SOILL STARTUP

Catalogue 2024

Mission Soil Living Labs & Lighthouses

Funded by
the European Union

Mission Soil Living Labs & Lighthouses
Catalogue 2024

DOI: 10.5281/zenodo.14017140

The following catalogue is based on the information collected by SOILL-Startup as provided by the Mission Soil Living Labs by October 2024. Information is subject to evolve and be updated and changes will be reflected in future versions of this catalogue.

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Foreword

SOILL-Startup is pleased to present the catalogue of the first 25 Mission Soil Living Labs funded under the Mission "A Soil Deal for Europe."

This publication, created with input from each of the Living Labs, provides an initial overview of the planned work, scope, and ambitions of these Living Labs as they embark on their journey toward healthier soils across Europe. For each Lab, we present details on target land-use types, relevant Mission Soil objectives, key strengths, partnerships, and improvement techniques, giving readers a comprehensive look at the strategies and approaches guiding these initiatives.

The catalogue reflects the shared commitment of communities and organisations across Europe to tackle pressing soil challenges. By offering insights into each Living Lab's specific goals and activities, it serves as a valuable resource for those interested in learning about or connecting with these pioneering efforts.

Beyond showcasing their planned work, this catalogue aims to foster collaboration. We hope these first steps will inspire partnerships and build networks that further advance soil health. SOILL-Startup is dedicated to supporting these connections and helping strengthen the collaborative path forward.

We invite you to explore this catalogue, connect with these 25 Living Labs through SOILL-Startup, and consider joining this collective movement toward a sustainable soil future across Europe.

SOILL-Startup Consortium

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What is SOILL and

SOILL – Support Structure for Soil Living Labs – aims to establish and manage a one-stop-shop structure to coordinate, support, expand, and promote a network of 100 Mission Soil Living Labs (LLs) and Lighthouses (LHs). This network is crucial for driving the transition towards healthy soils across various geographical and socio-economic contexts.

What SOILL Does:

- **Facilitates the network:** SOILL supports, coordinates, and promotes the development of 100 Mission Soil LLs and LHs, serving as collaborative hubs to foster innovative soil health solutions.
- **Provides dedicated support:** SOILL offers targeted capacity building, knowledge exchange, promotion, and regular monitoring to ensure the effective implementation and scaling of soil health initiatives.
- **Knowledge and innovation hub:** SOILL acts as a onestop-shop support structure, providing a central platform for resources, research, and best practices in soil health.

SOILL is a Framework Partnership funded under the EU Mission "A Soil Deal for Europe" (GA 101112782) and coordinated by the European Network of Living Labs (ENoLL). It involves 47 partners from 18 countries, bringing together a wide range of expertise, including academic institutions, ENoLL-certified Living Labs, multiactor organisations, and NGOs.

SOILL-Startup?

SOILL-Startup – Startup of the SOILL support structure for SOIL Living Labs – is the first project under the SOILL framework. During its two-year implementation (2024 - 2025), the SOILL-Startup project plays a crucial role in setting the foundations for the entire initiative.

Key activities include:

- **Establishing high-quality structures:** Developing clear processes and procedures for the Mission Soil LLs and LHs, and launching a web-based Hub to facilitate outreach, collaboration, support, and monitoring.
- **Comprehensive support:** Offering training, supporting tools, and methodologies to ensure a harmonised and sustainable approach across the network. This includes regular monitoring and evaluation based on a consolidated assessment framework.
- **Network expansion:** Promoting the Mission Soil LLs and LHs network through events, webinars, and matchmaking activities, assisting applicants in conceptualisation and consortia creation for Mission calls.
- **Facilitating knowledge exchange:** Enhancing visibility and accessibility of the Mission Soil LLs and LHs network through mutual learning events, collaborative platforms, and matchmaking to encourage collaboration and knowledge sharing.

SOILL-Startup is funded by the European Union under Horizon Europe programme (GA 101145592) and coordinated by ENoLL. It involves close collaboration with 27 international partners across 12 countries. This extensive network fosters a comprehensive approach to improving soil health, contributing to sustainable land use and environmental protection.

What are the Mission Soil Living Labs and Lighthouses?

Mission Soil Living Labs (LLs) are user-centred, place-based and transdisciplinary research and innovation ecosystems that involve multiple partners to co-design, test, monitor and evaluate solutions in real-life settings for improving soil health. Mission Soil LLs are essential for addressing specific soil health challenges and advancing sustainable soil practices, fostering partnerships among land managers, scientists, businesses, and citizens. Mission Soil LLs can vary by land use type:

- Agriculture
- Forestry
- (Post)-Industrial
- Natural
- (Peri)-Urban

Living labs characteristics comprehends:

- Active involvement of the (end-) users
- Co-creation, co-design and co-development of solutions
- Testing and experimentation in real-life conditions
- Participation of a multiplicity of stakeholders
- Use of multiple methods and tools originating from a range of disciplines and domains

Living Labs comprise **multiple Experimentation Sites** that are local sites (one farm, one forest exploitation, one industrial site, one urban city green area, etc.) that can be included in a LLs area or be located outside a LLs area.

When demonstrating exemplary performances in terms of soil health improvements, **Experimental Sites** can evolve into **Lighthouses** serving as models for effective soil management. Lighthouses are sites for demonstration of exemplary solutions, training, peer-to-peer learning, and communications related to improving soil health.

Livings labs and Lighthouses are key to accelerating the adoption of sustainable practices by users and to developing solutions adapted to local conditions.

The Mission Soil Living Labs projects

Five projects have been awarded from the 2023 Mission Soil topics dedicated to the set-up of Mission Soil Living Labs and Lighthouses:

GOV4ALL
GA - 101157865
Governance and business models for living labs: rural regeneration hubs for tackling soil health challenges in the Mediterranean region.

iCOSHELLs
GA -101157394
Innovative co-creation Mission Soil Health Living Labs.

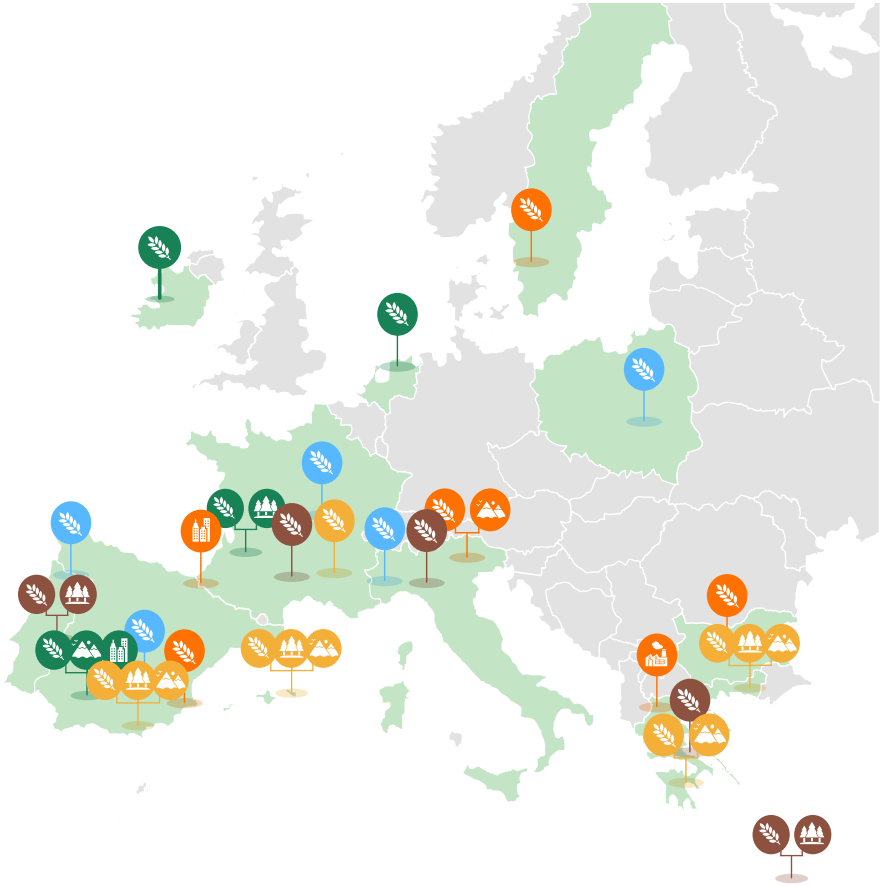
LivingSoiLL
GA - 101157502
Healthy Soil to Permanent Crops Living Labs.

LILAS4SOILS
GA -101157414
Fostering Carbon Farming Practices through Mission LIving LAbs in the Mediterranean and Southern EU for the healthy future of European SOILS.

SOILCRATES
GA -101157354
SOil Innovation Labs: Co-Regenerating And Transforming European Soils.

Together, these five projects contribute to establishing the first wave of 25 Mission Soil Living Labs across 10 European countries.

The Mission Soil Living Labs Map



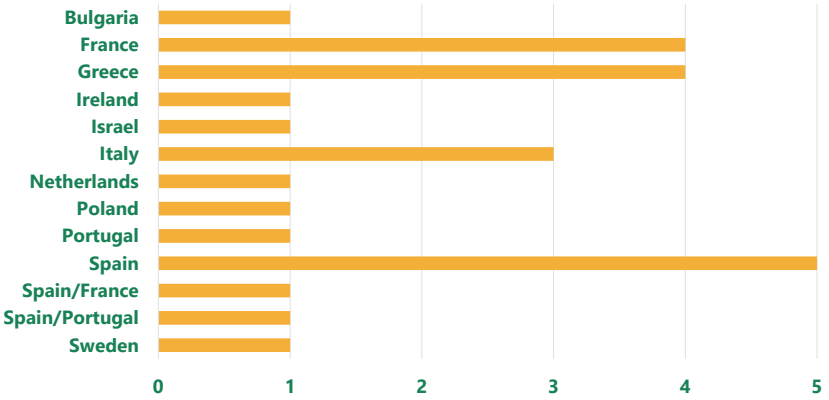
Agriculture
Natural
Forestry
(Peri) - Urban
(Post) - Industrial

Projects

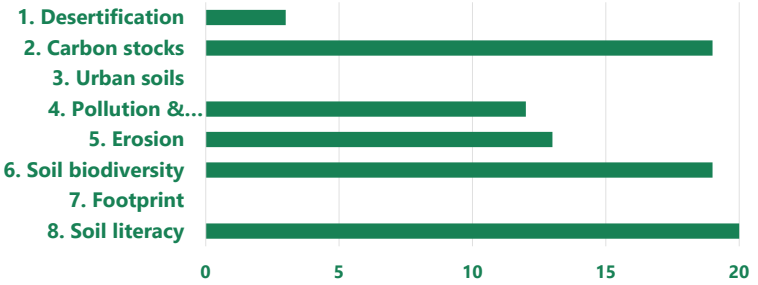
GOV4ALL
iCOSHELLs
SOILCRATES
LivingSoiLL
LILAS4SOILS

The diversity of the Mission Soil LLs

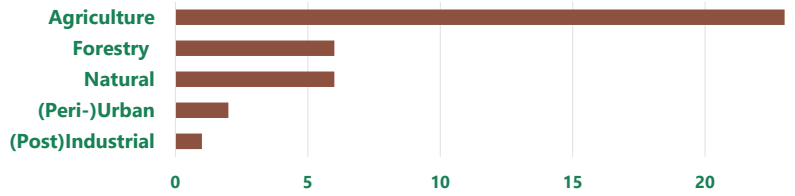
Mission Soil LLs country distribution



Mission Soil LLs target Mission Objectives



Mission Soil LLs land-use type



The Mission Soil Living Labs

GOV4ALL

AEGEAN LL

Agriculture

Natural

Greece

Key strengths

- Experience from previous project
- Involvement of soil research institute
- Political endorsement
- 2 demo farms already having visitors

Mission Soil objectives

1. Desertification - 2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Aegean Living Lab is situated on Lesvos Island in Greece. The rural landscape is mainly covered with olive orchards and faces significant soil degradation challenges due to its hilly terrain, shallow soils, climate change, and the abandonment of traditional farming practices. The Aegean LL, building upon an existing initiative of the Mara-Mediterra project (PRIMA), aims to address soil health issues related to desertification, drought, and organic matter loss through the use of Nature-based Solutions.

Within this robust foundation, a lighthouse for regenerative olive production has emerged and already highlighted by EUCAP Network as inspirational example. The Aegean LL leverages the political backing of North Aegean Region, the expertise of the Soil & Water Resources Institute of ELGO "DIMITRA," and the support of the Development Organization of Mytilene, working together with local farm advisors and pioneering farmers in this emerging bottom-up movement for rural regeneration.

Partners

Hellenic Agricultural Organization "DIMITRA" - Soil and Water Resources Institute (Research Organization-LL Coordinator)

Region of North Aegean - Directorate of Rural Economy (Regional Authority)

Mytilene Development Organization (Municipal Company)

Geotechniki Aigaiou (Farm advisors SME)

Agricultural Cooperative of Petra (Agricultural Cooperative)

FALCON AEBE (Ol'eve Farm)

Kalampoka Konstantina (Eirini Plomariou Farm)

Improvement techniques

Focused on Nature-based Solutions - Mainly agroecological practices and eco-engineering solutions that will be defined later on

GOV4ALL

ALVELAL LL

Forestry
Agriculture
Natural

Spain

Key strengths

- Soil technical expertise (green manures, green roofs, etc.) in semi-arid climates

Mission Soil objectives

1. Desertification - 2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The AlVelAl Living Lab extends across 10,000 km2 over the Spanish territories of Almería, Murcia and Granada. It is typified as a flat, semi-arid steppe with unforested shrubland, a large production of organic rainfed almond trees. The region faces degraded soils and significant drought; increasingly extreme climatic conditions due to climate change.

The Living Lab is a result of a collaboration after local farmers intersected Commonland's search for a region to apply its 4 Returns Framework and it has since grown into the largest landscape restoration project in Europe, bringing together land managers, conservationists, entrepreneurs and local administrations into the Association AlVelAl (AAVA). It encompasses over 500 members, including more than 300 farmers.

Partners

Fundación Aland
Ayuntamiento de Chirivel
Almendrehesa SL
Habitat S.Coop.And
Universidad Politécnica de Madrid UPM
Instituto Madrileño de Investigación y Desarrollo Rural, Agrario y Alimentario IMI
Spanish National Research Council CSIC

Improvement techniques

Organic amendments - Green manures - Sown and/or spontaneous plant covers - Reduction of tillage - Shredding of pruning waste

LivingSoiLL

ANDALUSIAN LL

Agriculture

Spain

Key strengths

- Soil technical expertise
- Management of previous EU soil projects (SUSTAIN OLIVE, SOIL O-LIVE)
- Large farmers community already available

Mission Soil objectives

2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil Literacy

The Andalusian Living Lab aims to be a reference entity in the South of Spain and an interdisciplinary network of partners (from the business, social, agricultural, and academic sectors) to propose innovative, useful, and feasible solutions to the olive soil health challenges.

Priorities - Preliminary innovations (selection process for innovations to be applied is in progress) :

1. Digitalization of agroecosystems
2. Integrated production and regenerative agriculture
3. Good practices for sustainable management of olive groves
4. Fight against drought and optimisation of water use
5. Generate carbon credits

Partners

University Of Jaén
Junta De Andalucía
Cooperativas Agro-Alimentarias De Andalucía
Diputación De Jaén
Infaoliva
Ifapa
Citoliva
Almazara De La Subbética
Finca La Torre
Fundación Caja Rural - Olivarum
Jaencoop
Puerta De Las Villa
Ortijo Spiritu Santo
Instituto Universitario De Investigación En Olivar Y Aceites De Oliva (Inuo)
Consule - Jaén Agritech Ventures
Nutesca

iCOSHELLs

BASQUE LL

(Peri)-Urban

Spain France

Key strengths

- High biodiversity research running in the area
- High involvement of citizens in the activities in the area
- High regulation knowledge on the land use because the high restrictions in the area
- High collaboration in cross border domains

Mission Soil objectives

4. Pollution and restoration -
6. Soil biodiversity - 8. Soil literacy

The Basque Living Lab is focused in the Biosphere Reserve of Urdaibai located in the Basque Country, an area of Atlantic Climate. The main challenge for the area is to protect the culture and biodiversity of the area without leaving behind prosperity, wealth and opportunities for the local citizen. For this it is very important to find methods, metrics and KPIs to maintain the balance, and the key is the sustainable use of the LAND. The main challenges facing the soil in salt marshes are related to their unique ecological characteristics and the impacts of human activities and climate change.

Partners

GAIA
Municipality of Forua
San Fidel School
Eskilara S. Koop
INNOVATEKBI
EUSKAMPUS Foundation

iCOSHELLs

BUV SHELL

Agriculture

Bulgaria

Key strengths

- The AUP and the Institute of Soil Science, Agroecology & Plant Protection will provide the knowledge and expertise related to the soil health
- The innovative solutions and new technologies will come from the private companies
- The validation and the testing will be carried out with the farmers. This co-creative environment is the main strength of the BUV SHELL

Mission Soil objectives

4. Pollution and restoration -
6. Soil biodiversity - 8. Soil literacy

At the heart of the BUlgarian Viticultural Soil HEalth Living Lab (BUV SHELL) is the grape vineyard of the Agricultural university of Plovdiv, which is an attractive centre for education, training, research and demonstration to stakeholders (farmers, grape and wine producers, researchers, experts, advisers, business companies, students, citizens, etc.).

The BUV SHELL maintains 30 ha of vineyards, including more than 400 local and foreign wine and table grape varieties. BUV SHELL has an extensive network of private farms for setting up additional comparative studies in collaboration with the Bulgarian Grape and Vineyard Chamber. At last 4 different soil health solutions will be tested on ~10 sites.

Partners

Agricultural university of Plovdiv, Institute of Soil Science, Agroecology & Plant Protection
Nikola Poushkarov
Ondo Solutions Ltd.
Summit Agro Bulgaria
National Agricultural Advisory Service of (NAAS-Plovdiv)
National Grape and Vineyard Chamber (NGVC)

SOILCRATES

FRENCH LL - LANDES

Agriculture
Forestry

France

Key strengths

- Living Lab management
- Soil technical expertise

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The French LL SOILCRATES - Landes is located in Gascony, within the Landes and Gers Counties. It is made of three main soil types: the sands of Landes Forest, the clayey sands, and the clayey silts on molasse where the source rocks are marl and limestone. The area is increasingly urbanized and peri-urbanized and is known for its industrial and commercial farming (wine, polyculture of maize, buckwheat, sunflower, soy and poultry farming and cattle breeding).

Summertime evapo-transpiration leads to a worsening of soil compaction, a decrease of the water-holding capacity and a loss of yield. The LL will focus on the improvement of water-holding capacity of the soils, which will contribute to an improved soil biodiversity and fertility. The improvement of irrigation practices will be challenged. Other themes will be explored following the set-up of the LL and the needs expressed by the local stakeholders.

Partners

Le Cnam
AgroBio40

SOILCRATES

GRANADA LL

Agriculture
(Peri)-Urban
Natural

Spain

Key strengths

- Expertise in Living Lab Management, led by Media Lab, which is also a member of the European Network of Living Labs (ENoLL)
- Various research groups highly skilled in soil management

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Granada SOILCRATES Living Lab is based in Granada province, in a region marked by unique geographic and climatic diversity, with altitudes spanning from sea level to over 2000 meters. This area supports varied climates, including continental Mediterranean, temperate, subtropical, and arid to semi-arid, with annual rainfall below 350 mm. Major crops include almonds, olives, citrus, vineyards, tropical fruits (mango, avocado), and greenhouse crops.

Key soil challenges include enhancing irrigation efficiency and rainwater use (to reduce runoff and soil loss), mitigating soil structure loss and compaction, restoring soil biodiversity, and improving nutrient cycling alongside the soil's organic carbon stock, with significant biodiversity loss affecting nutrient cycles, intense tillage, herbicide use, organic matter depletion, and high erosion rates.

Partners

Universidad De Granada
Diputación De Granada
Venchipa S.L. // O-Med

LILAS4SOILS

GREEK CARBON FARMING LL

Agriculture

Greece

Key strengths

- Technologies to reduce enteric methane, manure management, increased herd and feed efficiency
- Improved nutrient planning, timing and application of fertilisers
- Modelling GHG emissions and removals using the Life Cycle Approach (LCA)
- Regenerative Agriculture Systems

Mission Soil objectives

2. Carbon stocks

The Greek Carbon Farming Living Lab operates under a quadruple helix model to foster sustainable and long-term collaborations. The LL's core activities are centered at Agricultural University of Athens experimental farm in Voiotia, which spans 100 ha and hosts various crops where advanced carbon farming techniques and technologies are already being implemented. Key activities will be extended to the regions represented by the lab's members, as well as other parts of Greece. This broader implementation aims to encompass farming systems, climate conditions, and soil types. The Greek LL will introduce, test, and assess carbon farming methods and technologies across the country. By leveraging previous research and innovation efforts, the participants aim to streamline activities and promote the adoption of carbon farming practices. The LL will also work on developing new agrifood business models that prioritise carbon sequestration and engage policymakers and civil society.

Partners

Agricultural University of Athens
Federation of the Greek farmers
Perrotis College, American Farm School
Region of Central Greece

Improvement techniques

Based on quadruple helix model different climate zones, diverse farming systems and soil types - Three lighthouses - Previous relative experience from other projects - Active participation of final stakeholders (farmers)

iCOSHELLs

GREEK MINE SHLL (GREEK LL)

(Post)-Industrial

Greece

Key strengths

- Soil science and plant technical expertise
- Project management and coordination expertise

Mission Soil objectives

4. Pollution and restoration - 6. Soil biodiversity - 8. Soil literacy

The Greek Living Lab in Western Macedonia will feature the reclamation of surface lignite mine land for agriculture via phytoremediation. This is an essential practice in the framework of the region's ongoing decarbonisation effort and the shift towards sustainable activities. The LL will feature the testing of different crops for feedstock, essential oil production and other non-food uses, in order to determine the most efficient types of crops to be cultivated, and the most efficient approach to soil restoration. The reclaimed soil will gradually be given over to agriculture.

Such sites usually have high levels of chromium and nickel. Different soils need different reclamation processes at a different pace, so the living lab will establish the ideal approach for surface lignite mine land.

Experiments will feature planting different tree and plant species to determine their effects on soil health and restoration.

Partners

Cluster of Bioeconomy and Environment (CluBE)
University of Thessaly (UTh)
Waste Management of Western Macedonia (DIADYMA)
New Agriculture New Generation (NANG)

Improvement techniques

Phytoremediation - Phytodegradation - Soil testing and monitoring - Reduce erosion and maintain soil structure

LivingSoiLL

GRÓJEC LL

Agriculture

Poland

Key strengths

- Identified problems/factors negatively affecting the health of soils in apple orchards
- The openness of apple orchardists to introducing innovations that improve soil health
- The high scientific level of WULS soil scientists, the professionalism and commitment of LL partners cooperating with apple orchardists

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 6. Soil biodiversity - 8. Soil literacy

Since the history of the Grójec region, the establishment of large apple monoculture, which involves the continuous cultivation of apple trees in the same area over multiple growing seasons, several significant threats to the soil and overall ecosystem have been defined. Apple monoculture can lead to soil degradation, nutrient imbalance and poor soil fertility over time, loss of soil microorganisms biodiversity, pesticide residue accumulation and reduction of soil organic matter content. Grójec Living Lab set its goal to develop and present the most suitable methods to mitigate these threats.

To achieve that, a partnership was set up including researchers from WULS, fruit growers, advisors and companies from the apple sector, and 10 DS are identified. In each DS several trials will be set up to implement and present practices related to orchard floor management testing diverse solutions aimed at improving soil quality in terms of nutrient imbalance, pesticide residues, biodiversity and organic matter content. In this LL, at least 1 Lighthouse will be present in the apple sector.

Partners

Warsaw University of Life Sciences (WULS)
Grójeckie Orchards Association
THE FRUIT Kamil Jeziorek
Timac Agro Polska Sp. z o.o.
LIFE BIO FARMA SP. Z O.O.
Marketing services Izabela Kaczorowska

LILAS4SOILS

IBERIAN LL

Agriculture
Forestry

Portugal Spain

Key strengths

- Carbon farming practices and monitoring
- Reporting and Verification (MRV) technologies applied to soil organic carbon accumulation

Mission Soil objectives

2. Carbon stocks

The Iberian Living Lab is inserted in the LILAS4SOILS project and is, in this framework, the only one that is trans-national between the Portuguese and Spanish regions of Beira Baixa and Castilla y Leon, respectively. It is co-lead by Food4Sustainability (F4S - PT) and Agricultural Technological Institute of Castilla y Leon (ITACyL - ES) and has the collaboration of National Institute of Agricultural & Veterinary Research (INIAV, PT), the Union of Agricultural Cooperatives of Castilla y León (URCACyL, ES) and EIT Food South (ES). It is dedicated to the implementation of carbon-farming practices (CFPs) as well as the testing of innovative monitoring, reporting and verification techniques that can range from classical wet-lab analysis, to remote sensing and the application of models to estimate soil organic carbon. It will involve up to 20 farmers as demonstrators of the implementation of these CFPs during the project, with 10 in Portugal and 10 in Spain.

Partners

F4S
ITACyL
INIAV
URCACyL
EIT Food South

Improvement techniques

Regenerative agriculture practices: Cover crops - Rotation - Regenerative grazing - Biodiverse pastures, among others

iCOSHELLs

ITALIAN LL

Agriculture

Natural

Italy

Key strengths

- Diverse experimental areas
- Strong stakeholder network
- Expertise in sustainable practices
- Focus on knowledge exchange and capacity building

Mission Soil objectives

4. Pollution and restoration - 6. Soil biodiversity - 8. Soil literacy

The Italian Living Lab focuses on soil health across rural, urban, and peri-urban areas in the Adige and Po Valleys, with 10 experimental areas featuring multiple sites or main sites with nearby replicators. It targets Soil Mission goals, addressing soil structure, biodiversity, pollution, restoration, and enhancing soil literacy.

The areas, mainly rural, include farms in Italy's key agricultural zones, covering diverse pedoclimatic conditions (Alpine-Mediterranean). Crops tested will include grapes, rice, olives, chestnuts, and urban orchard varietals. The Italian Living Lab partners will contribute long-standing soil research and innovative practices, supporting monitoring, evaluation, and interpretation of outcomes. Solutions to be tested include soil amendments, mulching, advanced water management and cultivation techniques.

Partners

Isinnova
Università Degli Studi Di Trento
Comune Di Oppeano
Ruma S.R.L.
Innovhub
Consorzio Volontario Per La Tutela Dei Vini Con Denominazione Franciacorta E Sebino
Politecnico Di Milano
Parco Regionale Del Mincio
Università Cattolica Del Sacro Cuore
Università Degli Studi Di Milano

SOILCRATES

LL IRELAND MID-WEST

Agriculture

Ireland

Key strengths

- Soil science
- Circular processes
- Rural Development
- Data management and AI

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Living Lab SOILCRATES Ireland Mid-West is situated on mineral soils in 3 counties: Clare, Limerick, and Tipperary in the South-West of Ireland. Across all three counties are significant areas of Fine loamy soils, podzols and clays. Land usage across the region leans heavily towards grasslands for specialist beef and dairying farms, with smaller numbers of tillage and mix crop farms. Most of the farms across the three counties are conventional in nature, but organic farming has seen an increase across Ireland. A specific challenge is to increase and support soil drainage, decrease use of fertilizers and support biodiversity, via reduced disturbance, improved soil structure, high quality inputs, crop diversity and permanent cover. Increasing soil organic matter levels will support soil biodiversity, soil structure and soil water holding capacity.

Stakeholders: Talamh Beo, Concannon Biofarm, Padraic O'Reilly, Beal Organic farm, Arigna fuels, Hemp Partnership Ltd., Caimin Jacob Media. TCC, CCC, DAFM.

Partners

Ballyhoura Development Clg
Kraken Seeds Limited
Loop Head Together Clg
Cloughjordan Community Farm

Improvement techniques

Blochar application - Microbial cocktails - Organic growing - Intercropping - Multispecies swords

SOILCRATES

LL NORTH NETHERLANDS

Agriculture

Netherlands

Key strengths

- LL expertise
- Soil management expertise
- Expert knowledge on key soil health issues in our region

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Living Lab SOILCRATES North Netherlands is situated on mineral soils in 3 provinces: Fryslân, Groningen and Drenthe.

The main soil type in this region is sand (podzol) and clay. In the region most soil health issues arise from highly intensive monocropping agriculture, designed to reach efficiency in workload and costs. Field sizes become larger, machinery heavier and the system relies on external and chemical inputs. Consequently, there is a loss of biodiversity, nutrient leaching and gaseous emissions into non-agricultural areas and soils become compacted.

In the LL, North Netherlands actors from the quadruple helix will cooperatively improve and monitor soil structure, soil life and crop-growing conditions on mineral agricultural soils while co-creating beyond the state-of-the-art practices to improve soil health (soil structure and habitat quality for soil biota) at mineral agricultural land and at the meantime increase soil literacy in society.

Partners

Van Hall Larenstein
Province of Fryslan
Province of Groningen
Province of Drenthe
Wetsus

Agriculture collective Noardelike Fryske Walden
LBI
Wageningen university

Agriculture collective ELAN
Biosintrum
't Kompas

LivingSoiLL

LOIRE VALLEY AND BEAUJOLAIS LL

Agriculture

France

Key strengths

- Soil technical expertise
- Collective intelligence facilitation
- Project management

Mission Soil objectives

2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Loire Valley and Beaujolais (LVB) Living Lab is included in the LivingSoiLL project. It is dedicated to soil health in vineyards. It includes two regions that are quite afar from one another, so it will function more as two closely related LLs. It has been included in the project quite lately in the subscription process, so it is in a really early stage, and nearly everything has to be done.

Partners

Chambre d'agriculture des Pays de la Loire
Chambre d'agriculture du Rhône
Other potential partners to be added

LivingSoiLL

LUSO-GALICIAN LL

Agriculture

Portugal Spain

Key strengths

- Soil technical expertise

Mission Soil objectives

2. Carbon stocks - 4. Pollution and restoration - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The Luso-Galician LL is located in the Northwest of the Iberian Peninsula and comprises Galicia (Spain) and the North of Portugal. This LL that includes two crops (olives and vines) aims to be a reference in practices for maintaining healthy soils or restoring them for all hilly landscapes, where erosion and water shortage may put yields and quality productions at risk.

In the selected EXPS several practices related to soil management will be implemented including testing different amendments (on-farm composted residues, vermicompost, zeolite, biochar, biofertilizers), different cover crops and different cover management (rolled, tilled, mowed) and also the use of mulching.

Partners

Universidade De Tras-Os-Montes E Alto Douro
Universidad De Vigo
Universidade Do Porto
Inova+ - Innovation Services, Sa
Q Xotc Unipessoal Lda
Sogrape Vinhos S
A.D.V.I.D. Associacao Para O Desenvolvimento Da Viticultura Duriense
Fundacao Da Casa De Mateu
Symington Family Estates, Vinhos, Sa
Fertiprado-Sementes E Nutrientes Lda
Appitad - Associacao Dos Produtores Em Protecao Integrada De Tras-Os-Montes E Alto Douro
Adegas Moure Sa
Bodegas Terras Gauda Sa
Acushla Sa
Sa Morais Castro Unipessoal Lda
Sogevinus Quintas Sa , Linked To A.D.V.I.D. Associacao Para O Desenvolvimento Da Viticultura Duriense
Companhia Geral Da Agricultura Das Vinhas Do Alto Douro – Real Companhia Velha Sa, Linked To A.D.V.I.D.
Tras Os Montes Prime Lda, Linked To Appitad - Associacao Dos Produtores Em Protecao Integrada De Tras-Os-Montes E Alto Douro
Sociedade Agricola Do Conde Lda, Linked To Appitad

GOV4ALL

MENORCA LIVING SOIL

Agriculture
Forestry
Natural

Spain

Key strengths

- Social engagement at many levels: civil society, farmers, public administration
- Long term relationship with farmers

Mission Soil objectives

2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

The area of this Mission Soil Living Lab covers the whole island of Menorca, which has an extension of 700km2 and a population of 100.000 people. Although most of the island's territory is dedicated to agriculture and livestock, this is not its main economic activity, at all. The island's main industry is tourism, with 1.5 million tourists in 2023.

This LL build on the work that GOB Menorca has done for 20 years through its program «Custòdia Agrària» (Land Stewardship), which aims to drive the change towards a more sustainable agrarian sector. At the moment we work with 38 farms, which cover 4% of the surface of the island.

Our objective as a Living Lab is to focus on the most pressing challenges for farmers: both agricultural – scarcity of water, loss of soil fertility and climate change – and economical – commercialisation, bureaucracy, etc.

The hub will work through field consultancy, trainings, logistic support to decrease the discomfort of living in an isolated territory (shared premises, machines...) .

Partners

Rayén soluciones agronómicas
San Crispín, Sociedad Cooperativa de consumo
Universitat de València

Improvement techniques

Keyline - Directed grazing - Green cover crops - Biofertilizers

LivingSoiLL

NW ITALY - PIEMONTE LL

Agriculture

Italy

Key strengths

- Soil science expertise
- Land degradation
- Soil-plant interactions
- Soil biogeochemistry

Mission Soil objectives

2. Carbon stocks - 5. Erosion - 8. Soil literacy

Piemonte is characterised by hills and colluvial foot-slopes with tree orchards. Vineyards and hazelnut orchards dominate the central hills, while chestnut groves cover the lowest elevation areas of the Alps.

The scarce vegetation cover contributes to substantial soil losses through erosion exacerbated locally by rainfall erosivity (increased frequency of intense storms), steep slopes, and high soil erodibility. High soil erodibility, in turn, is linked to particle size distribution, low contents of organic matter, poor structure, and limited permeability.

Erosion leads to irreversible degradation of soil health and loss of fertility when combined with unsustainable management practices. Notably, in poorly developed soils under tree cover, available nutrients are concentrated in the top few centimeters. Erosion events can therefore have a substantial impact on the accessibility of both macro and micronutrients essential for plant growth.

Partners

Disafa
Vinidea
Vitecolte
Monferrato Frutta
Agrion

Improvement techniques

Improvement of soil structure - Cover crops - Erosion mitigation - Reducing soil compaction - Mitigate water stress

LILAS4SOILS

SOUTH OF FRANCE AGRO LL (SOFRALL)

Agriculture

France

Key strengths

- Soil technical expertise (Biospheres)

Mission Soil objectives

2. Carbon stocks

The South of France Agro Living Lab (SoFrALL) will be a place for co-experimentation and implementation of different carbon farming practices covering mainly sandy loam soil types and different cropping systems (corn silage, cereal meslin, vineyards, olive and almond groves) in a region of France with a Mediterranean climate. Soil data will be generated and innovative MRV technologies will be tested.

Partners

Biospheres
Danone

LILAS4SOILS

SHARE INNOVATION LAB

Agriculture

Italy

Key strengths

- Soil technical expertise
- Soil physico-chemical and biological analyses
- Farmers and contractors engagement

Mission Soil objectives

2. Carbon stocks

The Soil Health & Regenerative Agriculture (SHARE) Innovation Lab is a trans-regional initiative in the Po Valley, managed by Università Cattolica del Sacro Cuore (UNICATT), the Regional body for Agricultural and Forestry services of Lombardia region (ERSAF), and Confagricoltura Veneto (CONF). It addresses the challenge of soil degradation in intensively farmed lands by (i) introducing sustainable agro-ecosystem management practices and (ii) monitoring and verifying their impacts on soil health and carbon sequestration, in alignment with the EU Soil Mission. The lab engages farmers, researchers, and stakeholders committed to Conservation Agriculture and carbon farming. Innovations include practices to restore soil fertility, enhance biodiversity, and improve carbon storage.

Key components: (i) Long Term Experiments (LTE), ongoing since 2011, providing scientific data for innovative techniques; (ii) Lighthouse Farms (LHF), demonstration farms for testing and promoting new technologies, fostering adoption at landscape level.

Partners

Università Cattolica del Sacro Cuore (UNICATT)
Regional body for Agricultural and Forestry services of Lombardia region (ERSAF)
Confagricoltura Veneto (CONF)

GOV4ALL

SOLVI'TERRA

Agriculture

France

Key strengths

- Expertise on soil function and evaluation of soil activities

Mission Soil objectives

2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

Solvi'Terra, des sols vivants en Val de Drôme brings together actors in the Drôme River valley southwestern France. It spans an area of 600 km2, with 22 000 ha of agricultural land. This area already forms part of the Biovallée initiative, a bioregion that for the last 30 years has united local stakeholders in efforts to pursue an ecological transition.

Since 2021, Biovallée's stakeholders led by local public institution Communauté de Communes du Val de Drôme (CCVD) have co-participated in the definition of an agricultural and food vision for 2050, involving a shift toward organic farming, biodiversity and circular economy. GOV4ALL intercepted CCVD's plan to develop a composting platform in the area. This platform is designed to innovate and increase the recycling rate of agricultural waste, green waste and industrial waste with the ambition of becoming a centre for economic development in the region. Supporting such a plan with the laying out of a network of test farms, advisors, agricultural research centres and rural development agencies, will increase the likelihood of such a community-driven process resulting in better soil and water management, fully aligned with the Soil Mission.

Additionally, challenges related to water resources and climate change are significant and integral to the project objective. They will be addressed in the development of solutions and innovations to improve water retention capacity in agricultural soils. Therefore, practices such as cover crop, green manure, agroforestry, and topographic elements will also be integrated.

Partners

FiBL France
Communauté de Communes du Val de Drôme
Chambre d'agriculture de la Drôme
GRAB
SOLAGRO

SES SHELL - GREENNOMED

Agriculture

Spain

Key strengths

- Experimental design
- Soil scientific and technical expertise
- Laboratory analysis capabilities

Mission Soil objectives

4. Pollution and restoration - 6. Soil biodiversity - 8. Soil literacy

The main soil challenges SouthEastern Spain Soil HEalth Living Lab (SES SHELL) - GREENNOMED addresses are decline in soil organic matter and biodiversity due to intensive agriculture over the past decades. Main innovations are related to regenerative practices, use of natural pesticides, optimal fertirrigation management, agro-system biodiversity management

Partners

Cetenma
Imida
Cebas-Csic
Fundación Cajamar

Improvement techniques

Regenerative agriculture - Rotation pest management - Organic amendments - Green cover

SWEDISH SHLL (SWE LL)

Agriculture

Sweden

Key strengths

- Living Lab Management - structuring the co-creation process
- Soil technical expertise - training on soil sampling and preparation (to be consistent with other LL)

Mission Soil objectives

4. Pollution and restoration - 6. Soil biodiversity - 8. Soil literacy

In recent decades, Sweden's agricultural land has seen increased crop production intensity through the use of mineral fertilizers, pesticides and heavier equipment. SWEdish Soil Health Living Lab (SWE LL) addresses agricultural soil health problems, being soil compaction, poor soil structure and soil biodiversity as the major challenges, followed by areas where nutrient imbalances with surplus P are causing subsequent pollution. Experimental sites are composed of farm networks in Southern Sweden and in Mid region, with the aim of confronting these soil health challenges and refine policy through a collaborative process with relevant stakeholder groups. The experimental sites include pig, poultry and cattle farms, more than 7000 ha of arable lands, and will be used for testing the manure sharing between animal farms and crop production farms. The end aim here is to reduce eutrophication and to provide healthy soils with a sound farm economy.

Partners

Hushållningssällskapet (HS)
Swedish University of Agricultural Sciences (SLU)
Odling I balans (OiB)
Swedish Federation of Farmers (LRF)
National Veterinary Institute (SVA)

GOV4ALL

THYREA LL

Agriculture
Forestry
Natural

Greece

Key strengths

- Networking and storytelling
- First pilot bio economy village

Mission Soil objectives

1. Desertification - 2. Carbon stocks - 5. Erosion - 6. Soil biodiversity - 8. Soil literacy

North Kynouria otherwise known by its ancient name Thyreatis area is a municipality in Arcadia Prefecture in the Eastern part of the Peloponnese Island. Its land area is 577 km^2, its population about 10,000. About 86% of its area consists of forests and grasslands, while the rest was and partly is cultivated land.

Shepherding sheep and goats was the main occupation of its inhabitants since antiquity. Nowadays this bucolic lifestyle is reaching extinction. Olive oil production and wine making were also two main economic activities blended with ancient traditions. The olive orchard basin of Kynouria produced 7-10.000 tons of giga olives as well as 1.500 tons of manaki olive oil. Noteworthy is the 50% drop from its regular production for the last 5 years and another 10 % drop in 2023 due to a) the ineffective fruit fly management b) the scarcity of waters c) extreme weather conditions and d) the continuous malpractices of old olive growers that left the soil totally depleted of microbial life. The soil turned to dirt. These three adversities along with the inability of locals to organize in cooperative business schemes has led the young population to leave the area to seek a better life in urban settings.

The picturesque villages experience the relentless shrinkage of their population, the fact that no young farmers are staying to steward the olive orchards coupled with the extreme loss of field workers drive the region to its imminent death. Local economy relies only on non- sustainable short lived tourism and all is under the spell of “fast profit” now! Time to change the narrative.

Partners

Meraki People SME
National and Kapodistrian University of Athens (NKUA)
The Olive Production Agricultural cooperative of Doliana
Afforest4Future
Academy of Entrepreneurship
The New Agriculture

LILAS4SOILS

UPPER GALILEE LL

Agriculture
Forestry
Peat land

Israel

Key strengths

- Ecosystem building
- Contact with farmers
- Applicative research

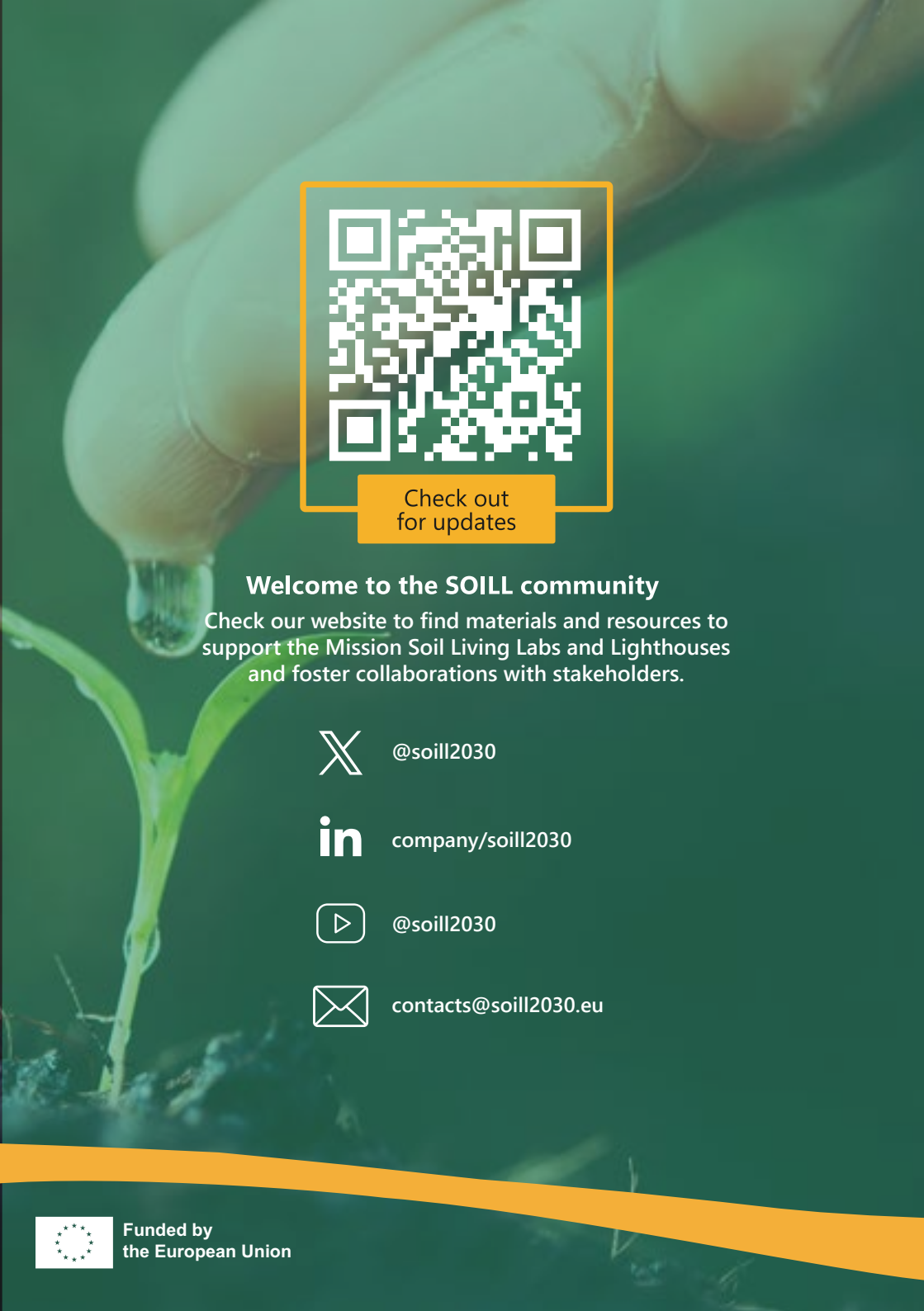
Mission Soil objectives

2. Carbon stocks

The Upper Galilee Living Lab is establishing 10 demo sites this year and additional 10 next year for carbon farming practices implementation.

Partners

Granot
Galil elion



Check out
for updates

Welcome to the SOILL community

Check our website to find materials and resources to support the Mission Soil Living Labs and Lighthouses and foster collaborations with stakeholders.

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Funded by
the European Union