



## TITLE

**RECROP - BIOINOCULA AND CROPPING SYSTEMS: AN INTEGRATED BIOTECHNOLOGICAL APPROACH FOR IMPROVING CROP YIELD, BIODIVERSITY AND RESILIENCE OF MEDITERRANEAN AGRO-ECOSYSTEMS**

## HIGHLIGHTS

Redesign Mediterranean agrosystems with improved resilience capacity and higher productivity, focusing on the development of sustainable agricultural production systems through the combined use of biotechnological tools and environmentally friendly agronomic practices.

## ABSTRACT

The Mediterranean economy is highly dependent on agriculture. However, agricultural sustainability and productivity in this region are under serious threat due to climate change and depletion of water resources. This is worsened by poor management practices, such as the overuse of chemical fertilizers and pesticides, overgrazing, and monoculture farming. ReCROP aims to redesign Mediterranean agrosystems with improved resilience capacity and higher productivity, focusing on the development of sustainable agricultural production systems through the combined use of biotechnological tools and environmentally friendly agronomic practices. This will allow farming systems to face climate change through the improvement of below and aboveground biodiversity, fertility, and water conservation. RECROP uses the novel approach of plant-microorganism management that relies on the increase of soils functions and health by using bioinocula, amendments, cropping systems, and climate-ready crops, to increase crop yields while providing ecological services, e.g., increasing carbon sequestration, organic matter, nutrient cycling and water conservation.

ReCROP covers the Mediterranean Geographical Area (MGA), involving Morocco, Egypt, Tunisia (South MGA), Italy and France (North MGA), and Portugal and Spain (West MGA), and incorporates major crops cultivated in these countries - vineyards, cereals, and aromatic/medicinal plants. ReCROP relies on a multi-actor approach by involving agricultural associations, local farmers and companies in the design of new resilient agrosystems. Agricultural practices will be tested and monitored across different edaphoclimatic conditions from experimental plots in a climatic area with Atlantic influence (N Portugal and NW Spain) to others in drier and hotter regions on the N of Africa. RECROP will use established and new fields to tackle the specific objectives:

i) implement and validate widely adaptable agro-ecological farming; ii) devise new bioinoculant formulations to enhance soil biodiversity and functioning, plant health and yields of the target crops; iii) provide a new tool based on omics technologies to help farmers in the decision-making process through the assessment of soil biodiversity profiles for prediction of crop suitability; iv) characterize from a socioeconomic point of view the main drivers to encourage farmers to switch towards greener practices and promote their acceptability; v) foster innovative sustainable solutions for ecological farming systems involving the views of local stakeholders and providing guidelines to improve the resilience of Mediterranean target crops.



PROJECT R&D + I

KEYWORDS

Agroecosystems, Agroecosystem Resilience, Biodiversity, Circular Bioeconomy, Climate Change, Climate-ready Crops, Crop Diversification, Crop Yield, Cropping Systems, Ecological Services, Mediterranean Crops, Mediterranean Agroecosystems, Microbial Inoculants, ReCROP, Socio-economic Assessment, Soil Health and Biodiversity, Sustainability, Sustainable Agrosystems, Water Conservation.

PROMOTERS / PARTNERS

Coordinator



Partners



FINANCING PROGRAM	EXECUTION DATE	GLOBAL BUDGET
PRIMA PROGRAMME	START DATE: 01-06-2021 END DATE: 31-05-2024	1.398.127,50€
CONTACTS (ESB)	E-MAIL	PHONE
Helena Moreira Sofia Pereira Paula Castro João Cortez Eduardo Cardoso	hgmoreira@ucp.pt sapereira@ucp.pt plcastro@ucp.pt jcortez@ucp.pt ecardoso@ucp.pt	+351 22 558 0001

ADDITIONAL INFORMATION
<a href="https://www.cbqf.esb.ucp.pt/en/recrop">https://www.cbqf.esb.ucp.pt/en/recrop</a>

<p>This project has been funded with support from the European Commission.</p> <p><i>The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.</i></p>	

National Funding Agencies

