

Building Capacities for Water Resilient Cities in the Asia-Pacific Region

"National governments may make agreements. But change has to take place locally, where more and more of us are living our lives each day." David Cadman, President 2006-2015, ICLEI –Local Governments for Sustainability

Challenges

Cities are undeniably the most successful organization of communities and economic activity as well as social and cultural capital. However, cities also have a downside through environmental degradation, increased vulnerability to natural hazards, economic disparity, traffic congestion and social instability. In the Asia-Pacific region many of these problems are directly related to the lack of planning and control, and a short-term development scope of the rapid expansion of urban areas.

The United Nations (2004) estimates that practically all the population growth in Asia will happen in cities, resulting in 55% of Asians or 2.7 billion people living in urban areas by 2030. The International Water Ambition of the Netherlands (2016) estimates that in 2050, 7 out of 10 people in the world will live in cities, and 75% of these in urban deltas. UN Habitat (2007) estimates that in the developing world only 5% of urban development is actually planned. Resources and amenities can barely cope with the increased demand driven by an unprecedented rural-urban migration.

Since many of the world cities are located in river and coastal regions, the concentration of assets and people makes them especially vulnerable to storm surges and river floods. Rapid urbanization has a significant effect on microclimate, water cycle and subsidence of which the consequences of increased urban flooding are among the most prominent. Underinvestment and lack of maintenance in the urban drainage structures as well as lack of planning amplifies this problem. This especially holds for slum areas where salt water intrusion, inadequate water supply, poor sanitation facilities, including lack of grey water disposal, and ineffective solid waste management results in significant health impacts and drainage blockage as well as a further amplification of the flood risk and extent and limit the inundation depth. Over the past decades, the impact of flooding on cities has been considerable and is expected to intensify in the future.

Also climate change will have its direct impacts on cities. On the one hand cities will be confronted with shocks and sudden impacts such as storms, typhoons, and heat waves, while on the other hand longer term sea level rise, average temperature increase, and long-term changes in rainfall patterns with also longer dry spells will gradually increase stressors or impacts in these areas. ADB reports estimate that the Asia-Pacific region accounts for half of the world's estimated economic cost of disasters over the past 20 years – roughly US\$53.8 billion annually. In the Pacific the total climate change cost may reach 12.7% of annual GDP by 2100. It is estimated that by 2100 -under a business as usual scenario- losses in South Asia will be 9% of GDP. During the next 15 years US\$6 trillion per year has to be invested in urban, land use and energy systems under a business-as-usual scenario.

While the bigger cities, including megacities and national capitals, usually possess the critical mass of resources to attract the attention of national policy, international dialogue, media as well as investors, the importance of medium and small sized cities (with a population < 2 million inhabitants) in the global urban scene is often understated. The reality, however, is that more than 70% of the urban population lives in cities/towns with less than 2 million inhabitants. The challenge is to promote/facilitate a "learning from each other" process among cities.

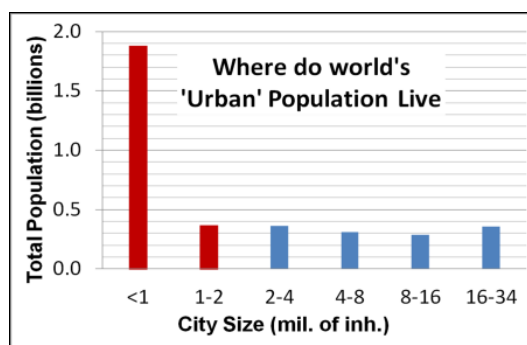


Figure 1: More than 70% of urban population lives in cities smaller than 2 million inhabitants. (Data from: <http://www.citypopulation.de>)

While many larger Asian cities have developed their own programs and implementation strategies to become more resilient and greener, small and medium sized cities are lagging behind in this process. During the next fifteen years, nearly 40 percent of the global economic growth is predicted to come from medium sized cities in growing economies. This anticipated growth poses many opportunities and challenges. Rapid Economic Growth of these cities is putting severe strains on the environment. Furthermore, the service sectors of small/medium sized cities often do not have the skills or financial capacity to attempt to address all those challenges. Learning from the experience of other cities that have undergone/ are undergoing similar transformations and teaming together with similar partner cities can greatly help this endeavour. During the learning week the focus will be on these medium and small sized cities, while where relevant lessons learned from mega cities will be included.

Urban Resilience

Urban resilience is often described as the capacity of cities to function, so that the people living and working in cities—particularly the poor and vulnerable—survive and thrive no matter what stresses or shocks they encounter.

A 2014 ADB publication on “URBAN CLIMATE CHANGE RESILIENCE, A Synopsis” describes what resilience means related to climate change. It distinguishes three levels of resilience in cities:

1. The systems’ level of the city that survives shocks and stresses;
2. The people and organizations level that is able to accommodate these stresses into their day-to-day decisions; and
3. The city’s institutional structures level that continues to support the capacity of people and organizations to fulfil their aims.

It states that there is no single action that will make a city resilient to climate change. Resilience is instead achieved through a number of actions, building upon each other over time. These actions would be enhanced and progressed as peoples and institutions learn from past experiences and apply it to future decisions.

Capacities to build resilience

Experiences from recent projects have learned that the process of leapfrogging into a resilient future requires three distinct capacities (see Figure):

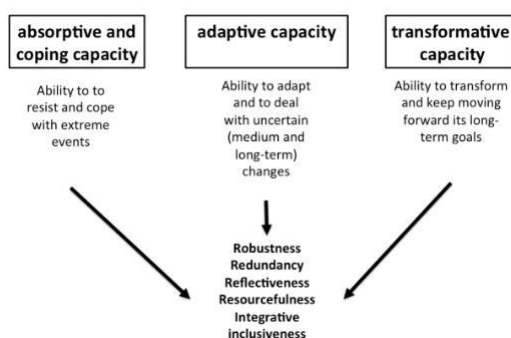


Figure 2: Figure: Capacities to leapfrog into an Urban Climate Change Resilience future

These capacities in turn support the observable qualities of resilient cities through its stakeholders and urban systems, like robustness, redundancy, reflectiveness, resourcefulness, integration and inclusiveness, which capture resilience and are increasingly being used to make urban resilience more tangible. Especially small and medium size cities do not have these capacities at a level required to support these resilience qualities and lack the means to further cultivate them. City capacity building through knowledge management, networking and monitoring will be required to effectively upgrade these three capacities in a coherent and well-balanced way. In this respect this Asia-Netherlands Water Learning Week will largely contribute to building up these capacities and in achieving a better knowledge and insight into the characteristics of water resilient cities and the procedures and principles how to reach this resilience.



Guiding principles of Urban Resilience

The above-mentioned ADB publication provides a number of core guiding principles in support of achieving urban resilience to be integrated into any effort to advance action, i.e., a process that should be iterative, inclusive, and integrated. These guiding principles of urban resilience are:

- **Combining hard and soft measures.** Capacities, networks, and behaviour (of individuals, communities, and institutions) are as critical as physical systems during disruption. Soft measures include new regulations, technology and information systems, and social networks.
- **Engaging diverse perspectives through multi-stakeholder processes.** The engagement of stakeholders at all levels and departments and from all sectors, public and private (government, business, civil society, and academia), is key for success.
- **Enlist different geographic and governance scales: Beyond city boundaries.** It is important to understand how systems (economic, physical, ecological, political mechanisms) within and beyond the city affect how it functions. There is also a need to understand how to best enlist stakeholders at different scales.
- **Addressing today's problems while embedding a long-term vision: The future is now.** Planning processes should begin by addressing the current needs. Building on existing issues and analyses is one way to bring future scenarios into current decision making.
- **Tapping into local expertise.** Engaging local technical experts (e.g., researchers and academics) enables dialogues to be held on a sustained basis. For example, external experts may be paired with local technical institutions to build long-term adaptive planning capacity.
- **Building leadership and local action.** Efforts to build resilience can be accelerated and sustained through strong leadership, driving commitment, and accountability with active community engagement to build awareness.
- **Focusing on vulnerable communities: Whose resilience?** The real test for a meaningful urban resilience approach is its relevance to the interests of poor or vulnerable households. It is important to constantly ask 'resilience for whom?' to establish their value and to ensure that equity concerns are kept at the heart of the agenda.

The City Climate Resilience (CCR) Approach (From: ADB Literature, *guidebook-climate-change-resilience.pdf*)

The CCR approach is used to develop the climate change resilience of city's urban water infrastructure and is composed of the following steps:

- Step 1: Identify and characterize potential climate change impacts.
- Step 2: Assess infrastructure vulnerability.
- Step 3: Develop a city climate resilience strategy

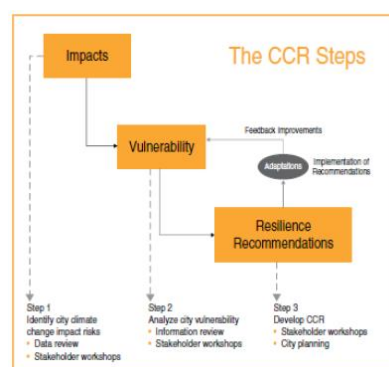


Figure 3: The Climate Change Resilience Approach (Source ADB)

Working together

Worldwide more and more governments – in collaboration with their societal partners from business, academic community and NGO's have the ambition and take steps towards more resilient urban water management, matching long term planning with short term investments. The comprehensive approach of combining water management and urban planning is essential for this ambition, aligned with inclusive processes of collaboration and innovation. Collaboration across counties, regions of expertise and stakeholder groups is necessary to effectively address global risks, provide strategic guidance and advice on the methodology of comprehensive water management and climate resilience into urban planning. There is a clear demand for comprehensive urban strategies that integrate water management and climate resilience into cities' comprehensive urban planning. Inclusive processes for development and implementation must include all stakeholders from the start to ensure capacity building, local buy in and awareness as well as investment opportunities across all sectors. Partnerships based on strong global networks and 'blue growth' are key for unlocking the potential of water assets in cities across the globe, and thus greatly contribute to real resilience. Comprehensive water and urban strategies are key for cities to become resilient, turning challenges into opportunities. With the rapid changes occurring in cities nowadays it is important to develop new knowledge and to accelerate learning processes. Accelerate learning goes beyond active learning (or 'learning by doing') as it also involves 'learning from each other' or **City to City (C2C) learning**. Many initiatives have been taken to stimulate cooperation among cities through developing networks and collaborative learning platforms, like the **Resilient Cities Acceleration Initiative (RCAI, 2015)** with the objective to accelerate the design and implementation of integrated strategies that strengthen the resilience of urban systems. The ambition of the RCAI is, among others, to double the number of cities and partners committed to building resilience by the end of 2015, to assist 500 local governments to develop resilience action plans by 2020, and to manage an online 'marketplace' and support platform to develop the required capacity and to enhance the resilience of communities and community-based institutions in all city and urban- related initiatives and programmes.