

A PRIMER FOR POLICY MAKERS

Hand in Hand for Urban Transformation

Roles and responsibilities at the local, national and
international level to enable cities' climate leadership

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Climate & Development
Knowledge Network



Abstract

The Paris Agreement which was adopted in December 2015 sets the pace for global action against climate change for the coming years and decades. In its preamble it underlines the importance of all levels of government engaging in and contributing to tackling the climate challenge. Given the significance of cities in emitting greenhouse gases as well as their vulnerability to the impacts of climate change, their role in advancing a low-carbon and climate-resilient development should not be underestimated. An urban transformation is key as it will decisively shape the functionality of cities for the next 50 to 100 years.

This publication has been developed to guide policy makers on how such a transformation can take place. It describes why local governments have such important roles to play and what relevant parameters they can adjust to move cities forward on a low-carbon and climate-resilient path. It visualises the steps local governments have to take to lead cities towards becoming climate compatible urban spaces and it reviews the different forms of financing sources that are available to cities. Moreover, it looks at the responsibilities of national governments and what can be done domestically to encourage such a transformation. Lastly, the publication considers the international level with a particular focus on the Green Climate Fund, the largest climate fund to date, and how it can support cities through the different financing structures it provides.

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Abbreviations

CDKN	Climate and Development Knowledge Network
EDA	Enhanced Direct Access
EE	Executing Entity
GBP	Great Britain Pound
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gas
IE	Implementing Entity
MNRE	Ministry of New and Renewable Energy of India
NDA	National Designated Authority
PSF	People's Survival Fund Philippines of the Philippines
US\$	United States Dollars

1 Introduction

Climate change is a global challenge and addressing it requires unprecedented cooperation across all levels of government. Internationally the Paris Agreement sets the pace for reducing emissions and adapting to the impacts of climate change. The Agreement contains common objectives for the international community, namely “holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels” and “increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience”. In order to achieve these objectives, all financial flows are to be made “consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (United Nations, 2015, Article 2.1). These are very ambitious objectives that will require decisive action on all levels of society.

By “recognizing the importance of the engagements of all levels of government and various actors ... in addressing climate change” (United Nations, 2015, Preamble) the Paris Agreement identifies national, subnational and local governments as playing important roles in climate change mitigation and adaptation. While national governments are mandated to translate the Paris Agreement objectives into national targets, strategies and action plans, no concrete mandates have been given to subnational and local governments. Obviously this reflects the nature of the United Nations Framework Convention on Climate Change, where country parties negotiate and take decisions. Nonetheless, there is a very significant immediate potential to reduce emissions and increase resilience that lies within the jurisdiction of cities and local governments.

Cities emit more than 70% of global emissions and consume around the same proportion of the world’s primary energy. At the same time, they generate 80% of the global Gross Domestic Product (GDP), which depends on healthy urban residents and functioning urban structures and services, many of which are increasingly vulnerable to the impacts of climate change such as heatwaves, storm surges and rising sea levels (The Global Commission on the Economy and Climate, 2014). Beyond the direct effects of climate change, cities today face the challenge of rapid population growth, often resulting in increased levels of poverty and soaring inequality rates. Small and medium sized cities in Africa and Asia are particularly affected while at the same time receiving limited international and national attention as well as financial resources to address those challenges.

To date, a number of handbooks and manuals have been published to guide local governments in addressing the climate challenge, developing integrated long-term planning strategies and identifying suitable financing mechanisms. As part of a research project funded by the Climate and Development Knowledge Network this publication aims not to develop new guidelines and methodologies for cities to engage in such processes but rather to synthesise existing approaches and lessons based on the findings of our research.

The first chapter will go into detail about why local governments have such important roles to play in tackling climate change and what relevant parameters they can adjust to move cities forward on a low-carbon and climate-resilient path. It also visualises the steps local governments have to take to lead cities towards becoming climate compatible urban spaces. Furthermore it reviews and illustrates the different forms of local financial sources that are available to cities. Two case studies illustrate the approach that different cities have chosen in order to advance a transformation towards low-carbon and climate-resilient development.

The second chapter then looks at the role of national level governments. Why are they important in guiding cities? What is their specific function and responsibility? Insights from India, Indonesia and the Philippines exemplify the set-ups and approaches that their national governments have used to best support cities, not just financially, but also in planning processes.

The third chapter considers the international level. It outlines why support from the international level is particularly needed to support small and medium sized cities and goes into detail about how one particular fund, the Green Climate Fund, could support cities through its financial support structure.

2 The City Level

2.1 Why it is important

The world's cities are at the forefront of climate change, both in the fight against climate change and in experiencing its impacts. Whether it is traffic, high energy consumption, flooding of high density settlements or heat waves leading to extreme urban heat island effects – it is the urban arena in which those problems occur to a substantial extent and it is therefore the cities in which those problems need to be addressed.

With over 70% of today's cities already experiencing the effects of climate change, many of them have initiated policy processes around the issue and engaged in climate action planning in a practical sense (C40, 2016). Many mayors' willingness and motivation to take up the issue is supported by urban dwellers who tend to be more willing to accept climate change as a reality and thus to embrace the solutions that are necessary to live in a low-carbon and climate-resilient city. In other words, urban residents are understood to have a higher level of acceptance of the kind of changes in society that climate change mitigation and adaptation measures will require (Aggarwala, 2013).

Beyond the increased willingness of mayors and urban dwellers, local governments have the political authority to advance on climate change within their territorial dominions. Their jurisdiction over a number of decisions that are related to climate change make them frontline players in implementing low-carbon and climate-resilient development actions. On the adaptation side, among others, this includes the modernisation of urban infrastructures such as drainage systems and stormwater collection structures, the declaration of water retention areas and no-build zones, the development of parks and other green and aquatic spaces and the relocation of vulnerable groups living in hazardous areas of the city. With regard to mitigation, the jurisdictional authority of local governments reaches into areas such as the transport sector in which local governments can introduce measures to improve traffic flow, incentivise the reduction of private vehicle use and the use of public and non-motorised transport. Furthermore, they can install measures to reduce energy consumption in buildings, e.g. through solar water heaters, adequate insulation, double glazed windows or improved architectural design for heating and cooling (UNEP, 2009). **Figure 1** (Page 7) illustrates the percentage of cities which have control over different urban sectors, functions and structures.

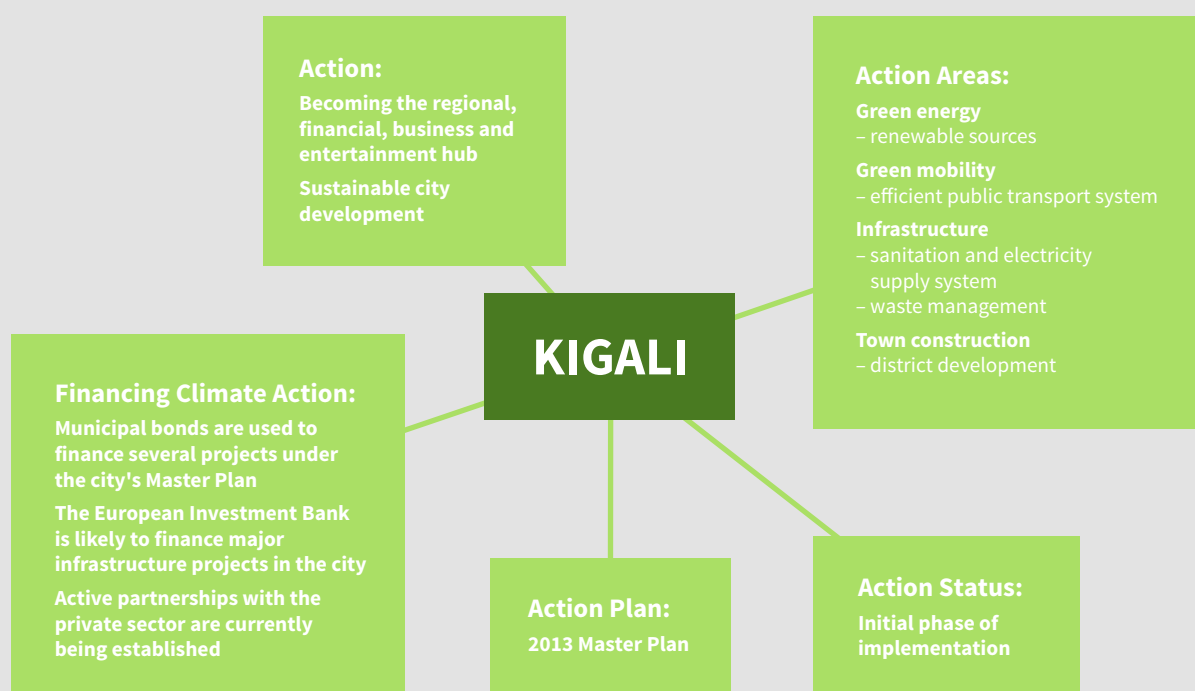
Case Study: Kigali

Kigali, the capital of Rwanda, has undergone rapid urban growth and intense socio-economic challenges since the genocide in 1994 (Goodfellow and Smith, 2013). By the year 2000, the population of Kigali had grown to 17 times the size that it was in 1970; and with 1.2 million residents today, it is expected to increase further in the future due to rural-urban immigration and a high birth-rate. Over the course of the city's expansion, informal settlements have developed in and around the city, posing a challenge to the city in terms of land use, urban infrastructure and environmental impacts (WGBU, 2016).

After the genocide, Kigali was supported financially by the international community investing in economic and environmental development projects (Goodfellow and Smith, 2013). Nevertheless, today the city still lacks good infrastructure. Kigali's second Master Plan therefore centres on public transportation, the sanitation system and waste management as well as the poor energy supply network. As a result, the local government hopes to limit or even lower the use of private vehicles to keep carbon emissions at their current levels (WGBU, 2016). Furthermore, the Master Plan contains approaches for a sustainable urban transformation of Kigali. Among others, these include the implementation of green mobility schemes, cycle lanes and walkable neighbourhoods as well as a reduction of impacts on the environment (City of Kigali, 2013a). Furthermore, the Master Plan has a very ambitious district development programme: Each of the three administrative city districts shall develop their own identity and fulfil specific urban functions. Specifically, Nyarugenge shall become the "Green Financial Hub and Vibrant Growth Centre of Kigali", Gasabo the "Diverse Employment Hub and Cultural Heartland" and Kicukiro the "Knowledge Hub and Green Gateway of Kigali" (City of Kigali, 2013b).

What Rwanda's government is longing for is to leapfrog a carbon-intense economy and to skip straight to the implementation and usage of renewable energies. Nowadays, Kigali follows a climate-friendly development paradigm and it received the UN-Habitat Scroll of Honour Award for implementing the first transformational steps towards fostering green energy, improving waste management and for its pioneering position on prohibiting plastic bags (UN, 2008). At the same time however the Master Plan is predetermined by the government of Rwanda, which regulates local governments. Here it is particularly problematic that the city dwellers of Kigali are not involved in the planning and implementation process thus having to fear forced evictions due to the potential demolitions of informal settlements (WGBU, 2016).

On the whole, while the Master Plan outlines an innovative framework for formalising modern, economic, social and sustainable urban development, it remains highly questionable whether an urban transformation in Kigali can be achieved without the active involvement of all urban residents (WGBU, 2016).



Sometimes, in comparison with national governments, cities can be more straightforward in taking decisive action, often with more immediate results. Compared to their regionally and nationally elected counterparts, local official might also feel more directly accountable to their constituents, the urban dwellers, for their decisions.

On a whole, cities are as powerful as they are vulnerable. Even with no direct global mandate to reduce their emissions or adapt to climate change, they must be part of the solution, locally and globally. On the one hand, speaking with one voice at international fora, such as the intergovernmental meetings of the United Nations will be essential to feed into and inform global policies and shape global agendas. On the other hand, cities are needed more than ever to create new solutions on the ground. For centuries cities have been centres of innovation, expertise and culture. Where else than in cities itself can ideas for low-carbon and resilient urban development be created and designed and subsequently be put into practice?

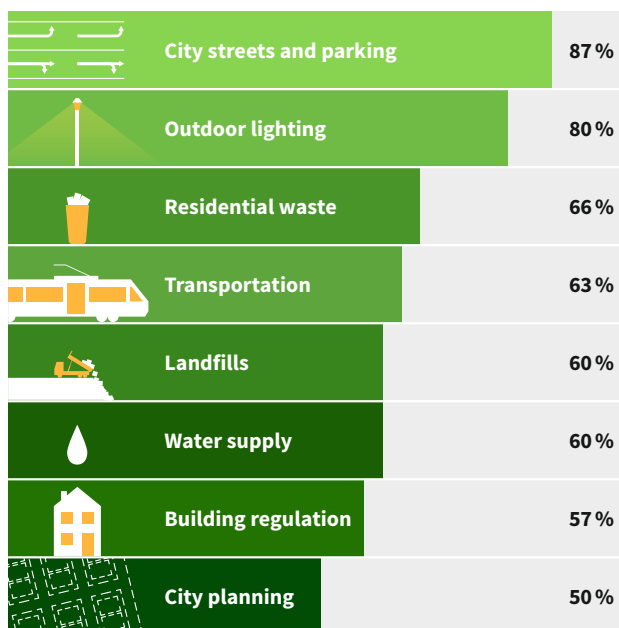


Figure 1: Jurisdictions
Source: Own illustration, based on C40 (2013)

2.2 How it works

Bringing climate change debates from the level of international negotiations down to urban realities on the ground has been a challenge over the past decades. Whilst cities have been engaging in urban development and thereby addressing basic environmental challenges for some time now, integrating climate change has been a complex undertaking for most of them and often overwhelms their capacities and financial resources. Small and medium sized cities have been facing particular hardships, receiving less national and international attention compared to capital cities, while at the same time having limited opportunities to build-up their knowledge capacities on the topics of climate change, vulnerability and adequate measures to respond (CDKN, 2015).

The multiple challenges that cities are facing today, e.g. high population growth, an increasing proportion of the urban poor and limited access to basic water and sanitation as well as food delivery services will be exacerbated through climate change. At the same time, increased attention to climate change can contribute to local governments' no longer side-lining sustainable development but putting it at the core of all short, medium and long-term planning decisions. This will also help to create an understanding of the many co-benefits that climate change action can have on curbing urban poverty levels (UN-Habitat, 2012).

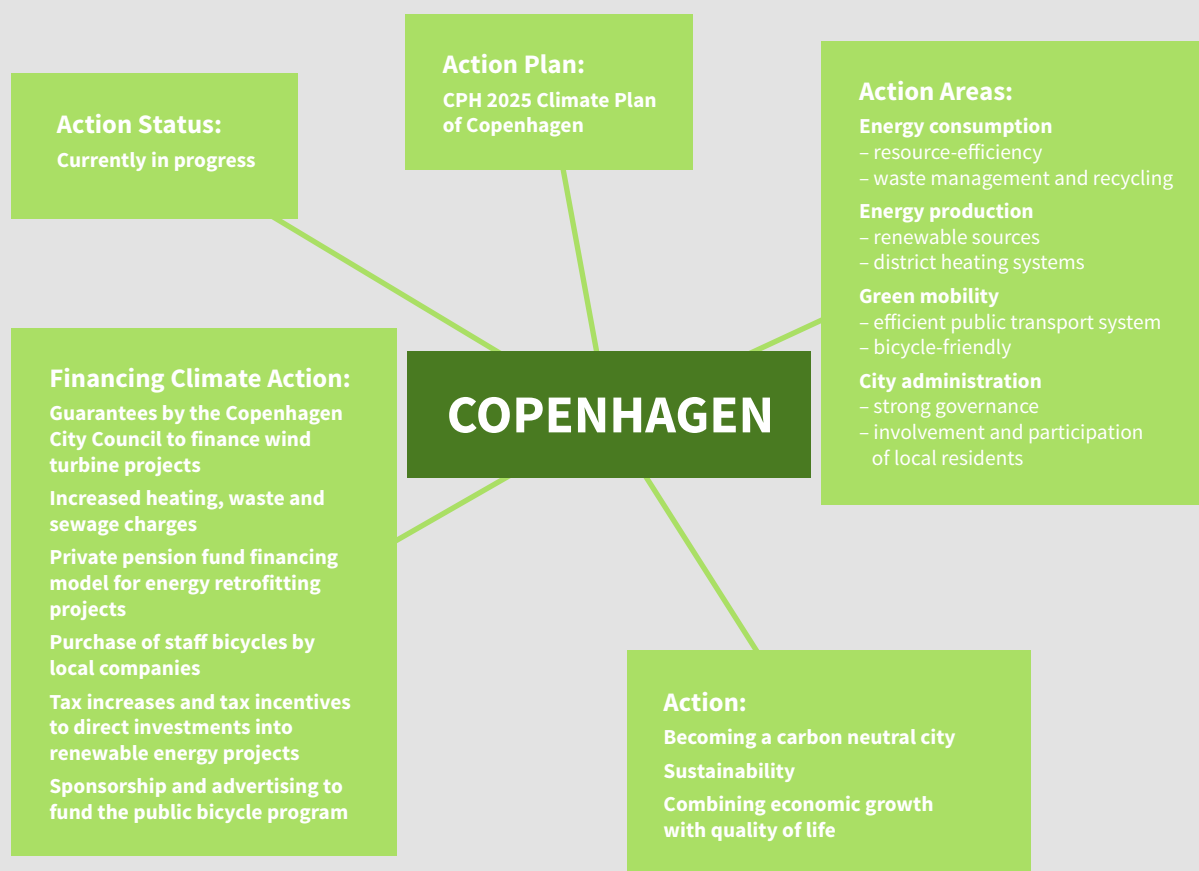
Case Study: Copenhagen

Copenhagen is a typical western European city but differs from many others with regard to its ambitious climate change and sustainability targets. Driven by its objective of becoming carbon neutral by 2025, the city is in the process of an integral transformation, transitioning from an industrial and harbour city to a contemporary and sustainable metropolis (City of Copenhagen, 2010). The city is determined to combine economic growth with the enhancement of quality of life for its population and to address climate change through various emission reduction and adaptation measures in a sustainable manner. In order to achieve the pioneering position of being the first carbon neutral city, its local government focusses on four pillars of intervention: energy consumption, energy production, green mobility and city administration (City of Copenhagen, 2014).

As of today the city has already installed an innovative and efficient district heating system that integrates surpluses from biomass, geothermal and wind energy. Moreover, a bicycle-friendly infrastructure as well as an integrated and intelligent public transport network has led to the bicycle becoming the favoured medium of transport for the city's residents (City of Copenhagen, 2014).

To reach its 2025 goal, the local government aims to supply other parts of Denmark, that have so far relied on conventional energy sources, with renewable energy, thereby compensating for the city's own emissions (City of Copenhagen, 2012). Effective waste management and recycling are two other areas of intervention through which the city aims to significantly reduce its carbon footprint. Furthermore, based on its "Five Finger Plan" that is likely to be formalised soon, Copenhagen is planning to invest in green spaces in between the city's major roads and train tracks to provide local recreation areas and to promote a close urban-rural connection (WBGU, 2016).

With the understanding of increasing the quality of life and well-being of the city's residents, the local government in Copenhagen also actively promotes the involvement and participation of residents in urban planning and design (WBGU, 2016).



There have been a number of attempts to provide local governments with the know-how of addressing climate change and development challenges in a synergistic manner. While there is no one-size-fits-all approach, the numerous publications share some fundamental elements of a transformation towards climate compatible and pro-poor development in urban areas.

The typical starting point is the calculation of a city's greenhouse gas emissions and its sources as well as an assessment of the risks posed by climate change and the vulnerability of urban residents as well as of the city's functions. Data should be obtained through electronic means as well as through participatory approaches to include stakeholders' perceptions, particularly from those most at risk. A subsequent strategic plan will have to put those findings into a long-term planning perspective for the city, helping the local government to gain political acceptance among residents and other decision makers. This is either done by mainstreaming climate change action plans into existing plans or by developing stand-alone strategy documents. Subsequently, the details of financing must be addressed. While the next chapter outlines a number of different sources of finance available to local government, a blend of different sources has proved most promising. For example, the use of national and international funds, be it public or private, can help to initiate project implementation while the use of locally raised funds will in the long-term ensure sustainability and ownership of a project. In the implementation phase, it will be important to engage with relevant stakeholders such as individual citizens, the private sector or civil society organisations on a continuous basis in order to respond to potential or emerging challenges and to incorporate local knowledge and capacities. The monitoring phase that begins with the completion of the project is important in order to respond to possible shortcomings, maintain the functionality of the project and above all, to ensure the sustainability of the intervention.

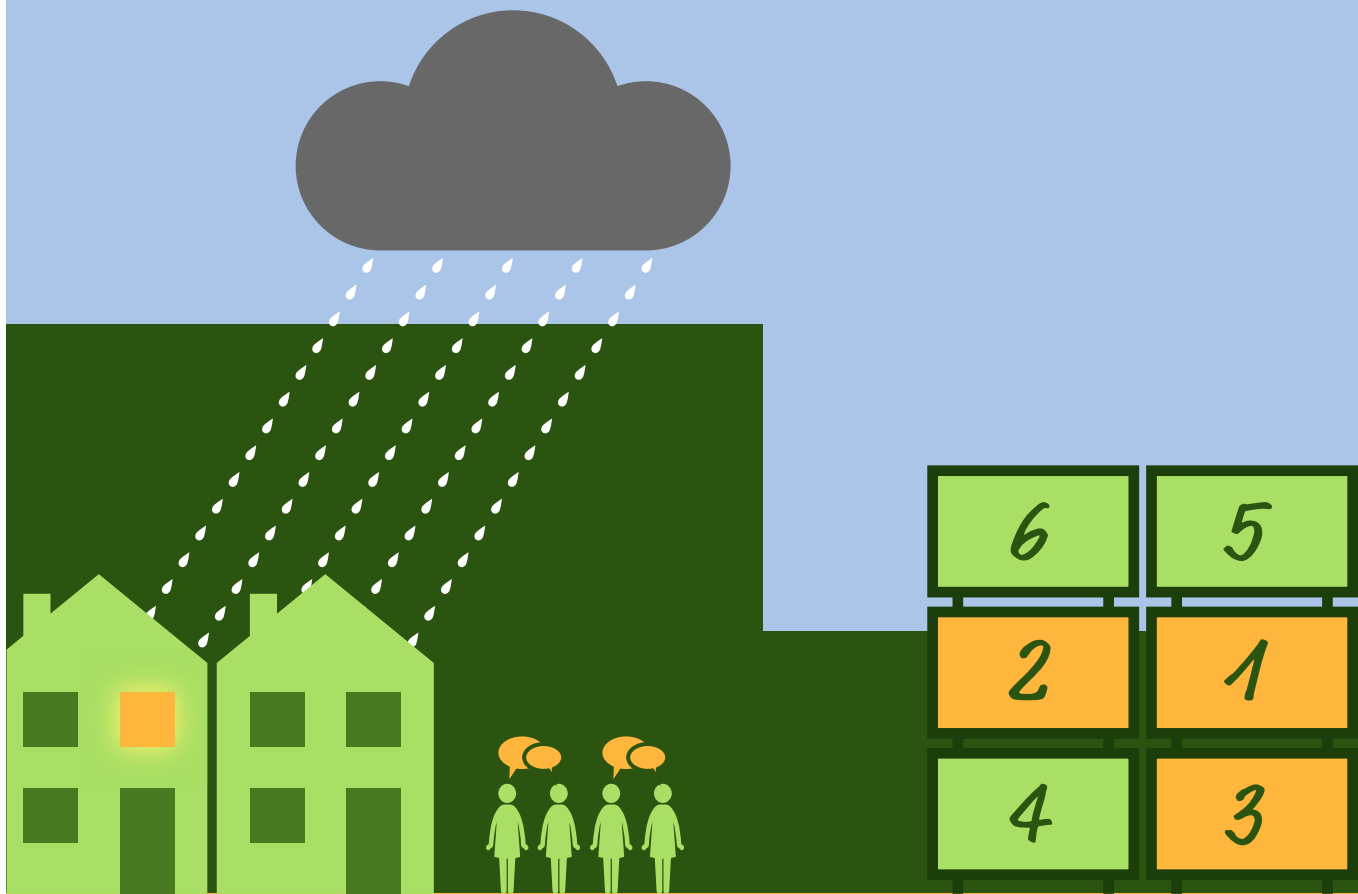
To date a number of planning guidelines have been developed for local authorities and city planners to engage in and take into account climate change aspects in their long-term planning perspectives. **Figure 2** (Page 10) synthesises those approaches and illustrates the different steps urban planners and local governments have to take in order to promote climate compatible development.

Particular attention in all of those steps needs to be given to the issue of human rights. In the past the vulnerability of certain areas and districts has led local governments to resettle vulnerable urban residents, sometimes even whole neighbourhoods. Sample cases from Dhaka, Medellin, Jakarta and Santiago show that often this was not with the residents' agreement and thus led to forced eviction (Bliss, 2016). Particularly the urban poor who live in informal settlements in hazard-prone areas with unclear land tenure rights need therefore to be at the centre of attention (Schauber/Teschner, 2016). Planning a low-carbon and climate-resilient transformation in cities should always be seen as an opportunity to create more, not less, equitable cities. Only by opening the planning and implementation process to groups such as resident organisations, civil society and community groups and thus paying close attention to the nuanced human impacts associated with the projects, local governments can engage in such a transformation without excluding the most poor and vulnerable urban residents.

Finance

The climate finance landscape offers a variety of different financing instruments that are also relevant for the urban context. They span from local sources such as development charges or crowdfunding to domestic sources like national climate or development funds to international climate financing institutions.

Steps for Urban Planners and Local Governments



Assessing Development

Preparation and analysis of information, creating an awareness of challenges, vulnerability and risk assessments

How does your city contribute to climate change? How is it exposed / could it be impacted? Which people, places and sectors are most vulnerable? How capable is your city of adapting to climate change?

Identification and participation of local stakeholders

Who needs to be involved (e. g. local government, resident organisations, civil society, community groups, academia, industry representatives) ? How should they be involved?

Strategic Planning

Identification and organisation of objectives

Which options (projects, policies, programmes) does your city want to implement? Which are feasible, most effective, best to implement, technically possible? Can they be mainstreamed into existing plans?

Ranking of priorities

Which objectives are most urgent? What do communities value most? Do "quick-start" options exist which could be put into action first?



Implementation

Assessment of local capabilities to prepare project plans, a financing framework and to access resources

What human, technical and institutional capabilities need to be build up before project implementation? Do you have the capacities to manage a blended financial resources portfolio?

Finalization of plans, identification of financing instruments

Which finalised climate actions will be put into action (short/long term)? What financial resources are at your city's disposal?

Putting plans into practice

How will the implementation process take place? Which player will take which role?

Monitoring Outcome

Monitoring and evaluation

How should a project be monitored? What should be monitored and who is responsible for the monitoring/evaluation?

Adjustments

How can processes be adjusted, based on monitoring and evaluation results?

Figure 2: Steps for Urban Planners and Local Governments

Source: Own illustration, based on ICLEI (2013), UN-Habitat (2014), UN-Habitat (2012), UN-Habitat (2011), World Bank (2011), World Bank (2009)

For cities to move towards sustainable and transformative low-carbon and climate-resilient development, steady and predictable financial revenues from local resources are essential. Besides increasing the ownership of projects those revenues are important for sustaining a project in the long-term. Furthermore, they foster municipal autonomy and increase the accountability of local governments. Generally, setting-up and introducing local revenue schemes requires a strong political will, effective administrative structures and the necessary knowledge to implement and monitor those actions. Local revenue schemes also need to be designed in a socially acceptable manner considering lower-income households' financial capacities.

To date, a number of cities across the world have already successfully raised financial resources locally through innovative means. Junghans/Dorsch (2015) have delved into a number of those financing sources. They are illustrated in **Figure 3** (Page 14) .

3 The National Level

3.1 Why it is important

Cities are often dependent on national governance systems regarding the extent to which they have the autonomy to take decisions concerning new policies or regulations. Thus, if a national government takes climate change seriously, it should be its duty to provide a strategic national policy framework that promotes low-carbon and climate-resilient urban development while at the same time strengthening the autonomy of city governments and fostering the participation of city dwellers (OECD, WBGU). In fact, it can be observed that in a number of cities around the world, local governments have the ability to respond to climate change more proactively if there are precise political guidance frameworks from the national government as well as adequate sources of finance. In other words, risk sharing schemes, financial support modalities and broad policy frameworks set-up by the national government, can help cities respond more effectively to the climate challenge (UN Habitat, 2011).

With regard to the provision of financial resources for low-carbon and climate-resilient urban development, national governments need to provide predictable finance streams. Although, as outlined in the last chapter, there are a number of ways local governments can raise funding locally, such funding is not normally sufficient for enabling larger scale or transformative projects in a city. Moreover, in cities it is often politically unpopular to spend large amounts of local revenues on low-carbon development projects that do not directly benefit urban residents. Besides, it forces mitigation or adaptation projects to compete with other urgent development needs. What can also be observed in a number of cities across the world is the limited priority that climate change plays for mayors at present. To overcome these barriers, national policy frameworks or funding mechanisms need to be set up, ideally encouraging local governments to take up the issue, integrating it into its short, medium and long-term development plans.

Above all, a national stimulus that places climate change as one of the national priorities will help to empower local governments, mobilise local stakeholders to play an essential role in addressing climate change and contribute to achieving a climate compatible development as well as a socially inclusive and productive environment in cities. **Table 1** (Page 13) outlines a few more fields of action for national governments to encourage and support cities to advance on a low-carbon and climate-resilient pathway.

Table 1: Core recommendations for transformative urban governance and for financing an urban transformation

GOALS	IMPORTANT MEASURES AND APPROACHES
Equip cities with the necessary decision-making powers or strengthen these powers	<ul style="list-style-type: none"> – Consistently enforce the subsidiarity principle – Enact legislation on local self-administration or some other form of constitutional recognition of urban autonomy
Integrate cities better into national and regional decision-making processes by giving them opportunities for consultation	
Strengthen capacity of urban administration	<ul style="list-style-type: none"> – Improve training of city planners and urban administration staff: make environmental and social principles part of training – Give cities autonomy in staff recruitment
Fight corruption	<ul style="list-style-type: none"> – Ensure the transparency, integrity and accountability of administrations – Introduce freedom-of-information laws and legal protection for whistle-blowers – Encourage anti-corruption pledges and programmes in the private sector
Ensure the compatibility of private investment with the common good and restrict real-estate speculation	<ul style="list-style-type: none"> – Promote social housing – Strengthen rental markets with high standards of tenant protection – Strengthen alternative forms of ownership – Develop and introduce innovative, socially compatible approaches to property taxes and real-estate transfer taxes – Establish sustainable investment standards worldwide
Strengthen municipal administration and financial base	<ul style="list-style-type: none"> – Ensure solid financing of cities through adequate transfer payments – Use transfer payments to strengthen the endogenous financing potential and support existing development potential – Consider making it easier for cities to use the financial markets
Mobilize private capital for urban infrastructure	<ul style="list-style-type: none"> – Work out a long-term and binding national transformation strategy – Create inclusive financial institutions

Source: WBGU, 2016

3.2 How it works

The national policy landscape differs from country to country. Local circumstances shape national agendas and affect their implementation pathways. At the same time, and particularly in the context of climate change, it appears that countries in fact also follow similar policy patterns. One reason might be the overarching mandates and guidelines that the United Nations Framework Convention on Climate Change assigns to all Annex-I and/or Non-Annex-I party

Internal Revenue Sources



Property Taxes

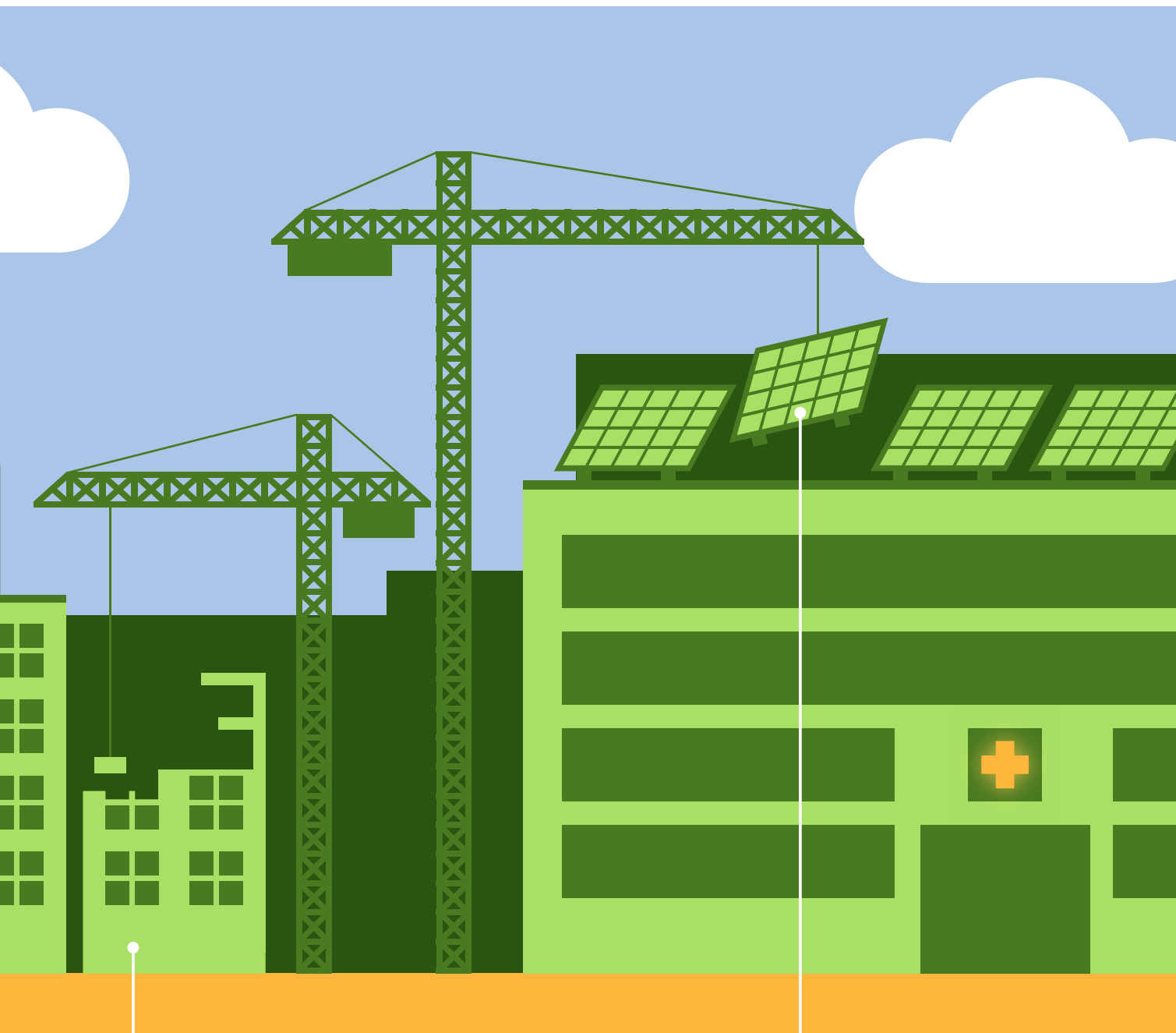
The primary purpose of taxes is to raise revenue which can be spent on general (local) governmental services. The most common types of taxes on the municipal level are property taxes.

Development Charges

A development charge is a one-off levy on developers who are developing a new area. The development charge will be used by the municipality to build necessary infrastructure such as street lighting and sewage systems etc. – an ideal entry point for integrating adaptation or mitigation measures.

Figure 3.1: Local financing options

Source: Own illustration,
based on Junghans/Dorsch (2015)



Tax Increment Financing

TIF is a very useful instrument to redevelop blighted areas in a climate friendly manner. It works by using a certain percentage of future property tax revenues as a means to develop the area. This takes place without increasing the property taxes for owners.

User Fees

User fees are levies charged for particular goods or services e. g. urban infrastructure services such as toll roads, parking spaces or water and electricity utilities. The primary purpose of user fees is not to raise revenue but to regulate activities and services, encouraging climate friendly behaviours.

Intracating

This instrument is a useful tool for lowering public buildings' energy bills without external financiers. It works by financing the energy saving measures through energy bill savings. While start-up financing is necessary, the energy savings will cover those costs in the mid-term.

External Revenue Sources and Alternative Models

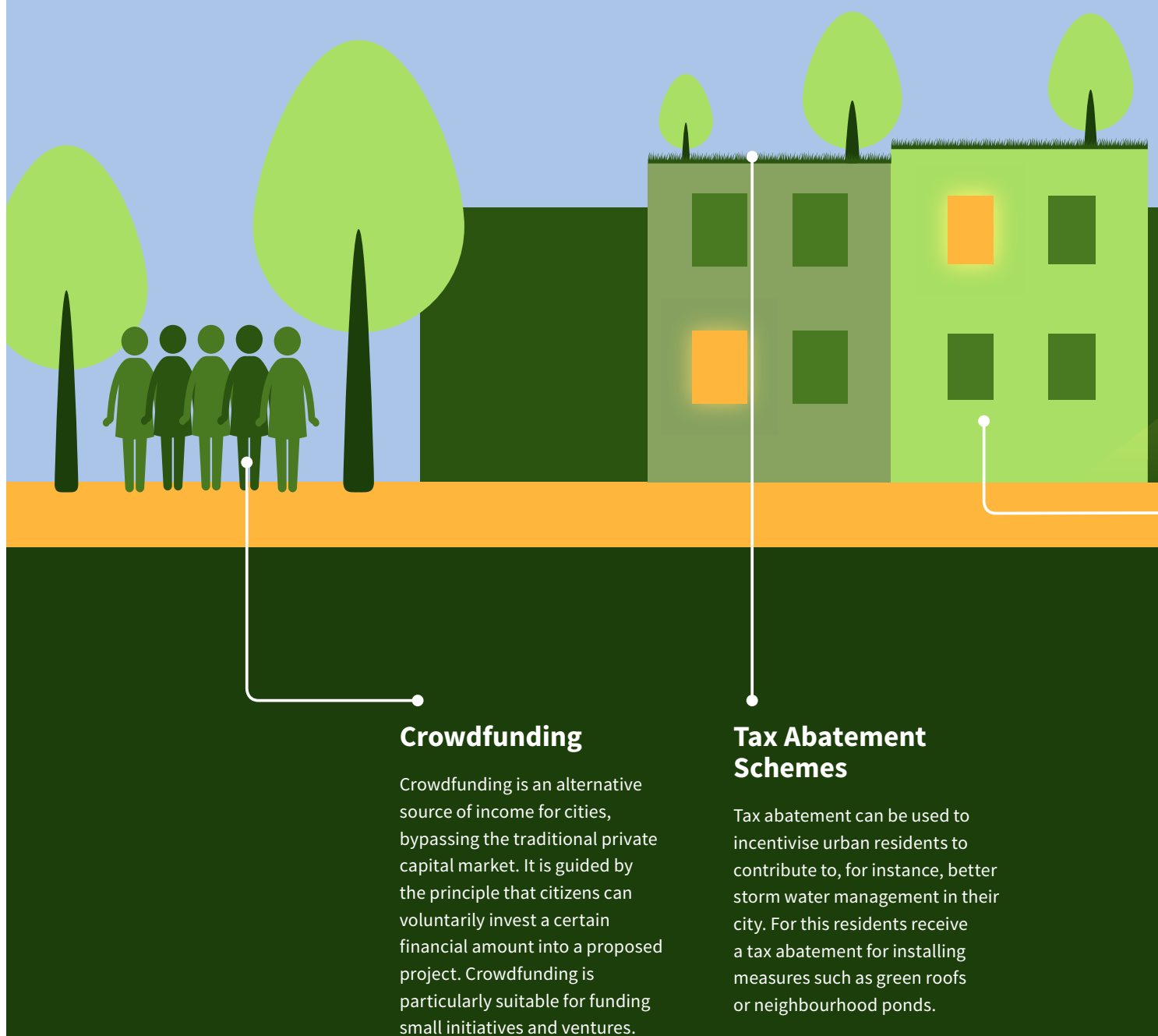


Figure 3.2: Local financing options
Source: Own illustration,
based on Junghans/Dorsch (2015)



Energy Performance Contracting

Through Energy Performance Contracting a local government can contract a company to install energy saving measures on public property. The company then receives a gradual payback that is financed by the reduced energy bills.

Green Bonds

A green bond is a type of loan, which local governments can use to finance “green” projects that are contributing to a low-carbon, climate-resilient economy. Green bonds provide cities with the opportunity to realise up-front investment costs e. g. start-up or kick-off costs that relate to intracting or TIF.

Community-Owned Energy Systems

Owned by the local residents and located on public grounds, community-owned energy systems can generate profits for both parties.

countries.¹ For example the guidelines developed for establishing National Adaptation Plans present certain formats of policy set-ups and provide recommendations on how to mainstream those into national strategy plans. There are less explicit guidelines regarding mitigation, but the best practices showcased through the UNFCCC process, for example in Technical Expert Meetings, still provide some orientation on mitigation policy. Furthermore, a number of developing countries have set-up national climate funds, some more similar to others, some with new and innovative features such as access modalities. This section will review the different policy set-ups of the Philippines, India and Indonesia with regard to their relevance to cities and local governments and draw some broader recommendations for national policy makers in other countries.

The Philippines

The Philippines is one of the countries most vulnerable to climate change. Many provinces, and especially cities near the coast, are considered to be extremely vulnerable. In 2009 the Climate Change Act in the Philippines was introduced to mainstream climate change development plans and programmes into national, sectoral and local level processes. Accordingly, local governments should become frontline stakeholders in formulating, planning and implementing climate change action plans and city districts should be involved in prioritising and identifying the most efficient practices and solutions. Moreover, local governments should allocate adequate funds to take forward and implement climate change action plans in their territorial jurisdictions. Those plans can for instance include public awareness campaigns, education and training programmes or energy-saving solutions.

Recognizing the need to provide support in implementing climate plans, the Climate Change Act has been amended through the People's Survival Fund (PSF) Law, which was passed in 2012. PSF amended the original law by establishing long-term climate change adaptation financing streams to local government units and communities. The Philippine national budget annually allocates at least 1 billion pesos (16 million GBP) to the PSF. The PSF Board, the fund's governing body, issued its first call for project proposals in 2015. The PSF is a grant fund for adaptation initiatives proposed by local government units (LGU) and communities through local organisations. The PSF's financing priorities include projects with a high poverty incidence, those with pronounced vulnerability to climate impacts such as typhoons, drought, rising sea levels and those that address key biodiversity areas such as forests or coral reef systems with endangered animals.

Furthermore, the National Disaster Risk Reduction and Management Plan was approved in 2010 in order to advance activities regarding disaster risk reduction, prevention, preparedness, relief, recovery and reconstruction. The plan also mandates local governments to set up city district risk reduction and management committees that serve as coordinators of disaster risk management programmes and advance the development and implementation of action plans. Fund allocations are also available at local and national levels.

¹ Annex I Parties include the industrialised countries that were members of the Organisation for Economic Co-operation and Development in 1992, plus countries with economies in transition, including the Russian Federation, the Baltic States, and several Central and Eastern European States. Non-Annex I Parties are mostly developing countries. Certain groups of developing countries are recognised by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures (UNFCCC, 2016).

India

India is a large and very diverse country with the impacts of climate change differing greatly between the north and the south, the different states and the country's cities. Some of the challenges that they face include acute water shortages and poor water quality, shrinking green spaces, growing traffic and the resultant traffic congestion, rising pollution levels, increasing heat stress and other health related issues and dwindling agricultural productivity. Furthermore, in coastal areas they face increasing soil erosion on beaches and increasing water salinity levels which is affecting ground water, crop cultivation and riverine fish catch.



Solar panels are installed in Gurgaon in the state of Haryana

Source: <https://upload.wikimedia.org/wikipedia/commons/2/2b/Solar-Panels-HUDA-station.jpg>

Apart from the National Action Plan on Climate Change and policies under the various missions of that National Action Plan there are a number of policies from various departments and ministries, both at a national and state level, for various sectors and issue specific areas that have an immense bearing on climate change as a co-benefit.

Under the umbrella of the National Action Plan, one of the most successful initiatives so far has been the Jawaharlal Nehru National Solar Mission, which is a major initiative of the Government of India. It sets the massive target of installing 100 GW of solar generation capacity by 2022, which includes a combination of grid connected large solar farms, grid connected solar roof-top systems and off-grid solar generation particularly for rural households. This includes installations in residential, governmental, social and institutional sectors such as hospitals and educational establishments. Under the umbrella of the mission, the Ministry of New and Renewable Energy (MNRE) has also launched a programme on “Development of Solar Cities”, which a number of cities are part of. With assistance from the MNRE, local governments will prepare a master plan for increasing energy efficiency and renewable energy supplies in all of the participating cities. The minimum target will be a 10% reduction in the projected total demand for conventional energy by the end of the five-year period.

Currently, the Ministry of Urban Development is leading the way in implementing the Jawaharlal Nehru National Urban Renewal Mission. The mission aims to encourage reforms and fast track planned development of the participating cities with a focus on strengthening the efficiency of urban infrastructure and service delivery mechanisms, community participation, and the accountability of parastatal agencies to citizens. In practical terms it will support cities in preparing city development plans and project proposals as well as in subsequently acquiring adequate funds to meet the deficiencies in urban infrastructural services by releasing and leveraging public funds and incorporating the private sector.

Furthermore, there is the National Electric Mobility Mission Plan that promotes the purchase of electric and hybrid vehicles. Under the subsidy scheme, depending on the maximum speed and efficiency of the vehicles, buyers of electric and hybrid vehicles will get an upfront discount of one-third of the difference between the price of that particular vehicle and a comparable petrol model, while the manufacturers receive a reimbursement.

Besides national policies, a number of states have also enacted policies and legislation aimed at reducing emissions and providing financial assistance for adaptation measures. A policy worth mentioning is the mandatory installation of solar roof top systems for all buildings above the size of 500 m², covering large residential, commercial and industrial establishments in the states of Haryana and Orissa. Other initiatives in the two states include the massive household LED lighting programme, aimed at providing all households in their respective states with at least two LED lights in replacement of CFLs and incandescent bulbs and another programme, namely a solar irrigation pump set programme, aimed at replacing inefficient diesel irrigation pump sets.

Indonesia

Indonesia is an archipelago country that is located in South East Asia, and it is a large country with a population of over 240 million. Indonesia is prone to climate change, but at the same time, Indonesia presents many climate change mitigation opportunities, in various sectors, such as energy, land-use, waste, transportation and industry. In 2009, during the G20 meeting in Pittsburgh, Indonesia announced their pledge to reduce greenhouse gas emissions to 26% voluntarily and 41% with adequate international support. Since then, Indonesia has launched the Presidential Decree No. 61/2011, called National Action Plan (RAN-GRK), to reduce greenhouse gas emissions. RAN-GRK consists of an action plan to reduce emissions from five sectors: land-use, energy, waste, transportation, and industry.

One of the mandates in RAN-GRK is for provinces in Indonesia to develop their own action plan to reduce greenhouse gas emissions. The action plan for each province is called Provincial Action Plan to Reduce Greenhouse Gas Emissions (RAD-GRK). The difference between RAN GRK and RAD GRK relates to who will carry out the emission reduction activities. RAN-GRK will be implemented at a national level, meaning, it is the responsibility of the relevant ministries and agencies to conduct the activities listed, whereas for RAD-GRK, the provincial government is the one who is responsible for implementing the activities.

Currently, there are no national funds directly available for cities concerning action to combat climate change. Unless the cities have a development plan that includes or mainstreams climate change, no national funding is provided for tackling these issues. However, there is a form of national funding called the Specific Purpose Fund (DAK) that can be accessed by cities, concerning issues such as the environment and forestry. However, it requires the city to apply for the funding, which can only happen if the city has a programme relevant to the purpose of the fund.

Indonesia has a trust fund called Indonesia Climate Change Trust Fund (ICCTF) that was established in 2009. ICCTF was designed to support the implementation of RAN-GRK and RAN-API. However, in accordance with its nature, ICCTF cannot provide funds to be used by any government institutions, including the central government. ICCTF can only provide support for non-governmental organizations, academia, or the private sector, and can be implemented to support activities at a city level, to address the needs of the cities. In many cases, project proponents applying to ICCTF attach an endorsement letter from the local government, including cities, as an additional document to the proposal.

Another institution that is currently providing funding related to combatting climate change is PTSMI. PTSMI is a non-bank financial institution that is state owned and 100% of its shareholders belong to the Indonesian Ministry of Finance. PTSMI provides various instruments to fund different activities, but primarily those concerning infrastructure. PTSMI may work together with the local government, including cities, through public-private-partnerships. Currently, PTSMI is applying for accreditation under the Green Climate Fund. Recommendations

Recommendations

Overall across these three countries, there are a number of policies and funding mechanisms that also cities can make use of with regard to tackling climate change in their jurisdictions. For such policy instruments to take root integrative and supportive national governance structures are key, backed by a productive interaction between the different levels of governments (World Bank, 2014). Moreover, empowering local governments and integrating them into national decision-making processes to a greater extent can also increase the capacities of urban administrations and thus help to advance sustainable urban development (WBGU, 2016).

Generally, the national government has the mandate to set domestic standards on climate change mitigation and adaptation and is able to catalyse investments from the public and private sector. By sending the right policy signals, for instance by offering tax rebates or incentives for investments in climate-friendly designs for individuals or industries, national governments have the power to initiate a strong investment framework for cities, while at the same time assuring that such private sector investments serve the common good, setting the scene for a low-carbon and climate-resilient urban development pathway (UN-Habitat, 2011; WBGU, 2016; World Bank, 2014).

4 The International Level and the Green Climate Fund

4.1 Why it is important

The previous chapters have outlined the vital role of cities in achieving the commitments of the international climate change framework, as set out in the Paris Agreement. At the same time cities are also benefitting from the opportunities created by this framework and its associated bodies. Several international players have already developed or are in the process of developing strategies for supporting climate change mitigation and adaptation in cities, particularly with regard to providing financial means (UN-Habitat, 2011). In this regard international climate funds play the most prominent role alongside international development agencies, multilateral development banks and other international organisations such as UN institutions.

According to the World Bank, more than US\$ 1 trillion annually is needed to close the climate infrastructure gap in low and middle income countries, with half of the cost arising in urban areas (World Bank, 2015). While local revenues and national transfers are important sources of finance for this, they each come with strings attached: While locally raised funding is important to strengthen ownership and safeguard the sustainability of interventions as well as the stability of revenue, it will take time to establish governance structures that ensure a steady flow of local revenue dedicated to climate change work. Local revenues are therefore not suitable for initiating transformative projects but rather for sustaining their operation in the long-term. At the same time, despite a national responsibility to direct funding to subnational entities, domestic financial markets are often insufficiently equipped to provide adequate resources for cities to engage in transformational projects. Driven by the imperative of low-emissions development, international funds and investors are thus needed to, on the one hand, encourage cities to take their first transformative steps and, on the other hand, unlock and leverage domestic and local sources of finance. From an equity point of view, the countries' different levels of vulnerability, responsibility and capacity need to form the basis for decisions on international support, i.e. cities in the least developed countries are likely to require more long-term assistance (Junghans et al., 2016).

Generally, a variety of financial instruments such as grants, (concessional) loans, insurance products, guarantees, equity, and microfinances exist to provide climate financing. All of these are necessary to help local authorities blend existing sources, steadily improve creditworthiness through setting-up financial management structures and generate start-up finance for projects with a longer return-on-investment period. In the multilateral climate finance architecture, the Green Climate Fund (GCF) is not only the newest player, but also the world's largest international climate fund having received commitments worth US\$ 10 billion in its initial resource mobilisation process. Before delving into the details of the GCF and how it could become a source of funding for cities, **Table 2** (Page 22) provides an overview of the other international financing options, according to the type of support.

Table 2: International financing instruments relevant for cities

INSTRUMENT	INTERNATIONAL SOURCE
Grants No repayment necessary	Green Climate Fund, Adaptation Fund, Global Environmental Facility, Private Sources/Foundations, Urban Climate Change Resilience Trust Fund, Bilateral institutions, Sub-National Technical Assistance Program (Public-Private Infrastructure Advisory Faculty)
Concessional Loans Low interest rates/long repayment period	Clean Technology Fund, Multilateral Development Banks, Bilateral institutions (e. g. French Development Agency)
Loans Given on commercial basis	Multilateral Development Banks, Bilateral institutions (e. g. French Development Agency)
Technical assistance Ideas, knowledge, practices, technologies, or skills	Strategic Climate Funds, Multilateral Development Banks, Private Sources/Foundations, UN Habitat, bilateral institutions, Cities Climate Finance Leadership Alliance, Cities Development Initiative for Asia, Global Fund for Cities Development, Local Governments for Sustainability, Global Fund for Disaster Risk Reduction, Public-Private Infrastructure Advisory Faculty

Source: Junghans/Dorsch, 2015

4.2 How it works

There are several options for local governments to access funding from the GCF or to exert influence on national authorities to increase the attention given to cities with regard to GCF funding. The first part of this section will focus on how local governments can have a stake in discussions on national investment priorities, advocating the role of low-carbon and climate-resilient urban development within those priorities. The second part will centre around the issue of access: How can cities directly receive financial support from the GCF and through what channels? Lastly, this section will look at how the GCF could support cities through guarantees as an innovative financial instrument.

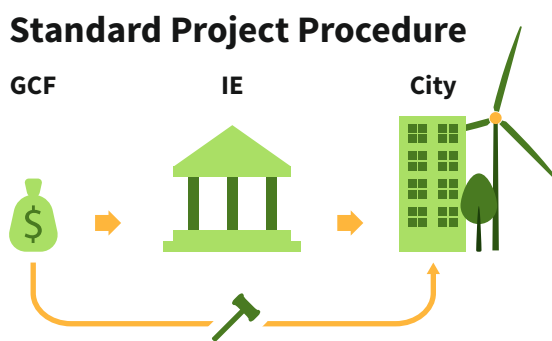
Institutional set-up of National Designated Authorities

The National Designated Authority (NDA) is the principal in-country GCF body and has the mandate to define and shape the country's thematic funding priorities vis-à-vis the GCF. To date, most NDAs are "single-person institutions", often restricting the extent of guidance they can provide. While there is no requirement from the GCF to establish a multi-stakeholder committee within the NDA, it is highly advisable since it can help to take decisions based on actual needs of sectors, regions or groups of people. For local governments or an association of municipalities, demanding such a multi-stakeholder set-up can be beneficial as it helps to increase the attention given to the (financial) needs of cities in the country. In fact, an effective representation of local governments within the setup of an NDA could help them in pushing for the national funding portfolio to include projects which focus on cities. The integration of urban stakeholders can also help in making a case for cities to become implementing or executing entities under the GCF.

Access pathways under GCF

Besides advocating for an open set-up of the NDA and participating in NDA multi-stakeholder processes, there are also other opportunities for cities to receive funding for low-carbon or climate-resilient urban development projects from the GCF. As explained by Junghans et al. (2016), four modalities have been identified that could serve this purpose.

The first modality is to generally strengthen the urban focus of projects submitted to the GCF. Several of the GCF's initial result areas both for mitigation and adaptation are relevant for cities. This includes "reduced emissions from buildings, cities, industries and appliances" but also several others on reduced emissions from energy generation and in the transport sector and the increased resilience of the livelihoods of people and communities as well as of infrastructures and the built environment (GCF, 2014).² Generally, this shows that if countries want to advance on low-carbon and climate-resilient urban development, the GCF result management framework would support such an approach. Accredited entities could therefore submit proposals with a focus on activities to be implemented in cities.

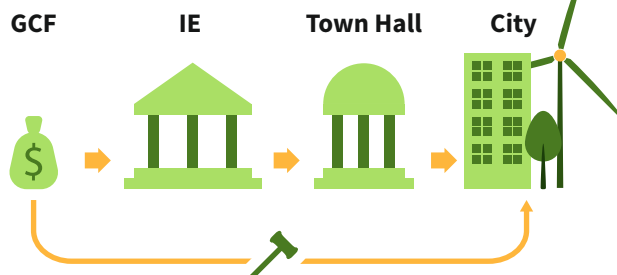


Source: Own illustration, based on Junghans et al., 2016

² An example is the GCF project FP004 "Climate-Resilient Infrastructure Mainstreaming in Bangladesh" with one of its main components being a pilot scheme for climate-resilient urban infrastructure. This project will not only have an impact on the above mentioned adaptation result areas, but also significantly contribute towards reaching the Sustainable Development Goal #11 *Sustainable cities and communities*.

The second modality is for cities to become Executing Entities (EEs) under an approved GCF project. Being selected by the implementing Entity (IE), the EE is responsible for executing projects on the ground. EEs can be of different character, from being the same institution as the IE, to being a civil society organisation, a local/subnational or national public institution or an international organisation. Therefore, there is the possibility for a local government to function as an EE within a project. To support this, the NDA can encourage such set-ups in the project design phase.

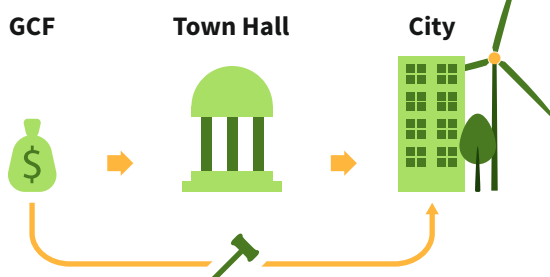
City as EE



Source: Own illustration, based on Junghans et al., 2016

The third modality sees local governments taking up the role of accredited IEs. The Governing Instrument of the GCF foresees that under the direct access modality, recipient countries will nominate competent subnational, national and regional implementing entities for accreditation to receive funding (GCF, 2011). Cities, being subnational entities, may thus apply directly to the GCF for accreditation. This would imply that they could design their own project proposals and apply directly for funding. However, looking at the currently slow pace of the accreditation process, this might not be the best option. Furthermore, the process of accreditation under the CGF has proven rather complex, potentially overwhelming local governments' capacities. To overcome those barriers, another possibility would be for a national or international cities association to apply for GCF accreditation which would then cooperate with cities regarding the implementation of projects (similar to the second option, with the cities association serving as IE and the cities as EEs).

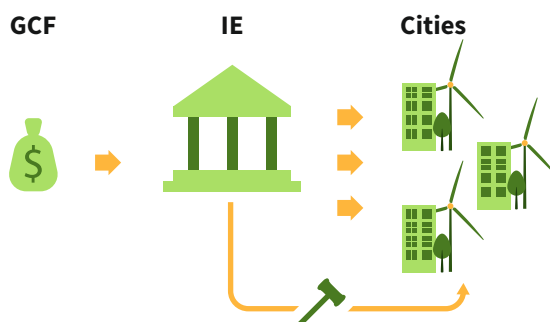
City as IE



Source: Own illustration, based on Junghans et al., 2016

Lastly, there is the opportunity to use the GCF's programmatic approach and enhanced direct access (EDA) modality to help channel funding to cities. As suggested by Junghans et al. (2016) under this modality an accredited entity would submit a programme proposal to the GCF and after approval, the funding entity would issue a call for proposals to cities. To ensure an urban focus, one option would be to establish a national city facility which would have the mandate to transfer resources to cities which would then independently develop project proposals and apply for funding. A city programme or facility would not only be conceivable at a national level, but also at an international level and issue calls for proposals to cities at a national and international level respectively.

City Facility Under IE



Source: Own illustration, based on Junghans et al., 2016

Generally, there is a clear advantage to a programmatic approach, particularly because of the potential to induce major transformational change and a paradigm shift towards low-carbon and climate-resilient cities. So far, the GCF has not clearly defined the details of the programmatic approach and how the EDA scheme will work at a country level. However, generally, this modality represents a promising opportunity to strengthen the role of cities within the GCF.

Guarantees for Municipal Climate Bonds

The green bond market represents an opportunity of low-cost capital for cities as well as an increased cooperation between environmental and financial departments. Since the first green bond, the so called Climate Awareness Bond, was issued in 2007 by the European Investment Bank, the green bond market has been growing rapidly worldwide. There are various definitions of what can be considered green bonds, ranging from very broad and flexible concepts to precise and restrictive definitions of what counts as "green" projects. In the quickly evolving market for green bonds several voluntary standards have emerged like the Climate Bonds Standard by the Climate Bond Initiative and the Green Bond Principles by the International Capital Market Association. Both standards put an emphasis on climate change solutions covering both mitigation and adaptation investments, with the Climate Bonds Standard often being considered more ambitious and stringent.

Municipal green bonds account for a significant part of the total green bond market today (Climate Bonds Initiative, 2015). Due to the strong investor demand for green bonds, there is the potential for cities to attract new investors by entering into the green bond market and issuing municipal climate bonds. The strong demand for green bonds is partially driven by the endeavour of investors to spend their money on environmentally sustainable projects. For example large pension funds nowadays often have a mandate to "think green" like in the case of the Swedish public pension fund which will dedicate 1 percent of its portfolio to green bonds (Swope, 2016). Other investors might simply be interested in an investment with limited risks and stable returns, whether the bond is "green" or not. Municipal climate bonds, which have the objective of funding environmentally sustainable projects in cities such as renewable energy or public transportation systems can make an important contribution to low-carbon and climate-resilient developments in urban arenas. Bonds have to be paid back, using financial returns generated by the projects financed by the bond and/or using public funds such as tax revenue. This implies that bonds are not the appropriate financing instrument for all activities, especially when it comes to projects that do not generate a typical return-on-investment like a sea wall or community-based adaptation projects, the latter usually being too small-scale or fragmented to attract private investments. Particularly for developing country cities that have limited tax revenues, an investment into adaptation projects that usually do not generate a financial return-on-investment, green bonds are not the best source of funding. For many mitigation projects however green bonds can be a useful financial instrument. In many cases, bonds can meet the investment requirements for climate-friendly infrastructure in cities, such as clean transportation, energy efficiency in buildings and renewable energy and waste management, to name just a few. Another benefit of municipal climate bonds could be that, if local individuals were the principal investors, cities could better connect with citizens' environmental concerns.

However, cities, particularly from the Global South, often face the challenge that they are not considered creditworthy and lack a credit rating. This makes it expensive or even impossible to finance urban projects with bonds, as investors are reluctant to invest in municipal climate bonds issued by cities in developing countries. In fact, pioneer issuers of municipal climate bonds have basically only been European and North American cities and occasionally cities from emerging economies (for example the City of Johannesburg) (Climate Bonds Initiative, 2015). In order to improve the creditworthiness of a city's municipal climate bonds, a third par-

ty, for example the GCF, can provide a guarantee. A guarantee is essentially a promise that, should the city default on its repayment obligations, this would (at least partially) be covered by the third party. For investors, the guarantee means decreased probability of default and an increased chance of recovery of defaults. Providing guarantees for cities in the Global South would give them the opportunity to enter into the green bonds market at lower interest rates and attract investors that would otherwise not invest in those bonds.

The GCF, in addition to the classical use of grants and concessional loans, also has the possibility to provide guarantees and equity. For achieving the GCF's objectives, guarantees could be an attractive instrument since they can mobilize private sector investment and can thus close the funding gap on a potentially transformative scale (GCF, 2014). Guarantees can also encourage finance from multilateral and national development banks. There are different kinds of guarantees (comprehensive, partial risk etc.) which accordingly imply a different risk-bearing capacity. If deployed guarantees expire unused, the intermediary has to return the money to the GCF which then can be used again to fund further projects. Yet of the 17 projects that have been approved so far by the GCF board, only one project is deploying guarantees - namely the project "Energy Efficiency Bonds in Latin America and the Caribbean".

There are several options for cities to obtain guarantees under the GCF. One option would be that an accredited national or international entity would function as an intermediary and request support in the form of guarantees for municipal climate bonds. As another option, within the above mentioned framework of the EDA modality as a means of implementing the programmatic approach, it is also conceivable that for example a national development bank applies to be accredited as a funding entity and applies for support in the form of guarantees which will then be used in national calls to cities for guarantees. It would then be the accredited national funding entity which approves the proposals submitted by cities.

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