

CLIMATE CHANGE & THE ENVIRONMENT

As environmental issues become an increasingly acute concern worldwide, Turkey is a country of prime interest in the field of climate studies. Due to its location, it presents an ideal opportunity to explore and understand climate development and the history of global environmental change within the context of contemporary international relations. Lake sediments, tree-rings, speleothems and peat deposits represent valuable natural 'archives' of environmental change that have been under-explored in both Turkey and the wider Black Sea region. This programme of research into the vegetation and climate history of the region focuses on changes in vegetation, water resources, landscape stability and hazards in Turkey, the Black Sea area and much of the wider Middle East over time. It also provides a key context of interaction concerning human use of the landscape from prehistory to the present day.

doi:10.18866/biaa2020.13

Sustainable Water Management: a British International Research Institutes initiative

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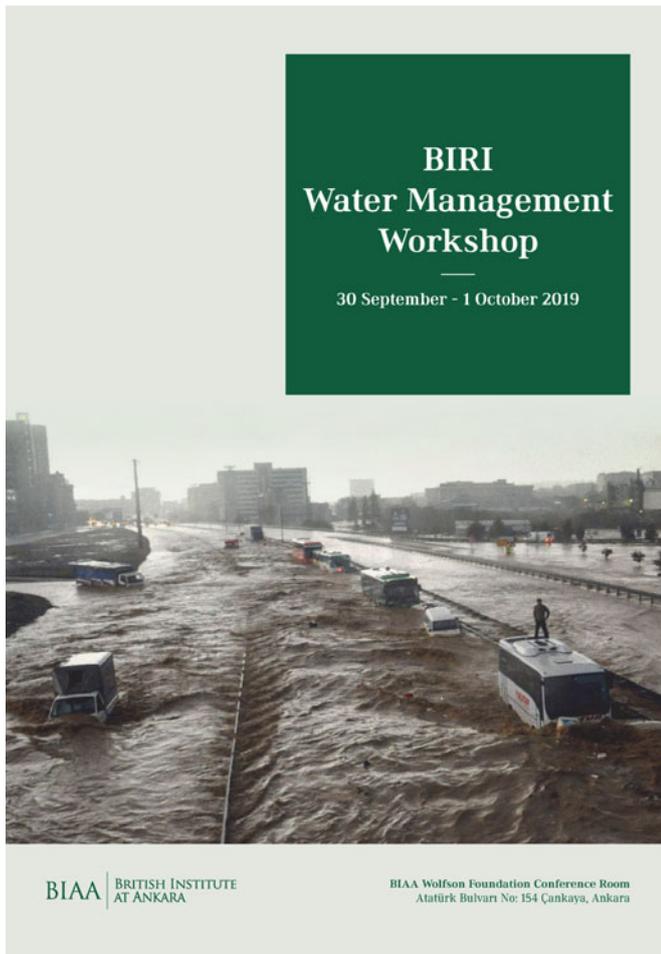
The Sustainable Water Management initiative of the British International Research Institutes (BIRI) brings together the member organisations in a network that intends to share research and expertise and develop joint research projects focused on water management. The British Institute at Ankara has been granted funding from the Business Development Fund of the British Academy to lead the project.

The world is becoming increasingly urban, with more than half of its inhabitants now living in cities. This proportion is expected to increase further during the current century, and this, in turn, will increase demand for urban water supplies. As a consequence, cities may well find themselves with a water deficit and conflicts between urban and agricultural demands for water are expected to increase.

All the organisations grouped together as BIRI are located in regions where reconsideration of current water-management practices is of the utmost importance due to increasing drought and mismanagement and/or excessive abuse of available resources, as well as the exponential growth of cities. The eight BIRI organisations are located around the Mediterranean and in Iran, Iraq and eastern Africa. All have already led or funded work on water management undertaken by UK researchers. Notably, the work of Duncan Keenan-Jones, formerly a Fellow at the British School at Rome and now working at the University of Queensland (Australia), was a particular incentive for the creation of the current initiative.

As a first step, and in order to understand what type of work had already been conducted under the auspices of each of the BIRI organisations individually, workshops were organised to bring together an initial group of experts. Three were planned, but the current pandemic made it necessary to cancel the last one in the series, which had been organised for March 2020. The first workshop took place at the British Institute at Ankara on 30 September and 1 October 2019. A multidisciplinary group of individuals – comprising 21 experts from the fields of archaeology, anthropology, geology, geography, urban planning and hydraulic engineering – took part, either in person or remotely via Google Hangouts. The participants represented seven of the eight BIRI organisations; many are based at UK higher-education institutions, others included BIRI staff and scientists from the regions under consideration. Although representatives of one of the BIRI organisations were unable to attend, they have been actively engaged in the project and the discussions surrounding it from the outset.

The range of topics covered by the presentations and discussions at the workshop was extremely broad, and included the study of antique waterworks around the Mediterranean, across the Near East and in the UK, anthropological work in eastern Africa and Greece, as well as geo-scientific research. The digital and engineering methodologies necessary to understand ancient practices, their functionality and efficiencies, as well as the various options for the implementation of insights derived from past



practices in modern situations were also discussed. As a consequence, the workshop generated a number of ideas about potential areas for joint research.

A second workshop took place at the School of History, Classics and Archaeology of the University of Edinburgh on 12 February 2020. An initial concept note resulting from the first workshop was discussed in depth and developed further.

It was first concluded that future research projects needed to be founded on a thorough understanding of the current situation in all its aspects and to raise awareness of the increasingly unsustainable ways in which available water resources are used in many regions around the Mediterranean and in eastern Africa. How to manage water resources in the face of external stresses, such as climate variability, localised water scarcity, flooding, salinity, siltation and volcanic/seismic events and/or human-induced stresses, such as increasing population, social change or conflict, are challenges that not only the regions of focus face, but the world as a whole.

Secondly, it was agreed that the initiative should seek to understand, through a deep-time approach, how past urbanised societies responded to the problems associated with water management that are relevant today. Many ancient systems had much longer lifespans than those envisaged by the designers of modern infrastructure. Often,

ancient systems had lower energy consumptions and environmental impacts, more communal governance structures and were easier to operate and maintain. Although it is obvious that the problems and solutions of past urbanised societies cannot simply be transferred to the present-day situation, tested previous systems and practices may well inform today's problems and potential solutions, and those of the future.

To reach conclusions that may be of relevance for current water-related challenges, the geological and geographical contexts in which societies developed need to be considered, as do variations in climatic conditions over time. This will allow differentiation between natural and human-induced changes.

A combination of the results of the initiative should provide models that can be used to inform water-management practices today and into the future. Although joint projects are difficult to realise under the current pandemic, the individual BIRI organisations continue their work. For instance, the British Institute at Ankara has provided funding for several projects focused on water management. Again, the pandemic prevented fieldwork that was planned for summer 2020 taking place, but it is hoped this will be conducted in spring 2021 and that it will be reported in the next edition of *Heritage Turkey* (but, for now, see the following article by Ender Peker). The BIAA is also involved in several other projects, led by scholars in UK higher-education institutions, and, in this way, is part of an expanding network of researchers working on water-management issues in the UK and Turkey.



The workshop in Ankara in progress (photo by Martyn Weeds).