



Living Labs for regenerative ecosystems: soil, forestry & water

Key takeaways and recommendations
for the Living Lab community



Funded by
the European Union

Regenerating ecosystems through place-based innovation

European and international policy frameworks set a clear and ambitious direction for the regeneration and restoration of natural ecosystems. The the newly approved [EU Soil Monitoring Law](#), the [EU Nature Restoration Law](#), or the [Climate Law](#) as well as international commitments such as the [United Nations Sustainable Development Goals](#), converge on a shared objective: to halt ecosystem degradation and actively restore soil, water and forest systems that underpin biodiversity, food security, climate resilience and human wellbeing.

Achieving these objectives requires more than regulatory ambition. It calls for approaches capable of translating policy goals into concrete, locally adapted actions that are socially accepted, economically viable and environmentally effective. In this context, Living Labs (LLs) have emerged as a critical instrument to connect innovation, governance and practice in real-life settings.

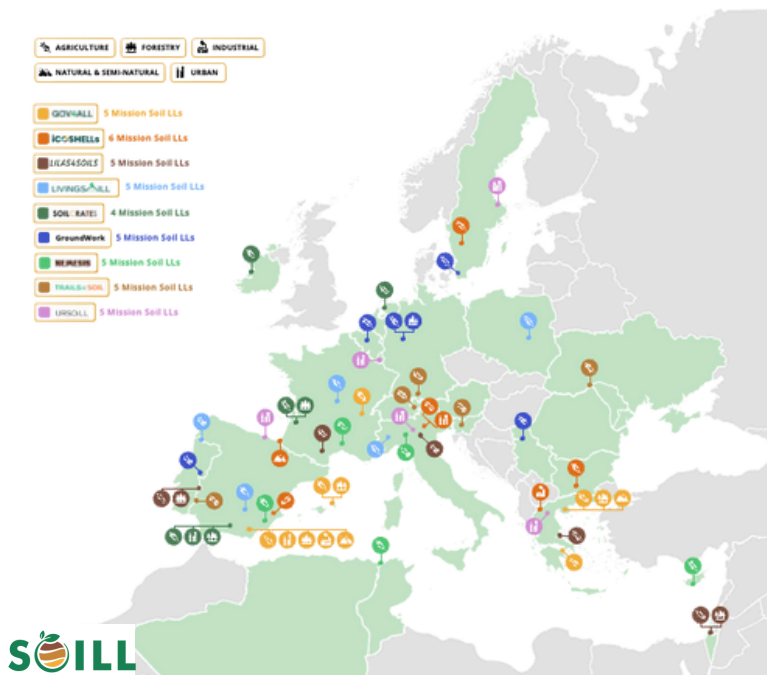
This ambition is embedded at the core of the EU Missions under Horizon Europe. Among the five [EU Missions](#), the Mission “[A Soil Deal for Europe](#)” uniquely positions Living Labs as a central delivery mechanism, with the objective of establishing 100 Mission Soil LLs and Lighthouses (LHs) across Europe by 2030. Through place-based experimentation, co-creation and continuous learning, Mission Soil LLs aim to accelerate the transition towards healthy soils while contributing to broader ecosystem regeneration goals.

Mission Soil Living Labs and Lighthouses

Mission Soil 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. Living Labs are composed of multiple Experimentation Sites that can vary based on land use type – agriculture, (peri-)urban, forestry, (post-)industrial, and natural environment – and that can evolve into Lighthouses if showing exemplary performances in terms of soil health improvement, serving as models of effective soil management.

Working in real settings, Mission Soil Living Labs ensure that solutions are practical and adoptable and provide a powerful user-driven model to catalyse systemic change in support of restoring critical ecosystems such as soil, forests, and water.

Since 2023, the implementation of the Mission “[A Soil Deal for Europe](#)” has led to the establishment of a **network of 45 Mission Soil Living Labs**, deployed progressively through successive waves. These Living Labs operate across a wide range of European regions, land-use types and socio-economic contexts, reflecting the diversity of soil health challenges addressed under the Mission.



The map of the first 45 Mission Soil Living Labs. ©SOILL2025

The 45 Mission Soil Living Labs have been set up through nine Horizon Europe projects, which provide the operational, scientific and organisational frameworks supporting their activities. While the projects act as implementation vehicles, the Living Labs themselves constitute the core of the Mission Soil approach, functioning as long-term, place-based ecosystems for experimentation, learning and innovation.

First wave (25 LLs):

- [GOV4ALL](#)
- [iCOSHELLS](#)
- [LILAS4SOILS](#)
- [LivingSoiLL](#)
- [SOILCRATES](#)

Second wave (20 LLs):

- [GroundWorks](#)
- [Nemesis](#)
- [TRAILS4SOILS](#)
- [URSOILL](#)

A comprehensive overview of the Mission Soil Living Labs, including their geographic distribution, land-use focus and key characteristics, is available through the [SOILL catalogue](#) and the [SOILL Hub](#), which provide access to detailed information on individual Living Labs and their activities.

Supporting the Mission Soil Living Labs

The SOILL Framework Partnership Agreement facilitates and fosters collaboration among the Mission Soil Living Labs, researchers, policymakers and key EU and international stakeholders. By creating synergies and aligning efforts, the partnership aims to ensure that the Living Labs effectively contribute to achieving the Mission Soil goals, ultimately advancing the agenda for healthy soils across Europe. Through targeted initiatives and shared resources, SOILL envisions a collaborative ecosystem where innovative solutions for soil health are developed, co-created, and disseminated widely.



The SOILL Framework Partnership Agreement covers the period 2024–2030, providing continuity and stability to support the network’s growth and is implemented through three consecutive implementation projects:



- **SOILL-Startup**– Startup of the SOILL support structure for Soil Living Labs – is the first project under the SOILL Framework Partnership Agreement, aimed at establishing and operating a support structure for the 100 Mission Soil Living Labs and Lighthouses. Designed to foster and strengthen this network, SOILL-Startup offers tailored support for growth through capacity building, knowledge exchange, promotion, and regular monitoring to ensure the network’s effective contribution to the Mission Soil goals.
- **SOILL-Stepup** (2026–2027) will be the second project under the SOILL Framework Partnership Agreement, aiming to strengthen and expand the SOILL one-stop-shop structure, improving and consolidating the services offered to Mission Soil Living Labs and Lighthouses, expanding the network and its services to applicants, as well as to aligned and emerging Europe-wide Soil Living Lab and Lighthouse initiatives.

SOILL session at OpenLivingLab Days 2025

The session “[Living Labs for regenerative ecosystems: soil, forestry and water](#)” was organised within the framework of SOILL-Startup and took place during [OpenLivingLab Days 2025](#) (OLLD25) in Andorra la Vella.

OpenLivingLab Days, organised annually by [ENoLL - European Network of Living Labs](#), is the flagship event of the international Living Lab community and a key international forum for exchange on Living Lab methodologies, practices, and policies. It brings together Living Lab practitioners, policymakers, researchers, businesses and civil society actors to share experiences, discuss emerging challenges and explore how Living Labs can contribute to systemic change. The 2025 edition, held in Andorra la Vella under the theme “Living Labs for Regenerative Futures: Connecting Local and Global Innovation Ecosystems”, gathered 335 participants from 44 countries across five continents. The programme focused on the role of Living Labs in regenerative transitions, with particular attention to ecosystem regeneration, place-based innovation and the connection between local experimentation and wider policy and innovation frameworks.

Within this broader conference context, the SOILL-Startup session focused specifically on ecosystem regeneration and the contribution of Living Labs across soil, forestry and water systems. While Mission Soil places soil health at the centre of action, the session recognised that soil degradation, water availability, forest management and biodiversity loss are closely interconnected and often manifest at landscape scale. Addressing these challenges therefore requires integrated approaches that go beyond sectoral boundaries and connect environmental, social and economic dimensions.

The session explored how Living Labs can act as practical experimentation spaces for ecosystem regeneration strategies, linking European policy ambitions with locally grounded action. It aimed to highlight the role of Living Labs in supporting the implementation of restoration objectives on the ground, to connect Mission Soil Living Labs with wider European and international restoration agendas, and to identify key enablers, barriers and lessons learned for scaling regenerative approaches through co-creation.

The discussion brought together representatives from the European Commission, IUCN - International Union for Conservation of Nature, and Living Lab practitioners active in soil, water and forestry contexts. Through presentations and exchange, the session examined how Living Labs can accelerate ecosystem regeneration by fostering collaboration, strengthening local ownership and translating policy objectives into evidence-based, place-specific solutions.



Key messages from the session

Co-creation as a foundation for ecosystem regeneration

Effective ecosystem regeneration depends on the active involvement of those who live in, manage and depend on landscapes. Co-creation is not an optional add-on but a prerequisite for designing solutions that are realistic, feasible and sustainable over time.

EU funding instruments such as Horizon Europe and the LIFE Programme increasingly endorse participatory and bottom-up approaches. In parallel, tools such as the Nature Restoration Reference Portal support Member States in translating policy objectives into national restoration plans. Living Labs provide the operational space where solutions can be tested, demonstrated, and upscaled in real life, bridging policy ambition and local action.

Ecosystem challenges require landscape-wide approaches

Soil, water and forests function as interconnected systems. Fragmented interventions risk shifting pressures from one component to another rather than delivering lasting regeneration. A landscape-wide perspective is therefore essential.

This integrated approach aligns with the interconnected nature of EU Missions, notably Soil, “Restore our Oceans & Waters”, and “Adaptation to Climate Change”. Living Labs operating at landscape scale can facilitate cross-sector dialogue, align interventions across land uses and contribute to more coherent and effective restoration outcomes.

Living Labs as policy feedback mechanisms

Living Labs generate practical knowledge through experimentation in real contexts. However, this knowledge only delivers systemic impact if it feeds back into policy design and implementation.

Systematically capturing lessons learned, evidence and data from Living Lab activities and translating them into policy-relevant insights strengthens evidence-based decision-making. Living Labs thus act not only as testing grounds for solutions, but also as interfaces between local practice and European policymaking for regulatory learning.

Social and economic dimensions of regeneration

Ecosystem regeneration is inseparable from social and economic considerations. Restoring ecosystems also means restoring the relationship between people and nature. Agroecology, recognised by the EC as a science, a set of practices and a social movement, offers a concrete pathway to combine environmental restoration with social and economic benefits. Living Labs provide a platform to scale agroecological approaches at landscape level, linking ecological objectives with livelihoods, food security and community resilience.

Long-term success requires embedding LLs structured within stable institutional frameworks and financing mechanisms, moving beyond short-term project cycles.



Panel debate at SOILL session at OLLD25.

Enablers for impact and scaling

Several enabling factors were identified as critical for effective ecosystem regeneration through Living Labs:

- knowledge sharing across sectors and regions, supported by harmonised methodologies and data
- recognition and integration of local, traditional, and indigenous knowledge alongside scientific expertise
- strong orchestration capacities and committed individuals to sustain collaboration over time
- strategic use of digital tools and technologies as support mechanisms for co-creation, monitoring and learning

Technology should act as a “silent partner”, enabling collaboration and informed decision-making without replacing local governance structures.

A path forward ...

...for Mission Soil LLs...

The exchanges and reflections during the session underlined the role of Mission Soil Living Labs as key instruments for advancing ecosystem regeneration beyond single-sector interventions. In the coming years, Mission Soil LLs are expected not only to improve soil health, but also to contribute to integrated, landscape-based approaches that connect soil, water and forestry objectives.

Based on the session exchanges, several recommendations emerged for the further development of Mission Soil Living Labs:

- Embed cross-sector engagement from the design phase, ensuring that relevant actors from agriculture, forestry, water management, local authorities and civil society are involved early and meaningfully in Living Lab governance and activities.
- Strengthen the capacity of Living Labs to generate policy-relevant evidence, by systematically capturing lessons from local experimentation and translating them into insights that can inform policy frameworks, programmes and funding instruments at different levels.
- Reinforce connections with other EU Missions and restoration initiatives, in particular those related to oceans and waters, climate adaptation and biodiversity, in order to maximise synergies and avoid fragmented interventions.
- Advance harmonisation of methodologies, including approaches to monitoring, reporting and verification, to support comparability across Living Labs while respecting local specificities and enabling aggregation of evidence at European level.

Together, these orientations point towards Mission Soil Living Labs as long-term platforms for learning, coordination and impact across interconnected ecosystems.

...and for SOILL

The session also confirmed the importance of a strong, stable support framework to accompany the development of Mission Soil Living Labs over time. Following SOILL-Startup, the SOILL Framework Partnership Agreement will continue under SOILL-Stepup, further consolidating and expanding the support structure for Mission Soil Living Labs and Lighthouses.

Building on the experience of the first implementation phase, SOILL-Stepup will focus on strengthening and refining the services offered to Living Labs, supporting new applicants, and enhancing alignment with emerging soil-related Living Lab initiatives across Europe. By fostering coherence, collaboration and shared learning across the network, SOILL will support Mission Soil Living Labs in fulfilling their role as drivers of the transition towards healthy soils and resilient ecosystems, in line with European and global regeneration objectives.

Living Labs for regenerative ecosystems: soil, forestry & water

Key takeaways and recommendations for the Living Lab community

DOI: 10.5281/zenodo.17978608

© SOILL-Startup 2025

This publication is licensed under the Creative Commons Attribution-NonCommercial 4.0 International license. (CC-BY-NC 4.0)

Authors:

Giulia Campodonico, ENoLL - European Network of Living Labs

Anne-Sophie Mulier, ENoLL

Contributors:

Martina Desole, ENoLL

Dolinda Cavallo, ENoLL

Aurora Agostinis, ENoLL

Mar Ylla, ENoLL

Koen Vervoort, ENoLL

Design:

Mar Ylla, ENoLL

Editing and layout:


Giulia Campodonico, ENoLL

Acknowledgments:

Special thanks to the sessions speakers and moderators whose contributions facilitated productive discussions:

- Alexandra Vakrou, Head of Unit at the European Commission's Directorate-General for Environment
- Victorine Che Thöner, Senior Programme Officer Forest and Grasslands, IUCN
- Marta Domènech Ferres, Director & Researcher, Andorra Research + Innovation (Andorra Living Lab)
- Uchechi Obinna, Researcher, Center for Expertise Water Technology
- Alexia Stokes, Senior scientist, INRAE Montpellier
- Ewelina Czujko-Moszyk, Project Manager, PCSS – Poznań Supercomputing and Networking Center
- Yannis Fallas, Director, Cluster of Bioeconomy and Environment of West Macedonia

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.

A decorative wavy line at the bottom of the page, consisting of a thick orange curve on the left and a thick green curve on the right, meeting in the middle.



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.



company/soill2030



@soill2030



contacts@soill2030.eu