

Introducing Nature-based Solutions to Optimize the Water-Ecosystems-Food Nexus Across the Mediterranean Basin: The Plain of Tarquinia (IT) Case Study - Abstract

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Summary

The sustainable use of natural resources, such as water and land, particularly in the Mediterranean region is conditioned by resources availability, changing climatic conditions and increasing socio-economic stresses. In this context, the project “LEarning and action alliances for NexuS EnvironmentS in an uncertain future” (LENSES) is developing a stepwise approach to identify, based on a participatory process, local Water, Ecosystems and Food (WEF) challenges that can be addressed through Nature Based Solutions (NBSs). Identified NBSs aims to co-achieve multiple Nexus Domain Objectives (i.e., sectoral goals) activating Nexus Resilience Qualities that should facilitate the transition towards more efficient and resilient Nexus systems. In this project, these measures will address vulnerabilities identified in 7 pilot areas distributed across the Mediterranean region and linked to (i) socio-institutional frame, and (ii) climate change. Building on the assumption that biodiversity is the only viable pathway to guarantee water-food security, the NBS will support the delivery of ecosystem services and provide evidence-base for the broader Nexus policy dialogue. Under this perspective, this paper introduces the methodology developed in the LENSES project which aims to improve water allocation, enhance food security while preserving ecosystems and aiding climate change adaptation, through a collective learning process which supports the operationalization of the WEF Nexus. The developed evaluation framework includes a comprehensive catalogue of Nexus related NBSs, whose suitability needs to be evaluated at local level to achieve a better use of protected/natural ecosystems, increase the sustainability and multi-functionality of managed ecosystems, design and manage new ecosystems. The paper reports the preliminary outcomes and lessons learned from the implementation of the LENSES approach in the plain of Tarquinia, which is the Italian case study area of the project. To this end, the paper discusses local WEF challenges identified through a participatory process, which counted on the engagement of a diverse set of relevant stakeholders from across different level. Then, it identifies potential NBSs that can help addressing these challenges and increasing the resilience of the WEF nexus, for the long-lasting benefit of local ecosystems. Ultimately, the paper focuses on the deep transformations processes required to our social and economic systems, and the crafting of integrative governance systems and co-design aspects

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that are needed to operationalize the WEF nexus and bring to effect these deep systemic changes. The outcomes of this paper can inform policy makers at local and national level and support the drawing of improved policies and decisions that foster a fair and sustainable allocation of resources, thus accelerating the achievement of Sustainable Development Goals.

Keywords

Nature Based Solutions, WEF, NEXUS, Ecosystems, Participatory approach