

Water Resilient Cities - Lessons from Recent Extreme Events | Summary Note

Mark Fletcher

June 2021

Introduction

Introduction and welcome from Mark Fletcher, Global Water Business Leader at Arup. He was the Moderator for this session. This session focused around Water Resilience and Liveability of Cities. We have now passed the point where more people live in urban than rural areas. The impacts of climate change are becoming more extreme. In China the third batch of Sponge Cities is being released. We have all been impacted by Covid-19.

Session speakers talked about water and health-related shocks and stresses in the context of cities they have personal knowledge of. The specific presentations included:

- **DROUGHT** Cape Town – Louise Ellis (an Associate from Arup specialising in City Water Resilience)
- **FLOOD & STORM** Hong Kong – Edwin Lau (Chief Engineer for the Land Drainage Department of the Drainage Services Department (DSD) in Hong Kong)
- **COVID-19** Manila and wider Asia – Geoffrey Wilson (Senior Water Resources Specialist at the Asian Development Bank (ADB) in the Philippines)
- **LEGACY ISSUES** India - Suresh Rohilla (Senior Director, Centre for Science and the Environment in New Delhi, India)

We also had Henk Ovink Special Envoy to the United Nations for the Netherlands join the Panel Discussion and he also provided his reflections and takeaways from the session.

Presentations

To start the session, Louise presented on ‘Building a Water Resilient Future: From Diagnosis to Delivery’. She covered how Cape Town avoided Day Zero with practical actions like water demand reduction by people and businesses, public engagement, water pressure and leakage management, use of temporary desalination plants, role of agriculture, provision of water from private dams, among others. She then went on to talk about the initiative ‘Our Shared Water Future’ and the Application of the City Water Resilience Approach (developed by Arup, co-funded and in partnership with The Resilience Shift, SIWI, World Bank, Rockefeller Foundation, 100 Resilient Cities). During the session, Louise also outlined some innovative work on Oral History from different personal perspectives through video interviews which was funded by The Resilience Shift, Arup and Aurecon.

This was followed by Edwin Lau’s presentation on ‘Managing Stormwater Flooding at Scale’, showcasing how Hong Kong has developed its approach of preparedness to extreme

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shocks including typhoons, intense rainfall, storm surge. As a city of 7.5million people which is very hilly (only 40% of land available for development) the impacts of these extremes have been managed through innovative large scale infrastructure including tunnels, flood storage, a storm-surge barrage and blue/green drainage improvements. It was interesting to hear how the Internet of Things (IoT) has been applied through Smart Drainage and in what way traditional concrete channels called ‘nullahs’ were being restored and regenerated to address the biodiversity crisis and provide ‘beauty’ to the city.

Next was Geoffrey Wilson who spoke about ‘Covid-19 Pandemic Impacts on the Water Sector’ in his presentation. This included reference to guidance notes relating to Covid-19 and water and sewage treatment developed by the ADB. He provided some insightful observations on the change in business and domestic demand and the impact on reducing revenues. He also clarified that Covid-19 is not waterborne but can be traced through sewage. He outlined ideas and action around Response, Recovery and Rejuvenation.

And finally Suresh presented on ‘Over-coming legacy issues in India’. This discussed the history of India since colonial rule, the issues around Smart Cities and urban flooding and the need for rapid assessment in the face of significant groundwater depletion. The stark fact that ‘no city in India has 24-7 water supply’ was a key statement that he shared. He used the example of Delhi which was experiencing a 25% increase in rainfall and learnings from adopting a traditional approach to drainage for a sub-city called Dwarka. He then shared some useful progress on Water Sensitive Urban Design to ‘join up the wider catchment’ in the face of rapid urbanisation and the need for building greater capacity of practitioners.

Panel Discussion

There was then a Panel Discussion. In terms of the Panel Discussion the initial question was as follows:

- *From your perspective what is the most important issue when dealing with resilience of cities?*

Key issues included systems-thinking, importance of inter-dependencies, role of partnerships, need for future-focus, importance of governance across the water cycle, importance of a ‘one water’ approach, value of preparedness, importance of social and institutional resilience and the value of planning to support more sustainable solutions.

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- *What are the main legacy issues from your geographical experience relating to water-related shocks and stresses?*
 - a. A shift in response and thinking from grey infrastructure to blue-green-grey infrastructure;
 - b. The need to shift to a systems-based approach;
 - c. The increasing importance of understanding the role of businesses and communities;
 - d. Recognition that our thinking has to become more ‘circular’ and we need to mainstream re-use, reduce and recycle much quicker than we are doing;
 - e. A greater appreciation of our relationship to and with nature;
 - f. The need to value water much more than we do;
 - g. The increased importance of WASH;
 - h. The shift going forward to make much more use of technology
 - i. A need to bring in the private sector and in particular private financing

We then addressed questions added to the chat with members of the Discussion Panel. These related to water demand management and incentives for business to reduce water demand in Cape Town, and issues of adequately valuing water following from Geoffrey’s presentation.

Insights

This was followed by Insights from the Panel Discussion/Reflections from Henk. This included the following:

- Increase consistency and continuity;
- Build capacity across all of the players;
- Adopt the principles of governance at all scales;
- Embrace systems-thinking for small (personal) and large (catchment) scales;
- Learn about and take much more holistic perspectives;
- Encourage much more sharing and integration;
- Support ambitious targets like zero waste, zero run-off, SDGs and The Paris Agreement

Most importantly don’t just ‘muddle through’. We need to learn from every disaster and adopt a ‘build forward better’ not build back. We also need to inspire through a strong provocation to society that fully recognises that ‘water is life’.

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Closing Remarks

Closing Remarks from Mark had him thank the speakers for their personal insights and for their engagement in this session. It also came with a reminder that with more people living in cities than in rural areas, coupled with effects of global warming, there is an increased severity and frequency of climate related extreme shocks and stresses. Therefore, there is now a greater need to share our learning with each other and prepare to adapt.

There is an African Proverb that says ‘If you want to go fast – go alone but if you want to go far – go together’. Mark stated that we all have a long way to go on this journey for the benefit of future generations.

He also pointed out that a recording of this session would be shared and this Summary Note would be prepared for dissemination based on the discussion in the session.