

# Urban water management in Istanbul: exploring the challenges in the face of climate change

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Water, in its all forms, is always on the move in a complex natural cycle. Climate change is making a measurable impact on this cycle by affecting the amount, availability and quality of water. Cities, expected to be home to 68% of the world's population by 2050, are experiencing this impact in terms of two extremes: water shortages and floods. The individual characteristics of a city – such as its location, climate, size, urbanisation pattern and population density – determine its experience of this impact.

Istanbul, the largest city in Turkey, demonstrates various water-management problems. There is considerable water loss from the distribution system, which requires significant investment in the water-supply network to fix (Yalçıntaş et al. 2015), and a threat of water scarcity due to illegal settlement in watershed zones (Saatçi 2013). There is also a risk of water shortages due to an imbalance between supply and demand (Bekiroğlu, Eker 2011), and the need to transfer water across significant distances to the city, up to 180km (Leeuwen, Sjerps 2015). These challenges call for a comprehensive understanding of water management that focuses on the relationships between the different areas and practices of local planning and administration.

Following publication of the *Istanbul Local Climate Action Plan* (2019), water management has been high on the planning agenda as one of several significant intervention areas with respect to climate adaptation. Since the local elections in 2019, the Istanbul Metropolitan Municipality has placed more emphasis on the issue of water management along with other areas of climate-change adaptation. Accordingly, a symposium on climate change and water management, co-organised by the municipality and İSKİ (Istanbul Water and Sewerage Administration), took place on 8–9 January 2020. The programme was structured around a series of sessions, during which threats and opportunities were discussed by academics, professional experts and public institutions (with approximately 300 participants). The six sessions covered: (1) water-resource management; (2) the effects of climate change on water management; (3) comprehensive watershed management; (4) the potable water supply; (5) energy and water management; (6) water infrastructure resilience. Each session aimed to identify the underlying difficulties that have led to unsustainable use of water in the urban and adjacent rural areas of the Istanbul region.

Reflecting upon these issues, my research aims to explore the experienced difficulties of the current system of urban water management in Istanbul. To achieve this, I will first map the current water-management arrangement, including its roles

and institutions. This includes archival research and a literature review focused on water-usage patterns, management strategies, the leading actors and governance models at different times. I will then explore the experienced challenges and the potential to overcome them within the current socio-political situation. In-depth interviews will allow actors to describe the challenges they face in their roles within local-level water governance. The interviews will cover both their personal experiences and also their reflections on the performance of institutional water management.

In order to understand the commonalities and shared challenges that need to be overcome immediately, I will organise a participatory workshop with all interest groups. The critical point here will be to generate a dialogue that will allow the various stakeholders to discuss, reflect upon and prioritise the identified challenges. Thus the workshop will include key water-management actors from institutions such as the Istanbul Metropolitan Municipality, the Istanbul Water and Sewerage Administration, the Governmental Water Works Department, the Directorate of Provincial Agriculture and Forestry, and the Governorate of Istanbul. The representative engagement of all these parties through such a workshop is expected to strengthen dialogue and connection, not only in relation to this project but also regarding the future of the city's water-management practices.

The principal outcome of this research will be a report presenting the prioritised and shared action areas collectively identified by the water-management actors. The project will also strengthen the dialogue and connection between these actors and BIAA researchers. This, in turn, will provide new opportunities for future collaboration within the BIRI Sustainable Water Management initiative (see pages 27–28).

## References

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