



Climate-change adaptation plan in the Mediterranean region

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The Mediterranean region is considered a “Hot Spot” susceptible to the threat of climate change. Many regions are prone to desertification, reduced water and change of rainfall pattern, loss of fertile soil, and degradation of the ecological services provided. Using the Jordan Valley as a test case, the overall objective of the new EcoFuture project, funded by the PRIMA programme (under GA number 2243), is to develop a climate-change adaptation plan oriented towards improving the socio-economic welfare for people in the Mediterranean region based on Water-Energy-Food-Ecosystem (WEFE) nexus methodologies. The project builds on the research and innovation capacities of partners and local stakeholders in order to: 1) Propose a climate change adaptation plan for the Jordan Valley region, based on existing and emerging technologies, taking into account the social and economic priorities of the three involved jurisdictions (Jordan, Israel and Palestine); 2) Use techno-economic models to optimise the sustainable efficiency (economic, society and environment) performance of the Plan; 3) Use socio-economic models to assess and recommend policies in the WEFE context to improve the welfare of people in the region; 4) Perform tests in three demonstration sites in the Jordan Valley, one in each country, in order to validate the inputs to the various models; 5) Propose methodologies to extend the applicability of the results of the Jordan Valley to other regions and to other Mediterranean countries; 6) Build synergies across sectors to investigate interlinkages across the nexus; 7) Implement capacity building and training programs in response to project findings.

EcoFuture is designed to accomplish the objectives of the project in 3 phases:

- Data Collection Phase – The phase involves the collection of current and future WEFE resources data, Nature-Based Solutions (NBS) alternatives, Socio-ecological data and Governance data.
- Knowledge Creation Phase – The data collected in the first phase are analyzed using various methodologies, tools and models. This will be achieved through the development of Casual-Loop Diagrams (CLD), WEFE alternatives, Multi-criteria analysis of the selection of the optimal WEFE alternative, Hydrologic analysis of the area, Water allocation analysis, Energy Analysis, Ecosystem and Climate change assessment.
- Synthesis and Proposals Phase – This phase involved a techno-economical analysis and a foresight analysis that will be the basis for the development of a regional Strategic Plan that will assure Water security, Energy security and Food security while accounting for the impacts of climate change.

At the same time, Living Labs will take place in each territory with stakeholders that are relevant to the WEF Nexus in order to co-design the pilot demonstration that will take place in each territory. These pilots will be the basis for capacity building and training programs for the local stakeholders.