

grounds, roadsides, public squares, coastal areas, parking lots, disaster assembly and shelter points, private gardens, and marketplaces) were defined. Of these, the first three were identified as the most promising for the implementation of rainwater harvesting systems. Relevant suggestions on legislative implementation tools and the appropriate actors to create and put them into action were incorporated into a report that was presented to all institutions involved.

The project formally concluded with a major conference held at Istanbul Technical University and online in March 2023. The conference attracted an international audience of approximately 250 academics, students, policymakers, municipality representatives and other stakeholders, as well as members of the public.

Based on the results of *Water in Istanbul: Rising to the Challenge?*, a follow-up project, led by the BIAA and

funded by UK International Development, is currently being implemented to develop and deliver an experience-based training programme to equip municipalities in Türkiye with the knowledge, resources and capacities to implement sustainable rainwater harvesting. In addition to the training programme itself, the main outputs of this project will be the initiation of a pilot project in Kadıköy Municipality and an online multimedia toolkit to widen impact to all municipalities in Türkiye (see below).

Running from 2021 to 2023, the Water in Istanbul: Rising to the Challenge? project was funded by the British Academy's Knowledge Frontiers International Interdisciplinary Research Scheme, the Scientific Research Projects Department of Istanbul Technical University, two BIAA research grants and the SFC GCRF Fund of the University of Edinburgh.

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Local climate action: empowering municipalities on rainwater harvesting

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I consider myself fortunate to have an engineer in our department with expertise in rainwater harvesting systems, who is also dedicated to continuous exploration and development in this field. Thanks to him, we have successfully conducted rainwater harvesting implementations in some of our service buildings. However, it's worth noting that there is a noticeable lack of awareness among our municipal staff concerning this issue, as well as climate adaptation in general. Would it be possible for us to collaborate on addressing this matter?

(Director, Kadıköy Municipality, Istanbul)

This was the response we received from one of the key directors at Kadıköy Municipality during a feedback interview as part of the *Water in Istanbul: Rising to the Challenge?* project (see above), which aimed to draw lessons from past solutions to water-related difficulties that could be applied to contemporary challenges. As one of the pioneering municipalities in Istanbul, Kadıköy has taken some initial measures to address the risk of water scarcity in the face of climate change. To create an alternative water resource, the municipality has implemented rainwater harvesting (RWH) methods in four different public buildings. These initiatives have successfully replaced a portion of the mains water used for street cleaning in the district. The pilot projects were voluntarily designed and implemented by an engineer working under the guidance of the Directorate of Climate Change and Zero Waste.

However, as indicated by the quote, city officials working in various departments responsible for local climate action lack technical knowledge of rainwater harvesting systems.

With the support of a small research grant from the British Institute at Ankara, we have been conducting additional research with Kadıköy Municipality to better understand the challenges that emerge due to lack of resources – including staff, knowledge and tools – to implement rainwater harvesting systems. We conducted group interviews with directors and experts from the Directorates of Climate Change and Zero Waste, Strategy Development and Foreign Relations, Zoning and Urbanisation, Technical Works, Parks and Gardens, Plans and Projects, License and Inspection, and Construction Control. In total, we interviewed 23 experts, and the analysis of these interviews helped us identify the most frequently mentioned challenges and needs within these directorates. To share the findings with municipal staff and design the remainder of the process in a way that is meaningful to the municipality, we organised a roundtable meeting with key directors who hold significant responsibilities for rainwater harvesting facilities. They agreed on the need for a training programme where municipal staff could practise collaborative work while attending lectures provided by external experts. Here, a wide range of training needs were described, starting from learning how a simple rainwater collection system works at the building scale, and progressing to how complex systems can be designed at the urban scale.

We reached a consensus on the need for a training programme that incorporated hands-on workshops to provide trainees with practical learning experiences, alongside lecture-based sessions conducted by experts in rainwater harvesting. Additionally, the goal was to create a pilot project for rainwater harvesting in a public open space during the training programme, something that has not been done before in Istanbul. Subsequently, we met with the Mayor of Kadıköy, who pledged to execute a pilot project that has the potential for further development throughout this research and training process. While there are pilot projects at the building scale, this will be the first open-space rainwater harvesting system implemented in a public park.

While developing the training programme, we seized the opportunity to secure additional funding from UK International Development. With this extra funding, the number of participants in the training programme and the project design workshop could extend beyond Kadıköy Municipality staff to include personnel from Istanbul Metropolitan Municipality, Istanbul Water and Sewerage Administration (IWSA) and other district municipalities. We also expanded the pool of experts and incorporated case studies from different countries within/and beyond Europe. In this way, the project would be able to present the stakeholders with a wider range of examples and case studies, bringing them into contact with a wider range of options for dealing with issues related to water management in Istanbul.

The two-day training programme comprises: seminars on the current situation of RWH in Türkiye; lectures on RWH in buildings and open spaces, with examples from different countries; a panel discussion with professionals from IWSA and experts on Türkiye's experience with RWH; and hands-on workshops with the aim of co-designing a pilot RWH project in Kadıköy.

The training programme took place on 7–8 November 2023. On the first day, the programme, held in a hybrid format, attracted 102 participants attending physically and 297 participants online. The participants, who came from

various institutions, had the opportunity to hear about rainwater harvesting projects at different scales implemented in Australia, Germany, Iran, the Netherlands, the USA and Türkiye. This was followed by a panel who focused on interagency collaboration in RWH. This panel provided a comprehensive synthesis of the day's insights and set the stage for ongoing collaboration and knowledge-sharing. The attendance of Kadıköy Municipality Mayor Şerdil Dara Odabaşı and IWSA General Manager Şafak Başa underscores the significance and impact of the event.

Inspired by the applications of these practices, on the second day, the Kadıköy Municipality Rainwater Workshop was conducted. The 56 participants from different institutions and directorates were divided into four tables. In the workshop's first session, participants identified areas within the boundaries of the Kadıköy district that were potentially suitable for rainwater harvesting. In the second session, the strengths and weaknesses of the identified areas were evaluated based on planning and design principles. At the end of this session, the two places with the highest scores were selected. In the third session, participants generated design ideas specific to the two highlighted areas. In the final session, group moderators presented the knowledge produced at their tables to all participants. Subsequently, a collaborative exercise using democratic methods was conducted. At the end of the day, a common pilot project area was determined.

The training programme will now be converted into an online training toolkit. This will include videos of lectures, workshops and seminars about the technical, financial and governance dimensions of RWH in Türkiye, along with good-practice examples from selected countries. The training toolkit will be shared with other municipalities in Türkiye via a specific section of the BIAA's Digital Repository. This will allow them easy and free access to the programme. As we progress, this project will serve as a testament to the positive impact achieved when local governments, researchers, and experts collaborate to address urgent climate change issues.



Day 1: expert presentations



Day 2: participatory workshop