

Chapter 7

Empower city governments to build low-emission and resilient urban societies

Cities are a priority area for furthering low-emission, resilient and inclusive development. The way cities expand and develop will impact the trajectory of global emissions. Cities, especially in developing countries, are vulnerable to climate risks. This chapter explores the barriers facing cities as they grapple with the challenges of insufficient financing and infrastructure deficits, and the important development opportunities presented by financing low-emission, resilient infrastructure. The chapter describes four key actions for governments to empower cities: integrate land-use and transport policies, align national and local fiscal regulations with investment needs in cities, build climate-related and project finance capacity in cities, and seize the development benefits of low-emission, resilient planning.

Key messages

Empowering local and city governments to plan and finance low-emission, resilient infrastructure is an essential part of achieving climate and development goals. The way cities expand and develop will determine the emissions of 70% of the world's population in 2050. Cities are particularly vulnerable to climate risks and must develop strategies that ensure urban resilience. The failure to invest in the right urban forms will put residents, the local economy and social cohesion at risk, potentially exacerbating existing inequalities. National and local governments should work together to pursue the following transformative actions:

- Rethink institutional configurations to integrate land-use and transport strategies and seize the immediate development benefits of low-emission, resilient planning.
- Align national and local fiscal policies to encourage and enable low-emission, resilient investments and behaviours.
- Build climate-related and project finance capacity in cities to efficiently finance and deliver complex low-emission, resilient infrastructure projects.
- Seize the social and economic benefits of low-emission, resilient planning to deliver inclusive urban growth.

Why is action in cities transformative?

Cities are home to over half of the global population (UNDESA, 2018^[1]) and account for over 80% of global GDP (UN-Habitat, 2016^[2]). However, they also account for between 60 and 80% of global energy consumption and 70% of global greenhouse gas emissions (UN-Habitat, 2016^[2]). As urban populations are expected to account for over 70% of the world population by 2050, trillions of dollars will be needed to expand and renew urban infrastructure. The choices made today about the types, features and location of long-lived infrastructure can play a major role in limiting the extent of climate change, contributing to the resilience of urban societies, and creating the backbone for strong, inclusive urban development.

The failure to invest in low-emission, resilient urban forms will put residents, the local economy and social cohesion at risk. Climate change threatens to exacerbate cities' existing economic and social inequalities. Low-income populations living in urban areas are vulnerable to climate change, as they tend to live in at-risk neighbourhoods (for instance, areas prone to flooding or landslides), or in poorly designed homes (such as underground apartments or informal structures). Their limited access to social insurance and safety nets further complicates recovery from climate-related incidents. Furthermore, municipalities with a high climate risk profile may be less attractive places to live and do business, and therefore potentially less economically productive (OECD, 2010^[3]).

What is the state of play?

In general, urban forms are not developing in a sustainable fashion. In most OECD countries, urban sprawl has increased since 1990. Specifically, cities have become more fragmented and the share of land allocated to very low-density areas has increased. Urban areas have become denser on average, but 60% of urban space is sparsely populated (OECD, 2018^[4]). Urban sprawl is driving many challenges facing cities today, including traffic congestion, air pollution, longer commuting times, reduced access to affordable housing, and increasing per-user costs of public services such as water, energy and public transport. It also contributes to many environmental challenges, including increased greenhouse gas emissions, harm to biodiversity and loss of environmental amenities.

In a business-as-usual scenario, emissions in large cities are projected to increase by 26% to 2050, partly driven by rising car use in certain regions (ITF, 2017^[5]). Car use in Asia, for example, is expected to increase by 50% by 2050. Established cities are already struggling with air pollution that is consistently higher than accepted limits. Traffic congestion is also tremendously costly. For example, one study calculated that traffic congestion in Germany, the United Kingdom and the United States cost these economies a combined USD 461 billion in 2017, or USD 971 per person (INRIX, 2017^[6]). Outdoor air pollution – of which a major contributor is traffic pollution – is projected to contribute to 6-9 million premature deaths a year globally, and to cost 1% of global GDP by 2060 in the absence of more stringent policies (OECD, 2016^[7]).

Cities are also particularly vulnerable to climate risks and must therefore carefully craft strategies to ensure that investments made today do not become tomorrow's damaged or stranded assets. In 2014, 89% of cities – home to 2.1 billion people – were located in areas that are highly vulnerable to economic losses from natural disasters (UNDESA, 2015^[8]). Extreme weather events can be particularly disruptive to complex urban systems and areas of high population density. Much of the world's urban population inhabits low-lying coastal areas, making them more vulnerable to storm surges and rising sea levels. Many of these low-lying urban areas are also rapidly expanding, which compounds risks. Cities in developing countries are particularly vulnerable to flood risks, as they are relatively less equipped to prepare for and address the fallout from disasters (Hallegatte et al., 2013^[9]).

What are the barriers and opportunities for change?

Local governments have a central role to play in getting the low-emission, resilient transformation right. They often have authority over many of the decisions that matter for limiting greenhouse gas emissions and strengthening the adaptive capacity of cities, such as spatial planning and zoning, regulation of transport, building construction, water and emergency management systems (Hallegatte et al., 2016^[10]).

Local governments are also major spenders and investors. Their budgets account for an increasing share of public expenditures, accounting for 40% of total public spending on average in the OECD and 57% of public investment in 2016 (OECD, 2018^[11]). The nature of urban infrastructure is fundamental. Making cities more compact and connected can lower investment requirements by as much as 10% (New Climate Economy, 2014^[12]), worth up to USD 17 trillion in economic savings by 2050 (New Climate Economy, 2018^[13]).

Action at the local level can also result in significant economic benefits and greater social inclusion. For example, more accessible forms of transportation can help

vulnerable populations participate in the workforce by increasing access to jobs (OECD, 2018^[14]). Investing in climate-resilient infrastructure is therefore not only a tremendous opportunity for cities. It is also an imperative to ensure their sustainability in the context of a changing climate, to drastically reduce their emissions, and to reduce and prevent further inequalities within and between regions (see 7.1).

Despite these opportunities, cities report financing constraints in meeting their infrastructure needs (OECD, 2018^[11]). There are significant barriers to cities' ability to access finance; for example, cities and subnational governments can be limited in their ability to raise revenues through taxation, and in their ability to borrow. Their capacity for long-term infrastructure planning can also be limited, particularly in smaller municipalities.

Changing the current allocation of investments and patterns of infrastructure will be challenging for even the most advanced countries and cities. It will require a better organisation of urban landscapes through the integration of land-use and transport planning policies, and a "managed" transition towards low-emission activities, the supply and uptake of low-emission technologies, and a sufficient degree of public support for this transition. For many industrial cities, this may require developing strategies to support the reorientation of existing industries in order to increase their efficiency and lessen dependence on fossil fuels. Clear communication and consultation with the public will be needed to increase awareness of the opportunities that are generated by the transition, not just the costs.

Box 7.1. The economic and social benefits of low-emission cities

A study by the Coalition for Urban Transition finds that the transition to low-emission cities is good for the local economy and well-being:

- Directing investment towards clean public transport and greater vehicle efficiency could create up to 23 million additional jobs a year and tackle congestion, cutting the wasted hours spent sitting in traffic by up to 30%. It could reduce by over 80% the 1.3 million transport-related deaths and 78 million transport-related injuries worldwide each year.
- Investing in city cycling infrastructure could save five times the cost of this investment by improving public health and reducing traffic congestion. Extrapolating across Europe, the health benefits from cycling could be worth USD 35-136 billion annually.
- Investing in energy efficiency for new and existing buildings could create up to 16 million additional jobs a year worldwide. Improved working and home environments would lower rates of illness, saving on health bills and making workers up to 16% more productive.

Importantly, these initiatives benefit the poor the most. Low-income groups are more likely to live in poorly-insulated buildings and neighbourhoods with chronic air pollution, and depend on public transport, cycling and walking over private car use. An ambitious programme to reduce greenhouse gas emissions would especially improve the living conditions of the poor, and therefore help to achieve more equitable cities.

Source: Andy Gouldson et al. (2018^[15]), *The Economic and Social Benefits of Low-Carbon Cities: A Systematic Review of the Evidence*, Coalition for Urban Transitions, London and Washington, DC, <http://newclimateeconomy.net/content/cities-working-papers>

7.1. Integrate land-use and transport policies

The way in which cities are designed and built is a key aspect of sustainability. Infrastructure investment must therefore be integrated with land-use and transport planning. Urban forms influence the need for infrastructure, as denser developments can reduce the extent of infrastructure networks required to deliver services such as transport, water and sewage. In fast-growing cities, mainly in developing countries, where most infrastructure is being built, urban layouts – and therefore emissions pathways – are being determined now. Over 60% of the land that will be urbanised by 2030 has yet to be developed (New Climate Economy, 2018^[13]). This implies a tremendous opportunity to make the “right” decisions to pursue low-emission, resilient infrastructure pathways. Acting now is crucial: it is extremely difficult and often costly to revise cityscapes once roads, houses, parking, transit ways, parks and other urban infrastructure have been built.

Box 7.2. Sustainable cooling can have significant decarbonisation effects

Cooling technologies are critical across virtually all sectors of society, including food, building, health, industry, data centres and transport. While cooling is often associated with comfort air conditioning, it is directly linked to essential daily economic and social needs that underpin poverty eradication and meeting the Sustainable Development Goals (SDGs). 1.1 billion people globally face immediate risks from lack of access to cooling (SE4All, 2018^[16]).

In addition to being a critical development issue, cooling technologies represent a challenge for climate change through refrigerant leakage and energy-related emissions. Cooling appliances, such as air conditioners or refrigerators, typically use refrigerants that damage the ozone layer and have a high global warming potential. In addition, cooling is energy-intensive, which can lead to major indirect carbon dioxide emissions. According to the IEA, energy demand solely from air conditioners – mainly driven by emerging economy cities – will increase threefold by 2050 (IEA, 2018^[17]).

Yet, more cooling is called for if we want to meet the SDGs. This raises an important question: Is it possible to deliver “cooling for all” while meeting the climate objectives? Increased energy efficiency of cooling appliances or drastic greening of electricity grids alone will be insufficient. The implementation of the Kigali Agreement, which requires a major reduction of hydrofluorocarbons (HFCs) in the years to come, is expected to reduce the impact of cooling devices on global warming – and even more if these new appliances are energy efficient. However, this may not be sufficient to cancel out an increasingly growing number of appliances.

Solutions could become available when focusing on a needs-driven approach. For example, the cooling demand of buildings can be dramatically reduced using non-electric energies and temperature differentials such as waste heat, building efficient district cooling infrastructure into new city designs and solar energy that, in combination with new thermal storage solutions, can be used to power cooling equipment.

System-wide changes will require a careful assessment of country needs and circumstances to define scenarios and long-term pathways towards sustainable cooling for all. For example, governments can implement policies and regulations that improve building codes, rethink city planning, redesign food logistics and consumption chains and explore alternative materials and ways of producing and storing “cold energy”.

Targeted policy action can help drive more sustainable city growth, particularly in land-use and transport policies. Examples include appropriately pricing car travel by reforming parking policies to better reflect the cost of providing parking, and introducing road pricing mechanisms. This should be accompanied by a shift towards greener urban transport, by investing in public and non-motorised transport infrastructure like bicycle lanes (OECD, 2018^[4]).

Land-use policies can be reformed to encourage more sustainable urban development patterns. This includes relaxing maximum-density restrictions, shifting the cost of infrastructure provision to developers, streamlining land-use taxation to remove incentives for developing land on the outskirts of cities and introducing market-based instruments that encourage densification in key urban areas (OECD, 2018^[4]). Urban planning can also encourage functionally and socially mixed neighbourhoods with access to green spaces (New Climate Economy, 2018^[13]). Regulations governing how buildings are constructed can also play an important role in decarbonising cities (see Box 7.2).

For integrated planning, the appropriate scale of action is not necessarily contained within the administrative boundaries of cities, but rather the functional metropolitan area. Subnational and local governments need to strengthen collaboration between cities and different levels of governments, for example, by creating single entities with authority for transport and land use, and favouring more collaborative and co-ordinated forms of decision making. National and local transport agencies can develop joint pipelines of low-emission, resilient infrastructure projects aligned with long-term climate goals (see Chapter 2). Such projects should be selected on the basis of cost-benefit analysis with climate and resilience at their core.

7.2. Align national and local fiscal regulations with investment needs in cities

As urban populations grow, trillions of dollars will need to be spent on expanding and renewing urban infrastructure (OECD, 2014^[18]). Much of this responsibility and expense falls on cities; on average, subnational governments account for 64% of climate-related spending and investment¹ (see Figure 7.1). However, this share ranges widely depending on the country context – for example, 98% of Japan’s climate-related spending and investment falls to subnational governments, while in Iceland this accounts for 18%.

One of the primary challenges for cities in accessing sufficient financing is their limited ability to tax, which is typically constrained by legislation at higher levels of government. The Inter-American Development Bank (IDB) governance database shows that fewer than half of all countries have devolved fiscal or legislative powers to subnational governments (Floater et al., 2017^[20]). Cities are further constrained in their ability to borrow; they may be limited by whether and how much they can borrow from the private sector (OECD, 2014^[18]). According to the IDB database, 56% of countries do not allow borrowing of any kind by local governments (Floater et al., 2017^[20]). Sometimes national frameworks also prevent cities from issuing bonds (see Box 7.3). While this feature may help to limit financial risks, it can also deprive cities of an important source of finance. Other financing mechanisms for climate-resilient urban infrastructure include the use of catastrophe bonds, the establishment of dedicated finance facilities, dedicated global climate funds, as well as official development assistance (ODA) for cities in developing countries.

Figure 7.1. **Subnational governments largely foot the bill for environment and climate investment**

Environmental and climate investment by level of government, selected OECD countries, 2000-2016



Note: Calculated by dividing total amount of subnational climate direct investment spending by the total amount of general government climate-related infrastructure investment, 2000-2016. Average represents the unweighted average of all countries presented in this graphic, rather than average for all OECD countries. Japan's spending data begins in 2005, Lithuania's in 2004, and Iceland's in 2013. Australia's spending data ends in 2015.

Source: OECD (2017^[19]), "Government Expenditure by Function (COFOG)," OECD Statistics (database).

StatLink  <https://doi.org/10.1787/888933856492>

Supportive national policy frameworks and legislation are necessary to ensure that cities have the resources, incentives and potential to implement effective climate initiatives. National policies and legislation typically determine what cities can do and the framework conditions within which they operate including, for example, their revenue-raising ability. A strong national framework using market-based instruments (e.g. carbon pricing, performance standards) can broaden the range of environmentally and economically effective options available to cities. National governments can also build environmental goals into national and urban planning strategies, and encourage climate action through grants and subsidies. It is equally important to identify national policies that conflict with or prevent local climate action.

Box 7.3. The importance of green bonds for cities

Financial instruments such as green bonds can provide an opportunity to raise funds for green infrastructure projects. The first green bonds for cities were issued in 2013. Since then, 180 bonds in 13 countries have been issued. For example, New York plans to use their green bond revenues on wastewater adaptation and a USD 1.7 billion subway expansion. Wuhan in central China has a total green bond issuance of USD 8.7 billion, with planned projects including flood protection and a public bicycle service.

Subnational green bond growth issuance is rising, and accounted for 21% of green bond issuance in 2017. Cities have begun to issue green bonds at record pace in order to help finance their infrastructure needs. However, before cities can issue bonds, they need national legislation to clearly articulate whether they can borrow and under what conditions, including from which institutions, how much, in what currencies and using what collateral.

Sources: Climate Bonds Initiative (2018^[22]), *Green Bond Highlights 2017*; Climate Bonds Initiative (2017^[23]), *Bonds and Climate Change: The State of the Market 2017*, <https://www.climatebonds.net/>

Cities with devolved revenue-raising capacity – such as Tokyo and Paris – can align their existing municipal revenue streams to help achieve climate goals (Slack, 2016^[24]). For example, congestion charges and parking fees can help prompt users to use lower-emitting public transit alternatives, and property taxes and development charges can encourage density in urban areas (OECD, 2013^[25]; OECD, 2018^[4]). Some cities can also introduce emissions-pricing initiatives, offering the dual benefit of raising revenues that fund low-emission, resilient infrastructure while also helping to internalise the costs of emissions. For example, Beijing, Shenzhen and Tokyo have all implemented or are planning to implement emissions-trading schemes (World Bank and Ecofys, 2018^[26]).

Municipalities in developing countries face the even greater challenge of having typically limited capacity or authority to raise revenues, but also the largest infrastructure deficits. Ensuring infrastructure resilience in the face of increasingly severe climate events will be key for the sustainability of cities (see Box 7.4). The financing gap is most evident in cities in low- and middle-income countries: Iwo (Nigeria), Lucena City (Philippines), and Pekalongan (Indonesia) raise only USD 14, USD 54, and USD 101 per resident per year, compared to Freiburg (Germany) and Bristol (United Kingdom), which have per capita budgets of USD 3 638 and USD 4 907 respectively (Löffler, 2016^[27]).

Multi-national development banks and development finance institutions can provide technical support to facilitate access to international markets and propose city-specific financial instruments such as bonds and grants to scale up investment, and help improve credit-worthiness of cities through guarantee mechanisms. Coalitions such as the Cities Climate Finance Leadership Alliance, launched in 2014, work to mobilise and accelerate investment in low-emission, resilient infrastructure in cities and urban areas.

National finance ministries can help by reviewing the fiscal framework of cities and identifying misalignments with climate objectives, and by developing national legislation that clearly articulates whether cities can borrow and under what circumstances. Local governments can align local taxes and charges with low-emission, resilient development (such as introducing appropriately priced parking fees, congestion charges and emissions pricing), and reform fees and taxes that encourage sprawl.

Box 7.4. Improving cities' access to finance is essential for building urban resilience

In the coming decades, cities will have to grapple with increased demographic pressures and rapid urbanisation, while also adapting to new operating conditions for essential infrastructure and services due to climate change. The severity of the impacts of future climate events will depend on a range of factors, but high physical and economic costs can drastically hinder cities' ability to bounce back following a climate-related disaster (Goldstein, 2018^[28]). This problem is even more complex in many developing countries, where cities' existing infrastructure stocks are insufficient, and must now be scaled up to provide services for burgeoning populations. In these countries, capital investment needs in infrastructure are huge, possibly in excess of USD 1 trillion per year. This recurring infrastructure deficit combined with strong population growth threatens the economic prospects of such cities, leading policy makers to explore new ways to pay for low-emission, resilient development. While climate action plans are emerging at the city level, funding and financing options available to local authorities, in both developing and advanced economies, can be limited due to creditworthiness concerns or national policy frameworks. However, some promising solutions exist.

From a management and system design perspective, some approaches can help system operators avoid or reduce the impacts of climate change on their systems, as presented hereafter:

- In the water sector, some municipalities are encouraging **'green' infrastructure projects** (e.g. parks that can act as short-term storm water retention ponds) instead of **'grey'** (or manmade) systems that can be more costly to build and maintain.
- In the energy sector, **demand response schemes** that encourage households through differentiated pricing systems to consume less energy during peak demand periods have been set up by various utilities; and a **dedicated science team** was set up within the California-based Pacific Gas and Electricity company in 2016 to integrate the latest climate studies into the company's risk assessment process (PG&E, 2016^[29]).

Cities are also starting to turn to a range of financing and regulatory approaches to support climate-resilient infrastructure investments. For example:

- **Land-use laws and building codes** can help manage citywide infrastructure needs by encouraging property owners to invest in climate-proofing as part of their building or landscaping design strategy.
- **Taxes with a dedicated climate focus** controlled by local authorities can support resilient infrastructure investments. While still a relatively new phenomenon, there are several examples from which lessons can be learned: for example, Mexico City offers a property tax reduction, averaging a 10% cut, to all new and existing building owners that install green roofs (C40, 2015^[30]).
- **Public-Private Partnerships (PPPs)** can increase access to finance beyond what is available to governments, ensure cost containment, and help with timely delivery of climate-related projects. Moving forward, PPP contracts could include a "fitness for purpose" warranty that requires the private sector partner to ensure that the infrastructure delivers against its intended function over an extended timeframe. This implicitly forces the private party to account for climate change in their system design and operations.
- **Bilateral aid and ODA** are common sources of funding for energy, water and transport systems in most developing countries. Over the period 2010-12, an estimated USD 720 million per year, representing 8% of the total bilateral adaptation-related aid, was dedicated to climate-resilient infrastructure investments (OECD, 2014^[31]; Ohshita and Johnson, 2017^[32]). This number could be even higher if governments made this a priority as part of their request for support.
- **Dedicated global climate funds**, e.g. the Green Climate Fund, as well as green banks or facilities focusing solely on urban projects can help. While such green banks are mostly found in advanced economies, and the question of their capitalisation needs to be resolved, their narrow focus allows them to build in-house expertise quickly, meaning they can also serve as a helpful technical resource to clients.

Box 7.4. Improving cities' access to finance is essential for building urban resilience (cont.)

Another promising development is the growing role of technical assistance initiatives aimed at facilitating cities' access to public and private finance for resilience projects. National governments again have a role to play here, as they create the essential operating conditions for their cities. While some governments may wish to keep a tight rein over these decisions, due to concerns about corruption or lack of internal capacity, a key question moving forward is whether and when national governments should revisit such restrictions, giving cities more room to manoeuvre on climate issues. At the 2017 One Planet Summit, the Global Covenant of Mayors called for "improved vertical policy alignments between national and local governments" for these very reasons. This will likely remain an ongoing concern, with financing implications, for cities and other local authorities engaged in climate resilience matters and planning.

Source: World Bank Group (2018^[33]), *Financing Resilient Urban Infrastructure: Lessons from World Bank and Global Experience* (forthcoming), *Financing Climate Futures Case Studies*.

7.3. Build climate-related and project finance capacity in cities

In addition to the challenges facing local governments due to their weak fiscal autonomy, they also often lack capacity in areas such as measuring emissions, mainstreaming climate risks in infrastructure planning, and financing and delivering infrastructure projects efficiently. These capacity gaps not only impede governments' success in delivering on their climate objectives but also their borrowing ability.

Only 20% of the world's 150 largest cities have the basic analytical tools at their disposal for low-emission urban planning (World Bank, 2013^[34]). Developing capacity in local governments and administrations is fundamental to make climate action work, particularly in developing countries that suffer from capacity constraints and severe vulnerabilities to the adverse effects of climate change. This is recognised in Article 11.2 of the Paris Agreement, which states that "[c]apacity-building should be country-driven, based on and responsive to national needs including at the national, subnational and local levels" (UNFCCC, 2015^[35]).

Sufficient capacity can help bolster infrastructure investment, including a better understanding of administrative procedures, procurement procedures, co-ordination with other levels of government and across jurisdictions (see Box 7.5), and strategic planning. National governments can fund programmes that provide training and technical support to enhance access to private capital markets. Building institutional capacity and expertise can help cities prepare for and package infrastructure projects into attractive bankable projects for private investors. Cities could also strengthen their long-term planning capacity (see Chapter 2), including their use of tools such as cost-benefit analysis, to ensure a strong information base is being used for decision making.

National governments and development finance institutions can help by building local capacity to access private capital markets and to work with the private sector (OECD, 2014^[18]). They can strengthen capacities and skills in developing risk-informed urban plans, and in designing and selecting urban infrastructure that takes into account a range of future climate conditions and the associated uncertainties. They can also help build climate-related capacities to develop long-term low-emission strategies and measure greenhouse gas emissions and progress.

Assisting cities through strengthened financial performance and enhancing city leaders' knowledge of revenue management, expenditure control, debt management, asset maintenance and capital investment planning is central to unlocking and improving creditworthiness (World Bank, 2018^[37]). Creditworthiness can be affected by the inability to

collect revenue, which limits a city's capacity to borrow. The lack of transparent accounting practices is another important barrier, particularly in developing countries.

Box 7.5. **Kommuninvest**

Kommuninvest is a co-operative organisation of Swedish municipalities that work together to bring down the cost of loans. It began in the 1980s and today accounts for over 40% of Swedish local government borrowing. It helps build credit for cities in order to facilitate investment. All members must accept liability for Kommuninvest's obligations.

There have never been any credit losses since the entity's inception and it is the only company in Sweden that has the highest credit rating from Moody's and Standard & Poor's. Canada, France, New Zealand and the United Kingdom are building on Kommuninvest's model for similar operations.

Source: Kommuninvest (2018_[36]), "Our vision", Kommuninvest website, <https://kommuninvest.se/en/about-us-3/vision-and-basic-concept/>

Estimates suggest that less than 4% of the largest 500 cities in developing countries are considered creditworthy in international markets, and less than 20% are considered creditworthy in local markets (World Bank, 2013_[38]). Improving creditworthiness can have tremendous impacts: just USD 1 of investment in improving city creditworthiness in a developing country can leverage more than USD 100 in private investment in sustainable urban infrastructure (World Bank, 2013_[38]). City creditworthiness initiatives and project preparation facilities, such as the World Bank's City Resilience Program (CRP) and the C40 Finance Facility, can support public entities' capacities in developing bankable projects and scale up their investment in infrastructure. This applies in particular to cities in developing countries, as the majority still lack access to external financing sources.

Strong leadership among local elected representatives can increase the ambition of climate and inclusive growth measures undertaken by cities. In recognition of the key role of cities in tackling inequalities, the OECD created a global coalition of Champion Mayors for Inclusive Growth in March 2016, which put forward four priority policies: education, labour markets, housing and the urban environment, and infrastructure and public services. The coalition's agenda includes diagnosing policy misalignments affecting climate action, developing evidence on the benefits and potential regressive impacts of climate action on inclusive growth, facilitating best practice sharing, as well as identifying bottlenecks to entrepreneurship. This coalition provides the leadership that is often missing at a city level to ensure that cities plan and finance low-emission, resilient infrastructure to ensure a sustainable and fair local economy (OECD, 2015_[39]).

7.4. Seize the development benefits of low-emission, resilient planning

Income inequality is already higher in cities than their national averages – and likely to be worsened by climate change (Hallegatte et al., 2016_[10]; OECD, 2018_[14]). Cities therefore have a crucial role to play in implementing and delivering the low-emission transition in an inclusive way. The health implications of poverty in cities are already startling: while the richest 40% of urban dwellers are likely to reach the age of 70 or more, the poorest 20% struggle to reach 55 years (UN-Habitat, 2015_[40]). In Baltimore (US) and London (UK), life expectancy can vary by 20 years across neighbourhoods (OECD, 2016_[41]). Globally, nearly one billion people live in slum-like conditions, many of which are extremely vulnerable to climate impacts (UN-Habitat, 2016_[2]).

Core climate policies – such as those relating to energy, transport and carbon taxation; subsidy and pricing reforms; support for renewable and low-carbon energy; energy efficiency programmes; and transport planning and management – have the potential to affect household spending and the affordability of energy, transport services and housing. Policies outside the climate portfolio can also influence climate and inclusive growth. For instance, local tax policies, by affecting the costs and benefits of land use, can have a significant impact on emissions and housing affordability. Considering the impacts of policies at the subnational level on development and inclusiveness is therefore central to strategic, cohesive planning (see Box 7.6).

Box 7.6. OECD Framework on Inclusive Growth

Climate change, globalisation, digitalisation and demographic changes are transforming the way economies work, providing new opportunities for growth, but also raising the risk of deeper inequalities if the gains from growth are not evenly shared among people, firms and regions. The OECD Inclusive Growth Initiative puts the emphasis on policies that can improve the perspectives of the bottom 40% of the income distribution:

1. **Invest in people and places that have been left behind** through: (i) targeted quality childcare, early education and life-long acquisition of skills; (ii) effective access to quality healthcare, justice, housing, infrastructures; and (iii) optimal natural resource management for sustainable growth.
2. **Support business dynamism and inclusive labour markets** through: (i) broad-based innovation and technology diffusion; (ii) strong competition and vibrant entrepreneurship; (iii) access to good quality jobs, especially for women and underrepresented groups; and (iv) enhanced resilience and adaptation to the future of work.
3. **Build efficient and responsive governments** through: (i) aligned policy packages across the whole of government; (ii) integration of distributional aspects upfront in the design of policy; and (iii) assessing policies for their impact on inclusiveness and growth.

Source: OECD (2018^[42]), *Opportunities for All: A Framework for Policy Action on Inclusive Growth*.

Climate policies and strategies present both threats and opportunities for more inclusive growth. If appropriately planned, low-emission, resilient infrastructure can have positive impacts on vulnerable populations; for instance, increased investment in urban transport systems generally improves access to jobs for low-income populations.

However, such investments can also lead to counterproductive knock-on effects in the long run. Upgrading the public transport system may in some cases lead to gentrification and the displacement of lower income groups to lower quality, job-poor neighbourhoods, thereby reducing their access to jobs and services (ITF, 2017^[43]). In the absence of redistribution mechanisms, carbon pricing may disproportionately affect low-income people. Another example is congestion charges, which tend to be regressive and, in the absence of compensating policies, risk disproportionately affecting low-income households living in the urban periphery where housing prices are cheaper. However, if the revenues of congestion charges are used to provide an affordable and reliable alternative (public transport), they can generate more equitable outcomes (ITF, 2017^[43]). Focusing on housing quality and affordability can improve the productivity of home-based workers who comprise a significant proportion of the work force in Asia (14% in India), and the vast majority of whom are women (Chen and Sinha, 2016^[44]).

While the transition to a low-emission economy will yield benefits in certain economic sectors, it will also reduce jobs for workers in emissions-intensive sectors. Low-skilled workers are likely to be most significantly affected, while medium- and high-skilled workers will be largely shielded and are also more likely to benefit from opportunities in green technology and innovation. These impacts can be limited – and a high level of employment and a fair distribution of transition costs maintained – if governments can put effective policies in place to prepare the labour markets. Specifically, governments can focus on supply-side policies, with active labour market policies and skill development systems that can help facilitate a smooth reintegration of workers into employment. Demand-side policies can foster a competitive green sector through strong product market competition and moderate employment protection. Finally, income support, such as unemployment insurance and in-work benefits, can ensure a fairer transition for workers (OECD, 2018^[14]).

Subnational and local governments can help by mainstreaming inclusiveness in infrastructure planning (see Box 7.7). Cities can also integrate climate and inclusiveness outcomes by investing the revenues from environmental taxes and fees in measures that boost inclusive growth. They can take advantage of skills development and job-creation opportunities in urban infrastructure financing and investment, particularly relating to energy efficiency investments, and explore the potential for green bonds to achieve both climate and inclusion goals.

Box 7. 7. Strengthen capacity to track subnational data on climate spending and investment

Many subnational governments have set climate targets and are incorporating climate change adaptation and mitigation into their budget priorities. However, climate-related spending and investment at the local level remain insufficient. Between 2000 and 2016, climate-related investments grew by only 0.5% annually (in real terms on average), compared to 2.6% for central governments. Comparing the levels and trends of such investments is currently not possible across subnational governments due to lack of consistent data. This in turn makes it difficult to evaluate progress towards the Paris Agreement in a standardised way, and to adjust climate action at the subnational level accordingly. Thus, there is a need to address the institutional, human and data capacity gaps that currently lower the quality and quantity of data for tracking local climate-related spending and investments.

Few countries have developed climate-specific statistics, and many use other categories of national accounts to capture climate-related spending and investments (e.g. counting energy efficiency investments in hospitals under health-related functions). Some countries have developed approaches to tracking climate expenditures at the national level (e.g. Belgium, France and Germany), but they all use different categories and classification systems. Other countries' systems provide incomplete data models. Only three European countries produce complete national data on mitigation spending, and none maintain comprehensive data on adaptation spending. These issues are even more obvious at the subnational level, especially for non-OECD countries (including some members of the G20).

To ensure cities have the adequate data, capacities and instruments to deliver the scale and speed of the transformation needed, governments should strengthen data collection, statistical systems and methodological approaches to track progress on climate objectives. This could be done in co-ordination with international fora such as the G20, and with the support of the OECD and other international organisations, building on preliminary efforts to track and compare existing subnational climate-related spending and investments.

Source: OECD (2018^[11]), Financing climate objectives in cities and regions to deliver sustainable and inclusive growth (forthcoming), *Financing Climate Futures Case Studies*.

Some cities are already incorporating such explicit equity dimensions into their climate strategies. For example, New York's 'OneNYC' roadmap aims to make the city not only more dynamic economically, but also more just, sustainable and resilient. It includes environmental targets (such as fully eliminating waste going to landfills), steps for adaptation (such as strengthening coastal defences against flooding and sea rise) and equity measures (including lifting 800 000 New Yorkers out of poverty by 2025, setting the minimum wage at USD 15 and implementing education and retraining initiatives) (New York City, 2013^[45]).

Another example is Seoul's Energy Welfare Public Private Partnership Programme. It aims to address energy poverty in Seoul, which affects over 10% of households, by increasing their energy independence through efficiency home upgrades for example. It also provides training to allow disadvantaged job seekers to become energy efficiency consultants for low-income households. The programme is funded by public and private sources, including monetary savings earned through demand-side management measures, among other elements (OECD, 2018^[14]).

Notes

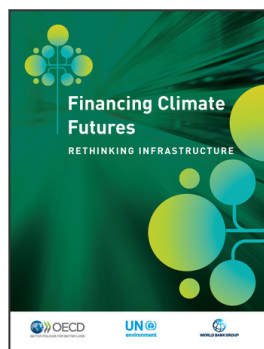
1. Climate investments can be defined as the acquisition (including purchases of new or second-hand assets) of assets for climate purposes (e.g. installing coastal defences against flooding and sea level rise). Climate spending can be defined as the amount of money spent on operating and maintaining these (e.g. strengthening coastal defences).

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