Showcase of Technologies and Solutions

Living-Labs for Mitigating Climate Change in Agriculture

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Espai Bital, Barcelona

Tech Centres
Universities
Farmers
R&D Projects
Policymakers
Researchers

Funded by the European Union

CONCAT LIVING LAB
Eco Ready
PRIMED
Innovative sustainable economy
Interreg Euro-MED
Co-funded by the European Union
REFOREST
Naked Innovations
Generalitat de Catalunya
IRTA Instituto de Investigación y Tecnología Agroalimentarias
Federació de Cooperatives Agràries de Catalunya
X_AgriTech
Beta Biodiversitat, Ecologia, Tecnologia Ambiental i Alimentària
BIOHUBCAT Hub de la Bioeconomia de Catalunya

Living-Labs for Mitigating Climate Change in Agriculture

EXHIBITOR PROFILES

Observatory

- **TRL:** 7-8
- **Buyer or end user:** **For the dashboard**: Policy makers, industry users, farmers, and possibly Living Labs (to improve decision-making). **For the mobile app:** mainly citizens (increased awareness and knowledge)
- **Specific solution:** The Observatory will allow tackling immediate problems and long-term challenges at the same time. The outputs of ECO-READY include the Digital Observatory, available as a dashboard and mobile app, as well as a Network of 10 Living Labs for scenario co-creation and for testing the Digital Observatory tools.
- **Contact:** ali.hurriyetoglu@wur.nl / thdiaman@auth.gr

SEACURE

- **TRL:** 7-8
- **Buyer or end user:** Water managers, land users, farmers.
- **Specific solution:** The project will demonstrate, scale up, and replicate innovative strategies for the systemic prevention, reduction, and remediation of nutrient pollution across the land–river–sea system in the Mediterranean basin. Sixteen solutions will be tested in six territorial units located in Spain, Italy, and Greece, encompassing innovative soil and nutrient management practices, smart farming, nature-based solutions, technological innovations, and targeted remediation approaches. SEACURE will drive the regional upscaling and replication of these strategies across new pollution-affected European basins by establishing collaborations with Associated Regions and fostering regional mobilization through key levers: policy, capacity building, societal awareness, and funding access.
- **Contact:** andrea.casadesus@uvic.cat

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EXHIBITOR PROFILES

GreenHood

- **TRL:** 7
- **Specific solution:** Region-specific solutions to reduce nutrient losses through innovation, circularity, and governance.
- **Contact:** mabel.mora@uvic.cat

Plataforma Catalana de Nutrients

- **TRL:** NA, a governance model
- **Buyer or end-user:** 4-ple helix stakeholders
- **Specific solution:** Regional platform to ensure sustainable nutrient management. Co-define the nutrients value chain and involved actors
- **Contact:** celia.guixe@uvic.cat

AQUAGRI-KNOW

- **TRL:** 7-8 operational groups
- **Buyer or end-user:** Multi-actor approach
- **Specific solution:** Ambassador Programme.
- **Contact:** nicoslark@gmail.com

TRANSFORMED

- **TRL:** 7-8 operational groups
- **Buyer or end-user:** Farmers & Foresters
- **Specific solution:** Large-scale adoption of successful agroforestry systems (AFS) in saline and degraded areas to restore soil health, increase biodiversity and productivity of the agroecosystems by overcoming the socioeconomic and sociocultural barriers. Lighthouses location in Morocco, Tunisia and Turkey.
- **Contact:** diana.jimenez@uvic.cat

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EXHIBITOR PROFILES

EVECSA

- **TRL:** 6-9
- **Buyer or end-user:** The primary end-users are present and future European agricultural professionals, including farmers, vocational education and training (VET) providers, and other stakeholders in the agricultural sector.
- **Specific solution:** The project advances Climate Smart Agriculture (CSA) through vocational education by mapping agri-food skills at regional and transnational levels to tackle present and future challenges.
- **Contact:** jordi.pous@uvic.cat

University of Copenhagen

- **TRL:** 7
- **Buyer or end user:** Farmer, agricultural advisors, environmental agencies and policy-making bodies
- **Specific solution:** Poster 1 provide insights into dual benefits of higher crop yields and higher soil organic matter in agroforestry systems, for climate-smart farming
- Poster 2 quantifies the above and belowground carbon stock in diverse agroecosystems from conventional monoculture to diversified agroecosystems
- **Contact:** amcb@plen.ku.dk

CATCROPS

- **TRL:** 8
- **Buyer or end user:** The Catalan Government (Department of Agriculture, Livestock, and Fisheries) has used it for agricultural monitoring and policymaking during drought periods.Irrigation districts also rely on it to estimate agricultural water demands and optimize water resource distribution.
- **Specific solution:** Technology that identifies crop types in agricultural land using remote sensing and AI.This technology is currently operational in Catalonia and is being used as a surveillance tool for food security and agricultural water demand estimation.
- **Contact:** jordi.gene@irta.cat

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EXHIBITOR PROFILES

Organic Living Lab PROBIO

- **TRL:** 7
- **Buyer or end-user:** The primary users of our technology are farmers, agricultural advisors, and policymakers focused on sustainable farming practices. Our solution is particularly beneficial for organic farmers, agribusinesses, research institutions, and environmental organizations aiming to enhance climate resilience, biodiversity, and sustainable farming practices.
- **Specific solution:** The solution combines innovative organic farming practices to mitigate climate change, promote biodiversity, and enhance food security. Our approach includes crop rotation, soil fertility management, and the use of organic fertilizers, with a focus on key crops like spelt, buckwheat, alfalfa, and crimson clover. We also offer practical action plans, contingency strategies, and policy recommendations for sustainable farming. This solution aims to help farmers adapt to changing environmental conditions while maintaining productivity.
- **Contact:** travnicek@czechorganics.com

IT tool for selection of rural based innovative business models

- **TRL:** 7
- **Buyer or end-user:** Buyer or end-user: It is offered by proQuantis, a partner in ECO-Ready. A further advanced version which allows the adjustment of the tool to own interests and the publication of own business models for use by any specific target group can be accessed through passwords available through proQuantis.
- **Specific solution:** The solution involves a database of innovative farm business models which could contribute to a sustainable development of farms. The description of models is complemented by listings of examples with their hyperlinks from all over the globe. The second part of the tool allows users to test to what extent their resources meet the resource requirement of the business model or where deficiencies require investments. Proposals for investments conclude the analysis.
- **Contact:** schiefer@uni-bonn.de

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LILAS4SOILS

- **TRL:** 7
- **Buyer or end-users:** Farmers and MRV providers
- **Specific solution:** LILAS4SOILS fosters Carbon Farming in the Mediterranean to catalyse the transformation of the European agricultural sector towards healthy soils. The project established 5 Living Labs (LLs) in 6 countries, to implement 19 Carbon Farming Practices including peatland management, agro-forestry, nutrient management, livestock management and soil organic carbon in 100 demo-sites across agricultural and climatic areas using co-creation processes. The project developed a soil sampling methodology that ensure accuracy while reducing sampling costs. The project will also design business models for the long-term sustainability of the Living Labs.
- **Contact:** sonia.pietosi@eitfood.eu

Science For Change

- **Buyer or end-user:** On the one hand, the main buyers for our methodologies include public administrations, research centres, and the private sector. On the other hand, most of our projects are designed with citizens as the primary end users. However, certain technological solutions may be tailored to specific stakeholder groups, such as producers, policymakers, or academic institutions.
- **Specific solution:** Citizen Science through technological platforms, as the human part of the technological solution and the methodology that connects the technology with society. Science For Change is a citizen science expert organisation that has consistently demonstrated, across multiple projects, the value of engaging communities in the data collection process. By mobilising citizen participation, we enable the generation of large volumes of data, which can be stored on digital platforms and analysed according to the specific goals of each project—whether for scientific research, policymaking, or public awareness. This approach not only enhances data quality and relevance but also fosters behavioural change, informed decision-making, and greater societal impact, ensuring that technology serves as a bridge between scientific objectives and community engagement.
- **Contact:** sergi.lopez@scienceforchange.eu / oscar.larraga@scienceforchange.eu

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EXHIBITOR PROFILES

LandGriffon

- **TRL:** 9
- **Buyer or end-user:** Currently being used by companies in the food sector to calculate their supply chain nature footprint.
- **Specific solution:** LandGriffon is pioneering a new era of supply chain transparency and environmental accountability. The platform allows companies to use the best available open datasets on environmental indicators, all in one place. We go beyond carbon emissions to assess forest loss, biodiversity loss, and water stress. This comprehensive approach ensures a holistic evaluation across the entire supply chain.
- **Contact:** maria.ricart@vizzuality.com / susana.romao@vizzuality.com

Carbon Farming MED project

- **TRL:** 6
- **Buyer or end-user:** Project developers (agricultural carbon projects), farmers and cooperatives, local and regional stakeholders interedted in meinterestedasure carbon removals, buyers and sellers of carbon credits.
- **Specific solution:** The project is developing and piloting a science-based, regionally adapted carbon certification framework that includes: 1) MRV models (Monitoring, Reporting, and Verification) tailored to the Mediterranean context; 2) A digital platform to assess and quantify potential carbon credits at the farm level; 3) Best agricultural practices (e.g., reduced tillage, cover crops, organic amendments) that enhance soil organic carbon (SOC) and reduce greenhouse gas emissions; and 4) Stakeholder engagement tools and training to ensure adoption by farmers and credibility among carbon market actors.This solution is designed to unlock the economic value of climate-smart practices by linking farmers to emerging voluntary carbon markets, thus contributing to both environmental goals and rural development.
- **Contact:** carlosalberto.torres@uvic.cat

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Carbonflow Operational Group

- **TRL:** 7
- **Buyer or end-user:** Any farmer
- **Specific solution:** Practical tools to restore the microbiological diversity of soils; Bioreactor with fungal dominance, Microbiology Extractor-Fermenter-Applicator (3 in 1) and Microscope (any 400x optical).
- **Contact:** albert.domingo@gencat.ca

Microcosmos: AI-assisted soil biodiversity monitoring and Resilient Landscape simulation

- **TRL:** 4-5
- **Buyer or end-user:** Soil researchers and ecologists, farmers and land managers, consulting firms and sustainability advisors, policymakers and environmental agencies
- **Specific solution:** Microcosmos, a prototype integrating artificial intelligence with optical microscopy to analyze soil microbiology in real time. The system is being designed to enable cost-effective, rapid assessments of soil microbial functional groups, providing an innovative alternative to molecular sequencing.
- **Contact:** quim.zaldo@ctfc.cat

I3-4-Biofertilizers

- **TRL:** 8-9
- **Buyer or end-user:** Biofertilizer sector
- **Specific solution:** Innovation investments in bio-fertilizers (8 investment projects).
- **Contact:** laura.mejias@uvic.cat

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HOLISTIC DECISION ANALYSIS TOOL

- **TRL:** 5
- **Buyer or end-user:** Buyer or user of the technology:Farmers and policy makers seeking to assess the potential economic impact of agroecological interventions and funding schemes, using probabilistic simulation models based on the principles of decision analysis.
- **Specific solution:** This online-app serves to calibrate farm-scale models based on user-specific values. The structure of the model is inspired in real-world interventions, co-developed with their actors. The model explicitly acknowledges the existence of imperfect information in real-world decision contexts. Hence, the user can calibrate the value ranges in which each of the variables of the model may fall, allowing to account for the uncertainty in their specific region. Besides typical bio-economic variables typically included in mechanistic simulation models or cost-benefit analysis tools, the user can also include in the assessment variables such as harvest failure risks and the value of the sense of purpose, allowing for a more realistic and systemic quantification of the value of a farm-level intervention.
- **Contact:** mjimene1@uni-bonn.de

AGRIXELS

- **TRL:** 7
- **Buyer or end user:** Any party involved in agriculture, especially farmers, cooperatives, technological companies of the sector and the public administration.
- **Specific solution:** Agrixels is a standard to exchange geo-referenced agricultural data, making it possible to perform calculations on land and crop data, such as CO2 footprint estimation or impact of water stress on crops.
- **Contact:** upcxels.ideai@upc.edu

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Dynamic microbiological Fertilizers

- **TRL:** 9
- **Buyer or end-user:** Farmers and agricultural producers, as well as industrial partners engaged in sustainable crop production and soil management.
- **Specific solution:** Bhumi Sp. z o.o., a University of Warsaw spin-off, offers biofertilizers based on annually rotated microbial strains. Inspired by microbial dynamics in soil, this strategy ensures sustained plant growth, resilience to microbial viruses, and effective biocontrol of emerging pathogens. Each year, high-performing soil microbes are isolated and screened to match proven functions while refreshing genetic strength, maintaining diversity, soil health, and field performance over time.
- **Contact:** n.joshi@uw.edu.pl / l.drewniak2@uw.edu.pl

PRIMED Project

- **TRL:** From TRL4-5 to TRL 6-7 (prototype demonstration in a
- relevant/real environment)
- **Buyer or end-user:** End-users (primary porducers, SMEs, industry...) and LLABs
- **Specific solution:** The specific solution depends on the focus of the LLAB (e.g. biochar, soil additives, food ingredients and biotissues.)
- **Contact:** julia@inveniam-group.com

NUTRI-KNOW

- **TRL:** 7-8 operational groups
- **Buyer or end-user:** Practitioners & project managers
- **Specific solution:** Results Amplification Methodology. Transformative framework designed to maximise the uptake and adoption of knowledge generated by projects to increase its impact and sustainability over time, particularly those under EIP-AGRI Operational Groups (OGs). With an emphasis on adaptability and scalability, RAM serves as a comprehensive guide to ensuring that project outcomes are effectively transferred to practitioners, and end-users, amplifying the results' utility and reach.
- **Contact:** victor.carbajal@uvic.cat

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DeliSoil

- **TRL:** 6-8
- **Buyer or end-user:** The primary end-users of DeliSoil's innovations include farmers, landowners, and other stakeholders in the agricultural sector who seek sustainable soil improvement solutions. Additionally, the project engages with researchers, industries, and citizens through its Living Labs and Lighthouses to co-create and promote these innovations.
- **Specific solution:** The DeliSoil project aims to transform byproducts from various food processing industries—such as vegetable, meat, insect cultivation, olive oil, wine, and others—into tailored soil improvers. This involves developing innovative technologies and practices within five regional Living Labs, where stakeholders collaborate to convert these byproducts into effective soil enhancers.
- **Contact:** pedrofederico.rizzo@uvic.cat