



## **Sustainable Land Management practices contribution to address desertification and climate change mitigation and adaptation in Mediterranean rural regions**

Itxaso Ruiz, María Almagro, Silvestre García de Jalón, María del Mar Solà, and María José Sanz  
Basque Centre for Climate Change (BC3), Climate basis, Bilbao, Spain (itxaso.ruiz@bc3research.org)

Historically, land use changes in the Mediterranean basin have been mainly related to deforestation and land cultivation, leading to the spread of desertification and enabling the conditions for a drier environment. Climate change is expected to accentuate these man-induced processes through increased temperatures and drought-stresses. These will influence the hydrological budget of the region and will compromise the effectiveness of efforts aimed at combating desertification, promoting rural development, and wisely managing water resources.

This study aims to identify the potential of a variety of sustainable land management practices to increase climate change resilience in rural areas while addressing current landscape degradation issues such as extended droughts, forest fires, and the abandonment of traditional land-use systems and/or practices. With it, we intend to prove that sustainable land management is a successful tool for increasing the resilience of societies and ecosystems.

Here we present results from a semi-quantitatively statistical analysis carried out to assess the multiple impacts and trade-offs of a wide range of practices implemented across the Mediterranean basin. For that, over a hundred practices under the World Overview of Conservation Approaches and Technologies (WOCAT) framework have been considered. These practices have been implemented on a variety of environments within the region and are related to soil and water conservation, combat desertification, and climate change mitigation and adaptation. The work also explores key barriers and incentives for their implementation in rural areas.

Results indicate that the combined adoption of practices addressing soil and water conservation such as crop and livestock waste management or the increase of forest cover are among the most effective approaches and should be prioritized. The synergies provided by the combined adoption of these practices are particularly beneficial to ensure sustainability. The results here obtained may assist policy-makers when designing land management policies and developing action portfolios in rural areas under Mediterranean environmental conditions.