



## **Climate, water and health in ancient Greece**

**N. Zarkadoulas**, D. Koutsoyiannis, N. Mamassis and S. M. Papalexiou

Department of Water Resources, Faculty of Civil Engineering, National Technical University of Athens, Heron Polytechniou 5, GR 157 80 Zographou, Greece (dk@itia.ntua.gr)

In contrast to earlier ancient civilizations (Egypt, Mesopotamia, Indus) that flourished in water-abundant environments (large river valleys), ancient Greeks preferred to establish their settlements in dry, water-scarce sites. It seems to be a paradox that all major Greek cities during the several phases of the Greek civilization that lasted for millennia, were established in those areas that had the minimal rainfall across the continental and insular Greece. Although there exist some medium-scale rivers and lakes in Greece, there has been no major city close to them in Greek antiquity. It can be argued that in such choices, climate and health have been the main criteria: dry climates are generally more convenient to live and healthier as they protect the population from water-related diseases. The progress in Greek civilization has been closely connected to hygienic living standards and a comfortable lifestyle. To achieve these, both technological infrastructures and management solutions were developed. In Crete, hygienic technologies were practiced as early as in the Minoan period of the island (3500-1200 BC) and were followed in several other cases in mainland Greece and the Aegean islands. The technological frame created comprised: (a) bathrooms, toilets (resembling modern day ones with flushing devices) and other sanitary facilities; (b) urban wastewater management systems; and (c) underground aqueducts that ensure superior water quality and safety against pollution and sabotage. The importance attached to the hygienic use of water in ancient Greece is highlighted in the case of Athens, a city established in one of the driest places of Greece. The entire Peisistratean aqueduct (6th century BC), which transferred water from the Hymettos Mountain to the city center, was constructed as an underground channel. There were bathrooms, latrines and other sanitary facilities, both public and private. Finally, an extended wastewater management network connected every single building of the Athenian Agora to the so-called

Great Drain. The whole infrastructure can only be compared to modern hygienic water systems, reestablished in Europe and North America from the second half of the nineteenth century AD.