal economy is often associated with poverty, it is important to acknowledge its diversity and the fact that some workers choose informal work over other types of formal low-skilled jobs.[317] For now and the foreseeable future, the informal economy will remain a key factor in the well-being of the urban economy as a whole.[318]

Informal workers generate income, consume goods and services, and create jobs for others. Although the informal economy does not typically generate tax revenues for the city, many governments charge informal vendors for day licenses, permits, and operating fees and levy other kinds of taxes and penalties. Contrary to common perception, informal and formal enterprises seldom operate in isolation and are actually often mutually dependent.[319]

Whether they sew garments, drive minibuses, cook and sell food, pick waste, construct buildings, or run small manufacturing businesses from home (see Figure 29), informal urban workers play an essential role in the economies of the global South.

Figure 29 | **Informal workers in India play a significant role in key sectors of the urban economy**



Source: Chen and Beard (2018), using data from Chen and Raveendran (2014).

Though it is vast and vital to both the urban poor and the cities where they live, the informal sector has received relatively little attention. Much past research has focused on strategies for boosting formal sector productivity in cities as a pathway out of poverty.[320] The World Bank identifies institutions and regulations, infrastructure and land (which includes urban services), skills and innovation, and enterprise support and finance as the four categories of interventions needed for "competitive cities," but their study does not explore the role of the informal economy.[321] Cities with large informal sectors have also tended to ignore them, push them out of sight, treat them as a liabilities, or get rid of them. Many have barely any data on informal employment, and the interlinkages with and contribution to the formal economy are not widely recognized.[322]

Our research aims to help fill this void. It underscores what a growing number of economists have come to believe: the informal sector is not just a problem to be solved by "formalization" but an opportunity to improve livelihoods and prosperity for all. With the right kinds of support, it can raise productivity and incomes for the poorest workers and generate additional benefits citywide.[323] Affordable and reliable services are a key component of that support. Currently, informal workers suffer disproportionately[324] from poor access to infrastructure and services,[325] making it more difficult for them to connect to inputs and customers, avoid interruptions, and eke out a livelihood. Being under-serviced multiplies the costs of getting and treating water, managing waste, and generating or buying power. It can hit small, cash-poor operations the hardest. In some African cities, for example, households and small businesses lack access to electricity and water not because the service does not exist but rather because the connections are too costly.[326]

With barely any data on informal employment, most cities do not recognize its interlinkages with and contribution to the formal economy.

9.2 PRIORITY ACTIONS

A. Quantify the contributions and challenges of informal workers

Local officials must collect, analyze, and incorporate into official planning better data on the true extent of informal work and its importance to the city as a whole. Data from Mukuru, one of **Nairobi**'s largest informal settlements, indicates it has a robust informal economy comprising over 20,000 independent and undocumented small-scale service providers who generate almost $64 million (approximately 7 billion Kenyan shillings) annually. It supports both local livelihoods and the economy of the entire metropolitan region, representing a fifth of the total revenue of the Nairobi City Council for the 2015/16 fiscal year and about 4 percent of the Kenyan government's annual national budget.[327]

Dharavi in **Mumbai**—often considered Asia's largest slum—has an active informal economy with about 20,000 small-scale manufacturing units and household enterprises producing leather, textile, and pottery products exported around the globe with an annual turnover of over $1 billion.[328] These enterprises provide livelihoods to slum residents. Reports show that 60 percent of Mumbai's segregated waste is processed in Dharavi, which is home to almost 30,000 waste pickers, and indicates the vital role this informal settlement, which houses almost a million people, plays in managing solid waste in a megacity.[329]

A study on the contribution of urban informal settlement dwellers to **India**'s urban economy, which was based on surveys conducted in 50 Indian cities and comprising over 5,000 households, found their total contribution to be 7.5 percent of national GDP.[330] The survey looked at a broad set of social, economic, and demographic issues in Indian informal settlements, considering incomes, expenditures, education, and living conditions, including their levels of access to services such as electricity, tap water, and sanitation. Across the 50 cities, one-third to half of all residents lacked one or more of these services, but in some of the lower-income Indian states, 80 percent of slum residents lacked these facilities.

Studies like this clarify two issues. First, not all workers living in informal settlements are "informal." Some are indeed self-employed or own account workers, but others may be employed in formal or legal businesses but their productivity and quality of life are affected by the absence of basic services in informal settlements. Second, those who are informal workers produce the goods and services that benefit the

formal local economy, and as such, their lack of access to services and poor living and working conditions have high shadow costs for the economy, with negative impacts on well-being and economic resilience. Detailed surveys, such as the studies mentioned here, can help assess the value generated by otherwise invisible and uncounted informal workers and enterprises located in informal settlements and then bring it to the attention of decision-makers.

B. Stop the exclusion of informal workers from city life

Cities can begin by acknowledging the legitimate value of informal and home-based workers—not harassing or penalizing them—and by ensuring they are granted the same rights as other workers. These rights include legal recognition, economic and social rights, access to core infrastructure and services, social protection, and better representation in city decision-making (see Figure 30). Legitimacy brings the invisible giant—the large number of informal workers—into plain sight.

Urban governance attitudes have too often been shaped by traditional measurements of labor productivity and economic development, which do not recognize or capture the value of the informal economy in the global South. They obscure its importance to the livelihoods and well-being of all city dwellers. A different formula, one that factors in the value of shared opportunities and resilient livelihoods for all citizens, would change these calculations. Recognizing the informal sector's importance and better meeting its needs can help achieve its potential.

In Indian cities such as **Surat** and **Ahmedabad**, the Mahila Housing Trust has tried this approach by negotiating with city agencies and leveraging city funds on behalf of informal workers. These funds have been used to upgrade housing conditions and access solar energy technologies to run refrigerators, soldering irons, and sewing machines for home-based businesses. These changes have raised incomes, saved money, and lowered energy consumption.[331] In **Bangkok**, an organization of home-based and other informal workers called HomeNet negotiated with the Bangkok Mass Transport Authority to extend service to the outskirts of the city where most informal workers reside, giving them access to inputs for their products and markets to sell them.[332]

Transformation 2 provides more examples of how cities across **Argentina**, **Brazil**, **Colombia**, and **India** have altered their employment practices to contract previously informal waste pickers and their cooperatives for door-to-door waste collection as part of municipal solid waste management systems.[333]

C. Expand access to public spaces, services, customers, and social safety nets

Legal recognition and full acknowledgment of the rights of informal workers implies a full and fair expansion of the benefits of urban living to include all city residents. Government should:

- Provide core public services such as electricity, water, and sanitation to informal workers to make their home-based and other workplaces more productive
- Grant regulated access to public spaces for informal workers to pursue their livelihoods (while balancing the interests of other users of these spaces, such as pedestrians who need to use sidewalks)
- Allow informal worker organizations to compete for public procurement to increase demand for their goods and services
- Extend social safety nets to informal workers
- Promote access to credit for informal workers and their organizations

Examples from cities across the global South illustrate how these steps can improve informal workers' earnings, well-being, access to opportunities, and economic contributions.[334] For example, a number of cities have opened more space for street vendors. Informal worker groups and NGOs engaged with India's Ministry of Urban Development, which led to the adoption of a national law to recognize and protect street vendors and identify designated zones for them to operate.[335] The cities of **Bhubaneshwar, India**, and **Durban** have worked with local NGOs and informal worker groups to create designated zones in public areas and improved markets for street vendors, acknowledging their important role in each city's economy.[336]

Figure 30 | **Cities can support informal workers in various ways for a more inclusive economy (illustrated by three categories of informal workers)**

Sector-specific needs and demands

HOME BASED WORKERS	STREET VENDORS	WASTE PICKERS
• Freedom from forced relocations and zoning restrictions • Secure tenure and upgrading of their homes-cum-workplaces • Basic infrastructure services—water, electricity, sanitation • Occupational health and safety services	• Freedom from harassment, bribes, confiscation of goods, evictions, arbitrary warrants and convictions, arbitrary relocations • Right to vend in public spaces in central locations near pedestrian and customer traffic under fair and reasonable conditions (which balance competing rights of different users of public spaces) • Integration of natural markets of street vendors in urban zoning, land allocation, and market development plans • Fair, transparent, and participatory system for allocating licenses and permits • Basic infrastructure services at vending sites, including shelter, water, sanitation, and storage facilities	• Access to waste • Freedom from harassment and confiscation of collected waste and reclaimed materials by city officials • Recognition for their economic and environmental contributions • Integration as paid service providers for collecting, segregating, recycling, and transporting waste in solid waste management systems • The right of their organizations to bid for solid waste management contracts • Space and equipment for collecting, transporting, sorting, and storing recyclable materials, including safety equipment and clothing • Equipment for processing reclaimed waste (e.g., balers, compactors, and grinding and pelleting machines) • Ban on the use of incineration and landfill disposal technologies that are harmful to the environment and the livelihoods of waste pickers

Source: Chen and Beard, 2018.

City governments have also offered procurement opportunities. In India they have begun working with the Self-Employed Women's Association, a trade union with 1.5 million members, to give self-employed women jobs that provide core public infrastructure services. The partnership is organizing workers and linking them to specific city government departments responsible for sanitation, water, electricity, and housing. Since these cities lack the budgets and investment capital to meet the demand for services, employing these informal workers fills unmet needs, creates employment, fosters more inclusive cities, and saves money that would otherwise have to be spent on hiring city staff to manage service delivery.[337]

As COVID-19 has made all too clear, informal workers need social safety nets, just as other workers do.

In response to the pandemic, the World Bank has allocated $1 billion to improve social safety net programs for the urban poor in India, and the Indian government is creating the National Database of Migrant Workers to better target assistance to the numerous migrant and informal workers affected by the pandemic.[338] In 2020, **Nigeria** committed almost $200 million as part of a survival fund to compensate informal workers, including transit operators idled by the COVID-19 pandemic.

In **Lesotho** and **Vietnam**, unemployment benefits have been expanded to workers in the informal sector.[339] Many countries have expanded their cash transfer programs, with most Latin American countries, including **Bolivia** and **Colombia**, explicitly including informal sector workers.[340] In one case in **Brazil**, the city of **Maricá** has gone even further, providing additional payments to those with lower incomes.[341] Programs like these, which are typically more prevalent in rural areas, also need to cover urban informal workers to protect their lives and livelihoods and, in doing so, protect the economic resilience of cities.

We argue that informality is not an anomaly or a transient phenomenon but rather is the very essence of contemporary urbanization in the global South; therefore, urban policies need to be developed from this perspective.[342] Trying to formalize the entire informal sector quickly is not feasible, realistic, or necessarily desirable. National governments should make it easier for informal enterprises and workers to join the formal economy if they want to. National governments can provide legal standing to informal enterprises and self-employed informal workers. Legal standing might require them to pay taxes; yet in return, they would no longer need to pay daily bribes or other fees and penalties to be able to operate. They would gain security and more reliable income. Simplifying complex business registration regulations could at least give informal business operators choices.[343] Studies show that reforming employment practices to make it easier to register a business can boost employment because larger informal business owners will formalize their businesses and smaller business owners and daily wage earners are likely to shift to formal jobs.[344]

More inclusive cities recognize the legitimacy of informal workers and grant them the rights to which other urban workers are entitled. Acknowledging the current and potential contributions of the informal workforce is necessary for achieving greater prosperity citywide. Table 5 lists the actions and roles required of different actors to move Transformation 4 forward.

Table 5 | **Roles of specific actors in advancing Transformation 4: Informal Urban Employment**

INFORMAL URBAN EMPLOYMENT—RECOGNIZING AND SUPPORTING INFORMAL WORKERS	
City Government and Urban Sector Specialists 	▪ **Recognize the challenges of different types of informal workers and the value they generate** in the urban economy across sectors ▪ **Increase the access of informal workers** to public spaces, services, procurement opportunities, and social safety net programs ▪ **Grant informal workforce the same rights as other urban workers**: legal identity and standing, economic and social rights, organization and representation, social protection, and access to core infrastructure services.
National Government 	▪ **Reform laws and regulations** to support informal workers with easy business registration procedures and social safety net programs, and penalize their harassment ▪ **Gather data on informal and migrant urban workers**, by sector, including their working conditions, wages, and contributions to output in different economic sectors ▪ **Ensure taxation programs are progressive and transparent** and account for the informal taxes and operating fees informal workers already pay ▪ **Create incentives for cities** to offer public procurement contracts for services such as waste management to informal worker organizations with a path to formalization and benefits ▪ **Engage informal worker organizations** when setting policies in sectors in which they are employed, and support them in negotiations with local governments
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Work with city government to increase the access of informal workers** to public spaces, public services, and public procurement opportunities ▪ **Advocate for a more inclusive vision of economic prosperity**, so that it is shared across all who contribute to the workforce ▪ **Ensure equal employment rights and security for informal workers**, including social and fiscal safety nets in times of crisis and disasters ▪ **Support and facilitate participation of informal workers groups in urban decision-making** that affects their lives and livelihoods
Private Sector 	▪ **Recognize the contributions of informal workers** to the overall economy, including formal business and output, and penalize their exploitation ▪ **Partner with informal small entrepreneurs** to invest in and scale local innovations ▪ **Comply with wage laws** and offer paths to formal employment and reliable livelihoods with benefits and insurance schemes ▪ **Include informal workers in supply chains** for goods and services and provide reliable business to support their livelihoods ▪ **Create and operationalize innovative credit instruments in the banking sector** for informal workers and businesses investing in informal settlements, thus fostering financial inclusion
International Community, including Development Finance Institutions 	▪ **Develop financing programs that help cities integrate informal workers** into formal employment and service delivery systems, with social and fiscal safety nets, health benefits, and secure livelihoods ▪ **Incentivize a change in mindset** to acknowledge the implications and contributions of the informal economy ▪ **Design programs that ensure economic gains are distributed for shared prosperity**, ensuring access for all citizens to the full range of opportunities the city offers

Source: Authors.


A
A Niquía
A La Estrella
A
Entrada
VIAJE METRO
Cívica
VIAJE METRO
Cívica

Chapter 10. Financing and Subsidies—Increasing Investment and Targeting Funds Innovatively

Cities, countries, and investors need to substantially increase investment and target it innovatively to fill the gap in affordable urban services. National government support is essential, especially in the global South, where it can build an enabling ecosystem using its power of the purse, regulations, and control of financing institutions. Developing innovative financing instruments and engaging local communities can get money to where it is needed most.

Status Quo	Priority Actions	Desired Outcome
Chronic underinvestment in core services	• Increase national government investment, directing it where the need is greatest • Create well-structured, targeted subsidies for affordability and social returns • Use innovative financing instruments and creative payment schemes • Regulate private entities and strengthen oversight capacity • Incorporate wider social costs and benefits into financial analysis and involve the community	**Higher investment in core services, targeting the most vulnerable**

10.1 WHAT MUST CHANGE AND WHY

Financing for vast needs is inadequate in the global South

In struggling and emerging cities of the global South, investments in core services and infrastructure could pay for themselves many times over, and the costs of inaction can be staggering. But these cities face a major constraint: money. Low- and middle-income cities can rarely afford to finance such projects on their own. Big-ticket infrastructure projects cost far more than they can collect in taxes. Many of the fastest-growing cities in the world have the smallest budgets per capita to meet the growing demand for public services.[345] The urban services divide will continue to grow unless cities make large, up-front capital investments in necessary infrastructure and core urban services; they also must invest differently to ensure that the money reaches those whose need is greatest. Ensuring that the poor and marginalized have equitable access to those services usually adds costs. Even investments that will be more than offset by the multiple health, economic, and environmental cobenefits they provide over the long term may prove out of reach for most cities.

Options are limited. Municipal governments in most low-income countries cannot borrow from international development banks. Private finance has generally not been forthcoming because short-term returns to investors are low or uncertain while financial risks are high. Available capital gets absorbed by safer and more immediately profitable investments that benefit more high-end customers.

Privatization is not a panacea

In recent decades, cash-strapped cities have contracted with private companies to build or repair infrastructure and manage services for a profit, sometimes through public-private partnerships (PPPs). But it is unclear whether any core urban service will become profitable for the provider (in the short and medium term) without significant public investment and subsidies to make services more affordable to customers with low incomes.

During the 1990s a number of private companies began providing piped water to cities in the global North and South. Cities privatized municipal water suppliers because they were starved of resources or because their systems were too poorly maintained to provide the quality and quantity of water needed by urban dwellers (See Box 12). But by 2005 most of these companies were losing money. They were required to connect water lines and service to low-income households that could not afford their fees.[346] Private companies may have had the know-how and capital to fix leaking pipes and aging systems, but without subsidies, the water was too expensive for consumers, and privatization failed to live up to the hopes it raised. Privatization also stirred up controversy because many objected to the notion that water could be owned and commodified. Activists and scholars have argued that access to safe, reliable, affordable water is a human right.[347] Some believe this also applies to sanitation, energy, and public transport. In the public transport sector, privatization of bus services without strong government oversight and regulation, and poorly structured PPPs, have sometimes led to excessive competition for passengers, poor service and maintenance, more road accidents, and gaps in coverage along less-profitable routes.[348] These and other disappointments have pointed to the need for governments to oversee and regulate transit to keep it safe, reliable, and affordable. Enlisting the private sector to build housing can also yield mixed results, with private developers less inclined to target low-income groups than more affluent ones.

The urban services divide will continue to grow unless cities make large, up-front capital investments in necessary infrastructure and core urban services, while ensuring that funds are targeted where the need is greatest.

BOX 12 | Concerned about water quality from the tap, families turn to expensive private vendors in São Paulo

São Paulo has long struggled with providing water to its residents. In 2014, when rainfall was scant, the city's water supply system completely dried up, leaving 8.8 million city residents without access to drinking water. Even before this drought, Ivaneide, who lives in a hilltop neighborhood in northern São Paulo, distrusted the municipal water supply. She says it was "a little earth-colored, too chlorinated, [and] we did not risk drinking it because of its appearance."

Ivaneide earns between US$251 and $378 per month as a self-employed seamstress and spends nearly $25 per month buying water from a private vendor to supplement her piped water supply due to quality concerns with the piped water (Figure B12.1). "Today, we buy the water. Previously we used the tap, which was treated and safe. But after the lack of water, we don't use it for drinking anymore."

Figure B12.1 | Ivaneide prepares her purchased water supply

Picture credit: Merylin Esposi, 2016.

Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

Urban infrastructure investments ignore social and environmental costs

Cities appear to make the greatest progress towards providing equitable access to core urban services when those services are provided or at least regulated by the public sector. The benefits can be denied to those who cannot or do not pay for them. But outcomes for the public good, such as cleaner air and water or improved health, are not achievable if most individuals lack access to these systems. In cities of the global South, resource constraints and deficits in the supply of water, sanitation, energy, housing, or transport may deny access to all but the privileged few. This leads to social and economic inequalities that perpetuate across generations.

The methods used to analyze and decide upon these investments often do not capture the true long-term economic and social costs and benefits for the city as a whole, tending to focus on direct monetary costs and benefits. Aspects that are more difficult to measure, such as environmental, social, and distributive costs and benefits, network impacts, and longer-term uncertainty, tend to be incorporated weakly or not at all.[349] These methods also often overlook needed maintenance expenditures and their benefits over the life of the investments.

The measures residents must take to provide for themselves when core urban services are lacking illustrate another serious market failure: the tragedy of the commons. Public goods may be exploited for private benefit or used in ways that fail to consider the effects on others. Discharging untreated waste into rivers, stripping forests to burn wood for fuel, digging bore wells that drain aquifers, or driving private vehicles in congested cities, may be a cheap, expedient option for individuals. But the "negative externalities," the price others and future generations will pay for this, are left out of the equation.

National governments are uniquely positioned to finance the large up-front capital investments needed to build and connect infrastructure.

The public sector is uniquely positioned to direct capital to investments based on their true costs and benefits and their ability to best serve the public good, but in cities of the global South, they often lack the capacity and resources to do so effectively.

10.2 PRIORITY ACTIONS

A. Increase national government investment, directing it where the need is greatest

The public sector must take the lead when it comes to financial innovation. Since growing cities have few public resources and need substantial and sustained financial investment in core infrastructure, national governments must help.

National governments have a substantial role to play, for many reasons.[350] They are uniquely positioned to finance the large up-front capital investments needed to build and connect infrastructure. They collect almost three-quarters of total public revenues worldwide, dwarfing what cities can raise. They can also tap into funding from banks, multilateral lending institutions, development agencies, and, in some cases, philanthropic organizations. Thus, it is not surprising that cities in the global South often depend on fiscal transfers from national governments. National governments typically transfer funds to regional and municipal governments in the form of grants and subsidies. In countries such as **Malta**, **Peru**, and **Tanzania**, grants and subsidies account for over 80 percent of these revenue transfers.[351]

Even projects that are popular, effective, and successful over many years can falter without sustained national government support. Pulling the rug out from under them can stall or regress transformative change. In **Porto Alegre,** the PB model successfully mobilized local communities, including the poor, improving access to small-scale infrastructure and services, and increasing citizens' direct political engagement.[352] Yet the proportion of Porto Alegre's municipal budget allocated through this mechanism remained modest, always under 10 percent, and especially modest in comparison to

the share dedicated to larger investments. Fiscal transfers from the national government were necessary to support the city's overall budget, including this innovative financing mechanism. In 2018, after national-level support and funding dried up due to national and local political changes, local authorities suspended this otherwise successful program.[353]

It is important that fiscal transfers not only be reliable but also adequate to enable effective budget planning and management across all tiers of government. The structure of transfers and the conditions attached to them can determine their impact as well. Requirements for tracking and transparency, as well as aligning priorities between the national program and local needs, can contribute to success. Some transfers can be ongoing for general obligations, but others can be part of larger, more specific policy goals. Examples of the latter include **Mexico**'s Federal Program to Support Mass Transit (Programa Federal de Apoyo al Transporte Urbano Masivo; PROTRAM) for transport, **Kenya**'s Water Sector Trust Fund, and **India**'s Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for a range of urban services. PROTRAM finances public transit systems to reduce GHG emissions in Mexican cities, with technical assistance provided to improve operations.[354] Kenya's Water Sector Trust Fund provides grants and finances water and sanitation services in under-served areas and also includes capacity building and monitoring as key complements to its financing.[355] India's JNNURM, which ran from 2005 through 2014, city development plans were required, along with state cofinancing, to access federal or national financing of urban infrastructure.[356] AMRUT followed under new political leadership in 2015, prioritizing water supply and sewer networks, with requirements for state annual action plans and use of PPPs to leverage government funding.[357]

National governments are key conduits in channeling funding from international aid agencies and external programs to cities that cannot directly access these funds. Tools are available to help national governments identify programs designed to achieve particular goals. For instance, since 2012, the World Bank's municipal Program-for-Results (PforR) funding instrument has been helping national governments effectively disburse resources to regional and local governments in low- and middle-income countries.[358] It offers guidance on how to direct funding based on results achieved in reaching specific goals, such as protecting the environment or improving access to services for vulnerable groups.[359] Resources can be allocated to local programs that support or complement national social or community development programs. **Pakistan** used this instrument for urban property tax reform. **India** used it to scale up energy efficiency and rooftop solar programs. **Tunisia** used it to improve local governance and support for delivering municipal infrastructure, **Kenya** to establish national safety net programs for poor and vulnerable residents, and **Burkina Faso** to increase access to water and sanitation. This targeting instrument provides both financing and training to help recipients improve the way they administer and track progress. It can help countries design indicators and risk management procedures and implement good standards for budgeting, accounting, and reporting. The PforR makes up a rapidly growing segment of the World Bank's lending portfolio, especially in low-income countries of Africa and South Asia.[360]

Finally, national government financing can scale innovations in urban service delivery. This is essential because private investors and many financing institutions cannot risk investing heavily in relatively new approaches. National governments can also work through their development finance institutions, whether national, regional, or global.

Governments often establish their own development financial institutions domestically, such as national banks, investment agencies, and investment funds, and they have votes in multilateral or regional institutions, where they can set rules requiring cofinancing, set terms and conditions, and develop new products and services for different needs.[361]

All these pieces together display the national government's ability to help create an enabling ecosystem to bring resources to cities. This ecosystem involves good planning that prioritizes inclusion, equity, and sustainability. National governments can align policies, policy instruments, and institutions to create mechanisms that develop quality projects, scale them, and aggregate smaller projects into larger ones of greater interest to private financiers. They also can provide "bridges" to domestic, multilateral, and international funding sources to help implement and monitor those investments.

B. Create well-structured, targeted subsidies for affordability and social returns

Financing for urban services can support transformative change if it ensures service coverage and affordability for all. To accomplish this, subsidies can be targeted to close gaps in specific under-served communities and neighborhoods, reduce the costs of services, and lift the crippling burden that self-provision often places on poor households. Measuring the cobenefits of such targeted subsidies and monetizing them would render this investment more financially viable for investors, but this kind of precise targeting poses challenges for governments across the global South. In some cases, policies designed to lower the cost of services do not reach the poorest of the poor, and they can even widen the gaping divide between those who are well served and those who are not. In all cases, targeting imposes administrative costs, which must be balanced against the benefits that targeting can provide.

Many countries in the global South have used targeting to strengthen their social safety nets and ensure that money goes where it is needed most. Examples include **Brazil**'s Family Allowance (Bolsa Familia) program starting in 2003 and **Chile**'s efforts during the 1990s to use means-targeted subsidies for conditional cash transfers. In 2005, **Indonesia** began an iterative process of cutting fossil fuel subsidies that flowed mostly to higher-income groups while redirecting resources towards pro-poor development, thus reducing the burden on the poor and vulnerable groups.[362] Likewise, the **Dominican Republic** targeted direct cash transfers to the poorest 40 percent when reforming its LPG subsidy in 2008.[363] More recently, poverty maps have been used by the World Bank in **Luanda, Angola**, to target under-served populations, and more accessible data and map processing should allow such efforts to be expanded.[364]

Electricity subsidies illustrate the unintended consequences when subsidies are not properly targeted. Governments subsidize electricity in myriad ways, including directly through budget allocations, indirectly through price controls on diesel to run generation plants, and through soft loans or tax breaks for investment. Governments sometimes subsidize grid extension and utility operating costs or impose price controls so that consumers pay less for electricity than the cost of providing it. But price controls can mean that utilities continuously operate at a loss. Those that cannot recover their operating costs have no incentive to add more power lines and customers, especially poor customers who cannot pay even price-controlled tariff rates. Subsidies and price controls are politically popular and are hard to abolish. But their benefits often flow not to the lowest-income groups but to better-off people already connected to the grid.

To connect low-income people to electricity and other core services, cities must focus on key barriers that exclude them, such as up-front costs. A "service drop" fee for hooking up to power lines can cost what a poor household earns in a year. Typically, it has to be paid as a lump sum up front rather than in installments, and households cannot borrow money to cover the costs given their lack of access to credit. For electricity and water services, tariffs are typically lowest for low-income customers, but they are not low enough. When **Bolivia** needed a loan in 1997, the World Bank required it to privatize its water and sewer systems for the city of **El Alto**, which were in disrepair and hemorrhaging money.[365] The company that took over raised water prices by 35 percent, pushing the cost of a hookup for a single house above $445. Many Bolivians earned about $2.50 a day (about $800 a year), so the connection fee would absorb a large proportion of yearly earnings.[366] This may have reflected the actual costs of expanding service, but residents were incensed and protested until the contract was annulled. Governments can use subsidies to lower such fees or to pay companies directly to wire households and connect them to the grid.

They can spread out the payments, offer loans, or organize bulk discounts for hooking up many homes in the same neighborhood. They can also provide subsidies to make service and hookups more affordable.

Identifying low-income urban households that need subsidies can be challenging and can impose additional administrative and monitoring costs. Some targeting efforts have been more successful than others. **Bengaluru** and **Nairobi** use "incremental block tariffs" to make water more affordable for low-income households.[367] However, the benefits flow only to those who already have running water in their homes. Multiple families or tenants sharing water taps (in other words, poorer households) miss out. Better ways to target those most in need of help might include subsidized or flexible payment arrangements for household connections, shared kiosks, or subsidized pay-per-use systems. **Chile** introduced direct water subsidies to offset the cost of privatized water and structured the program to funnel the largest subsidies to the lowest-income families.[368] **Colombia**'s water subsidy is targeted to neighborhoods and is based on a six-tier classification system, representing socioeconomic status. This channels subsidies to low-income households while avoiding the costs of collecting detailed household-level economic data for means testing. Although targeting by neighborhoods may misdirect some subsidies, it can provide many of the same benefits with fewer expenses.

Providing a finite quantity of water per person at a below-market cost offers another way to reach the poorest of the poor. The city of **Medellín** established a "lifeline water tariff" of 2.5 cubic meters (m^3) per person per month at a subsidized cost, and **Bogotá** allows qualifying households to receive 6 m^3 per person per month of subsidized water. In **Durban** (**eThekwini** metropolitan area), a "free basic water" policy gives households a free monthly water allowance of 9 m^3.[369] However, tensions between free basic water and alternative water supply models continue because **South Africa**'s government has introduced the right to water as part of the new constitution while simultaneously trying to maintain a cost-recovery management model. One weakness of South Africa's approach is that free water is provided only to formal homeowners; informal tenants are excluded from the program.[370]

In public transport, ensuring access for the lowest-income groups has led to mixed experiences. In **Argentina** and **Brazil**, transport services are supplied by private operators who receive government subsidies. But a lack of transparency and competition has resulted in both high subsidies and high fares that the poor still cannot afford.[371] The high capital and operating costs in this sector make targeted subsidies for low-income groups necessary. By using smart cards and carefully screening beneficiaries, it is possible to minimize leakage of the subsidy to higher-income users who can afford to pay more.[372] The city of **Bogotá** aims its transport subsidy squarely at social welfare beneficiaries through its National Beneficiary Selection System (Sistema Nacional de Selección de Beneficiarios). It provides up to a 60 percent discount on a maximum of 40 trips per month on its integrated public transport network.[373] Early evaluations show that it is used mostly by people on the outskirts of the city with the highest fare burdens, and that the free transfer has increased overall accessibility levels in the city.[374] As this shows, transfer policies, routes, and fare levels can be tailored to assist those most in need.

Many countries in the global South have used targeting to strengthen their social safety nets and ensure that money goes where it is needed most.

In all cases, the structure of subsidies matters and must be context-specific. Such subsidies are discussed in the sectoral actions under Transformation 1 and in more depth in our thematic papers.

C. Use innovative financing instruments and creative payment schemes

Cities can combine funding from diverse sources—national and local, public and private, domestic and external—to finance investments to improve access. And to ensure investments yield lasting benefits, they must set aside funds for maintenance.[375] Cities can also rely on innovative combinations of traditional and less standard revenue streams and instruments. Land value capture techniques (described in Transformation 6) or green bonds can be coupled with more traditional property taxes and subsidies. Partnering with the private sector can also play a role here. Blended finance, pairing commercial and concessional

funding, can tap into wider markets to raise the cash needed to build, operate, and maintain infrastructure.[376] Innovative mechanisms and combinations are key to capturing value from public investments, generating potential sources of revenue, and fostering private sector involvement. Likewise, engaging local communities, both civil society and the private sector, in planning and allocating investment can allow cities to respond to true needs on the ground.

In financing access to energy and housing, cities face obstacles that include large, "lumpy" up-front costs and shared or uncertain asset ownership. Lumpy costs are fixed costs paid at the outset that do not change based on the quantity produced, such as a housing down payment or deposit and a connection to the electricity grid. Uncertain ownership of land and inadequate legal assurances or resolution processes can make capital investment risky. These raise the risk profile, making financing more expensive.

Blended and innovative financing schemes and structures can help overcome these obstacles. Along with targeted subsidies (discussed above) cities can use innovative, flexible, cost-effective technologies and payment plans to help bring services within reach. They can raise the money needed to help pay for renewable energy and energy conservation projects that require up-front investments but will end up saving money and providing environmental benefits. **Thailand**, for instance, levies a petroleum tax that raises around $50 million a year to finance its revolving Energy Conservation Promotion Fund. This fund finances energy efficiency programs in factories and buildings by providing capital to Thai banks at no cost. The banks then provide low-interest loans to energy services companies.[377] **Bangladesh** has used a combination of subsidies, microfinance, and concessionary loans to encourage homeowners to invest in solar panels. This program started in 2003, and by 2014 it had led to 3 million systems being installed.[378]

Nonprofit financing, working together with the private sector, can also help address this challenge. PAYG models for consumer installment finance have helped households that cannot afford high initial lump-sum payments. PAYG has been successfully used to pay for solar lighting and clean cooking in **Ghana**, **Kenya**, and **Zambia**.[379] In **Uganda**, PAYG approaches have made mobile phones affordable. In Ghana, PAYG has enabled customers living in informal settlements who were burning dirty fuels indoors to switch to sharing kitchens powered by cleaner fuels such as LPG.[380] Digital data solutions can expand flexibility with PAYG as well, with benefits for both providers and consumers. Digital data can improve trust, transparency, and revenues as information is available to everyone, not just to those with connections. Service problems can be identified more readily, and corrupt "adjustments" become clear to all. When digital solutions were implemented for PAYG water in **Niamey, Niger**, the city posted improved revenues and increased trust and consumers saved time and money.[381] M-KOPA, headquartered in **Nairobi**, is one of the most popular companies offering PAYG systems in Africa. From its commercial launch in October 2012, M-KOPA has connected more than 280,000 homes in Kenya, **Tanzania**, and Uganda to solar power, and it continues to connect 500 new homes each day.[382] Customers acquire solar systems for a small deposit and then buy daily usage "credits" for $0.50, which is less than the price of traditional kerosene lighting.

For the finance innovations of PAYG to be fully successful, they often must be accompanied by educational efforts to promote behavioral changes along with the payment changes.[383] For example, a household needs to adjust its budgeting and cash management to ensure that money is available when needed, not just for one lump-sum payment. Similar efforts often accompany microfinance as well.

Creative payment, ownership, and financing packages expand access to housing. Through land trusts, communities can collectively purchase land to build homes and meet other ongoing community needs while ensuring that, when their investments raise property values, the profits flow back to the residential community. Collective landownership in **Thailand**'s Baan Mankong program[384] and land trusts in **Bolivia**, **Brazil**, and the **United States** combine innovative finance with creative ownership structures to minimize the challenges of gentrification, thus helping manage demand for finance over time.[385] Land trusts are often financed by philanthropy that seeks to maximize community benefit, not financial profit. **Chile**'s ABC program stands for *ahorro* ("savings"), *bono* ("subsidy"), and *credito* ("loans").[386] The ABC program uses creative schemes for financing housing. It uses residents' savings as a base, offering loans and providing subsidies to make housing more affordable. Any one of these approaches (savings, loans, and subsidies) alone would be insufficient; it is the combination that allows increased access to housing.

National governments can also promote innovative taxation at the local level, including municipal land value capture policies. These policies enable municipalities to recover increases in land value that result from public investment and other government actions. Cities can capture land value by selling land and building rights, or by levying additional taxes or fees when the public infrastructure spending pushes up property values. They can also finance infrastructure by selling bonds that are backed by future increases in property tax revenue that will be realized when land values appreciate. When adding infrastructure makes it possible to build denser neighborhoods and taller buildings, cities can collect revenue by selling the air rights to build higher than standards normally permit without additional fees. In **Brazil**, **Águas Claras**, near **Brasília**, financed its underground metro line by selling land plots as well as air rights. Between 2006 and 2010, **São Paulo** raised over $1 billion by selling development rights.[387] Bond and air rights sales have helped cities around the world finance the infrastructure they need.

New financing instruments connected to carbon-related emissions and credit instruments provide additional nontraditional financing sources. One example is green bonds. **Mexico City** issued its first green bond in 2016, with proceeds used for energy-efficient lighting, BRT improvements, and water infrastructure modernization.[388] **Bogotá**'s BRT, Transmilenio, and **Delhi**'s metro system both have tapped the Clean Development Mechanism's carbon emissions reduction credits traded on the carbon market.[389] Such financing requires that the recipient accurately measure emissions reductions, limiting possibilities because of challenges in measurement, but improvements in sensors should offer new opportunities in the future.

Cities can pay to extend services and infrastructure to marginalized communities by tapping into fees paid by the rich. **Ouagadougou** uses fees paid by high-income households for sewer service to support safe on-site sanitation for low-income households, create a training program for safe emptying practices, and construct school latrines.[390] When money collected from customers, national and local revenue streams, and overseas development is insufficient, cities can consider PPPs. **South Africa** now has standard criteria and methodologies for overseeing PPPs, reducing risks and clarifying dispute-resolution procedures. These kinds of laws and regulations are important to unleash capital flows and increase investment.

D. Regulate private entities and strengthen oversight capacity

There are times when it is appropriate for the government to contract private entities to build physical infrastructure and deliver services. The high cost and large scale of many infrastructure projects, and the length of time it takes to recoup what is spent, means the cost of some of these systems can dwarf what the public sector has on hand. Governments turn to the private sector for long-term financing, which can include loans, equity investment, and sometimes innovative contracts. These arrangements often give a private company a say in operations, tariff setting, and fee structures. So, to protect the public interest, the government will need to set and enforce regulations to ensure quality and public safety and also monitor the price charged to consumers for the service. Most regulatory authority lies with national authorities, but local officials can engage communities to ensure they are getting services of acceptable quality at prices they can afford.

The issue of the cost to consumers is particularly crucial where the market and service structure favors a single supplier. Piped water and sewers are such natural monopolies. Having multiple providers extending physical lines in an infrastructure network would be inefficient and negate economies of scale.[391] But single providers can use their market dominance to charge exorbitant prices or deliver

poor service. To guard against this, regulators need credible information about the service quality and prices charged.[392] Competitive tendering, well administered, can help address this challenge, yet the capacity constraints are significant. Another way to learn what is happening on the ground, especially in low-income communities, is for public regulators to engage with civil society organizations. Negotiating with utility managers and financiers to improve services requires regulators to have sophistication, skill, and experience, along with authority and political will to apply and enforce their decisions. They often require training and capacity building to develop these skills.

For government officials to meet higher technical demands and build more participatory processes, they will need training in both the "hard" technical skills of setting and enforcing regulations and in the "softer" skills of more inclusive planning and consultation processes. Building both technical[393] and process-oriented skills [394] will allow government officials to ensure that finance helps catalyze transformation rather than obstructing it.

E. Incorporate wider social costs and benefits into financial analysis and involve the community

Cities must adopt a longer and wider financial planning horizon that looks beyond short-term financial concerns and factors in broader benefits as well as costs. When calculating the pros and cons of public investments, planners and funders should weigh not just the financing requirements for individual projects but also the cobenefits for urban residents in terms of health and productivity.[395] For example, cities can get social benefits worth between 4 and 12 times the cost of improving water and sanitation,[396] and cities such as **Beijing** and **São Paulo** could save up to 10 percent of GDP by investing in public transit and reducing congestion, road accidents, and dangerous levels of air pollution.[397]

Better analysis requires new tools, concepts, and ways to measure both explicit and implicit costs and benefits, including externalities.[398] Models used need to factor in social and environmental outcomes—such as the costs of environmental degradation, the value of ecosystem services, the health impacts on specific populations, and so on—but often these are left out.[399] There are many tools that can help governments estimate the costs and benefits of services over time.[400] Governments should use them, and make sure that they include social and environmental outcomes. Social and equity impacts can be gauged through distributive cost-benefit analysis. This methodology revealed, for instance, that in **Bogotá**; **Istanbul, Turkey**; **Johannesburg**; and **Mexico City**, BRT systems benefited the under-served more than the richest strata of society over time.[401] Challenges, however, in accurately monetizing both costs and benefits, even with proxy variables, complicate this type of analysis. Survey data from users can complement these quantitative analyses.

Giving communities a voice in planning infrastructure investment and allocating public spending can build confidence and trust in government and improve service delivery to traditionally under-served areas and populations. In **Porto Alegre**, PB was an integral part of transformative change in the city. The PB model successfully mobilized local communities, including the poor, helping them choose the investments that would most improve their lives, and building the small-scale infrastructure they needed. It helped pave streets, add sewer and water lines, improve local parks, and build and renovate schools, medical clinics and community centers. It also nurtured citizens' direct political engagement. Instead of being simply clients, recipients, or beneficiaries of the government, they became part of the process. The PB program built on the strength of civil society, encouraging all communities, including the poor, to set their own priorities, and allocated the money specifically for them to help them achieve their goals.

Newer techniques used either in person or online can also tap community opinion and enthusiasm about budget allocations. Simulation and role-playing games, especially those concerning budgets, can be helpful in getting input from different stakeholders. However, care must be taken to ensure that they do not merely confirm the government position, as was the case recently in **India**.[402]

Increased and better-targeted investment to address long-ignored needs is essential for a more equal city. This will not be possible without strong national government involvement, well-structured and targeted subsidies, and innovative financing instruments. It will also require financial analysis and regulatory approaches that consider broader social and environmental costs and benefits. Governments will need to build the capacity to perform these calculations, negotiate with service providers, catalyze additional resources, and use them well. Table 6 lists the actions and roles required of different actors to move Transformation 5 forward.

Table 6 | **Roles of specific actors in advancing Transformation 5: Financing and Subsidies**

FINANCING AND SUBSIDIES—INCREASING INVESTMENT AND TARGETING FUNDS INNOVATIVELY	
City Government and Urban Sector Specialists 	▪ **Prioritize ways to reduce the cost of urban services** for the lowest-income consumers, considering the local context ▪ **Increase investment in urban services to ensure service coverage and affordability for all** by targeting investments to close gaps in services in specific under-served communities and neighborhoods ▪ **Adopt a longer, wider financial planning horizon** factoring in broader social benefits and costs and engaging the community ▪ **Regulate the private sector's role** in financing, building, and delivering core infrastructure and services ▪ **Give communities a voice in the allocation of public spending** to build confidence and trust in government and result in more effective service delivery ▪ **Consider innovative and diverse ways to increase the affordability of all urban services** through the use of cost-effective technologies, targeted subsidies, and flexible payment mechanisms that allow people with irregular incomes to pay for them
National Government 	▪ **Support the financing of large capital investments in urban areas** by enabling fiscal transfers with conditions for performance outcomes related to equity and sustainability ▪ **Ensure adequate funding to urban authorities to support bottom-up processes**, such as participatory budgeting ▪ **Channel funding from international aid agencies** and external programs to cities that are unable to directly access these funds ▪ **Enable alternate, innovative financing techniques** by creating the right regulatory and policy frameworks, such as public-private partnerships and land value capture; ensure financial regulators are not working at cross-purposes with other policies; incorporate social costs and benefits into financial analysis and oversight ▪ **Authorize local and state governments to increase own-source revenues** and collect land-based revenues and taxes ▪ **Create and fund well-structured, targeted subsidies** for affordability and social returns ▪ **Regulate private entities and strengthen oversight capacity**
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Support the design and implementation of appropriate targeting mechanisms** and processes to identify vulnerable populations in cities and get money where it is needed most ▪ **Advocate for embedding equity criteria in investment programs** (national, local, private, and international) and monitoring their impact on vulnerable groups ▪ **Participate in and push for inclusive, participatory budget allocation processes** at national, state, and local levels ▪ **Gather data on public sector expenditures and ensure accountability** for equitable allocation; consider using community groups and universities to help gather and maintain these data
Private Sector 	▪ **Support up-front investments to address the urban services divide** in urban areas by developing new models and partnerships with government and financial institutions ▪ **Develop innovative financing structures**, collaborating with the public sector to ensure laws and regulations keep up with innovations ▪ **Explore creative payment schemes and blends of financing** to invest in urban services and keep them affordable for low-income people
International Community, including Development Finance Institutions 	▪ **Disburse resources** to subnational levels of government through new tools and financial instruments ▪ **Direct resources into locally implemented development programs** with the condition that investment be targeted to achieve equitable access goals ▪ **Ensure resources and capacity** for adequate monitoring, evaluation, and learning, and share knowledge of international good practices and performance standards ▪ **Mandate well-designed and well-structured processes for public participation** in decision-making for recipients of financial resources ▪ **Incorporate social costs and benefits into financial analysis** for project approval and allocation of financial resources

Source: Authors.

Chapter 11. Urban Land Management—Promoting Transparency and Integrated Spatial Planning

Transparent, well-regulated land markets and effective integrated spatial planning are absolutely central for delivering services equitably and ensuring the long-term future of the city. In rapidly growing cities, the scarcity of well-serviced land and weak planning have exacerbated spatial inequities. Through better regulations, innovative incentives, provision of secure tenure, and integrated planning, many cities have made land markets more transparent and inclusive and have enabled equitable service provision.

Status Quo	Priority Actions	Desired Outcome
Spatial inequities and unsustainable urban growth	• Structure regulations and incentives to make land markets more transparent and inclusive • Improve services in informal settlements to achieve affordable, livable density • Practice integrated spatial planning for better urban services and sustainable growth	**Equitable land markets, well-planned urban growth**

11.1 WHAT MUST CHANGE AND WHY

Urban land markets have a sordid underbelly

Cities across the world struggle with corruption and rapacious behavior in land markets because land is such a valuable asset. Land markets in many cities of the global South are opaque and distorted. The reasons include poor records of landownership, lack of transparency on property transactions, complex land titling regulations, and excessive land value speculation.[403] Nonexistent or ineffective land regulations mean public sector stakeholders cannot prioritize the public's interests, make crucial decisions about what gets built where, harness the benefits of increasing land values, or use this asset to generate the municipal revenue needed to invest in services and infrastructure.[404] These challenges are magnified where city officials either have no development plan or have no power to implement or enforce one. They may lack the statutory authority or technical capacity to create incentives or regulations to guide building activity.[405] Opaque and nonparticipatory planning and decision-making fails to take people's real needs into account and widens inequities (see Box 13 for an example from **Bengaluru**).

Urban land is highly valuable and therefore a tempting prize for the powerful and well connected. Politicians and large private developers often collude, using insider information to buy land cheaply then steering development to benefit themselves or interest groups that support them. They and their allies (including construction and real estate moguls) strike backroom deals that fuel speculative investment and piecemeal development. City development plans are shunned in favor of maximizing profits. Corruption is ubiquitous. In struggling and emerging cities, the bribes paid by developers for building permits and to get around bureaucratic red tape can amount to half of total construction costs.[406]

Murky or missing records of landownership and value prevent well-functioning and fair land markets in many struggling and emerging cities

Even well-intentioned policies can misfire. Regulations and tax incentives designed to spur denser and infill development may merely enrich landowners or large private developers and prompt them to build more high-end and luxury housing in well-serviced locations.[407] Scant and unenforced regulation and real estate speculation can make well-serviced urban land unaffordable for most people. Such speculative investment crowds out smaller developers and regular households looking to make investments, and the unaffordability it creates may contribute to the growth of informal settlements.[408]

In addition, when cities do try to upgrade overburdened and inadequate infrastructure, private interests may reap all of the benefits and pay none of the costs. Public investments raise land and property values, but there are often no mechanisms for capturing a portion of this windfall and using it to benefit the public.

Poor land records and uncertain property rights help explain why these problems are pervasive. Murky or missing records of landownership and value prevent well-functioning and fair land markets in many struggling and emerging cities. Overlapping land tenure systems, common in many African cities, create confusion and conflict over landownership and inhibit investment. They also foster exploitative practices, which are frequently seen in transactions between private land developers and individual landowners or farmers in the outskirts of cities. [409] Further, the lack of systematic and transparent land value assessment systems creates a black market for property transactions and increases the difficulty of compensating landowners fairly.[410] Many real estate investment transactions fall within the informal economy and are neither trackable nor taxable.[411] Without clear land records, it is hard for city governments to negotiate with developers to achieve goals such as allocating urban land for affordable housing, capturing benefits from rising land values, or financing public infrastructure.

The lack of complete and up-to-date records of landownership and transactions is a key barrier to designing effective land regulations, property taxation, and incentive schemes. This

BOX 13 | Fast, unserviced urban expansion in Bengaluru threatens to displace the poor

Sushila's family has lived on the outskirts of **Bengaluru, India**, making and selling pottery, for more than 65 years. When her parents first moved into the Kengeri village, they found an abandoned *kalyana mantapa* (a space for marriage ceremonies) in the forest and set up their home there. Sushila, now 25 years old, has seen tremendous change across Bengaluru. Near her home, trees have given way to roads and shops. But infrastructure has lagged behind development. The built-up areas enveloping Sushila's home have few city services.

For instance, access to water has improved only slightly. For about an hour a day, Sushila's family can fetch water from a nearby bore well, which they use for bathing and washing clothes. They have to purchase the water for drinking and cooking. There is a bus stop about a five-minute walk from their home, but there are no designated footpaths, so the walk can prove dangerous. Solid waste management has not arrived, except that the city sometimes dumps waste into a nearby stream.

Sushila's family's combined monthly income is US$90 to $105, which is barely enough to pay for the maintenance and upkeep of their old, deteriorating house. Even though they have lived in their house for more than six decades, they do not have any legal documentation that says they own the property. This could soon be problematic as private developers continue to push outward from the center of the city. "Once an individual or real estate developer comes and builds something like houses and apartment complexes, the next one comes along, and the next . . . and there's a lot of open land here to go," says Sushila. She adds that there is no transparency about how land is sold to developers. She has heard of proposals for public projects such as extending the metro to Kengeri or widening Mysore State Highway, but neither she nor any anyone she knows in the community has been engaged in this planning.

Figure B13.1 | Sushila gathers with her family outside their Kengeri village home on the outskirts of Bengaluru

Picture credit: Radha Chanchani, 2016.

Note: These vignettes are based on in-depth interviews with urban residents conducted in seven countries grappling with the effects of urbanization (Brazil, China, Ghana, India, Kenya, Mexico, and Nigeria).

is why real estate developers and speculators, instead of local authorities, end up capturing all the benefits from public expenditures on infrastructure that raises property values. Yet putting together accurate records is difficult, and many rapidly growing cities simply do not have the capacity to do so. Based on an analysis of landownership and land-use regulations in 200 cities, we found that in struggling cities, land registration records for the urban periphery, established land-use plans, and the ability to implement or enforce them, may be missing altogether. And even when plans exist, private developers and public agencies may ignore them. The largely outward growth currently under way in these cities is therefore either undocumented or occurring through informal transactions, meaning it is unplanned and occurs in a weak regulatory environment. Emerging cities are only slightly better off.

Low-density growth occurs on cheaper land in the urban periphery

New data gathered for *Towards a More Equal City* show how struggling and emerging cities with scant financial resources and severe deficits in built infrastructure are growing outward much more than upward. This accelerates the consumption of resources such as land, energy, and water and hampers the delivery of urban public services. As a city's area expands and its population density declines, the per capita costs of public service provision rise, and so do social costs imposed by congestion, pollution, and urban inefficiencies.[412]

Our research identified a host of risk factors and policy choices that can accelerate outward, sprawling growth. High subsidies for fuel and low costs for private vehicles contribute by reducing the perceived costs of driving long distances.[413] Restrictive density or building height regulations in well-serviced inner-city areas can push development outward.[414] This outward growth typically occurs in areas on the urban periphery with unclear jurisdiction, involving multiple local (and sometimes regional, state, or rural) authorities that do not coordinate on service provision or land-use planning. As a result, it creates blind spots in some cases and confusion in others in the governance of burgeoning new settlements. Outside city limits, developers also find bargain land prices, lax record keeping, and fewer land-use regulations. This allows them to build many units on large land parcels, achieving economies of scale more easily and profitably than building in more central locations. Rapid, haphazard, unplanned sprawl then compounds the challenge and raises the cost of providing infrastructure and services. And limited control over peripheral areas makes it harder for cities to channel, or draw value from, land price surges and building frenzies.

Perverse incentives add to these problems. Governments sometimes fuel building booms in the urban periphery by promoting investment in housing and special economic zones without regard for location and services. Social housing programs typically evaluate affordability in terms of income and housing costs alone, neglecting the high price of commuting or connecting housing with services. Thus,

across **Brazil**, **Chile**, **Ethiopia**, **India**, **Mexico**, and **South Africa**, private developers have built in the urban periphery.[415] Some governments, such as those of India and South Africa, are even building this type of housing themselves. Residents who move to these remote locations suffer because social networks that supported families and livelihoods get broken. They are saddled with long, expensive commutes that cut into their productivity and can eat up whatever they save in housing costs and choke cities with traffic congestion and air pollution. Evidence from African, Indian, and Latin American cities shows that access to multiple urban services, including paved roads, drainage, and good-quality piped water, drops sharply in peripheral areas.[416] For these reasons, residents in a number of cities have abandoned some of these housing developments on the periphery altogether.[417] A national housing program in Mexico reportedly cost $100 billion between 2001 and 2012 and built millions of homes in the distant outskirts of cities (e.g., 40 miles outside **Mexico City**). Today, a large proportion of these homes, which still lack running water and electricity and are not connected to public transport, sit abandoned.[418]

Weak spatial planning can result in mounting long-term costs

The long-term cumulative costs of low-density growth in peripheral areas typically dwarf what cities and households imagine they are saving.[419]

Weak spatial planning directly contributes to unmanaged urban expansion, which has far-reaching environmental consequences. Studies predict that, by 2030, global urban expansion will menace biodiversity hot spots and threaten ecosystems far beyond city limits. [420] Fast-growing cities envelop prime agricultural land and compete with food production. They also accelerate GHG emissions, air pollution, and urban heat effects.

Urban sprawl exposes citizens to a variety of dangers that will undermine health and economic productivity. For example, some of the most rapid urban expansion is occurring in low-elevation coastal zones, which are vulnerable to floods, sea level rise, and other impacts of climate change. [421] Around the world, unabated and illegal construction on urban floodplains and water bodies in cities is already causing disastrous flooding.[422] At the same time, the opposite problem of water scarcity is growing rapidly and creating disastrous ripple effects. Because 60 percent of new developments in cities in the global South are not connected to a central water system, many households rely on privately or self-provided bore wells. In **Bengaluru**, **Jakarta**, **Mexico City**, **São Paulo**, and elsewhere, indiscriminate, unregulated bore wells have rapidly depleted groundwater and caused the land to subside or sink.[423] Clandestine connections to the municipal water supply are commonplace, leading to overextraction and water stress.

Weak spatial planning directly contributes to unmanaged urban expansion, which has far-reaching economic and environmental consequences.

Weak spatial planning has had another consequence: a growth in informal, self-built settlements that are now home to over a billion people around the world. Some settlements, such as those in **Kampala** and **Mumbai**, are closer to city centers and jobs. But whether located centrally or in the periphery, what most have in common is what they lack: essential public services and infrastructure, including streets, water, sanitation, and electricity. Housing quality is poor, living spaces are overcrowded, and households, even families who have occupied the same spot for generations, often have no security of tenure. At any moment homes may be bulldozed and valued possessions destroyed. Someone may decide to locate a toxic waste dump next door.

Towards a More Equal City presents new analysis of the links between accessibility (the relative locations of jobs and housing) and the time and money spent on mobility.[424] It shows that, in the global South, up to half of urban dwellers likely experience restricted access to jobs, leading to either high travel burdens or exclusion from opportunities. Figure 31 categorizes residents of **Johannesburg** and **Mexico City** according to their access to opportunities and their mobility expenditures. It illustrates a typical pattern: residents who are under-served by transport options tend to be located on the periphery of cities, which are far from most jobs.

One group categorized as the "stranded under-served," face such severe access constraints that they travel little or not at all. This group includes many who can only commute on foot or by bicycle as well as those stuck in such poor locations that

travel is completely unaffordable. Another group, the "mobile under-served," do travel, often starting from peripheral suburbs far from economic opportunity. They spend a long time and up to 35 percent of their income on commuting.[425] We also identified two other categories: "well-located commuters" and "well-located urbanites." Well-located commuters are better off in terms of access to opportunities because they may own private vehicles, and well-located urbanites are located either close to jobs or in public transit corridors that provide easy access to the majority of jobs. In both cities, fewer than 1 in 10 people fall in this last category.

Overall, the majority of people in both cities—74 percent in Johannesburg and 62 percent in **Mexico City**—face higher-than-average costs in terms of both time and money to reach their destinations.[426] This analysis is backed up by other evidence. A study of social housing residents living in peripheral areas of secondary cities in **Brazil**, **Colombia**, and **Mexico** found that households pay on average about 40 percent less than they would for a centrally located unit in a low-income area, but their commutes cost twice as much and take three times as long as they do for centrally located households.[427] This poor accessibility directly affects people's productivity and, ultimately, their earnings.

11.2 PRIORITY ACTIONS

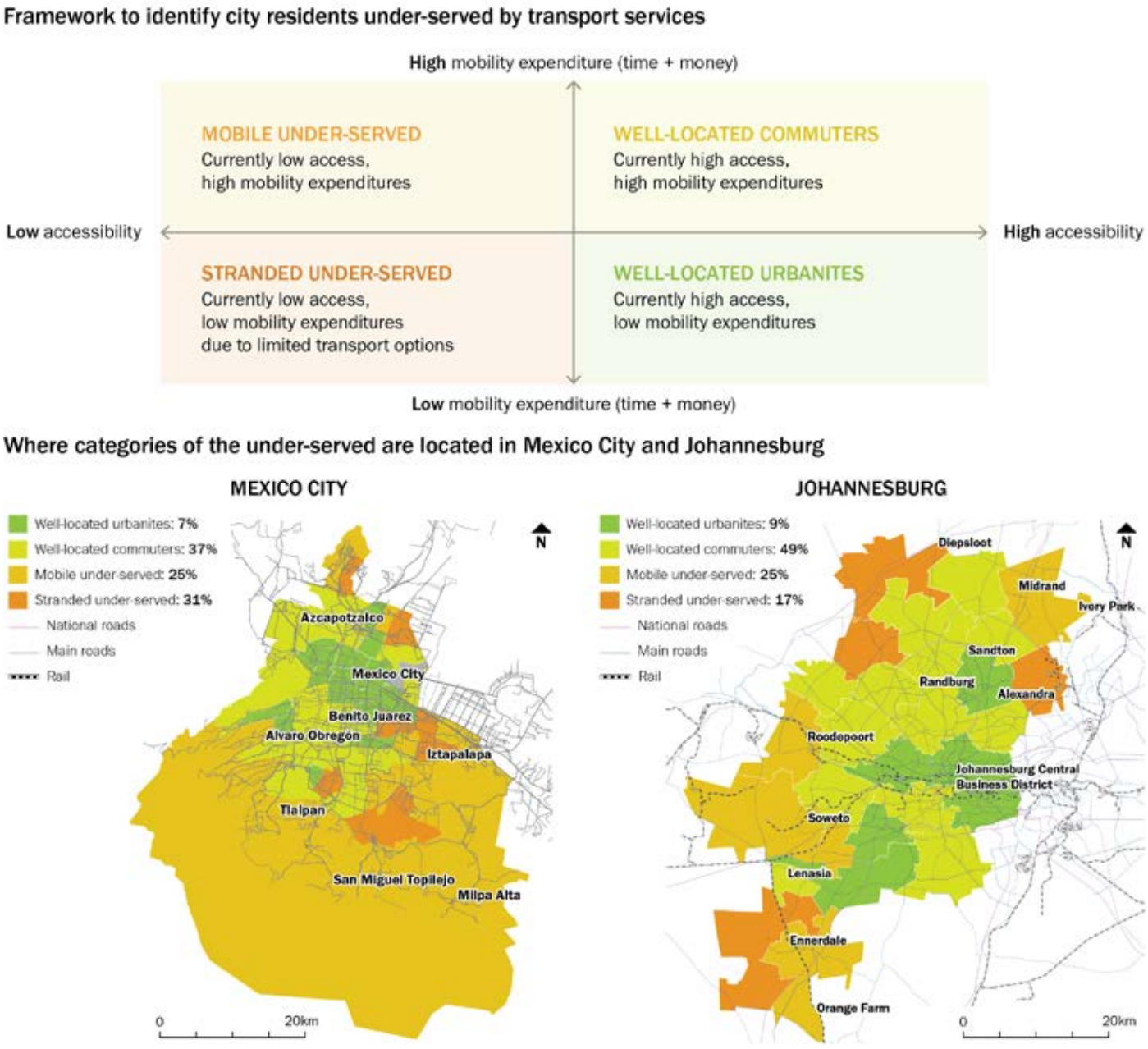
A. Structure regulations and incentives to make land markets more transparent and inclusive

Cities can use an array of policies and fiscal instruments to make land markets more inclusive, efficient, and responsive to the needs of the public.[428] They can establish incentives to direct development towards specific locations within cities, impose time limits on how long land can be held without being built upon, tax vacant land and buildings, and implement land value policies that benefit both private land developers and the city. Planning focused on spatial equity can stop urban development and real estate investment from exacerbating existing patterns of inequality, segregation, and isolation. Regulations can guarantee that adequate urban infrastructure is provided wherever new development and urban regeneration occur. This helps avoids the economic, social, and environmental costs that result from unmanaged expansion and self-provision of services.[429]

Regulations and incentives to enable affordable housing in accessible locations

Regulations can enable land development and the construction of affordable housing in well-serviced locations as well as require private developers to contribute to infrastructure costs. These steps can achieve more equitable outcomes and allow all residents, regardless of their location in the city, to access urban services and opportunities. For example, after **Brazil** and **Mexico** made the mistake of building now-abandoned affordable housing in the urban periphery, they changed course. They began providing national housing subsidies to developers to build affordable housing in designated zones based on regularly updated spatial and socioeconomic data on access to core services and employment.[430] In 2013, 80 percent of housing in Mexico was built in these identified zones, which are called Urban Containment Perimeters (Perímetro de Contención Urbana), and the subsidies were significantly reduced after 2018.[431] In other locations, developers are required to fund and build infrastructure to extend core services (water, sewer networks, electricity) and sidewalks to their developments, and municipalities are responsible for operating the services.[432] In 2003, **South Africa** passed a law offering tax incentives to developers to build, extend, or improve buildings in specific urban development zones (UDZs).[433] In **Johannesburg**, the

Figure 31 | **New analysis shows spatial inequities in access to jobs and mobility expenditures in Mexico City and Johannesburg**



Notes: *Accessibility* is the number of opportunities reachable within 60 minutes; *mobility* expenditure is the actual amount of time and money spent traveling. This analysis allows decision-makers to consider strategies that increase accessibility while keeping mobility expenditures low by understanding the needs in different locations of a city. It allows them to integrate land-use and transport considerations in their decision-making.

Source: Venter et al., 2019.

city with the largest UDZ, a comprehensive, publicly available property database was developed in partnership with property owners, which has enabled the design of incentives for developers to build in the city's new BRT corridors.[434]

Facilitating supply of well-connected land and housing to reduce scarcity

Cities can also impose time limits on landholding and tax vacant land and buildings to prevent land hoarding or high vacancy rates. Land and housing units are often held back from the market in the hope of higher returns later.[435] This creates shortages in supply of land and pushes up prices. **China** and several Latin American countries tax vacant land to reduce speculation, induce development, and bring vacant units into the rental market. As a strategy to limit speculation and discourage land hoarding, some countries, such as **Colombia**, **Malaysia**, and **Sri Lanka**, temporarily freeze land values in locations where major urban development schemes have been announced.[436] City governments need the statutory authority, resources, and capacity from higher levels of government (national and state) as well as trained staff to devise and enforce development plans and regulations of this kind.

Raising public revenues from urban land

There is a compelling case for cities to implement land value capture mechanisms, which include property taxes, charges for building rights, and development impact fees.[437] Using these mechanisms, cities can raise funds to create a virtuous circle: investing in infrastructure to foster economic development and rising land values, which, in turn, create demand for more infrastructure. In many cities of the global South, weak institutions and land governance structures—and subversion by political or private development interests—can stymie such schemes.[438] But a large and growing number of cities around the world are using them. Even simple forms of land value capture, such as property taxes or special development charges, can generate much-needed local revenue to finance infrastructure and services.[439] In **Bogotá**, for example, a betterment levy (*contribución de valorización*) charges property owners a fee to defray the costs of public works improvements. From 1997 through 2007, this mechanism financed over $1 billion worth of investment in 217 public road and infrastructure projects all over the city.[440] Such land value capture instruments have also been used to finance transport-related improvements in Bogotá, **Brasilia**, **Hong Kong**, **Hyderabad**, **Mumbai**, and **São Paulo**.[441] These instruments have succeeded by jointly managing the development and sale of land with the construction of transport infrastructure. They show how critical it is for cities to coordinate across agencies and adopt an integrated approach to land development and transport improvements. More examples of land value capture tools can be found in Transformation 5 on transforming financial investment to prioritize and subsidize urban services for vulnerable groups.

Box 14 illustrates how a change in land-use laws allowed **Ahmedabad** to use a mechanism known as the Town Planning Scheme (TPS) to manage the growth of the city. It also shows the application of land value capture policies, which are one way to combine land regulations and incentives while creating additional revenues to finance infrastructure.

B. Improve services in informal settlements to achieve affordable, livable density

Transformation 1 includes many examples of successful approaches to making housing more affordable and livable.[442] Here, in discussing interventions specifically related to land and spatial planning, we focus on how cities can extend core services to already very dense informal settlements and create affordable, livable density through flexible planning standards.

BOX 14 | Ahmedabad uses the mechanism of Town Planning Scheme for sustainable expansion

The *Towards a More Equal City* case study of **Ahmedabad, India**, showed the Town Planning Scheme (TPS) has been transformational in allowing the city to increase the supply of well-connected land in planned locations and sustainably manage its urban expansion. The TPS involves negotiations between the city, private developers, and landowners. Instead of just taking land for public services through eminent domain, Ahmedabad readjusts the boundaries of private plots, making space for roads and sewer and power lines and other infrastructure. Landowners get compensated for land taken, minus a portion of the cost of providing the infrastructure. Therefore, the city and landowners share the costs and benefits. The TPS faced challenges in Ahmedabad. It was difficult to engage tenants, raise financing, and win cooperation from farmers in locations slated for new growth. But it has reduced commuting distances, increased street density, and prompted the construction of affordable housing in close-in, accessible neighborhoods.

Figure B14.1 | Land is planned and serviced through an area development approach

BEFORE: Proposed Road Alignment

AFTER: Without Land Readjustment
Inefficient and inequitable development

AFTER: With Land Readjustment Opportunity to plan, service, and finance development. All landowners benefit with space created for community benefit.

Figure Source: Mathews et al., 2018.

Implementing the TPS in Ahmedabad required changes in state law that allowed the city to do so. The state of **Gujarat** passed an amendment under the Town Planning and Urban Development Act that encouraged coordination across sectoral agencies to deliver urban services in tandem with the city's development plan, with infrastructure financing generated from land sales. In addition, national-level financing programs for housing for the urban poor supported the construction of affordable housing within the TPS. These national- and state-level actions enabled the city to utilize the TPS to guide urban development.

Source: Mahadevia et al., 2018.

Affordable, livable density means a level of housing density that allows a good quality of life and well-being for all, especially the more vulnerable, without placing an undue burden on household finances (see Box 15). It means no overcrowding in living spaces, good access to core services, and a human scale that achieves a balance between mid- to high-rise buildings, open public spaces, and street connectivity. In line with SDG indicators, *affordable* would mean no more than 30 percent of a household's monthly income spent on housing and transport combined.[443]

Cities have a long track record of displacing residents, sometimes involuntarily, to "affordable" housing in the urban periphery. We argue that affordable, connected housing can often be better provided by upgrading informal settlements in place if they exist in otherwise secure locations, minimizing vulnerability to climate risks. In **Medellín**, the public sector utility company Empresas Públicas de Medellín, which provides electricity, gas, water, sanitation, and telecommunications services, has for decades

BOX 15: Density and its effects must be better understood

Although density offers many advantages, including efficient delivery of public services and accessibility, it has been a contentious topic, often leading to misinformed policy prescriptions and unintended consequences. On the one hand, highly restrictive regulations that limit densities in growing cities are partially responsible for driving urban sprawl; on the other hand, high-end, high-density development is often accompanied by unaffordability, gentrification, and displacement. [a] Further, recommendations to densify rely too much on a single operational measure: population density. They may neglect important aspects of the built environment, such as the quality and design of structures, whether buildings are tall and close together or have open space between them, and whether they are already overcrowded.[b] On paper, an urban area may not appear to be dense; yet, in reality, each house may be packed with people. For example, the **Democratic Republic of the Congo**'s capital, **Kinshasa**, has a lower population density than **Dhaka, Bangladesh**, or **Hong Kong**, even though it has almost double the floor-space occupancy (or crowding) of Dhaka and almost four times that of Hong Kong.[c] This highlights the problem with overly simplistic recommendations to "densify." In a low-income city where affordable housing and urban infrastructure are in short supply, building tall, high-end apartment buildings with lots of floor space per capita actually exacerbates spatial inequalities, even if it increases density. To accommodate growing populations, to provide a humane, healthy environment where they can thrive, be productive, and contribute to the civic and economic life of the city, cities must prioritize affordable, livable density.

Figure B15.1 | **Very high levels of density in the city of Dhaka**

Picture credit: Dominic Chavez, World Bank

Sources: a. Economist, 2015; Bertaud and Brueckner, 2005; Brueckner and Sridhar, 2012; Rode et al., 2014; Ahlfedlt, G., and E. Pietrostefani, 2017.; b. Angel, 2019; Neuman, 2005.; c. Angel, 2019.

run a program called Fitting-Out of Dwellings (Habilitación de Viviendas) to extend services to people living in the city's growing informal settlements.[444] Similarly, in the Social Urbanizers project in **Porto Alegre**, municipalities engaged with private sector informal developers to ensure set minimum levels of service provision and better-planned informal subdivisions. This experience has been replicated in **Colombia** and **El Salvador**.[445] Regularization programs for informal settlements in **Rio de Janeiro** and other Brazilian cities have provided legal titles and upgraded services at the same time.[446]

With or without formal regularization programs, improving services and livability in very dense informal settlements requires that cities adopt flexible minimum planning standards. Inclusionary zoning, such as the Zones of Special Social Interest (Zonas Especiais de Interesse Social) used in Brazilian cities, allows less restrictive densities and building standards and features lower transaction costs for building approvals. It allows rezoning of informal settlements, or *favelas,* so that they can be legalized and connected to city services. Existing informal settlements—such as Khuda-ki-Basti 3 in **Karachi**, La Candelaria in **Medellín**, and several in **Windhoek**—utilized smaller plot sizes and lower infrastructure standards to increase affordability while upgrading informal settlements, with the ability to densify even more over time.[447] This has increased the number of services reaching under-served areas in the city without displacing residents. Sites-and-services projects in the Indian cities of **Mumbai** and **Chennai** used similar principles to allow for incremental development while allocating space for commercial and social services and facilitating high density through a hierarchy of streets and open spaces.[448]

Tenure insecurity in informal settlements makes implementing such actions difficult. With significant proportions of urban residents living under insecure land titles and tenure, some cities are paying more attention to existing community-recognized titles and tenure systems.[449] Particularly in Africa, overlapping public, private, tribal, and customary landownership rules create challenges as tribal and customary ownership is often deemed "informal." But increasingly countries such as **Botswana**, **Namibia**, **Rwanda**, and **Zambia** are recognizing customary landownership as part of formal land tenure systems and regularization programs.[450]

C. Practice integrated spatial planning for better urban services and sustainable growth

Cities must develop density and land-use policies—aligned across spatial scales from metropolitan to regional to local—to guide citywide growth and development of neighborhoods.[451] We created the first publicly available global data set of upward and outward growth over time in almost 500 cities, showing most cities expanding in both dimensions, with the dominant type of growth varying across parts of a city.[452] These growth patterns were also analyzed by type of city, showing that struggling cities have negligible upward growth relative to other cities in the sample. It is clear from the data that a two-pronged approach is needed when considering where to expand the supply of serviced land. In vacant, under-utilized, or low-density areas within cities, municipal governments can encourage more upward and compact growth near employment centers and services, such as along public transit corridors. In cities that are growing upward to accommodate more people and expanding rapidly outward as well (e.g., Chinese cities), trade-offs need to be made. These rapidly growing cities must increase the supply of serviced land, working in partnership with private developers and landowners to balance the cost of land with the cost of connecting it with services. Spatial and economic development must be integrated so that land and infrastructure plans guide the development of new housing and employment centers. This also ensures a more even distribution of jobs and residential densities. Investing in reliable public transport to support these plans saves people the time and money they must spend on getting around and can further improve productivity and livelihoods, preserve social networks, and protect the environment.

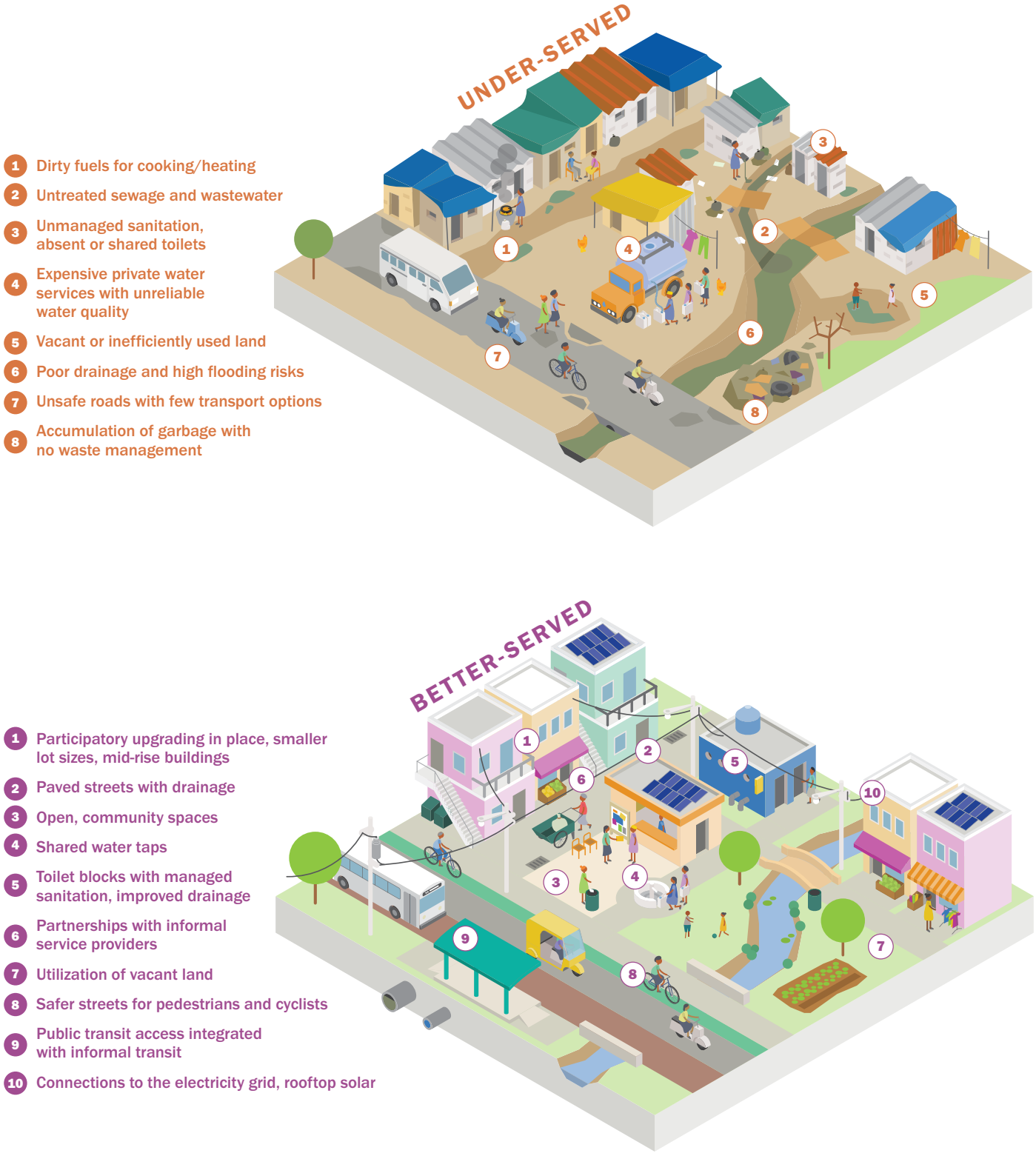
Cities should densify strategically so that they consume land more efficiently. There are four ways they can do this:

- Using under-utilized or vacant land within the city because it is already connected to services
- Upgrading informal settlements within the city to good-quality and well-serviced affordable housing
- Targeting well-located, well-serviced land within the city to densify—that is, increasing affordable housing with medium building heights while enhancing services[453]
- Planning for new affordable housing in the immediate periphery as needed while ensuring that trunk infrastructure is extended to these developments as they are planned

Further, crafting flexible standards for living space and services for different income groups and their lifestyles can make housing more affordable. Households can add building height and additional rooms as their incomes increase, provided the trunk infrastructure can support the higher density. This strategy has been used in **Chennai**, **Mumbai**, and **Windhoek**. Features such as smaller lot sizes, narrower streets, and more community open spaces instead of private ones have allowed density to increase and have opened up more access to housing for lower-income groups, but in a way that improves quality of life and livelihoods (see Figure 32). Table 7 lists the actions and roles required of different actors to move Transformation 6 forward.

The first publicly available global data set of upward and outward growth over time in almost 500 cities shows struggling cities predominantly growing outward with negligible upward growth over time.

Figure 32 | **Using land efficiently, ensuring its connectivity to employment and services, and upgrading informal settlements in place bring great value to cities**



Source: Authors.

Table 7 | **Roles of specific actors in advancing Transformation 6: Urban Land Management**

URBAN LAND MANAGEMENT—PROMOTING TRANSPARENCY AND INTEGRATED SPATIAL PLANNING	
City Government and Urban Sector Specialists 	▪ **Use fiscal instruments** to help make land markets more inclusive and productive and to capture land value to invest in public infrastructure ▪ **Develop regulations and incentives** to limit land value speculation, encourage transparent land records, and promote well-located affordable housing ▪ **Understand changes in built form and accessibility needs** to inform policies on density and local land-use regulations; consider indicators of density, crowdedness, and access together to prevent misinformed policies and unintended consequences ▪ **Practice integrated planning of land and infrastructure** to address spatial inequities in line with local economic development, low-carbon development, and climate-resilient plans ▪ **Utilize vacant land and develop denser mixed-use neighborhoods** within the city while enhancing the infrastructure and services needed to support higher density ▪ **Plan for urban expansion with space allocated for core infrastructure and services** while protecting vital ecological areas (e.g., green spaces as flooding buffers, wetlands, biodiversity zones) and ensuring new housing and employment centers are accessible by public transit to reduce emissions ▪ **Upgrade informal settlements in secure locations** into affordable housing that meets residents' needs and improves living conditions instead of displacing them to housing in the urban periphery ▪ **Design and implement flexible planning standards** to make good-quality housing with services available for a range of income groups ▪ **Incorporate information on climate risks in planning** urban infrastructure and services; build the climate resilience of the most vulnerable populations ▪ **Engage community actors** in urban development planning to fully understand the needs of the most vulnerable communities
National Government 	▪ **Establish complete and transparent nationwide urban land records** of ownership, values, and transactions, at least in urban areas where land is highly contested and subject to speculation ▪ **Ensure planning for affordable housing programs accounts for land costs**, service provision costs, access to core infrastructure, and connectivity to employment ▪ **Authorize local and state governments to collect land-based revenues and taxes** ▪ **Create land acquisition laws and land management regulations** that fairly compensate original land owners, with provisions for landless workers and tenants ▪ **Incentivize integrated spatial planning in urban areas** that incorporates climate change mitigation and adaptation actions in regional and urban development plans ▪ **Establish planning processes and mandates for inclusive urban planning** that engage vulnerable groups and the broader community
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Engage in and help design participatory processes** to provide input on local development plans; organize communities when these plans are detrimental to community concerns ▪ **Provide data and analysis** to ensure local officials understand the short- and long-term socioeconomic, environmental, and equity impacts of land regulations and spatial plans, including climate risks ▪ **Advocate for and develop tools** to support local officials in completing land records and making land transactions more transparent ▪ **Act as watchdog to monitor** when development flouts approved plans and regulations or creates social and environmental risks ▪ **Advocate for embedding equity criteria** in local development plans, land-use regulations, and housing policies ▪ **Inform and educate vulnerable groups** so they can participate in planning processes, and push local officials to include them

Table 7 | **Roles of specific actors in advancing Transformation 6: Urban Land Management (Cont.)**

URBAN LAND MANAGEMENT—PROMOTING TRANSPARENCY AND INTEGRATED SPATIAL PLANNING	
Private Sector 	▪ **Invest in land and property development** within the framework of local land-use and regional plans and regulations ▪ **Contribute to transparent land records and support public authorities** to develop a database of land ownership, values, and transactions to limit speculative prices increases ▪ **Partner with local land and regional land development authorities** to increase supply and financing of well-serviced, well-connected land for affordable housing and other public infrastructure
International Community, including Development Finance Institutions 	▪ **Support cities with knowledge and tools** to develop better and more transparent land records that enable property tax collection, more inclusive land markets, and limit land value speculations ▪ **Incentivize data transparency and mandates** to share disaggregated and spatial data across jurisdictions and stakeholder groups in urban areas ▪ **Use peer exchange and knowledge networks to share international good practices** on land-use regulations, integrated spatial planning, climate action planning, slum upgrading, and other mechanisms to ensure equitable access to urban services and a more sustainable city ▪ **Share lessons on national, regional, and local land-use regulations and building approval processes** to limit exploitative practices in land acquisition, reduce speculation, and limit the increase of informality

Source: Authors.

TRANSFORMATION 7

Chapter 12. Governance and Institutions—Creating Diverse Coalitions and Alignment

Cities need to transform governance to work for, with, and by the people. Diverse coalitions of public, private, grassroots, and civil society organizations can galvanize political action around a shared vision and achieve lasting change when empowered by coherent policies.

Status Quo	Priority Actions	Desired Outcome
Fragmented governance and conflicting interests	• Form and support coalitions of local actors with access to decision-making • Create incentives, resources, and mandates for policy alignment and collaboration	**Effective governance supporting coalitions for change**

12.1 WHAT MUST CHANGE AND WHY

Multiple sectors, actors, and systems work against each other

Cities and urban areas do not exist in isolation but rather in a spatial and political context comprising national and subnational actors at the state, regional, provincial, and local community levels. Cities often lack the power, jurisdiction, or resources to make needed changes within their administrative areas or the regions where citizens live, work, and interact with nature. Metropolitan or regional agencies may have control over networked infrastructure such as transport, energy, water, and sanitation. These sectoral agencies and levels of government must be aligned so that they can move together in a consistent, coordinated way, in the same direction, to avoid duplicating efforts, stymying one another, or working at cross purposes.

Without aligning goals and policies towards a shared vision for a city, it is difficult to achieve the consensus and momentum needed for durable change. Collaborative decision-making can expand policymakers' horizons while revealing obstacles and opportunities. Our research found that policy alignment and collaboration is necessary both horizontally—across sectoral agencies and city jurisdictions—and vertically—between local, regional, and national levels of government. It also showed how siloed sectoral thinking and piecemeal interventions that are not conceived holistically may address the symptoms but not the root cause of problems.

Without aligning goals and policies towards a shared vision for a city, it is difficult to achieve the consensus and momentum needed for durable change.

The absence of vertical collaboration and policy alignment across different scales of government can lead to national policies clashing with or neglecting urban needs and priorities. Providing urban services such as good-quality housing, transport, energy, water, and sanitation often depends on metropolitan or regional agencies planning within national policy and financing frameworks. Many struggling and emerging cities rely on their national and state government for policy, regulatory, and technical support as well as for large portions of their budgets. National and regional governments depend on cities too. Actions taken by cities have the potential to generate both positive and negative economic and environmental impacts that reach far beyond their boundaries, with repercussions for whole regions and nations.

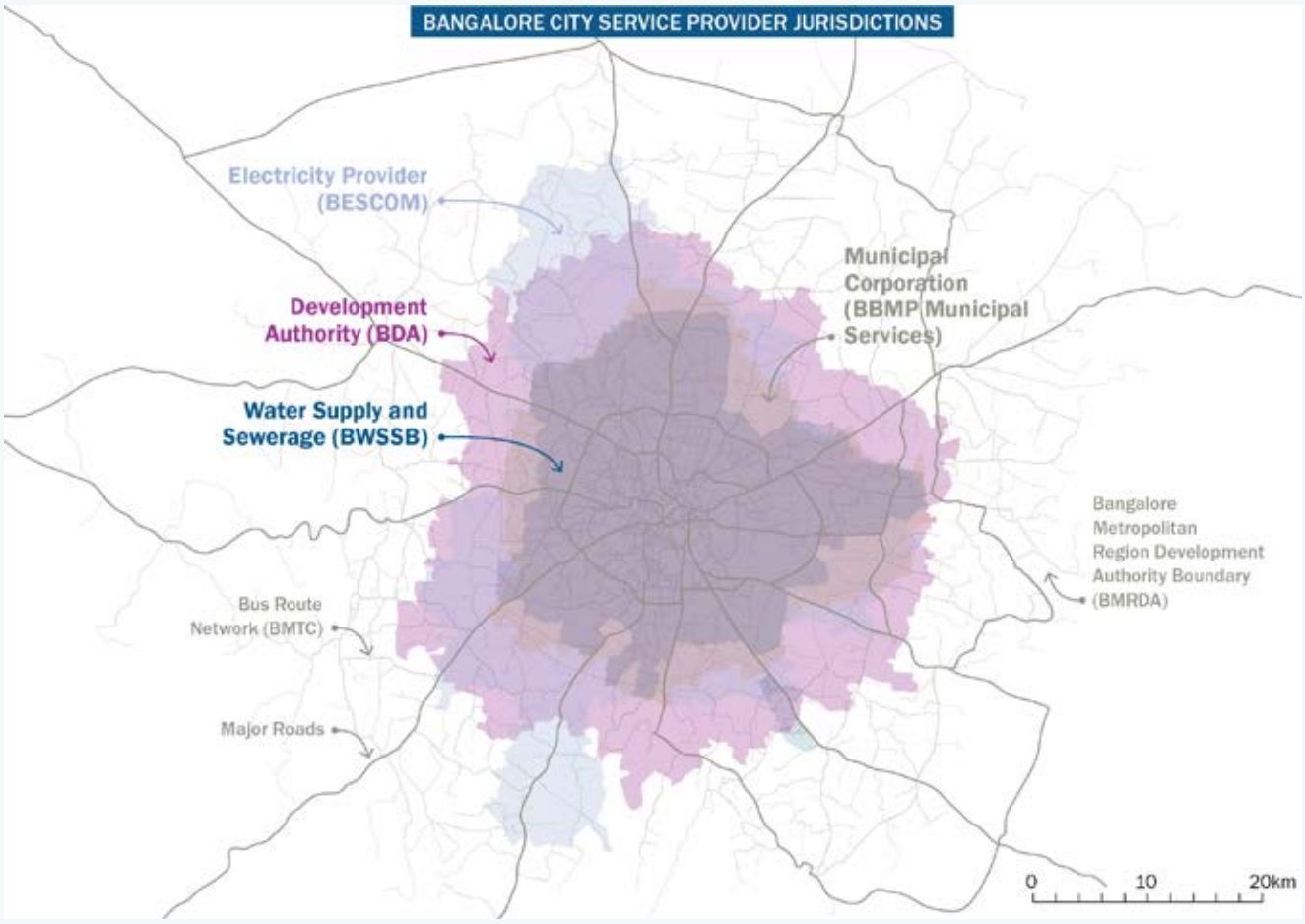
The absence of horizontal collaboration and the lack of integrated planning across sectors and spatial jurisdictions can create multiple challenges for cities and their ecosystems. Regional challenges—including flooding and water scarcity, air pollution, land degradation, and the loss of biodiversity, wetlands, and forests—transcend city boundaries but can have critical implications for a city's prosperity and quality of life. Urban infrastructure networks physically span multiple jurisdictions, and a city's labor market and economy can encompass smaller towns and cities on its periphery.

Urban spatial planning for land and services must therefore consider not just the city itself but also the surrounding areas where settlements and populations are expanding (see Box 16). These may fall under the jurisdiction of regional, state, or even rural agencies. Land development patterns—the ways cities are pushing outward—must be considered in planning core services to avoid spatial inequalities and gaps in access. This requires collaboration, which can be challenging because local governments in adjacent jurisdictions may lack the technical awareness, incentives, resources, or policy mandates to collaborate. It requires a coherent policy framework and vision at higher levels of government.

BOX 16 | Rapidly expanding cities invariably face governance challenges

Figure B16.1 shows the governance challenge that arises in a growing city such as **Bengaluru, India**, when rapidly urbanizing areas on the city's periphery fall outside the jurisdiction of key service-providing agencies. The mismatch of jurisdictions inevitably results in gaps in access to one or more key services for people living in these locations, and those with lower incomes are most affected. Many lack access to basic services, including piped water and sewer connections (see also Chapter 3, Figure 11).

Figure B16.1 | In Bengaluru, India, the jurisdictions of key service-providing agencies do not align



Source: Mahendra and Seto, 2019, contributed by WRI India.

Lack of collaboration across jurisdictions hinders service provision

Coordination across geographies, levels of government, various sectors, and over time is difficult logistically as well as politically. Administrative challenges multiply when both populations and urban footprints are growing, and when the realities of life on the ground, including control or authority over natural resources such as watersheds, do not correspond to older jurisdictions, institutional structures, and processes.[454] Box 16 presents the example of rapidly-growing **Bengaluru**, where the jurisdictions of different service provision agencies do not match. Rigid and hierarchical bureaucracies prevent effective communication and can undermine trust, political will, and consistency. Such mismatches and lack of coordination can lead to cases like that of **Nairobi**, where the water and sanitation utility installed water taps that were removed five years later by the roads authority wanting to build new roads.[455]

Collaboration takes time and requires the political will to work towards a common vision and devise a plan to achieve it. Existing incentives can tilt public sector agencies more towards competition than collaboration. Not collaborating is far easier and can be politically motivated. Political differences between national and city governments can prevent cities from exercising the authority they need or accessing the credit they require from international markets or donors to build needed infrastructure.[456] **Dakar** has been struggling financially, in part because of insufficient revenue transfers from the Senegalese government. The national government blocked the city from accessing credit offered by the U.S. Agency for International Development. It cited fears that Dakar's weak governance and inadequate revenue collection would force the national treasury to repay the money. However, political differences between the national government and a city government led by the opposition party likely played a key role.[457]

Working at cross-purposes or in silos, without a shared vision or long-term planning horizon, carries significant costs. The *Towards a More Equal City* **Kampala** case study illustrates this. Project-based thinking—where different actors implement narrowly conceived and often short-lived projects to solve a problem—is common in the delivery of urban services. It fragments resources and responsibility between multiple actors working towards inconsistent objectives and can lead to waste through inefficiency and duplication of effort. Sometimes, for example, cities need to perform multiple feasibility studies for the same large infrastructure projects to comply with the unique rules and paperwork requirements of various funders and partners. Urban management projects in Kampala were not coordinated. Each project and donor focused on its own goals rather than participating in an integrated plan to improve the lives of citizens by responding to their needs. Donor priorities would change, pilot projects were not supported beyond the short term, and longer-term strategic thinking was absent. Moreover, the time frame for evaluating success was short, further minimizing the chances for long-term collaborative approaches. Short-term and piecemeal investments failed to achieve lasting change with wider benefits.

12.2 PRIORITY ACTIONS

A. Form and support coalitions of local actors with access to decision-making

To build durable change that can withstand the vicissitudes of political cycles and changing administrations, cities need lasting coalitions of stakeholder groups. A shared vision across these groups can help drive transformative change, minimize backsliding, and create bridges across time, political cycles, and leaders. These coalitions reinforce and sustain transformative change because of their political commitment, their ability to drive change on the ground, and determination to ensure that policies are implemented. Our case studies of **Guadalajara**, **Kampala**, **Pune**, and **Surabaya** provide examples of how coalitions of actors built the momentum and political support needed at the relevant city, national, and state levels to progress towards transformative change.[458]

For example, in **Surabaya**, Mayor Tri Rismaharini's commitment to a pro-poor, pro-environment, anti-corruption platform was a powerful catalyst for change. She depended on diverse coalitions of stakeholders, including university academics, who were committed to protecting the uniquely Indonesian urban, low-income neighborhoods, the *kampung*, and incrementally improving these settlements over decades. Their political commitment was central to sustained, participatory measures to upgrade informal settlements. Likewise, in our case study of **Pune**, strong coalitions of civil society stakeholders, allied with a progressive municipal government and supported by national policies, drove change. In **Kampala**, change became possible, at least in the provision of sanitation services, when the objectives and political commitment of the national leadership and the city leadership were aligned. Together, they promoted a results-driven working culture that supported new technologies for fecal sludge management. The Kampala city and water and sewer utility overcame "politics" and built a partnership over time that increased household access to safe sanitation, although large challenges remain.

As seen in our case study of **Pune**, as well as across multiple Latin American cities in **Colombia** and **Brazil**, alignment of national and local policy has promoted equity by incorporating waste pickers into municipal solid waste management systems.[459] This shift eventually led to the founding of the Brazilian national movement of waste pickers and three landmark judgments in Colombia in support of waste pickers and their right to earn a livelihood, including the right to bid for solid waste management contracts in cities.

In **Guadalajara**, civil society coalitions advocated for public space, uniting sometimes competing interests to work together towards establishing the Via RecreActiva bike path, which closes major streets to cars and turns them over to other uses. Transparency was improved and new roles were created for activists in municipal institutions, with some of them entering government and formal politics along the way.

Such bottom-up coalition-building processes at the city level help advance top-down national- and state-level policies by demonstrating how a wide range of stakeholders can be included in decision-making processes. Brazilian cities such as **Belo Horizonte**, **Florianopolis**, and **São Paulo** use participatory planning processes to incorporate a wide range of views and opinions, providing a broader base of support for official plans and policies.

Participatory processes can also help overcome challenges of land acquisition, ownership, and management. **Thailand**'s unique CODI exemplifies how organized public participation and community-driven action, supported by national and local government and civil society, can lead to more equitable outcomes. CODI provides grants to poor communities to improve housing, including infrastructure and services and local livelihood opportunities. CODI's process of cocreating solutions, including financial priorities, with deep community engagement demonstrates how development outcomes are more likely to favor low-income groups when they are actively engaged.[460]

Transformative change requires leadership to initiate a shared vision and bring the right actors together, beyond city actors and the public sector, to move forward (see Figure 33). Effective leaders can harness the power of citizens and bureaucracies, creating governance processes that forge solutions rather than create obstacles. It takes a continuous commitment of political leaders working in collaboration with coalitions of diverse stakeholders to balance trade-offs with opportunities. The private sector, civil society

organizations, international development agencies, and smaller-scale communities must be part of the common vision and movement.

Coordination and a shared, overarching vision enable cities to make strategic choices to pursue multiple desired outcomes that can drive collaboration across a range of stakeholder groups. By *strategic,* we do not mean large, capital-intensive projects such as airports or special economic zones. It refers to devising a strategy focused on specific interventions that can help unleash a cascading set of benefits with multiple social, environmental, and economic outcomes that improve quality of life for the majority of people in the city. A shared vision with consensus on goals is essential to drive collaboration that can harness synergies across different urban investments, prevent inefficiencies and gaps, and minimize trade-offs. The New Urban Agenda also urges all levels of government to collaborate and align policies to implement its shared vision. Key indicators (for example, those included under the cities-focused SDG 11) can be used to track progress against this vision and to understand how well different strategies meet social, economic, and environmental goals simultaneously.[461]

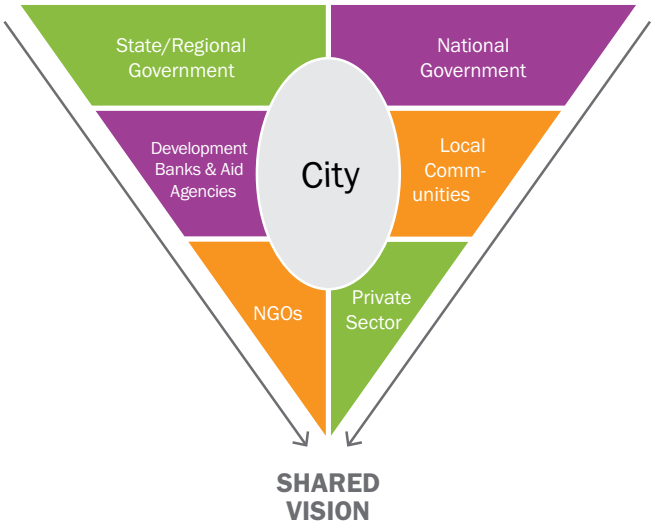
B. Create incentives, resources, and mandates for policy alignment and collaboration

Aligning incentives, resources, and mandates promotes collaboration and change. Incentives established by national or state governments can encourage cross-agency collaboration in cities. For example, **Brazil**'s National Law on Urban Mobility, adopted in 2012, required over 3,000 municipalities to adopt urban mobility plans by 2015. These plans integrated local land use and transport to improve overall accessibility in cities.[462] The law also required cities to ensure public participation in developing and implementing mobility plans. This spurred innovative ways to share information and engage the public. The Brazilian law was accompanied by a national financing program for urban mobility infrastructure, which created an important incentive for cities to coordinate across land-use and transport agencies and with other jurisdictions.[463]

Figure 33 | **Policy alignment and a shared vision can drive collaboration**

When actors are not aligned, the city suffers from the costs of conflicting agendas, uncoordinated investments, inefficiencies, and short-lived change.

When actors are aligned towards a shared vision, the city benefits from harnessing synergies, minimizing trade-offs, and increased collaboration between actors on implementation.



Note: The figure shows an indicative set of actors with influence in cities.

Source: Authors.

Responding to a challenge such as climate change makes collaboration and policy alignment all the more urgent. It requires cities to reduce emissions, build resilience, and manage health risks. For example, how cities grow, provide transport, and generate power can have a major impact on their carbon footprint. But national governments play a major role in determining the mix of energy sources, their prices, and their supply. Likewise, national-level financing, subsidies, and incentives for smart growth and building efficiency often set the framework for local-level spatial planning, including decisions about where new affordable housing should go, how energy efficient it should be, and how it should be serviced. Major transport infrastructure—key to a city's carbon footprint—is typically planned and financed at the national level but can have profound implications for the quality of life in cities and regions. Some national policies are making it harder to mitigate climate change. And sometimes transport, housing, and energy policies collide. For example, national-level fossil fuel subsidies or investment in coal-fired power plants are at odds with efforts to promote electric vehicles and nonmotorized transport (cycling and walking infrastructure) to reduce emissions from urban transport. These conflicts can create perverse outcomes for equity, economic productivity, and environmental sustainability at the city level.

Governance processes must ensure that national policies consider urban needs, as in the energy example above. They must give cities the capacity and authority to enforce development plans, collect the revenue they need, and create incentives to encourage collaboration. For example, as the *Towards a More Equal City* **Ahmedabad** case study shows, the state government gave the Ahmedabad Urban Development Authority and the Ahmedabad Municipal Corporation the authority to effectively implement and enforce the TPS in line with its development plan by amending a state law. But in many other growing peri-urban areas, rural and urban authorities often clash over jurisdiction, policy enforcement, and who pays for service provision.[464] For example, **Lagos**—one of the fastest-growing sub-Saharan cities—has been described as a "loose federation of diverse localities" whose minimal interaction and lack of coordination has hampered quality of life over the last 20 years.[465] In contrast, **China** has improved housing and services for the urban poor because local governments have been actively negotiating with private developers and other public agencies, driven by incentives created by provincial governments.[466]

National and regional governments must require and support data transparency and mandates to share data across jurisdictions and stakeholder groups (public sector, private sector, universities, NGOs, and communities). Such policies can help improve the performance of local authorities and build trust. Local and city governments can harness a variety of sources to address data gaps across all urban and peri-urban residents. Communities can be involved in data gathering using traditional survey and mapping techniques or newer citizen science approaches. These sources can uncover key information on services, access, costs, and externalities. However, the social, environmental, and economic costs, as well as the broader impacts of service deficits, must be captured by monitoring local and regional indicators such as access to services, service quality and reliability levels, and changes in economic activity. This kind of cooperation and alignment may be less visible than others, but it is increasingly essential to ensure data-driven policymaking.

Another "invisible" but potent tool national governments can deploy is guidance on innovative financing, standards, and processes, along with policy space to raise own-source revenue—that is, revenue raised by jurisdictions for their own use. National and state governments can allow and promote alternative, innovative financing techniques, including PPPs, and provide the information, authority, and regulatory frameworks cities need to take advantage of them. Examples range from **South Africa** introducing standard criteria and methodologies for PPPs to **Brazil**'s City Statute 2001 and **Colombia**'s Law 388 of 1997, which authorized the use of land value capture by municipal governments.[467] National governments can invest in civil service systems to enforce

National and regional governments must support data transparency and mandates to share data across jurisdictions and stakeholder groups (public sector, private sector, universities, NGOs, and communities).

rules on good budgeting, accounting, and reporting standards, which, in turn, can help prevent corruption and misallocation of funds. Basic systems of oversight and transparency are often missing in cities, so national standards, guidance, and accountability mechanisms (often tied to receipt of national funds) can be essential for good governance.

The collaboration recommended here does not come naturally, and the skills required are not typically part of training curriculums. Capacity building is essential to improve both technical and process-oriented skills such as negotiation, reflective learning, and proactive planning. Increasingly, capacity building and technical assistance tackles such areas, sometimes with civil society being trained alongside government officials, to ensure that all actors involved in municipal governance are prepared to contribute to sustaining transformation.[468]

Several of our case studies demonstrate how strategic interventions in cities (projects or programs) that pursue multiple desired outcomes can drive collaboration across various sectors and levels of government. **Johannesburg** launched the Corridors of Freedom program, a transformative vision designed to end spatial inequalities. It led to policy alignment across various levels of government and coordination across local agencies, despite shifting city leadership. **South Africa**'s National Development Plan of 2011 highlighted spatial inequalities in access to core services and recognized that no single agency had the ability to fix them. The plan strengthened partnerships across agencies and allocated funding to provide more equitable access to services.[469] This move fit in with the city's own long-term Growth Management Strategy, which prioritized affordable housing and public transport services, especially in marginalized areas. Aligned with this strategy, Johannesburg's Strategic Development Framework created incentives for private developers to build medium-density social housing in the new transit corridors. Local precinct-level plans, as well as funding directed at achieving this vision, all helped advance the implementation of the program in a coordinated way. Challenges remain, in part because private sector investments in affordable housing have fallen short of expectations. Nevertheless, the case study points to the success of policy alignment across the national, provincial, and local levels.

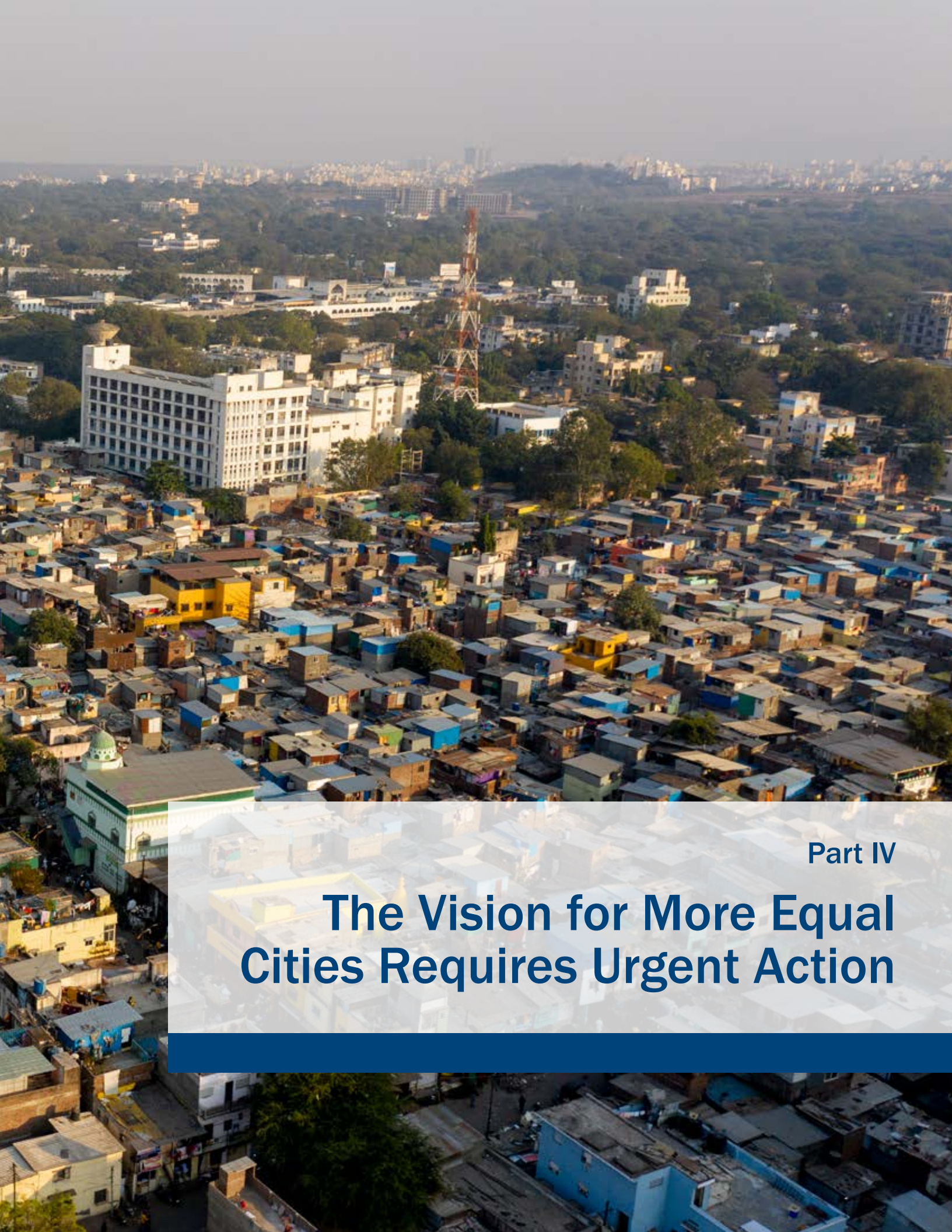
Porto Alegre also displayed the importance of vertical and horizontal alignment. It pioneered participatory budgeting as a signature program of the Workers' Party. It thrived thanks to a well-structured system of vertical coordination that directed the flow of financial resources from the national to local level, combined with horizontal coordination across city agencies to implement projects chosen through a participatory budgeting process.[470] However, after more than two decades, the national government's political commitment to the program dropped off, fewer resources were allocated for the participatory budget system, and the program was suspended. **Surabaya**'s citywide Kampung Improvement Program involved partnerships between the local university and communities, national government, and international financial institutions, and it became a model for in situ slum upgrading—integrating improvements to basic infrastructure and services, affordable housing, and livelihood opportunities for the poor.[471] By aligning and creating links between government bureaucracies, international donors, and a local university, this program allowed new ideas to percolate and be adapted locally, and it prepared university graduates to serve in governmental roles where they could apply that knowledge.

These cases provide different examples of alignment across levels of government, sectors of government, and local institutions that shared a common vision and purpose to promote change in their cities. Incentives, processes, and mandates can facilitate alignment and movement together towards a more equal city. Table 8 lists the actions and roles required of different actors to move Transformation 7 forward.

Table 8 | **Roles of specific actors in advancing Transformation 7: Governance and Institutions**

GOVERNANCE AND INSTITUTIONS—CREATING DIVERSE COALITIONS AND ALIGNMENT	
City Government and Urban Sector Specialists 	▪ **Engage a diverse coalition of stakeholders**, including community organizations, expert groups, the private sector, and international agencies to reinforce and sustain change on the ground ▪ **Commit to meaningful partnerships** and collaboration from under-represented and under-served communities, engaging groups at the start of the process ▪ Design processes for **well-structured public participation** in decision-making ▪ **Assess barriers to local planning and policymaking** in different areas of urban service delivery; work through statutory processes to create alignment with higher levels of government ▪ **Create demand for new legislation to ensure better policy coherence** and increased local authority, forming coalitions with a wide group of stakeholders
National Government 	▪ **Coordinate national initiatives with local priorities** across transport, housing and land management, water and sanitation, and energy planning ▪ **Ensure public participation in decision-making** in collaboration with diverse stakeholders ▪ **Provide a national shared vision and guidelines around resilience planning** informed by climate and health risks; enable local governments to take leadership ▪ **Commit to knowledge coproduction and a common vision** through the creation of multiple stakeholder communication and engagement platforms ▪ **Develop regulations and governance structures** that incentivize cross-jurisdictional and cross-sectoral coordination to solve regional challenges such as climate change, water resilience, air pollution, etc. ▪ **Develop enabling national urbanization policies** that consider different city contexts, service delivery standards, and targets, clearly defining outcomes and implementation strategies ▪ **Increase autonomy of urban governments**; authorize cities and regional governments to enforce spatial development plans that achieve local and regional goals of equitable access, economic development, environmental sustainability, and resilience ▪ **Develop financing mechanisms to incentivize inclusive service delivery**; these may include subsidies, loan programs, and tax incentives that help increase affordability and coverage for vulnerable communities ▪ **Build capacity to assess risks across multiple decision-making levels and establish corresponding institutional bodies** to design strategies that span jurisdictions, ecosystems, rural-urban landscapes, formal-informal institutions, and the regional political economic network
Civil Society, including Nongovernmental Organizations, Experts, and Researchers 	▪ **Form coalitions of diverse stakeholders** to drive change on the ground and hold city leaders accountable; bolster bottom-up, local-level support for a **shared vision** that includes the most vulnerable communities ▪ **Work in collaboration with political leadership** and others in civil society to ensure the scope for change is ambitious and sustained ▪ **Advocate for well-structured public participation** in decision-making ▪ **Develop and support training programs** for effective participation in decision-making processes
Private Sector 	▪ **Participate in coalitions with civil society organizations** to drive change on the ground and hold city leaders accountable ▪ **Contribute to training efforts** to increase skills of workers and vulnerable communities to engage in participatory planning processes ▪ **Bolster bottom-up, local-level support for a shared vision** that includes the most vulnerable communities
International Community, including Development Finance Institutions 	▪ **Create incentives for cross-agency collaboration** to advance multiple local and regional outcomes in line with the Sustainable Development Goals, the New Urban Agenda, and the Paris Agreement ▪ **Support learning, skills, and capacity development** among urban actors ▪ **Foster innovative partnerships** around technology exchange and the sharing of good practices across cities in different countries ▪ **Mandate that recipients of resources engage a diverse coalition of stakeholders**, including community organizations, expert groups, the private sector, and international agencies to reinforce and sustain change on the ground, within an environment of transparency and cooperation. ▪ **For projects implemented at city and regional scale, commit to meaningful partnerships** and collaboration from under-represented and under-served communities, engaging groups at the start of the process

Source: Authors.



Part IV

The Vision for More Equal Cities Requires Urgent Action

Chapter 13. Conclusion

This report articulates a vision for a more equal city that can drive action at a time when deep inequities have been exposed. The seven transformations provide a roadmap for cities to close the urban services divide with wide economic and environmental benefits. To support vulnerable communities and make our cities more resilient to future crises, we must act now.

This synthesis of the World Resources Report: *Towards a More Equal City* series argues that to keep cities humming as economic, cultural, and political dynamos, large-scale investments in infrastructure for water, sanitation, housing, transport, and electricity are needed around the world to provide growing populations with essential services. These investments need to specifically improve access for those residents currently being left behind—a situation that has come to greater global attention during the COVID-19 pandemic. This synthesis report is a call to action for all levels of government and civil society.

Our research details how the world has entered a new phase of urbanization unlike any we have seen before. Urban populations are increasing exponentially in low-income countries, inequality is deepening, and the share of poor and informal workers in many urban areas is rising. We have argued that informality is a fundamental feature of contemporary urbanization in the global South, and urban policies and decision-makers have ignored it for too long. Large swaths of the population lack even basic municipal infrastructure and services, burdening them with heavy costs, and hindering their potential to rise out of poverty and contribute to the prosperity of their cities and nations. This is happening throughout rapidly urbanizing low- and middle-income countries, but it is most pronounced in cities where populations are surging, public expenditures are not keeping pace, and per capita incomes are stagnant or falling. Although urbanization and economic dynamism once went hand in hand, that link is now broken in many countries. The toll of inequalities in access to urban services remains high and hidden.

The fastest-growing cities are expanding in ways that squander essential resources, make it more difficult to meet residents' most basic needs, and make mounting problems even harder to fix. Decision-makers are unable to respond to urgent and conflicting pressures to meet immediate needs and control costs. At the same time, they are making decisions that will shape the built environment and the destiny of urban residents for many generations. In addition, many are operating without the resources and capacity needed to balance these tensions. Short-term solutions often win over longer-term approaches. Simply waiting for economic growth and improved business investment to fix these problems is not a realistic option, despite what some urban scholars have suggested.[472] And strategies that worked for wealthy countries are no match for the array of challenges lower-income urbanizing countries are grappling with today.

Failure to meet these challenges will have dire consequences. Nations have long counted on cities to create wealth and drive economic development. But the chronic capacity and resource constraints in today's fastest-growing cities could stall these outcomes. In addition to entrenching poverty and inequality, today's urbanization threatens to degrade the environment, accelerate climate change, and put many more people in harm's way. This situation calls for a new vision, different thinking, innovative approaches to urban development, and immediate, decisive action.

13.1 A VISION TO SHIFT THE TRAJECTORY

The research on multiple urban sectors and interrelated urban challenges presented in the World Resources Report: *Towards a More Equal City* points to a way forward. It finds evidence that providing more equitable access to core municipal infrastructure and services with a focus on the under-served can help cities escape the vicious cycle in which many of them find themselves trapped. It explains how some struggling and emerging cities in the global South have pursued this vision, and what helped and hindered them along the way. This synthesis distills the lessons learned and highlights approaches available to any city attempting to accelerate progress towards a more equitable, environmentally sustainable, and economically vibrant future. It offers city leaders guidance on what to prioritize, and where and how to begin. The seven transformations described in Chapters 6 through 12 provide several avenues for action. Cities do not need to do all seven at the same time, and different actors can start at different places. There are multiple entry points to create transformative change. The vision for a more equal city that we articulate in this report can be the trigger for action. In a world starting to emerge from the tragedy of the pandemic, which exposed deep inequities, the urgency to act on this vision cannot be overstated.

Our body of research—the framing paper with the seven thematic papers and seven cases studies—shows how investing in more equitable access to services can provide cascading benefits that ripple across whole cities and improve

everyone's quality of life. More equitable access can conserve fragile ecosystems and precious resources, improve public health, and spur productivity and economic dynamism. It can nurture civic engagement. And when done correctly, the steps to close the yawning urban services divide can reduce burdens on the most vulnerable, while bringing about durable and transformative change.

Each of the thematic papers in the series dives deep into different urban sectors (housing, transport, energy, water, sanitation, land, and the informal economy), highlighting effective ways to prioritize the needs of under-served groups while improving health, well-being, prosperity, and the environment in ways that benefit everyone. Each of the city case studies documents practical solutions—ways that governments can work with local communities, national actors, and external stakeholders to understand the reality of problems on the ground and create interventions that best fit their context. This level of engagement not only identifies needs but also helps to evaluate a range of possibilities for action and generate a shared vision for change. In our case studies, we found hope and reasons for optimism. By mustering political leadership, building coalitions, and seizing moments of opportunity, cities can make real progress.

For instance, we found that cities can alleviate the severe shortage of affordable, accessible, well-serviced housing. Upgrading existing informal settlements and connecting them with services, building more rental units, and converting under-utilized urban land to affordable housing can prevent urban sprawl into risk-prone or ecologically sensitive areas. It can also link city dwellers to jobs and cut down on traffic congestion and air pollution. Similarly, cities can improve zoning, spatial planning, and create incentives for private developers to build in well-connected, close-in locations while increasing the supply of serviced land and generating financing for essential infrastructure. These measures can promote affordable, livable density and ensure that development is more sustainable and humane.

Designing safe streets that cater less to drivers of private vehicles and more to residents who walk, cycle, and use public transport yields multiple similar benefits. It can improve access to jobs, reduce commute times, and lower carbon emissions. Enabling residents to cook their food and light their homes with clean, affordable, reliable, energy is another way to close the services divide and improve the quality of life. Cleaner cooking cuts down on dangerous indoor air pollution. Distributed renewable energy sources and energy-efficient buildings can cut costs, boost productivity, and lower a city's carbon footprint. Cities can improve access to good-quality water and sanitation by supporting interim alternative solutions that curb water pollution and prevent the spread of waterborne diseases while extending the piped water and sewer network in the longer term.

Acknowledging the importance of the vast informal economy is vital to realizing the vision of a more equal city. The informal market fills the vacuum created where vital municipal infrastructure and services are lacking. It does not always do this well, however. Parallel or informal markets are often unregulated, so the quality and price of urban services can vary widely. Although alternative arrangements may be illegal, costly, unsafe, or exploitative and may impose especially heavy burdens on the poor, they act as lifelines providing essential access to services that are not publicly available. Cities can improve regulation and oversight to harness the benefits and limit the costs of these arrangements, which help people cope. They can provide informal businesses with better services and support, stop harassing them, and recognize their right to exist. Cities have a key opportunity to tap into the immense potential of the informal market, its entrepreneurial energy, and the innovative solutions it offers in some sectors, particularly energy, transport, water and sanitation, and waste management. Doing so can also provide more security and better livelihoods for the more than 2 billion people who now work in the informal economy worldwide. That is 60 percent of the global workforce.

This research highlights powerful examples of cities that have begun implementing some of these shifts in mindsets and practices, with a range of stakeholders working collectively to reduce inequality and drive transformative change. It provides new data and in-depth analysis and suggests questions for future study. It will be important, for instance, to further explore and quantify the costs of inaction—the social, economic, and environmental consequences of the services gap and deepening inequality. More useful information will emerge as more cities, along with their national and external stakeholders, embark on the strategies outlined in this research.

In addition to conducting this research, we have been working to help cities apply the lessons learned. In India and across Sub-Saharan Africa, we have been conducting workshops

and engagement sessions, in person and virtually, to help diverse groups of stakeholders explore these approaches and translate relevant findings into action. Box 17 summarizes some conclusions from these workshops as they relate to the transformations identified in Part III.

13.2 PATHWAYS FOR TRANSFORMATIVE CHANGE WILL VARY ACROSS CITIES

The seven transformations outlined in Part III of this report can help cities close the urban services divide and ensure a better quality of life for everyone (see Figure 34). They unpack how prioritizing equitable access to urban services can unleash transformative change, and how the benefits can cascade throughout the city, improving the economy, environment, and quality of life. They illustrate pathways to launch transformative change by reimagining service provision, including the excluded, and creating the right enabling conditions. They point to how cities can design and deliver infrastructure differently to prioritize the under-served majority and expand access by partnering with alternative service providers. They reveal how cities can collect, use, and share granular data to uncover and meet the needs of marginalized communities living in informal settlements or working in insecure jobs because counting, valuing, and supporting these populations is essential if cities are to be more equitable. The transformations also explain the need for innovative financing, better spatial planning, and more effective regulation of land markets, coalitions, and policies aligned to drive change. Each of these transformations can feed into, reinforce, and amplify the others. City leaders may sequence them differently, or adapt them to fit local needs, resources, and possibilities.

For instance, if a city already has an active civil society with a mayor committed to improving services in under-served areas, data collection and coalition building might be the most practical place to start. If a city is already receiving climate-resilience financing from multilateral development banks or foreign aid agencies, then the next piece of the puzzle might be ensuring different parts of the government have aligned policies and a shared vision to drive collaboration, find synergies, and avoid waste and duplication. Cities that lack disaggregated data on the most vulnerable communities and informal settlements may need to begin gathering this data before trying to target investments to aid these communities. Leveraging land and spatial planning effectively is a powerful and vital tool for redirecting growth in ways that serve the public interest and break down spatial inequalities. But this requires both granular community-level data and mechanisms for targeted investment in specific locations of the city.

Making these essential shifts requires decision-makers to break out of silos, build new coalitions, and embrace new resources, technologies, and policy innovations. This means city decision-makers, practitioners, financiers, investors, and other stakeholders may need to adopt a new mindset. City leaders can benefit, first and foremost, from inviting diverse stakeholder groups—particularly those representing vulnerable communities—into the process of creating, implementing, and monitoring solutions. These coalitions can propel and sustain change even when governments shift and political leadership wanes. Coming to terms with informality is another crucial mental leap. The informal economy provides housing, livelihoods, and vital services to millions of people and helps prop up the formal economy, and leaders must begin to work with it rather than against it. Finally, leaders need to recognize cities as integrated systems where decisions made in one urban sector affect outcomes in others. Strategic, long-term, cross-sectoral thinking and planning are vital, as is collaboration across municipalities since actions cities take can affect people far beyond their boundaries.

The summary tables of recommended actions at the end of each transformation chapter spell out how different actors can create the momentum needed for transformative change. They offer a menu of ways to tap the knowledge and influence of diverse stakeholders and suggest steps each can take to advance the necessary transformations discussed in Chapters 6 through 12. We elaborate on the roles that city government (with the different agencies composing it); national government; civil society actors, including NGOs, experts, and researchers; the private sector; and the international community, including development finance institutions, should play to help usher in transformative change. All of these fall within the short to medium term because cities in the global South are growing and making fateful decisions so rapidly that there is no time to lose. Interventions may run into hurdles or take time to show results, but the long-term consequences of failing to act are dire.

BOX 17 | *Towards a More Equal City* engagements in India and Sub-Saharan Africa to advance transformations into action

INDIA

In December 2019, the WRI convened city changemakers from across India for a two-day workshop in **New Delhi**, which was designed to disseminate findings from the *Towards a More Equal City*, gather input and real-world case studies for this report, and identify upcoming decision-making opportunities to advance solutions discussed in the workshop. Some common themes that emerged from discussions over the two days are below. These included the importance of:

- Integrated urban planning that is cross-sectoral and draws input from different agencies, such as transport, water, health, and environment
- Geospatial and disaggregated socioeconomic data used to inform decision-making
- Integrating the formal and the informal sector to improve access to services for all in cities

A diverse group of participants from government agencies, nongovernmental organizations (NGOs), academia, and community-focused organizations discussed several real-world examples of how these kinds of solutions brought about positive change in Indian cities. They cited a collaborative initiative between the government of **Odisha**, a state in eastern **India**, and the nonprofit organization Tata Trusts, which brought together government and planning experts to help upgrade and provide services to slums in nine urban areas across Odisha. Drones collected geospatial data to help map the slums, and the government used these maps to grant land rights to inhabitants and begin installing infrastructure, including roads, shared toilets, and open public space for recreation. This is a successful example of a coalition of actors utilizing detailed geospatial data to inform land governance and improve access to services for the urban poor.

Participants also pointed out that a city master plan can be a useful starting point or tool to encourage cross-sectoral, spatial urban planning that prioritizes the needs of the urban poor. One participant noted that **Mumbai**'s master plan mentions the need to include and embed local area plans, reflecting the city's embrace of inclusive and participatory planning. Although it has yet to be achieved at scale, this openness to gathering local input is a step in the right direction. This workshop revealed that planning strategically, prioritizing granular geospatial data, working in coalitions, and focusing on smart land management are gaining traction as approaches to be more inclusive.

SUB-SAHARAN AFRICA

In March 2020, the World Resources Report team convened key stakeholders from across Africa for a three-hour webinar that included a presentation of *Towards a More Equal City* research and an open discussion about strategies for improving access to services in African cities.[a] Common solutions emerged as especially important for city decision-makers in the African context, including:

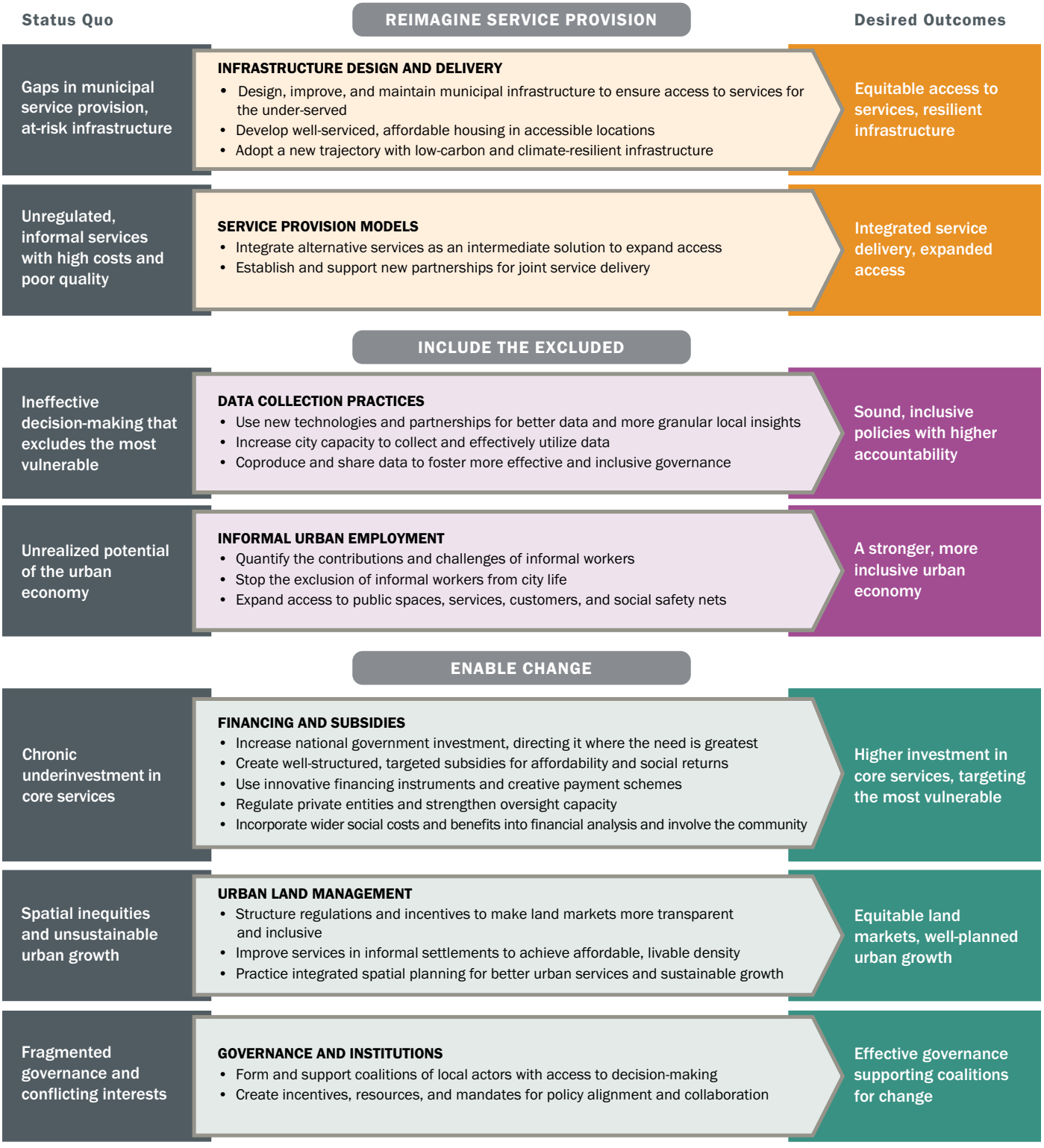
- Integrating the formal and informal sectors and harnessing innovation in the informal sector
- Improved collection and use of data that is relevant for policymaking
- Spatial planning that is cross-sectoral and is built on trust with the local community

We heard from partipants that information is power, but only when you know how to use it. Slum/Shack Dwellers International showed how data can be used to improve conditions for communities on the ground. The organization used data to show that informal dwellers are paying far more but are receiving fewer services than those in more formal houses and neighborhoods. This kind of information can be used by cities to allocate resources in a way that benefits vulnerable people the most.

A participant from the Akiba Mashinani Trust described a new, inclusive planning process implemented in the Mukuru slum outside of **Nairobi**. In this case, the municipal government designated the slum to be a "special planning area" that required a fully-thought-out development plan prepared in partnership with the community before new resources could flow into the area. The local government and NGOs came together to create an eight-sector development plan for the area—mapped to the responsibilities of key service delivery agencies in the city—which prioritized water and sanitation due to their immediate impact on public health.[b] This development plan tapped into expertise from both the public and private sectors and considered the needs of the community. Going forward, this plan and others like it will inform budget allocations from the county. The collaborative process exemplified the potential of cross-sectoral spatial planning to meet the needs of under-served communities in the city. The discussions in this webinar supported the idea that more effective urban planning and land management are key starting points for cities in the global South to begin efficiently and intelligently allocating resources to improve access to services for the most vulnerable populations.

Notes: a. This webinar took the place of a planned in-person, two-day workshop in Addis Ababa that was postponed due to the COVID-19 outbreak; b. Horn et al., 2020.

Figure 34 | **Seven cross-sectoral transformations can achieve a more equal, prosperous, and sustainable city**



Source: Authors.

13.3 THE TIME TO ACT IS NOW

This report was drafted in the midst of an altered reality that could make the dangers it highlights and steps it recommends all the more urgent. The COVID-19 pandemic has devastated cities, overwhelming health care services, bankrupting businesses, and draining revenue that public transit systems relied on. And while cities in wealthy nations have begun to crawl back to life, cities in the global South are facing new outbreaks. Disease and death continue to stalk all communities, but especially those where people cannot self-isolate, turn on the tap to wash their hands, work online at home, or run errands safely in cars. Over 1 billion people who live in informal settlements in the global South—representing two of three people in low-income countries—have no means to stay apart or follow social distancing norms. And millions who work in the informal economy face a cruel choice: keep laboring under conditions that expose them to the virus or face hunger. They lack the social safety nets that would allow them to do anything else.

During a pandemic, access to infrastructure and services can mean the difference between life and death. And even in ordinary times, increased access benefits human well-being in countless other ways. It diminishes poverty, increases equality, and makes cities more sustainable, livable, and resilient. It bolsters productivity and fuels economic growth, supporting national and global goals for a more prosperous future. Closing the urban services divide and ensuring equitable access to services and infrastructure in the ways described in this report will also advance global efforts to protect the natural world and future generations from climate change.

It is not too late to change course. As the pandemic has shown us, practices and mindsets can be changed in a short time. The fast-growing cities in the global South and all over the world can act on the opportunity to build and invest differently. Prioritizing equitable access to core urban services can offer an effective entry point, a blueprint, and a way forward.

Endmatter

ABBREVIATIONS

ABC	*ahorro, bono, credito* (savings, subsidy, loans)
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
BBMP	Bruhat Bengaluru Mahanagara Palike
BDA	Bangalore Development Authority
BRT	bus rapid transit
CODI	Community Organizations Development Institute
COF	Corridors of Freedom
CO_2	carbon dioxide
GDP	gross domestic product
GHG	greenhouse gas
JMP	Joint Monitoring Programme
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
LPG	liquefied petroleum gas
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OPP	Orangi Pilot Project
PAYG	pay-as-you-go
PB	participatory budgeting
PforR	Program-for-Results
PPP	public-private partnership
PROTRAM	Programa Federal de Apoyo al Transporte Urbano Masivo (Federal Program to Support Mass Transit)
PV	photovoltaic
SDG	Sustainable Development Goal
SDI	Slum/Shack Dwellers International
TPS	Town Planning Scheme
UDZ	urban development zone
WHO	World Health Organization
WRI	World Resources Institute

ENDNOTES

1. Data on the population living in slums (percentage of urban population) are from World Bank (2018b). This is a conservative estimate because many more urban residents who live outside slums, in disconnected peripheral areas, also face similar challenges.
2. ILO, 2018b.
3. Mehrotra, 2019; Racaud et al., 2018.
4. Florida, 2017; McGranahan et al., 2016; Nijman and Wei, 2020.
5. Worldwide, 4,245 cities had populations greater than 100,000 in 2010 (Angel et al., 2016).
6. World Bank, 2020b.
7. Beard et al., 2016; Watson, 2009a
8. Based on Mizrahi (2011): "Self-provision mechanisms are defined here as informal methods and strategies used by individuals and groups to satisfy their immediate interests and need for services. By choosing self-provision strategies, individuals and groups use none of society's established institutional settings (i.e., the formal rules and laws), whether these are dominated by the public, the private, or the third sector. Rather, they attempt to improve their outcomes through extralegal or illegal strategies. Self-provision strategies may belong to one of two categories: informal (or under-the-table) payments for services and self-production of services. Informal payments to providers of public services change the incentive scheme, meaning that the payer actually creates alternative production channels as compared to the established legal mechanisms in society. The two categories require self-financing and hence may contribute to welfare state retrenchment as well as increase social inequalities."
9. Mitlin et al., 2019; Satterthwaite et al., 2019.
10. Beard et al., 2016.
11. UN DESA, 2019; World Bank, 2020b.
12. ILO, 2018b.
13. Data on the population living in slums (percentage of urban population) are from World Bank (2018b).
14. Chen and Beard, 2018.
15. Westphal et al. (2017), using data from Erickson and Tempest (2014).
16. Beard et al., 2016.
17. UN-Habitat, 2020b.
18. Hutton and Haller, 2004; WHO, 2012; WWAP, 2016.
19. Venter et al., 2019.
20. Westphal et al., 2017: 9–10.
21. Kazis, 2011.
22. Westphal et al., 2017; World Bank, 2016a.
23. AAWSA, 2015; Damania et al., 2017.
24. Mcloughlin and Harris, 2013; Mitlin et al., 2019.
25. CET, 2017; Venter et al., 2019.
26. Brand and Dávila, 2011.
27. Government of Karnataka, 2014.
28. See the M-KOPA website, http://www.m-kopa.com/.
29. Lines and Makau, 2018; King et al., 2017.
30. Mitlin and Muller, 2004; King et al., 2017.
31. For more information about Baan Makong, see the Community Organizations Development Institute, https://en.codi.or.th/.
32. Colenbrander et al., 2019; Venter et al., 2019.
33. Global Commission on Adaptation, 2019.
34. Sutherland et al., 2019; Almansi, 2009.
35. Mitlin et al., 2019; Venter et al., 2019.
36. Venter et al., 2019.
37. Bhaskar, 2019; Safe Water Network, 2016.
38. Cervero and Golub, 2007; De la Pena and Albright, 2013; Kumar et al., 2016.
39. WSUP, 2019.
40. Venter et al., 2019.
41. Wihbey, 2017; Chandran, 2018.
42. Lines and Makau, 2018.
43. ILO, 2020; Racaud et al., 2018.
44. Corburn et al., 2020.
45. World Bank Group, 2015.
46. World Bank Group, 2015: 26.
47. Chen and Beard, 2018.
48. ILO and WIEGO 2013.
49. Assainar, 2014; Mahawar, 2018.
50. Assainar, 2014; Mahawar, 2018.
51. PRIA, 2013.
52. MHT, 2018, 2019a, 2019b.
53. HVT, 2020.
54. Roever, 2014.
55. ILO and WIEGO, 2013; Kamath et al., 2018.
56. Scheinberg et al., 2010; UN-Habitat, 2010.
57. Colenbrander et al., 2019.
58. WHO, 2012.
59. WHO, 2012.
60. Colenbrander et al. (2019) based on Organisation for Economic Co-operation and Development data.
61. Angel and Loftus, 2019; Bakker, 2007; Karunananthan, 2019; Langford and Russell, 2017; Pestova, 2016.
62. Ahluwalia, 2019; Habtemariam et al., 2021; World Bank, 2017.
63. Khandker et al., 2014.
64. Feltenstein and Dalta, 2020; le Blanc, 2007.
65. Mitlin et al., 2019.

66. Heymans et al., 2016.
67. Trémolet et al., 2007.
68. Swope, 2017.
69. Bredenoord et al., 2014.
70. M-KOPA Solar, 2016.
71. Global Commission on Adaptation, 2019.
72. Abers et al., 2018.
73. Mahendra et al., 2020.
74. Seto et al., 2012.
75. Brueckner and Sridhar, 2012; Carruthers and Ulfarsson, 2003; Hortas-Rico and Solé-Ollé, 2010; Libertun de Duren and Guerrero Compeán, 2015.
76. Smolka and De Cesare, 2006.
77. Wihbey, 2017.
78. Turok, 2018: 100.
79. CoJ, 2004; National Treasury, 2004; Ochoa et al., 2017; OECD, 2015.
80. King et al., 2017; Mitlin and Muller, 2004.
81. For more information about Baan Makong, see the Community Organizations Development Institute, https://en.codi.or.th/.
82. Bakker et al., 2008; Ngoga, 2019.
83. Lall et al., 2017: 29.
84. Mahendra and Seto, 2019.
85. Habtemariam et al., 2021.
86. Kamath et al., 2018; Lwasa and Owens, 2018; Sarmiento et al., 2019.
87. AFD and MEDDE, 2014.
88. SDG 11: "Make cities inclusive, safe, resilient and sustainable." SDG 11 includes targets for access for all to adequate, safe, and affordable housing and transport as well as to public spaces. It also provides for slum upgrading and participatory and integrated human settlement planning and management. To learn more, see SDG 11, https://sustainabledevelopment.un.org/sdg11, and the New Urban Agenda, http://habitat3.org/the-new-urban-agenda/.
89. Gulati et al., 2020; ILO, 2015; Just Transition Research Collaborative, 2019; Mahendra et al., 2019.
90. UN DESA, 2019.
91. United Nations, 2019.
92. Mitlin et al., 2019; Satterthwaite et al., 2019.
93. World Bank, 2020b.
94. Ravallion et al., 2007a, 2007b; World Bank, 2018a.
95. Westphal et al. (2017), using data from Erickson and Tempest (2014).
96. Florida, 2017; McGranahan et al., 2016; Nijman and Wei, 2020.
97. United Nations, 2015.
98. Worldwide, only seven countries have both a national urban policy and a nationally determined contribution that specifically address climate mitigation in cities. See Colenbrander et al. (2019).
99. UN-Habitat, 2014.
100. Cities Alliance, 2015.
101. Beard et al., 2016.
102. IRP, 2018.
103. Beard et al., 2016.
104. *Social equity* refers to equal access to opportunities regardless of gender, race, income, social group, and other geographic, demographic, social, or economic variables, and ensuring that nobody suffers from absolute deprivation (Atinc et al. [2005], adapted from the World Resources Institute's Governance Center definitions).
105. In this categorization, which uses Oxford Economics data, a population threshold of around 400,000 was used to finalize the city list. The data set uses official metropolitan or urban agglomeration boundaries where these exist. The definition of *cities* is based on "urban agglomerations and metros, which include the built-up area outside the historical or administrative core (i.e., city proper). This common definition ensures comparability of cities across the [Oxford Economics' Global Cities] service and is standard research practice for global urban benchmarking" (Oxford Economics, 2014: 4).
106. These are the seven *Towards a More Equal City* thematic papers: Chen and Beard (2018), King et al. (2017), Mahendra and Seto (2019), Mitlin et al. (2019), Satterthwaite et al. (2019), Venter et al. (2019), and Westphal et al. (2017).
107. These are the seven *Towards a More Equal City* case studies: Abers et al. (2018), Das and King (2019), Kamath et al. (2018), Lwasa and Owens (2018), Mahadevia et al. (2018), Pieterse and Owens (2018), and Sarmiento et al. (2019).
108. Jedwab and Vollrath, 2015; Williamson, 1990.
109. Szreter, 2002.
110. As Annez and Buckley (2009: 10) note, "The Great Sanitation Debate, prompted by the Chadwick Report of 1842, had already sensitized the middle and upper classes to the terrible plight of the urban poor. The report offered well-established technical solutions in water and sewerage and even computed cost-benefit ratios for investments using the concept of (if not the term) human capital. It made a compelling case for reform on economic and technical grounds, pulling together information and analysis that had been known for decades."
111. Bairoch, 1988; McCloskey, 2011.
112. UN DESA, 2019.
113. UN DESA, 2019.
114. UN DESA, 2019.
115. UN DESA, 2019.
116. Tacoli et al., 2014: 8–9.
117. Tacoli et al., 2014: 8–9.
118. Tacoli et al., 2014: 8–9.
119. Beard et al., 2016.
120. Authors' analysis based on World Bank Data on urbanization levels and GDP per capita for 1980 through 2020, http://data.worldbank.org.

121. Fay and Opal, 2000.
122. Jedwab and Vollrath, 2015: 1.
123. Glaeser, 2014: 1154.
124. Gollin et al., 2016.
125. Gollin et al., 2016.
126. Fay and Opal, 2000; Gollin et al., 2016; Jedwab and Vollrath, 2015.
127. Beard et al., 2016; Ravallion et al., 2007b: 8.
128. Mahler et al., 2021; Sánchez-Páramo, 2020; World Bank, 2020c.
129. World Bank, 2018a: 113, Table 4C.1.
130. Marx et al., 2013.
131. World Bank, 2018a: 5.
132. World Bank, 2018a: 103–31.
133. UNICEF and WHO, 2012.
134. Estrin, 2018; Jagori and UN Women, 2011.
135. Castells-Quintana, 2017.
136. Beard et al., 2016.
137. Beard et al., 2016.
138. UN DESA, 2019; World Bank, 2018b.
139. AfDB et al., 2019.
140. Corburn et al., 2020; Ellis and Roberts, 2016.
141. Chen and Carré, 2020; ILO, 2018b. *Informal employment* refers to employment without legal and social protection—both inside and outside the informal sector.
142. Chen and Carré, 2020: 7; ILO, 2018b.
143. For India, see Mehrotra (2019); for Kenya, see Racaud et al. (2018).
144. ILO, 2018a.
145. Godfrey and Zhao, 2016.
146. Wagner, 2021.
147. Croitoru et al., 2020.
148. IRP, 2018. In their construction and operation, as well as to support urban lifestyles, cities use billions of tonnes of raw materials, ranging from fossil fuels, sand, gravel, and iron ore to biotic resources such as wood and food. Quantitative analysis of the global resource requirements of future urbanization shows that without a new approach to urbanization, material consumption by the world's cities will grow from 40 billion tonnes in 2010 to about 90 billion tonnes by 2050.
149. Beard et al., 2016.
150. WWAP, 2017.
151. McDonald et al., 2014.
152. Seto et al., 2012: 16083.
153. Chu et al., 2019; Colenbrander et al., 2019.
154. Chu et al., 2019.
155. Xing et al., 2016.
156. Chafe et al., 2014.
157. Health Effects Institute, 2019.
158. Rigaud et al., 2018.
159. Westphal et al. (2017), using data from Erickson and Tempest (2014).
160. Colenbrander et al., 2019.
161. UN-Habitat, 2015b.
162. World Bank, 2010.
163. Durand-Lasserve and Royston, 2002: 3; Libertun de Duren and Guerrero Compeán, 2015.
164. Mitlin et al., 2019.
165. Paul, 2014.
166. Lall et al., 2017: 54; World Bank, 2013: 68.
167. Mahendra and Seto, 2019.
168. Venter et al., 2019.
169. Corburn et al., 2017.
170. Durand-Lasserve and Royston, 2002: 3; Libertun de Duren and Guerrero Compeán, 2015.
171. UN-Habitat, 2020b.
172. Bivins et al., 2017.
173. Global Commission on Adaptation, 2019.
174. Wee, 2018.
175. Weru, 2004.
176. Hutton and Haller, 2004; WHO, 2012; WHO and UN-Habitat, 2010; WWAP, 2016.
177. WHO, 2012; WHO and UNICEF, 2017.
178. AfDB, 2012; UN-Habitat, 2013.
179. WHO, 2013.
180. Rentschler et al., 2019.
181. Win, 2017.
182. Shastry et al., 2018; Tewari and Godfrey, 2016.
183. Tewari and Godfrey, 2016.
184. Chen and Beard, 2018.
185. Satterthwaite et al., 2019.
186. Venter et al., 2019.
187. Gwilliam, 2002; Hook and Howe, 2005.
188. For the Land and Housing Survey in a Global Sample of Cities, see Angel et al. (2016).
189. Westphal et al., 2017: 9–10.
190. WHO, 2018.
191. WHO, 2018.
192. Beard et al., 2016.

193. For the full list of *Towards a More Equal City* case studies, see www.citiesforall.org. A note on methodology: the cities were selected on the basis of a set of criteria combined with a consultation process. The case studies focused on "struggling" or "emerging" cities, as defined by the criteria in Towards a More Equal City (see Figure 10 in this report). The case studies were selected from the different geographic regions that represent the global South and are the focus of this World Resources Report: Latin America, South and Southeast Asia, and Sub-Saharan Africa. Cities were also selected to represent different points along a continuum of transformative urban change. Each was known for addressing a seminal problem related to the delivery of urban services that touched many people's lives.

    All cities were selected because our preliminary research and consultations showed they exemplified conditions necessary for supporting transformative change (e.g., visionary leadership and political commitment, nascent coalitions, access to financial resources). Our task was to ascertain whether and how a transformative change process began and was sustained over time. Finally, the case study cities were selected after a consultation process with experts who work on urban development internationally and locally. Having selected cities through this process, the case study authors were chosen because of their deep knowledge of these cities and key urban issues.

    Each case study includes analysis of primary and secondary data. Primary data included in-depth interviews with 10 to 15 key informants. Key informants were chosen because of their political, technical, or leadership role. Some were selected because they were intimately involved in the transformation process from the beginning or over many years, or during a particularly important stage in it. Examples of key informants included mayors or supporting staff members, planners and other municipal employees, activists, technocrats, journalists, researchers, and business leaders. Some interviews covered recent events, whereas others were retrospective. Case study authors also analyzed secondary data, including administrative records, population and socioeconomic statistics, legislation, newspaper articles, and other scholars' research on the city.

194. Cirolia, 2020.

195. Venter et al., 2019.

196. Kazis, 2011.

197. Ahmed et al., 2007.

198. World Bank, 2018b.

199. World Bank, 2018b.

200. Lim et al., 2012.

201. Figures are weighted by population. The 15 cities include Bengaluru, India; Caracas, Venezuela; Cochabamba, Bolivia; Colombo, Sri Lanka; Dhaka, Bangladesh; Kampala, Uganda; Karachi, Pakistan; Lagos, Nigeria; Maputo, Mozambique; Mzuzu, Malawi; Mumbai, India; Nairobi, Kenya; Rio de Janeiro, Brazil; São Paulo, Brazil; and Santiago de Cali, Colombia. See Mitlin et al. (2019).

202. Satterthwaite et al., 2019.

203. Barraqué and Zandaryaa, 2011; Jaglin, 2013.

204. Goldman, 2015.

205. Auerbach, 2020.

206. Khalil, 2019.

207. AAWSA, 2015; Damania et al., 2017.

208. King et al., 2017.

209. Annez et al., 2010; R. Buckley et al., 2016; Mahadevia et al., 2013; Shah et al., 2015; Woetzel et al., 2014.

210. Hardoy and Satterthwaite, 1989.

211. Biermann and Van Ryneveld, 2007.

212. King et al., 2017.

213. Gilbert, 2014; Gilbert et al., 2011.

214. Baird-Zars et al., 2013.

215. EIA, 2019.

216. Westphal et al. (2017), using data from Erickson and Tempest (2014).

217. Chu et al., 2019.

218. Byers et al., 2018.

219. Hallegatte et al., 2013.

220. Chu et al., 2019; Dodman et al., 2012, 2019; Michael et al., 2019; Williams et al., 2019.

221. Global Platform for Sustainable Cities, 2020.

222. CET, 2017.

223. Brand and Dávila, 2011.

224. Garsous et al., 2019.

225. Venter et al., 2019.

226. Westphal, et al., 2017.

227. REN21, 2015.

228. Government of Karnataka, 2014; Mittal, 2014.

229. Westphal et al., 2017.

230. Bakker, 2010; Heymans et al., 2016.

231. Mitlin, et al., 2019; Satterthwaite et al., 2019.

232. Mcloughlin and Harris, 2013; Mitlin et al., 2019.

233. Mitlin et al., 2019; Satterthwaite et al., 2019.

234. Das and King, 2019; King et al., 2017.

235. King et al., 2017; Mitlin and Muller, 2004.

236. For more information about Baan Makong, see CODI, https://en.codi.or.th/.

237. Lines and Makau, 2018.

238. Das and King, 2019.

239. ACHR, 2021.

240. Participedia, n.d.; Rollenhagen, 2019.

241. Lopera Pérez et al., 2017.

242. King et al., 2017.

243. Kerr, 2008.

244. CDM Smith, 2013; Lagos HOMS, 2013; Salvi del Pero, 2016; Stickney, 2014.

245. Pieterse et al., 2011.

246. Colenbrander et al., 2019.
247. Lucon et al., 2014.
248. Jannuzzi and Goldemberg, 2014.
249. International Partnership on Mitigation and MRV, 2015.
250. Colenbrander et al., 2019; Venter et al., 2019.
251. Sims et al., 2014.
252. C40 Cities Climate Leadership Group and BuroHappold Engineering, 2018.
253. Chu et al., 2019; Global Commission on Adaptation, 2019.
254. Sutherland et al., 2019.
255. Global Commission on Adaptation, 2019.
256. Chu et al., 2019.
257. Mitlin et al., 2019; Venter et al., 2019.
258. The term *informal transit* refers to small-enterprise private transit providers operating substantially outside of the ambit of formal transport planning and regulatory processes. They are also sometimes called *paratransit* operators (not to be confused with dial-a-ride services in North America). Very common in the global South, these operators employ a range of vehicle types and sizes, ranging from two-wheeler taxis to full-size buses. Operational strategies also range across a continuum from formal to informal, depending on the scope and nature of government control. Without trying to impose a strict definition, we refer to all operations with some measure of informality as *informal transit*.
259. Venter et al., 2019.
260. Figueroa, 2013.
261. Cervero and Golub, 2007.
262. Scheinberg et al., 2010; UN-Habitat, 2010.
263. Chen and Beard, 2018.
264. Salazar Ferro, 2015.
265. Sclar et al., 2005.
266. Cirolia, 2020.
267. Mbara, 2016.
268. Barter, 2008; Mehndiratta and Rodriguez, 2017.
269. Behrens et al., 2015; Mehndiratta and Rodriguez, 2017.
270. TERI, 2013.
271. Salazar Ferro, 2015.
272. McGranahan and Mitlin, 2016.
273. Devadiga, 2020.
274. Heymans et al., 2016
275. Mercy Corps, 2017.
276. Heymans et al., 2016.
277. WSUP, 2019.
278. Lwasa and Owens, 2018.
279. Lwasa and Owens, 2018.
280. Burra et al., 2003; Patel, 2015.
281. Hasan, 2008; Hasan and Arif, 2018; Satterthwaite and Mitlin, 2014.
282. Chen and Beard, 2018.
283. ILO and WIEGO, 2013.
284. Kamath et al., 2018.
285. Venter et al., 2019.
286. Tun et al., 2020.
287. Salazar Ferro and Behrens, 2015; Schmidt, 2017; Tun et al., 2020.
288. Salazar Ferro, 2015.
289. Cervero and Golub, 2007.
290. Bhattacharya, 2018; *Economist*, 2017; *Uber Blog*, 2018;.
291. Bhattacharya, 2018.
292. Jennings and Behrens, 2017
293. Carrigan et al., 2014; Dewey, 2016; Hidalgo and Gutiérrez, 2013.
294. Jaglin, 2008, 2013.
295. USAID, 2013.
296. Bapat, 2009.
297. Satterthwaite et al., 2019.
298. Satterthwaite, 2016.
299. Brito et al., 2019.
300. World Bank, 2021.
301. SDI, 2018.
302. Wihbey, 2017; World Bank, 2016b.
303. Gadiraju et al., 2018; Kuffer et al., 2016.
304. Chandran, 2018; Gadiraju et al., 2018.
305. Lines and Makau, 2018.
306. Livengood and Kunte, 2012.
307. Chandrashekar and Iyer, 2016.
308. National Treasury, 2004; Pieterse and Owens, 2018.
309. Morozov, 2013.
310. Darido et al., 2016; Yanocha and Mason, 2019.
311. Chen and Beard, 2018.
312. ILO, 1993.
313. ILO, 2003.
314. Vanek et al., 2012.
315. Chen and Beard, 2018.
316. AfDB et al., 2016; Ghani and Kanbur, 2013: 16.
317. Jütting and de Laiglesia, 2009; Ghani and Kanbur, 2013: 17.
318. Alfers et al., 2016.
319. Chen, 2007: 7.
320. World Bank Group, 2015.
321. World Bank Group, 2015.
322. Ghani and Kanbur, 2013.
323. Ghani and Kanbur, 2013: 20.
324. Ghani and Kanbur, 2013: 24.

325. ILO, 2020.
326. World Bank, 2010.
327. Corburn et al., 2017: 18.
328. Assainar, 2014; Mahawar, 2018.
329. Assainar, 2014; Mahawar, 2018.
330. PRIA, 2013.
331. MHT, 2018, 2019a, 2019b.
332. Alfers and Lund, 2012; Namsomboon and Kusakabe, 2011.
333. ILO and WIEGO, 2013.
334. Chen and Beard, 2018; Das and King, 2019; Lwasa and Owens, 2018.
335. Chen and Beard, 2018.
336. Roever, 2014.
337. A 2006 Organisation for Economic Co-operation and Development study found that the capital required globally to finance investment in key infrastructure will amount to about $75 trillion by 2030, with nearly half of it for water and sanitation.
338. World Bank, 2020a.
339. Qiang and Kuo, 2020.
340. Gentilini et al., 2020.
341. Gentilini et al., 2020; Katz and Ferreira, 2020.
342. Chen and Beard, 2018.
343. De Soto, 1989.
344. Bruhn, 2008, 2012.
345. Beard et al., 2016.
346. Mitlin et al., 2019.
347. Angel and Loftus, 2019; Bakker, 2007; Karunananthan, 2019; Langford and Russell, 2017; Pestova, 2016.
348. Gómez-Ibáñez and Meyer, 2011.
349. Vickerman, 2007.
350. Colenbrander et al. (2019), based on data from the Organisation for Economic Co-operation and Development.
351. Colenbrander et al. (2019: 92), citing OECD and UCLG (2019).
352. Sintomer et al., 2014.
353. Abers et al., 2018.
354. World Bank, 2017.
355. For more information about the Water Sector Trust Fund, see https://waterfund.go.ke/.
356. Ahluwalia, 2019.
357. For more information about AMRUT, see the Government of India's Ministry of Housing and Urban Affairs, http://amrut.gov.in/content/innerpage/the-mission.php.
358. For more information about PforR, see https://www.worldbank.org/en/programs/program-for-results-financing.
359. Saadah, 2015.
360. World Bank, 2019.
361. Attridge and Gouett, 2021.
362. Coalition for Urban Transitions, 2021.
363. Inchauste and Victor, 2017.
364. Andres et al., 2019.
365. NACLA, 2007.
366. NACLA, 2007.
367. An incremental block tariff is a charge that increases with every successive block, or unit, of water consumed.
368. Gómez-Lobo and Contreras, 2003 ; Valdés Fernandez, 2007.
369. Heymans et al., 2016.
370. Heymans et al., 2016.
371. De Vasconcellos, 2005; Mehndiratta and Rodriguez, 2017.
372. Pucher et al., 2004.
373. Rodriguez et al., 2016.
374. Bocarejo and Oviedo, 2012; Peralta Quirós and Rodriguez, 2016 ; Rodriguez et al., 2016.
375. Rozenberg and Fay, 2019.
376. OECD, n.d.
377. UNEP, 2006.
378. Khandker et al., 2014.
379. Global Alliance for Clean Cookstoves, 2011, 2016a, 2016b; WES, 2015.
380. WES, 2015.
381. White and Morais, 2020.
382. M-KOPA Solar, 2016.
383. Bisaga, 2020.
384. Boonyabancha, 2005; Boonyabancha, 2009; CODI, 2008.
385. Archer, 2012; HOFINET, 2016; Stein and Vance, 2008.
386. Bredenoord et al., 2014.
387. Ahmad et al., 2019.
388. Swope, 2017.
389. Ardila-Gomez and Ortegon-Sanchez, 2016.
390. Trémolet et al., 2007.
391. Berg and Tschirhart, 1988.
392. OECD, 2013; Rouse, 2013.
393. An example of such training is provided by the World Bank's Global Platform for Sustainable Cities, https://www.thegpsc.org/municipal-ppp/municipal-finance-and-ppp.
394. UN-Habitat, 2020a.
395. Ardila-Gomez and Ortegon-Sanchez, 2016.
396. WHO, 2012.
397. AfDB, 2012; UN-Habitat, 2013.
398. Ardila-Gomez and Ortegon-Sanchez, 2016.
399. Vickerman, 2007.
400. EPA, 2018.

401. Carrigan et al., 2013.

402. Palavalli and Krishnan, 2018.

403. We must distinguish here between real estate investment that aims to protect financial assets when other investment avenues are limited and exploitative or undesirable speculation. In his seminal article from 1920, "Land Speculation," Richard Ely states that when referring to speculation in general or land speculation in particular, "Perhaps there is no economic term so frequently used to which a greater variety of meanings is attached, and, furthermore, these meanings lack sharp lines of demarcation." He explores legal and economic meanings of the term, which offer differing interpretations, concluding that there are "one or two ideas which we all recognize as playing a part in what we properly designate as land speculation. These ideas are large risks, danger of unusual loss and hope of large gain." See Ely (1920: 121–22) and Banner (2016: 1–4).

404. Mahendra and Seto, 2019.

405. Mahendra and Seto, 2019.

406. Goytia et al., 2015; Goytia and Pasquini, 2016; Monkkonen and Ronconi, 2016.

407. Monkkonen and Ronconi, 2016.

408. Goytia et al., 2015; Goytia and Pasquini, 2016.

409. Mahendra and Seto, 2019.

410. Turok, 2018.

411. Hasan et al., 2013; Ujikane, 2017; Weinstein, 2008.

412. Brueckner and Sridhar, 2012; Carruthers and Ulfarsson, 2003; Hortas-Rico and Solé-Ollé, 2010; Libertun de Duren and Guerrero Compeán, 2015.

413. Brueckner, 2005; Gakenheimer, 2011; Mahendra, 2008; Su and DeSalvo, 2008.

414. Bertaud and Brueckner, 2005; Buckley and Kalarickal, 2006; Lall et al., 2017.

415. Libertun de Duren, 2018.

416. Lall et al., 2017: 54; World Bank, 2013.

417. R. Buckley et al., 2016; Moreno and Blanco, 2014.

418. Marosi, 2017.

419. Brueckner and Sridhar, 2012; Carruthers and Ulfarsson, 2003; Hortas-Rico and Solé-Ollé, 2010; Libertun de Duren, 2017; Libertun de Duren and Guerrero Compeán, 2015.

420. Seto et al., 2012: 16086.

421. Seto et al., 2013: 2.

422. Dutta, 2013.

423. Kimmelman, 2017a, 2017b; Romero, 2015.

424. Venter et al., 2019.

425. Bocarejo and Oviedo, 2012; Carruthers et al., 2005; Gwilliam, 2002.

426. Venter et al., 2019.

427. Libertun de Duren, 2017.

428. Smolka and De Cesare, 2006.

429. Castells-Quintana, 2017.

430. Mahendra and Seto, 2019.

431. OECD, 2017: 26.

432. Libertun de Duren, 2017.

433. CoJ, 2004; National Treasury, 2004.

434. National Treasury, 2004; Pieterse and Owens, 2018.

435. Woetzel et al., 2017.

436. Mahendra and Seto, 2019.

437. Turok, 2018: 100.

438. Mahendra et al., 2020.

439. Mahendra et al., 2020

440. Peterson, 2008: 63.

441. AFD and MEDDE, 2014; Metrolinx, 2013.

442. King et al., 2017; Mahendra and Seto, 2019.

443. UN-Habitat, 2019.

444. Furlong, 2013.

445. Angel, 2008.

446. Silva and Mautner, 2016.

447. King et al., 2017; Mitlin and Muller, 2004.

448. Owens et al., 2018.

449. Bakker et al., 2008; Ngoga, 2019.

450. Lall et al., 2017: 29.

451. Mahendra and Seto, 2019.

452. Mahendra and Seto, 2019; Mahtta et al., 2019.

453. Mathews and Pai, 2020.

454. Mehrotra et al., 2020.

455. Habtemariam et al., 2021.

456. Gorelick, 2018.

457. Ahmad et al., 2019: 23.

458. Kamath et al., 2018.

459. Dias, 2011.

460. Boonyabancha, 2009; Satterthwaite and Mitlin, 2014.

461. UN-Habitat, 2017.

462. Mahendra, 2018: 235.

463. AFD and MEDDE, 2014.

464. Narain, 2009.

465. Gandy, 2006.

466. Sanyal, 2016.

467. Colenbrander et al., 2019.

468. Arup and C40 Cities Climate Leadership Group, 2019; OECD, 2017.

469. Pieterse and Owens, 2018: 10.

470. Abers et al., 2018.

471. Das and King, 2019.

472. Glaeser and Joshi-Ghani, 2015; World Bank, 2020b; World Bank Group, 2015.

REFERENCES

AAWSA (Addis Ababa Water and Sewerage Authority). 2015. "AAWSA Annual Report." Addis Ababa: AAWSA.

Abers, R., I. Brandão, R. King, and D. Votto. 2018. *Porto Alegre: Participatory Budgeting and the Challenge of Sustaining Transformative Change*. World Resources Report Case Study. Washington, DC: World Resources Institute.

ACHR (Asian Coalition for Housing Rights). 2021. *Sanjay Nagar: Case Studies of Collective Housing in Asian Cities Series*. Bangkok: ACHR.

AFD (Agence Française de Développement) and MEDDE (Ministry of Ecology, Sustainable Development and Energy). 2014. *Who Pays What for Urban Transport? Handbook of Good Practices*. Lyon, France: Cooperation for Urban Mobility in the Developing World.

AfDB (African Development Bank). 2012. "Joint Statement by the Multilateral Development Banks on Sustainable Transport and Climate Change." Abidjan, Côte d'Ivoire: AfDB.

AfDB, ADB (Asian Development Bank), EBRD (European Bank for Reconstruction and Development), and IDB (Inter-American Development Bank). 2019. *Creating Livable Cities: Regional Perspectives*. Manila: ADB.

AfDB, OECD (Organisation for Economic Co-operation and Development), and UNDP (United Nations Development Programme). 2016. *African Economic Outlook 2016: Sustainable Cities and Structural Transformation*. Paris: OECD.

Agarwal, K. 2020. "'Hunger Can Kill Us before the Virus': Migrant Workers on the March during Lockdown." The Wire, March 27. https://thewire.in/labour/coronavirus-lockdown-migrant-workers-walking-home. Accessed July 27, 2020.

Ahlfedlt, G., and E. Pietrostefani. 2017. "Demystifying Compact Urban Growth: Evidence from 300 Studies from across the World." Working Paper. London and Washington, DC: Coalition for Urban Transitions.

Ahluwalia, I.J. 2019. "Urban Governance in India." *Journal of Urban Affairs* 41 (1): 83–102.

Ahmad, E., D. Dowling, D. Chan, S. Colenbrander, and N. Godfrey. 2019. "Scaling Up Investment for Sustainable Urban Infrastructure: A Guide to National and Subnational Reform." Washington, DC: Coalition for Urban Transitions.

Ahmed, Q.I., H. Lu, and S. Ye. 2007. "Urban Transportation and Equity: A Case Study of Beijing and Karachi." *Transportation Research Part A: Policy and Practice* 42 (1): 125–39.

AICCTU (All India Central Council of Trade Unions). 2020. "Coping with COVID-19 Pandemic: An Interim Report into the Health Awareness, Livelihood Security and Food Security among Workers in Bengaluru." March 23. http://en.aicctu.org/article/2020/03/coping-COVID-19-pandemic?fbclid=IwAR05C7MmTlkl5fMjkhMFiYAzVnjCa0_Iqn1RGnkc75GxIIRcQYNNm12AwqQ. Accessed September 15, 2020.

Alfers, L., N. Bali, M. Bird, T. Castellanos, M. Chen, R. Dobson, K. Hughes, S. Roever, and M. Rogan. 2016. *Technology at the Base of the Pyramid: Insights from Ahmedabad (India), Durban (South Africa) and Lima (Peru)*. Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Alfers, L., and F. Lund. 2012. "Participatory Policy Making: Lessons from Thailand's Universal Coverage Scheme." Policy Brief 11 (Social Protection). Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Almansi, F. 2009. "Regularizing Land Tenure within Upgrading Programmes in Argentina; the Cases of Promeba and Rosario Hábitat." *Environment and Urbanization* 21 (2): 389–413.

Anand, N. 2017. *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*. Durham, NC: Duke University Press.

Andres, L.A., M. Thibert, C. Lombana Cordoba, A.V. Danilenko, G. Joseph, and C. Borja-Vega. 2019. *Doing More with Less : Smarter Subsidies for Water Supply and Sanitation*. Washington, DC: World Bank.

Angel, J., and A. Loftus. 2019. "With-against-and-beyond the Human Right to Water." *Geoforum* 98 (January): 206–13.

Angel, S. 2008. "Preparing for Urban Expansion: A Proposed Strategy for Intermediate Cities in Ecuador." In *The New Global Frontier: Urbanization, Poverty and Environment in the 21st Century*, edited by G. Martine, G. McGranahan, M. Montgomery, and R. Fernandez-Castilla. London: Routledge.

Angel, S. 2019. "Modern Cities Become Less Dense as They Grow." *The Economist*, October 5. https://www.economist.com/graphic-detail/2019/10/05/modern-cities-become-less-dense-as-they-grow. Accessed February 15, 2020.

Angel, S., A.M. Blei, J. Parent, P. Lamson-Hall, and N.G. Sanchez. 2016. *Areas and Densities*. Vol. 1 of *Altas of Urban Expansion*. New York: New York University; Nairobi: United Nations Human Settlements Programme; Cambridge, MA: Lincoln Institute of Land Policy.

Annez, P.C., A. Bertaud, B. Patel, and V.K. Phatak. 2010. "Working with the Market: A New Approach to Reducing Urban Slums in India." Policy Research Working Paper. Washington, DC: World Bank.

Annez, P.C., and R.M. Buckley. 2009. "Urbanization and Growth: Setting the Context." In *Urbanization and Growth,* edited by M. Spence, P.C. Annez, and R.M. Buckley, 1–45. Washington, DC: World Bank.

Archer, D. 2012. "Finance as the Key to Unlocking Community Potential: Savings, Funds and the ACCA Programme." *Environment and Urbanization* 24 (2): 423–40.

Ardila-Gomez, A., and A. Ortegon-Sanchez. 2016. *Sustainable Urban Transport Financing from the Sidewalk to the Subway: Capital, Operations, and Maintenance Financing*. Washington, DC: World Bank.

Arup and C40 Cities Climate Leadership Group. 2019. *Inclusive Community Engagement Playbook*. London: C40 Cities Climate Leadership Group.

Assainar, R. 2014. "At the Heart of Dharavi Are 20,000 Mini-Factories." *The Guardian*, November 25. https://www.theguardian.com/cities/2014/nov/25/dharavi-mumbai-mini-factories-slum. Accessed March 10, 2021.

Atinc, T.M., A. Banerjee, F.H.G. Ferreira, P. Lanjouw, M. Menendez, B. Ozler, P. Berk, et al. 2005. *World Development Report 2006: Equity and Development*. Washington, DC: World Bank Group.

Attridge, S., and M. Gouett. 2021. *Development Finance Institutions: The Need for Bold Action to Invest Better*. London: Overseas Development Institute.

Auerbach, A.M. 2020. *Demanding Development: The Politics of Public Goods Provision in India's Urban Slums*. Cambridge: Cambridge University Press.

Baird-Zars, B., J. Katz, C.P. Bouillon, O. Chevalier, M.L. Alvarado-Zanelli, N. Jawaid, and J. Goswami. 2013. *Using Evidence-Based Global Housing Indicators for Policy Evaluation of Rental Housing and Vacant Properties*. Atlanta: Habitat for Humanity.

Bairoch, P. 1988. *Cities and Economic Development: From the Dawn of History to the Present*. Chicago: University of Chicago Press.

Bakker, K. 2007. "The 'Commons' versus the 'Commodity': Alter globalization, Anti privatization and the Human Right to Water in the Global South." *Antipode* 39 (3): 430–55.

Bakker, K. 2010. *Privatizing Water: Governance Failure and the World's Urban Water Crisis*. Ithaca, NY: Cornell University Press.

Bakker, K., M. Kooy, N.E. Shofiani, and E.-J. Martijn. 2008. "Governance Failure: Rethinking the Institutional Dimensions of Urban Water Supply to Poor Households." *World Development* 36 (10): 1891–915.

Banner, S. 2016. *Speculation: A History of the Fine Line between Gambling and Investing*. New York: Oxford University Press.

Bapat, M. 2009. "Poverty Lines and Lives of the Poor: Underestimation of Urban Poverty—the Case of India." Working Paper 20. London: International Institute for Environment and Development.

Barraqué, B., and S. Zandaryaa. 2011. "Urban Water Conflicts: Background and Conceptual Framework." In *Urban Water Conflicts*, edited by B. Barraqué, 1–14: London: CRC.

Barter, P.A. 2008. "Public Planning with Business Delivery of Excellent Urban Public Transport." *Policy and Society* 27 (2): 103–14.

Beard, V.A., A. Mahendra, and M.I. Westphal. 2016. "*Towards a More Equal City*: Framing the Challenges and Opportunities." Working Paper. Washington, DC: World Resources Institute.

Behrens, R., D. McCormick, and D. Mfinanga. 2015. *Paratransit in African Cities: Operations, Regulation and Reform*. London: Routledge.

Berg, S.V., and J. Tschirhart. 1988. *Natural Monopoly Regulation: Principles and Practice*. New York: Cambridge University Press.

Bertaud, A., and J.K. Brueckner. 2005. "Analyzing Building-Height Restrictions: Predicted Impacts and Welfare Costs." *Regional Science and Urban Economics* 35 (2): 109–25.

Bhaskar, R. 2019. "Tanker Mafia Earning Rs 8,000–10,000 Crore Annually from Water Biz in Mumbai." Money Control, June 5. https://www.moneycontrol.com/news/eye-on-india/videos/tanker-mafia-earning-rs-8000-10000-crore-annually-from-water-biz-in-mumbai-4057001.html. Accessed January 20, 2021.

Bhattacharya, A. 2018. "As Uber Sputters, Ola Is Really Stepping on the Gas in India." Quartz Media, February 15. https://qz.com/1200878/with-uber-in-crisis-ola-zooms-ahead-in-indias-taxi-wars/. Accessed August 9, 2021.

Biermann, S., and M. Van Ryneveld. 2007. "Improving the Location of Low-Income Housing Delivery in South African Urban Areas." Prepared for the 10th International Conference on Computers in Urban Planning and Urban Management, Iguassu Falls, Brazil, July 11–13.

Bisaga, I. 2020. "Challenges and Opportunities to Scaling Up Pay as You Go LPG." Engineering for Change, February 17. https://www.engineeringforchange.org/news/challenges-opportunities-scaling-pay-go-lpg/. Accessed March 10, 2021.

Bivins, A.W., T. Sumner, E. Kumpel, G. Howard, O. Cumming, I. Ross, K. Nelson, and A. Brown. 2017. "Estimating Infection Risks and the Global Burden of Diarrheal Disease Attributable to Intermittent Water Supply Using QMRA." *Environmental Science & Technology* 51 (3): 7542–51.

Bocarejo, J.P., and D.R. Oviedo. 2012. "Transport Accessibility and Social Inequities: A Tool for Identification of Mobility Needs and Evaluation of Transport Investments." *Journal of Transport Geography* 24 (September): 142–54.

Boonyabancha, S. 2005. "Baan Mankong: Going to Scale with 'Slum' and Squatter Upgrading in Thailand." *Environment and Urbanization* 17 (1): 21–46.

Boonyabancha, S. 2009. "Land for Housing the Poor—by the Poor: Experiences from the Baan Mankong Nationwide Slum Upgrading Programme in Thailand." *Environment and Urbanization* 21 (2): 309–29.

Brand, P., and J.D. Dávila. 2011. "Mobility Innovation at the Urban Margins: Medellín's Metrocables." *City* 15 (6): 647-61.

Bredenoord, J., P. Van Lindert, and P. Smets, eds. 2014. *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*. 1st ed. New York: Routledge.

Brito, M., J. Macias, L. Ramírez Reyes, C. Jacquin and G. Zubicaray. 2021. "Índice de desigualdad urbana." Working Paper. Mexico City: World Resources Institute Mexico.

Brito, M., L.R. Reyes, J. Macias, and E. Mackres. 2019. "From Jobs to Education, Inequality in Mexico City Is about Access." *TheCityFix* (blog), June 7. https://thecityfix.com/blog/map-month-mobility-health-education-inequality-mexico-city-spatial-problem-mauricio-brito-lorelei-ramirez-reyes-jorge-macias-eric-mackres/. Accessed August 9, 2021.

Brueckner, J.K. 2005. "Transport Subsidies, System Choice, and Urban Sprawl." *Regional Science and Urban Economics* 35 (6): 715–33.

Brueckner, J.K., and K.S. Sridhar. 2012. "Measuring Welfare Gains from Relaxation of Land-Use Restrictions: The Case of India's Building-Height Limits." *Regional Science and Urban Economics* 42 (6): 1061–67.

Bruhn, M. 2008. "License to Sell: The Effect of Business Registration Reform on Entrepreneurial Activity in Mexico." Policy Research Working Paper 4538. Washington, DC: World Bank.

Bruhn, M. 2012. "A Tale of Two Species: Revisiting the Effect of Registration Reform on Informal Business Owners in Mexico." Policy Research Working Paper 5971. Washington, DC: World Bank.

Buckley, M., A. Zendel, J. Biggar, L. Frederiksen, and J. Wells. 2016. *Migrant Work & Employment in the Construction Sector*. Geneva: International Labour Organization.

Buckley, R., and J. Kalarickal. 2006. *Thirty Years of World Bank Shelter Lending: What Have We Learned?* Washington, DC: World Bank.

Buckley, R., A. Kallergis, and L. Wainer. 2016. "Addressing the Housing Challenge: Avoiding the Ozymandias Syndrome." *Environment and Urbanization* 28 (1): 119–38.

Burra, S., S. Patel, and T. Kerr. 2003. "Community-Designed, Built and Managed Toilet Blocks in Indian Cities." *Environment and Urbanization* 15 (2): 11–32.

Byers, E., M. Gidden, D. Leclère, J. Balkovic, P. Burek, K. Ebi, P. Greve, D. Grey, et al. 2018. "Global Exposure and Vulnerability to Multi-sector Development and Climate Change Hotspots." *Environmental Research Letters* 13 (5): 055012.

Carrigan, A., R. King, J.M. Velasquez, M. Raifman, and N. Duduta. 2014. *Social, Environmental and Economic Impacts of BRT Systems: Bus Rapid Transit Case Studies from Around the World*. Washington, DC: EMBARQ, World Resources Institute.

Carruthers, J.I., and G.F. Ulfarsson. 2003. "Urban Sprawl and the Cost of Public Services." *Environment & Planning B: Planning and Design* 30 (4): 503–22.

Carruthers, R., M. Dick, and A. Saurkar. 2005. "Affordability of Public Transport in Developing Countries." Transport Paper TP-3. Washington, DC: World Bank.

Castells-Quintana, D. 2017. "Malthus Living in a Slum: Urban Concentration, Infrastructure and Economic Growth." *Journal of Urban Economics* 98 (March): 158–73.

CDM Smith. 2013. *ADB Technical Assistance Consultant's Report 7148-IND, India: Promoting Inclusive Urban Development in Indian Cities*. Mandaluyong, Philippines: Asian Development Bank.

Cervero, R., and A. Golub. 2007. "Informal Transport: A Global Perspective." *Transport Policy* 14 (6): 445–57.

CET (Companhia de Engenharia de Tráfego). 2017. *Acidentes de trânsito: Relatório anual 2017*. São Paulo: Prefeitura de São Paulo.

C40 Cities Climate Leadership Group and BuroHappold Engineering. 2018. *Toward a Healthier World: Connecting the Dots between Climate, Air Quality and Health*. London: C40 Cities Climate Leadership Group.

Chafe, Z.A., M. Brauer, Z. Klimont, R. Van Dingenen, S. Mehta, S. Rao, K. Riahi, F. Dentener, and K.R. Smith. 2014. "Household Cooking with Solid Fuels Contributes to Ambient PM2.5 Air Pollution and the Burden of Disease." *Environmental Health Perspectives* 122 (12): 1314–20.

Chandran, R. 2018. "With Drones and Satellites, India Gets to Know Its Slums." Reuters, July 24. https://www.reuters.com/article/us-india-landrights-tech/with-drones-and-satellites-india-gets-to-know-its-slums-idUSKBN1KE1DN. Accessed May 10, 2021.

Chandrashekar, G., and S.R. Iyer. 2016. "Bellandur, Hope Rising." *Deccan Chronicle,* May 6. https://www.deccanchronicle.com/nation/current-affairs/060516/bellandur-hope-rising.html. Accessed July 17, 2020.

Chen, M., and V. Beard. 2018. "Including the Excluded: Supporting Informal Workers for More Equal and Productive Cities in the Global South." Working Paper. Washington, DC: World Resources Institute.

Chen, M., and F. Carré. 2020. *The Informal Economy Revisited: Examining the Past, Envisioning the Future*. Abingdon, UK: Routledge.

Chen, M., H. Zhang, W. Liu, and W. Zhang. 2014. "The Global Pattern of Urbanization and Economic Growth: Evidence from the Last Three Decades." *PloS ONE* 9 (8): e103799.

Chen, M.A. 2007. *Rethinking the Informal Economy: Linkages with the Formal Economy and the Formal Regulatory Environment*. New York: United Nations Department of Economic and Social Affairs.

Chen, M.A., and G. Raveendran. 2014. "Urban Employment in India: Recent Trends and Patterns." Working Paper 7 (Statistics). Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Chu, E., A. Brown, K. Michael, J. Du, S. Lwasa, and A. Mahendra. 2019. "Unlocking the Potential for Transformative Climate Adaptation in Cities." Background paper. Rotterdam, Netherlands: Global Commission on Adaptation; Washington, DC: World Resources Institute.

Cirolia, L.R. 2020. "Fractured Fiscal Authority and Fragmented Infrastructures: Financing Sustainable Urban Development in Sub-Saharan Africa." *Habitat International* 104 (October): 102233.

Cities Alliance. 2015. "Sustainable Development Goals and Habitat III: Opportunities for a Successful New Urban Agenda." Cities Alliance Discussion Paper 3. Brussels: Cities Alliance.

Coalition for Urban Transitions. 2021. *Seizing Indonesia's Urban Opportunity*. Washington, DC: Coalition for Urban Transitions, World Resources Institute; London: C40 Cities Climate Leadership Group; Jakarta: World Resources Institute Indonesia.

CODI (Community Organizations Development Institute). 2008. *50 Community Upgrading Projects: CODI Update*. Bangkok: CODI.

CoJ (City of Johannesburg). 2004. *Guide to the Urban Development Zone Tax Incentive for the Johannesburg Inner City.* Johannesburg: CoJ Finance and Economic Development Department.

Colenbrander, S., L. Lazer, C. Haddaoui, N. Godfrey, A. Lobo, H. Clarkson, R. Huxley, et al. 2019. *Climate Emergency, Urban Opportunity: How National Governments Can Secure Economic Prosperity and Avert Climate Catastrophe by Transforming Cities*. Washington, DC: Coalition for Urban Transitions, World Resources Institute.

Corbane, C., A. Florczyk, M. Pesaresi, P. Politis, and V. Syrris. 2018. GHS Built-up Grid, Derived from Landsat, Multitemporal (1975-1990-2000-2014)." R2018A. Ispra, Italy: European Commission, Joint Research Centre. http://data.europa.eu/89h/jrc-ghsl-10007. Accessed August 9, 2021.

Corburn, J., V. Agoe, M. Asari, J. Ortiz, R. Patterson, P. Ngau, M. Mwaura, et al. 2017. "Situational Analysis of Mukuru Kwa Njenga, Kwa Reuben & Viwandani." Technical Paper. Berkeley, CA: University of California, Berkeley; Nairobi: University of Nairobi, Muungano Alliance, Strathmore University, and Katiba Institute.

Corburn, J., D. Vlahov, B. Mberu, L. Riley, W.T. Caiaffa, S.F. Rashid, and A. Ko. 2020. "Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements." *Journal of Urban Health* 97 (3): 348–57.

Croitoru, L., J. Chang, and J. Akpokodje. 2020. "The Health Cost of Ambient Air Pollution in Lagos." *Journal of Environmental Protection* 11 (9): 753–65.

Currency Converter. 2020. "Historic United States Dollar Ugandan Shilling." https://currencies.zone/historic/us-dollar/ugandan-shilling/april-2020. Accessed August 9, 2021.

Damania, R., S. Desbureaux, M. Hyland, A. Islam, S. Moore, A.-S. Rodella, J. Russ, and E. Zaveri. 2017. *Uncharted Waters: The New Economics of Water Scarcity and Variability*. Washington, DC: World Bank.

Darido, G., B. Bianchi Alves, and F. Targa. 2016. "Sao Paulo's Innovative Proposal to Regulate Shared Mobility by Pricing Vehicle Use." *Transport for Development* (blog), World Bank, January 26. https://blogs.worldbank.org/transport/sao-paulo-s-innovative-proposal-regulate-shared-mobility-pricing-vehicle-use. Accessed March 10, 2021.

Das, A.K., and R. King. 2019. *Surabaya: The Legacy of Participatory Upgrading of Informal Settlements*. World Resources Report Case Study. Washington, DC: World Resources Institute.

de la Pena, B., and R. Albright. 2013. *Catalyzing the New Mobility in Cities: A Primer on Innovative Business and Service Models*. New York: Rockefeller Foundation.

De Soto, H. 1989. *The Other Path: The Invisible Revolution in the Third World*. New York: Harper & Row.

Devadiga, A. 2020. "'Water When You Need It': Drawing Lessons from Practices in Hubli-Dharwad, India." *International Development Planning Review* 42 (3): 337–57.

de Vasconcellos, E.A. 2005. "Transport Metabolism, Social Diversity and Equity: The Case of São Paulo, Brazil." *Journal of Transport Geography* 13 (4): 329–39.

Dewey, O.F. 2016. *How Mexico City Is Transforming a Jitney System into a World Class Bus Rapid Transit System*. Cambridge, MA: Harvard Graduate School of Design.

Dias, S.M. 2011. "Recycling in Belo Horizonte, Brazil—an Overview of Inclusive Programming." Policy Brief 3 (Urban Policies). Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Dodman, D., D. Archer, and D. Satterthwaite. 2019. "Editorial: Responding to Climate Change in Contexts of Urban Poverty and Informality." *Environment and Urbanization* 31 (1): 3–12.

Dodman, D., J. Bicknell, and D. Satterthwaite, eds. 2012. *Adapting Cities to Climate Change: Understanding and Addressing the Development Challenges.* Abingdon, UK: Routledge.

Durand-Lasserve, A., and L. Royston, eds. 2002. *Holding Their Ground: Secure Land Tenure for the Urban Poor in Developing Countries*. London: Earthscan.

Dutta, V. 2013. "Land Use Dynamics and Peri-urban Growth Characteristics Reflections on Master Plan and Urban Suitability from a Sprawling North." *Environment and Urbanization ASIA* 3 (2): 277–301.

Economist. 2015. "Urban Land: Space and the City." April 4. https://www.economist.com/leaders/2015/04/04/space-and-the-city. Accessed May 29, 2018.

Economist. 2017. "Grab Battles Uber in South-East Asia." February 9. https://www.economist.com/business/2017/02/09/grab-battles-uber-in-south-east-asia. Accessed August 9, 2021.

ECOSOC (United Nations Economic and Social Council). 2021. *Progress towards the Sustainable Development Goals: Report of the Secretary-General.* New York: ECOSOC.

EIA (United States Energy Information Administration). 2019. "EIA Projects Nearly 50% Increase in World Energy Usage by 2050, Led by Growth in Asia." September 24. https://www.eia.gov/todayinenergy/detail.php?id=41433. Accessed May 11, 2021.

Ellis, P., and M. Roberts. 2016. *Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability*. Washington, DC: World Bank.

Ely, R.T. 1920. "Land Speculation." *Journal of Farm Economics* 2 (3): 121–22.

EPA (United States Environmental Protection Agency). 2018. "Estimating the Economic Benefits of Energy Efficiency and Renewable Energy." In *Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy: A Guide for State and Local Governments.* Washington, DC: EPA.

Erickson, P., and K. Tempest. 2014. "Advancing Climate Ambition: How CityScale Actions Can Contribute to Global Climate Goals." Working Paper 2014-06. Stockholm: Stockholm Environment Institute.

Erickson, P., and K. Tempest. 2015. "Keeping Cities Green: Avoiding Carbon Lock-In Due to Urban Development." Working Paper 2015-11. Seattle: Stockholm Environmental Institute.

Estrin, J. 2018. "Photographing an Indelicate but Deadly Subject." *New York Times*, September 4. https://www.nytimes.com/2018/09/04/lens/photographing-an-indelicate-but-deadly-subject.html. Accessed September 18, 2018.

Fay, M., and C. Opal. 2000. "Urbanization without Growth: A Not-So-Uncommon Phenomenon." Policy Research Working Paper 2412. Washington, DC: World Bank.

Feltenstein, A., and B.K. Dalta. 2020. "Broad-Based Subsidies or Targeted Transfers? Distributional Equity vs Macroeconomic Costs." *Journal of Economic Policy Reform*: 1–18.

Figueroa, O. 2013. "Four Decades of Changing Transport Policy in Santiago, Chile." *Research in Transportation Economics* 40 (1): 87–95.

Florida, R. 2017. *The New Urban Crisis: How Our Cities Are Increasing Inequality, Deepening Segregation, and Failing the Middle Class—and What We Can Do About It*. New York: Basic Books.

Furlong, K. 2013. "The Dialectics of Equity: Consumer Citizenship and the Extension of Water Supply in Medellín, Colombia." *Annals of the Association of American Geographers* 103 (5): 1176–92.

Gadiraju, K.K., R.R. Vatsavai, N. Kaza, E. Wibbels, and A. Krishna. 2018. "Machine Learning Approaches for Slum Detection Using Very High Resolution Satellite Images." In *Proceedings: 18th IEEE International Conference on Data Mining Workshops*, edited by H. Tong, Z. Li, F. Zhu, J. Yu, 1397–404. Los Alamitos, CA: Institute of Electrical and Electronics Engineers. https://nkaza.github.io/files/pdfs/slumdetection.pdf.

Gakenheimer, R. 2011. "Land Use and Transport in Rapidly Motorizing Cities: Contexts of Controversy." In *Urban Transport in the Developing World: A Handbook of Policy and Practice*, edited by H. Dimitriou and R. Gakenheimer, 40–70. Cheltenham, UK: Edward Elgar.

Gandy, M. 2006. "Planning, Anti-planning and the Infrastructure Crisis Facing Metropolitan Lagos." *Urban Studies* 43 (2): 371–96.

Garsous, G., A. Suárez-Alemán, and T. Serebrisky. 2019. "Cable Cars in Urban Transport: Travel Time Savings from La Paz–El Alto (Bolivia)." *Transport Policy* 75 (March): 171–82.

Gentilini, U., M. Almenfi, and P. Dale. 2020. "Social Protection and Jobs Responses to COVID-19: A Real Time Review of Country Measures." Living Paper, version 14. Washington, DC: World Bank.

Ghani, E., and R. Kanbur. 2013. "Urbanization and (in)Formalization." Policy Research Working Paper 6374. Washington, DC: World Bank.

Gilbert, A. 2014. "Renting a Home: The Need for a Policy Response." In *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*, edited by J. Bredenoord, P. Van Lindert, and P. Smets, Chapter 6. New York: Routledge.

Gilbert, A., C. Acioly Jr., C. Augustinus, R. Sietchiping, U. Westman, R. Precht, M. French, and C. Lalande. 2011. *A Policy Guide to Rental Housing in Developing Countries*. Nairobi: United Nations Human Settlements Programme.

Glaeser, E., and A. Joshi-Ghani. 2015. *The Urban Imperative: Towards Competitive Cities*. New Delhi: Oxford University Press.

Glaeser, E.L. 2014. "A World of Cities: The Causes and Consequences of Urbanization in Poorer Countries." *Journal of the European Economic Association* 12 (5): 1154–99.

Global Alliance for Clean Cookstoves. 2011. *Case Study Summary: Toyola Energy Limited Ghana*. Washington, DC: Global Alliance for Clean Cookstoves.

Global Alliance for Clean Cookstoves. 2016a. *Emerging Cooking Solutions: Testing Employer Guarantees and a Pellet Business Model*. Washington, DC: Global Alliance for Clean Cookstoves.

Global Alliance for Clean Cookstoves. 2016b. *Lessons Learned in Manufacturing: Burn Manufacturing*. Washington, DC: Global Alliance for Clean Cookstoves.

Global Commission on Adaptation. 2019. *Adapt Now: A Global Call for Leadership on Climate Resilience.* Rotterdam, Netherlands: Global Center on Adaptation; Washington, DC: World Resources Institute.

Global Platform for Sustainable Cities. 2020. "A Review of Integrated Urban Planning Tools for Greenhouse Gas Mitigation: Linking Land Use, Infrastructure Transition, Technology, and Behavioral Change." Technical Paper. Washington, DC: World Bank.

Godfrey, N., and X. Zhao. 2016. "Financing the Urban Transition for Sustainable Development: Better Finance for Better Cities." Working Paper. Washington, DC: New Climate Economy, World Resources Institute.

Goldman, M. 2015. "Development and the City." In *Cities of the Global South Reader*, edited by F. Miraftab and N. Kudva, 54–65. Abingdon, UK: Routledge.

Gollin, D., R. Jedwab, and D. Vollrath. 2016. "Urbanization with and without Industrialization." *Journal of Economic Growth* 21 (March): 35–70.

Gómez-Ibáñez, J., and J.R. Meyer. 2011. *Going Private: The International Experience with Transport Privatization.* Washington, DC: Brookings Institution Press.

Gómez-Lobo, A., and D. Contreras. 2003. "Water Subsidy Policies: A Comparison of the Chilean and Colombian Schemes." *World Bank Economic Review* 17 (3): 391–407.

Gorelick, J. 2018. "Supporting the Future of Municipal Bonds in Sub-Saharan Africa: The Centrality of Enabling Environments and Regulatory Frameworks." *Environment and Urbanization* 30 (1): 103–22.

Government of Karnataka. 2014. "Solar Policy 2014–2021." Bengaluru: Karnataka Gazette.

Goytia, C., G. Dorna, J. Cohen, and R. Pasquini. 2015. "An Empirical Analysis of Land Use Regulation Determinants." Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.

Goytia, C., and R. Pasquini. 2016. *Housing Affordability: The Land Use Regulation Link to Informal Tenure in Developing Countries*. Buenos Aires: Torcuato Di Tella University.

Gulati, M., R. Becqué, N. Godfrey, A. Akhmouch, A. Cartwright, J. Eis, S. Huq, M. Jacobs, R. King, and P. Rode. 2020. *The Economic Case for Greening the Global Recovery through Cities: 7 Priorities for National Governments*. Washington, DC: Coalition for Urban Transitions, World Resources Institute.

Gwilliam, K.M. 2002. *Cities on the Move: A World Bank Urban Transport Strategy Review*. Washington, DC: World Bank.

Habtemariam, L.W., F. Gelaye, J. Du, and A. Mahendra. 2021. *Water Resilience in a Changing Urban Context: Africa's Challenge and Pathways for Action*. Washington, DC: World Resources Institute.

Hallegatte, S., C. Green, R.J. Nicholls, and J. Corfee-Morlot. 2013. "Future Flood Losses in Major Coastal Cities." *Nature Climate Change* 3 (August): 802–6.

Hammer, M.S., A. van Donkelaar, C. Li, A. Lyapustin, A.M. Sayer, N.C. Hsu, R.C. Levy, et al. 2020. "Global Estimates and Long-Term Trends of Fine Particulate Matter Concentrations (1998–2018)." *Environmental Science & Technology* 54 (13): 7879–90.

Hardoy, J.E., and D. Satterthwaite. 1989. *Squatter Citizen: Life in the Urban Third World*. London: Earthscan.

Hasan, A. 2008. "Financing the Sanitation Programme of the Orangi Pilot Project—Research and Training Institute in Pakistan." *Environment and Urbanization* 20 (1): 109–20.

Hasan, A., N. Ahmed, M. Raza, A. Sadiq, S.u.D. Ahmed, and M.B. Sarwar. 2013. "Land Ownership, Control and Contestation in Karachi and Implications for Low-Income Housing." Working Paper 10. London: International Institute for Environment and Development.

Hasan, A., and H. Arif. 2018. "Pakistan: The Causes and Repercussions of the Housing Crisis." Working Paper. London: International Institute for Environment and Development.

Hatchile Consult. 2020. *Towards Recovery and Reform: Mitigating the Impact of COVID-19 on the Public Transport Sector in the Greater Kampala Metropolitan Area*. Kampala: Friedrich-Ebert-Stiftung.

Health Effects Institute. 2019. *State of Global Air 2019*. Boston: Health Effects Institute.

Heymans, C., R. Eberhard, D. Ehrhardt, and S. Riley. 2016. *Providing Water to Poor People in African Cities Effectively: Lessons from Utility Reforms*. Washington: World Bank.

Hidalgo, D., and L. Gutiérrez. 2013. "BRT and BHLS around the World: Explosive Growth, Large Positive Impacts and Many Issues Outstanding." *Research in Transportation Economics* 39 (1): 8–13.

HOFINET (Housing Finance Information Network). 2016. "An Interview with HOFINET's Director: Marja Hoek-Smit on Housing Markets in Developing and Emerging Countries." *HOFINET Blogs*, April 27. http://www.hofinet.org/blogs/blog_item.aspx?id=33. Accessed August 9, 2021.

Hook, W., and J. Howe. 2005. *Transport and the Millennium Development Goals: A Background Paper to the Task Force on Slum Dwellers of the Millennium Project*. New York: Institute for Transportation & Development Policy.

Horn, P., J. Kimani, J. Makau, and P. Njoroge. 2020. "Scaling Participation in Informal Settlement Upgrading: A Documentation of Community Mobilisation and Consultation Processes in the Mukuru Special Planning Area, Nairobi, Kenya." Working Paper. Manchester, UK: University of Manchester.

Hortas-Rico, M., and A. Solé-Ollé. 2010. "Does Urban Sprawl Increase the Costs of Providing Local Public Services? Evidence from Spanish Municipalities." *Urban Studies* 47 (7): 1513–40.

Hutton, G., and L. Haller. 2004. *Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level*. Geneva: World Health Organization.

HVT (High Volume Transport). 2020. "Nigeria Paves the Way to Transport Recovery, but Sustainable Development Needs to Go Faster Say Experts." October 15. http://transport-links.com/news/nigeria-paves-the-way-to-transport-recovery-but-sustainable-development-needs-to-go-faster-say-experts/. Accessed August 9, 2021.

ILO (International Labour Organization). 1993. *Report of the Fifteenth International Conference of Labour Statisticians, Geneva, 19–28 January 1993*. Geneva: ILO.

ILO. 2003. *Guidelines Concerning a Statistical Definition of Informal Employment.* Report on the 17th International Conference of Labour Statisticians. Geneva: ILO.

ILO. 2015. *Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All*. Geneva: ILO.

ILO. 2018a. "More than 60 Percent of the World's Employed Population Are in the Informal Economy." Press Release, April 30. https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_627189/lang--en/index.htm. Accessed August 9, 2021.

ILO. 2018b. *Women and Men in the Informal Economy: A Statistical Picture*. 3rd Ed. Geneva: ILO.

ILO. 2020. *World Employment and Social Outlook: Trends 2020*. Geneva: ILO.

ILO and WIEGO (Women in Informal Employment: Globalizing and Organizing). 2013. *Women and Men in the Informal Economy: A Statistical Picture*. 2nd ed. Geneva: ILO.

Inchauste, G., and D.G. Victor, eds. 2017. *The Political Economy of Energy Subsidy Reform.* Washington, DC: World Bank.

India Today Web Desk. 2020. "Will Not Let Anyone Go Hungry, Will Feed 20 Lakh Migrants If We Have to, Says Delhi Deputy CM Manish Sisodia." *India Today*, March 27. https://www.indiatoday.in/india/story/will-not-let-anyone-go-hungry-will-feed-20-lakh-migrants-if-we-have-to-says-delhi-deputy-cm-manish-sisodia-1660516-2020-03-27. Accessed July 27, 2020.

International Partnership on Mitigation and MRV. 2015. *Ecuador: Promoting Induction Cooking in Ecuador*. Bonn, Germany: International Partnership on Mitigation and MRV, Deutsche Gesellschaft für Internationale Zusammenarbeit.

IRP (International Resource Panel). 2018. *The Weight of Cities: Resource Requirements of Future Urbanization.* Nairobi: United Nations Environment Programme.

Jaglin, S. 2008. "Differentiating Networked Services in Cape Town: Echoes of Splintering Urbanism?" *Geoforum* 39 (6): 1897–906.

Jaglin, S. 2013. "Regulating Service Delivery in Southern Cities: Rethinking Urban Heterogeneity." In *The Routledge Handbook on Cities of the Global South*, edited by S. Parnell and S. Oldfield, Chapter 37. London: Routledge.

Jagori and UN Women (United Nations Entity for Gender Equality and the Empowerment of Women). 2011. *Safe Cities Free of Violence against Women and Girls Initiative: Report of the Baseline Study Delhi 2010*. New Delhi: Jagori and UN Women.

Jannuzzi, G., and J. Goldemberg. 2014. "Modern Energy Services to Low-Income Households in Brazil: Lessons Learned and Challenges Ahead." In *Energy Poverty: Global Challenges and Local Solutions*, edited by A. Halff, B.K. Sovacool, and J. Rozhon, 257–70. Oxford: Oxford University Press.

Jedwab, R. and D. Vollrath. 2015. "Urbanization without Growth in Historical Perspective." Working Paper. Washington, DC: George Washington University, Institute for International Economic Policy.

Jennings, G., and R. Behrens. 2017. "The Case for Investing in Paratransit Strategies for Regulation and Reform." Volvo Research and Educational Foundations (VREF).

Just Transition Research Collaborative. 2019. *Climate Justice from Below: Local Struggles for Just Transition(s)*. Geneva: United Nations Research Institute for Social Development.

Jütting, J., and J. de Laiglesia. 2009. *Is Informal Normal? Towards More and Better Jobs in Developing Countries*. Paris: Organisation for Economic Co-operation and Development.

Kallergis, A. 2018. "Addressing the Need for Local Data: A Systematic Low-Cost Way for Monitoring Living Conditions in Informal Settlements." PhD dissertation, The New School. https://www.proquest.com.

Kamath, L., H. Burte, A. Madhale, and R. King. 2018. *Pune: Civil Society Coalitions, Policy Contradictions, and Unsteady Transformation*. World Resources Report Case Study. Washington, DC: World Resources Institute.

Karunananthan, M. 2019. "Can the Human Right to Water Disrupt Neoliberal Water Policies in the Era of Corporate Policy-Making?" *Geoforum* 98 (January): 244–53.

Katz, P.R., and L. Ferreira. 2020. "What a Solidarity Economy Looks Like." *Boston Review*, April 9. http://bostonreview.net/class-inequality/paul-katz-leandro-ferreria-brazil-basic-income-marica. Accessed March 15, 2021.

Kazis, N. 2011. "What Percent of Your City's Street Space Is Allocated to Non-car Uses." World Streets, March 4. https://worldstreets.wordpress.com/2011/03/04/what-percent-of-your-citys-street-space-is-allocated-to-non-car-uses/. Accessed May 30, 2018.

Kerr, T.A. 2008. *Quick Guide 7: Rental Housing: A Much Neglected Housing Option for the Poor*. Quick Guides for Policy Makers on Housing the Poor in Asian Cities. Bangkok: United Nations Human Settlements Programme and United Nations Economic and Social Commission for Asia and the Pacific.

Khalil, D. 2019. "The Flexible Governance of Water in Cairo's Informal Areas." *Water* 11 (8): 1644.

Khandker, S.R., H.A. Samad, Z.K.M. Sadeque, M. Asaduzzaman, M. Yunus, and A.K. Enamul Haque. 2014. *Surge in Solar-Powered Homes: Experience in Off-Grid Rural Bangladesh*. Washington, DC: World Bank.

Kimmelman, M. 2017a. "Jakarta Is Sinking So Fast, It Could End Up Underwater." *New York Times*, December 21. https://www.nytimes.com/interactive/2017/12/21/world/asia/jakarta-sinking-climate.html. Accessed April 6, 2018.

Kimmelman, M. 2017b. "Mexico City, Parched and Sinking, Faces a Water Crisis." *New York Times*, February 17. https://www.nytimes.com/interactive/2017/02/17/world/americas/mexico-city-sinking.html. Accessed April 6, 2018.

King, R., M. Orloff, T. Virsilas, and T. Pande. 2017. "Confronting the Urban Housing Crisis in the Global South: Adequate, Secure, and Affordable Housing." Working Paper. Washington, DC: World Resources Institute.

Kuffer, M., K. Pfeffer, and R. Sliuzas. 2016. "Slums from Space—15 Years of Slum Mapping Using Remote Sensing." *Remote Sensing* 8 (6): 455. https://www.mdpi.com/2072-4292/8/6/455/htm.

Kumar, M., S. Singh, A.T. Ghate, S. Pal, and S.A. Wilson. 2016. "Informal Public Transport Modes in India: A Case Study of Five City Regions." *IATSS Research* 39 (2): 102–9.

Lagos HOMS. 2013. "Lagos State Home Ownership Mortgage Scheme (HOMS)." http://lagoshoms.gov.ng/?u=d1&dd=38. Accessed February 20, 2017.

Lall, S.V., J.V. Henderson, and A.J. Venables. 2017. *Africa's Cities Opening Doors to the World*. Washington, DC: World Bank.

Langford, M., and A.F. Russell, eds. 2017. *The Human Right to Water: Theory, Practice and Prospects*. Cambridge: Cambridge University Press.

le Blanc, D. 2007. "A Framework for Analyzing Tariffs and Subsidies in Water Provision to Urban Households in Developing Countries." Working Paper 63. New York: United Nations Department of Economic and Social Affairs.

Libertun de Duren, N., and R. Guerrero Compeán. 2015. "Growing Resources for Growing Cities: Density and the Cost of Municipal Public Services in Latin America." *Urban Studies* 53 (14): 3082–107.

Libertun de Duren, N.R. 2017. "The Social Housing Burden: Comparing Households at the Periphery and the Centre of Cities in Brazil, Colombia, and Mexico." *International Journal of Housing Policy* 18 (2): 177–203.

Libertun de Duren, N.R. 2018. "Why There? Developers' Rationale for Building Social Housing in the Urban Periphery in Latin America." *Cities* 72 (Part B): 411–20.

Lim, S.S., T. Vos, A.D. Flaxman, G. Danaei, K. Shibuya, H. Adair-Rohani, M. Amann, et al. 2012. "A Comparative Risk Assessment of Burden of Disease and Injury Attributable to 67 Risk Factors and Risk Factor Clusters in 21 Regions, 1990–2010: A Systematic Analysis for the Global Burden of Disease Study 2010." *Lancet* 380 (9859): 2224–60.

Lines, K., and J. Makau. 2018. "Taking the Long View: 20 Years of Muungano Wa Wanavijiji, the Kenyan Federation of Slum Dwellers." *Environment and Urbanization* 30 (2): 407–24.

Livengood, A., and K. Kunte. 2012. "Enabling Participatory Planning with GIS: A Case Study of Settlement Mapping in Cuttack, India." *Environment and Urbanization* 24 (1): 77–97.

Lopera Pérez, J.D., D.P. González Avendaño, and L.M. Sánchez Mazo. 2017. "Entre luchas sociales y avances jurídicos para la garantía de derechos." In *Barrios populares Medellín: Favelas São Paulo*, edited by M. de Lourdes Zuquim and L.M. Sánchez Mazo, 18–34. São Paulo: Architecture and Urbanism College, University of São Paulo.

Lucon, O., D. Ürge-Vorsatz, A.Z. Ahmed, H. Akbari, P. Bertoldi, L.F. Cabeza, N. Eyre, et al. 2014. "Buildings." In *Climate Change 2014: Mitigation of Climate Change.* Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, et al. Cambridge and New York: Cambridge University Press.

Lwasa, S., and K. Owens. 2018. *Kampala: Rebuilding Public Sector Legitimacy with a New Approach to Sanitation Services.* World Resources Report Case Study. Washington, DC: World Resources Institute.

Mahadevia, D., A. Datey, and A. Mishra. 2013. "Foisting Mass Housing on the Poor: Lessons from Social Audit of BSUP." Working Paper 21. Ahmedabad: Centre for Urban Equity, CEPT University.

Mahadevia, D., M. Pai, and A. Mahendra. 2018. *Ahmedabad: Town Planning Schemes for Equitable Development—Glass Half Full or Half Empty?* World Resources Report Case Study. Washington, DC: World Resources Institute.

Mahawar, H. 2018. "Dharavi Is Not Just a Slum, It's a Thriving Hub of Industry." Medium, May 23. https://medium.com/@hiteshmahawar93/dharavi-is-not-just-a-slum-its-a-thriving-hub-of-industry-27a87f6df3e6. Accessed March 10, 2021.

Mahendra, A. 2008. "Vehicle Restrictions in Four Latin American Cities: Is Congestion Pricing Possible?" *Transport Reviews* 28 (1): 105–33.

Mahendra, A. 2018. "Balancing Accessibility with Aspiration: Challenges in Urban Transport Planning in the Global South." In *The Routledge Companion to Planning in the Global South*, edited by G. Bhan, S. Srinivas, and V. Watson, Chapter 18. London: Routledge.

Mahendra, A., R. King, E. Gray, M. Hart, L. Azeredo, L.P. Betti, S. Prakash, et al. 2020. "Urban Land Value Capture in São Paulo, Addis Ababa, and Hyderabad: Differing Interpretations, Equity Impacts, and Enabling Conditions." Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.

Mahendra, A., and K.C. Seto. 2019. "Upward and Outward Growth: Managing Urban Expansion for More Equitable Cities in the Global South." Working Paper. Washington, DC: World Resources Institute.

Mahler, D.G., N. Yonzan, C. Lakner, R.A. Castaneda Aguilar, and H. Wu. 2021. "Updated Estimates of the Impact of COVID-19 on Global Poverty: Turning the Corner on the Pandemic in 2021?" *Data Blog*, June 24. https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-turning-corner-pandemic-2021. Accessed August 9, 2021.

Mahtta, R., A. Mahendra, and K.C. Seto. 2019. "Building Up or Spreading Out? Typologies of Urban Growth across 478 Cities of 1 Million+." *Environmental Research Letters* 14 (12): 124077.

Mansueto Institute for Urban Innovation. n.d. "Million Neighborhoods: Mapping Fast-Growing Informal Settlements in Africa." https://miurban.uchicago.edu/2019/11/14/millionneighborhoodsmap/. Accessed August 9, 2021.

Marosi, R. 2017. "Mexico's Housing Debacle: A Failed Vision." *Los Angeles Times*, November 26. http://www.latimes.com/projects/la-me-mexico-housing/. Accessed May 24, 2018.

Marx, B., T. Stoker, and T. Suri. 2013. "The Economics of Slums in the Developing World." *Journal of Economic Perspectives* 27 (4): 187–210.

Mathews, R., and M. Pai. 2020. "High Rises Don't Help." *Indian Express*, August 26. https://indianexpress.com/article/opinion/columns/coronavirus-affordable-housing-real-estate-6571068/. Accessed March 12, 2021.

Mathews, R., M. Pai, T. Sebastian, and S. Chakraborty. 2018. "State-Led Alternative Mechanisms to Acquire, Plan and Service Land for Urbanisation in India." Working Paper. Washington, DC: World Resources Institute.

Mbara, T.C. 2016. "Tuk-Tuk, 'New Kid on the Block' in Johannesburg: Operational and User Travel Characteristics, Competition and Impacts—Original Research." *Journal of Transport and Supply Chain Management* 10 (1).

McCloskey, D. 2011. "Liberty and Dignity Explain the Modern World." In *Morality of Capitalism: What Your Professors Won't Tell You,* edited by T.G. Palmer, 187–210. Ottawa, IL: Jameson.

McDonald, R.I., K. Weber, J. Padowski, M. Flörke, C. Schneider, P.A. Green, T. Gleeson, et al. 2014. "Water on an Urban Planet: Urbanization and the Reach of Urban Water Infrastructure." *Global Environmental Change* 27 (July): 96–105.

McGranahan, G. 2015. "Realizing the Right to Sanitation in Deprived Urban Communities: Meeting the Challenges of Collective Action, Coproduction, Affordability, and Housing Tenure." *World Development* 68 (April): 242–53.

McGranahan, G., and D. Mitlin. 2016. "Learning from Sustained Success: How Community-Driven Initiatives to Improve Urban Sanitation Can Meet the Challenges." *World Development* 87 (November): 307–17.

McGranahan, G., D. Schensul, and G. Singh. 2016. "Inclusive Urbanization: Can the 2030 Agenda Be Delivered without It?" *Environment and Urbanization* 28 (1): 13–34.

Mcloughlin, C., and D. Harris. 2013. *The Politics of Progress on Water and Sanitation in Colombo, Sri Lanka.* London: Overseas Development Institute.

Mehndiratta, S.R., and C. Rodriguez. 2017. "Bus Reform in Developing Countries: Reflections on the Experience Thus Far." Policy Note. Washington, DC: World Bank.

Mehrotra, S. 2019. "Informal Employment Trends in the Indian Economy: Persistent Informality, but Growing Positive Development." Working Paper 254. Geneva: International Labour Organization.

Mehrotra, S., L. Lewis, M. Orloff, B. Olberding. 2020. *Greater than Parts: A Metropolitan Opportunity*. Washington, DC: World Bank.

Mercy Corps. 2017. *Water, Sanitation & Hygiene: Capacity Statement*. Portland, OR: Mercy Corps.

Metrolinx. 2013. *Land Value Capture Discussion Paper*. Prepared by George Hazel Consultancy. Toronto: Metrolinx.

MHT (Mahila Housing Trust). 2018. *Promoting Energy Efficient Livelihoods: A Case Study in Home Based Embroidery Work*. Ahmedabad: MHT; Bengaluru: Selco Foundation.

MHT. 2019a. *Promoting Energy Efficient Livelihoods: A Case of Soldering Iron, Surat*. Ahmedabad: MHT; Bengaluru: Selco Foundation.

MHT. 2019b. *Promoting Energy Efficient Livelihoods: A Case Study in Home Based Grocery Stores*. Ahmedabad: MHT; Bengaluru: Selco Foundation.

Michael, K., T. Deshpande, and G. Ziervogel. 2019. "Examining Vulnerability in a Dynamic Urban Setting: The Case of Bangalore's Interstate Migrant Waste Pickers." *Climate and Development* 11 (8): 667–78.

Mitlin, D. 2008. "With and beyond the State—Co-production as a Route to Political Influence, Power and Transformation for Grassroots Organizations." *Environment and Urbanization* 20 (2): 339–60.

Mitlin, D., V.A. Beard, D. Satterthwaite, and J. Du. 2019. "Unaffordable and Undrinkable: Rethinking Urban Water Access in the Global South." Working Paper. Washington, DC: World Resources Institute.

Mitlin, D., and A. Muller. 2004. "Windhoek, Namibia: Towards Progressive Urban Land Policies in Southern Africa." *International Development Planning Review* 26 (2): 167–86.

Mittal, S. 2014. "Indian States Move Forward with Solar Net-Metering & Solar Leasing." CleanTechnica, September 6. https://cleantechnica.com/2014/09/06/indian-solar-net-metering-solar-leasing/. Accessed August 9, 2021.

Mizrahi, S. 2011. "Self-Provision of Public Services: Its Evolution and Impact." *Public Administration Review* 72 (2): 285–90.

M-KOPA Solar. 2016. "M-KOPA Solar." http://www.m-kopa.com/. Accessed April 19, 2016.

Monkkonen, P., and L. Ronconi. 2016. "Comparative Evidence on Urban Land Use Regulation Bureaucracy in Developing Countries." In *Slums: How Informal Real Estate Markets Work*, edited by E. Birch, S. Chattaraj, and S. Wachter, 24–46. Philadelphia: University of Pennsylvania Press.

Moreno, E.L., and Z.G. Blanco. 2014. "Ghost Cities and Empty Houses: Wasted Prosperity." *American International Journal of Social Science* 3 (2): 207–16.

Morozov, E. 2013. "The Real Privacy Problem." *MIT Technology Review*, October 22. https://www.technologyreview.com/2013/10/22/112778/the-real-privacy-problem/. Accessed March 21, 2021.

NACLA (North American Congress on Latin America). 2007. "Bolivia: Privatized Water Company Defeated." September 25. https://nacla.org/article/bolivia-privatized-water-company-defeated. Accessed July 17, 2020.

Namsomboon, B., and K. Kusakabe. 2011. "Social Protection for Women Homeworkers: A Case of Healthcare Services in Thailand." *International Journal of Sociology and Social Policy* 31 (1/2): 123–36.

Narain, V. 2009. "Growing City, Shrinking Hinterland: Land Acquisition, Transition and Conflict in Peri-urban Gurgaon, India." *Environment & Urbanization* 21 (2): 501–12.

National Treasury. 2004. "Urban Renewal Tax Incentive Launched in Johannesburg and Cape Town." Press Release. Pretoria: Republic of South Africa.

ND-GAIN (Notre Dame Global Adaptation Initiative). 2018. "ND-GAIN Data." https://gain.nd.edu/our-work/country-index/matrix/. Accessed March 15, 2020.

Neuman, M. 2005. "The Compact City Fallacy." *Journal of Planning Education and Research* 25 (1): 11–26.

Ngoga, T.H. 2019. *A Quick, Cost-Effective Approach to Land Tenure Regularisation: The Case of Rwanda*. London: International Growth Centre.

Nijman, J., and Y.D. Wei. 2020. "Urban Inequalities in the 21st Century Economy." *Applied Geography* 117 (April): 102188.

Ochoa, R., T. Guerrero, and G. Velasco. 2017. "Housing Manufacturing in Mexico: Building Efficient Houses in Inefficient Locations?" *Procedia Manufacturing* 8: 89–95.

OECD (Organisation for Economic Co-operation and Development). 2013. *Principles for the Governance of Regulators*. Paris: OECD.

OECD. 2015. *OECD Urban Policy Reviews: Mexico 2015: Transforming Urban Policy and Housing Finance*. Paris: OECD.

OECD. 2017. *OECD Public Governance Reviews Highlights: Skills for a High Performing Civil Service*. Paris: OECD.

OECD. n.d. "Blended Finance." https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/. Accessed April 11, 2021.

OECD and UCLG (United Cities and Local Governments). 2019. *2019 Report of the World Observatory on Subnational Government Finance and Investment–Key Findings*. Paris: OECD.

Ostrom, E. 1996. "Crossing the Great Divide: Coproduction, Synergy, and Development." *World Development* 24 (6): 1073–87.

Owens, K.E., S. Gulyani, and A. Rizvi. 2018. "Success When We Deemed It Failure? Revisiting Sites and Services Projects in Mumbai and Chennai 20 Years Later." World Development 106 (June): 260–72.

Oxford Economics. 2014. "Global Cities 2030: Methodology Note." Oxford, UK: Oxford Economics.

Oxford Economics. 2016. (Database.) Global Cities 2030. Oxford, UK: Oxford Economics.

Palavalli, B.M., and S. Krishnan. 2018. "Budget 2018 and Interactive Media: How to Design Nuanced Games on Complex Topics." *Economic and Political Weekly*, March 3. https://www.epw.in/engage/article/budget-2018-interactive-media-tools-how-design-game-understand-complexity-budget. Accessed April 15, 2021.

Participedia. n.d. "Participatory Slum Upgrading Process in the City of Buenos Aires: The 'Villa 20' Case." https://participedia.net/case/5988. Accessed March 15, 2021.

Patel, S. 2015. "The 20-Year Sanitation Partnership of Mumbai and the Indian Alliance." *Environment and Urbanization* 27 (1): 3–18.

Paul, S. 2014. "Finances and Governance of Urban Local Bodies: An Approach of Urban Development Perspective from a Developing Country (India)." *Journal of Urban and Regional Analysis* 6 (2): 181–201.

Peralta Quirós, T., and C. Rodriguez. 2016. "To Measure the Real Impact of Transport Services, Affordability Needs to Be Part of the Equation." *Transport for Development* (blog), World Bank, December 15. https://blogs.worldbank.org/transport/measure-real-impact-transport-services-affordability-needs-be-part-equation. Accessed August 9, 2021.

Pestova, N. 2016. "The Human Right to Water in the City Context: Insights from Domestic Litigation." In *Global Urban Justice*, edited by B. Oomen, M.F. Davis, and M. Grigolo, 157–76. Cambridge: Cambridge University Press.

Peterson, G.E. 2008. *Unlocking Land Values to Finance Urban Infrastructure: Land-Based Financing Options for Cities*. Washington, DC: World Bank.

Pieterse, E., and K. Owens. 2018. *Johannesburg: Confronting Spatial Inequality*. World Resources Report Case Study. Washington, DC: World Resources Institute.

Pieterse, E., K. Press, K. Rust, and W. Smit. 2011. *Quick Guide 4: Eviction: Alternatives to the Destruction of Urban Poor Communities*. Quick Guides for Policy Makers on Housing the Poor in African Cities. Nairobi: United Nations Human Settlements Programme and Cities Alliance.

PRIA (Participatory Research in Asia). 2013. *Contribution of Urban Informal Settlement Dwellers to Urban Economy in India*. New Delhi: PRIA.

PTI (Press Trust of India). 2020. "Swiggy Plans to Serve 5 Lakh Meals Daily to the Needy amid Coronavirus Lockdown." *Deccan Herald,* April 2. https://www.deccanherald.com/business/business-news/swiggy-plans-to-serve-5-lakh-meals-daily-to-the-needy-amid-coronavirus-lockdown-820599.html. Accessed July 27, 2020.

Pucher, J., N. Korattyswaroopam, and N. Ittyerah. 2004. "The Crisis of Public Transport in India: Overwhelming Needs but Limited Resources." *Journal of Public Transportation* 7 (3): 95–113.

Qiang, C.Z., and R. Kuo. 2020. "Supporting Informal Businesses amid COVID-19 without Formalization." *Private Sector Development Blog*, World Bank, December 16. https://blogs.worldbank.org/psd/supporting-informal-businesses-amid-covid-19-without-formalization. Accessed March 15, 2021.

Racaud, S., J. Kago, and S. Owuor. 2018. "Introduction: Contested Street: Informal Street Vending and Its Contradictions." *Articulo—Journal of Urban Research* 17–18.

Ravallion, M., S. Chen, and P. Sangraula. 2007a. "New Evidence on the Urbanization of Global Poverty." *Population and Development Review* 33 (4): 667–702.

Ravallion, M., S. Chen, and P. Sangraula. 2007b. "The Urbanization of Global Poverty." *World Bank Research Digest* 1 (4): 1, 8.

REN21 (Renewable Energy Policy Network for the 21st Century). 2015. *Renewables 2015 Global Status Report*. Paris: REN21.

Rentschler, M. Kornejew, S. Hallegatte, J. Braese, and M. Obolensky. 2019. "Underutilized Potential: The Business Costs of Unreliable Infrastructure in Developing Countries." Policy Research Working Paper 8899. Washington, DC: World Bank.

Rigaud, K.K., A. de Sherbinin, B. Jones, J. Bergmann, V. Clement, K. Ober, J. Schewe, et al. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: World Bank.

Rode, P., G. Floater, N. Thomopoulos, J. Docherty, P. Schwinger, A. Mahendra, and W. Fang. 2014. "Accessibility in Cities: Transport and Urban Form." New Climate Economy Cities Paper 3. London: London School of Economics and Political Science.

Roever, S. 2014. *Informal Economy Monitoring Study Sector Report: Street Vendors*. Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Rollenhagen, L. 2019. "Should a Notorious Buenos Aires Slum Become an Official Neighbourhood?" *The Guardian*, August 7. https://www.theguardian.com/cities/2019/aug/07/should-a-notorious-buenos-aires-slum-become-an-official-neighbourhood. Accessed March 15, 2021.

Romero, S. 2015. "Taps Start to Run Dry in Brazil's Largest City." *New York Times*, February 15. https://www.nytimes.com/2015/02/17/world/americas/drought-pushes-sao-paulo-brazil-toward-water-crisis.html. Accessed May 24, 2018.

Rouse, M.J. 2013. *Institutional Governance and Regulation of Water Services*. 2nd ed. London: International Water Association.

Rozenberg, J., and M. Fay, eds. 2019. *Beyond the Gap: How Countries Can Afford the Infrastructure They Need while Protecting the Planet*. Washington, DC: World Bank.

Saadah, F. 2015. "Beyond the Boundaries: Program-for-Results and the Role of Leverage in Scaling Up Results." Presentation. Washington, DC: World Bank.

Safe Water Network. 2016. *Drinking Water Supply for Urban Poor: City of Mumbai*. New Delhi: Safe Water Network; Washington, DC: United States Agency for International Development.

Salazar Ferro, P. 2015. *Paratransit: A Key Element in a Dual System*. Lyon, France: Cooperation for Urban Mobility in the Developing World; Paris: Agence Française de Développement.

Salazar Ferro, P., and R. Behrens. 2015. "From Direct to Trunk-and-Feeder Public Transport Services in the Urban South: Territorial Implications." *Journal of Transport and Land Use* 8 (1): 123–36.

Salvi del Pero, A. 2016. "Housing Policy in Chile: A Case Study on Two Housing Programmes for Low-Income Households." Social, Employment and Migration Working Paper 173. Paris: OECD.

Sánchez-Páramo, C. 2020. "The New Poor Are Different: Who They Are and Why It Matters." *Let's Talk Development* (World Bank blog), August 13. https://blogs.worldbank.org/developmenttalk/new-poor-are-different-who-they-are-and-why-it-matters.

Sanyal, B. 2016. "Informal Land Markets: Perspectives for Policy." In *Slums: How Informal Real Estate Markets Work*, edited by E.L. Birch, S. Chattaraj, and S.L. Wachter, 177–93. Philadelphia: University of Pennsylvania Press.

Sarmiento, C., S. Alveano, and R. King. 2019. *Guadalajara: Revisiting Public Space Interventions through the Via Recreactiva*. World Resources Report Case Study. Washington, DC: World Resources Institute.

Satterthwaite, D. 2016. "Editorial: A New Urban Agenda?" *Environment and Urbanization* 28 (1): 3–12.

Satterthwaite, D., V.A. Beard, D. Mitlin, and J. Du. 2019. "Untreated and Unsafe: Solving the Urban Sanitation Crisis in the Global South." Working Paper. Washington, DC: World Resources Institute.

Satterthwaite, D., and D. Mitlin. 2014. *Reducing Urban Poverty in the Global South*. London: Routledge.

Scheinberg, A., M. Simpson, and Y. Gupt. 2010. *Economic Aspects of the Informal Sector in Solid Waste Management.* Eschborn, Germany: German Technical Cooperation and Collaborative Working Group on Solid Waste Management in Low- and Middle-Income Countries.

Schmidt, D. 2017. *How Do We Imagine Hybrid Modes of Public Transportation Systems?* Case Brief 1-0021. Bengaluru: Indian Institute for Human Settlements.

Sclar, E.D., P. Garau, and G. Carolini. 2005. "The 21st Century Health Challenge of Slums and Cities." *The Lancet* 365 (9462): 901–3.

SDI (Slum/Shack Dwellers International). 2018. *Know Your City: Slum Dwellers Count,* edited by J. Byrne. Cape Town: SDI.

Seto, K.C., B. Güneralp, and L.R. Hutyra. 2012. "Global Forecasts of Urban Expansion to 2030 and Direct Impacts on Biodiversity and Carbon Pools." *Proceedings of the National Academy of Sciences of the United States of America* 109 (40): 16083–88.

Seto, K.C., S. Parnell, and T. Elmqvist. 2013. "A Global Outlook on Urbanization." In *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities*, edited by T. Elmqvist, M. Fragkias, J. Goodness, B. Güneralp, P.J. Marcotullio, R.I. McDonald, S. Parnell, et al., 1–12: Dordrecht, Netherlands: Springer.

Shah, P., E. Hamilton, F. Armendaris, and H. Lee. 2015. *World: Inclusive Cities Approach Paper*. Washington, DC: World Bank.

Shastry, S., S. Goswami, A. Markandya, A. Sagar, I. Ray, Z. Aziz, S. Paul, A. Tagat, and A. Chatterjee. 2018. "Towards Smarter Service Provision for Smart Cities: Accounting for the Social Costs of Urban Service Provision." Working Paper. Bengaluru: World Resources Institute.

Silva, P.C., and Y. Mautner. 2016. "Tenure Regularization in Favelas in Brazil." In *Slums: How Informal Real Estate Markets Work*, edited by E.L. Birch, S. Chattaraj, and S.L. Wachter, 92–93. Philadelphia: University of Pennsylvania Press.

Sims, R., R. Schaeffer, F. Creutzig, X. Cruz-Núñez, M. D'Agosto, D. Dimitriu, M.J. Figueroa Meza, et al. 2014. "Transport." In *Climate Change 2014: Mitigation of Climate Change.* Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, et al., 599–670. Cambridge and New York: Cambridge University Press.

Sintomer, Y., C. Herzberg, and A. Röcke. 2014. "Transnational Models of Citizen Participation: The Case of Participatory Budgeting." In *Hope for Democracy: 25 Years of Participatory Budgeting Worldwide*, edited by N. Dias, 28–44. São Brás de Alportel, Portugal: In Loco Association.

Smolka, M.O., and C.M. De Cesare. 2006. "Property Taxation and Informality: Challenges for Latin America." *Land Lines* 18 (3): 14–19.

Stein, A., and I. Vance. 2008. "The Role of Housing Finance in Addressing the Needs of the Urban Poor: Lessons from Central America." *Environment and Urbanization* 20 (1): 13–30.

Stickney, C. 2014. *Many Paths to a Home: Emerging Business Models for Latin America and the Caribbean's Base of the Pyramid*. Washington, DC: Inter-American Development Bank.

Su, Q., and J.S. DeSalvo. 2008. "The Effects of Transportation Subsidies on Urban Sprawl." *Journal of Regional Science* 48 (3): 567–94.

Sutherland, C., D. Roberts, and J. Douwes. 2019. "Constructing Resilience at Three Scales: The 100 Resilient Cities Programme, Durban's Resilience Journey and Water Resilience in the Palmiet Catchment." *Human Geography* 12 (1): 33–49.

Swope, C. 2017. "Lessons Learned from Mexico City's First Green Bond." GreenBiz, April 3. https://www.greenbiz.com/article/lessons-learned-mexico-citys-first-green-bond. Accessed August 9, 2021.

Szreter, S. 2002. "Rethinking McKeown: The Relationship between Public Health and Social Change." *American Journal of Public Health* 92 (5): 722–25.

Tacoli, C., G. McGranahan, and D. Satterthwaite. 2014. "Urbanization, Rural-Urban Migration and Urban Poverty." Background paper for the *World Migration Report 2015: Migrants and Cities, New Partnerships to Manage Mobility.* Geneva: International Organization for Migration.

TERI (The Energy and Resources Institute). 2013. Pro-Poor Mobility: Policy Guidelines and Case Studies. Nairobi: United Nations Human Settlements Programme.

Tewari, M., and N. Godfrey. 2016. *Better Cities, Better Growth: India's Urban Opportunity*. London: New Climate Economy; Washington, DC: World Resources Institute; New Delhi: Indian Council for Research on International Economic Relations.

Trémolet, S., R. Cardone, C. da Silva, and C. Fonseca. 2007. "Innovations in Financing Urban Water and Sanitation." Paper prepared for the Rockefeller Foundation Global Urban Summit, "Financing Shelter, Water and Sanitation." New York: Center for Sustainable Urban Development, Columbia University.

Tun, T.H., B. Welle, D. Hidalgo, C. Albuquerque, S. Castellanos, R. Sclar, and D. Escalante. 2020. "Informal and Semiformal Services in Latin America: An Overview of Public Transportation Reforms." Washington, DC: World Resources Institute Ross Center, Global Environment Facility, and Inter-American Development Bank.

Turok, I. 2018. "Urbanisation and Development: Reinforcing the Foundations." In *Routledge Companion to Planning in the Global South*, edited by G. Bhan, S. Srinivas, and V. Watson, Chapter 7. London: Routledge.

Turok, I., and G. McGranahan. 2013. "Urbanization and Economic Growth: The Arguments and Evidence for Africa and Asia." *Environment and Urbanization* 25 (2): 465–82.

Uber Blog. 2018. "UberBoda Has Arrived in Kampala." March 29. https://www.uber.com/en-UG/blog/uberboda-kampala/. Accessed August 9, 2021.

Ujikane, K. 2017. "Forget NY, Mumbai Is among Top Four Most Expensive Cities in the World." Bloomberg, January 19. http://www.business-standard.com/article/companies/forget-ny-mumbai-is-among-top-four-most-expensive-cities-in-theworld-117011900105_1.html. Accessed August 9, 2021.

UN DESA (Department of Economic and Social Affairs). 2019. *World Urbanization Prospects: The 2018 Revision*. New York: United Nations.

UN DESA. 2020. "Urbanization: Expanding Opportunities but Deeper Divides." Chap. 4 in *World Social Report 2020: Inequality in a Rapidly Changing World,* 119. New York: United Nations.

UNEP (United Nations Environment Programme). 2006. *Improving Energy Efficiency in Industry in Asia—a Review of Financial Mechanisms*. Nairobi: UNEP.

UN-Habitat (United Nations Human Settlements Programme). 2010. *State of the World's Cities 2010/2011:Bridging the Urban Divide*. Nairobi: UN-Habitat.

UN-Habitat. 2013. *Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements 2013*. Nairobi: UN-Habitat.

UN-Habitat. 2014. "Ecuador Will Host the United Nations Conference on Housing and Sustainable Urban Development in October 2016." Press Release, December 19. http://unhabitat.org/wp-content/uploads/2014/07/PR-The-New-Urban-Agenda-will-be-decided-in-Quito_-1.pdf. Accessed August 9, 2021.

UN-Habitat. 2015a. *Housing at the Centre of the New Urban Agenda*. Nairobi: United Nations.

UN-Habitat. 2015b. *Slum Almanac 2015–2016*. Nairobi: UN-Habitat.

UN-Habitat. 2017. *New Urban Agenda*. New York: United Nations.

UN-Habitat. 2019. *Sustainable Development Goal 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable—a Guide to Assist National and Local Governments to Monitor and Report on SDG Goal 11+ Indicators*. Nairobi: UN-Habitat.

UN-Habitat. 2020a. "UN-Habitat Capacity Building Strategy Presented by the Executive Director to the Executive Board: Draft, January 2020." Nairobi: UN-HABITAT.

UN-Habitat. 2020b. *World Cities Report 2020: The Value of Sustainable Urbanization*. Nairobi: UN-Habitat.

UNICEF (United Nations Children's Fund) and WHO (World Health Organization). 2012. *Progress on Drinking Water and Sanitation: 2012 Update*. New York: UNICEF.

United Nations. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/RES/70/1. New York: United Nations.

USAID (United States Agency for International Development). 2013. *Sustainable Service Delivery in an Increasingly Urbanized World*. Washington, DC: USAID.

Valdés Fernandez, F.P. 2007. *Case Study: System of Households' Water Use Subsidies in Chile*. Stockholm: Global Water Partnership.

Vanek, J., M.A. Chen, and G. Raveendran. 2012. "A Guide to Obtaining Data on Types of Informal Workers in Official Statistics." Statistical Brief 8. Cambridge, MA: Women in Informal Employment: Globalizing and Organizing.

Venter, C., A. Mahendra, and D. Hidalgo. 2019. "From Mobility to Access for All: Expanding Urban Transportation Choices in the Global South." Working Paper. Washington, DC: World Resources Institute.

Vickerman, R. 2007. "Cost-Benefit Analysis and Large-Scale Infrastructure Projects: State of the Art and Challenges." *Environment and Planning B: Planning and Design* 34 (4): 598–610.

Wagner, I. 2021. "Car Ownership: Number of Vehicles per U.S. Household 2001–2017." Statista, March 4. https://www.statista.com/statistics/551403/number-of-vehicles-per-household-in-the-united-states/#:~:text=On%20average%2C%20there%20are%201.88,disposal%20in%20that%20same%20year. Accessed May 10, 2021.

Watson, V. 2009a. "'The Planned City Sweeps the Poor Away . . .': Urban Planning and 21st Century Urbanisation." *Progress in Planning* 72 (3): 151–93.

Watson, V. 2009b. "Seeing from the South: Refocusing Urban Planning on the Globe's Central Urban Issues." *Urban Studies* 46 (11): 2259–75.

Wee, S.-L. 2018. "In China, Bill Gates Encourages the World to Build a Better Toilet." *New York Times*, November 6. https://www.nytimes.com/2018/11/06/business/bill-gates-reinvented-toilet.html. Accessed September 23, 2019.

Weinstein, L. 2008. "Mumbai's Development Mafias: Globalization, Organized Crime and Land Development." *International Journal of Urban and Regional Research* 32 (1): 22–39.

Weru, J. 2004. "Community Federations and City Upgrading: The Work of Pamoja Trust and Muungano in Kenya." *Environment and Urbanization* 16 (1): 47–62.

WES (Wana Energy Solutions). 2015. "Expanding Access to Consumer Finance–Innovation in Asset Finance." Prepared for the Clean Cooking Forum 2015, Accra, Ghana, November 10–13.

Westphal, M.I., S. Martin, L. Zhou, and D. Satterthwaite. 2017. "Powering Cities in the Global South: How Energy Access for All Benefits the Economy and the Environment." Working Paper. Washington, DC: World Resources Institute.

White, Z., and C. Morais. 2020. *Scaling Digital Solutions in the Water Sector: Lessons from CityTaps and Wonderkid*. London: GSM Association.

WHO (World Health Organization). 2012. *Global Costs and Benefits of Drinking-Water Supply and Sanitation Interventions to Reach the MDG Target and Universal Coverage*. Geneva: WHO.

WHO. 2013. *Pedestrian Safety: A Road Safety Manual for Decision-Makers and Practitioners*. Geneva: WHO.

WHO. 2018. "Household Air Pollution and Health." May 8. https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health. Accessed April 15, 2021.

WHO and UN-Habitat (United Nations Human Settlements Programme). 2010. *Hidden Cities: Unmasking and Overcoming Health Inequities in Urban Settings*. Kobe, Japan: WHO Centre for Health Development; Nairobi: UN-Habitat.

WHO and UNICEF (United Nations Children's Fund). 2017. *Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines*. Geneva: WHO and UNICEF.

WHO and WEDC (Water, Engineering and Development Centre). 2013. "How Much Water Is Needed in Emergencies." Technical Notes on Drinking-Water, Sanitation and Hygiene in Emergencies 9. Geneva: WHO.

Wihbey, J. 2017. "The Drone Revolution: UAV-Generated Geodata Drives Policy Innovation." *Land Lines* 18 (4): 15–21.

Williams, D.S., M. Máñez Costa, C. Sutherland, L. Celliers, and J. Scheffran. 2019. "Vulnerability of Informal Settlements in the Context of Rapid Urbanization and Climate Change." *Environment and Urbanization* 31 (1): 157–76.

Williamson, J.G. 1990. *Coping with City Growth during the British Industrial Revolution*. Cambridge: Cambridge University Press.

Win, T.L. 2017. "In Flood-Prone Jakarta, Will 'Giant Sea Wall' Plan Sink or Swim?" Reuters, September 14. https://www.reuters.com/article/idUSL4N1LP4S8. Accessed February 15, 2021.

Woetzel, J., S. Ram, J. Mischke, N. Garemo, and S. Sankhe. 2014. *A Blueprint for Addressing the Global Affordable Housing Challenge*. New York: McKinsey Global Institute.

Woetzel, J., S. Ram, S. Peloquin, M. Limam, and J. Mischke. 2017. *Housing Affordability: A Supply-Side Toolkit for Cities*. Briefing Note. New York: McKinsey Global Institute.

World Bank. 2010. "Consumption Shares 2010 by Country, Product/Sector, Area and Consumption Segment (Percent)." https://datatopics.worldbank.org/consumption/detail. Accessed June 15, 2020.

World Bank. 2013. "Planning, Connecting, and Financing Cities—Now: Priorities for City Leaders."

World Bank. 2016a. (Database.) *World Development Indicators*. https://datacatalog.worldbank.org/dataset/world-development-indicators. Accessed August 9, 2021.

World Bank. 2016b. "Drones Offer Innovative Solution for Local Mapping." January 7. https://www.worldbank.org/en/news/feature/2016/01/07/drones-offer-innovative-solution-for-local-mapping. Accessed May 24, 2018.

World Bank. 2017. "Preparing Mexico's Urban Transport Sector for a Low-Carbon Transition." April 6. https://www.worldbank.org/en/results/2017/04/06/preparing-mexico-urban-transport-sector-low-carbon-transition. Accessed January 20, 2021.

World Bank. 2018a. *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*. Washington, DC: World Bank.

World Bank. 2018b. (Database.) *World Development Indicators*. https://datacatalog.worldbank.org/dataset/world-development-indicators. Accessed January 15, 2021.

World Bank. 2019. *Program-for-Results: Proposal to Remove the Cap on Commitment Authority*. Washington, DC: World Bank Group.

World Bank. 2020a. "$1 Billion from World Bank to Protect India's Poorest from COVID-19 (Coronavirus)." Press Release, May 14. https://www.worldbank.org/en/news/press-release/2020/05/13/world-bank-covid-coronavirus-india-protect-poor. Accessed March 15, 2021.

World Bank. 2020b. *Poverty and Shared Prosperity 2020: Reversals of Fortune*. Washington, DC: World Bank.

World Bank. 2020c. "Profiles of the New Poor Due to the COVID-19 Pandemic." Washington, DC: World Bank. https://thedocs.worldbank.org/en/doc/767501596721696943-0090022020/original/ProfilesofthenewpoorduetotheCOVID19pandemic.pdf.

World Bank. 2021. *World Development Report 2021: Data for Better Lives*. Washington, DC: World Bank.

World Bank Group. 2015. *Competitive Cities for Jobs and Growth: What, Who, and How*. Washington, DC: World Bank.

WRI (World Resources Institute). 2018. "WRI Ross Center for Sustainable Cities' Water and Sanitation 15-City Study." https://datasets.wri.org/dataset/wri_water_sanitation_15_cities_study.

WSUP (Water & Sanitation for the Urban Poor). 2019. *Running Dry: Tackling the Myths about Urban Water and Sanitation*. London: WSUP.

WWAP (United Nations World Water Assessment Programme). 2016. *The United Nations World Water Development Report 2016. Water and Jobs*. Paris: United Nations Educational, Scientific and Cultural Organization.

WWAP. 2017. *The United Nations World Water Development Report 2017. Wastewater: The Untapped Resource.* Paris: United Nations Educational, Scientific and Cultural Organization.

Xing, Y.-F., Y.-H. Xu, M.-H. Shi, and Y.-X. Lian. 2016. "The Impact of PM2.5 on the Human Respiratory System." *Journal of Thoracic Disease* 8 (1): E69–E74.

Yanocha, D., and J. Mason. 2019. *Ride Fair: A Policy Framework for Managing Transportation Network Companies*. New York: Institute for Transporation & Development Policy.

PHOTO CREDITS

Cover, Unequal Scenes; Pgs ii-1, Ted McGrath; Pg 2, Asiye eTafuleni; Pg 8, Felipe Paiva/WRI Brasil; Pg 11, Sarel Kromer via Flickr; Pg 18, Via RecreActiva Guadalajara; Pg 22, Adam Cohn; Pg 24, WRI Ross Center for Sustainable Cities; Pg 33, Arkady Lukashov; Pg 35, WRI Ross Center for Sustainable Cities; Pgs 40-41, Unequal Scenes; Pg 42, Asiye eTafuleni; Pg 45, Radiokukka; Pg 50, World Bank; Pg 52, Philippe Renneville/Flickr; Pg 62, Adam Cohn; Pg 65, WRI Ross Center for Sustainable Cities; Pgs 66-67, Slum Dwellers International; Pg 68, WRI Ross Center for Sustainable Cities; Pg 73, Talia Rubnitz; Pg 76, WRI Ross Center for Sustainable Cities; Pg 80, WRI Ross Center for Sustainable Cities; Pg 83, Zahara Milele; Pg 85, Danilo Alvesd; Pgs 90-91, WRI Ross Center for Sustainable Cities; Pg 93, WRI Ross Center for Sustainable Cities; Pgs 94-95, WRI Ross Center for Sustainable Cities; Pg 96, EMBARQ Brasil; Pg 98, WRI Ross Center for Sustainable Cities; Pgs 100-101, James Anderson; Pg 102, WRI Ross Center for Sustainable Cities; Pg 107, WRI Ross Center for Sustainable Cities; Pg 115, ASaber91/Flickr; Pg 116, Adam Cohn; Pg 120, WRI Ross Center for Sustainable Cities; Pg 128, WRI Ross Center for Sustainable Cities; Pg 130, WRI Ross Center for Sustainable Cities; Pg 142, WRI Brasil; Pg 144, WRI Ross Center for Sustainable Cities; Pg 150, Merylin Esposi; Pg 152, WRI Ross Center for Sustainable Cities; Pg 157, WRI México; Pg 161, WRI Ross Center for Sustainable Cities; Pg 164, EMBARQ Brasil; Pg 168, WRI Ross Center for Sustainable Cities; Pg 170, Cliff Hellis; Pg 172, Edith Alusa-Bosire; Pg 175, EMBARQ Brasil; Pg 180, WRI Ross Center for Sustainable Cities; Pg 184, WRI Ross Center for Sustainable Cities; Pg 188, WRI Brasil; Pgs 190-191, WRI Ross Center for Sustainable Cities; Pg 192, WRI Ross Center for Sustainable Cities; Pg 199, Rupert Taylor-Price; Pg 200, WRI Ross Center for Sustainable Cities

ACKNOWLEDGMENTS

There are numerous people to thank for an effort of this scale. We are grateful to Laura Malaguzzi Valeri and Maria Hart for providing comments on multiple drafts of this report. We also thank the internal and external reviewers who helped strengthen the report. Internal reviewers were Manish Bapna, Thiago Guimarães, Anne Maassen, Prerna Mehta, Carlos Muñoz-Piña, Nirarta Samadhi, and Rogerio Studart. External reviewers were Judy Baker, Robert Buckley, Billy Cobbett, Nora Libertun de Duren, Astrid Haas, Rubbina Karruna, Rory Moody, Diana Mitlin, Vidyadhar Phatak, Meenu Tewari, Sameh Wahba, and Jorge Wolpert.

We are deeply grateful to the 26 coauthors of previous *Towards a More Equal City* papers: Rebecca Abers, Saúl Alveano, Igor Brandão, Himanshu Burte, Martha Chen, Ashok Das, Dario Hidalgo, Lalitha Kamath, Shuaib Lwasa, Avinash Madhale, Darshini Mahadevia, Diana Mitlin, Mariana Orloff, Kate Owens, Madhav Pai, Tejas Pande, Diego Pérez, Edgar Pieterse, Carolina Sarmiento, David Satterthwaite, Karen Seto, Christo Venter, Terra Virsilas, Daniely Votto, Michael Westphal, and Lihuan Zhou. We are also grateful to 131 internal and external reviewers of the 15 working papers published earlier as part of the series. Their feedback helped improve our research and sharpen our findings.

We wish to thank the participants from the December 2019 workshop "Towards a More Equal City: A Workshop for City Changemakers in India": O.P. Agarwal, Samrat Basak, Amit Bhatt, Bharti Bhonsale, Shahana Chattaraj, Shivani Chaudhry, Andre Aranha Correa do Lago, Vandana Chauhan, Dnyanada Deshpande, Jaya Dhindaw, Marie Duraisami, Pedro Ivo Ferraz da Silva, Chirag Gajjar, Kavneet Kaur, Manzoor Khan, Komal Khatri, Ashok Khosla, Felix Knopf, Sebastien Louvet, Rejeet Mathews, Prerna Mehta, Priyanka Mohanty Ajay Nagpure, Vaishali Nandan, Manika Negi, Zeenat Niazi, Leona Nunes, Madhav Pai, Tikender Panwar, Lubaina Rangwala, Jyoti Sharma, Shakti Sinha, Aman Srivastava, Shikha Srivastava, Kanak Tiwari, Madhu Verma, and Kamlesh Yagnik. We would also like to thank staff in the WRI India office who helped us execute a successful workshop: O.P. Agarwal, Jaya Dhindaw Rejeet Mathews, Prerna Mehta, Leona Nunes, and Madhav Pai.

We also thank the participants from the March 2020 webinar "Towards a More Equal City: A Workshop for City Changemakers in Africa": Gashaw Aberra, Iman Abubaker, Zaheer Allam, Elleni Ashebir, Chris Buckley, Bizuneh Gultu, Leo Horn-Phathanothai, Shuaib Lwasa, Wanjira Mathai, Haileselassie Medhin, Frederick Mugisa, Mokom Njang, Gaetan Siew, Revo Twinomihongi, Rogier van den Berg, Jane Weru, Liku Workalemahu, Kofi Yeboah, Edlam Yemeru, and Abebe Zelue. We thank our staff in the WRI Africa office who helped us execute a successful webinar: Iman Abubaker, Elleni Ashebir, and Wubanchi Tesso Wakoya.

We are thankful to the WRI Ross Center's Executive Team for their guidance and support: Claudia Adriazola-Steil, Elleni Ashebir, Sergio Avelleda, Daniela Facchini, Aklilu Fikresilassie, Leo Horn-Phathanothai, Toni Lindau, Adriana Lobo, Clay Nessler, Madhav Pai, Katherine Roboff, Tini Tran, Rogier van den Berg, Sebastian Varela Contador, Ben Welle, and Gunes Yerli. We also thank key current and former members of the WRI Executive Team for providing valuable input over the years: Manish Bapna, Janet Ranganathan, Lawrence MacDonald, and Andrew Steer.

We are very grateful to Emily Matthews, Kathleen Schalch, and Lauri Scherer for their editorial support and to the team at Graphicacy, including Carni Klirs and Jeff Osborn, for their work on developing the report's interactive graphics. We thank Ben Oldenburg for his illustration work. We thank Emma Pearlstone for her great help in getting this report over the finish line. Thanks are also due to Maeve Weston, Carolina Marques De Mesquita, Kira Austin, Rivvy Eisenberg, Maria Hart, and Alison Yue for keeping this work moving forward. We thank our communications team, including Schuyler Null, Hillary Smith, Tini Tran, and Becca Warner, who helped with messaging and outreach, as well as Shannon Collins, Bill Dugan, Rosie Ettenheim, and Romain Warnault for their work on the graphics and layout. We also thank Craig Brownstein, Lauren Zelin, and Michael Oko for their support in media engagement.

We are thankful to the United Kingdom's Foreign, Commonwealth and Development Office (FCDO; formerly Department for International Development, DFID) for funding the World Resources Report series and this report. We also acknowledge the support of our institutional strategic partners who provide core funding to WRI: the Netherlands Ministry of Foreign Affairs, the Royal Danish Ministry of Foreign Affairs, and the Swedish International Development Cooperation Agency.

ABOUT THIS WORLD RESOURCES REPORT

This is the synthesis report of a series of working papers that comprise the World Resources Report: *Towards a More Equal City*. To obtain an electronic copy of this report, other working papers, and to view supporting materials please visit www.citiesforall.org.

Funders

We deeply appreciate the following donors for their generous financial support:

United Kingdom's Foreign, Commonwealth and Development Office (FCDO)
Stephen M. Ross Philanthropies
Denmark Ministry of Foreign Affairs
Ireland Department of Foreign Affairs and Trade
Netherlands Ministry of Foreign Affairs
Swedish International Development Cooperation Agency

About WRI Ross Center For Sustainable Cities

WRI Ross Center for Sustainable Cities is World Resources Institute's program dedicated to shaping a future where cities work better for everyone. It enables more connected, compact and coordinated cities. The Center expands the transport and urban development expertise of the EMBARQ network to catalyze innovative solutions in other sectors, including air quality, water, buildings, land use and energy. It combines the research excellence of WRI with two decades of on-the-ground impact through a network of more than 370 experts working from Brazil, China, Colombia, Ethiopia, India, Mexico, Turkey and the United States to make cities around the world better places to live. More information at www.wrirosscities.org.

About World Resources Institute

World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach

Count It

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

Change It

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

Scale It

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.

WORLD
RESOURCES
INSTITUTE

10 G STREET NE
SUITE 800
WASHINGTON, DC 20002, USA
+1 (202) 729-7600
WWW.WRI.ORG