In collaboration with PwC

# Rethinking City Revenue and Finance

INSIGHT REPORT

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# Foreword

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This report on *Rethinking City Revenue and Finance* is a crucial contribution to the ongoing debate about how cities can mobilize their resources to finance the infrastructure necessary to achieve their long-term goals, especially related to the COVID-19 pandemic recovery and climate preparedness. The report draws on the input of a wide network of organizations, including financial institutions, city authorities, the private sector, research institutions and the United Nations.

It offers new insights and knowledge that aim to help fill the financing gaps for cities. Based on this intensive research, the report identifies how cities can rethink traditional revenue and financing mechanisms to "build back better" and provide climate-resilient, green, social, inclusive and enabling infrastructure to deliver liveable, sustainable, resilient and affordable cities.

The economic and social impact of the pandemic significantly hit the global economy and widened the financing gap, while creating further financing constraints, particularly in developing countries. Some 80% of support measures took place in developed countries. This created further imbalances in city revenue and financing between developing and developed countries.

With this in mind, the report examines the benefits and pitfalls of city revenue and finance from various perspectives – including established case studies, emerging regulations and others. In addition, it identifies new instruments that are vital for attracting investment and finance for cities, plus innovative practices in city revenue and finance from around the world that provide best practices.

Cities rely on good policy-making to cultivate a favourable environment for business and finance. They need to maintain an efficient infrastructure – including communication channels, laws and regulations – to enable the smooth functioning of city financial systems.

City and local governments are under increasing pressure as they are responsible for providing fiscal support in the fight against COVID-19 and its consequences. The current crisis in Ukraine also exposes cities' vulnerability to external shocks. Specifically, the connections within the global financial system can be broken overnight. Many such risks are beyond the control of individual cities.

Enhancing city revenue will require a careful review and prioritization of public spending, subsidies and measures to expand the tax base and incentivize productive and green investment. Financial systems will have to be strengthened to reduce the financial risks while supporting an equitable and green recovery. An important step in achieving this goal is to create an enabling environment to attract private investment and finance, and to guard against the associated risks.

In response to this period of disparity and vulnerability in the global economy, the report calls for targeted and coordinated policy and financial measures to be implemented at the municipal, national and international levels. City, local and national governments need to take an integrated approach and to carefully sequence, calibrate and coordinate different financial policies. One of their priorities should be to reduce external shocks to the city financial system. Internationally, the world needs to devise solutions to avoid international financial systems being interrupted by non-financial events and interventions.

We are honoured to have been part of the World Economic Forum's Global Future Council on Cities of Tomorrow and the task force that steered and developed this publication. We hope this report will help guide cities in improving their city revenue and finance to catalyse resilient, green and sustainable investments, and to develop healthy financial systems towards a sustainable and equitable urban future.

# Executive summary

## It is critical for cities to have sustainable and diversified sources of financing to meet future infrastructure demands.

The worldwide gap in infrastructure investment has been well documented for many years. In 2018, the Global Infrastructure Hub estimated a $15 trillion global investment gap in the years to 2040 that will have to be filled and surpassed if we are to make infrastructure net zero and resilient to climate impacts.

Cities face major barriers such as a lack of institutional capacity and expertise, limited engagement with the private sector, lack of access to international finance, exchange-rate risks caused by an unstable forex regime and insufficient funding for emergency situations.

This report is informed by a survey of 10 city administrations that highlighted the challenges and shifts in priorities due to the pandemic. As part of this survey, we also gained their perspectives on potential revenue streams, planned initiatives and the policy interventions required to ensure a speedy and just recovery. It became apparent that two factors – cities' political autonomy and their financial self-sufficiency – determine how well they meet current challenges. Looking at these factors enabled us to deduce four typologies for urban financing that cities typically epitomize: self-reliant, aspiring, striving and dependent.

City infrastructure projects play a crucial role in shaping transformative impacts, such as boosting resilience, addressing climate change, improving inclusivity and enabling digital urban infrastructure. Regardless of which typology they may fall under, cities need to re-evaluate traditional mechanisms and start to draw on new and innovative approaches to revenue and financing.

The capacity of cities to develop their financial sustainability and resilience depends on their ability to access a diverse range of revenue sources to pay for urban infrastructure as well as their service delivery investments for implementation, operations and maintenance. The surest path to achieving this is to combine own-source revenues at the local and national level with private-sector investment, and to a lesser extent philanthropy and international finance.

Cities will need to incentivize private investment through new partnerships and creative financing solutions that are relatively untested in developing countries or limited to certain sectors. Such solutions include market-based instruments (e.g. tax-increment financing), policy-based tools (e.g. exactions and impact fees) and blended finance. Green infrastructure bonds are relatively new but gaining traction as a cost-effective way of improving the built environment.

A city's regulatory and planning actions can either help or hinder its ability to mobilize investment for public-private collaborations.

Finally, a city's ability to tap financial markets is a combination of a country's level of decentralization, whether it has the legal right to borrow, and if it can generate sustainable revenues and promote bankable projects. While national policies determine a country's degree of fiscal decentralization, creditworthy cities tend to exist in jurisdictions with clear rules governing tax sharing and transfer payment arrangements between national governments and local authorities. This legal framework is further enhanced by clear policy guidelines, statutory limits and transparent approval mechanisms for local government borrowing.

This report proposes the following five guiding principles and four cross-cutting strategic enablers to support cities across typologies in sound financial management practices.

FIGURE 1 **Five principles and four enablers of sound financial management for cities**

1 **Maximize returns on existing spending and assets**
Ensure maximum value is extracted from spending and assets, while avoiding waste, before embarking on new infrastructure

2 **Stewardship of city finances and resources**
Strive for effective governance of financial decisions and the assessment of infrastructure investments to ensure the efficient use of resources and funds in adherence to budgets

3 **Long-term planning while considering contingencies**
Make financial decisions based on long-term strategies and forecasts while embedding prudence in budgets to allow flexibility and resilience to respond to crises

4 **Continuous exploration of diverse and innovative revenue options**
Identify new funding sources and financing methods that maintain or enhance the city's financial sustainability by considering innovations from one domain/sector to another

5 **Effective partnerships and opportunities for collaboration**
Establish quality partnerships with public and private entities early to establish avenues for cost efficiencies and potential opportunities for revenue generation

**Regulations**
Regulatory ecosystem enabling cities' access to finance and ability to practise sound financial management

**Talent and knowledge**
Leveraging the collective potential of a skilled workforce and knowledge hubs in financial planning

**Stakeholder engagement**
A whole-system approach that brings together relevant city stakeholders in city financial planning and budgeting

**Digitalization**
Integrating digital technologies and strategies in ensuring data-driven decision-making in financing

**Strategic enablers**

# 1 Introduction

In the wake of the COVID-19 pandemic, and its effect on city budgets, there is an urgent need to find diverse sources of sustainable finance to upgrade urban environments and make them climate-resilient.

# 1.1 The need for sustainable and diversified sources of financing

Urban financing and the investment landscape have evolved in the past decade, influenced by factors such as ageing infrastructure,[2] constrained budgets, a growing appetite for technological innovations, climate action and greater knowledge of the ways in which municipal projects can advance equality in terms of their benefits to city residents.

Against this backdrop came the heavy impacts of COVID-19 on municipal capital budgets and investments. Now there is even greater urgency to mobilize diverse, sustainable financing and funding mechanisms – and to do so with a focus on the climate, resilience and social, inclusive and digital outcomes that comprise the essence of "building back better".

For cities, this brings the need to rethink traditional revenue and financing mechanisms and begin drawing instead on new and innovative approaches. Cities should focus on projects that stimulate the economy and anticipate the impact of future shocks.

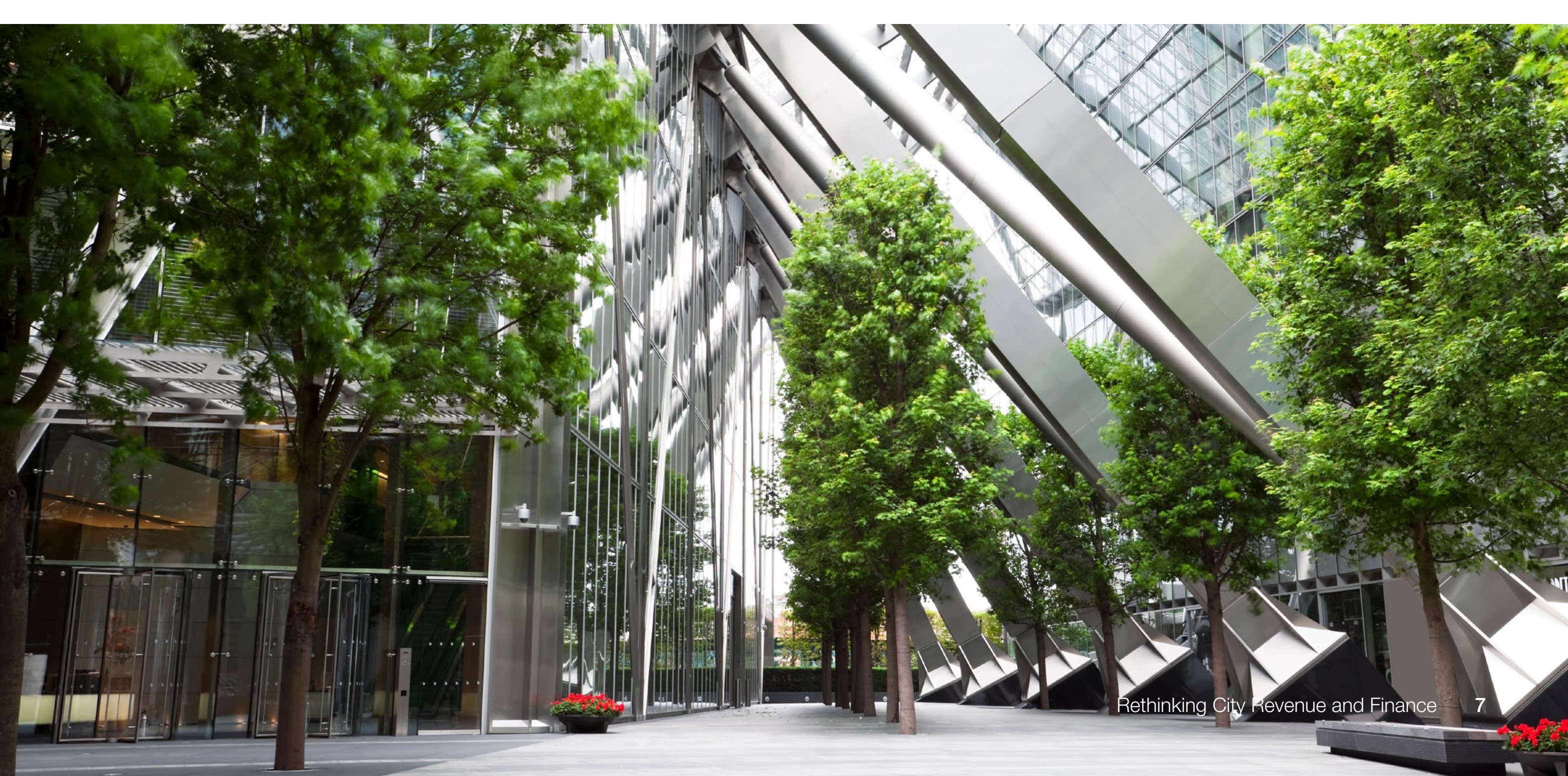
## The state of urban financing prior to recent shocks and the subsequent impact

The worldwide gap in infrastructure investment is well documented. The Global Infrastructure Hub estimated in 2018 a $15 trillion global investment gap in the years to 2040.[3] The likelihood is that a healthy portion of this investment will need to occur at the municipal level.

The 2021 United Nations Climate Change Conference (COP26) was an important event: all levels of government should aim to progressively raise their commitment to reduce greenhouse gas (GHG) emissions and adapt to climate change. It urged future, sustainable and integrated urban development in financing mechanisms and replicating successful non-market approaches (NMAs), including at local, subnational, national and global levels.

However, cities worldwide have struggled to finance infrastructure in tandem with development. In a 2017 report on trends in subnational investment, the Organisation for Economic Co-operation and Development (OECD) found that subnational investment accounts for about 60% of public investment in OECD countries and the European Union – and that most of this goes to infrastructure. However, they also found that subnational governments had decreased their capital expenditure after the global financial crisis (GFC), and that there had been limited diversification of public investment financing since 2010.[4]

The COVID-19 pandemic has similarly resulted in a decrease in capital expenditure, with more than 48% of cities analysed by the World Economic Forum having indicated that infrastructure projects – particularly rapid transit projects and water systems – would be postponed or paused, nearly 40% indicating that budgets have been adjusted to focus on green and just recovery projects, and only 12% indicating that the capital budget had been unaffected.[5] Overall, 92% of large cities, including megalopolises such as New York City and Hong Kong, entered or expected a deficit in their city's operating budget.



The scale of the investment need and the budget circumstances of cities add even greater urgency to the requirement to mobilize private investment. Yet this is challenging. Prior to the pandemic, private infrastructure investment in primary markets remained stagnant and lower than it was 10 years ago, at around $100–150 billion globally per year, with the most recent data showing a decline of 6.5% in global private investment in primary markets in 2020 from 2019. While private investment in large greenfield infrastructure projects remained resilient at $156 billion in 2020, it represented only 0.2% of global gross domestic product (GDP), far less than the 5% required to close the infrastructure gap. This can be attributed to extremely complicated and lengthy procedures in the preparation and negotiation of PPPs, especially those with a high-risk profile – which can also affect the overall bankability of such projects.[6]

In addition, the current geopolitical context is creating inflationary pressure on overall construction costs and further disrupting global supply chains, which had already been severely affected by the pandemic. Russia and Ukraine, for instance, are critical suppliers of metals, raw materials, timber, chemical products and machinery. Russia is the largest timber exporter globally;[7] it also controls around 10% of global copper reserves and is a major producer of nickel and platinum.[8] Ukraine holds the fifth-largest iron reserves and is consequently one of the largest iron exporters.[9] With access to these materials possibly restricted and/or their production halted, prices have already started increasing, with markets already looking for alternative supply chains. Consequently, geopolitical risk has altered risk appetite for investors and is being evaluated more carefully in the broader context of a country and its relationship with its neighbours, among other things.

In addition, the Ukraine conflict has also prompted companies and governments to re-evaluate their risks and levels of dependency on other nations, including in manufacturing and service operations – a process that was already being spurred by the effects of the COVID-19 pandemic. The political risk of operating in countries in conflict already has and continues to decelerate globalization significantly, reversing the trend the world has witnessed over the past few decades. As a result, companies may opt to onshore or nearshore more of their operations, creating pressures on maintaining healthy margins, with higher costs and a large-scale reorientation of supply chains pushing an overall inflationary effect in the economy.[10]

$156 billion

**While private investment in large greenfield infrastructure projects remained resilient at $156 billion in 2020, it represented only 0.2% of global gross domestic product (GDP), far less than the 5% required to close the infrastructure gap.**

## Financing city projects to drive societal change and a transformative recovery

In our increasingly urbanized world, cities are central to community development and are the main providers of community support. They are also the “sandboxes” of projects to come and should pave the way for transformative recovery. The Urban 20 (U20) group has noted that “Cities are enabled by decades-in-development abilities to share best practices, engage local communities, and advocate for their needs … Nations must make use of these capacities to expedite recovery in cities and urban areas.”[11]

As they contemplate investments during the recovery, many cities are in fact focusing on changes that will have transformative impacts, such as improving resilience, addressing climate change, increasing inclusivity and enabling digital urban infrastructure.

**Resilience** is essential in all infrastructure sectors, and the pandemic raised the profile of its importance; for example, by highlighting vulnerabilities in the social infrastructure sector and particularly in healthcare facilities (medical and ancillary infrastructure), education (schools, universities and student accommodation) and housing. Among sectors, social infrastructure has seen the greatest decline in private investment over the past 10 years, with its share of total private investment in infrastructure declining from 11% in 2010 to 3% in 2020.[12] The imperative in terms of **climate change** and related resilience will also require better management of projects, particularly those relating to energy and water, in a responsible way.

Increasingly, governments are held accountable for **inclusion** by societal movements centred on race, gender and income inequalities. These groups advocate for and address the ways in which some people (including disabled persons) have been excluded and have experienced inequalities in the urban environment. Infrastructure should reflect the needs of these vulnerable people to ensure they have equal access and are more integrated into our economies, which will benefit all.[13]

We design tomorrow's infrastructure today, and we need to make it digitally enabled**.** Digital adoption in infrastructure has been slow, but Infratech[14] (infrastructure technology) can be an enabler, offering an opportunity to:

– Enhance the economic benefits that infrastructure delivers

– Reduce infrastructure life-cycle cost

– Reduce the global infrastructure gap

– Support Quality Infrastructure Investment principles[15]

– Help integrate principles of environmental, social and governance (ESG)[16]

– Access financial tools to move towards a cashless economy

– Enhance infrastructure efficiency

The ability to harness cities' influence to produce transformative change depends on enabling investment at the municipal level. This requires rethinking traditional approaches to infrastructure finance and bringing more innovation into funding and financing.

## Now is the right time to develop sustainable, diversified sources of financing for cities

Cities currently have a unique window to innovate in their funding and financing and mobilize private investment. For instance, São Paulo has generated revenue of over $1 billion from private developers through land value capture mechanisms whereby developers wanting to build beyond the basic floor-to-area ratio (FAR) are required to pay compensation to the city.[17]

The data also shows that private investors are ready to invest in infrastructure, particularly to achieve sustainable development goals, provided an investment is well structured.[18] Private investment (both debt and equity) can help close the investment gap and facilitate private-sector innovation in infrastructure, whether through technological or other innovation, faster implementation or reduced funding costs. These factors improve the commercial viability of projects and lead to better value for money for governments.

The private investment being mobilized is also increasingly green, as investors look for investments with an ESG focus.[19] The green evolution is shifting the focus of private investment to how cities and infrastructure can be more liveable, sustainable and affordable. Institutions such as HSBC are providing green financing to facilitate economic development,[20] and initiatives such as the Gap Fund are connecting stakeholders to "scale up support to cities in identifying, preparing, and financing low-carbon, resilient urban infrastructure".[21] Local governments often face challenges in accessing financial markets.[22] Collaboration with the private sector and other levels of government can help overcome this. For instance, Initiatives Chicago is currently implementing programmes to specifically promote sustainable investment (green regulatory incentives in the form of zoning and planning guidelines; collaboration with World Business Chicago works to encourage sustainable investment).

In fact, collaboration is one of the key themes in addressing the barriers to urban financing and investment, and this includes addressing the obstacles to multistakeholder collaboration laterally across the public and private sectors, among levels of government and between public-sector and other non-governmental actors (civil society, academia etc.).

Beyond the environmental focus, private investment also needs to attend to investments that give rise to widespread social gains by promoting diversity and inclusion, while being underpinned by good governance principles. This approach is important for cities looking to "build back better".

**" Collaboration is one of the key themes in addressing the barriers to urban financing and investment.**

## 1.2 Major barriers in urban financing and budgets

City leaders' key role is to: ensure the efficient allocation of available but scarce financial and other resources to promote sustainable economic growth; meet the challenges posed by accelerated urbanization; and achieve sustainable urban development. Historically, city governments have received part of their financing from national or state government transfers, and from multilateral development banks (MDBs), which provide public finance for infrastructure (as well as technical assistance and other grant-funded support). The split between national/regional and city funding varies between countries and depends on political and institutional arrangements, and on central governments' willingness to devolve revenue-raising powers and associated policy determination to cities. Cities have traditionally raised the balance of their requirements from the levying of taxes, fines and fees, from investment income or from debt financing in the form of loans from public and private-sector banks or international capital markets. However, for many local banks this poses a constraint on financing at long tenors (financial contracts with a long duration) as there may be a mismatch between the loan structure and the overall useful asset life cycle and cashflows.

Consequently, new and alternative sources of finance will be needed to complement traditional sources in building revenue towards addressing climate change. Rapid urbanization poses major challenges to city leaders in advanced and emerging economies. Unemployment, housing shortages, insufficient capacity in healthcare and education, traffic congestion and overcrowded public transport are all manifestations of the inability of cities' infrastructure to keep pace with demand. Much of the joblessness is concentrated in cities, resulting in burgeoning slums, rising income inequality and escalating crime rates. Two-thirds of the world's urban population have higher levels of income inequality as compared to four decades ago.[23] Rapid urbanization is also contributing to climate change. Cities produce 70% of the human-induced GHG emissions and consume two-thirds of the world's energy. In addition, all forms of public infrastructure are under pressure.

Estimates suggest that the deficit in investment for global infrastructure is growing, with the world facing a $15 trillion gap between projected investment and the amount needed to provide adequate global infrastructure by 2040,[24] making it difficult for cities to raise the finance required to meet the demand for urban infrastructure. Furthermore, in a recent survey of around 100 cities worldwide, the international centre LSE Cities found that 55% of municipalities identified a lack of public funding as a major barrier to sustainable urban growth, while 50% cited insufficient national support.[25] In addition, the survey carried out by the World Economic Forum in preparing this report identified that over 60% of cities cited a rise in financing costs and lack of sustainable sources in meeting the demands of their population.

Today, cities stand on the cusp of major transformation, which if managed well will lead to sustainable economic growth and prosperity for all. But if mismanaged, urbanization could result in economic stagnation, social decline and environmental damage. To deliver positive urbanization outcomes, cities need substantial investments while addressing the following key barriers in accessing the funding and financing for urban infrastructure and services projects.

## Lack of institutional capacity and expertise

Urban infrastructure and service projects are complex undertakings that require a wide range of skills at each phase of the urban infrastructure and service delivery life cycle: assessment, planning, pre-feasibility, detailed design, structuring, procurement, construction and operations and maintenance. Furthermore, city governments may lack the financial expertise to develop feasible and commercially viable urban infrastructure project pipelines, overcome regulatory obstacles, negotiate the requisite funding commitments and guarantees, run tender and procurement processes, and manage infrastructure projects effectively. The key challenges faced by cities include:

- Lack of project preparation, urban infrastructure planning and management capacity
- Failure to develop bankable urban infrastructure pipelines aligned with the country vision, and secure funding commitments and sufficient guarantees. In addition, a lack of understanding from institutions about what it means for the private sector to be investment-ready
- Weak implementation capacity, resulting in construction delays
- Regulatory obstacles and lack of clarity on city-level revenues and fiscal space
- Failure to provide consistent standards, opaque procurement laws and fragmented approaches to investment procurement processes related to infrastructure projects. It is common for each individual project to have its own tailored bidding process. Such fragmented approaches potentially discourage investment as it is more time- and resource-consuming for investors to assess projects

## Limited engagement with the private sector

Urban infrastructure and services have traditionally been provided by the public sector out of current fiscal resources. However, this seldom meets the total investment required to deliver full value. Working in isolation and with a business-as-usual approach is no longer viable, necessitating the need for private-sector investment. In practice, private investors are unable to commit and partner with city governments, owing to multiple factors:

- Absence of an investment-ready project pipeline
- Ineffective national public-private cooperation policies and incentives
- Limited legal mechanisms to safeguard private-sector investments
- Inflexibility in procurement processes to support innovation and new business models
- Lack of political will and commitment
- Improper engagement with the private sector during the project preparation and design phase

## Inaccessibility of international finance

**“ The involvement of international financial institutions as a lender or investor in urban infrastructure and service projects can bring a project extremely valuable credibility.**

Cities also have recourse to international capital markets to raise financing. Traditionally, bank financing tends to predominate early in a city's financial development because of its simplicity and relatively low transaction costs, and international financing options (global financial institutions or multinational development banks) come much later. The involvement of international financial institutions as a lender or investor in urban infrastructure and service projects can bring a project extremely valuable credibility, fostering investor confidence and helping the project managers attract other investors, including from the private sector. However, access to international capital markets is impeded by:

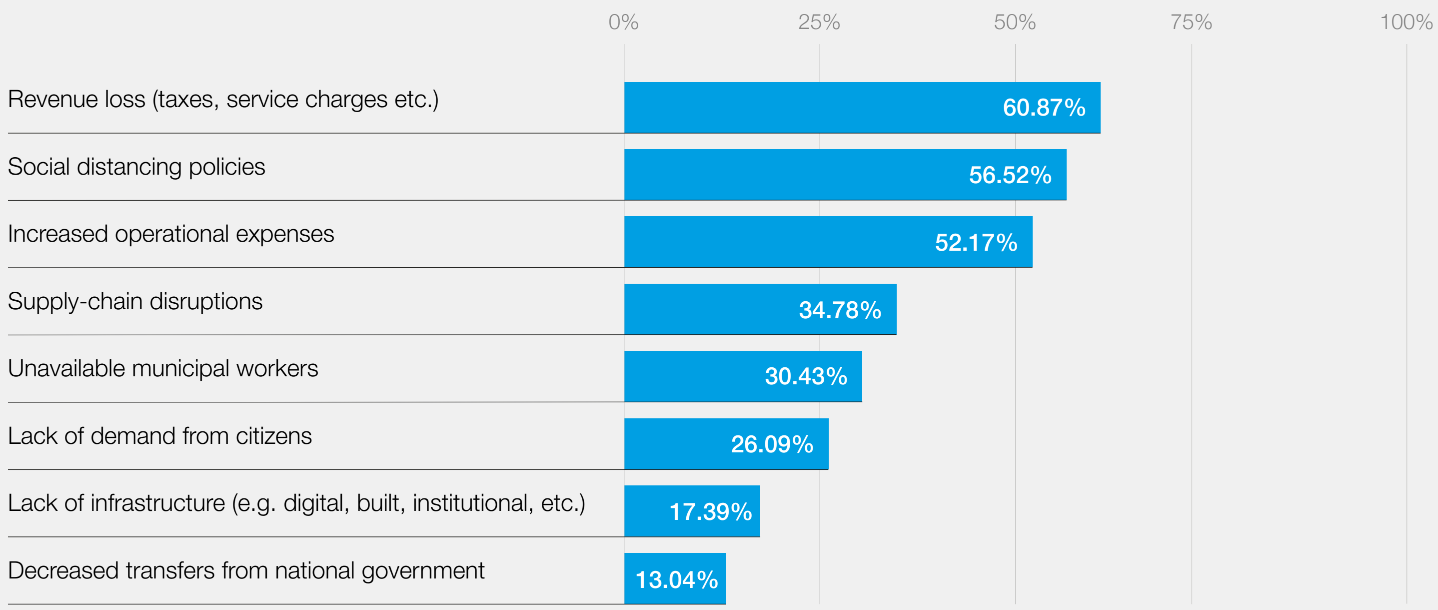
- High dependency on sovereign national guarantees and limits
- Forex and exchange-rate risk, along with lack of mitigation instruments[26]
- Low municipal creditworthiness
- Politicized national and subnational decision-making – term limits of politicians shift the focus towards initiatives and programmes with shorter life cycles than most infrastructure projects

## No funding for emergency situations

The frequency of 21st-century natural and man-made shocks has increased and is having greater socioeconomic impact. Cities are at the epicentre of such outbreaks and the recent pandemic has proved the vulnerability of cities owing to their high population density and concentration of economic activities. COVID-19 has compounded the financial pressures at all levels of government and has increased the funding gap between cities' limited financial resources and their many needs due to rising urbanization.

FIGURE 2 **Challenges cities face in delivering services and the budgetary impact of COVID-19**

### Challenges faced by cities delivering essential urban services




### Impact of COVID-19 on city's capital budget

12.12%

48.48%

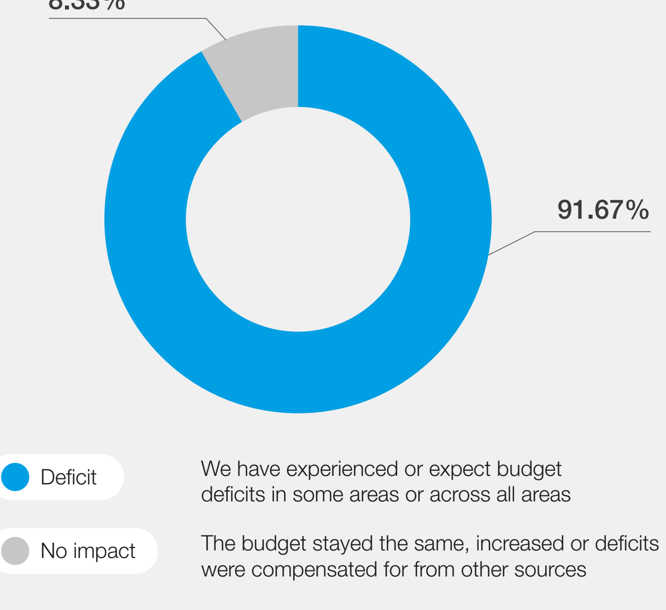
39.39%

Some projects have been or will be paused or postponed

The budget has been adjusted to focus on recovery projects

The capital budget has not been affected

### Impact of COVID-19 on city's operating budget




Deficit — We have experienced or expect budget deficits in some areas or across all areas

No impact — The budget stayed the same, increased or deficits were compensated for from other sources

**Source:** Survey done by the Urban 20 group (under G20) in 2020

Studies, including a survey done by the Urban 20 group (under G20) in 2020, reveal cities have suffered revenue losses, as the severe decline in economic activity has reduced revenues from property taxes, tolls and other urban service charges.[27] At the same time, operational budgets have been hit by the unprecedented need to finance various responses to the pandemic, such as confinement arrangements in public and commercial spaces. These revenue declines and increased outlays have led to greater deficits in the capital and operational budgets of most cities surveyed. In some cities, subsidies allocated to infrastructure investments have yielded a low return on investment.

Cities have suffered due to limited resiliency planning for natural and man-made shocks and need to overcome the following challenges to enable system-led thinking and resources for future emergency events:

– Limited local government revenues and intergovernmental grants for emergency situations

– Minimal insurance coverage to safeguard against emergency situations and external shocks

– Inadequate access to national government stimulus packages for response and recovery

## 1.3 What is the cities financing gap opportunity?

Times of crisis always represent an opportunity to pause, reflect and challenge the status quo. Infrastructure development has been in crisis for many years, but only now are we seeing significant momentum to address this challenge head-on in order to build infrastructure that better meets the future needs of people and communities.

We should use this momentum to first redefine our infrastructure needs. The infrastructure of the future should be significantly different from that of the past. As discussed in section 1.1, this includes infrastructure that makes cities more liveable, sustainable, resilient and affordable.

Focusing on these higher and longer-term objectives is also a means of enabling and attracting investment. With both citizens and investors focused on ESG outcomes, cities cannot overlook holistic issues. At the same time, other more prosaic drivers such as regulatory frameworks, planning and permitting are also part of the enabling environment for investment. Cities that consider and use these drivers are better able to take advantage of innovations in funding and financing and attract more private investment.

## Redefining our infrastructure needs to envisage the infrastructure of the future

❝ The public and private sectors must work together to envisage better future infrastructure and create the right enabling environment to realize those visions.

Infrastructure is the essential foundation for economic and social activities, yet it is not a given that assets will be built and managed in a way that serves society equitably or safeguards the environment. As the 38 cities who endorsed the statement from the C40 Cities Global Mayors COVID-19 Recovery Task Force have said: "[We] are clear that our ambition should not be a return to 'normal' – our goal is to build a better, more sustainable, more resilient and fairer society out of the recovery from the COVID-19 crisis."[28] Their statement reflects how the COVID-19 crisis has galvanized action for a better future – including better future infrastructure.

The force of the current momentum for change may be due in part to long-standing recognition of vulnerabilities in our urban environments and infrastructure. Just prior to the pandemic, the Global Infrastructure Hub surveyed a cross-section of infrastructure stakeholders to collect their views on the trends that will shape the future of infrastructure. The results identified 25 megatrends, including urbanization and population growth, the rise of digitalization, an increase in natural disasters, more resilient infrastructure and increasing climate change. Although some of these trends related to new issues, others concerned issues that have been recognized for many years, and thematically the survey results showed that "while many of us know that change is coming, we are collectively underprepared".[29]

Now, we have the opportunity to prepare, and to envisage the infrastructure of the future. Several good frameworks exist for governments and cities to draw upon as they plan their future infrastructure projects. More important than the specific framework chosen is the willingness to fully commit to achieving higher objectives such as improving resilience, addressing climate change and ensuring inclusivity and equitable benefits to all members of society.

Also critical is collaborative effort across government and the private sector. Many of the issues facing cities and infrastructure can be addressed only through the public and private sectors working together. A timely example is the changing workforce skills mix across infrastructure sectors, as Industry 4.0 reshapes industrial value chains and processes. Grappling with labour market dislocations and upskilling workforces are increasingly urgent agendas for both government and industry. Another example is the ability to capture and appropriately use and draw on data, which has an essential role in infrastructure.

Ultimately, the public and private sectors must work together to envisage better future infrastructure and create the right enabling environment to realize those visions.

## Creating an enabling environment for investment in the infrastructure of the future

Infrastructure-dedicated stimulus packages are being announced worldwide. Alongside this, governments can redesign policy to enhance the enabling environment for infrastructure and better support private-sector investment in infrastructure. Eight drivers[30] can help cities evaluate their enabling environment for investment:

1. **Governance** – managing a project transparently, ensuring a dispute-resolution mechanism is in place and alignment between central and local government planning units (top-down and bottom-up) to maximize synergies, enable capability transfer and provide capacity support
2. **Regulatory frameworks** – the ability of the government to formulate and implement sound regulations to promote infrastructure investment and delivery
3. **Permits** – reliability and transparency of land administration processes
4. **Planning** – transparent public infrastructure project pipelines to enable industry to prepare for projects and citizens to have a say
5. **Procurement** – transparency of procurement processes
6. **Activity** – a strong recent track record of investment in infrastructure by governments and the private sector, relative to GDP
7. **Funding capacity** – credit rating of the government to borrow money for infrastructure spending
8. **Financial markets** – overall depth of the local financial market to sustain relatively large financial transactions and to extend long-term finance

Cities can learn from each other and from their top-performing counterparts in each of these areas.

TABLE 1 **Eight drivers for cities evaluating their investment environment**

| | Key challenges for different investors |
|---|---|
| **Governance** | – Lack of political will and commitment to invest in infrastructure projects<br>– Politicized national and subnational decision-making (term limits of politicians shift the focus towards initiatives and programmes with shorter life cycles than most infrastructure projects) |
| **Regulatory frameworks** | – Ineffective public-private cooperation policies and incentives<br>– Limited legal mechanisms to balance risk of investing parties<br>– Regulatory obstacles and lack of clarity on city-level revenues and fiscal space |
| **Permits** | – Difficulty in obtaining permits as the process is not streamlined and requires the applicant to deal with multiple government agencies to obtain them |
| **Planning** | – Lack of clarity and consistency between national, regional and local government policies<br>– Complex, inflexible and time-consuming planning-approval process |
| **Procurement** | – Inflexibility in procurement regulations and processes to support innovation and new business models<br>– Failure to provide consistent standards for investment procurement processes related to infrastructure projects. It is common for each individual project to have its own tailored bidding process. Such fragmented approaches potentially discourage investment as it is more time- and resource-consuming for investors to assess projects |
| **Activity** | – Inadequate engagement with the private sector during project preparation and design |
| **Funding capacity** | – Low municipal creditworthiness<br>– Failure to secure funding commitments and sufficient guarantees |
| **Financial markets** | – High dependency on sovereign national guarantees and limits<br>– Weak local capital markets<br>– Access to long-term finance, resulting in a financing mismatch |

## Rethinking the financing and funding of city projects

As will be discussed in further detail in the next section, cities must consider new ways of accessing funding and financing. Although the overarching principle is the need for "well-prepared, well-structured projects with adequate risk allocation procured through a competitive process",[31] governments have the opportunity to innovate more than they do – and cities are at the forefront of such innovation.

As part of its work towards the G20 Roadmap to Infrastructure as an Asset Class,[32] the Global Infrastructure Hub recently evaluated innovative funding and financing mechanisms with the goal of helping governments "understand their options, identify frictions in their markets, and access solutions to improve the quality and quantity of projects attractive to private-sector investors".[33] The resulting framework outlines the risk, revenue and financing levers governments can operate to maximize their investments and serves as a diagnostic tool for governments to devise effective strategies for structuring the funding and financing of their projects.

FIGURE 3 **Risk, revenue and financing levers to maximize investments**

**Private participation programme objectives**

Brownfield asset monetization

Greenfield asset development

Asset performance enhancement

Programme toolbox

**Project types**
- Public projects
- Privatization
- PPP
- Leases
- Management contracts
- Private-to-public deals

**Revenue levers**
- Tax-based
- User-based
- Ancillary revenue
- Value capture
- Data

**Risk management levers**
- Profit-sharing agreement
- Political/ performance guarantees
- Volume guarantees
- Financial guarantees
- Hedging
- Insurance

**Primary financing levers**

Direct
- Commercial bank loans
- MDB/ECA/ NDB debt
- Government debt
- Direct equity operating
- Direct equity institutional
- Government equity

Listed
- Securitized debt
- Project bonds
- Government and GO bonds
- Listed security investments
- Listed trust investments
- Listed infrastructure funds

**Secondary financing levers**

Indirect
- MDB/NDB debt fund
- Private debt fund
- Private equity investments
- Asset platform investments

**Providers**
- Public capital providers
- Commercial banks
- MDBs/ECAs
- Debt providers
- Construction/ concession
- Financial equity

Programme foundation

PPP legislation and sector regulation

Project preparation capabilities

Project and contract management capabilities

**Source:** Global Infrastructure Hub, Innovative Funding & Financing Framework

Durban City in South Africa is a good example of a city reimagining its own-source revenue potential. During the COVID-19 pandemic, the city suffered declining revenues and began to think of ways to solve this issue. It uses satellite night-light data and existing quarterly data estimates to estimate GDP data at the ward level.[34] The satellite imagery enables it to identify land use and the number of businesses in an area, which helps in estimating the potential revenues an area could generate. The city is able to compare this with actual revenue the area provides in terms of land rates and business permits to assess the gap. Initial findings show increased opportunity for the municipality to generate revenue by recovering dues and fining potential violators. This technology is now being deployed in other cities within South Africa, as the insights gathered from the pilot in Durban show promising results.

2

# Financing sustainable and resilient urban development

Emerging sources of finance to fund the greening of our cities include innovative market-based solutions that blend public money with private-sector investment.

## 2.1 Sources of urban finance

Achieving a sustainable and resilient future will hinge on cities' ability to tap into a range of diverse sources to mobilize funding and raise the financing needed to pay for urban infrastructure and service delivery investments, including implementation, operations and maintenance.

These major funding sources include own-source revenues/domestic resource mobilization at the local level and fiscal transfers from national and/or subnational governments, plus, to a lesser extent, grants from philanthropy and international finance institutions. Own-source revenues and intergovernmental fiscal transfers, if managed well, are critical sources of sustainable funding.

In addition to mobilizing funding from domestic resources, cities need to draw on diversified financing sources, including borrowing from capital markets or on market-rate terms (itself a function of municipal creditworthiness and depth of capital markets) and/or advantageous terms and conditions from international finance institutions, as well as attracting private-sector investments through concessions and PPPs, among other things.

Yet cities are faced with multifaceted urban resilience challenges, including natural hazards and health crises, and, in a context of increasingly restricted resources, they are hard-pressed to identify innovative urban financing sources to enable them to pay for climate-proofing infrastructure investments.

Local taxes and fees have the potential to become a significant revenue source for cities. In practice, however, most cities in the developing world are far from generating sufficient revenues. The revenues from property taxes – a key provider of own-source revenues – account for less than 0.3% of GDP in low-income developing countries, whereas developed countries raise about 2% on average.[35] In particular, the per-capita property tax proceeds in major cities in Africa and South Asia are mostly less than $100, which is considerably lower than in other developed countries including the UK and USA ($600–1,600).[36] This gap in property tax revenue generation is mainly due to insufficient land ownership records, a lack of clear property rights and ineffective collection and enforcement mechanisms.

**0.3%**

**The revenues from property taxes – a key provider of own-source revenues – account for less than 0.3% of GDP in low-income developing countries, whereas developed countries raise about 2% on average.**

CASE STUDY 1

## Enhancing city revenue by improving property taxation in Hargeisa, Somaliland

Hargeisa is one of the fastest-growing cities in Somaliland, and this puts pressure on its already overburdened municipal services. The city faced a significant challenge in financing its infrastructure and services due to lack of revenue, institutional weaknesses, missing or ambiguous legislation and poor municipal performance. Embryonic, costly and ineffective tax administration processes were employed. All collected revenues were directed to covering recurrent expenditure, and development investments were not on the agenda, which resulted in huge shortage of municipal finance. Because Somaliland is not internationally recognized as a country, therefore aid, debt and foreign direct investment are limited. Therefore, property tax becomes an extremely important revenue source.

With the technical assistance of the United Nations, including the UN Human Settlements Programme (UN-Habitat) and the UN Development Programme (UNDP), the city of Hargeisa explored sustainable local taxation and reformed tax administration. Required regulatory frameworks were established along with georeferenced property registration and the allocation of addresses to streets without them. More than 90,000 properties were mapped, which represented 60% of total properties in Hargeisa. An automated financial management system was set up and linked to a property database system to generate bills. This system is also used to manage expenditures, record all financial transactions and provide real-time finance reports. Digitalization of tax collection was also introduced. With a digitized revenue administration system, the city council can produce comprehensive budgets.

The property tax reform was driven by significant improvements in the city council's registration, accounting and billing processes. Property taxes were an insignificant revenue stream until property registration was introduced and data uploaded into the automated system.

Property taxes in Hargeisa increased from $384,115 in 2008 to close to $1.5 million in 2018. This represents one-fifth to one-third of the city's total revenue and it continues to grow, putting Hargeisa's fiscal autonomy in better shape. Compared to other cities in the region, Hargeisa's increase in municipal revenue post-intervention is the most substantial (Figure 4).

The city revenue enhancement project supported by UN-Habitat and UNDP presents a viable means of unlocking the requisite resources to fund delivery of services and investment in infrastructure. It has also largely contributed to reducing the city's dependency on national government transfers and external funding.

Hargeisa's improved regulatory environment and automation of its revenue systems is a viable option to modernize tax administration and enhance own-source revenues in general. These solutions have created confidence and public trust in the tax collection process, minimizing fraud and other types of financial malpractice. The city is now planning to introduce a mobile money payment system to streamline tax administration and enhance accountability and transparency to further improve tax collection and increase city revenue.

**Source:** Prepared based on information from UNDP, UN-Habitat, ILO, UNICEF, UNCDF (2008–2017), United Nations Joint Programme on Local Governance and Decentralized Service Delivery (UN-JPLG)

FIGURE 4 **Significant increase of own-source revenue in Hargeisa after intervention**



**Source:** Aims Information Management System

Consequently, many cities in the developing world tend to rely more on intergovernmental fiscal transfers to fund their urban infrastructure and services. While the importance of such transfers varies greatly between countries and even between cities within a given country, on average 60% of subnational expenditure in developing and transition economies is from intergovernmental fiscal transfers.[37] In fact, grants from central governments account for 65% of total municipal revenues in Brazil, 83% in Botswana and 91% in Uganda.[38] However, heavy reliance on transfers creates potential fiscal risks because fiscal transfer systems in many developing countries are lacking in transparency, are unpredictable and subject to political influence. Indeed, transfer systems in several countries have a bias against cities in favour of rural areas or against primary cities. In Nepal, for example, the largest cities with the greatest infrastructure needs receive lower levels of federal grant on a per-capita basis than smaller and less urbanized municipalities.[39]

Private finance is also extremely limited in cities in the developing world. The reasons for such limited private investment and finance include the important gap in city creditworthiness, a weak regulatory environment governing PPPs, underdeveloped financial markets, a lack of adequate information to support risk-taking and limited institutional capacity to prepare "shovel-ready" projects (i.e. projects where construction is ready to commence) to absorb available financing resources, among many others. In fact, of the 500 largest cities in developing and emerging economies with which the World Bank works, only 90 cities (or 18%) are rated creditworthy in international or domestic markets, and barely 6% (32 cities) have a track record of successful issuance of a municipal bond.[40]

CASE STUDY 2

## Municipal bonds financing urban infrastructure in local governments in the United States

Municipal bonds are the most important form of financing urban infrastructure in the United States at the city (or metropolitan) level. These bonds are funded through general tax revenue or the anticipated income resulting from projects. Figure 6 shows that municipal bonds are much more important than central government grant funding in the US.

Once the local government legislature and/or constituents approve a bond issuance, local authorities structure the bond for sale either through competitive or negotiated mechanisms. The bonds are sold to underwriters – security firms or investment banks that act as brokers in the municipal bonds market.

In most cases, municipal bonds are safe investments. They had lower default rates than corporate bonds between 1970 and 2012 (Table 1). This is the case, for instance, with municipal bond issuers of BAA credit rating estimated at 0.3% default rate, which is lower than corporate issuers of AAA rating. Even during the subprime crisis period of 2007–2009, when counties and other municipal bond issuers had a hard time making ends meet, the municipal bond defaults remained at low levels. From 2010–2013 the municipal bonds default rate was 0.4%.

TABLE 2 **Cumulative default rates by initial Moody's Rating, corporate issuers and municipal bond issuers (1970–2012)**

| | 1 year | | 3 years | | 10 years | |
|---|---|---|---|---|---|---|
| Rating/ issuer | Corporate issuers | Municipal bond issuers | Corporate issuers | Municipal bond issuers | Corporate issuers | Municipal bond issuers |
| Aaa | 0.00% | 0.00% | 0.01% | 0.00% | 0.50% | 0.00% |
| Aa | 0.02% | 0.00% | 0.14% | 0.00% | 0.92% | 0.01% |
| A | 0.06% | 0.00% | 0.41% | 0.01% | 2.48% | 0.05% |
| Baa | 0.18% | 0.01% | 0.90% | 0.06% | 4.74% | 0.30% |
| Ba | 1.13% | 0.18% | 5.44% | 0.92% | 19.72% | 2.85% |
| B | 4.13% | 2.21% | 15.29% | 6.14% | 42.00% | 13.88% |
| Caa-C | 16.85% | 5.77% | 37.21% | 9.67% | 69.93% | 12.66% |

**Source:** Moody's Investors Service (2013), "US Municipal Bond Defaults and Recoveries, 1970–2012"

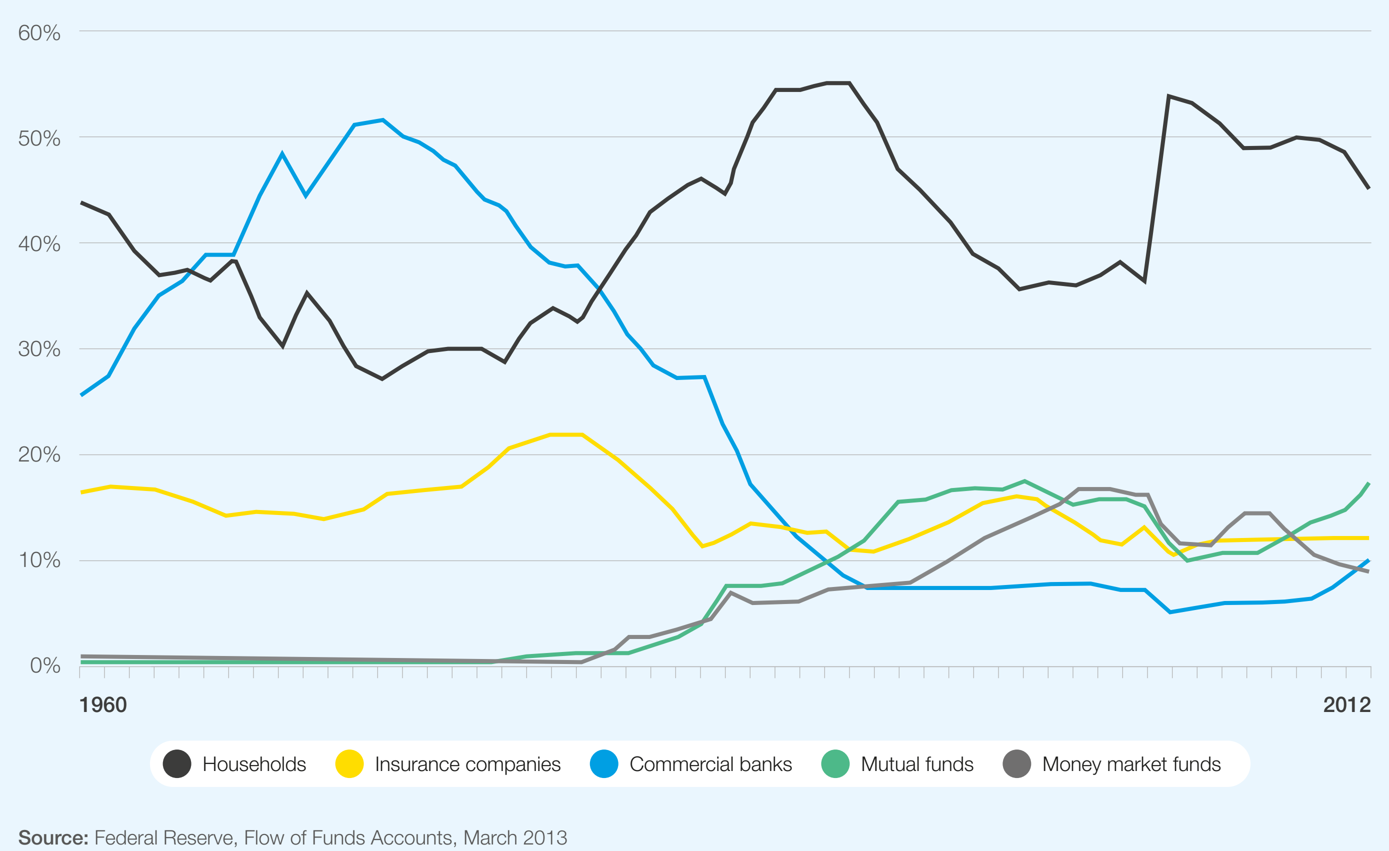
**Case study 2 continued**

Before the mid-1980s, the largest investors in tax-exempt municipal bonds were financial institutions, primarily commercial banks and property and casualty insurance companies. These last companies held 15–20% of outstanding municipal bonds. While commercial banks sharply reduced their share from almost 55% in 1980 to about 25% by 1990, households increased their investment in bonds from about 25% in 1980 to over 60% in 1990. By 2012, households were the most important investors in municipal bonds (Figure 5).

More than 50,000 local governments and authorities in the United States have used tax-exempt bonds to invest in three-quarters of US infrastructure, representing more than $3 trillion. Bonds have become the most important financial instruments for urban infrastructure development in the US.

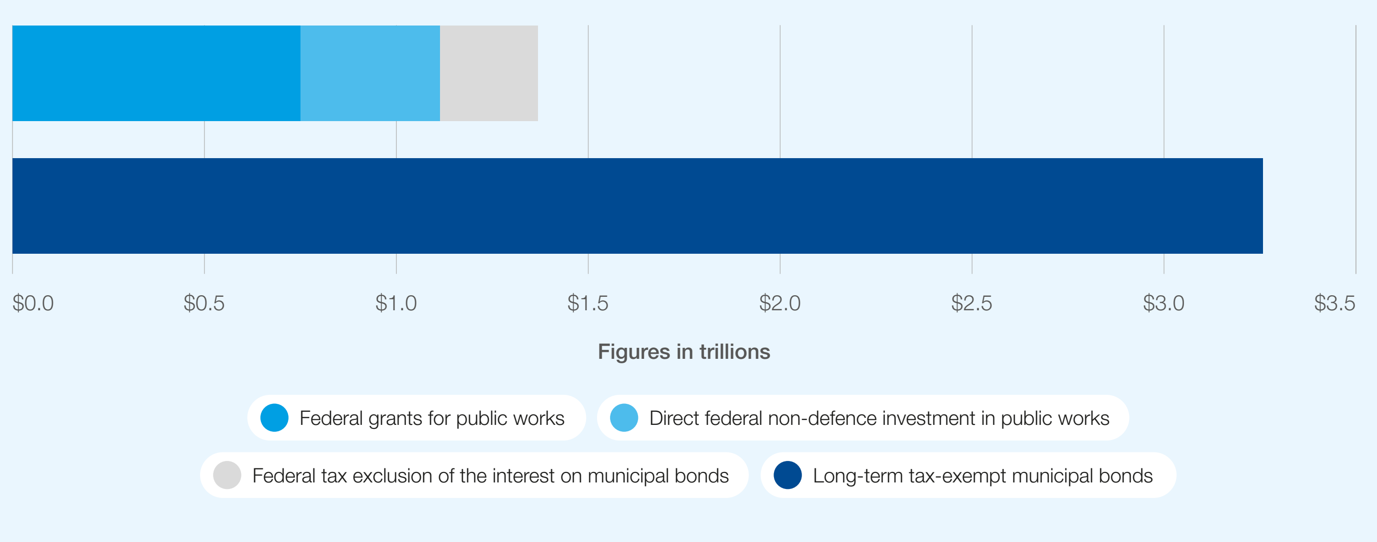
**Sources:** National Association of Counties (2013), "Municipal Bonds Build America"; Fortune, P. (1991), "The Municipal Bond Market", New England Economics Review; Community Capital Management, "A Case for Sustainable Fixed Income Investments"; Council for Development Finance Agencies, "Built by Bonds"

FIGURE 5 **Key investors of municipal bonds, share of municipal bonds outstanding (1960–2012)**




**Source:** Federal Reserve, Flow of Funds Accounts, March 2013

FIGURE 6 **Municipal bonds are the most important finance instruments for local governments in the US**




**Source:** National Association of Counties (2013), "Municipal Bonds Build America"

In this vein, most municipal lending in the developing world is done by international finance institutions (IFIs), typically at a sovereign level. There are, however, some efforts to move towards lending at the municipal level, in the process playing an important role in building capacity and signalling to the market. This is particularly important as it can help mobilize local lending, thereby mitigating forex risk. Similarly, in 2019, the municipal PPP transaction value in emerging economies and developing countries amounted to $9 billion, which is less than 10% of the total annual PPP value in these countries.[41]

Drawing on grant funding or concessional finance from multilateral and bilateral IFIs, philanthropic sources and the European Investment Bank and the Green Climate Fund (GCF) is a helpful way to ease the fiscal and financial burdens on cities. Grants and concessional loans play an important role in supporting cities in low-income countries to invest in sustainable urban development and climate-resilient infrastructure, especially if accompanied by incentives for needed reforms to improve access to finance and overcome market barriers (e.g. investing in property rights or reforming property tax rates). Concessional finance can take the form of direct investments in urban infrastructure projects or be blended with other sources of finance.[42] More recently, some donors, such as the European Commission and the Swedish Government (via SIDA, Sweden's Government Development Agency), have offered risk-mitigation instruments such as guarantees to reduce the cost of borrowing and to crowd in more private finance. Grants from philanthropic foundations have been increasing over time, reaching $8.2 billion in 2019.[43] Nevertheless, global philanthropic financing remains small at around 5% of total official development assistance (ODA) and highly concentrated in few sectors, such as health and agriculture.[44 45]

The infrastructure investment need at the global level from 2015–2030 was estimated at $4.5–5.4 trillion per annum, of which 70% would be in urban areas, including a premium of roughly $0.5–1.1 trillion to make such infrastructure climate-resilient.[46] While this is a rough estimate and there is no disaggregated data by country or city, an important proportion of the infrastructure deficit is expected to be in developing countries, where rapid urbanization is under way and existing cities lack infrastructure.[47] Relative to the available sources, the financing gap for resilient and sustainable urban infrastructure is very large.

To grapple with this shortfall in urban financing, it is increasingly important for cities to focus on how to mobilize untapped/insufficiently exploited sources. The obvious starting point is to go back to basics by investing in sound municipal finances and reforming/strengthening intergovernmental fiscal transfer systems. In turn, this requires clear land and property rights management through systematic land registration, strengthening property valuation and developing/updating property registries. In addition, cities need to ensure that municipally owned utilities and companies have the appropriate institutional structures and regulatory oversight to operate to the fullest extent possible on a self-sustaining basis. This means trying to ensure good cost-recovery levels while keeping within users' affordability constraints.

**$8.2 billion**

**Grants from philanthropic foundations have been increasing over time, reaching $8.2 billion in 2019.[43] Nevertheless, global philanthropic financing remains small at around 5% of total official development assistance (ODA) and highly concentrated in few sectors, such as health and agriculture.[44 45]**

**While investing in new construction attracts more publicity, appropriate asset management helps cities to extend the economic lifetime of critical municipal assets, along with significantly lowering O&M costs.**

The improvement of municipal asset management systems, including governance and operation and maintenance (O&M), is one of the key measures needed to make additional funding sources available, especially given that O&M costs often exceed actual capital investment costs.[48] In this regard, cities also need to strengthen their asset management practices. While investing in new construction attracts more publicity, appropriate asset management, including regular maintenance, helps cities to extend the economic lifetime of critical municipal assets, along with significantly lowering O&M costs. Asset management also helps improve cities' ability to generate revenue from the sale, lease and disposition of strategic assets in line with a well-conceived strategy. Land assets, for example, can be looked at more strategically to evaluate appropriate land use across agencies, with more emphasis on overall land portfolio management than on individual land use.

At the same time, the importance of capacity-building for cities to better attract private financing and mobilize innovative funding sources cannot be understated. Such capacity-building efforts help local governments enhance city creditworthiness, strengthen regulatory frameworks for PPPs (especially contract enforcement and dispute resolution) and improve the use of innovative urban financing sources such as land-based instruments (e.g. transfer of development rights, land readjustment or land pooling) and policy-based tools (e.g. inclusionary zoning or linkage, impact fees).

Obviously, such measures cannot happen in a vacuum; instead, they require national governments to have in place enabling regulatory frameworks and the fiscal and regulatory measures necessary to incentivize cities to effectively attract and regulate private investments and prudently access capital markets. Regulating private investments can prevent excessive borrowing, which further risks squeezing regional finances and pressuring local governments to scramble for other income sources to fund investments and support the economy – as has been observed in the case of land assets in China.[49] Another viable option is to explore a joint venture with the private sector rather than selling off infrastructure assets.

## 2.2 Emerging sources of urban finance

Conventional sources of municipal finance are insufficient to address the multifaceted challenges that cities face, including infrastructure shortages and climate change. For instance, parking fees collected by cities tend to be incongruent with broader green economy goals that intend to reduce vehicle use (particularly of those powered by fossil fuels). This will directly affect own-source revenues. The present generation of electric cars, although affordable to run in the long term, have high upfront costs that will require subsidies from national and/or subnational government, further affecting revenues. In addition, many cities across the world deferred some collections of rent/property tax during the COVID-19 pandemic, which affected overall collections.

Thus, it is timely to discuss how to incentivize public and private investment at scale through new partnerships and creative financing solutions that are relatively untested in developing countries or limited to certain sectors. Such solutions include, but are not limited to: market-based instruments (e.g. land-value capture, tax-increment financing); policy-based tools (e.g. exactions and impact fees); and blended finance. Philanthropy is also playing an increasingly important role.

## Market-based solutions

A variety of land-value capture (LVC) tools has been used to bridge financing gaps in urban infrastructure and services over the past few decades, yet LVC has much untapped potential in developing countries. LVC is a financing approach that captures from private owners a part of the windfall increases in land and property value caused by public action – whether re-zoning/densification or infrastructure investment – to defray part of the associated public investment cost. The LVC increment is monetized by accessing capital markets ex ante to borrow against the expected future increase in property tax collection or by collecting ex post a betterment levy from property owners who benefited from public action.

The city of Barcelona has used LVC effectively through the 22@Barcelona project changing the land-use designation of 115 privately owned blocks from industrial to services. Through the project, the city council, in exchange for a planning permit, demanded that 30% of the total developed area of land or its monetary equivalent be transferred to the city, and also imposed a development levy per square metre of land developed. All transfers and levies were donated to a publicly owned company and were reinvested in full in district development, the construction of social housing units and knowledge-based infrastructures (such as incubators, telecommunications, student accommodation and research and development centres) and green spaces. The development levy was used to fund the delivery of the Special Infrastructure Plan, for the holistic infrastructure development of the area towards a knowledge-based economy.[50]

LVC tools can therefore be an attractive tool for both the private sector and the city government – for developers, who have flexibility on the timing of projects depending on market conditions; for the city government, which can use the funds raised for potential follow-on investments in resilient, climate-smart and sustainable urban development.

CASE STUDY 3

### Água Espraiada joint urban operation, São Paulo City, Brazil

Given its budgetary limitations, São Paulo City[51] has been experimenting with alternative approaches to financing public infrastructure. The objective was to attract investments to the city to facilitate infrastructure and property developments through leveraging public-private-partnerships (PPPs).

Land-value capture (LVC) was introduced in Brazil's 1988 Constitution and was enforced through the Urban Development Act or City Statute in 2001. São Paulo City introduced the first official LVC mechanism in its 2002 strategic master plan and its 2004 land use law on the federal city statute. This approach allowed Sao Paulo City to generate revenue through new building rights charges on developers.

The LVC mechanism in São Paulo is implemented using Certificates of Additional Construction Potential (CEPACs) – a type of charge issued by the city government and sold in the stock market through auctions. Under the federal city statute enacted in 2001, CEPACs became a common financing mechanism for projects and initiatives that improve social and environmental conditions in a defined urban area, which are implemented collaboratively by public officials, private landowners and investors. The advantage of these projects is that for a defined area, they allow for special zoning and building rules such as the sale of higher floor-to-area ratios (FARs) in the purchasing of CEPACs.

CEPACs allow for land value capture through changes in zoning (to change land use or increase FARs) that increase the profitability for developers. Value capture from increased land value or profits provide the revenue needed for the city to implement public projects. With government interventions, the value of land tends to rise and, by issuing new CEPACs, the city may not only capture land value increases from changes in zoning but also partially recover upfront investments in the land. Through this, CEPACs depend on the initial cost of land as well as the projected value of the land parcel based on the sale of FARs. Revenue from the sale of CEPACs is allocated to a specific Urban Operation fund that can be invested only in specific projects in a defined area chosen by the city government based on prospective analysis that determines where property development is most needed. Owners of CEPACs can either convert the charge into additional building rights in the project area or resell the CEPACs through the stock market. CEPACs are regulated and monitored by the Brazilian Securities and Exchange Commission in order to ensure transparency in sales transactions as well as the development of infrastructure in project areas.

The Água Espraiada Urban Operation project used LVC to finance solutions to the informal housing and drainage problems in the area, which measures nearly 1,400 hectares (some 3,500 acres). The city government generated a revenue of BRL2.9 billion (equivalent to $806 million) through the sale of the 3.4 million CEPACs in auctions between 2004 and 2012, which was used to finance the construction of two cable-stayed bridges connecting the two banks of the Pinheiros River and six social housing buildings and other public projects such as parks, public schools and healthcare centres. Since the LVC mechanism was introduced in São Paulo, city revenues have increased annually. It has generated a net revenue of more than $1 billion from two of the city's 13 urban operations.

**Source:** Sorensen, A. and J. Okata (2020), *Megacities, Urban Form, Governance, and Sustainability*, London: Springer; Lincoln Institute of Land Policy (2020), "Urban Land Value Capture in Sao Paulo, Addis Ababa, and Hyderabad, Differing Interpretations, Equity Impacts and Enabling Conditions", Working Paper WP20AM1

Another way to raise funds through accessing capital markets is the issuance of tax-increment financing (TIF) bonds in which tax revenue from the future appreciation of property (once improvements have encouraged economic development) is used to attract private finance. TIF has been used extensively in US cities to finance necessary infrastructure and services. Medellín, Colombia, is also exploring TIF as a tool to fund approximately 21–55% of the total investment costs of a municipal transport infrastructure project.

However, this type of market-based instrument can be appropriate only if certain necessary conditions are met. An existing municipal bond market and a functional property tax system should exist, and the planned development should be sufficiently large to result in a substantial increase in property values. Since such conditions are rarely found in many cities in developing countries, it is important to enhance the creditworthiness of cities and introduce the necessary enabling regulatory frameworks to unlock the potential of LVC tools.

## Policy-based tools

Cities can also raise funds through their regulatory power to impose fees or taxes with which to offset infrastructure investments. Betterment levies are an ex-post LVC scheme that allow cities to recoup part of their investment in urban infrastructure by imposing a fee on owners of properties that have gained in value because of public infrastructure investments.

In Colombia, betterment levies have played a key role in financing public investments over the past few decades. In Bogotá, administration of the betterment levy is the responsibility of the Urban Development Institute (Instituto de Desarrollo Urbano, or IDU), which is also in charge of identifying the main road construction projects to be financed by the levy. The criteria used to establish the level of benefit from the levy include proximity and accessibility to the project—which affords greater use of the road and thus increases property values and the economic conditions of the property in the area.[52] Bogotá and eight other smaller cities have raised about $2 billion in public investment funds through this levy.

Taxpayers have generally accepted collection of the levy, with relatively lower default rates than other taxes such as property tax. This success in Colombia verifies the feasibility of using the levy as a tool to raise significant municipal revenues, and the initiative can be replicated in other developing countries.

Many cities also impose tools such as exactions, impact fees, linkage and inclusionary zoning programmes that require private developers to contribute (in land, cash or in kind) towards the cost of additional investment in infrastructure and services caused by the impact of such development and/or contribute towards other policy objectives such as affordable housing provision. Impact fees have been used in many cities across the globe. In Guatemala, an instrument called *Impacto Vial* has raised more than $20 million from private developers since 2006, covering almost all of the costs of road construction projects. The rationale is that private developers should be responsible for incremental traffic impacts associated with their large development projects, which otherwise are borne by the public. In the case of the city of San Francisco, the city government collected impact fees of more than $4 million from 2013 to 2016, funding transport needs, bicycle infrastructure, pedestrian capital improvements, affordable housing and more.

**“ In Guatemala, an instrument called *Impacto Vial* has raised more than $20 million from private developers since 2006, covering almost all of the costs of road construction projects.**

## Blended finance

Blended finance is an approach that blends scarce public concessional funds with private-sector commercial capital to realize innovative, high-impact infrastructure projects that do not yet have a commercial track record.[53] Since it was recognized in the 2015 Addis Ababa Action Agenda,[54] blended finance has grown rapidly to leverage scarce public funds to unlock private capital to cities in developing countries. There are various approaches towards blended finance including guarantees (against default risk), insurance and other forms of credit enhancement intended to de-risk private investment in urban infrastructure – especially to tackle issues of perceived risk due to the lack of track record or to culminate in a different risk-sharing profile.

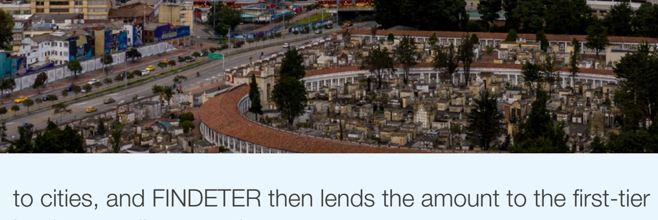
These instruments are used at national and local level depending on city government or other public authorities' creditworthiness and specific financing needs, market conditions, risk appetite and so on. BNG Bank in the Netherlands is a semi-publicly owned bank that blends state finances (50%) with those from municipalities and provinces (50%). Since it was established in 1914, the bank has specialized in public-sector financing to address social challenges and maximize social impact through a range of instruments for municipalities, housing associations, healthcare institutions and public utilities.

Blended finance can potentially act as a catalyst for follow-on investments in sustainable urban infrastructure and can contribute to the development of well-functioning local financial markets in the long term. Blended finance approaches have been used widely in larger pieces of infrastructure such as airports, ports, bridges, tunnels and canals, in public transport and, to a lesser extent, in housing and property operations.

Recently, in the context of scaling up climate action and post-COVID-19 recovery plans, the notion of debt swaps (e.g. the creditor and debtor agree to swap a "debt for nature" – in other words, they agree to cancel the debt and conserve nature) has been discussed, with application to both emerging markets (especially debt-distressed small states) and cities alike, to raise additional capital for low-carbon, climate-smart investments.

CASE STUDY 4

### Blended finance for city governments via second-tier lenders in Colombia – World Bank



Following decentralization in Colombia during the 1980s, many municipalities faced challenges in accessing finance for development and urban infrastructure projects. Cities had little or no previous experience in borrowing long-term debt. Commercial lenders were not used to lending to municipal governments.

In 1989, Financiera de Desarrollo Territorial (FINDETER) was established as a government corporation to develop solutions to address long-term infrastructure financing challenges by cities.

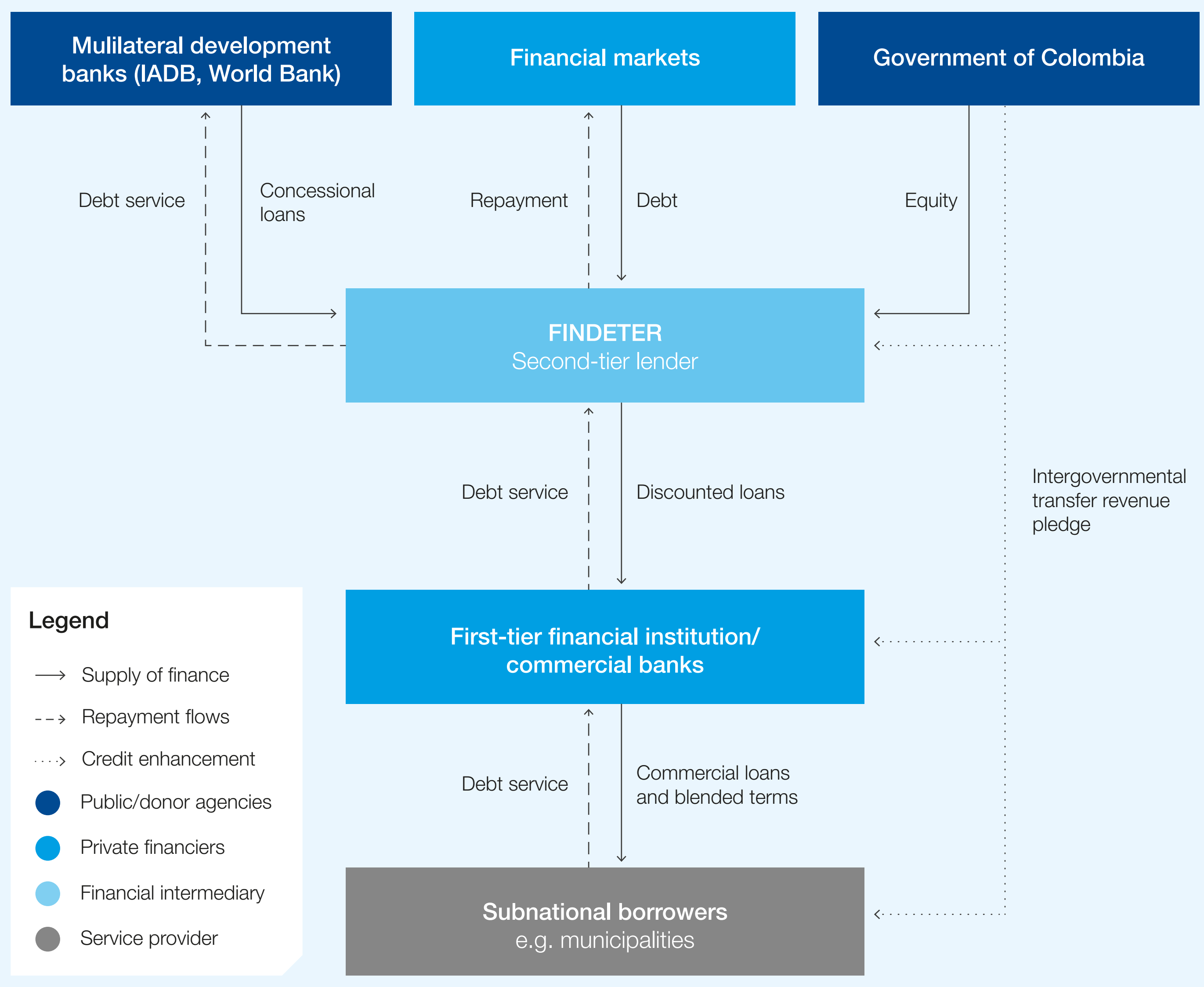
City governments apply for loans through commercial banks; FINDETER appraises the local government's proposal in parallel with the commercial bank. The first-tier lender provides loans to cities, and FINDETER then lends the amount to the first-tier lender at a discounted rate.

Figure 7 shows how the institutional blending process operates via FINDETER. The commercial bank is responsible for repaying the rediscounted loan to FINDETER, independently from the reimbursement by the local borrowers to commercial banks. The commercial bank takes on 100% of the credit risk in repayment to FINDETER.

FINDETER offers maturities of up to 15 years, which is three times longer than normal loans on the market. The strong credit rating and intercept provision help FINDETER lend for longer tenors at better rates.

**Case study 4 continued**

FIGURE 7 **How the institutional blending process operates via FINDETER**
Institutional blending via second-tier lender FINDETER, Colombia: financial structure




**Source:** World Bank, 2016

Experience demonstrates the viability of this approach for funding local authorities and delivering impact. In Colombia, the approach was successful in developing local credit markets. FINDETER, as a second-tier lending institution, was established to provide commercial banks with lending capital to offer to municipal borrowers at discounted rates. By 2014, water and sanitation investments represented an estimated 28% of FINDETER's total disbursements.

This system creates a good argument to convince commercial banks to lend directly to municipalities with their own resources. The successful blending of concessionary and commercial financing at the national level has fuelled municipal government participation in local credit markets, thereby contributing to long-term market development through the funding of important capital investments.

Second-tier lenders can play an important facilitation role in municipal credit market development. FINDETER has embraced several roles to respond to market requirements, including by rediscounting loans, but also by providing technical assistance on project design and feasibility to local governments. This has been critical for small- and medium-size municipalities that do not have sufficient support or prior experience with borrowing. The fact that the credit risk is borne fully by the first-tier lenders allows for greater flexibility and expanded investment potential for FINDETER.

**Source:** Adapted from World Bank (2016), "Institutional Blending via Second-Tier Lender FINDETER in Colombia"; International Water Association (2017), "Maximising Financing for Achieving the SDG Ambition on Water"

## Philanthropy and leadership groups

**Philanthropic contributions can serve as an important catalyst to leverage investment in sustainable and resilient urban development.**

Lastly, philanthropic finance has been playing an increasingly important role in addressing pressing development challenges across the globe. The Bill and Melinda Gates Foundation, the largest global philanthropic body, granted more than $4 billion in 2018, mainly to improve healthcare systems in developing countries. Philanthropic contributions can serve as an important catalyst to leverage investment in sustainable and resilient urban development. Through its 100 Resilient Cities Network, the Rockefeller Foundation invested $160 million to strengthen and mainstream resilience in cities, leveraging in the process more than $655 million from various public, private and bilateral/multilateral financing sources to implement resilience projects. The Rockefeller Foundation has now transitioned its funding to the Atlantic Council and the 100 Resilient Cities Initiative has become the Resilient Cities Network, which has found funders in addition to the Rockefeller Foundation.

Some other global philanthropic bodies actively sourcing funds to make cities more liveable and sustainable include Bloomberg Philanthropies (for environment, public health, government innovation and education), Thomson Reuters Foundation (for fair and sustainable business models, combating forced labour, protecting data and digital rights), the Hilton Foundation (for homelessness and social housing), the Ford Foundation (for addressing social inequalities), the Open Society Foundations (for social inclusion, equality, human rights) and the Bezos Earth Fund (for climate change and environmental justice).

Many of these philanthropic bodies fund capacity-building support in the form of organizing convenings or trainings for city officials in a relevant field of focus. Grants and donations from such bodies can help take visionary risks and make targeted spends (in some cases in a faster and more effective manner) without having to work through bureaucracy. Large contributions can also be used to work together with cities for underfunded public goods that have generated public excitement.

City leadership groups and alliances such as the C40 Cities Climate Leadership Group, United Cities and Local Governments (UCLG), the Global Covenant of Mayors and the Urban 20 are also playing a pivotal role in developing finance facilities for city mayors to help address urban challenges from economic, social and environmental standpoints.

# 2.3 New financing mechanisms and alternative revenue-generating instruments

While increased urbanization brings financial benefits such as increased tax and property revenues, large upfront investment is required; the amount needed to equip emerging economies with the infrastructure to support burgeoning populations is estimated at $1.3 trillion per annum.[55] Underinvestment, however, also comes at a cost. Poorly planned and managed cities generally underperform in terms of competitiveness, contribute less to the national GDP and have lower employment rates, while also delivering a decreased quality of life, especially for those from vulnerable communities that offer limited opportunities for future generations.

For many governments and local authorities, the major barrier to the implementation of sustainable urbanization projects is being able to access finance. This is particularly acute among emerging economies, with only 4% of the 500 largest cities in developing countries being deemed creditworthy in international financial markets, rising to 20% in local markets.[56] And yet, with research showing that timely investment in infrastructure has a powerful multiplier effect of between 1.5 to 2.7 on both direct and indirect GDP,[57] the potential returns are substantial.

So, what are the options? With structured finance being out of reach for many, governments need to look at diversified sources. One such route is to strategically benefit from the numerous high-value urban assets that cities invariably hold, such as large swathes of undeveloped land and plots ripe for redevelopment. By unlocking the investment and local economic development potential of these assets, significant value can be realized and, ultimately, sustainable urbanization achieved.

Public-private collaborations are a prime route by which governments can meet increased housing and infrastructure demands, regardless of budgetary constraints. By engaging in transparent strategic partnerships, public- and private-sector expertise can be brought together to develop and manage high-quality projects efficiently, rapidly and in line with a country's strategic vision. Such models of cooperation, where the authority contributes the land or asset for redevelopment, and private entities fund the development and its construction, can help to drive sustainable economic growth through job creation. An investment generates direct jobs, while additional jobs are created through the supply chain. In turn, a developer's expenditure on suppliers and employee wages generates future spending throughout the economy.

CASE STUDY 5

## PPP for waste-to-energy complex in Belgrade, Serbia

Belgrade generates 510,000 tonnes of communal waste per year but its 40-year-old city landfill in Vinča was filled with untreated waste that polluted the air and groundwater and caused fires at the site.

Concerned about the very large environmental impact of its growing waste problem, the International Finance Corporation (IFC) was engaged by Belgrade authorities to design a PPP for a partner to build and operate a new waste treatment and disposal complex, including a waste-to-energy plant to produce electricity and heat for the city.

The project is being carried out through a public partnership with Beo Cista Energija (BCE), a consortium formed by French utility company Suez, the Japanese conglomerate Itochu and a pan-European equity group, the Marguerite Fund, founded especially for the purpose.

Through a competitive procurement process and by bundling two opportunities together, landfill remediation and the development of revenue-generating greenfield assets, the city of Belgrade was able to offer a commercially viable design-build-finance-operate-transfer (DBFTOT) contract to five prequalified bidders. A total of €280 million ($286 million) in funding loans were received from IFC, the European Bank for Reconstruction and Development (EBRD) and the Development Bank of Austria (OeEB).

The loans provided included a combination of A loans totalling €72.25 million (where the IFC keeps a share of the loan for its own account) and B loans totalling €35 million (in which the remaining shares of the loan are sold to private lenders). Further financing from the OeEB amounted to €30 million in addition to two concessional loans worth €20 million through the IFC from the Canada-IFC Blended Climate Finance Program and €21 million obtained by the EBRD from the Green Energy Special Fund.

The project, Serbia's first large-scale PPP, will lead to €373 million in private investment, introduce EU standards in waste management to the country and reduce pollution and GHG emissions. The facility will process up to 340,000 tonnes of municipal waste each year, or 66% of Belgrade's total waste. It will operate as a combined heat and power (CHP) facility, powering approximately 30,000 households and delivering steam to the municipal district heating system. The recycling unit will treat 200,000 tonnes of construction and demolition waste. The project will enable Belgrade to reduce its GHG emissions by 250,000 tonnes of CO2 per year, notably by curbing methane emissions from uncontrolled dumping.

**Source:** IFC, "PPP Sector Factsheet (CITIES)"; Global Infrastructure Hub, "Belgrade Waste-to-Energy PPP"

PPPs also offer the potential to deliver essential facilities and services to citizens. For every dollar of project value, developers typically invest the same dollar amount in both hard and soft infrastructure.[58] For government and local authorities, planned residential or mixed-use communities not only help alleviate the housing shortfall but also, where the community is sizeable, include the provision of healthcare, educational and entertainment facilities that benefit both residents and the wider community. Enhanced transport links can also be part of the PPP delivery scope.

With urban areas being responsible for nearly 80% of the world's energy consumption and more than 60% of GHG emissions,[59] the impact of unchecked urban growth on both the environment and the health of populations will be severe if proper measures are not put in place. Thus, it is critical for new urban developments to be designed with sustainability in mind; for governments, ensuring that developers adhere to national sustainability goals as an integral part of any PPP is imperative. The model has been particularly successful in street lighting projects and the implementation of security and safety systems in cities among others.

For PPPs to deliver on successful and sustainable urban infrastructure, it is important that both cities and the private sector engage in building mutual trust and integrity through a pragmatic approach and engage all affected stakeholders early in the collaboration process. A previous report prepared by the World Economic Forum's Shaping the Future of Urban Development and Services initiative, *Harnessing Public-Private Cooperation to Deliver the New Urban Agenda*, brings forth these considerations for all involved stakeholders.[60]

For smaller, midsized cities, establishing their own credibility in the global marketplace will be the primary challenge. Subsequently, having projects of a sufficient size to attract substantive investments would be the next goal.

Additionally, instruments that look beyond financial returns to address important issues such as sustainability and social equity have also widely emerged. Some of these include the innovative value capture/developer revenue approach; for example, CEPAC bonds (Brazil), crowdfunding (US), direct institutional investing in projects through joint ventures (Netherlands), multi-city pooled funding agencies (Scandinavian countries) and socially responsible sources such as green bonds, social impact bonds, carbon tax/cap-and-trade and so on.[61]

An evolving model for funding small-city projects is crowdfunding, which combines aspects of crowdsourcing with microfinancing by connecting entrepreneurs and novel investors through internet-based intermediaries. This type of funding has proven useful for small projects (such as cycle lanes or public parks) or strategic funding (such as fund matching to meet grant requirements and help mature initiatives reach fruition). Some cities have also deployed "mini" bonds to target small-scale investors. In Denver, an online crowdsourcing platform successfully issued $12 million worth of mini-bonds that sold out within an hour.[62]

Another approach that has proven successful in Scandinavia and the Netherlands is a multi-city pooled approach through local government funding agencies. The entity is co-owned by member cities and local governments (sometimes with a minority stake held by the national government), pooling the borrowing needs of the local authorities and issuing bonds in capital markets with the proceeds used for lending. The agency helps to create local markets and reduce financing costs, transaction costs and also risk exposure as a result of increased diversification.

More recently, credit-rating agencies have started incorporating ESG principles into their methodologies in the mainstream financing mechanisms available to cities. Governance factors are generally embedded in broader financial management assessments; environmental considerations include potential climate-related risks, while social considerations cover issues of diversity, equity and inclusion – among others. Instruments such as green bonds, carbon tax, cap-and-trade and social impact bonds are examples that specifically address ESG issues, with the proceeds generally being used to fund clean energy, transport and social infrastructure projects.

Rapid urbanization may be inevitable, but it does not have to herald an impending crisis. By using some of these innovative financing mechanisms, it is possible to deliver high-quality, targeted urban solutions designed to help stimulate long-term socioeconomic growth. In doing so, not only can we build liveable cities in which people enjoy an improved quality of life, we can also lay the foundations for robust economic prosperity and the promise of a better future for generations to come.

80%

**With urban areas being responsible for nearly 80% of the world's energy consumption and more than 60% of GHG emissions,[59] the impact of unchecked urban growth on both the environment and the health of populations will be severe if proper measures are not put in place.**

# 3 Impact of COVID-19 on city budgets and investments

Reduced local taxation and income combined with increased emergency expenditure on medical and social care meant the COVID-19 pandemic had a devastating effect on the finances of many cities.

# 3.1 Impact on public finance and the shift in priorities

According to the International Monetary Fund (IMF), in 2010 the world's GDP increased by 5.4% from the previous year; fast forward a decade and the number was -3.3% due to the pandemic-induced lockdowns in nearly every nation, a phenomenon that reflected in part the devastating effects of COVID-19 on urban areas, the source of 80% of global GDP.[63] Some 90% of cases of the disease were in cities.[64] While international institutions and individual national governments responded with large aid programmes, these were directed either to sovereignties in the case of international lending entities or to households and businesses in the case of national governments.

In all situations, the fiscal stress on national governments and subnational governments, especially cities, resulted in a lack of direct aid. In fact, as of February 2021, only 14% of the funding provided by the G20 plus 10 other major economies has focused directly on cities.[65] This is despite 59% of all public investment coming from G20 countries alone.[66] The absence of direct aid to supplement stretched budgets has not only put intense fiscal stress on cities but also forced many to adjust their priorities significantly. In the immediate future, the IMF has a relatively optimistic outlook for global GDP. It anticipates a 6% increase in 2021 and 4.4% in 2022.

-3.3%

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## City budgets and finances

More than half a million subnational governments exist worldwide, with the majority being part of unitary systems where power and associated financial policy is concentrated in the national government, while the remainder are in federal arrangements experiencing varying degrees of decentralization.[67] All, however, are strained by the increased expenses and decreasing revenues[68] caused by the COVID-19 pandemic. A recent survey determined that on average subnational governments would likely experience a 5% increase in expenses and a 10% decrease in revenues.[69] However, averages hide the extremes. For example, Rio de Janeiro's revenues declined to 2010 levels.[70]

Increased expenses include health and sanitation (e.g. PPE, increased cleaning as well as installing new ventilation systems in public facilities and transport, and in some cases ramping up hospitals and emergency facilities), social support (e.g. emergency funds, food and medicine for vulnerable populations, investment in digital infrastructure for remote learning, housing homeless people) and public communication and lockdown enforcement.

While national governments, also under fiscal stress, are not providing extra funding to subnational governments to cover the increased costs, a matter discussed later, the pandemic has affected a number of revenue streams and returns on investment. Income, payroll taxes and sales taxes, fees, concessions and property transfer taxes are experiencing significant drops, especially in cities that depend on tourism or business entertainment.[71] Subnational governments that operate certain public services such as mass transit have seen dramatic declines in revenue. For example, the IFC reports that in India, among 27 bus operators, 81% had no revenue during the 2020 lockdown.[72]

Finally, where subnational governments are under mandates to balance their budgets, as in the United States, the revenue losses are devastating – both today and tomorrow. As a result of dealing with managing the pandemic in all its dimensions – health, social, fiscal – they have had to reorder their priorities. For example, a UCLG/Metropolis/LSE Cities survey of 33 municipalities conducted in late 2020 revealed that respondents were deferring or defunding sports and culture, public works and infrastructure investments.[73]

## National/subnational finance

> During 2022, S&P forecasts a largely positive credit momentum, reflecting favourable financial conditions and powerful economic recovery, with fewer downgrades and low default rates from 2021.

One measure of the impact of COVID-19 on national and subnational finance is reflected in credit ratings – indicators of governments' ability to borrow and the associated costs of borrowing. Governments rely on borrowing and regularly refinance their debts. However, the stress on national and subnational budgets has led ratings agencies to re-evaluate their assessments, moving governments downwards in cases where the pandemic struck hard, particularly if they were already fiscally fragile. For example, between 1 March 2020 and 20 July 2020, S&P downgraded 19 sovereign governments, including those of Argentina, Nigeria and South Africa.[74] It based these rankings on the belief that the post-COVID-19 recovery in those countries would be slow and gradual.[75] While COVID-19's impact has waned, variants still pose a concern. During 2022, S&P forecasts a largely positive credit momentum, reflecting favourable financial conditions and powerful economic recovery, with fewer downgrades and low default rates from 2021. Countries remain vulnerable to inflationary pressures, rising global debt and exposure to climate risks that can affect credit quality.[76] A direct result of this may be reduced support and funding for subnational governments that depend on intergovernmental transfers.

For local and regional governments that do have ratings – S&P rates only 294 outside of the US – the situation is also fraught. Ratings organizations have taken a fresh look at a set of risk factors, especially the timing of the recovery. For example, S&P believes that large urban areas will take longer to revive because they have service-oriented economies that call for intensive but slow-to-return social interaction, tend to have large, costly social welfare programmes and subsidize hard-hit public services such as transport. To meet these obligations, S&P posits, these places will likely increase their borrowing, adding to the risk. In particular, S&P cites London, Paris, Rome, Madrid, Stockholm, Brussels, Moscow, Melbourne and Sydney as examples.[77]

# 3.2 Impact on city investments and the shift in priorities

## Private finance

COVID-19 has strained private infrastructure financing. A recent study conducted by the World Bank highlighted that private investment dropped by an unprecedented 56% from the same period in 2019.[78] Infrastructure investors were holding back at the onset of the pandemic owing to supply chain interruptions, travel and shipping restrictions, and other pandemic-related hurdles, which caused delays or cancellations in existing projects. Many projects were either halted or postponed due to lower demand or forced renegotiations. At the same time, governments shifted funding to the healthcare and social protection sectors, which was a wise decision. Private sponsors and financiers are understandably hesitant to participate in the infrastructure industry, as returns on investment frequently need long-term commitments. Credit quality, borrowers' liquidity and counterparties' financial soundness have all been questioned as a result of the pandemic's aftermath, particularly in developing nations.

However, PPPs have played and will continue to play a critical role in the recovery phase post-COVID-19. Private investors continue to show an interest and become more involved in this sector. Institutional investors can potentially be tapped for infrastructure projects in developing nations within an enabling investment environment; according to Swiss Re they are collectively estimated to have $80–85 trillion under management.[79]

In the years prior to the COVID-19 pandemic, private external financing for emerging markets and developing economies (EMDE) was stagnant, with a severe downturn in external private sources, including remittances, in 2020. For EMDEs, foreign direct investment (FDI) and remittances are important foreign sources of funding infrastructure.[80] Furthermore, institutional investors play a significant role in private infrastructure investment and, at the start of 2020, accounted for 28% of total investment. This is a significant development, given that their contribution has accounted for less than 1% of overall infrastructure investment in developing nations.

Private investments made through private equity funds are predominant and have a certain presence in emerging markets. Recently, other funds such as private debt and dedicated infrastructure funds have been growing, driven particularly by renewable energy. Renewable energy remains a major component of new energy-generation projects, accounting for 67% of the private sector's investment.[81] This indicates that private investments are mostly supportive of the decarbonization goal.

FDI, portfolio investments and, to a lesser extent, loans all contribute to the expansion of the economy's productive capacity. Returns on FDI and portfolio equity are usually high, and both developed and developing economies have seen a decline in FDI returns in recent years. FDI flows to emerging nations' economic infrastructure sectors are consistently low. Around 40% goes to power (electricity), gas and water, 30% to transportation/storage and 30% to information/communication. FDI interest in social infrastructure and other SDG areas has been minimal.[82]

The greatest opportunity for cities as a result of the pandemic is to rebuild better using the planned fiscal stimulus. This means: more climate-resilient infrastructure, and green initiatives such as increasing public spaces, creating vehicle-free streets, constructing bike lanes and converting buildings to multiple uses, enabling cities to do more with less. This cannot be accomplished only by the government – private investments along with other MDBs and philanthropic bodies all have to play a role.

67%

**Recently, other funds such as private debt and dedicated infrastructure funds have been growing, driven particularly by renewable energy. Renewable energy remains a major component of new energy-generation projects, accounting for 67% of the private sector's investment.**

## Multilateral development banks and development aid agencies

Confronted by the sudden changes brought about by the pandemic, international financial institutions – MDBs and development aid agencies – have reassessed or redefined their strategies, prioritizing actions that can help countries tackle the emergency and address the recovery. Although not exhaustive, the section below summarizes the most common thematic trends across institutions.

**Trends – the response to the COVID-19 pandemic:** For most MDBs and development aid agencies, the response to the pandemic included one or more of the following elements: (1) strengthening public health preparation and response capacity; (2) supporting and providing safety nets for poor and vulnerable populations; (3) assisting the private sector and small businesses; and (4) supporting fiscal and financial management.

At a city level, institutions have supported local governments by: (1) strengthening their municipal finances (the World Bank, Switzerland's State Secretariat for Economic Affairs [SECO]); (2) providing extraordinary or additional stabilization liquidity support (as is the case for the EBRD in Lviv, Ukraine, backed by a first loss guarantee or mechanism where third parties including the EU's European Fund for Sustainable Development (EFSD) would compensate the lender if the borrower defaults, or the Agence Française de Développement [AFD] in Barranquilla, Colombia); or (3) exceptionally financing recurrent and operational costs to enable the continuation of essential urban services (transport, water or waste management), including municipal companies.

MDBs such as the Inter-American Development Bank (IADB) and the World Bank have also intensified their support to the urban poor. Their efforts have targeted informal settlements and vulnerable areas – where the effects of confinement in overcrowded and under-served conditions have accentuated the divide among different socioeconomic segments. Examples include

**❝ Of the $3.2 trillion in infrastructure stimulus announced by G20 governments, a sizeable portion targets green and inclusive outcomes.**

IADB's programme for the integration of vulnerable neighbourhoods in Chile and the World Bank's Kenya Informal Settlement Improvement Project – as well as cash transfers targeting the highest-poverty urban neighbourhoods (e.g. under the World Bank's first National Social Safety Nets Project in Nigeria).

**Trends – priorities for recovery: a green and (socioeconomically) just recovery:** Responses to the COVID-19 pandemic among MDBs and bilateral agencies focus primarily on supporting "build back better" scenarios that strengthen urban environmental, social and economic conditions and address climate-change risks. Government stimulus reflects similar priorities. Of the $3.2 trillion in infrastructure stimulus announced by G20 governments, a sizeable portion targets green and inclusive outcomes. For example, 30% relates to the low-carbon transition, 20% relates to affordability and 16% to inclusive mobility.[83]

The recovery process provides an opportunity: (1) to intensify efforts aimed at promoting green and resilient cities (e.g. EBRD's Green Cities programme or the World Bank's City Resilience Program), while improving service delivery; and (2) to advance commitments reached under the Paris Agreement. Vertical integration of country-level nationally determined contributions requires the development of city decarbonization plans and adaptation strategies. Opportunities for low-carbon development are centred on: (1) planning principles that reduce the number and intensity of trips or promote better integration between mobility and city expansion/densification; (2) transport solutions that are non-motorized (e.g. bicycles), encourage mass public transport and electromobility; and (3) solutions that enable improved building efficiencies, both in new construction (e.g. circular economy) and building retrofits, as well as operation and maintenance (e.g. energy and water consumption). In parallel, emerging actions associated with city adaptation and increased resiliency have centred on: (1) adopting green-infrastructure, nature-based solutions and smart surfaces that help manage surface run-off, water infiltration and heat-island effects, among other things; (2) managing biodiversity and conservation in areas of expansion, but also exploring benefits within the built environment (e.g. green roofs) and public spaces (e.g. green corridors, metropolitan parks); and (3) strengthening capacities to prevent and manage disaster risks.

Beyond greening, in many cities in developing nations the recovery process also calls for measures that reduce sociospatial segregation and protect the poor and vulnerable. For this purpose, efforts are being oriented towards: (1) securing access to adequate housing, improving security of tenure and expanding options that enable housing improvement, or alternatives to home-ownership such as housing rental; (2) integrating low-income neighbourhoods into the fabric of the city, not just through the supply of infrastructure; and (3) strengthening health monitoring and management of institutional capacities at the local level, not only in the context of future pandemics but also in the face of other potential environmental and social detriments to health, such as air or water quality. [84]

A just recovery also calls for improved economic resilience and access to finance, with MDBs (e.g. IADB's Vision 2025) and bilateral agencies highlighting: (1) the role of digital transformation and productive development reforms as part of a pathway that can capture the opportunities brought about by the Fourth Industrial Revolution and enhance public- and private-sector performance; and (2) gender equality and inclusion, especially through fair employment.[85]

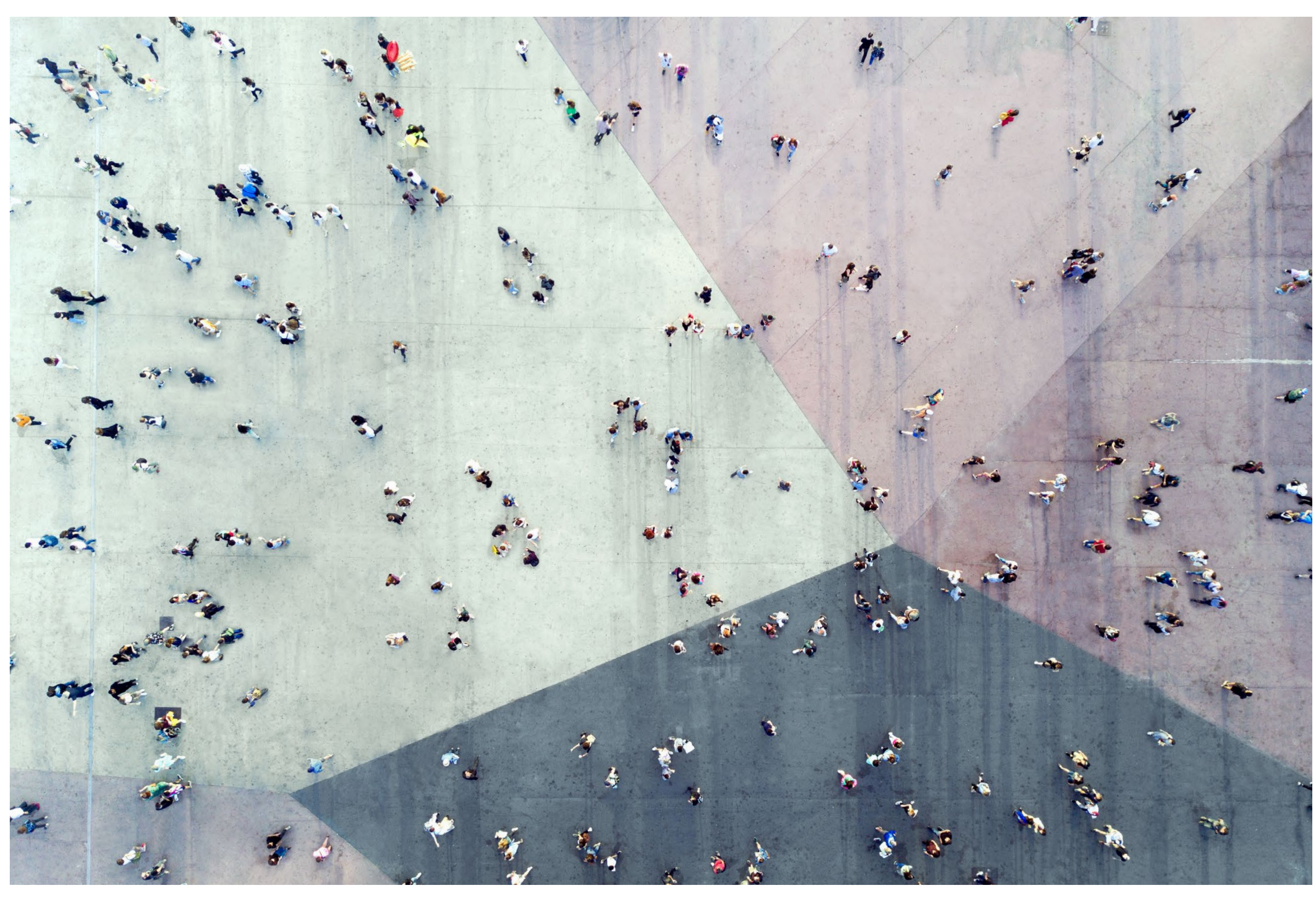
Financing new investments requires that cities not only strengthen their own resource mobilization – already discussed in earlier sections – but are also given access to new sources of subnational finance.

**Instruments:** Three structural trends have contributed to the rising demand for subnational finance: (1) decentralization in many countries has given sub-sovereigns increased spending responsibilities, although not always with the equivalent revenue-raising authority nor with an enabling regulatory framework governing the capacity to incur debt; (2) the unprecedented scale of urbanization in many developing countries requires large-scale infrastructure financing; and (3) the subnational debt market in developing countries has undergone a notable transformation, although it remains the exception rather than the rule that cities can access domestic or international capital markets (only 90 cities from the largest 500 cities with which the World Bank works are rated as creditworthy and, of these, only 32 have ever issued a municipal bond). Lastly, there is recognition, finally, that limiting and reversing the impacts of climate change requires clear collaboration and action by cities.

Most multilateral and bilateral agencies have been supporting subnational development finance for more than a decade, offering loans and credit enhancements directly to subnationals. This notably includes the EBRD and the European Investment Bank (EIB) – and to a lesser degree the IADB and the Asian Development Bank – but also the IFC through its Sub-national Finance Program, the Agence Française de Développement (AFD), the German investment and development bank kfW and the US Agency for International Development's (USAID) Credit Authority. For most MDBs, lending is based on cost-recovery principles, with commercial pricing applied as determined by a risk-management assessment (of the project and borrower); for bilateral agencies, preferential rates can also apply. The main challenges are:

1. **Normative and regulatory frameworks on subnational borrowing**. Countries such as Brazil, Indonesia and South Africa have well-established legal and regulatory systems that enable and assist subnational borrowing, within reasonable prudential limits. However, countries with such frameworks remain limited, particularly among emerging economies and, where available, borrowing from international institutions or in international currencies is further constrained.

2. **Credit ratings and repayment capacities**. Sub-sovereign transactions are subject to sound banking principles. Although they are a minority worldwide, a few municipalities (and/or their companies) present a solid financial standing, have sound operational efficiencies and tested/advanced internal structural reforms. Given the need for sound banking, sub-sovereign loans must be sized to reflect the city or its companies' ability to repay the loan, and often include reform-oriented covenants. For many municipalities, support for project design, advancing institutional reforms and strengthening financial capacities remain preconditions of borrowing. MDBs and bilateral agencies extensively support these through technical assistance.



CASE STUDY 6

## Meeting the challenge of sustainable urbanization in Indonesia: Indonesia Sustainable Urbanization Multi-Donor Trust Fund (IDSUN MDTF)

Indonesia is undergoing a major and rapid structural transformation, from a predominantly rural and agriculture-based economy to an urban and services-based economy. This movement to cities increases formal employment and productivity—such gains can strengthen Indonesia's ability to generate and share prosperity. So why is Indonesia not benefiting fully from urbanization? Many Indonesian cities suffer from "diseconomies of scale", such as severe traffic congestion, pollution and disaster risks, which lead to high costs. Challenges lie in the way of future growth and prosperity: a large urban infrastructure deficit, slow gains in labour productivity and rising inequality.

The government of Switzerland, through SECO, has provided funding to support the government of Indonesia in terms of technical assistance and capacity-building activities to develop a suite of financing, advisory, programme and policy solutions to meet the challenge of sustainable urbanization under the umbrella of the Indonesia Sustainable Urbanization Multi-Donor Trust Fund (IDSUN MDTF) at the World Bank, in collaboration with the government of Indonesia.

The IDSUN is designed to increase sustainable domestic solutions for urban infrastructure finance. It provides technical support to the Regional Infrastructure Development Fund (RIDF): 1) in delivering infrastructure financing solutions for subnational governments through PT Sarana Multi Infrastruktur (PT SMI); and 2) in improving the quality of subnational governments' technical, environmental, social and procurement documents.

The IDSUN also provides advisory solutions to improve urban management systems by delivering technical assistance to the cities of Semarang, Denpasar and Balikpapan. Through this programme, all three cities are in the process of operationalizing their municipal spatial data infrastructure for data-driven decision-making.[86] The programme also strengthens financial management and improves the creditworthiness of subnational governments (such as Central Java and West Java) towards issuance of the first municipal bond in Indonesia. It has also supported Surabaya with a shadow credit rating, or unofficial rating, and financial management assessments.

Overall, the programme has enabled Indonesian cities to meet their pressing urban infrastructure and management needs.

**Source:** Flyer issued by IDSUN MDTF (2019)

In an aspirational "graduation" path under which local governments will eventually source funds from national and international markets, most cities will initially access resources for urban development through sovereign-guaranteed loans or guarantees, which might be structured following one of the following models:

1. Investment lending to sectoral ministries responsible for the implementation of national programmes on urbanization, slum development and/or social infrastructure. Depending on the country, this might be further on-lent to local governments or transferred as a grant.

2. Direct lending with or without a sovereign guarantee to municipalities or their companies for financing city-level investments.

3. Financial support through financial intermediation institutions – as is the case for specialized entities (such as FINDETER in Colombia or the Tamil Nadu Urban Development Fund [TNUDF] in the Indian state of Tamil Nadu) or national development banks (such as the National Bank for Economic and Social Development [BNDES] or the Spanish not-for-profit banking foundation CAIXA, both in Brazil) – responsible for extending credit lines associated to urban services and infrastructure.

CASE STUDY 7

## Addressing the 'missing middle' of urban infrastructure finance in Indonesia, Manado (North Sulawesi), Banjarbaru (South Kalimantan) and Central Lombok (West Nusa Tenggara)

Cities and local governments in Indonesia are responsible for most of the infrastructure required for basic service delivery, under Indonesia's decentralized system. The infrastructure gap in Indonesia is large and is compounded by rapid urbanization in dozens of cities across the country. One of the key constraints has been the "missing middle" of infrastructure finance solutions at the subnational level for multi-year investments, i.e. between larger infrastructure financed by the central government and PPPs (e.g. toll roads) and smaller projects covered within a city's annual budget.

The Regional Infrastructure Development Fund (RIDF) is a domestic financial intermediary scheme implemented by PT SMI, a state-owned enterprise (SOE) of the Indonesian government with the mandate to stimulate infrastructure finance solutions. The RIDF is financed by loans from the World Bank and the Asian Infrastructure Investment Bank (AIIB), complemented by a project development facility and implementation support through grant funding from SECO. It has been instrumental in developing the institutional and regulatory framework for subnational borrowing in Indonesia, and has introduced a new source of financing for cities, where very few options existed before. The RIDF is also being used as part of the government's economic recovery efforts in response to COVID-19, offering a new lending facility to local governments for early response and recovery.

**Source:** PT SMI for Indonesia; World Bank (2017), "International Bank for Reconstruction and Development Project Appraisal Document on a Proposed Loan in the Amount of US$100 Million to the Republic of Indonesia for the Regional Infrastructure Development Fund Project", PAD1579; Asian Infrastructure Investment Bank (2017), "Project Document of the Asian Infrastructure Investment Bank: Republic of Indonesia Regional Infrastructure Development Fund Project", PD 0018-IDN

Lastly, beyond lending and guarantees, MDBs and bilateral agencies can also play an important role in assisting cities to raise finance for projects from capital markets through the issuance of bonds or via pool financing through risk mitigation instruments such as the MIGA.

## Philanthropic bodies

Over the past few decades, local, state and federal offices have been increasingly reliant on non-profits for service delivery. Governments have been able to pull back from sectors in which they had traditionally taken a lead. The relationship between government and philanthropy is evolving, with some philanthropic bodies influencing the shaping of local priorities through well-defined programmes or established partnerships. The increased involvement of philanthropy in local projects could be attributed to three causes:

1. **Rise of systems-change thinking:** communities are becoming more aware that endemic social challenges due to a lack of infrastructure will require contributions from multiple stakeholders to achieve tangible results.

2. **Local budget shortfalls:** ongoing budgetary crises at a local government level are an additional factor in the increased involvement of philanthropy in local projects. To address budgetary challenges, philanthropy contributes to cover the costs of service provision and infrastructure maintenance .

3. **Declining public trust:** in many countries, trust in governments to "do what is right" is declining. This limits the extent to which businesses and citizens respond to changes in public policies that can contribute to a sustainable economic recovery. Consequently, philanthropic entities step in to enable ecosystems to promote innovation and cultural movements in society to achieve equitable, thriving communities.[87]

The COVID-19 pandemic triggered several coordinated efforts by foundations, individuals, cities and towns in contributing towards relief. Over the past few years, an emerging trend has been the use of trust-based philanthropy as an official "project" and as a grant-making practice that allows for a more balanced working dynamic and more equitable funding practices. Additionally, such projects also create openings for engaging community voices in the decision-making process, a trend likely to continue to help build public trust and demonstrate inclusiveness on behalf of the philanthropy.

Philanthropies are also successfully using private-sector practices to generate more sustainable revenue. The private sector is increasingly incorporating social, environmental and philanthropic considerations into its decision-making and this has given rise to social entrepreneurs trying to develop hybrid models that can deliver social change. Philanthropic bodies can learn from cases in which this has worked while preserving fundamental philanthropic values and also taking advantage of business values from the private sector.[88]

## 3.3 Cities prioritize 'building back better' and achieving sustainable urbanization

To improve public support and achieve more sustainable growth, recovery policies need to emphasize other elements such as public goods, health, the protection of commons, resilience and climate change.

Cities are at the forefront of combating and recovering from the COVID-19 pandemic. "Building back better" would require a careful but balanced development of the social, economic and environmental dimensions, framed around the United Nations Sustainable Development Goals. This would lead to more inclusive, efficient, resilient and sustainable economies, contributing to the goal of leaving no one behind.

A central dimension of "building back better" is the need for a people-centred recovery that focuses on well-being, improves inclusiveness and reduces inequalities. To improve public support, recovery policies need to be measured on more than just economic growth and job creation.[89]

Emphasizing other elements such as public goods, health, the protection of commons, resilience and climate change are also important to achieve more sustainable growth. Cities cannot go back to business as usual. They need to take the opportunity to "build back better" based on four priority areas, underpinned by a real participatory process and new forms of consensus-building:

1. Public services and infrastructure
2. Urban planning and management
3. Urban economy and finance
4. Urban environment

### Public services and infrastructure

**Build a stronger and more equitable health system**

Many cities both in developing and developed countries lack full coverage of essential health services for their residents, with huge inequalities existing between different income groups. High costs for health impose financial hardships and create significant barriers to access, which contribute to different forms of social, cultural and political inequality. The number of hospital beds per capita averages 4.4 beds per 1,000 people for OECD and partner countries. More than half of these countries reported between three and eight beds per 1,000 people, with the lowest rates in Columbia, Costa Rica, Mexico, India and Indonesia.[90] In order to "build back better", healthcare services must be provided not as a commodity to those who cannot afford them but rather as a human right to which all people are entitled, without discrimination, particularly in a time of crises. Chronic underinvestment, lack of prioritization and misappropriation of funds in public health must be reversed and efforts redoubled to achieve universal health coverage in cities, closing inequalities in coverage based on income, gender, migration status or any other consideration.

**Manage public services**

In some cities, medical and smaller public service facilities are restricted in capacity and receive limited resources such as funding. In times of crises, larger public service facilities can be leveraged as temporary medical facilities to reduce patient loads in the city. Cities need to have an integrated plan for public services provision and management and take account of the possibilities for multi-use of some of these premises that remain unoccupied for most of the time with a strategy of continuous reconversion and adaptation. Being able to repurpose assets can help save resources for future exigencies.

**Strengthen local social protection systems**

The COVID-19 pandemic has exposed gross disparities due to the lack of social protection mechanisms that leave disadvantaged groups dangerously exposed to poverty, food insecurity and other shocks or vulnerabilities. However, the crisis also represents an opportunity to build on immediate response measures to reach all groups through social protection networks, quality public services and basic infrastructure, especially to protect vulnerable populations against livelihood risks, ensuring that everyone can enjoy the right to an adequate standard of living and care.

**Develop a sustainable, safe and affordable transport system**

Transport appears to be an important mechanism for reducing inequalities. Cities should work on the design of sustainable neighbourhoods, rethinking density and the proximity of services, and redesignate the provision of public and private facilities in nearby locations. They need to create new maps of walking areas with spaces for cycling, focusing on location, proximity and alternative modes of transport while ensuring passenger safety and the long-term viability of the public transport system. Integrated systems of transport – including bus, rail, metro, cycling and walking – can provide more options for mobility, and also make public transport more affordable and accessible for citizens and for the movement of goods.

## Urban planning and management

**Revisit urban planning and management**
The COVID-19 pandemic has led local authorities to revisit how cities should be planned and managed, to not only enhance their resilience to the effects of the pandemic but also make them more sustainable and productive in the long term, carefully planning urban forms, functions, density and space.

**Rethink zoning ordinance and building codes**
Cities should rethink zoning ordinance and building codes to allow for high residential densities, while promoting urban planning and designs that encourage better pedestrian dispersal and promote walkability. This would encourage the transition from car-oriented models with single land uses towards more pedestrian-oriented, mixed-use development and compact city plans, creating more flexible and adaptive urban forms that are better able to respond to future shocks.

**Provide adequate public space**
Public spaces are where people concentrate, mingle and interact in cities. Cities should plan adequate green public spaces that are resilient; they should tackle the uneven distribution of large public spaces and increase the number of small public spaces. COVID-19 has shown the value of well-designed, compact neighbourhood spaces that are accessible to all; during the pandemic, public spaces were used to receive patients and as temporary storage areas, highlighting their potential benefits in emergencies. Additionally, providing, conserving and enhancing green infrastructure proved its ability to deliver several advantages for residents, including improved health and well-being and reduced pollution levels.[91]

## Urban economy and finance

**Tackle the vulnerabilities of the urban economic system**
Cities need to tackle the key vulnerabilities of the urban economic system as highlighted by the COVID-19 pandemic – for instance, disruption of economic activities, high unemployment and shrinking government revenue. For decades, significant economic and social benefits have been derived from global interconnectedness, which also helped accelerate the spread of the pandemic. Global economic crises caused by focusing on short-term economic growth instead of building long-term resilience have also demonstrated the negative effects on society. Additionally, the vulnerabilities of global value chains have been exposed as several countries have been facing challenges in receiving essential goods and medical supplies. Finally, inequalities in societies have been uncovered through significant increases in unemployment in specific types of jobs.[92]

To tackle urban economic vulnerabilities, cities need to strengthen productivity, localize production value chains, adopt circular economy principles, consider the climate change implications and develop sustainable global, regional and urban connections. Central governments can decentralize more financial and economic functions and decisions to cities, providing cities with the necessary tools and authority to withstand economic shocks.

**Encourage investments in inclusive infrastructure and health services**
Cities should prioritize investments in inclusive infrastructure and health services. This includes investment in food systems, water and sanitation facilities and public healthcare for all, especially for vulnerable households, ensuring facilities are within close proximity, are self-contained and help create sustainable communities. Cities should promote community-based healthcare to augment traditional hospitals and make healthcare more accessible to vulnerable people. Investing in health systems needs to be reconceptualized as investing in improving the human experience.

**Strengthen the financial sustainability and capacities of cities**
Local authorities need to strengthen their financial sustainability, enhancing the own-source revenues of cities and cities' ability to access finance. Despite their economic role as engines of national growth, cities often have limited ability to develop their own funding sources, making them overly dependent on central government transfers, which are often tied to specific conditionalities or restrictions and are sometimes unpredictable. Cities can develop PPPs, use international finance and philanthropic contributions in conjunction with innovative financial instruments such as blended finance, particularly as part of the emergency response to crises such as that of COVID-19.

## Urban environment

**Improve urban environmental quality**
Urban environmental challenges may contribute to an increase in the likelihood and impact of future infectious diseases. Biodiversity losses caused by economic growth ambitions such as deforestation and wildlife trafficking can be linked to an increase in the spread of infectious diseases caused by animal-to-human-type viruses. Additionally, degrading air quality and increased water pollution also increase society's vulnerabilities to infectious diseases, with a more severe impact on poorer communities.[93]

Preventing deforestation and biodiversity loss will not only prevent human-wildlife contact, thus reducing the spread of zoonotic diseases, but also decrease exposure to harmful levels of particulate matter in the air and so lessen susceptibility to respiratory disease. Cities need to make conscious efforts to help improve the quality of the urban environment by, for instance: developing citywide sustainability and resilience plans; enhancing cities' natural infrastructure; and institutionalizing sustainability within city government. Figure 8 shows elements that can contribute to the improvement of urban environmental quality.

FIGURE 8 **Elements that can contribute to the improvement of environmental quality**

Urban and indigenous vegetation

Urban parks and woodland

Landscaping and spatio-temporal variations

Urban environmental quality

**Source:** Panagopalous, T., J. A. G. Duque and M. B. Dan (2015), "Urban Planning with Respect to Environmental Quality and Human Well-Being", Environmental Pollution 208 (Pt A): https://www.researchgate.net/publication/280872244

# Perspective from cities

The survey responses of 10 cities including Berlin, Buenos Aires and Melbourne gave a front-line view of potential sources of income to repair city finances post-COVID-19 and fund a green transformation.

## 4.1 Clustering experiences across city typologies

To understand city authorities' experience of urban financing, we conducted a survey of city administrations, asking for their perspectives on the key challenges and barriers to sustainable urban financing and the role the COVID-19 pandemic has played in multiplying these challenges. The survey also explored the potential sources of revenue and finance (both traditional and emerging), as well as key policy interventions and measures that would create future financing opportunities and mitigate the challenges currently faced. The questions were open-ended, with administrations from 10 cities in Europe, Asia, Africa, South America and Oceania answering.

Cities vary in their fiscal, political and institutional frameworks, with each having unique conditions. Therefore, it was important to cluster their experiences across city typologies to help develop a range of potential financing solutions and recommendations that work with all types of city.

We assessed the city administrations surveyed across two spectrums: political autonomy and financial self-sufficiency.

When considering political autonomy, we examined the extent of power that cities had in setting their own fiscal policies, supported by the ability to use regulatory instruments at their discretion. We explored the level of control cities possessed in setting and implementing their own local tax bases, property taxes/rates and reliefs and the level of regulatory influence from higher levels of government when deciding on city-level expenditure. It was not surprising that city states naturally had the highest levels of political autonomy; however, cities functioning as part of federal or unitary forms of government positioned themselves at varying points on this spectrum, with those functioning in unitary forms typically possessing lower levels of political autonomy as central governments wield considerable influence over local financing.

In determining the level of financial self-sufficiency cities possess, we examined the level of independence they had in raising revenue from other governmental entities. This included the reliance of cities on intergovernmental grants and funding as opposed to the share of city revenue raised from their own revenue-generation efforts. The financial self-sufficiency of a city and its ability to generate its own revenue are ultimately underpinned by many factors that include its creditworthiness, the regulatory framework in which it functions, the type of taxes it collects and the maturity of the city government's institutional practices. For instance, a city government that collects property taxes/rates is reliant on updated land registries and property valuations and a lack of such processes in places serves as a considerable impediment to raising revenue.

After considering these spectrums, we were able to identify and map cities across four typologies:

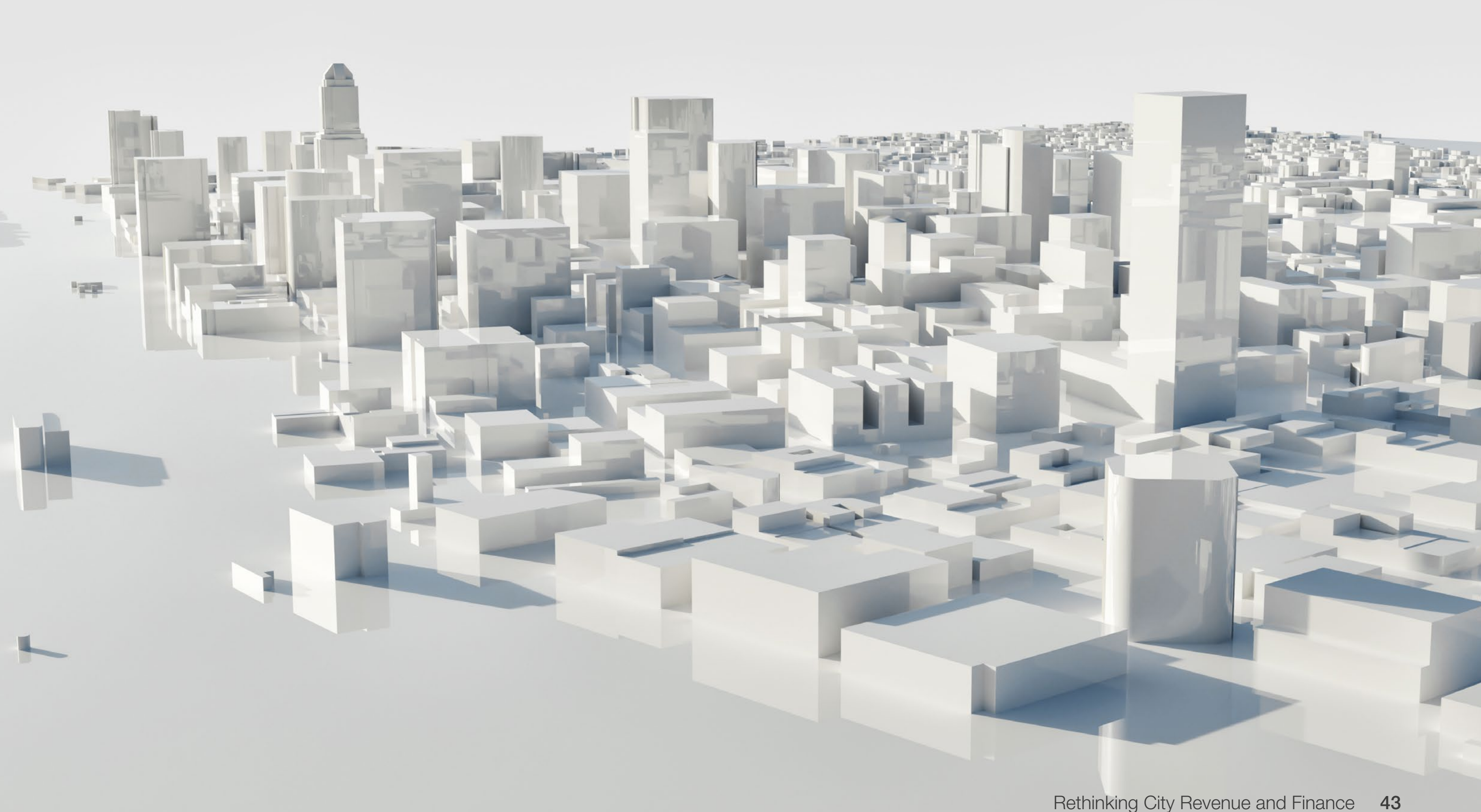


TABLE 3 | Four city typologies

| Typology | Political autonomy | Financial self-sufficiency | City characteristics |
| --- | --- | --- | --- |
| Self-reliant | High | High | – High levels of political autonomy in setting its own fiscal policies, supported by the ability to use regulatory instruments at its discretion<br>– High levels of control in setting and implementing its own local tax bases, property taxes/rates and reliefs<br>– Low levels of regulatory influence from federal/central/regional levels of government in deciding city-level expenditure<br>– Low levels of dependence on intergovernmental grants and funding as a source of revenue, with a high share of revenue gained from its own generation efforts |
| Aspiring | High | Low | – High levels of political autonomy in setting its own fiscal policies, supported by the ability to use regulatory instruments at its discretion<br>– High levels of control in setting and implementing its own local tax bases, property taxes/rates and reliefs<br>– Low levels of regulatory influence from federal/central/regional levels of government in deciding city-level expenditure<br>– High levels of dependence on intergovernmental grants and funding as a source of revenue, with a low share of revenue gained from its own generation efforts |
| Striving | Low | High | – Low levels of political autonomy in setting its own fiscal policies, supported by the ability to use regulatory instruments at its discretion<br>– Low levels of control in setting and implementing its own local tax bases, property taxes/rates and reliefs<br>– High levels of regulatory influence from federal/central/regional levels of government in deciding city-level expenditure<br>– Low levels of dependence on intergovernmental grants and funding as a source of revenue, with a high share of revenue gained from its own generation efforts |
| Dependent | Low | Low | – Low levels of political autonomy in setting its own fiscal policies, supported by the ability to use regulatory instruments at its discretion<br>– Low levels of control in setting and implementing its own local tax bases, property texes/rates and reliefs<br>– High levels of regulation from federal/central/regional levels of government in deciding city-level expenditure<br>– High levels of dependence on intergovernmental grants and funding as a source of revenue, with a low share of revenue gained from its own generation efforts |

## 4.2 Prioritizing financing solutions and policies across city typologies

> “Cities are prioritizing sustainable and resilient projects with investments in green infrastructure and technology as well as safer mass transport systems.

Regardless of which typology they fell under, cities shared many commonalities in the issues affecting them.

Regulatory mechanisms preventing diversity in finance and the steady rise in the cost of financing (due to city administrations being faced with high levels of interests and guarantees) are two key barriers to sustainable urban financing. Such challenges contribute to an increase in infrastructure deficit while city populations continue to grow.

We asked cities for their perspectives on the potential sources of revenue and finance (both traditional and non-traditional) that city governments should consider to address urban challenges such as infrastructure deficits. The most common responses were: various forms of taxes and fees; emerging sources of finance; and MDB financing. Cities surveyed believe that traditional forms of taxes and fees should be optimized while also considering new and emerging forms of finance such as green bonds, sustainable bonds, municipal bonds and crypto financing. City administrations also consider MDB financing a viable financing option as the financial terms and conditions are more favourable than other options and often include technical support for implementation and policy reform.

To better facilitate new sources of revenue and finance, city administrations also shared their perspective on important policy interventions that city and/or national governments should take: (1) establish investment attraction agencies and new projects to attract FDI; (2) take measures to improve city creditworthiness and improve risk appetite; (3) implement policy measures to overcome regulatory barriers.

Initiatives undertaken by city administrations to attract private investment include MDB financing, philanthropy and blended financing, market exercises for potential joint-venture partners and investors, external finance from development banks and tax incentive programmes for target sectors.

Responses from cities clarified the ways in which the COVID-19 pandemic has exacerbated the financing challenges they face. The most significant was the reprioritization towards health issues and emergency programmes. The pandemic has caused a shift in priorities as funds have been reallocated towards health-related and COVID-19 emergency programmes. Also, the pandemic caused an increase in cities' pre-existing fiscal deficits due to the lack of municipal revenues. City administrations have been generating less revenue from public service charges (e.g. municipal transport charges) due to many cities being in lockdown. Lastly, city administrations have faced reduced income due to increased hardship applications, fee payment deferrals and reduced tariffs from parking and tolls.

Despite the challenges city administrations faced, a number of emerging opportunities to enable a green and just recovery post-COVID-19 were identified. Cities are prioritizing sustainable and resilient projects with investments in green infrastructure and technology as well as safer mass transport systems. Additionally, economy and infrastructure regeneration projects such as developing deprived city areas and formalizing informal settlements are being given more importance as they aim to revitalize the township/city economy. Furthermore, city administrations noted the importance of accelerating the development and adoption of electronic government services.

# 5 What good looks like: creating the right policies and ecosystem

## How can cities access innovative finance – and what makes an urban transformation project attractive to investors?

## 5.1 Important policy considerations for improved urban financing and collaboration

New investment is needed to accelerate the transition to low-carbon and climate-resilient pathways. Given the challenge of increasing urbanization, combined with the significant investment needs, estimated at roughly $15 trillion,[95] cities will need to harness all available resources both internally and externally to ensure a green and just recovery post-COVID-19. With an increased focus on ESG investing, creditworthy cities will be able to raise finance and attract new investment. However, cities should not and do not need to act alone, given that the municipal landscape includes many players, both public and private, including utilities, municipally owned companies, institutions and foundations, and the private sector, which can also invest. Access to capital beyond public finance will be critical if cities are to achieve their ambitious decarbonization targets. While the right enabling policies at the national and local level will govern a city's creditworthiness and ability to access finance directly, a city's regulatory and planning actions can also play a role in mobilizing investment in municipal companies, attracting the private sector in PPPs and steering green investment to help close the financing gap.

### Municipal borrowing and creditworthiness

> Creditworthy cities demonstrate predictable revenue streams, which include own revenue (typically generated through local property taxes or user fees) and efficient revenue collection.

A city's ability to tap financial markets is a combination of a country's level of decentralization and whether the city has the legal right to borrow, together with whether it can generate sustainable revenues and promote bankable projects.[96] While national policies will determine a country's degree of fiscal decentralization, creditworthy cities tend to exist in jurisdictions with clear rules governing tax sharing and transfer payment arrangements between national governments and local authorities. This legal framework is further enhanced by clear policy guidelines, statutory limits and transparent approval mechanisms for local government borrowing, reducing the risk that a city's borrowing plans are scuppered at the last minute at the national level by political decisions.

Creditworthy cities also demonstrate predictable revenue streams, which include own revenue (typically generated through local property taxes or user fees) and efficient revenue collection. While national laws may regulate a city's ability to raise new revenue, cities have the ability to develop good financial management through strategic, long-term planning and effective budget control. Cities can also put in place policies and procedures to rationalize expenditures and carry out efficient cash management and asset management, as well as debt and capital expenditure planning and PPP regulation, helping to demonstrate their capacity for effective financial management.

Fiscal management complemented by a focus on strong corporate governance and transparent decision-making (with outcomes of council meetings regularly updated on a city's website) further demonstrates that a city is a reliable counterparty.[97] Corporate governance also extends to how cities manage municipally owned companies and utilities. The right enabling policies ensuring cost recovery and commercialized operations may enable municipally owned companies to borrow on their own balance sheet, thereby freeing up the city's budget for other priorities.

### Creditworthy municipal companies

Although some cities prefer to keep all municipal borrowing at the city level, high-performing municipally owned companies and utilities can also borrow. This is possible only if the regulatory and enabling environment supports cost-recovery tariffs to ensure sufficient revenue flows to service debt, and managers can operate without political interference. This approach enables municipal entities to be managed on a commercialized basis, thereby attracting talented and experienced management. In those utilities where revenue support is needed (e.g. public transport), well-managed cities frequently use public-service contracts (PSCs) to formalize service requirements and compensating subsidies and payments, allowing efficient financial and capital planning whether the company is publicly or privately owned.[98] The city of Warsaw has developed a robust PSC, enabling Warsaw Metro Company to borrow without any recourse to the city to co-finance, alongside EU funds, the acquisition of new metro trains required for its metro line extension. This was due to a clear definition of rights, processes and service levels in its PSC. Alternatively, cross-subsidy arrangements are structured by allowing rail operators to develop properties adjoining rail infrastructure through transit-oriented-development (TOD) models that can sustain high densities, as is the case in Singapore and Hong Kong, which access capital from commercial banks to do so.

Empowering creditworthy municipal companies with red-tape-cutting authority, in the name of efficiencies and in a nod to private-sector partners, will further enhance the credibility of such companies (attracting private investment), but will also reduce time-wasting activities and delays. This momentum amplifier has worked in cities with aggressive redevelopment programmes, such as Hamburg, Germany. The city has an "urban wealth fund" that has consolidated publicly owned assets in a common investment vehicle guided by a city mandate with dedicated professional staff to keep it free from political influence.[99]

Traditional revenue levers have limited capacity to meet city financing requirements and need to be supplemented with new levers. These could be in the form of increased charges through service differentiators and convenience fees, improving transaction volume and collections or introducing a new form of service fees, fines and/or charges. Due to affordability concerns, cities with regulatory powers are under constant pressure to keep tariffs low to ensure everyone in the population has access to basic services. Low tariffs, however, tend to result in a cycle of declining service quality and a backlog of maintenance, resulting in further service deterioration. An improved revenue stream through cost-recovery tariffs is often the first step in commercializing services. In these instances, a better approach is to introduce targeted income support for low-income and vulnerable groups, enabling them to pay their transport costs or utility bills rather than keep tariffs low. One example is the city of Rio de Janeiro, which has introduced the *bilhete unico*. This consolidated and unified fare for the various public transport modes in the city caps the maximum amount that a household pays per trip and compensates the operators via a subsidy. The alternative is to create a cross-subsidy through the introduction of block tariffs, which are volumetric charges frequently used for water and electricity billing; the first tranche is usually set in line with the basic consumption needs of poorer households, is set at a low level and is cross-subsidized by increased tariffs for further tranches. This approach is used in several countries facing power shortages, such as Egypt and South Africa, with the aim of helping with demand management by creating incentives for consumers to rationalize consumption.

Commercialization enables a city to focus on ensuring the delivery of quality services through more effective public-sector management, appropriate regulation and the use of private-sector participation (PSP) where appropriate and feasible. This approach introduces municipal utilities to the incentives and disciplines of the market, resulting in more efficient and customer-oriented operations. With this type of enabling environment, municipal utilities and companies are frequently able to borrow for their investment needs. Thanks to a regulatory regime supporting cost-recovery tariffs combined with a series of financial and operational performance improvement programmes focusing on customer management improvements, streamlined billings and collections, and taking steps to reduce non-revenue water losses, Romanian regional water operators successfully borrowed on a non-recourse basis to co-finance, alongside EU cohesion funds, investments to meet EU water and wastewater directives.

## Soft powers (policy and institutional foundations)

Urban activities and how they are organized are a key determinant of GHG emissions, the resilience to climate change and wider environmental health, and deeply affect the overall quality of life in cities. Cities that cannot borrow due to legislative or budgetary constraints can still steer and guide private investment through their planning and regulatory powers. For example, city planning competences can be used to enable land use changes that increase the value of land and property, and can be structured to ensure that transparent additional financial contributions are made when such land use changes are approved.

The high upfront cost of some climate actions, together with limited fiscal space of many municipalities, leads cities to adopt measures that minimize immediate costs, without considering the lifetime costs of such actions. Such short-term focus can lock in high-emission or climate-vulnerable infrastructure, increasing the risk of stranded assets. This compounds the challenges cities face in funding priority climate and environment investments by limiting their ability to fund investments that have higher upfront costs but deliver cost-effective economic, environmental and social benefits over the long term. A climate action plan places climate change investments on a level playing field with other potential actions.

Indeed, climate action plans developed with multiparty stakeholder engagement send a strong signal to investors of a city's investment priorities, establishing a pipeline of bankable projects, raising public awareness and creating buy-in from the public. A well-developed plan with clear goals may also play help reduce the risk perceptions of potential investors, thereby facilitating new investment. Moreover, transparent and efficient procurement for private-sector participation with clear KPIs will demonstrate value for money. The city of Tirana, Albania, emphasized in its Green City Action Plan the importance of improving air quality given the high number of older cars, encouraging one taxi company to convert its fleet to electric vehicles. Another example is the city of Banja Luka, Bosnia and Herzegovina, which after a public tender, entered into a joint venture with a private company to build a new biomass heat plant, thereby enabling the city to move away from heavy polluting fuel oil and improve air quality.

Cities can also influence green investment through stronger zoning laws, thereby influencing city density and traffic patterns. Washington, DC's decision to increase density levels in the area adjacent to Union Station is one example of how a city has advanced new investment in urban regeneration. Upzoning the area provided an incentivize for developers, resulting in a new mixed-used neighbourhood and generating higher property taxes for the city. Demographic change, cultural change and urbanization trends offer an opportunity to achieve more compact urban forms. The Swedish capital Stockholm and Pittsburgh, PA, have roughly the same population, but Pittsburgh uses five times more land than Stockholm and produces over five times more greenhouse gas emissions. This results in people needing to travel longer distances from their homes to places of work or to access facilities at greater personal and environmental expense, excluding them from social and economic opportunities. Densification of the city around transport hubs, rather than continuous sprawl makes sense to people and planet.[100]

Raising standards for energy efficiency and embodied carbon (e.g. in materials or furnishings), as well as performance requirements for new constructions and building retrofits, can reduce emissions from buildings. Although building codes are often set at the national level, cities often have the ability to set more ambitious codes. Alternatively, cities can introduce green building rating and certification schemes as a minimum standard for buildings and ensure there are appropriate monitoring systems in place. For these systems to be effective, strong legal foundations and technical regulations must underpin them, with clear implementing mechanisms in place, thereby sending a clear signal to investors.

**The Swedish capital Stockholm and Pittsburgh, PA, have roughly the same population, but Pittsburgh uses five times more land than Stockholm and produces over five times more greenhouse gas emissions.**

## 5.2 Going forward

Creditworthiness and capacity remain a challenge in many cities. Investing in technical assistance and capacity-building to put cities on a path towards creditworthiness is a critical priority, helping cities to:

- Increase their own-source revenue mobilization
- Reform intergovernmental fiscal transfers
- Rationalize expenditures
- Better manage and use land and property assets
- Tackle issues of debt and contingent liability
- Design the enabling regulatory environment at the national and subnational level

The World Bank's City Creditworthiness Initiative (City Cred) has started to see some success thanks to strong client buy-in. The city of Lima, Peru, commenced work with the World Bank to create a pipeline of investable projects and after five years of sustained technical assistance, it was ready to issue its first municipal bond.[101] In Kampala, Uganda, the city worked with the World Bank to improve its municipal revenues through better property record management, address issues with fee collection and bill processing and develop stronger accounting practices, which resulted in the city's revenue increasing by 284%;[102] while this has not yet translated into borrowing capacity, which is constrained by the lack of an enabling regulatory environment, it has resulted in more funds being available for new investment. Similarly, C40 Cities has launched a Creditworthiness Network to help eight cities[103] achieve a credit rating, recognizing the important of a rating in increasing the pool of investors available to cities and lowering borrowing costs.

## 5.3 Advances needed in governance, leadership and institutional frameworks

Cities operate in a wide spectrum of enabling environments, ranging from those with low levels of capacity, autonomy and control to those with high levels of administrative capacity, empowerment and strong fundamentals of planning and finance. Therefore, each city's context must determine the relevant policy levers and financial tools for mobilizing city finance.

In highly developed economies, the role of cities is usually well defined, which grants them high levels of administrative capacity and decision-making power—along with financial resources and fiscal powers. High levels of autonomy, authority and capacity tend to have robust systems and mechanisms for service delivery and financing. New York City, London, Helsinki, Cape Town and Jakarta are prominent examples of cities with legal and political autonomy while cities in certain developing economies such as Mexico, Brazil, Indonesia and India, among others, also fall into this category. Cities in these economies often focus on identifying effective finance instruments that are best suited to their context and establishing market incentives for interested investors.

❝ **City governments that are empowered by national governments are often well positioned to implement investments and use other sources of finance to fulfil their city goals.**

At the other end of the spectrum, many developing economies and those in conflict-affected countries have low capacity and unclear or fragmented city institutions that are sometimes unable to meet even basic urban infrastructure and service demands. For such cities, leaders need to focus on strengthening expenditure-side systems that can help build confidence among investors and create an enabling environment for accessing new and sophisticated sources of finance.

While strong governance and visionary leadership at the city level can be crucial enabling conditions in securing finance for urban infrastructure and service projects, in many countries broader national governance and intergovernmental and fiscal architecture determine what cities can do in terms of planning and financing urban projects. National laws, regulations and institutions shape the powers, authority and resources available to cities to undertake infrastructure investment and service delivery. In addition, the capacity of cities for planning and financing expenditures, mobilizing talent and attracting other sources of finance determine their ability to implement large-scale urban infrastructure projects. Other city-level constraints, such as the lack of local political will, weak administrative capacity or limited own-source revenue collections are also the result of the overall intergovernmental context.

In some economies, a city government's authority over land use, expenditures and services is curtailed or fragmented among national or regional authorities. This is true of Dhaka, Bangladesh, which has two elected city corporations and where land use and water use is controlled by national-level agencies. In some cases, civil works are directly implemented by a national agency in conjunction with city corporations, illustrating the need for an appropriate institutional or enabling framework to eliminate barriers in coordinating and mainstreaming action on city projects.

Cities, typically, have to balance their role in sourcing funds through "direct" sources (i.e. those within their control) such as own-source revenues, national or state-level fiscal transfers or grants and debt, or through "indirect" sources (i.e. those on which they can exert influence as a regulator, convener or champion) such as national government, national parastatals (companies or organizations owned by the government of the country), authorities, trust funds, the local or international private sector or citizens themselves to pay for infrastructure projects.

Globally, intergovernmental fiscal transfers constitute the largest source of funds received.[104] To mobilize city financing at scale, the enabling environment needs to be vertically integrated (from local to national levels) and horizontally integrated (across urban systems, processes and planning). City governments that are empowered by national governments are often well positioned to implement investments and use other sources of finance to fulfil their city goals. In situations in which city services are provisioned directly through vertical programmes managed by national government agencies (i.e. direct, centralized service delivery), the extent to which national governments enable and engage cities as partners is also a critical success factor.

The lack of "bankable projects" – those with a structure and risk profile in line with financiers' expectations – is a challenge, and therefore greater collaboration between city stakeholders and investors is required.[105] Involving financiers the early stages of project development could ensure the project's financing, particularly through capacity-building on how to deliver projects that are bankable and capable of being financed at scale. In addition, stable and aligned policies will also be essential to attract city investment.

# 6 Conclusion and recommendations

The primary aim of this report is to address critical barriers to urban infrastructure and services financing exacerbated by the COVID-19 pandemic.

**City administrations should establish quality partnerships with public, private and philanthropic entities early on to establish avenues for cost efficiencies and potential opportunities for revenue generation.**

This report explores the gaps in financing urban infrastructure and the opportunities for cities to seek out diversified and innovative sources of finance. It also studies the impact COVID-19 has had on city budgets and new investments while exploring the shift in investment priorities towards a swift, green and just recovery. It sets out a typology for cities to identify and classify the specific challenges and opportunities that exist with respect to financing city infrastructure projects and elaborates on the key policies, governance, leadership and institutional frameworks that will be required to help cities become self-sufficient in the urban infrastructure finance space and respond in a more effective and timely manner to the basic infrastructure service needs of their citizens and businesses.

The report recommends the following five guiding principles, which if adopted would support city administrations in having sound financial management practices with sustainable and diversified sources of financing:

**1. Maximize returns on existing spending and assets**

Investors are ready to invest in infrastructure, provided an investment has a risk profile and is well structured. However, since hesitancy by infrastructure investors at the onset of the COVID-19 pandemic – due to supply-chain interruptions, travel and shipping restrictions and pandemic-related closure of construction sites – caused delays in existing projects and many were either halted or postponed due to lower demand or forced renegotiations, city administrations should ensure maximum value is extracted from existing projects, public spending and assets, while avoiding waste, before investing in new infrastructure.

**2. Maintain stewardship of city finances and resources**

While strong governance and visionary leadership at the city level are essential to nurture an enabling environment that secures finance for urban infrastructure and service projects, in many countries the broader national governance and intergovernmental and fiscal architecture determine what cities can do in terms of planning and financing urban projects. Cities should strengthen their role as stewards of public finances and resources by striving for effective governance of the financial decisions they undertake. Infrastructure investments should undergo scrutiny and assessment against a business case within the mechanism of their own governance systems, to ensure the efficient use of resources and funds in adherence to budgets.

**3. Carry out long-term planning while considering contingencies**

The COVID-19 pandemic, like other crises in the past, has shown that cities need to factor in the vulnerabilities of the urban economic system, such as disruption of economic activities, significant unemployment and shrinking government revenue, as part of their budgeting. Cities need to make financial decisions that are supported by long-term strategies and forecasts while at the same time embedding prudence in budgets to allow flexibility and resilience in responding to crises and shocks.

**4. Explore diverse and innovative revenue options**

It is clearer than ever before that cities need to mobilize diverse, sustainable financing and funding mechanisms to manage various competing priorities, including the climate, resilience, social, inclusive and digital outcomes while at the same time planning for shocks and crises. Therefore, cities need to be active in continuously identifying new funding sources and financing methods that maintain or enhance their financial sustainability by considering innovations from one domain/sector to another.

**5. Establish effective partnerships and opportunities for collaboration**

The relationship between city administrations and other entities, both governmental and non-governmental, is evolving, with other entities having an influence in shaping local priorities through well-defined programmes or established partnerships. City administrations should establish quality partnerships with public, private and philanthropic entities early on to establish avenues for cost efficiencies and potential opportunities for revenue generation.

In addition to these guiding principles, we also recommend the following four strategic enablers:

1. **Regulations:** the regulatory ecosystem should enable cities to access finance and practise of sound financial management

2. **Talent and knowledge:** it is important to make the most of the collective potential of a skilled workforce and knowledge hubs in financial planning

3. **Stakeholder engagement:** a whole-system approach brings together relevant city officials and stakeholders in city financial planning and budgeting

4. **Digitalization:** integrating digital technologies and strategies will ensure data-driven decision-making in financing

Paying attention to these strategic enablers will allow city administrations to develop their organizational capabilities and ensure they are well placed to nurture the optimum internal climate for financial management best practices. This would enable them to extract the maximum value and more advantageous outcomes from the above guiding principles.

FIGURE 9 | **Five principles and four enablers of sound financial management for cities**

1

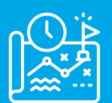
**Maximize returns on existing spending and assets**

Ensure maximum value is extracted from spending and assets, while avoiding waste, before embarking on new infrastructure

2

**Stewardship of city finances and resources**

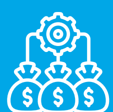
Strive for effective governance of financial decisions and the assessment of infrastructure investments to ensure the efficient use of resources and funds in adherence to budgets



3

**Long-term planning while considering contingencies**

Make financial decisions based on long-term strategies and forecasts while embedding prudence in budgets to allow flexibility and resilience to respond to crises



4

**Continuous exploration of diverse and innovative revenue options**

Identify new funding sources and financing methods that maintain or enhance the city's financial sustainability by considering innovations from one domain/sector to another

5

**Effective partnerships and opportunities for collaboration**

Establish quality partnerships with public and private entities early to establish avenues for cost efficiencies and potential opportunities for revenue generation

**Regulations**

Regulatory ecosystem enabling cities' access to finance and ability to practise sound financial management

**Talent and knowledge**

Leveraging the collective potential of a skilled workforce and knowledge hubs in financial planning

**Stakeholder engagement**

A whole-system approach that brings together relevant city stakeholders in city financial planning and budgeting

**Digitalization**

Integrating digital technologies and strategies in ensuring data-driven decision-making in financing

**Strategic enablers**

Using the emerging and innovative financing models discussed in this report, cities can tackle the infrastructure financing challenges they face today and in the future. The COVID-19 pandemic has affected all countries – developed, developing and emerging alike; however, each city has to start from its own unique position when mobilizing infrastructure finance. Cities are critical systems, and city leaders are essential stakeholders in leading this transition towards recovery. Despite the wide differences in enabling environments, city leaders across the world will need to use their influence with national governments, the private sector and institutional investors to attract investment and pave the way towards a swift, just and green recovery.

# 6.1 The way forward – a call to action

**As home to more than half the world's population and at the forefront of dealing with some of the most pressing issues of our time, cities have the right to demand an influential voice in the global arena of debate.**

Cities have been striving for years to gain accurate representation in an international institutional system designed for countries and which no longer reflects the reality of a changing world. As home to more than half the world's population and at the forefront of dealing with some of the most pressing issues of our time, cities have the right to demand an influential voice in the global arena of debate. This also applies, of course, to international financial architecture. However, despite marginal gains, cities are still seen as secondary players when it comes to direct accessing finance and the decision-making process that governs the resource allocation process.

COP26 was a clear example of this. The number of sessions addressing urban mitigation and adaptation was a recognition of cities' defining role in the battle against climate change, but the outcomes and declaration of the conference did not translate into financial commitments for cities. C40's announcement of a $1 billion commitment from investors to deliver zero-emission buses in Latin America,[106] and the UK's pledge of £27.5 million new funding for the Urban Climate Action Programme (UCAP)[107] to support cities targeting net zero were the only exceptions. Clearly, more innovative and disruptive initiatives are urgently needed to improve the financial landscape for cities in the future.

An area requiring major reform is the subnational funding mechanism, to allow the channelling of funds from IFIs directly to cities without the need for national government guarantees; this is often not granted for political reasons. IFIs represent one of the largest sources of financing for cities, particularly in the developing world. Although some IFIs, notably EBRD, IFC and EIB, provide subnational finance to creditworthy cities and municipal entities, more needs to be done. Promising efforts are being made in the provision of direct financing facilities for cities from institutions such as the World Bank, the IADB, the AFD and others, which must scale and be replicated. Increasing the level of advocacy and pressure from mayors, city networks and other urban activists around the world will be essential to achieve this goal. Nevertheless, given the statutory limitations that govern IFIs, coupled with the lack of incentives for nations to give more power to cities, the chances of radical change in this area are slim. For this reason, ideas such as the development of city-structured financial institutions such as the "Green Cities Development Bank" (proposed by the UK Overseas Development Institute, C40, ClimateWorks and Baker McKenzie) are worth exploring and pursuing.

The creation of a financial facility managed by a cities platform to support cities' needs directly could also be a fruitful endeavour. An innovative initiative in this regard is the "Global Urban Resilience Fund – GURF", presented during the 2020 Urban20 (the G20 Engagement Group for Cities), still a work in progress. The GURF would be a cities-led fund governed with an exclusively city perspective through the U20 to avoid the regulatory obstacles or political constraints cities currently face in accessing international finance. The objective is to tackle future external shocks, providing immediate disaster response funds for cities based on their needs, to ensure effective, unbureaucratic and rapid emergency action, as well as to develop medium- and long-term resilience projects. The GURF would disburse resources to cities through multiple financial services, including grants for providing technical assistance in the early stages of the project cycle, low-interest loans for the later stages of the project (construction and operation), guarantees for cities with low credit standing, securitization and resilience insurance, among other things. This pioneering fund could be a milestone: cities would have direct and timely access to resources to develop resilient infrastructure and strengthen their capabilities, unlocking new financial instruments and funding mechanisms currently unavailable to them through existing international finance architecture.

Another call to action is to significantly increase private-sector participation in urban climate-resilient projects. Frequently, the complex and difficult-to-implement regulatory frameworks of PPPs have prevented the private sector from investing in cities, limiting their ability to undertake the infrastructural transformation needed to tackle climate change and build resilience. A serious effort from international organizations, city networks, civil society and academia to develop benchmarking exercises and identify best practices in blended finance mechanisms and PPP regulations, procurement and implementation is an extremely timely assignment. Equally important is the need to adjust the current imbalance between mitigation and adaptation finance by significantly increasing the latter, something in which the insurance industry can play a pivotal role through innovative products and solutions that make our cities more resilient.

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