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MACC-SOIL

Living Lab MACC-SOIL | Greece

MACC-SOIL is an innovative Living Lab established by the Mediterranean Agrofood Competence Center (MACC) in Crete, Greece. As part of the European Network of Living Labs (ENoLL), it tackles soil degradation in the Southeastern Mediterranean by fostering sustainable soil management practices. Through research, technology, and multi-stakeholder engagement, MACC-SOIL bridges the gap between science, innovation, and real-world agricultural needs.

Aim

The initiative aims to restore and safeguard soil health, enhance agroecosystem resilience, and promote sustainable farming practices across Mediterranean landscapes. It focuses on co-creating solutions that integrate advanced technologies, circular economy principles, and community-based innovation.

Background information



MACC-SOIL was launched in 2021 under the umbrella of the Mediterranean Agrofood Competence Center (MACC). Recognizing the urgent challenge of soil degradation in Crete and the wider region, MACC established the Living Lab as a hub where farmers, researchers, policymakers, and businesses co-develop and test practical solutions. Within a short time, MACC-SOIL has become a reference point in Greece for soil health innovation and a model aligned with the EU Soil Mission goals.

Funding

MACC-SOIL is funded through a combination of European and national programmes, including Horizon Europe (CSS Boost, WIDERA) and national innovation support schemes (Competence Centers – NSRF 2014–2020). Additional revenues are generated through product commercialization (such as FertiWool and SmartAgroGenius) and the provision of services, alongside collaborations and project-based partnerships with industry and civil society stakeholders.

Activities

- Co-creation of sustainable soil management practices with farmers, researchers, policymakers, and businesses.
- SmartAgroGenius: IoT-based precision agriculture platform using LoRaWAN sensor networks for soil, water, and climate monitoring.
- Development and testing of circular bio-based products such as FertiWool, a soil amendment made from 100% Greek sheep wool.
- Pilot projects on biodegradable packaging and other eco-innovations.
- Training, mentoring, and knowledge-transfer activities for local communities in agrotourism and ecotourism.
- Participation in EU-funded projects that advance soil health, resource efficiency, and circular economy practices.

Methods, stakeholders engagements and tools

MACC-SOIL applies a quadruple helix approach, engaging academia, government, industry, and civil society. Tools include real-life experimentation on farms, IoT-enabled monitoring systems, participatory workshops, and co-creation platforms. The Living Lab ensures that innovations are developed in close collaboration with end users and adapted to Mediterranean agricultural realities.

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Achievements

- Certified member of the European Network of Living Labs (ENoLL).
- Development of FertiWool, an eco-friendly soil amendment improving fertility and water retention.
- Deployment of SmartAgroGenius, enabling real-time monitoring of soil and crop conditions across Crete, Macedonia, and the Peloponnese.
- Creation of biodegradable products supporting circular economy practices.
- Recognition as a reference model for soil innovation in Greece, contributing to the EU Soil Mission (75% healthy soils by 2030).

Website:



<https://macc.gr/>



<https://macc.gr/macc-soil/>



<https://macc.gr/en/fertiwool/>



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