



Financing urban resiliency and low emission development in Asia

A summary of peer exchange discussions and panels from
ICLEI's Resilient Cities Asia Pacific Conference

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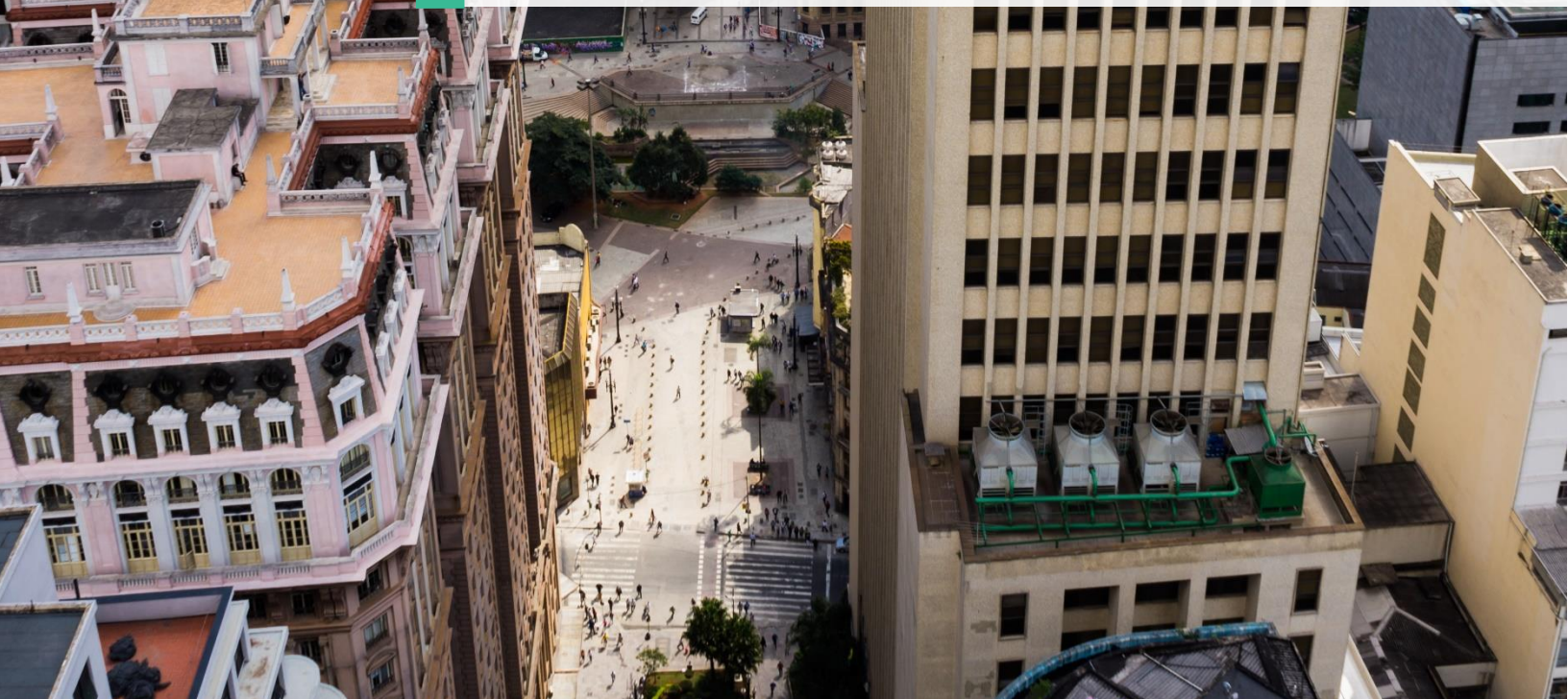


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This document addresses the challenges and opportunities with respect to financing low emission development and climate-related projects in the Asian region based on discussions from ICLEI's Resilient Cities Asia Pacific Conference 2019.



Source: Laura Noriega (ICLEI)

It is part of a series that documents the peer exchanges organized by the GPSC's Resource Team for the GEF 6 Sustainable Cities IP.

Context

More than 80% of GDP is produced in cities and at present, cities account for almost 70% of the carbon dioxide emitted (World Bank, 2019). Urban emissions are continually increasing.

Consider future emission when about 60% of urbanization that is expected to occur by 2030 has not been built yet (van Staden, 2019 Apr 16).¹ Much of this urbanization is happening in Asia.

Asia has the opportunity to shift towards sustainably develop - if policymakers, investors, and governments take appropriate action to do so. The need to meet projected urban development allows for an integrated solution to climate change through sustainable, low emission development (Barnard, 2015). As a result, cities are central to the climate change mitigation conversation—it is more cost efficient than business as usual for local governments to act swiftly to reduce their respective cities' carbon emissions and adapt for future climate change impacts. Natural disasters already account for \$250 billion a year, thus the cost of inaction will only rise as the frequency and intensity of natural disasters is expected to increase with climate change (van Staden, 2019 Apr 16). Almost 70% of climate resilience adaptation happen at the city level, as such, cities are essential to the climate change mitigation and adaptation conversation.

While local governments must act swiftly to reduce carbon emissions, financing for cities is often constrained by their revenue. This is more prevalent in developing countries where a strong tax base is not as prevalent, and where a large subset of the population exists outside an administrative purview and participates in the informal economy. Though public finance has increased, climate-specific finance remains a small share of public finance overall. This translates to a lack of financing for climate projects at the scale that is necessary to curb greenhouse emissions in cities. Many climate-related projects are largely underfunded because of the lack of public financing; consequently, external, multilateral financing or other innovative funding models will become necessary for cities to carry out large scale, low emission development projects.

Many cities in developing countries are facing low revenue in combination with few funding and financing options apart from domestic funding sources. Cities' creditworthiness is linked directly to their financial management skills and their ability to raise revenue from taxpayers (Hogg, 2013). In India specifically, city governments do not have enough revenue to provide basic services to constituents and tend to turn to the state and federal government for funding.² About 95% of local governments in India struggle to pay their staff, and in turn often default

¹ Director of the Bonn Center for Local Climate Action Planning and Reporting (carbonn Center), ICLEI World Secretariat, Maryke van Staden

² Vice President of India, Shri M. Venkaiah Naidu

and rely on state governments (Panar, 2019 Apr 17).³ This funding model perpetuates the debt as the state government then rely on the federal government.

Public financing is limited and cannot cover all necessary projects, namely large-scale infrastructure projects, let alone costlier low emission projects. Even though Indian cities provide two-thirds of India’s GDP and about 90% of India’s revenue, only 5% of India’s GDP is being invested in Indian cities representing the degree to which Indian cities are underfunded (Panar, 2019 Apr 16).

While urban climate-finance challenges are not exclusive to Asia, the challenges with funding low emission development identified at the peer exchange focused in the Asia-Pacific region. This report captures these discussions for other to learn from.

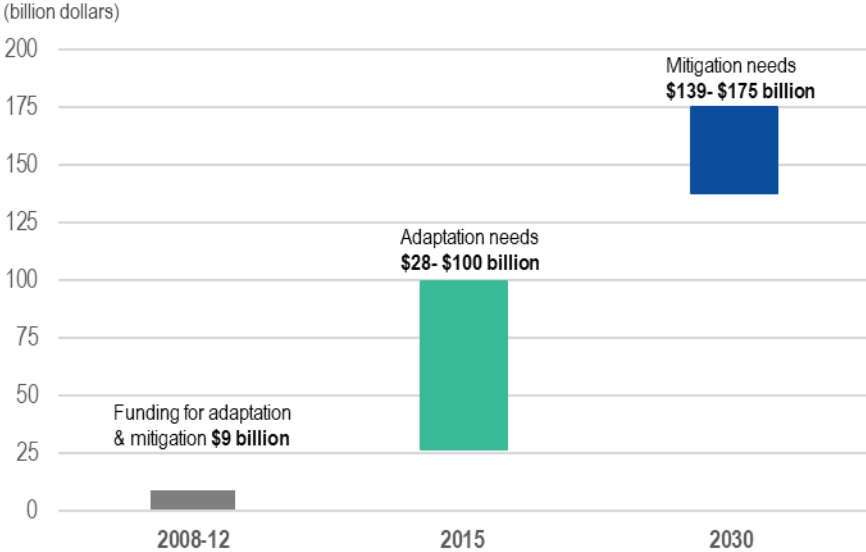
There is a clear gap with respect to international funds allocated for adaptation and mitigation projects compared to the need for these projects, as shown in Figure 1. There is even less funding for low emission development project preparation and implementation for sub-national governments.

The Asian Infrastructure Investment Bank estimates that the demand for urban infrastructure in Asia equals about \$120 billion per year (Teravaninthorn, 2019 Apr 17).⁴

The available funding for infrastructure in the entire Asia and Pacific region equals about \$1.7 billion annually, including climate adaptation and mitigation financing (Asian Development Bank, 2017). These countries, unable to self-finance the demand for infrastructure- namely low emission infrastructure, will need to consider innovative funding and financing models.

As climate change mitigation and adaptation have become more urgent globally, the types of urban development projects to address climate change have shifted. The European Investment

Figure 1. Projected Climate Financing Gap



Adapted from: <https://www.imf.org/external/pubs/ft/fandd/2009/12/hamilton.htm>

³ Former Deputy Mayor, Shimla Municipal Corporation, India, Tikendar Panar

⁴ Director General of Investment Operations Department, Asian Infrastructure Investment Bank, People’s Republic of China, Supee Teravaninthorn

Bank (EIB) has seen a shift in the type of project requests they receive in the Asian region. In recent years, the EIB has noticed that the development projects they have funded have become more integrated; many sectors are integrated within one project (Cannon, 2019 Apr 17).⁵ Projects are becoming more complex with integration. Urban development projects tend to combine six sectors such as housing, water, IT, transport, energy and waste (Cannon, 2019 Apr 17). While more complex projects are more challenging, they are ultimately more impactful. Involving multiple sectors is integral for tackling wicked problems such as climate change. The most common project EIB has seen in the last few years in India includes components that convert waste to energy. Funding for low emission development is available, but Asian cities have had trouble unlocking it.

Peer exchange context

Since there is an apparent gap in terms of financing available for low emission development and what funding Asian cities believe is, ICLEI organized the Resilient Cities Asia Pacific (RCAP) peer exchange to address this gap. ICLEI designed the peer exchange to facilitate a dialogue around financing low emission development. The Resilient Cities Asia Pacific peer exchange fomented a discussion about the barriers to funding and financing as well as innovative funding and financing opportunities in Asia. ICLEI invited GPSC cities from India, Malaysia and Vietnam to attend the peer exchange workshop also invited representatives from financing institutions to discuss financing urban resiliency and low emission development in the Asian context. For an overview of the attendees, please see the RCAP peer exchange agenda in [Annex 3](#). The peer exchange discussion focused on how resource-constrained cities can leverage capital for the very necessary low emission development. The broader RCAP conference allowed GPSC city participants to engage and learn from myriad of speakers around the topic of urban resiliency.

Financing institutions

The following institutions had representatives at the conference: Asian Infrastructure Investment Bank, French Development Bank, Asian Development Bank, European Investment Bank, World Bank/IFC, World Business Council for Sustainable Development, KfW and Global Green Growth Institute. The list of financing institutions present at the conference were mostly comprised of multilateral development banks.

Challenges to financing low emission urban development in Asia

⁵ European Investment Bank, Head of Regional Representation for South Asia, Donal Cannon

Representatives, based in Asia, from financing and funding institutions articulated five major challenges that financing institutions face with funding low emission development projects that were discussed at ICLEI's Resilient Cities Asia Pacific Conference 2019 in New Delhi, India.

1. **Scalability and bankability**
2. **Demonstrated impact of carbon emission reductions**
3. **Lack of project evaluation skills**
4. **Lack of financial capacity**
5. **Environment for funders can be prohibitive**

Assessing the risk and minimizing risk inherent with large-scale urban climate projects is imperative (Barnard, 2015). Some have suggested that the challenge with funding low emission development is not due to financial constraint but to the challenges of unlocking capital for projects. The challenge with funding low emission development projects goes beyond simply the availability of funds (Vidal De La Blache, 2019 Apr 17).⁶ Representatives from funding institutions articulated that the **scalability and bankability** of low emission development projects is a challenge for them (Barnard, 2015). Additionally, about half of countries globally do not allow local governments to borrow funds further challenging local governments' ability to create bankable projects (Ivanyna & Shah, 2012). While pilot projects are useful for demonstrating the functionality of a project and a city's commitment to low emission initiatives, they are generally not large enough for financing institutions to invest. If the projects are not at a scale large enough to demonstrate impact then it is unlikely that development banks will back the project (Barnard, 2015). Where financing institutions see pilot projects as not being scalable nor bankable, existing capital is not utilized to its full potential in the low emission development space in Asia (Kessler, 2019 Apr 17).⁷ Since cities need to accurately demonstrate the carbon reduction that results from their projects. Local governments need technical capacity to evaluate their baseline carbon emissions to successfully demonstrate the impact of a low emission development project.

In addition to needing the technical capacity to determine a city's greenhouse gas baseline, local governments need to establish baselines in terms of resilience. Information on urban resilience at the city level is essential to help financing institutions structuring their financing opportunities (Sharma, 2019 Apr 17).

To scale, projects need to **demonstrate impact**. Cosmetic projects that do not demonstrate real carbon emission reductions are not attractive investment opportunities (Sharma, 2019 Apr 17).⁸ Financial institutions also cannot finance debt at reasonable levels since most low emission

⁶ Deputy Director of French Development Agency New Delhi Office, Clemence Vidal De La Blache

⁷ KFW India, Christophe Kessler

⁸ Asian Development Bank and Urban Climate Change Resilience Trust Fund, Virinder Sharma

development projects are too small or too new—the risk for the financing institution is too high (Prasad, 2019 Apr 15).⁹

The commitment and interest of financing institutions is present but identifying priority projects and measuring impact is a challenge (Enkthur, 2019 Apr 17).¹⁰ The **lack of project evaluation skills** is a concern and points to a greater challenge regarding technical capacity of cities in developing countries. If the city does not have the technical and financial capacity to carry out infrastructure projects nor measure associated impact, then the likelihood of financing for the project greatly diminishes. For specific projects, financing institutions want to know what types of expertise cities need to carry out the projects they are financing, and some financing institutions will work with the city to improve their capacity.

In addition to the technical expertise necessary for designing low emission projects, local governments need to have the **financial capacity**. Funding institutions have had trouble financing low emission projects due to the lack of a city's creditworthiness, funders need cities to be investable vehicles (van Staden, 2019 Apr 2016). The Coalition for Urban Transitions found that 93% of low- to middle- income countries do not have adequate credit ratings for international investment (Floater et al., 2017). Many cities in developing countries lack the creditworthiness to be able to unlock financing opportunities such as the ability to issue municipal bonds (Rozenweig et al. 2015).

The **environment for funders can be prohibitive**; for instance, the complexity of the government's multi-layered sectoral plans and administrative visions can make it difficult for funders to back projects without explicit metrics. Having all the correct stakeholders together for a low emission development project is key, but this can be an issue as climate is often fragmented across levels of government vertically and across sectors horizontally. Climate discussions—even at the city level alone—are often fragmented, for instance, stakeholder coordination can be a real challenge for the implementation of low emission development projects (Enkthur, 2019 Apr 17). Therefore, it is necessary to have an enabling environment that supports low emission development projects. This includes having policies, plans and regulations that in concert support low emission development projects (Barnard, 2015). Policies could include removing fossil fuel subsidies to give renewable energy and low emission development a fair playing field (Meltzer, 2016). Enabling conditions such as tax policies and investment protections are important to attract private sector investment (Meltzer, 2016). Horizontal and vertical integration of government helps create an enabling environment for low emission development projects (ICLEI, 2018).

⁹ Executive Director, cKers Finance, India, Jayant Prasad

¹⁰ Climate Change and Project Management Specialist of ADB and Founder of Climate Campaign NGO, Mongolia, Zolzaya Enkthur

What do financing institutions expect from cities?

Financing institutions focusing on Asian projects are looking for those that challenge business-as-usual and are considered sustainable. However, there is a disconnect between funders and the project designers because engineers are still designing through a traditional, conventional paradigm rather than integrating resilience planning in their designs (Sharma, 2019 Apr 17). Financing institutions want to fund innovative solutions, not projects that appear sustainable on the surface. Innovative planning and engineering knowledge need to be shared so that sustainable solutions are more readily accessible for all cities (see the GPSC Library of Knowledge in [Annex 2](#)) (Gotmare, 2019 Apr 17).¹¹

Not only do financing institutions expect **innovative engineering and designs**, they expect **strong urban planning** as well (Cannon, 2019 Apr 17). To achieve this, many financial institutions believe capacity building is necessary in order for cities to incorporate integrated planning approaches to projects (Vidal De La Blache, 2019 Apr 17). For example, the World Business Council for Sustainable Development in India has found that many of the businesses working on sustainable development engage with cities at the master planning stage to facilitate strong master plans (Phelan, 2019 Apr 17).¹² Financing institutions expect local governments to integrate sectors in the master planning stage to increase their impact. When making the planning process more integrated, it also needs to be more inclusive (Cannon, 2019 Apr 17).

In order to mitigate risk with city-wide sustainable development projects, financing institutions would like to see that a city has **strong project preparation skills**, including strong monitoring and evaluation capabilities and the ability to conduct feasibility studies. This is a skill that financial institutions in Asia believe is lacking at the city level (Vidal De La Blache, 2019 Apr 17). Local governments need stronger project planning skills to be able to effectively monitor and evaluate project indicators and outcomes of large-scale infrastructure projects. Prior to requesting finance, reviewing the barriers to investments necessary to fund low emission projects as well as the technical capacity necessary for the city to execute such a project is a useful exercise to ensure a successful project (Westphal & Thwaites, 2016). Since it is mutually beneficial for financial institutions and cities, some financial institutions are working to strengthen project preparation and planning capacities of cities. For example, the French Development Agency created a tool known as a global project preparation framework for cities to utilize (Vidal De La Blache, 2019 Apr 17). In Mongolia, the Asian Development Bank (ADB) has worked with a city to create a quantitative database that helps the city government track their engagement with different stakeholders and increase their stakeholder engagement (Enkthur, 2019 Apr 17). ADB is also working to help the city create a greenhouse gas accounting baseline

¹¹ Representative from Global Green Growth Institute, Shantanu Gotmare

¹² Director of India, World Business Council for Sustainable Development, Joe Phelan

database (see CDP-ICLEI Carbon greenhouse gas accounting scheme in [Annex 2](#)) (Enkthur, 2019 Apr 17) .

Financial institutions expect local governments to **optimize their own financing tools** before asking for assistance. Local governments may be best prepared by leveraging regional and national funds as well as consider debt financing from the private sector before turning to international financing options. Within their own municipalities, local governments should also explore existing municipal assets like environmental fees, property taxes, and land value capture (Sharma, 2019 Apr 17; Teravaninthorn, 2019 Apr 17). Municipal authorities and urban development authorities can also actively demonstrate that they are open to private investment for both small- and large-scale projects (Cannon, 2019 Apr 17).

What are the solutions to financing low emissions development discussed at the peer exchange?

While there are myriad of solutions and opportunities for climate financing, the list that follows is informed by the discussion at RCAP 2019.

Standardization of procurement

In order to alleviate the often high transaction costs of low emission projects, some argue for the standardization of procurement and contracts (Gotmare, 2019 Apr 17). Whether cities undertake large infrastructure projects or small, pilot projects both projects often have similar startup costs. However, the cost to start a project often pays off with large infrastructure projects (Bielenberg et al. 2016). High transaction costs ultimately burden cities, making it even more challenging for cities to obtain capital for their projects. Thus, creating a way to share knowledge specific to project financing can be useful to reduce the high transaction costs of obtaining financing. The standardization of project processes would allow for lower transaction costs, and more generally, would facilitate private investment in local governments (Delmon, 2014).

Blended finance

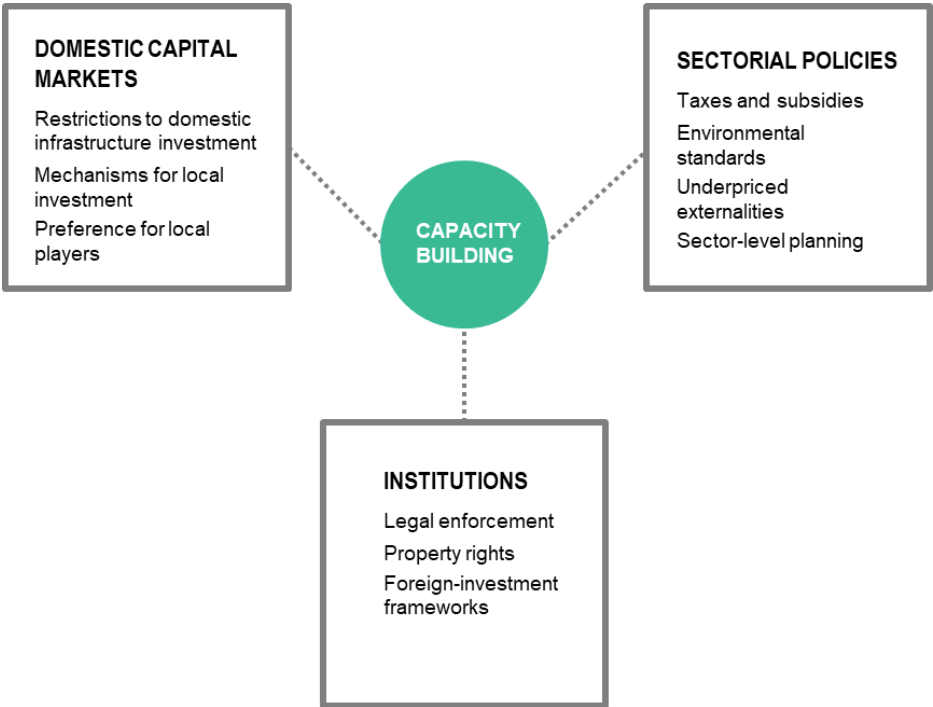
One funding strategy for low emission development projects encouraged by financial institution representatives at RCAP is blending funding and finance. This involves multiple types of finance or funding such as a loan from a multi-lateral development bank with municipal bonds. An example of blended funding includes a financial institution providing capital investment funding for infrastructure to mitigate flood risk but also supporting the redevelopment of urban spaces by investing in potable water structures with a different financing mechanism (Vidal De La Blache, 2019 Apr 17). A blended approach is mutually beneficial for the city and the financial institution as it reduces risk for the financial institution. Other institutions offering blended finance offered bond financing and market financing in combination with technical assistance (Kessler, 2019 Apr 17). Blended finance is considered most effective in combination with

capacity building of financial, project implementation, and urban planning skills, and support with policymaking promotes resilience and sustainability (Vidal De La Blache, 2019 Apr 17).

Capacity building

In conjunction with the infrastructure investments, technical assistance at the local government level is recommended (Vidal De La Blanche, 2019 Apr 17). The Asian Development Bank has also been working to incorporate technical assistance into their projects. For instance, they have incorporated spatial planning skills and developing warning systems for disaster planning in their projects (Sharma, 2019 Apr 17). Capacity building helps to create a positive enabling environment, which is important for funders (Bielenberg et al. 2016). Figure 2 demonstrates the specific ways in which capacity building can improve domestic capital markets, institutions, and sectorial policies to promote an enabling environment for foreign investment (Bielenberg et al. 2016).

Figure 2. Capacity building as a conduit to a positive enabling environment



Adapted from: Bielenberg et al. 2016

Budget policy lending

Budget policy lending, while not necessarily a new financing opportunity, assists governments with improving their operations more generally. Budget policy lending is a financing tool that flows directly to a national government to support policy development or to strengthen government institutions (Sundberg, 2016 Mar 15). For example, in Madagascar, the policymakers at the national level are developing a new policy for construction, permitting to

create an enabling environment for low carbon, resilient development at the local level (Vidal de la Blache, 2019 Apr 17). The funding in this case would help the national government carry out what they have budgeted for the construction permit reform in order to promote sustainability at the local level.

Crowdfunding

An innovative funding tool for low emission development projects consists of using crowdfunding to raise capital. Crowdfunding may contribute to the global energy transition to low emission through buy-in both locally and internationally (Sen, 2019 Apr 16).¹³ Crowdfunding is a new funding mechanism where the general population funds a project by making small donations or investments, typically through an online platform. Unlike conventional financing from international banks, crowdfunding is democratic and transparent. Because crowdfunding is a relatively new tool in developing countries, there is a need for technical capacity building, for example improving entrepreneurship skills. A report by infoDev and World Bank (2013) has noted that there is opportunity for entrepreneurship in developing countries and crowdfunding could be an innovative way to unlock this potential. Additionally, some have suggested that developing countries could leap frog traditional methods of financing and utilize crowdfunding to support their transition to low emission development (infoDev & World Bank, 2013).

There are crowdfunding institutions that act as the intermediary between local governments and the funders. These entities review projects and carry out financial and technical due diligence to determine project feasibility, reducing the risk for those who invest. The crowdfunding intermediary is able to provide this service because their portfolio of projects includes both small and large projects, meaning they pool the risk and divide it. Some companies that provide crowdsourcing, like Bettervest GmbH, demand that their projects are both low emission and have a positive social impact (Sen, 2019 Apr 16).

Cities

Challenges with financing low emission development in Asia

During RCAP 2019, city representatives acknowledged that they do not have sufficient information on how to finance climate-related projects, or the capacity and resources to do so. While city representatives identified that there is not adequate funding for climate-related projects, financing institution delegates at RCAP 2019 stressed that there is funding and financing available, rather, the disconnect arises from the lack of bankable projects that show impact.

¹³ Strategic Cooperation and Business Development, Bettervest GmbH, Rohit Sen

Solutions with financing low emission development in Asia

Some solutions to financing low emission development that the city representatives discussed were building capacities in terms of financial, project preparation, and urban planning skills and developing public-private partnerships. Additionally, representatives from the participating cities noted that if there were a database of funding and more transparent investment options, they would be better equipped to develop low emission development projects.

How are cities in Asia Pacific financing low emission development?

Municipal bonds

Municipal bonds can be a debt financing mechanism that municipalities can issue to private investors to raise equity for the municipality. Private investors receive a fixed-rate of interest annually and municipalities pay back the principal over a fixed time period. Creditworthiness, high cash flow and high revenue are all requisite to issue municipal bonds. Some Indian cities have been utilizing municipal bonds and public-private partnerships to finance low emission projects.

In the case of Pune, India the municipality used revenue bonds to upgrade their water infrastructure to be operational for 24 hours a day (Welankar, 2018 Jul 10). Pune has been in the midst of a water crisis due a lack of adequate rainfall and has been using water tankers to import water (Deshpande, 2019 Mar 04).

Pune is one of the first cities in India to use municipal bonds to fund an infrastructure project. It is unusual in that it has a large tax base and high revenue which is uncommon in many cities in



developing countries. City representatives at RCAP mentioned that Pune’s success with municipal bonds is not conceivable for all cities, because of their high revenue.

The Pune Municipal Corporation’s, Pune’s legal local government entity, first step was to ensure they were creditworthy to be eligible to issue municipal bonds. The Pune Municipal Corporation was well positioned to issue municipal bonds. They have high municipal revenue, a consistent revenue surplus, comfortable debt and liquidity position and timely servicing of the interest and principal. Throughout the process of becoming eligible to issue municipal bonds, Pune faced several challenges, including: standardizing debt management across their internal departments, adhering to the Securities and Exchange Board of India (SEBI) guidelines, and improving their credit rating from AA to AA+. The Pune Municipal Corporation also received assistance from the United States Treasury. Pune experienced a deficit of about \$347,000 USD, that the national government eventually subsidized to bolster the city’s effort to issue additional municipal bonds (Welankar, 2018 Jul 10).

Pune was successful in their endeavor and shared lessons learned (see a case study below in [Annex 2](#) for more details). However, many city representatives at the peer exchange noted that municipal bonds are not feasible for their low emission infrastructure projects, because many cities do not have access to a strong taxpayer base nor do all cities have high creditworthiness. Many private investors will not invest in a city’s municipal bonds if their creditworthiness score is not in the A range.

A few initiatives that help cities with increasing their creditworthiness include The City Creditworthiness Academy run by the World Bank, C40, and Private Public Investment Advisory Facility (PPIAF) (Barnard, 2015). The academy helps cities become creditworthy so that they can attract private investment and raise their score to become eligible to issue municipal bonds (Barnard, 2015). Another knowledge platform, called the Cities Climate Finance Leadership Alliance, fosters the exchange of knowledge for local governments seeking investment for low emission development (Barnard, 2015).

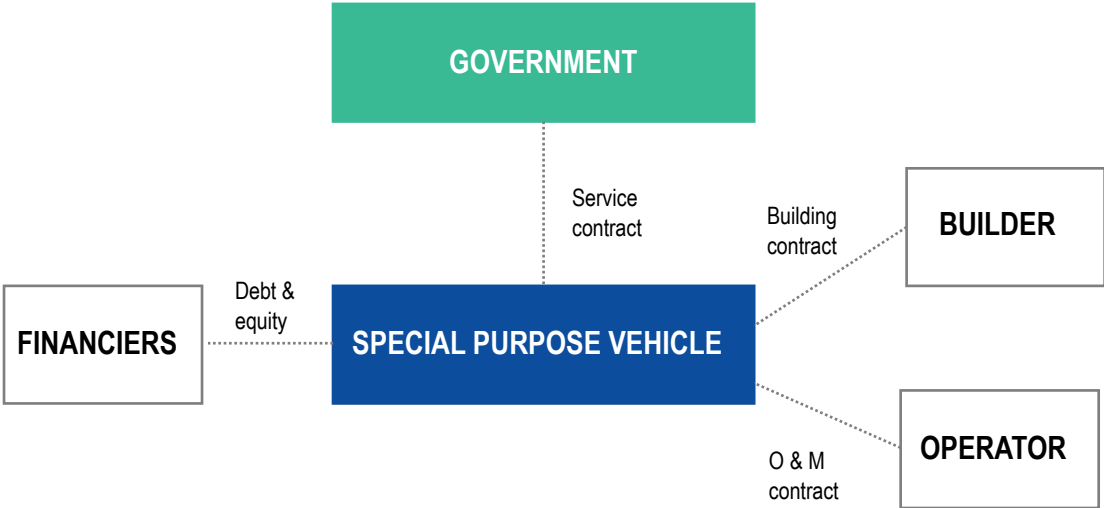
Public-private partnerships

“A public-private partnership (PPP) bundles finance, construction, and operation into a long-term service contract between the government’s procurement authority and a standalone private firm—the special purpose vehicle (SPV). The SPV takes charge of building and operating a legally and economically self-contained project for 10–30 years (Engel & Galetovic 2014, p. 2).” PPPs will be integral for the climate adaptation and mitigation of cities, as local governments are unable to finance the infrastructure gap on their own (Rozenweig et al 2015).

While PPPs provide upfront capital for infrastructure projects, it often costs more than financing the public debt—known as a PPP premium (Engel & Galetovic, 2014). There are some clear advantages with PPPs. SPVs assume specific responsibilities – construction, maintenance and operation of the infrastructure, which require expertise and time commitment that local

governments often lack. (Engel & Galetovic, 2014). Forming a PPP allows the local government to maintain a role of oversight rather than implementing the project. Figures 3 and 4, respectively, demonstrate how a public-private partnership is structured with the local government versus how the government operates without a public-private partnership.

Figure 3. Organizational Structure of a Public-Private Partnership



Adapted from: Engel & Galetovic (2014)

Figure 4. Organizational Structure of the Government without a Public-Private Partnership



Adapted from: Engel & Galetovic (2014)

Melaka, Malaysia

Public-private partnerships (PPPs) appeared to be the most popular form of financing for low emission development projects among cities present at RCAP 2019. For instance, representatives from Melaka attending RCAP 2019, discussed how Melaka is utilizing a PPP to help fund their solar energy project. Although Melaka also relies on grants from the state and central government, an assessment tax, loans, investment, privatization, and international funds

through GEF; from their perspective, the most innovative financing mechanisms are public-private partnerships and privatization. For this project, the main challenges have been that solar panels are new to people in Melaka, thus consumer awareness is low. There is a rather high startup cost to install the panels on roofs. The city utilized a pilot project to improve consumer awareness, with the government installing solar panels on all public buildings, increasing the technical capacity of staff as they did so.

Jaipur, India

A representative from Jaipur, who attended the RCAP peer exchange, discussed how Jaipur has used PPPs to produce energy from biogas waste. Jaipur received an investment from a local Japanese entrepreneur to finance the project. This low emission development project provides a revenue for the municipal corporation and is mutually beneficial for the entrepreneur. The entrepreneur saves on electricity on site and the payback period is 15 years. The municipality produces the gas then sells it to the entrepreneur who produces the electricity and sells some to the city and some to the grid. The financial challenges that Jaipur faced with respect to the biogas facility had to do with the large upfront investment to ensure the safety of the workers, and the internal rate of return based on a volatile market. Additionally, the electricity from biogas was competing with heavily subsidized liquified petroleum gas. Even with these challenges, Jaipur was able to build the biogas plant which is a positive step toward transitioning to low emission energy use.

Mysore, India

A representative from Mysore, who attended the RCAP peer exchange, discussed how Mysore has also utilized a PPP to support the construction of a plant used for waste management. The zero-waste management program started as an NGO, called the Federation of Mysuru City Corporation Wards Parliament, which collected waste and sold it to recyclers. The municipality partnered with the he Federation of Mysuru City Corporation Wards Parliament to help raise awareness about the waste collection initiative because that was a primary challenge with their zero-waste management program. The municipality expanded to segregate 18 different dry wastes and collects waste in four to five wards of the city. The municipality also turns compost to fertilizer and created a value-added product that they sell to farmers. As part of this collection, the city signed a memorandum of understanding with a private company to collect the dry waste. The PPP in Mysore has improved waste collection for the city by expanding the service to more citizens.

Conclusion

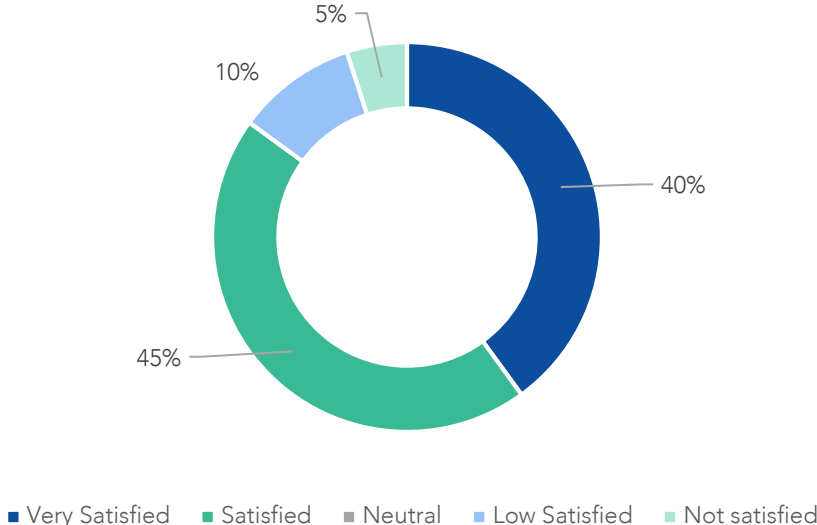
While Asian cities face many challenges when financing low emission development projects, the local government perspective - that there is insufficient financing available – is not shared by the financial institutions that were engaged in the discussion at RCAP. The following challenges

with financing low emission development projects, outlined by financing institution representatives at RCAP included: scalability and bankability, demonstrated impact of carbon emission reductions, lack of project evaluation skills, lack of financial capacity, and the environment for funders can be prohibitive. Despite these challenges, financing institution representatives provided solutions, from their perspective, to these challenges such as standardization of procurement, blended finance, capacity building, budget policy lending, and crowdsourcing. Financing institution representatives stressed that traditional types of financing are available for low emission development projects in Asian cities, the question raised at the peer exchange was how to facilitate local government capture of such financing.

Even though there is a challenge accessing traditional financing, there are achievable options to explore. As discussed at RCAP, many cities in India are using PPPs to implement sustainable projects. Since traditional finance models may not be available for cities since borrowing at the sub-national level is often limited by the city's creditworthiness, crowdfunding is an innovative way for the general population to invest in sustainable development.

About 60 people attended the peer exchange session at RCAP 2019, of those 50, 20 completed the survey. The peer exchange brought city representatives and financing institutions into the same room to promote conversations about how to access financing for urban resiliency and low emission development. Fifty-five percent of participants, who filled out the survey (19), felt that the peer exchange covered what they had hoped to discuss while 45% of participants thought it somewhat covered what they hoped to learn. Most people found that the peer exchange provided ideas for low emissions development projects and how to finance such projects but had hoped that there could have been more time for discussion and interaction

Figure 5. Satisfaction of peer exchange participants at RCAP 2019



and deeper conversations. Eighty-five percent of the peer exchange participants (20), were

satisfied with the peer exchange. All in all, participants were satisfied with the peer exchange, and would like to see more opportunities to discuss financing low emissions development projects in greater depth.

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Annex 2. Additional reports & sources

Global Platform for Sustainable Cities (GPSC) - <https://www.thegpsc.org/>

GPSC Library of Knowledge- <https://www.thegpsc.org/knowledge-products>

Transformative Actions Program (TAP) - www.tap-potential.org

Resilient Cities Asia Pacific - <http://resilientcitiesasiapacific.iclei.org/rcap-2015.html>

For more information about how to account for and report on greenhouse gases in cities, see the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories. This tool was developed by WRI, C40, and ICLEI to improve greenhouse gas emission reporting at the city level:

<https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

CDP-ICLEI Carbon greenhouse gas accounting scheme: <https://carbonn.org/>

For more information on Pune's experience with municipal bonds, see this case study:

https://smartnet.niua.org/sites/default/files/resources/pmc_bonds_casestudy.pdf

For more information about project evaluation, see the International Labour Organization's report on Project Evaluation: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---exrel/documents/genericdocument/wcms_172679.pdf

https://www.ilo.org/wcmsp5/groups/public/---dgreports/---exrel/documents/genericdocument/wcms_172679.pdf

For more information about creditworthiness initiatives mentioned in this report see:

Private Public Investment Advisory Facility (PPIAF): <https://ppiaf.org/>

Good Practice Guide to Creditworthiness by C40: [http://c40-production-](http://c40-production-images.s3.amazonaws.com/good_practice_briefings/images/6_C40_GPG_Creditworthiness.original.pdf?1456788925)

[images.s3.amazonaws.com/good_practice_briefings/images/6_C40_GPG_Creditworthiness.original.pdf?1456788925](http://c40-production-images.s3.amazonaws.com/good_practice_briefings/images/6_C40_GPG_Creditworthiness.original.pdf?1456788925)

For more information on Integrated Urban Development Planning, see this Position Paper by the German Association of Cities:

https://www.thegpsc.org/sites/gpsc/files/mat_integrierte_stadtentwicklungsplanung_en_gesamt_korr_0.pdf

For more information on PPPs, see:

PPP eLearning Course by the World Bank: <http://www.worldbank.org/en/programs/icp/brief/e-learning>

PPP E-Learning Platform: <https://pppknowledgelab.org/pppe-learning>

Summary of Good Practice of Successful Project Preparation Facilities:

https://www.citiesclimatefinance.org/wp-content/uploads/2018/07/20180201_PPF_Report_final.pdf

International Finance Corporation. 2018. **Climate Investment Opportunities in Cities - An IFC Analysis.**

<https://www.ifc.org/wps/wcm/connect/bffd2386-ff4c-454d-8366-8d801bf3b9c5/201811-CIOC-IFC-Analysis.pdf?MOD=AJPERES>

CCFLA (2018) **Summary of Good Practice of Successful Project Preparation Facilities.** Authors: Basil Oberholzer, Katharina Schneider-Roos, Charlotte Boulanger, and Maryke van Staden.

http://urbanleds.iclei.org/fileadmin/user_upload/Resources/guidance_and_tools/Climate_Finance/Summary%20of%20good%20practice%20of%20successful%20project%20preparation%20facilities%20-%202018.pdf

ODI - Overseas Development Institute (2015) **Climate finance for cities: How can international climate funds best support low carbon and climate resilient urban development?** London.
<https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9660.pdf>. Accessed 21 February 2019

ICLEI - Local Governments for Sustainability (2018) **Data speak louder than words - Findings from an initial stocktake of climate change adaptation and urban resilience efforts.** <https://iclei.org/en/publication/data-speak-louder-than-words>

ICLEI - Local Governments for Sustainability (2018) **Multilevel climate action: the path to 1.5 degrees. carbonn® Climate Registry 2017-2018 report.** Bonn, Germany. Authors: Chang Deng-Beck, Dana Vigran, Maryke van Staden, Alvaro Rojas Ferreira. <https://iclei.org/en/publication/multilevel-climate-action:-the-path-to-1.5-degrees>

ICLEI - Local Governments for Sustainability (2018) **Cities and Regions Talanoa Dialogues: Leveraging Subnational Action to Raise Climate Ambition.** Authors: Robert Meyer, Jisun Hwang, Yunus Arikan.
IUC (2019) **Overview of international financial sources and institutions.** Authors: Eszter Mogyorósy, Giorgia Rambelli, Silvia Assalini, Maryke van Staden. http://www.iuc.eu/fileadmin/templates/iuc/Documents/IUC_-_Finance_Publication_International_Financial_Sources.pdf

SDC, CapaCities, GIB, 2018: **Guidance Checklists: Preparation of Sustainable and Resilient Infrastructure Projects.**
<http://tap-potential.org/knowledge-center/>

Annex 3. Agenda from the Peer Exchange at RCAP 2019

The 4th Asia Pacific Forum on Urban Resilience and Adaptation

15-17 April, 2019 | New Delhi, India



WORLD
RESOURCES
INSTITUTE



Peer Exchange on Finance and Investable Climate Action

Date: 16 April 2019

Language: English

Time: 14:30-18:30

Contact: Laura Noriega

Room: Ballroom I & II

E-mail/web: laura.noriega@iclei.org

Organized by: ICLEI for the Global Platform for Sustainable Cities (GPSC)

OBJECTIVE

This peer-to-peer workshop at the Resilient Cities Asia Pacific (RCAP2019) of the Global Platform for Sustainable Cities (GPSC) brings together representatives of some GPSC cities in Asia (Vijayawada, Jaipur, Mysore, and Melaka, including Alor Gajah Municipality and Hang Tuah Jaya Municipality) and other leading cities in India tackling climate change and implementing sustainable energy, with experts on finance. The aim is to present and explore relevant developments on accessing finance, and share experiences and lessons learned. It brings together city representatives and financial experts to share experience on how to access climate finance. What works? What is needed? How can we ease the process?

Mobilizing investment for low-emission, climate resilient and sustainable development at city level is an urgent priority. Local governments are at the frontline. They have vast potential to plan, act and track progress. Yet, local governments face many barriers to planning and accessing finance for infrastructure investments, which are necessary to steer their sustainable development and build urban resilience (ODI 2015).

This requires a broad coalition of stakeholders to identify opportunities for cooperation and act, addressing gaps to accelerate access to necessary funds and implement local action.

This session will facilitate the exchange of sustainable urban planning practices, showcasing innovative ideas, challenges and solutions to developing local “bankable” projects - looking at public and private sector finance, from technical assistance via development banks to crowdfunding opportunities. The dialogue will focus on access to, and efficient use of finance, as well as how to create a policy environment to mobilize private finance. Join us and explore this key facet to unlock finance for local action!

OUTCOMES

- Enhanced understanding on how to catalyse local government action, enhancing capacity to select the appropriate finance mechanism and model for local projects.
- Improved understanding of different types of financing, as an overview to mobilize resources.
- Exploring how to pitch a project to finance institutions.
- Accessing information and knowledge on good practices and lessons learned in accessing finance.

METHODOLOGY

Following a keynote presentation to set the scene, practical discussions will take place in a workshop format using the world café methodology to discuss bankable project structuring, exploring new approaches and replicable solutions. Through this highly participatory approach, representatives from local and regional governments will be invited to share their experiences through presentations and exercises and ask questions of one another. The workshop will bring together around 70 delegates working in round tables

Lead Facilitator: Maryke van Staden, Director of the Bonn Center for Local Climate Action Planning and Reporting (carbonn Center), ICLEI World Secretariat

Additional Facilitators:
 Laura Maria Noriega Gamarra, Junior Officer Climate Data, ICLEI World Secretariat

Peer Exchange on Finance and Investable Climate Action – Program		
Session A: Discussion on finance and climate action planning 14:30 - 16:00	14:30 – 14:45	Setting the scene – financing developments relevant to cities and local governments <i>Maryke van Staden, Director of ICLEI’s carbonn Center, ICLEI World Secretariat, Germany</i>
	14:45 – 15:00	Asian Development Bank <i>Dr. Virinder Sharma, Senior Urban Development Specialist, Sector Advisory Service Division, Asian Development Bank (ADB)</i>

Peer Exchange on Finance and Investable Climate Action – Program		
	15:00 – 15:15	Crowd-financing of sustainable urban development projects and solutions Rohit Sen , Strategic Cooperation and Business Development Manager at Bettervest GmbH, Germany
	15:15 – 15:30	Example of accessing finance - a city perspective Ms. Ulka Kalaskar , Chief Accounts Officer, Pune Municipal Corporation
	15:30 – 16:00	Q&A
	16:00 - 16:15	Coffee Break
Session B: Peer exchange on access to funds and responding to challenges 16:30 - 18:00	16:15 – 17:00	Presenting city-level experiences on accessing finance, using examples of bankable projects including main challenges and lessons learned <ul style="list-style-type: none"> • Melaka-Malaysia Mr. Chandru Suparmaniam, CEO, Melaka Green Technology Corporation • Hang Tung Jaya, Melaka - Malaysia Mr. Muhammad Shahrul Hafidz bin Ab. Rahim, Mayor Hang Tuah Jaya Municipal Corporation • Vijayawada - India Mr. Koneru Sreedhar, Mayor, Vijayawada Municipal Corporation Mr. Chandrasekhar, Additional Commissioner, Vijayawada Municipal Corporation • Jaipur - India Mr. Rajiv Garg, Chief Engineer, Jaipur Municipal Corporation • Mysore - India Mr Ranjith Kumar A S, Assistant Executive Engineer, Urban Development Department, Government of Karnataka
	17:00 – 17:30	World café table discussion to discuss findings, explore new approaches and solutions.
	17:30 – 17:45	Wrap up: Feedback form break-out, conclusions and closing remarks Evaluation of session – complete evaluation form

Annex 4: Examples of low carbon, resilient projects in the Asian region

French Development Agency

The French Development Agency loaned the Government of India for a 180 million Euro long-term loan¹⁴ a metro project in Kochi, India (Vidal De La Blache, 2019 Apr 17). While the project itself was not perfect it is an example for integrating resiliency in large scale infrastructure projects.



Soon after the Kochi Metro project had been built, there were severe floods. Some of the metro system was inundated, but the elevated metro corridor was not impacted by the flooding. While all the roads were impassable, the elevated metro corridor service was only suspended for twenty-four hours and quickly became a lifeline for Kochi. The elevated metro corridor was used to bring disaster relief and help transport millions of passengers out of Kochi.

Source: <https://metrorailnewsindia.wordpress.com/tag/kochi-metro-rail->

European Investment Bank

The European Investment Bank (EIB) has invested in rehabilitating the Yamuna River which passes through Delhi—the river is considered biologically dead and is essentially used as an extended landfill site. However, the Yamuna River is culturally important as it is a sacred river in Hinduism. The large infrastructure project they have planned will increase employment and drive both social and economic benefits for communities residing along the river (Cannon, 2019 Apr 17). The idea is to use the river as transport but to also improve resiliency for those living near the river. This includes investment in improving the flood plains to increase resiliency from flooding and which will also restore the groundwater capacity (Cannon, 2019, Apr 17). This type of project would also include wastewater treatment plants and housing



David Gilkey from NPR

<https://www.npr.org/2016/05/11/477415686/can-indias-sacred-but-dead-yamuna-river-be-saved>

¹⁴ The amount loaned to the Government of India for the Kochi Metro was found [on Kochi Metro's Facebook page](#).

projects for those communities along the river. EIB's investment is multi-pronged and holistic in thinking about the social impact of their project.

Asian Development Bank

The Asian Development Bank has a project in Mongolia's capital city, Ulaanbaatar, where they are working to lower carbon emissions. In order to do so, they are working to develop a comprehensive greenhouse gas database at the city level. ADB is working with both national and sub-national governments to carry out their work. This work aligns with the national governments efforts to increase their target for the NDCs. This project will be addressed in more detail in the forthcoming peer exchange documentation of ICLEI's Resilient Cities Bonn.