

Climate, Water and Society: Exploring the Past, Present and Future relationships

The inter-play between climate and water availability has been fundamental to human activities in the past and will continue to be so into the future, nowhere more so than in the semi-arid regions of Middle East and North Africa (MENA). It is in the great river valleys of this region – the Jordan, Euphrates, Nile and Indus – that the ancient civilisations arose, while the plight of this region under a changing climatic and hydrological regime is central to global ecology, economics and politics today.

It is within the Jordan Valley, that the first farming communities appeared at 10,000 BC, soon followed by the first towns such as Jericho. For more than three millennia these towns housed the largest aggregations of people on the planet until they dramatically collapsed around 6500 BC. Throughout the later prehistoric and historic periods the Jordan Valley was the scene for further social and economic developments, including the great Nabatean trading settlements, Roman and Ottoman settlement. Social and economic change remains on-going today with an increasing intensification of agriculture, the settlement of formerly nomadic people, and the development of industry.

The one resource at the centre of all such past and present activity is water, its status changing from a natural resource to a cultural commodity and having now become a resource at the centre of political tension, in some circumstances provoking conflict, and in others international cooperation. Yet, curiously, the nature of the hydrological cycle and river flow within the Jordan Valley has not received the academic attention it requires. Nor has there been adequate study of how the hydrological regime has impacted on past settlement and how it might do so in the future in the context of global climate change and further economic development.

With funding from the Leverhulme Trust, a multi-disciplinary team from the University of Reading will assess the changes in the hydrological climate in the MENA region and its impact on human communities by bringing together a unique suite of researchers including meteorologists, hydrologists,

geologists, archaeologists and geographers. The project will have two levels. First, the development and evaluation of a climate model for the MENA region as a whole, together with a study of its implications for past, present and future human settlement. Second, a detailed case study of the interplay between climate, water and human society from 20,000 BC to AD 2100 in the Jordan Valley. This will involve the development of a hydrological model, palaeoenvironmental studies of landscape and vegetation change, archaeological studies of human settlement, diet, health and water management, and an examination of current issues regarding water usage in the context of industrial, agricultural and tourist development. With its unique inter-disciplinary collaboration, the project will provide a significant contribution to academic issues in all of its disciplinary fields, while also contributing to policy formation regarding economic development and planning. For further information see: www.waterlifecivilisation.org

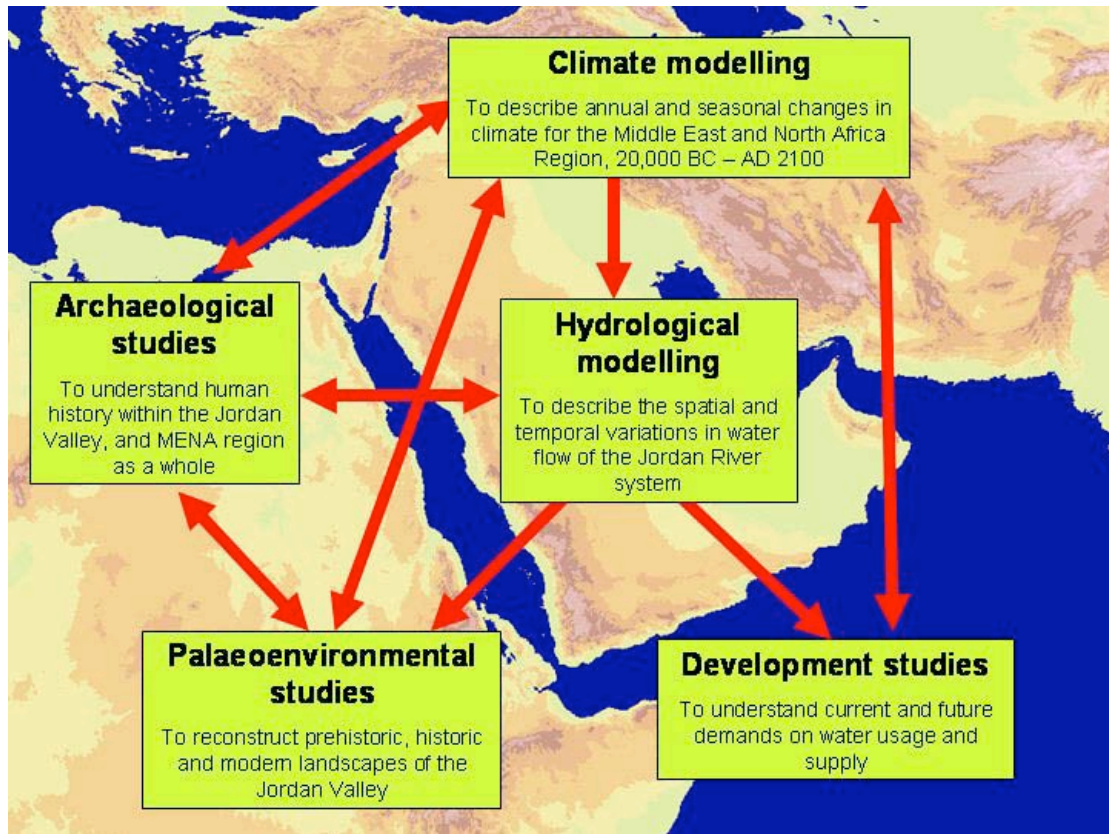


Figure 1: Inter-disciplinary collaboration in the study of climate, water and society in the Middle East and North African region



Figure 2: The Neolithic site of Ghuwyer 1 in the now arid Wadi Faynan, southern Jordan, abandoned at c. 6500 BC. This was one of the earliest farming settlements in the Jordan Valley, most likely growing a mix of cereals and herding goat.



Figure 3: The Roman/Byzantine field and irrigation system in Wadi Faynan. This was associated with an aqueduct and reservoir reflecting major investment in water management for the support of copper mining activities and other activities.



Figure 4: The laying of water pipes in the Jordan Valley close to Wadi Faynan in April 2004, relating to major investment in the management of water for industrial, agricultural and tourism development.

