



# Addressing Urban Flooding

## Action Points

- Develop a sound land use plan
- Take an integrated and cross-sectoral approach
- Implement public awareness and emergency preparedness initiatives
- Invest in data and research
- Reduce sealed surfaces, expand green infrastructure networks and strengthen ecosystem planning
- Increase public health engagement and risk prevention
- Use early warning systems
- Improve management of drainage systems
- Improve solid waste management

## Recognising the issue

Extreme rainfall events and typhoons cause flooding that threatens the integrity of urban and economic systems, as well as human lives and properties. Flooding is a natural phenomenon influenced by human activities that has caused widespread damage. With a changing climate and continuing pressures for development, the frequency and severity of flooding and consequently the damage caused is likely to increase significantly over the next few decades.

## Analysing the drivers

With cities growing and becoming more densely populated, its settlements and industries have been continuously expanding into flood-prone areas. As a consequence, a larger number of people, buildings and infrastructural facilities are being exposed to floods. Urban development trends have also led to more and more surface sealing, aggravating the risk and intensity of floods in cities as flood water is prevented from infiltrating into the ground.

In addition, an increased frequency and intensity of heavy precipitation events due to climate change will exacerbate the existing vulnerabilities. For South Asia, projections hint towards an increase of extremely wet monsoons – their changes of occurring currently lie at only once in 100 years but they are projected to occur every 10 years by the end of the century.

## Understanding the consequences

Flooding poses a severe threat to peoples' lives and livelihoods in the city. Flooding events can lead to an increased risk of fatalities, injuries, and illnesses; disruption of transport, commerce and economic activity; disruption of public water supply and sewer systems; and adverse effects on the quality of surface and groundwater leading to contaminated water bodies and the spreading of disease in stagnant waters.

Flooding also leads to direct and indirect damages and losses to physical assets and infrastructure, including houses, public facilities (e.g., hospitals and schools) and utilities.

## AsianCitiesAdapt Policy Pointer Series

- No. 1 Tackling Urban Landslides
- No. 2 Responding to Urban Heat Island Effects
- No. 3 Addressing Urban Flooding
- No. 4 Adapting to Sea-Level Rise

The Policy Pointers shall provide local governments with basic insights into selected climate change impacts and present first options of preventing and adapting to them.



Ramiz Khan /ICLEI South Asia

## Taking action

There are a number of pro-active measures that local authorities can take to reduce the city's vulnerability to flooding and help minimize damages and losses.

One overarching measure to take is the development of a sound land use plan that is based on the understanding of climate change vulnerabilities and that encourages ecological planning approaches.

In general, taking an integrated and cross-sectoral approach to city planning improves planning and prevents hazards and risks in the city. Sectors to take into consideration could include land use, housing, solid waste, sanitation, public health, emergency management, water supply, wastewater treatment, and the private sector.

Local authorities should invest in capacity building to increase knowledge and technical know-how of its staff on climate change including the vulnerable sectors.

It is also important for the local authorities to increase public health engagement and risk prevention around flood-related diseases. This could be seen in combination with the development and implementation of public awareness and emergency preparedness initiatives. Communication and awareness-raising activities, especially among threatened communities helps both households and the

public in undertaking adaptation initiatives. Local authorities may gain new insights from informal local approaches already underway as many communities living with the risks of disasters and climate variability have already independently developed coping mechanisms.

For informed decision-making, it is necessary to invest in data and research to better understand vulnerabilities. Communicating research results to decision-makers and the general public in an easily understandable way is of growing importance. Developing a partnership with local academic institutions could assist local governments with their vulnerability assessments.

Other measures to help reduce the damages of flooding events could be the use of early warning systems such as sending out warnings via text message to the general public in the event of heavy precipitation and increased risk of flooding in the city.

Green infrastructure and ecosystem planning in the city is a way to use green spaces to help prevent flooding. It can also reduce the extent of sealed surfaces that is one of the drivers of flooding events in the city.

Improved drainage systems and even short-term clearance and disposal of solid waste from drains to prevent clogging could be a low hanging fruit for local authorities to better prepare the city for floods.



For more information on the project and all other results see:

[www.asian-cities-adapt.org](http://www.asian-cities-adapt.org)

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AsianCitiesAdapt – Impacts of Climate Change in Target Cities in India and the Philippines and Local Adaptation Strategies (2010-2013) brings together science and policy in order to identify the impacts of climate change and develop local adaptation strategies in four cities each in India and the Philippines.

AsianCitiesAdapt is part of the International Climate Initiative. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety supports this initiative on the basis of a decision adopted by the German Bundestag.



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