BlueLegacies: From Ancient Water Heritage to a Climate-Resilient Mediterranean Future

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Abstract

The Mediterranean Basin is one of the regions most vulnerable to the impacts of climate change. In particular, rising temperatures, changes in drought frequency, and increasing pressure on water resources highlight the need to strengthen the region's capacity to adapt to climate change. In this context, understanding past climate changes and the adaptation strategies developed by historical societies in response to environmental conditions represents an important area of research that can provide scientific insights for contemporary climate policies.

BlueLegacies is an interdisciplinary and international research initiative that aims to integrate past climate records with ancient water management practices to support climate change adaptation in the Mediterranean Basin. The project will use palaeoclimatic data obtained from natural climate archives to reconstruct past drought periods and hydrological changes and evaluate the water management systems developed by ancient societies in response to changing climatic conditions.

The research brings together expertise from various disciplines, including palaeoclimatology, archaeology, history, hydrology, environmental engineering, and biology. Integrating findings from reconstructions of past climatic and environmental conditions with future climate projections will contribute to identifying regional climate vulnerabilities. Building on this scientific foundation, the project aims to develop low-cost, nature-based solutions informed by ancient water management practices that can be adapted to local conditions.

The project's ultimate objective is to translate scientific research findings into climate adaptation strategies that can be used by local authorities, decision-makers, and communities. The approach developed in Muğla and the Eastern Mediterranean is expected to be evaluated through pilot applications and transferred to other Mediterranean regions facing similar climate risks. The COP31 process is also regarded as an opportunity to strengthen international research partnerships, establish shared scientific infrastructure, and develop new project collaborations through programmes such as Horizon Europe, Interreg, PRIMA, and COST.

Keywords: Palaeoclimatology, climate change adaptation, ancient water management, nature-based solutions, Mediterranean.

MİDUG Thematic Area: WP1 – Climate Science and Nature-Based Solutions.