Report – Webinar series CitiesWithWater, WWC x ICLEI

Webinar #2 « Too much », 18/06/2025

Context.

Since 2000, flood-related disasters have increased by 134% (WMO, 2021). How can urban areas manage excess water and recover from the impacts of flooding? This webinar analyzed case studies of cities that face “too much” water, including issues such as urban flooding and the sustainable management of stormwater. As climate disasters intensify every year across the globe, it has become urgent not only to adapt but also to anticipate these crises. Representatives of Kumamoto, Lusaka, Ningbo and Larissa shared their practical experiences in building urban resilience through nature-based solutions and integrated planning. They highlighted through these case studies how cities can better capture, store, and reuse rainwater, turning flood risk into opportunity and creating more water-sensitive urban environments.

Keynote speeches.

Mr. Loic Fauchon, President of the World Water Council, emphasized that **having too much water or having too little is two sides of the same coin**. Even arid regions are now experiencing heavy rains and urban flooding, so they should not be overlooked in these discussions. He also underlined the **crucial role that mayors and elected officials in cities play** by facing climate divagation on the frontline.

Mrs. Kobie Brand, Deputy Secretary General of ICLEI, praised **the importance of collaboration in sharing solutions and learning from one another**. She also reminded us of the **important role cities can play in building urban climate resilience** and in creating effective solutions at the local level.

Recap from our last webinar “Too Little”.

Mr. Anton Earle, Global Coordinator of Water Systems at ICLEI, introduced the rationale for structuring the theme for the series around water being either too little, too much, or too dirty and how the terminology resonates with local government leaders globally. Find the full report and the video here : https://citieswithnature.org/citieswithwater/

Facilitator introduction.

Dr. Yoonjin Kim, Director of Strategy and Development at the World Water Council, introduced the various shapes that “too much water” takes. This threat to humans and nature includes sea-level rise, floods, storms, torrential rains, freshets, and other water-related events: an excess of water hard to control.

Key takeaways of the webinar.

- The panelists all underlined that nowadays, **it is not about preventing a disaster from happening but being prepared for when it unfolds**. Cities’ adaptation to climate hazards helps reduce some of the aftermath of “too much water” but some events (e.g. torrential rains) cannot be avoided; the city must be ready to handle them.

- While some speakers highlighted the crucial role technology can play (for instance, using artificial intelligence to create smart dams), others pointed out that **dialogue with the population is essential**. **Preparing them** for surges of such events and **raising citizens' awareness** about water-related disasters is important to reduce casualties and panic movements when a catastrophe happens.

- **Creating an environment capable** of absorbing the surplus of water is a solution at hand for many cities to better manage water-related disasters. As an example, planting trees and creating permeable soil can help store water, which limits the damage caused by a flood.

- **There is no unique "go-to" solution to face "too much water"; it is an ensemble of steps that shall be taken at different scales to prevent, manage and overcome an excess of water in cities**. These involve working with a wild range of people (authorities, water operators, NGOs, community leaders…), demonstrating pedagogy to ensure citizens understand the risks, using new tools such as virtual reality, taking into account a large scope of consequences (e.g. water transmissible diseases), utilizing nature-based solutions and understanding that political action is necessary to contain climate-change related disasters.

Key points of each speaker and their city case studies.

Kazufumi Onishi, Mayor
Kumamoto City Government

- The city of Kumamoto deploys two axes to reduce the risks of water-related disasters:
  - **Effective Groundwater Preservation Efforts**: by an integrated approach to sustainable **groundwater preservation and flood risk reduction**. The city relies on groundwater for drinking water, based on developed scientific methods to maintain aquifer health together. Promoting groundwater recharge by intentionally flooding agricultural fields represents a strong example of **ecosystem-based water management.**

  - **Water-related Disaster Risk Reduction Measures**: to address increasing flood risks, especially in the face of intensifying climate events, Kumamoto has implemented **targeted flood mitigation strategies**. These include **enhanced flood forecasting systems, green infrastructure, and integrated land-use planning**. The city's measures are designed not only to reduce immediate disaster risk but also to contribute to **long-term urban water resilience**. The presentation underscores Kumamoto's **dual strategy** of proactive groundwater preservation and adaptive flood risk management **as a model for water-secure and climate-resilient cities**.

- The mayor highlighted the importance of **never underestimating future disasters**: both city workers and residents must be prepared through proper training — for example, by using Virtual Reality to train citizens for flood evacuations.

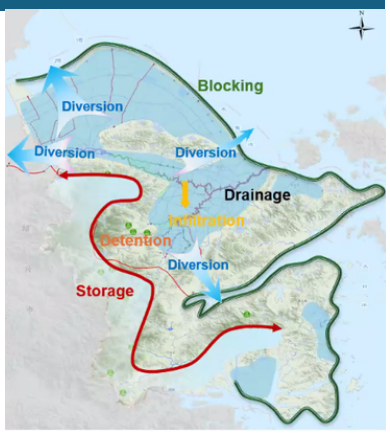
Bwalya Funga, Senior Community Development Officer, Community Engagement Coordinator and Resource Mobilization Chairperson, Lusaka Water Security Initiative

- This intervention **emphasized the long-term risks of floods**, which include not only the destruction of housing and potential loss of life, but also the **spread of diseases** such as cholera. In fact, Lusaka accounts for 92% of cholera cases in Zambia, and 70% of the city's population lives in informal settlements, which are more vulnerable to disease transmission due to inadequate infrastructure.

- Being prepared for water-related disasters is not only about containing the events themselves, but also about **investing in the sectors that are affected by such disasters, like floods.** This involves improving access to water, sanitation, and hygiene; creating stable housing; supporting the relocation of people from informal settlements; and building public toilets. In essence, addressing the challenge of "too much" water also requires rethinking urban infrastructure to better absorb it and combat water-related diseases.

- To address urban flooding, Lusaka worked on **urbanistic aspects of flood management**:
  - Creation of a city gap flood risk management project.
  - Community and stakeholders sensibilization, by focusing on disaster preparedness.
  - Protection of recharge areas to store water, for instance by planting trees.
  - "Cash for work": employing the local community to unclog the blocked drains.

Wenwu Yan, President of Ningbo Water Conservancy & Hydropower Planning and Design Institute
City of Ningbo



- The city of Ningbo created a modern flood control and disaster reduction system, organized around seven axes: **blocking, diversion, storage, detention, drainage, intelligence and infiltration**. Each system being set up in a strategic place (see map). Thanks to watershed coordination, holistic governance and tech-enabled solutions, they have several ways to deal with floods:
  - **Blocking**: limiting water flows entering the city to avoid facing too much sea level rise.
  - **Diversion**: creation of a rapid waterway and a deep tunnel, planning for flood outlets to overcome geographic drainage barriers.
  - **Storage**: expand reservoir storage capacity to create a window of opportunity for flood reception storage.
  - **Detention**: actively manage detention and storage zones, by creating dedicated rotational agricultural areas to receive water and relieve pressure on the main river.

- **Drainage**: creating a way out for water, due to pipelines that transfer water to river channels that will be discharged onto outer rivers, to evacuate this surplus of water.
- **Intelligence**: smart water conservancy, through integrated air-space-ground monitoring and AI models, for instance, enables the city to better predict water flows and manage the excess of water.
- **Infiltration**: using natural retention, thanks to rain gardens, green belts and permeable pavement, helps create sponge cities.

- As a benefit of **the combination of these strategies, Ningbo successfully withstood extreme typhoons** (typhoon "In-Fa" in 2021 and "Muifa" in 2022), resulting in zero casualties and **no major infrastructure damage**. Economic losses were limited to just 0.02%–0.03% of the city's GDP.

Maria Nikolaidou, EU Programs & Initiatives Officer - Operational Planning
Municipality of Larissa

- The case study of Larissa highlighted the **importance of preparedness in managing water-related disasters**, with a focus on the flooding caused by Storm "Daniel". The speaker acknowledged the lack of flood prevention infrastructure in the Larissa region, which increased the city's vulnerability. According to Ms. Nikolaidou, the core weakness of Greece's flood protection planning lies in **the fragmentation of responsibilities and the involvement of numerous bodies** in charge of flood management.
- Although unprepared to handle a flood event like Storm "Daniel", the Greek authorities used the experience **as an opportunity to learn and improve future preparedness**. Indeed, the concept of resilience should be prioritized in planning to **ensure that both the short-term and long-term consequences of such events are addressed**, preventing the authorities from being caught off guard.
- Building resilience means protecting not only human lives but also critical infrastructure. Protecting infrastructures means **ensuring the existence of housing and access to basic utilities after the flood**, which are essential to prevent diseases and limit the displacement of the population. To achieve this, it is crucial to foster cooperation, share responsibilities, and maintain clear communication to avoid disorganization during a disaster.