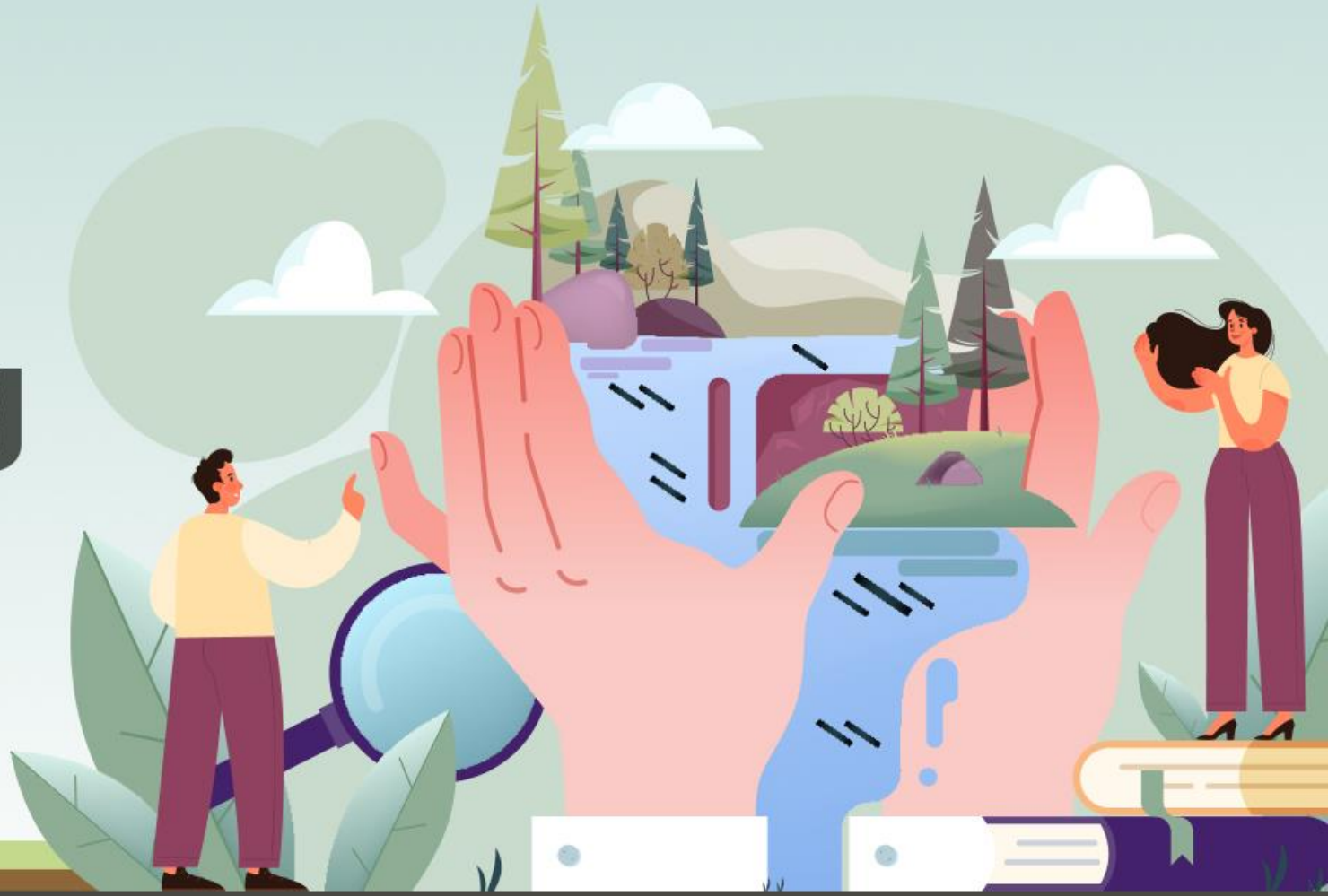
25 Sep 2024
14:15 - 16:15 EEST (GMT+3)

NATI00NS Side Event @OpenLiving Lab Days Timișoara, Romania



Funded by the European Union

Welcome / Opening remarks

Simina Lakatos

Founding President of the Ernest Lupan Institute for Circular Economy and Environment (IRCEM)

Funded by the European Union

Please be aware:

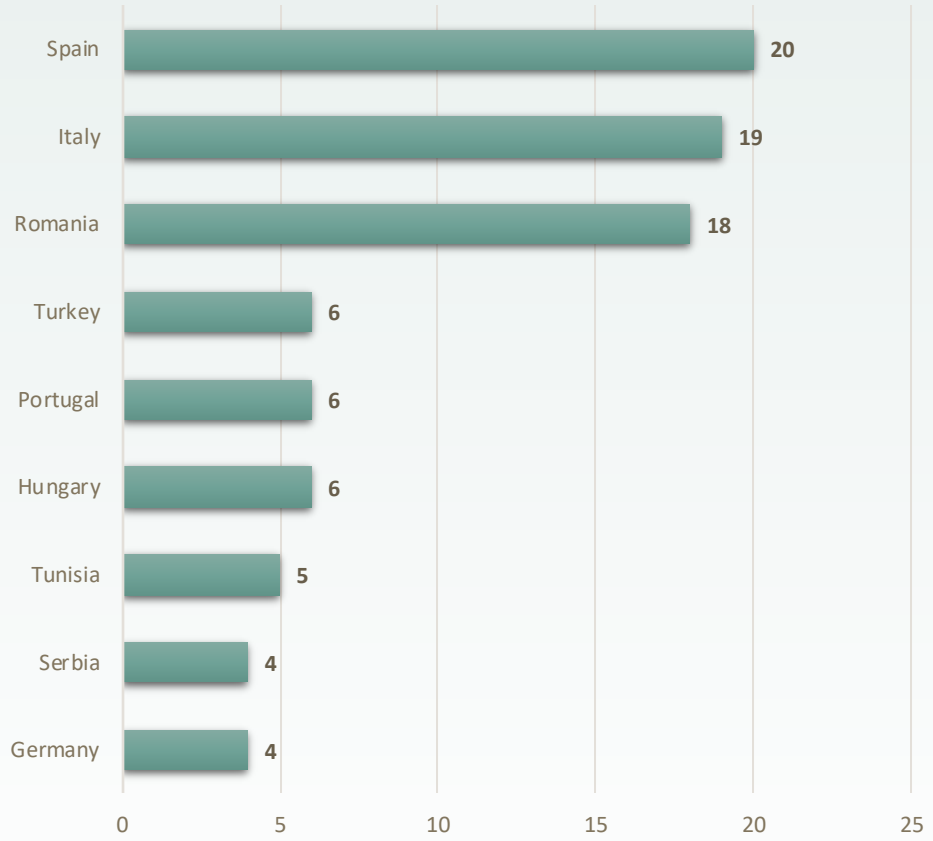
- We will take **photos** during the event for communication and dissemination purposes of the NATI00NS project. If you find yourself in a picture you would like us to remove, please send an email to info@nati00ns.eu

- If you have given your **consent** during registration to receive updates from NATI00NS and/or to receive information from other initiatives related to the EU Soil Mission, you have the **right to withdraw your consent** - by email to info@nati00ns.eu

- This is a hybrid event with an online component. The **Zoom Meeting will be recorded**.

Registration data at a glance

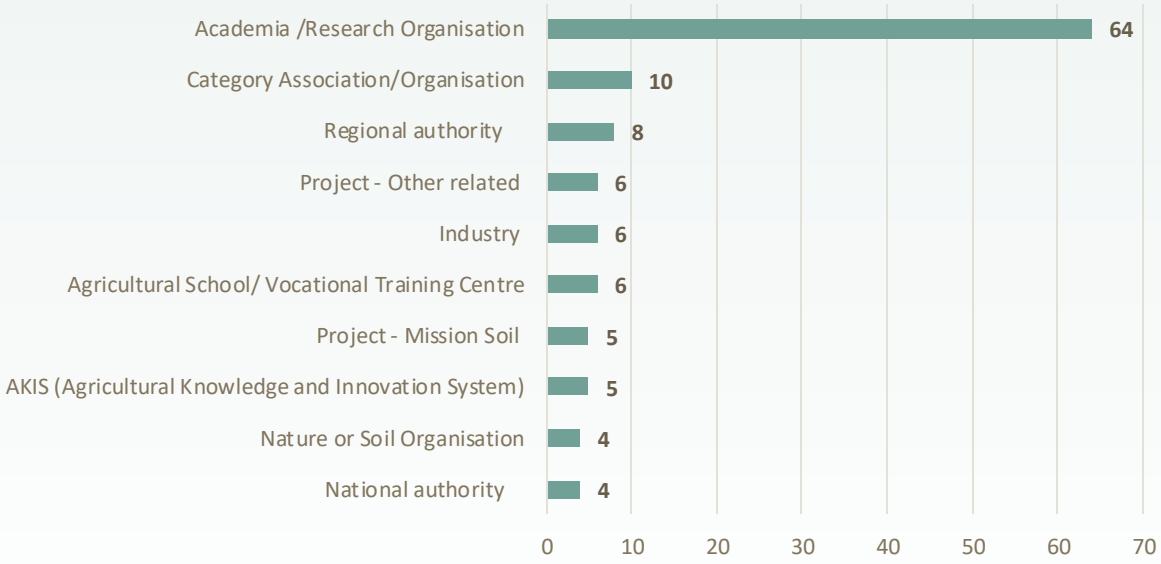
TOP TEN COUNTRIES AMONG ATTENDEES



64%

Academia / Research Organisation

TOP TEN ORGANISATION TYPES REPRESENTED TODAY



NATIOONS and the pathway to a competitive proposal

Gabriele Quattrocchi

Project Manager at Trust-IT Services

Funded by
the European Union

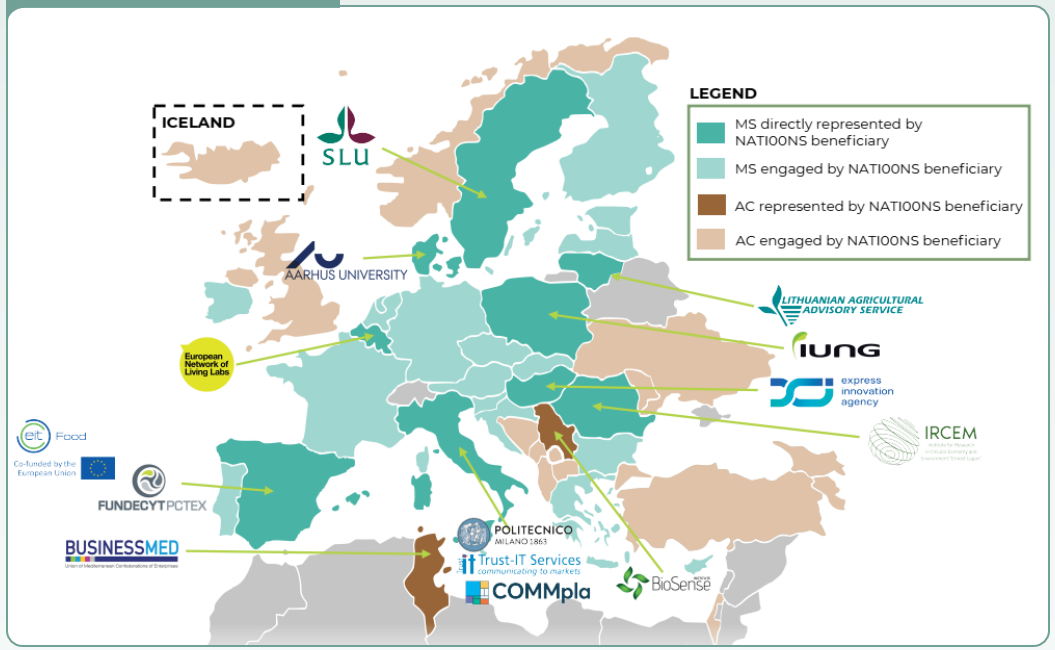
NATI0ONS – In a nutshell

OBJECTIVE

Support the formulation and submission of high-quality applications addressing the EU Soil Mission key topics dedicated to the establishment of the Soil Health Living Labs and Lighthouses.

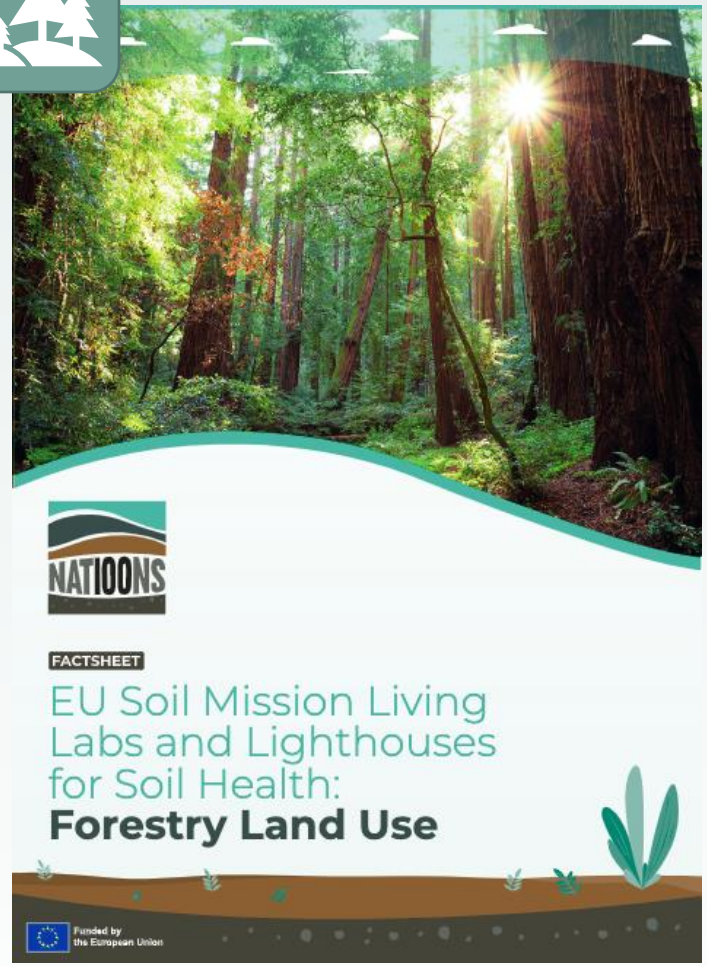
- **87 National events**
- **6 Thematic events**
- **4 Matchmaking events**
- **7 Capacity building webinars**

CONSORTIUM



- **Helpdesk**
- **Training materials**

Factsheets on EU Soil Mission Living Labs and Lighthouses for Soil Health



Nati00ns Factsheets. https://nati00ns.eu/factsheets

Factsheets on EU Soil Mission Living Labs and Lighthouses for Soil Health

Nati00ns Factsheets. https://nati00ns.eu/factsheets

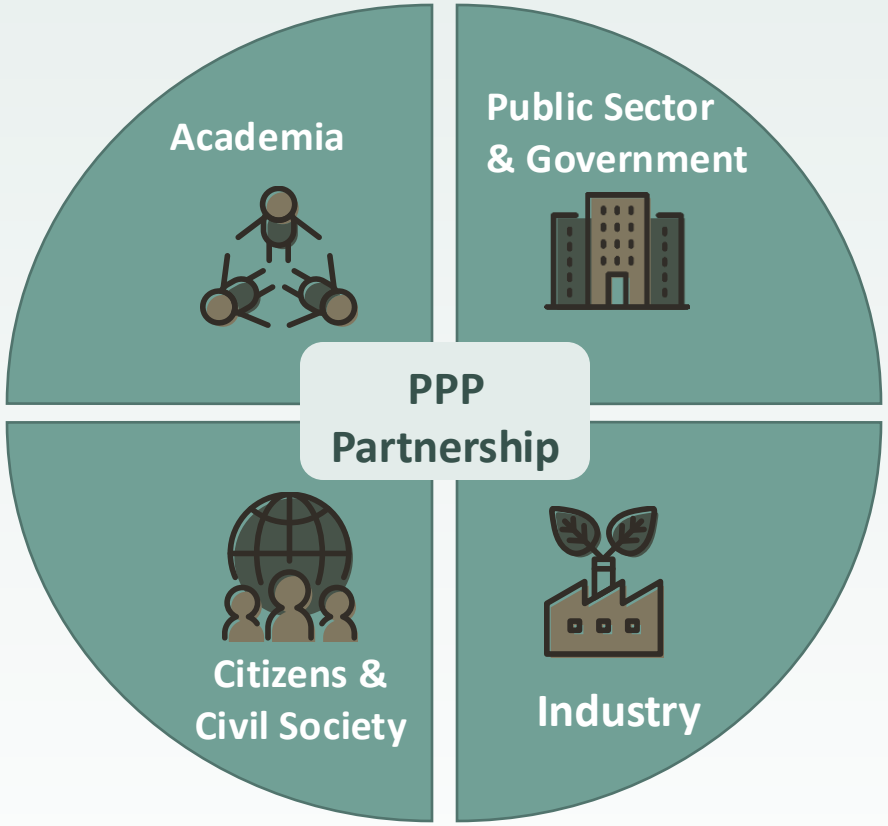
The soil mission’s main goal

- The main goal of the Mission 'A Soil Deal for Europe' is to establish 100 living labs (places for on-the-ground experiments) and lighthouses (sites for showcasing good practices) by 2030, to lead the transition towards healthy soils in rural and urban areas.

The Soil Mission goals and implementation

- 100 Living Labs and Lighthouses across all land uses: agricultural, forestry, natural, industrial and urban sites;
- To give visibility to soils as a crucial, yet widely "unrecognized" societal asset and public good;
- To pioneer, showcase and accelerate the transition to healthy soils.

- **Bottom-up approach:** based on open science and interactive, participatory innovation with strong stakeholder and citizen engagement;
- **Co-implementation of mission by researchers, land managers, regions, businesses, policy makers, citizens and international partners;**
- To **accelerate the co-creation** and uptake of solutions.

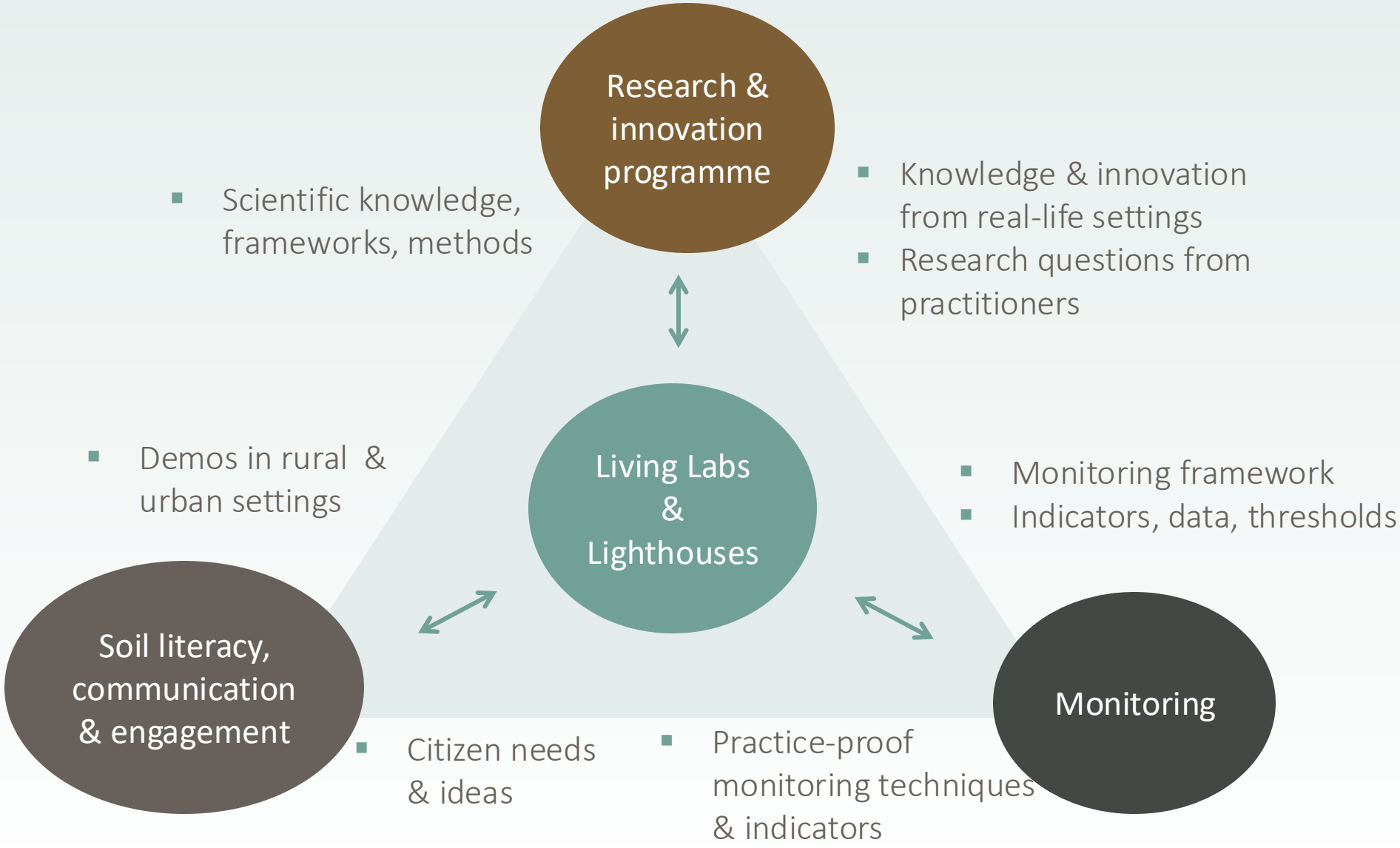


The Soil Mission objectives

1. Reduce desertification
2. Conserve and increase soil organic carbon stocks
3. Stop soil sealing and increase re-use of urban soils
4. Reduce soil pollution and enhance restoration

5. Prevent erosion
6. Improve soil structure to enhance soil biodiversity
7. Reduce the EU global footprint on soils
8. Improve soil literacy in society

The core element of the Mission: Living Labs and Lighthouses



Soil Health Living Labs & Lighthouses: Definition

Soil Health Living Labs *

Collaborative initiatives to co-create knowledge and innovations

"User-centred, place-based and transdisciplinary research and innovation ecosystems, which involve land managers, scientists and other relevant partners in systemic research and co-design, testing, monitoring and evaluation of solutions, in real-life settings, to improve their effectiveness for soil health and accelerate adoption."

- **User-centred,** place-based and transdisciplinary
- **Multi-stakeholder**: Involve all relevant partners in co-design, testing, monitoring and evaluation of solutions,
- Use of **real-life** settings to accelerate adoption.
- Contain **several sites** (e.g. farms, forest exploitations, city parks) at **regional** or **sub-regional** level.

Soil Health Lighthouses

Individual sites of exemplary performance

"Places for demonstration of solutions, training and communication that are exemplary in their performance in terms of soil health improvement"

- They **showcase** good practices and upscale solutions.
- They are places for **demonstrations**, **training**, **networking** and **communication** towards future users, policy-makers or the broader society.
- Help adoption of sustainable practices by **inspiring land users** through practical tools.

* This LL definition is customised for soil health LL and is provided within the "**A Soil Deal for Europe – Implementation Plan**".
It aggregates elements of **ENoLL definition** with those of a WG of the G20 agricultural chief scientists on agroecological living labs.

Soil Health Living Labs & Lighthouses: Implementation Plan - Criteria

Living Labs*

AIMS	• **Innovation**, **co-creation**, formal learning • Contribution to **societal challenges** • **Improving soil health and related ecosystem services** (=> mission objectives)
ACTIVITIES	• **Co-creation, co-development & experimentation** of innovations improving soil health and related ESS • **Research on impact of these innovative practices** on **ecosystems** • **Networking** and **knowledge exchange** • **Demonstration** (in particular lighthouses)
PARTICIPANTS	• **Public-private people partnership** • **Real users (soil managers connected with broad array of stakeholders & decision-makers)** • **Demonstration:** wider public, policy arena, EIP and relevant networks
CONTEXT	• Multiple **disciplines** (-> transdisciplinary, inc. social sciences), **methods, dimensions** (technical, economic, social) • **Place-based** approach and **real-life context** = real farms/forest/urban sites • **Robust scientific setup** for **ecosystem assessment** • **Openness,** communication, dissemination

Lighthouses

Criteria based on **exemplary performances** in terms of soil health and related ecosystems services

*adapted from McPhee et al. (2021)

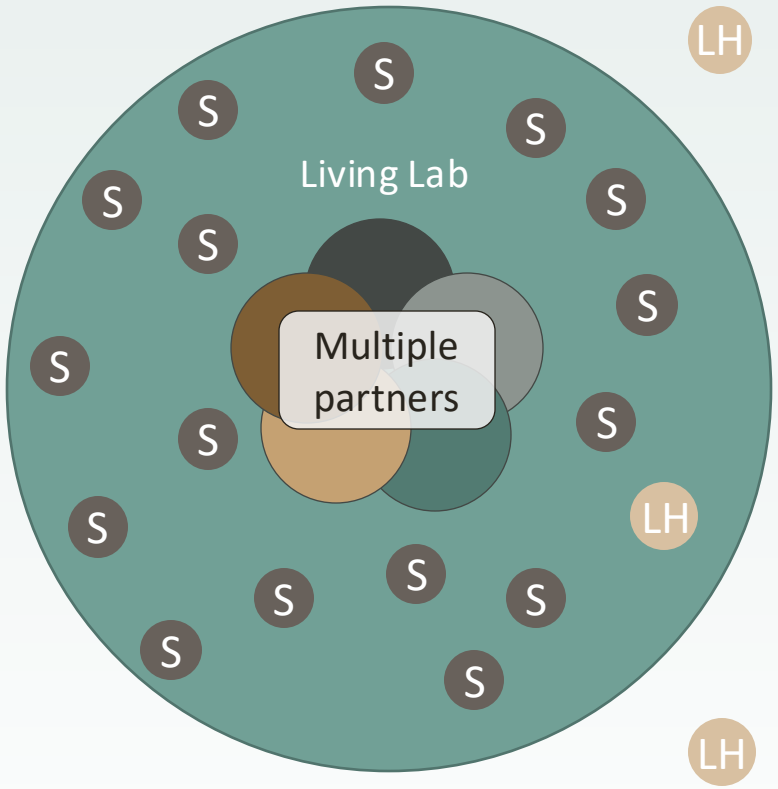
What to consider when setting up a Living Lab?

Places of co-creation, co-design, co-implementation and co-assessment

Participatory, interdisciplinary and transdisciplinary R&I approach

Business Models to ensure sustainability

Soil Health Living Labs & Lighthouses: Scale & Activities

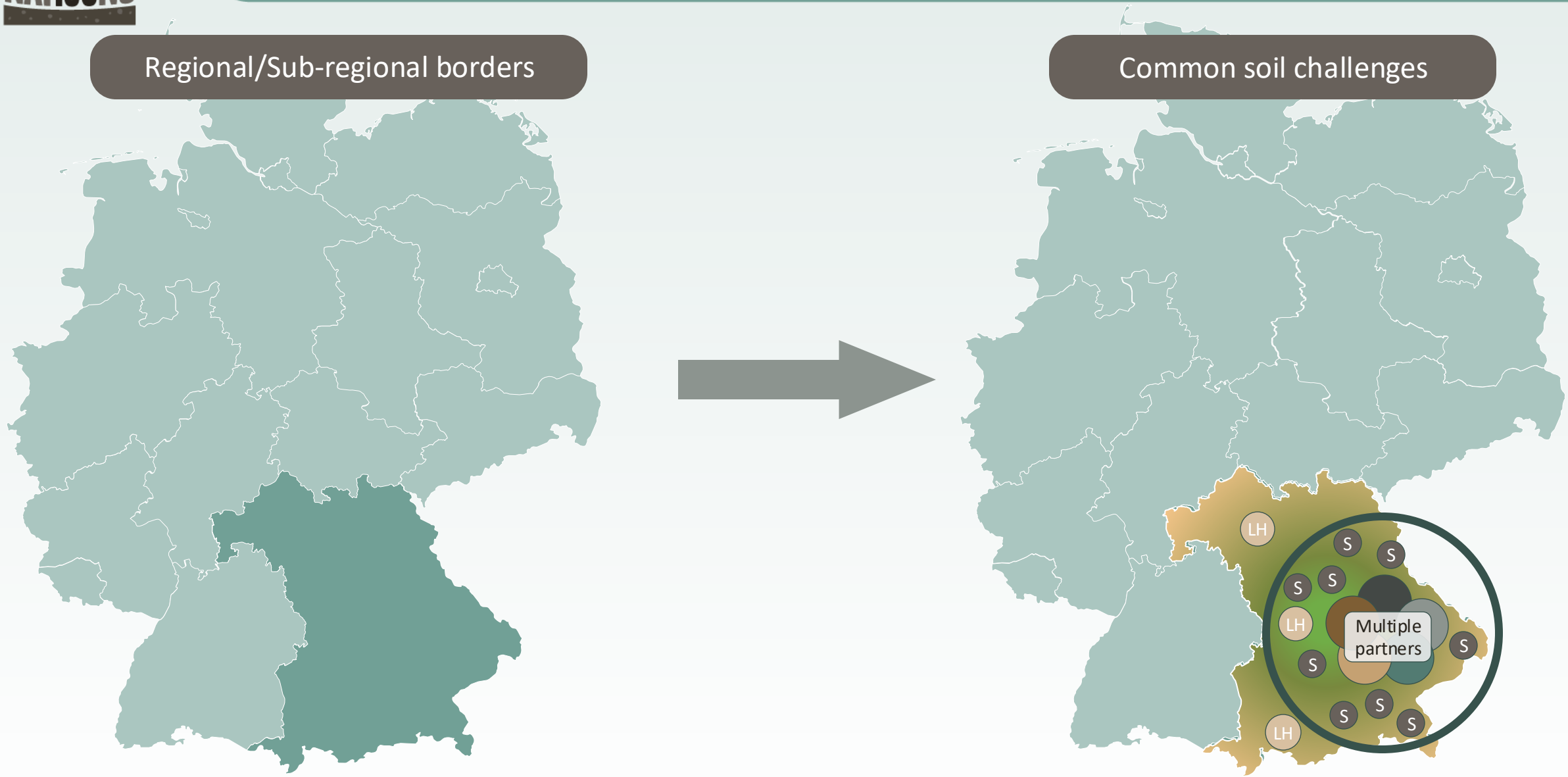


	Scale	Activities	Performance in soil health improvement
Living Lab (LL)	Regional/ subregional landscape	Coordinate experimentations & partners	In progress at landscape scale
Living Lab experimentation site (S)	Local (one farm/forest, one urban site, etc)	Co-create knowledge and innovations	In progress on the site
Lighthouse (LH)	Local (one farm/forest, one urban site	Experiment and/or demonstrate	Demonstrates high performance

Scale: Regional/Sub-regional

Regional/Sub-regional borders

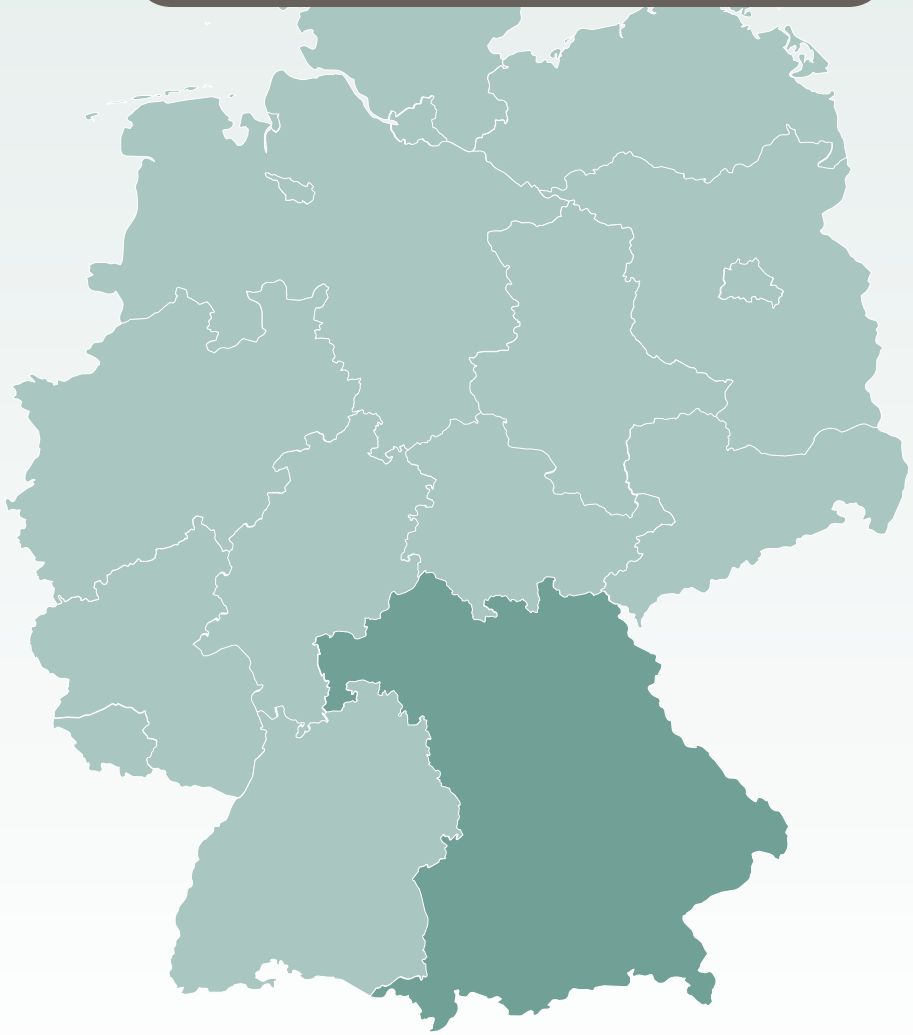
Common soil challenges



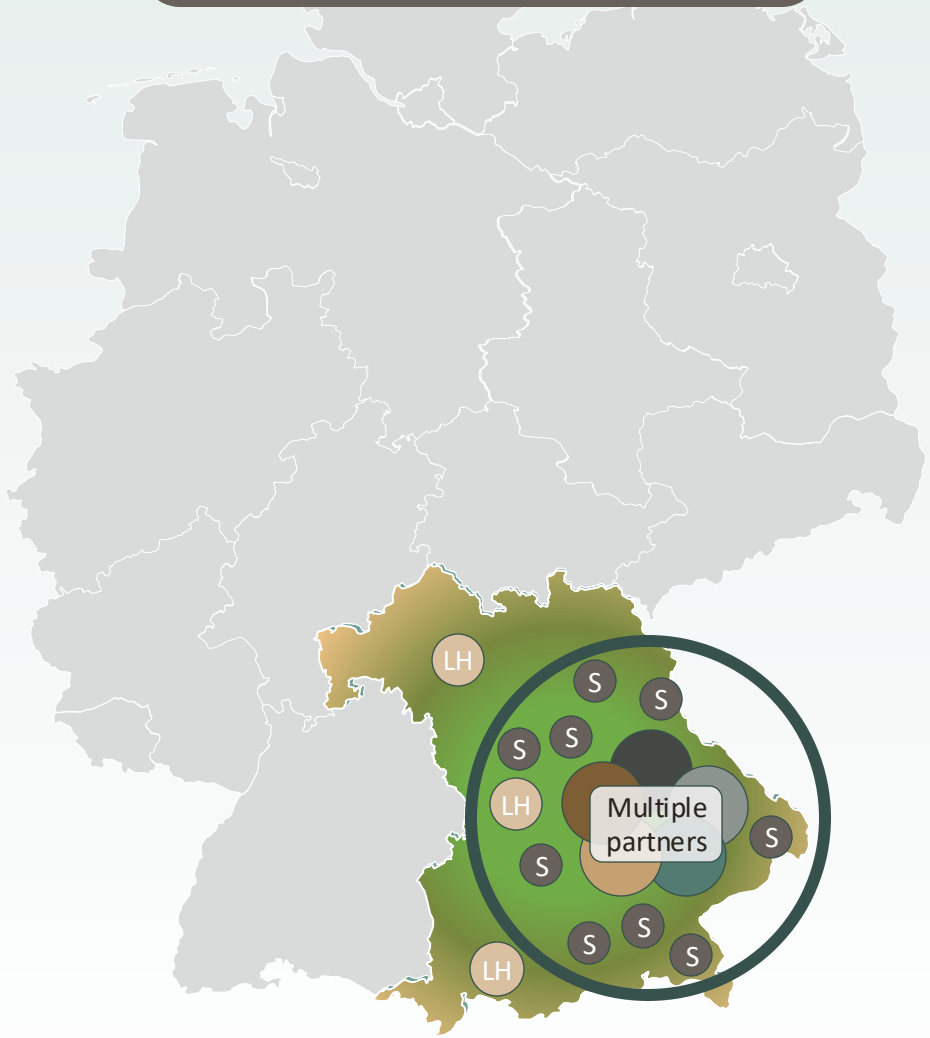
The image is a fabricated example of shared soil needs across sub-regions, for illustration only. Not intended to be exhaustive.

Scale: Regional/Sub-regional

Regional/Sub-regional borders



Common soil challenges



The image is a fabricated example of shared soil needs across sub-regions, for illustration only. Not intended to be exhaustive.

Scale: Cross-regional

Cross-regional borders

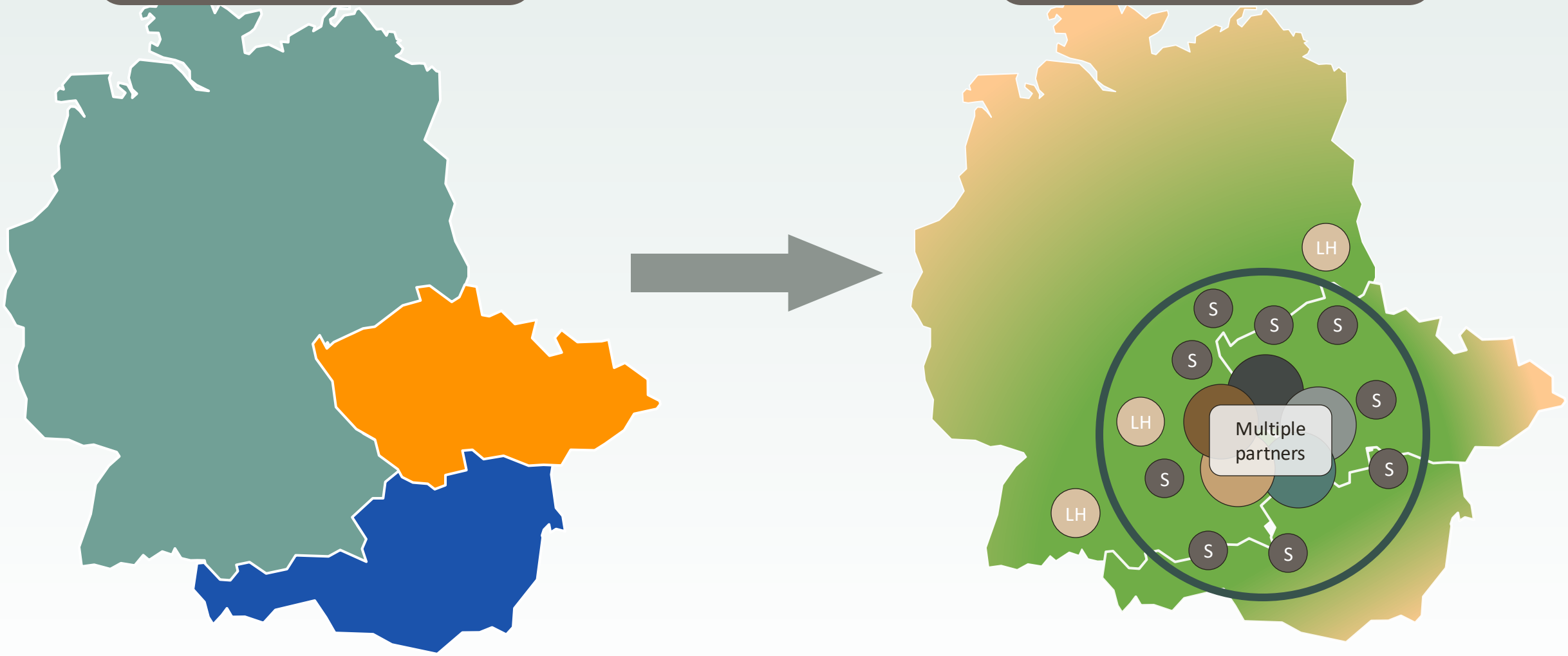
Common soil challenges

The image is a fabricated example of shared soil needs across regions, for illustration only. Not intended to be exhaustive.

Scale: cross-country

Administrative borders

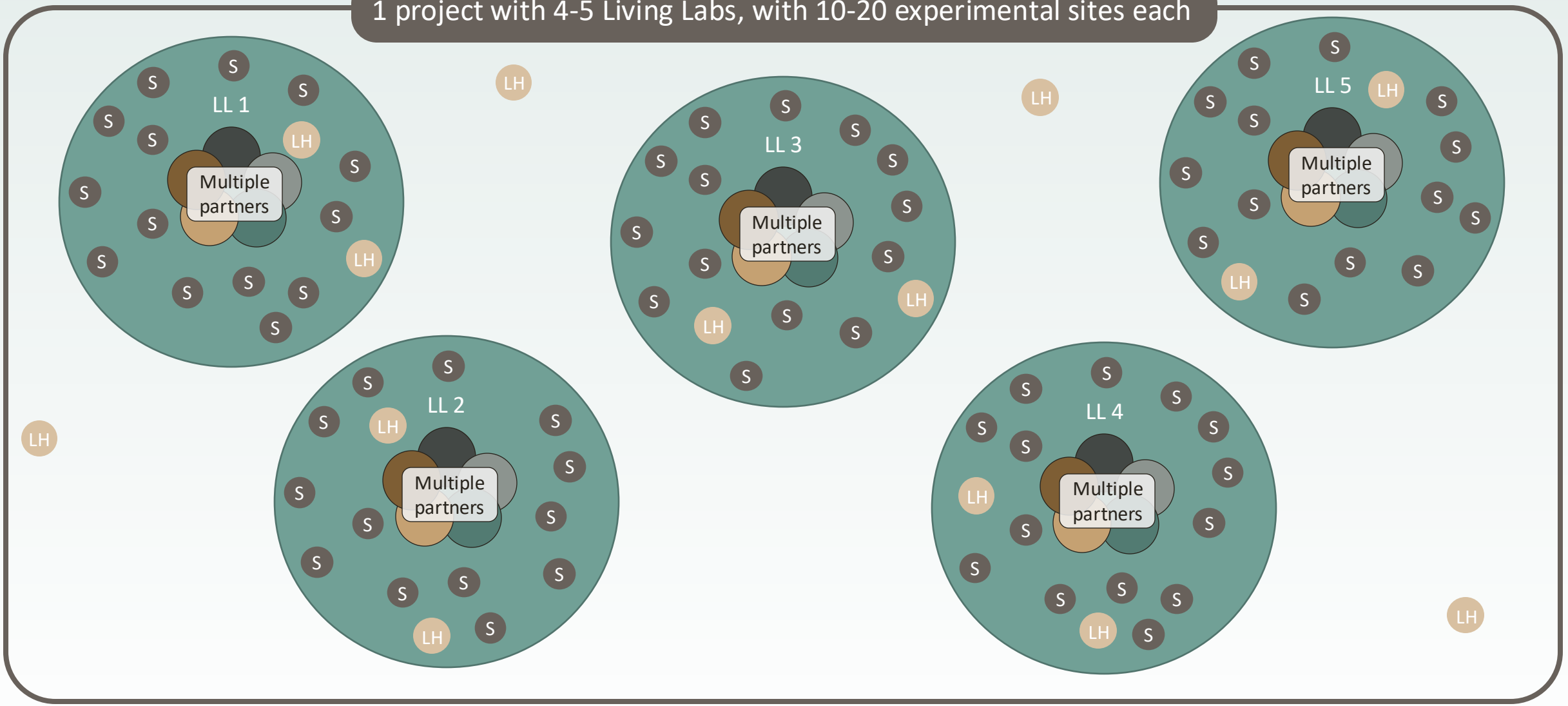
Common soil challenges



The image is a fabricated example of shared soil needs across countries, for illustration only. Not intended to be exhaustive.

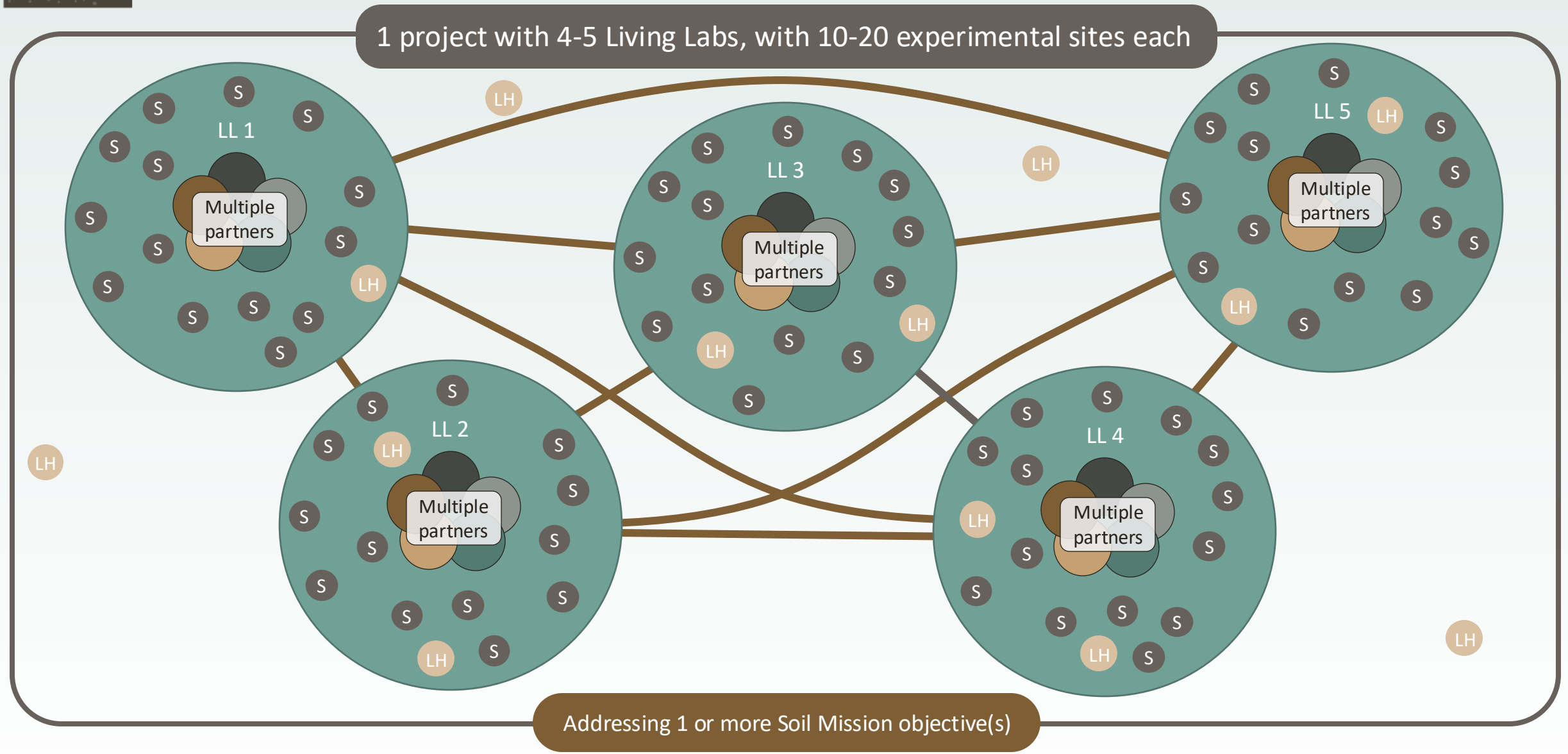
Soil Health Living Labs & Lighthouses

1 project with 4-5 Living Labs, with 10-20 experimental sites each



Living Lab (LL), Lighthouse (LH) and Living Lab experimental site (S)

Soil Health Living Labs & Lighthouses



Living Lab (LL), Lighthouse (LH) and Living Lab experimental site (S)

Common aspects within LLs in projects

Living Lab (LL)	Objectives	Land-use types	Application
LL1	Objective A	Land-use A	Local context 1
LL2	Objective A	Land-use B	Local context 2
LL3	Objective A	Land-use C	Local context 2
LL4	Objective A	Land-use A, Land-use B	Local context 3
LL5	Objective A	Land-use B, Land-use C	Local context 4

Living Labs focus on the **same Mission Objective, different land-use types**

Living Lab (LL)	Objectives	Land-use types	Application
LL1	Objective A	Land-use A	Local context 1
LL2	Objective A	Land-use A	Local context 2
LL3	Objective A	Land-use A	Local context 3
LL4	Objective A	Land-use A	Local context 4
LL5	Objective A	Land-use A	Local context 5

Living Labs focus on the **same Mission Objective and land-use type**, but with **different focus**

Living Lab (LL)	Objectives	Land-use types	Application
LL1	Objective A	Land-use A	Local context 1
LL2	Objective B	Land-use A	Local context 2
LL3	Objective C	Land-use A	Local context 1, 2
LL4	Objective A, Objective B	Land-use A	Local needs 2
LL5	Objective C	Land-use A	Local context 1

Living Labs focus on the **different Mission objectives**, but **same land-use types**

The tables are fabricated as example of a consortium, not intended to be exhaustive.

Our suggestions & recommendations

Clear and justified biogeographic regions

Make sure to justify the common aspects within LLs in projects and how the coordination across regions will be established.

Prevent cross-regional unjustified scope

Minimize outliers and, in case of a remote site, explain the management and the involvement in co-creation activities.

The image is a fabricated example of shared soil needs across countries, for illustration only. Not intended to be exhaustive.

NATIOONS

#1 LINK SOIL HEALTH CHALLENGES WITH SOIL MISSION OBJECTIVES

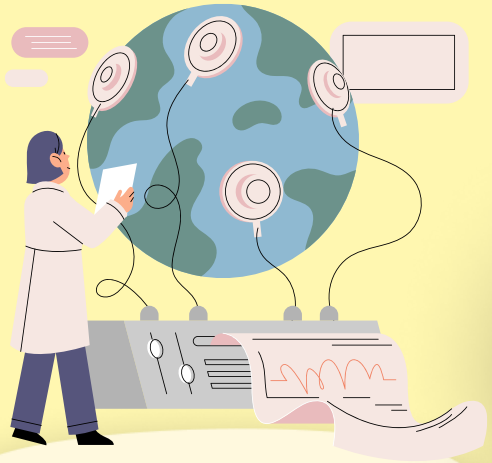
#2 INITIATE/JOIN/EXPAND A LIVING LAB

#3 INITIATE/JOIN A CONSORTIUM

#4 SUBMIT AN APPLICATION

Living lab realisation?

Explore the Pathway to a Competitive Application



#3 INITIATE/JOIN A CONSORTIUM

- **Reach out** to potential Living Labs collaborators
- **Join** the matchmaking platform and use it for:
  - sending messages
  - showcase products, services, projects, expertise, or other
- **Join/watch** thematic events for networking on a transnational scale
- **Agree** between Living Labs on a joint rationale behind forming the consortium

Explore the Pathway to a Competitive Application

#4 SUBMIT AN APPLICATION

- **Draft** your application keeping close in mind
  - the rationale of collaboration
  - the roles of stakeholders in the co-creation
  - the status of soil challenges
  - expected impacts
- **Check** NATI00NS FAQ
- **Utilize** NATI00NS tools
- **Comply** with the Horizon Europe Work programme and call text (NATI00NS is guiding)

NATI00NS: Engagement & Support to applicant LLs

https://www.nati00ns.eu/

Engagement events	**Inform, engage & promote.** 44 countries (EU MS + AC), national language
Matchmaking – (inter)national	**Facilitate creation of local LL.** Online and along engagement events
Factsheets & E-learning	**Inform & train.** LL, open call, types of LL peculiarity
Helpdesk & FAQ	**Support.** Online, addressing all questions on LL creation
Webinars LL methodology	**Train.** How to set up, develop and enlarge a LL.
Coaching	**Support.** Available in local language, appointed mentors.
Thematic events & webinars	**Inform, train & engage.** Different themes for specific land uses.
Matchmaking – International & thematic	**Facilitate creation of partnerships of LLs.** Online and along thematic events

NATIOONS

Join the Community

nati00ns.eu

@nati00ns

nati00ns

Funded by the European Union

SOILL & SOILL-Startup
Support Structure for Soil Health Living Labs

NATI00NS Side event @OLLD24

Giulia Campodonico, ENoLL

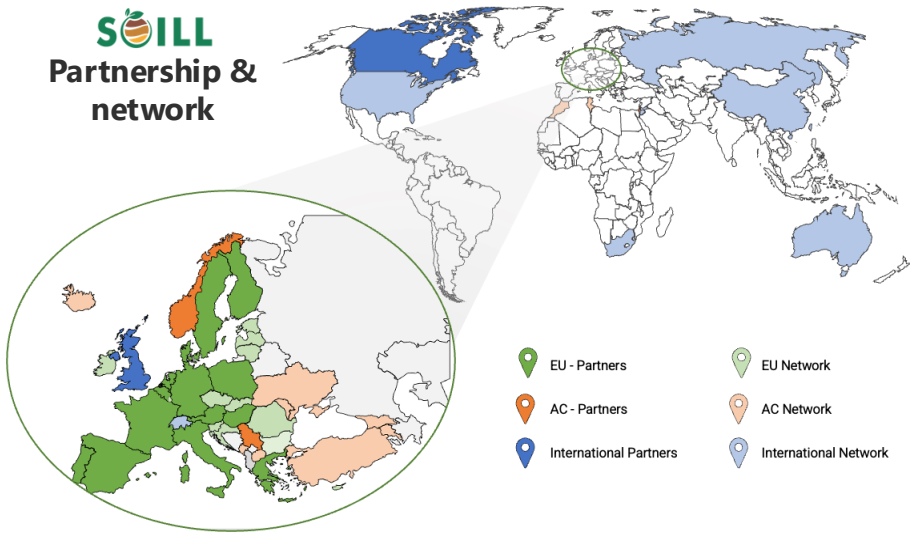
SOILL & SOILL-Startup Coordinator

Funded by the European Union

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.

Support structure for Soil Living Labs

Framework Partnership Agreement
2024-2030



Startup of the Support Structure for Soil Living Labs

Specific Grant Agreement 1
2024-2025

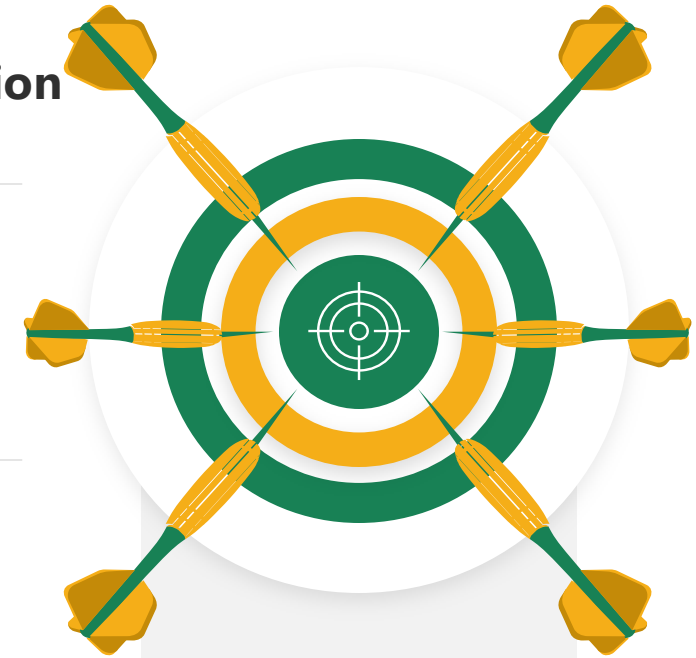
SOILL & SOILL-Startup Goals

SOILL aims to set up and run an **effective**, **agile**, **transdisciplinary**, **diffuse**, **open** and **fair** one-stop-shop structure to coordinate, support, enlarge, and promote the network of 100 living lab and lighthouses funded under the Soil Deal Mission and ensure their **co-created user-centred**, **harmonized**, **reliable**, **impactful**, **replicable**, and **sustainable** lead of the transition towards healthy soils.

User-centred co-creation

Harmonization

Quality



Impact

Replicability

Sustainability

SOILL STARTUP

SOILL target groups

Mission-funded Living Labs

100 Soil Health Living Labs and Lighthouses funded under the dedicated Mission Soil topics.

Applicant Living Labs & Lighthouses

Organizations and individuals interested in applying to the Mission Soil dedicated topics to set up LLs and LHs.

European Living Labs & Lighthouses for soil

Other Living Labs and Lighthouses in Europe fully aligning to Mission Soil criteria for network expansion.

Wider soil & Living Lab community

Any individual and organization at European and international level willing to collaborate with Soil LLs and LHs.

SOILL
STARTUP

The first Mission Soil Living Labs

SOILL STARTUP

What does SOILL offer to Soil Heath Living Labs?

Coordination & support

SOILL Hub

Training & capacity building

Knowledge sharing & networking

Engagement & promotion

Monitoring & assessment

SOILL STARTUP

What does SOILL offer to Soil Heath Living Labs?

Training & capacity building

Coordination & support

Engagement & promotion

Monitoring & assessment

Knowledge sharing & networking

SOILL Hub

SOILL STARTUP

How to plan collaboration with SOILL in applications?

In person

Personnel and **travel** costs

- **Network training**
  - Around 3 days for at least 1 person from SHLLs/LHs
- **Mutual learning engagement events**
  - Around 1-2 days for at least 1 person from SHLLs/LHs.
  - When possible, these will be organised alongside other key events to be attended by SHLLs/LHs such as Mission Fair/Soil Week.
- **Open/fields visits at the SHLLs/LHs or sites**
  - In this case, SHLLs/LHs should consider some hosting costs for hosting the visit and some travel budget to visit other SHLLs/LHs. Visits could be organised alongside other SOILL events (e.g., network trainings or mutual learning events) or be organised online as "virtual visits".

Online

Personnel costs

- **Thematic group training**
  - Around 2-3 per year, SHLLs/LHs representatives and/or additional stakeholders
- **Coaching sessions**
  - 1 per SHLLs/LHs as of 2025 pending participation to other group trainings
- **Monitoring interviews**
  - Every year as of end 2024 to complement self-assessment surveys
- **Self-assessment surveys**
  - Every 6 months as of July 2024 for monitoring SHLLs/LHs progress
- **Updates and engagement on SOILL Platform**
  - Regularly

In person/online

Personnel and **travel** costs

- **Interviews for dissemination**
  - Ad hoc, to be recorded possibly alongside key events

Relevant Soil Mission activities

- **Mission fair/ Soil Week**
  - Annual, around 2 days
- **Mission thematic working groups**
  - Currently 3: Data, Monitoring, and Engagement

SOILL STARTUP

From NATI00NS to SOILL: support to applicants

Set up of Soil Living Labs

Facilitate consortia creation

Advise and support

Engagement

Guidelines

Matchmaking

Pitching

Mentoring

Trainings

Helpdesk

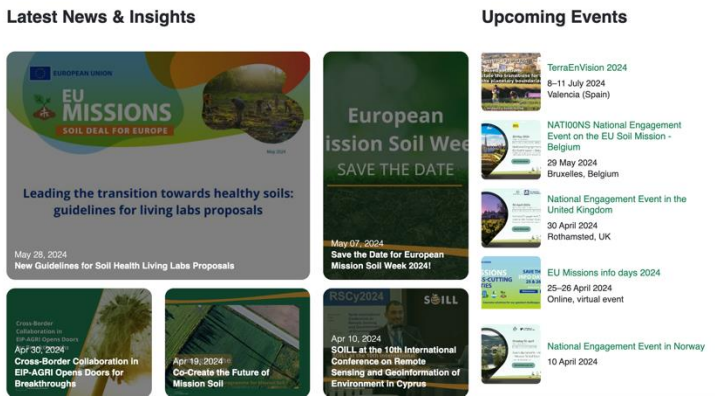
SOILL STARTUP

Find out more....

Visit our brand-new website to find:

ℹ Project & Mission information and updates
📅 Events
🌐 Interactive map of Living Labs
📽 Video gallery and publications:
🤝 Matchmaking platform

📬 Register now to our newsletter!



Join the SOILL community

Subscribe to our newsletter to learn more about the EU Mission Soil - "A Soil Deal for Europe" and our support activities to present and future Soil Health Living Labs.

Enter your email address to subscribe*

EMAIL

SOILL STARTUP

Questions or doubts?

SOILL
STARTUP

Thank you!

Connect with us for more information

soill2030.eu

@soill2030

company/soill2030

@soill2030

SOILLcoordinator@enoll.org

25 Sep 2024

14:15 - 16:15 EEST (GMT+3) - Timișoara, Romania

NATI00NS Side Event @OpenLiving Lab Days SESSION 2

AFTER THE BREAK

Teréz Krisztina Szabó

Hungarian Innovation Agency - NATI00NS

Ruth Pereira

University of Porto LivingSoiLL

Rumyana Georgieva

Agricultural University of Plovdiv - ICOSHELLs

Elvira Marín Irigaray

Director Aland GOV4ALL

Lena Madden

Tech University of the Shannon - SOILCRATES

Funded by the European Union

LIVINGSOIL

Project 101157502

Soil Mission: Co-creating solutions for soil health in Living Labs

HORIZON-MISS-2023-01-08

Ruth Pereira on behalf of
Cristina Carlos (Coordinator)

Funded by the European Union

"The pictures are there, and you just take them"

Robert Capa, Hungarian-American Photographer

Objectives

To establish a network of 5 Living Labs focused on permanent crops with economic, social and cultural importance in the EU (vineyards, olive groves, chestnuts, hazelnuts and apple orchards).

To co-create, co-implement and co-test innovative solutions that foster conservation/restoration of soil health

To set up at least 50 experimental sites and 10 lighthouses, with active participation of more than 2000 local actors.

Why Living Labs on Permanent Crops soil challenges?

Grapevines, olives and fruit crops (apples, chestnut and hazelnuts) are some of the **most economic** relevant **Permanent Crops (PC)** in the EU, which are facing important challenges related to **soil health issues,** due to **production practices,** but exacerbated by **climate change**.




The PC selected are of utmost importance for:

- Promoting **rural economies' competitiveness and the vitality** of many **European rural areas**.
- Promoting **healthy food dietary patterns and lifestyles**, by supplying the consumption of high-quality products defined by local origin.
- **Shaping cherished landscapes**, often acknowledged as world cultural heritage, a key for thriving tourism in rural areas.

Living Labs Localization

Project Coordinator:

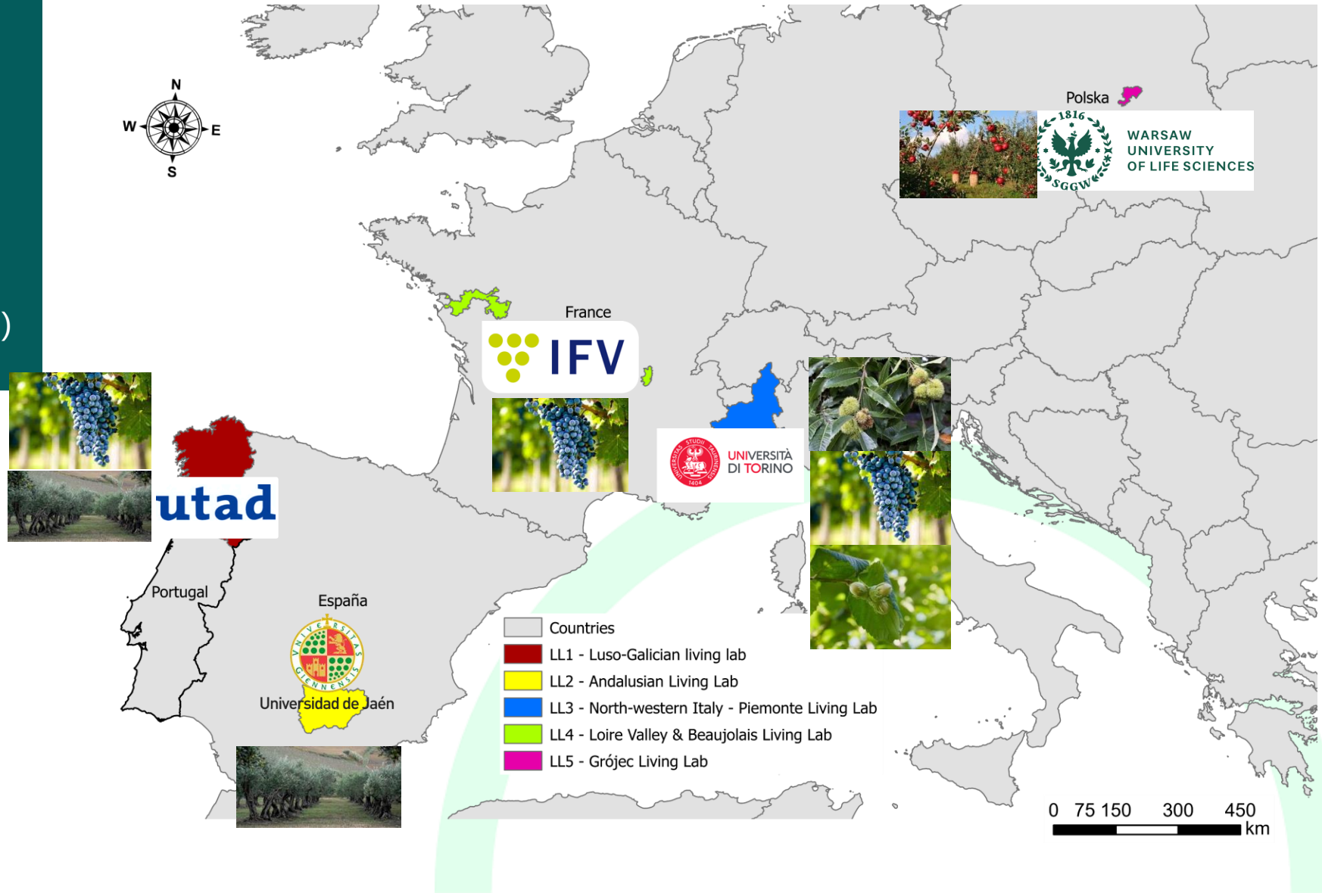
Cristina Carlos (UTAD, Portugal)

Financial Manager:

Lígia Pinto (UTAD, Portugal)

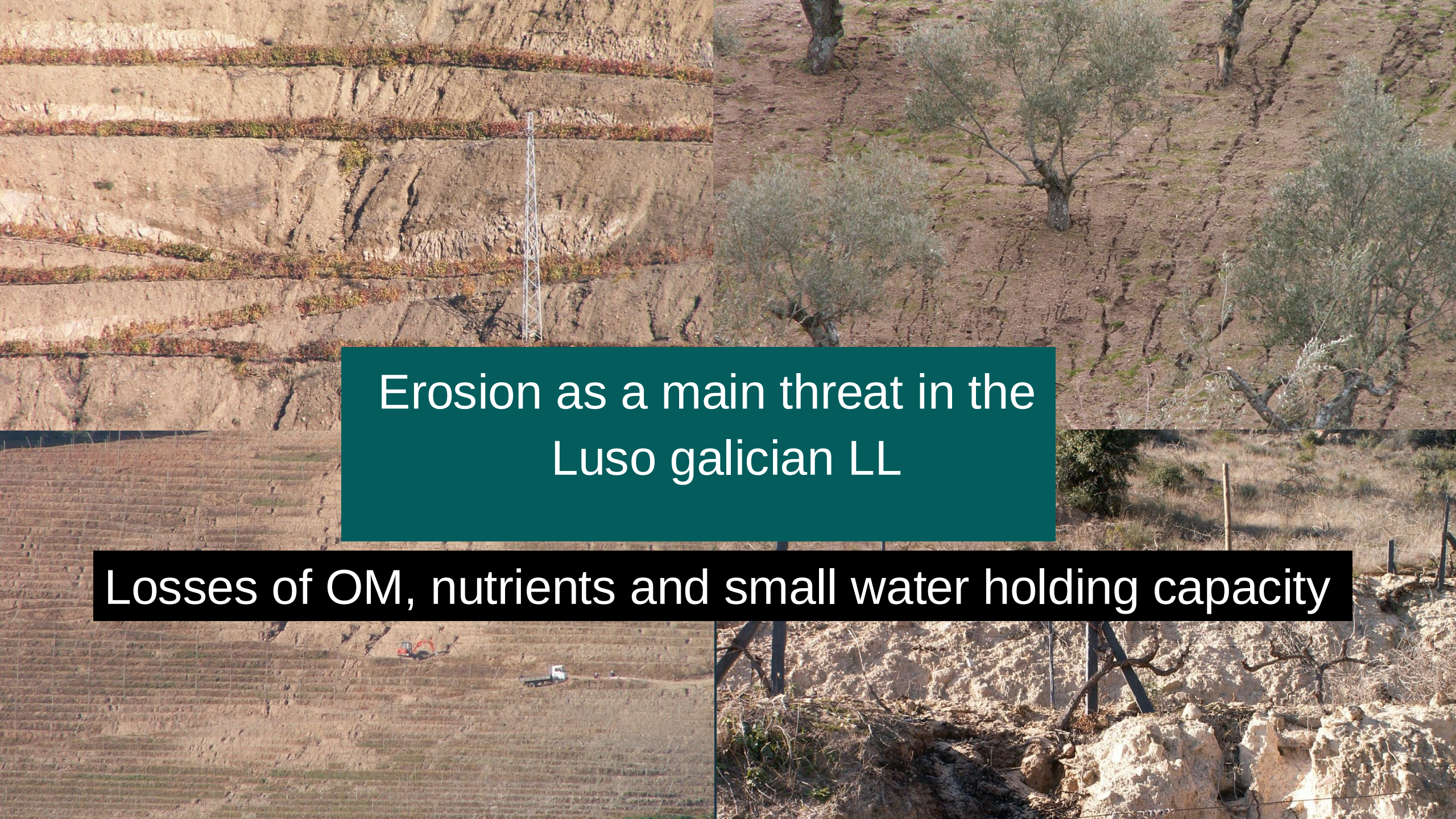
LL coordinators:

- UTAD (Cristina Carlos)
- Univ. of Jaen (Juan Jurado)
- IFV (David Lafond)
- Univ. of Turin (Eleonora Bonifácio)
- Warsow Univ. (Jozef Chojnicki)



For which Mission Soil Objectives LivingSoiLL will contribute?

Mission's Specific Objectives	Luso-Galician LL	Andalusian LL	North-western Italy - Piemonte LL	Loire Valley & Beaujolais LL	Grójec LL
	Vines/Olives	Olives	Vines/ Chestnuts/ Hazelnuts	Vines	Apples
1. Reduce desertification					
2. Conserve soil organic carbon stocks					
3. Stop soil sealing and increase re-use of urban soils					
4. Reduce soil pollution and enhance restoration	+	+			+
5. Prevent erosion	+	+	+	+	
6. Improve soil structure to enhance soil biodiversity	+	+		+	
7. Reduce the EU global footprint on soils					
8. Improve soil literacy in society	+	+	+	+	+



Erosion as a main threat in the Luso galician LL

Losses of OM, nutrients and small water holding capacity

Rational for cooperation

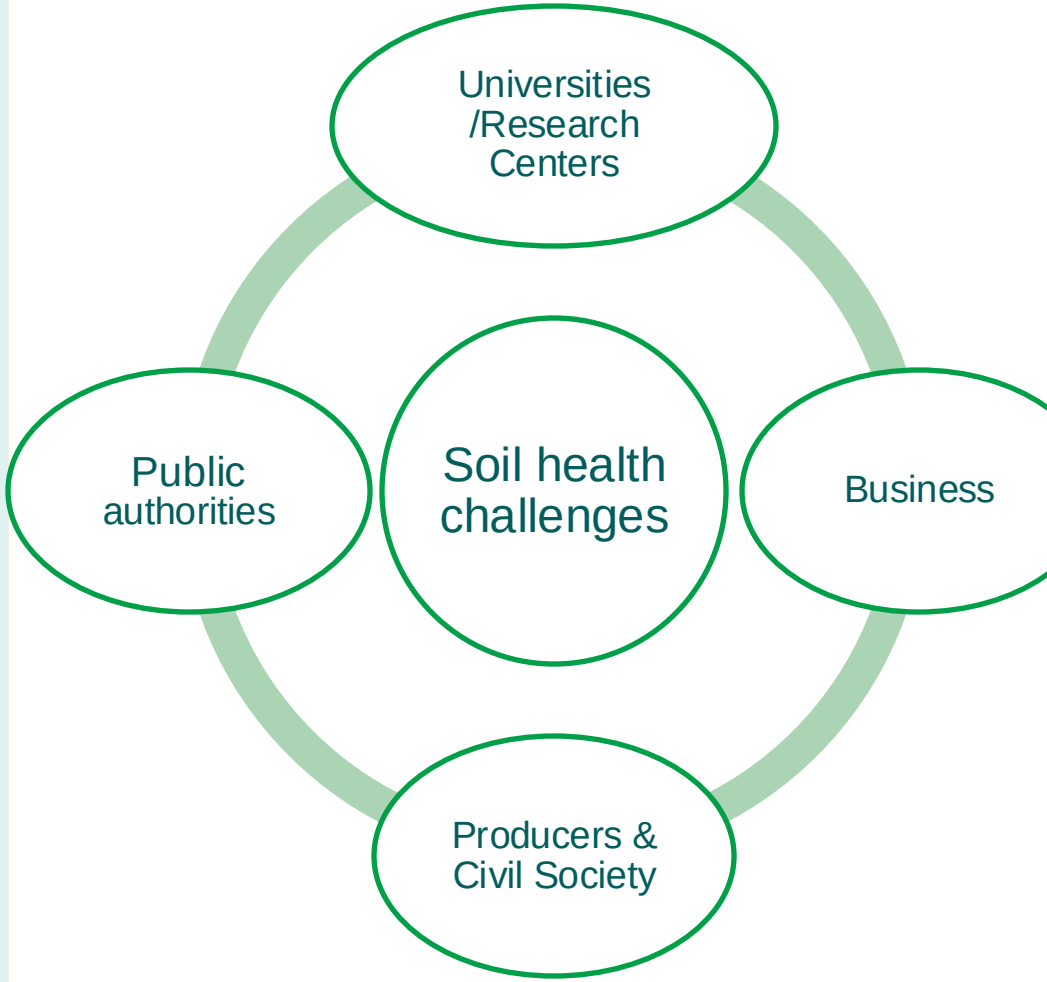
- **<u>Common soil health issues identified on PC</u>**

- **6 EU Universities** with: i) a **high scientific reputation in soil sciences and soil threats** and, on PC and production practices demonstrated by their participation in several European networks; ii) an **extensive experience of collaboration with local producers**, and **interaction with public administration bodies.**

- **Existing strong networks of collaboration in the proposed LL**, whose experience can be shared – **<u>INTERMEDIATE LEVEL OF DEVELOPMENT</u>**

- Partners with a **high potential for technological innovation** (e.g. IFV UJaen) in the agri-food sector with a high transference capability.

- **Partners with experience on social sciences** with capability to design strategies for knowledge and practices transference.



LivingSoiLL – experimental sites and soil management practices

Living Lab	Experimental sites		Partners		Ongoing or planned soil health-related work
	Identified	Target	Identified	Target	
LL1 | Luso-Galician	20	20	13	>15	a) cover crops (using autochthonous and water-parsimonious species; mulching and reduced tillage b) cover crops terminated with a roller c) use of amendments (on-farm composted residues, vermicompost, zeolite, biochar, biofertilizers)
LL2 | Andalusian	15	15	7	>15	a) soil erosion, soil pollution, and water scarcity. The experimental solutions involve the use of organic matter, compost, plant cover, and biochar hydrofilters. In addition, we are monitoring changes in soil health using remote sensing sensors. All experimental sites are related with Olive treesuse of organic matter, compost, plant cover, and biochar hydrofilters
LL3 | North-western Italy - Piemonte	6	10	6	>10	a) soil erosion (vineyard), b) chestnut (litter management, organic matter and fertility conservation, composting).
LL4 | Loire Valley & Beaujolais	0	10	3	>10	a) cover crops with low water needs b) use of mulches, biochar or biobased woven groundcover c) sustainable management of organic matter
LL5 | Grójec	1	10	4	>10	a) testing of different floor management systems in apple growing b) testing mulching with wide range of organic litter including agricultural waste and its effect on soil quality and fertility

Financial support to Third Parties - LivingSoilLL consortium will put together an administrative and financial procedure to support the selected ‘Associated Experimental Sites’, allowing them to actively participate in the Living Labs' activities.

Living SoiLL specific objectives (SO)

- **SO1.** Contribute to the **involvement of several actors/stakeholders in a collaborative multi-actor network to codesign, co-develop and co-implement solutions for restoring soil health**

- **SO2. Reduce the gap between knowledge and practice** through the implementation of 5 LLs to seek practical innovative solutions to the identified problems

- **SO3. Identify and research LLs soil health** problems while co-create a common action plan

- **SO4.** To **test and validate** a combination of **integrated solutions for updating and improving Soil Management strategies in permanent crops** / Boost the scale of innovative solutions to improve soil health.

Living SoiLL specific objectives (SO)

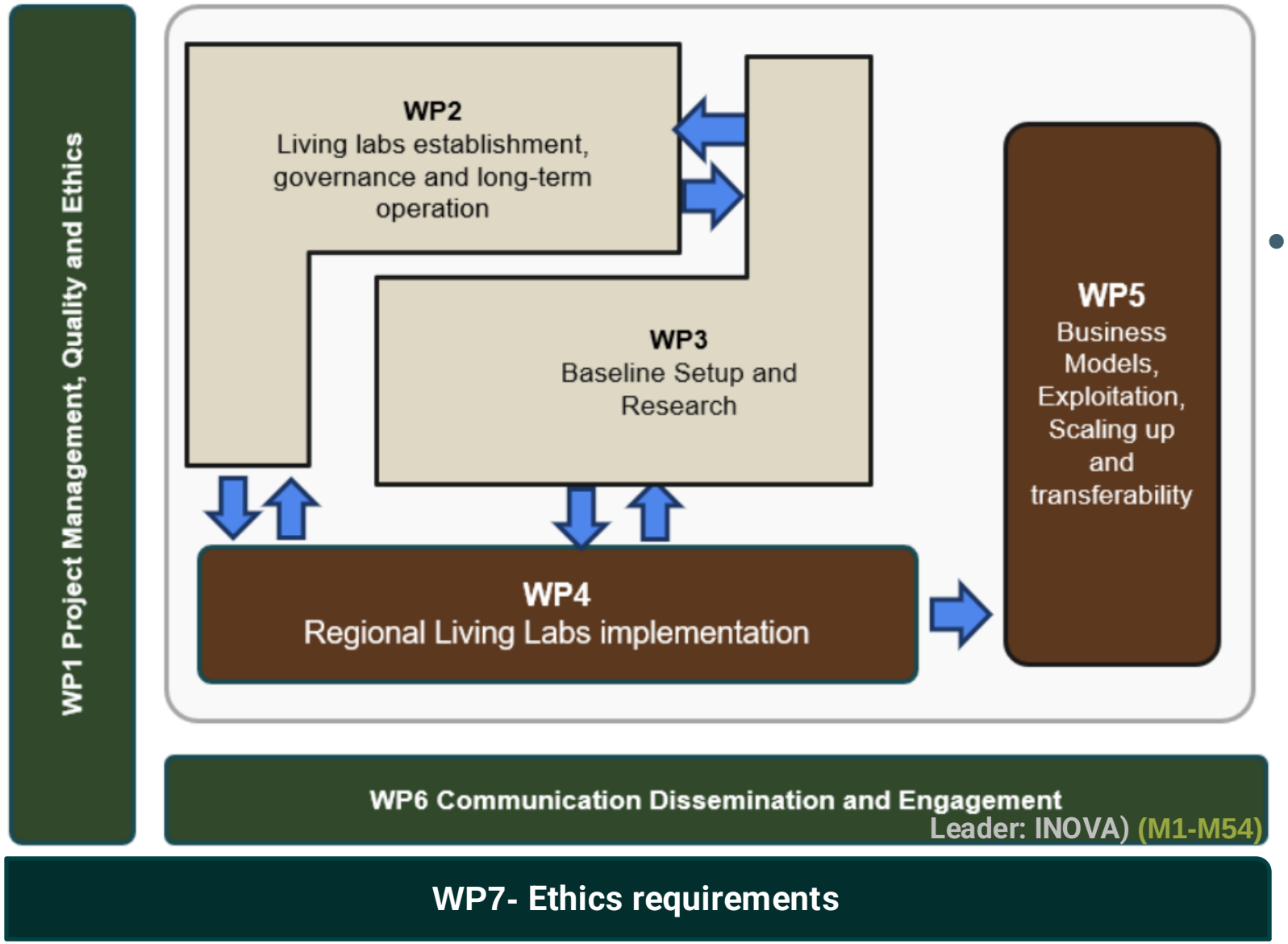
- **SO5. Ensure sustainability of the LL** through the creation of **economic business models**

- **SO6. Improve knowledge and increase literacy on soil** and **sustainable management practices** among farmers and the overall community

- **SO7. Engage and cooperate with other projects and initiatives, contributing to raising awareness of Mission Soil.**

- **SO8. Propose policy recommendations on best management practices** to be implemented on soil use for permanent crops to reduce erosion while promoting other soil health indicators.

LivingSoiLL – project structure



- **7 Work Packages (WPs),** each playing a pivotal role in achieving our objectives

Living SoiLL consortium – 42 beneficiaries + 8 associated partners

Luso-Galician LL

Andalusian LL

NW Italy-Piemonte LL

Beaujolais & Loire Valley LL

Grojec LL

Horizontal partners

Associated partners

Challenges and recomendations

- The quadruple helix framework poses significant challenges for project managers in terms of coordination and collaboration.

- LL with a high geographical extension causes a funding imbalance, which is not well seen and understood.

- Co-creation process is not well understood and difficult to implement due to budget justification requirements

- The negotiations after project approval can be highly demanding.

- ✓ The quadruple helix framework should be considered as a guiding principle for the proposal. Portugal is per sure a good example in what regards the link between academy, industry, and the primary sector. The number of partners from the sector was one of the reasons of success of this proposal.

- ✓ EU is expected to limit the geographical dispersion of the Living Labs.

- ✓ Take into account as much as possible funding balance between LL.

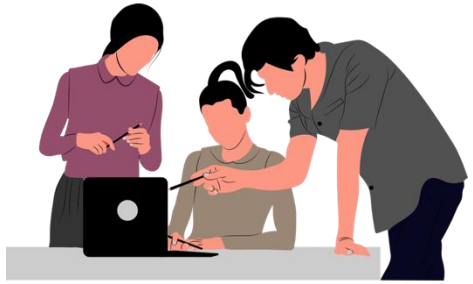
- ✓ In what regards soil monitoring frameworks, provide as much details as possible in terms of number of demonstration sites (DS), their extension, number of samples to be collected, indicators to be evaluated and corresponding protocols. This information must be clearly reflected in the justifications of the budget.

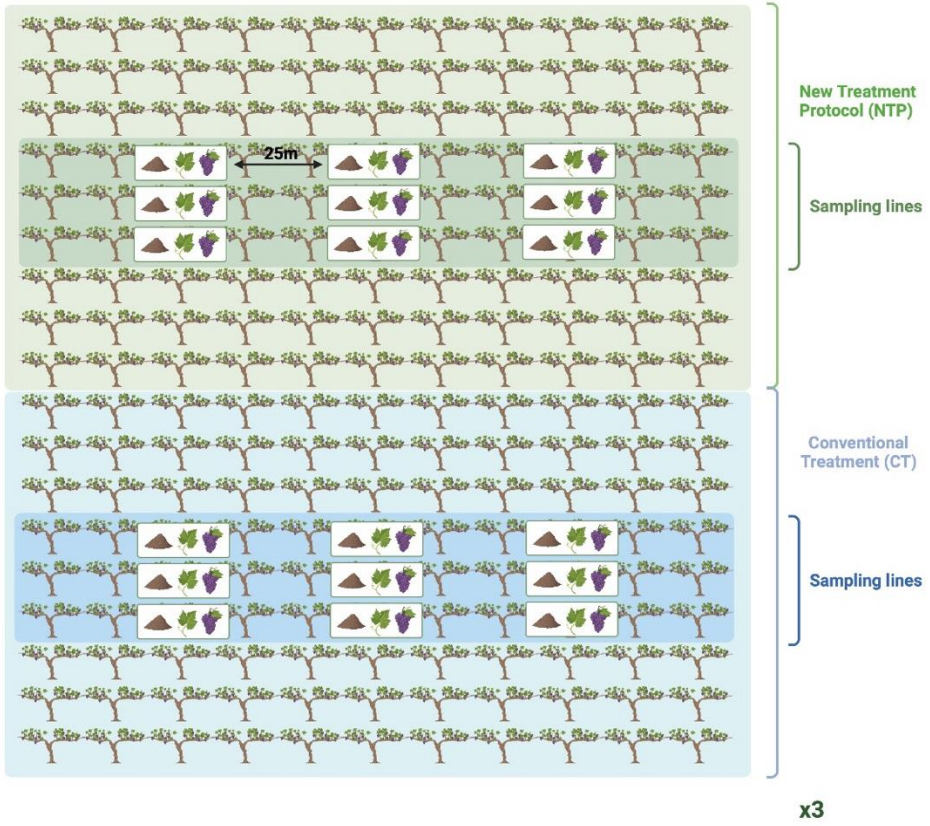
Table 1: description of the soil analysis to be performed and the number of samples available for the purpose.

Living Lab		Luso-Galician LL		Andalusian LL	North-western Italy - Piemonte LL	Loire Valley & Beaujolais LL	Grójec LL	TOTAL
Partner responsible for the analysis		UTAD	UVIGO	UJAEN	UNITO	UPORTO	WULS	
Soil Analyses	Metagenomics	504	216	540	360	360	360	**2340**
	General physical and chemical analysis + Nutrients*	504	216	540	360	360	360	**2340**
	Metals	336	144	360	240	240	240	**1560**
	Total Organic Carbon	504	216	540	360	360	360	**2340**
	Pesticides	112	48	120	80	80	80	**520**
	Erosion				**			
TOTAL		2800		2100	1400	1400	1400	9100

Three sampling campaigns (except for metals and pesticides)
12 samples for all the parameters per EXPS (except for pesticides, 4 samples only)
Soil erosion indicators analysis to be decided at each site

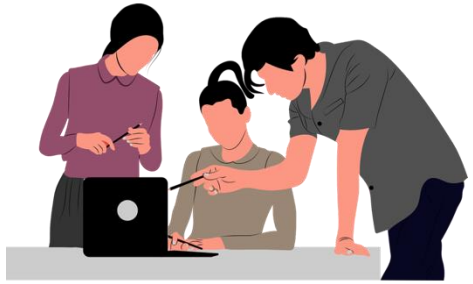
On going co-creation process and challenges faced so far





- Definition of experimental sites (EXPS)
- Appropriate experimental designs for field testing of agronomical practices to be implemented at EXPS/LH
- EXPS characterization
- Baselines and thresholds

On going co-creation process and challenges faced so far



Experimental sites (EXPS) – the farm or the real-life setting in the farm where different innovative solutions/technologies will be tested to address specific soil challenges identified or noticed. Therefore, by monitoring soil health indicators (as well as other social and economic indicators) over time, starting from existing data or on data collected at time zero (t0- before the implementation of selected innovative solutions/technologies), it will be possible to evaluate the progress of the followed approach.

The EXPS is thus selected for testing and experimentation, in real-life conditions, of innovative and/or cost-effective soil management practices and sustainable remediation techniques (one or more) specifically planned to address the soil challenges identified.

The selection of these solutions, the experimental design for testing in the field, and the monitoring framework to follow changes in soil health will be co-created with participation of a multiplicity of stakeholders (e.g. land managers, technology providers, service providers, relevant institutional actors, professional or residential end users) and adapted to the typical local pedo-climatic, socio-cultural and economic conditions. Both the solutions and the monitoring framework are expected to include multiple methods and tools originating from a range of disciplines and domains.

Thanks!

Does anyone have any questions?

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INNOVATIVE CO-CREATION SOIL HEALTH LIVING LAB (iCOSHELLs)

Bulgarian Viticulture Soil Health Living Lab (BUV SHELL)

Chief Assis. Rumyana Georgieva

INDEX

Bulgarian Viticulture Soil Health Living Lab (BUV SHELL)

Leader: Agricultural University Plovdiv (AUP);
Region: Plovdiv region, Central South Bulgaria;

Land use: Agriculture, Viticulture */362 wineries in the country, 360 have their own vineyards/*

CHALLENGES:

- Decreasing soil organic matter content leading to diminishing soil nitrogen and phosphorous levels
- Poor soil structure and soil biodiversity + inefficient soil tillage management
- Climate change pressures degrading soil health in the vineyards
- Insufficient knowledge and dissemination structures to reach private vineyard farmers and advisors on best practices for managing soil health.

Soil Mission Objectives addressed in BUV LL:

- Improve soil structure and enhance soil biodiversity
- Improve soil literacy in society
- Reduce soil pollution and enhance restoration
- Conserve soil organic matter
- Prevent erosion

Participants (BUV SHELL)

Partner	Description	Role
Agricutlral University of Plovdiv	Research, education, consulting	stakeholder engagement, experimental site selection, solution testing, lab analyses
National Agricultural Advisory Service of (NAAS-Plovdiv)	Advice, technology disseminatio n	stakeholder engagement, experimental site selection, solution testing
National Grape and Vineyard Chamber (NGVC)	Advocacy, stakeholder advice	stakeholder engagement, experimental site selection, solution testing
Institute of Soil Science, Agroecology & Plant Protection (ISSAPP "Nikola Poushkarov")	Research, innovations, technological solutions	validating novel solutions for soil health improvement incl. lab analyses
Ondo Solution Ltd. Summit Agro Bulgaria	Innovations, technological	Testing soil irrigation and saving soil-water solutions;

Experimental sites

WHERE:

Southern region incl. Plovdiv district (provides ~36% of grape/wine production nationally)

TESTS TO BE DONE: at least 4 soil health solutions tested on ~10 sites:

- no-till/ minimum-till vs. classic cultivation
- grassed vs cultivated intra- and inter-rows (e.g. no perennial plant cover, contrasting irrigation regime)
- none vs. additional organic matter and nutrient supply
- conventional vs. integrated/organic plant protection (weeds, pests & diseases, soil biodiversity e.g. microorganisms)

PARAMETERS TO MONITOR:

- vineyard microclimate (temperature, humidity, rainfall, carbon),
- soil-water moisture,
- soil structure (i.e. water permeability, porosity, texture, structure, pH),
- soil nutrient content (macro- and micro-elements, organic matter),
- plant health (pests, diseases and weeds infestations, soil biodiversity)

Living Lab		BUV LL
Total experimental sites		10
Partner responsible for the analysis		AUP
Number of experimental sites		10
Soil Analysis	Physical & Chemical analysis	120
	Organic matter content	120
	Metagenomics (DNA analysis)	120
	Soil biological activity (soil respiration)	120
	Heavy metals **	120
TOTAL		600
		600

Experimental sites

Experimental sites (Associated with document Ref. Ares(2024)5794003 - 12/08/2)		
Site 1: no-till/ minimum-till vs. classic cultivation	**Site 2**: no-till/ minimum-till vs. classic cultivation	**Site 3:** no-till/ minimum-till vs. classic cultivation
Site 4: grassed intra- and inter-rows vs cultivated intra- and inter-rows (e.g. no perennial plant cover); contrasting irrigation regime	**Site 5**: grassed intra- and inter-rows vs cultivated intra- and inter-rows (e.g. no perennial plant cover)	**Site 6**: grassed intra- and inter-rows vs cultivated intra- and inter-rows (e.g. no perennial plant cover)
Site 7: additional organic matter and nutrient supply vs. no additional nutrient supply	**Site 8:** additional organic matter and nutrient supply vs. no additional nutrient supply	**Site 9**: additional organic matter and nutrient supply vs. no additional nutrient supply
Site 10: plant protection i.e. conventional (chemical) protection against weed infestations, soil diseases and pests vs. integrated or organic plant protection; soil biodiversity e.g. microorganisms)	**Site 11:** plant protection i.e. conventional (chemical) protection against weed infestations, soil diseases and pests vs. integrated or organic plant protection; soil biodiversity e.g. microorganisms)	**Site 12:** plant protection i.e. conventional (chemical) protection against weed infestations, soil diseases and pests vs. integrated or organic plant protection; soil biodiversity e.g. microorganisms)
The initial idea is to test 4 different main solutions to improve soil health. Each solution will be tested at a minimum of 3 different sites that cover a variation of conditions (slope, soil type, microclimate etc..) to increase the understanding of how the solution affect soil health. Most Experimental sites will be determined during the co-creation process from the large stakeholder farm networks of NGCV, AFG and RAAS.		

Thank you for your attention!

Soil Health Living Labs
Living Lab AlVelAl – Southeast Spain

Elvira Marín Irigaray
Director Aland Foundation
Ambassador LL AlVelAl

Altiplano Estepario Landscape

High Steppe Plateau

Granada, Almería y Murcia

1 m. hectares

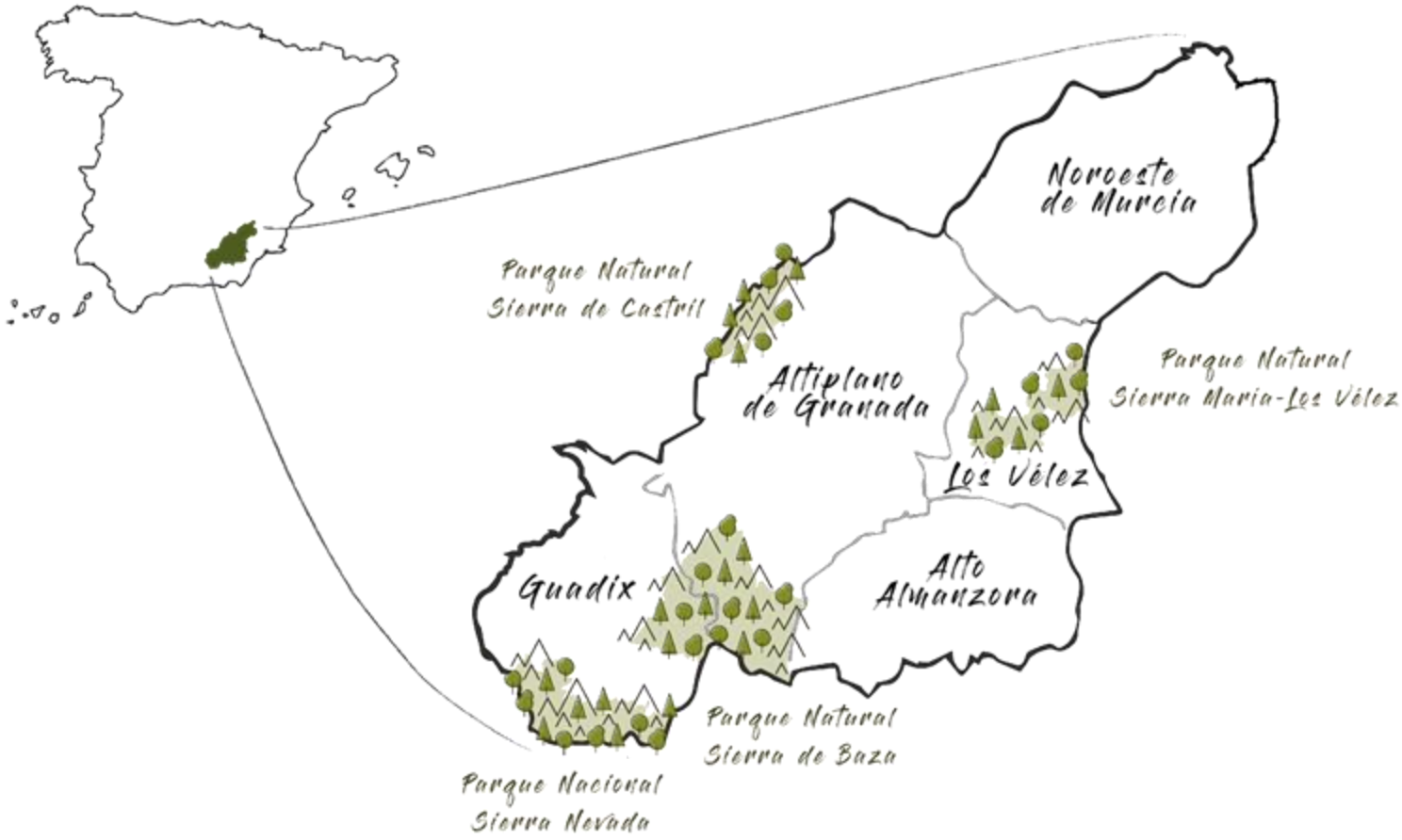
78 municipalities

4 protected areas (natural park)

200.000 inhabitants

+140.000 ha rainfed almond trees

+70.000 organic certified



Altiplano Estepario Challenges

Average rainfall 300mm/year

Monoculture almond trees

Erosion

Loss of soil

Lack of organic matter

Loss of biodiversity

Development of intensive crops and macro-Farms

Lack of opportunities

Depopulation

AlVelAl Association

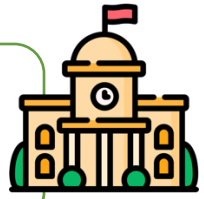
Stakeholders Landscape

Regional, national EU governments

Farmers

Associations

Local governments



Funders

Researchers

Cooperatives

External companies

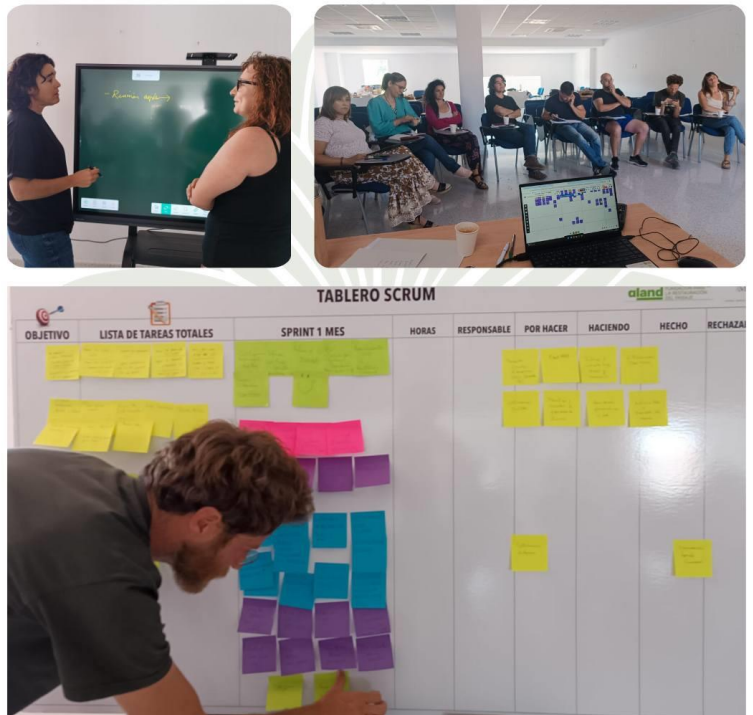
Students

Businesses

Living Labs in projects

FARMS 4 CLIMATE

Bioregional Weaving Labs



Thank you!

Elvira Marín Irigaray
Elvira.marin@fundacionaland.com
Director Aland Foundation
Ambassador LL AlVelAl

Successful experiences in Soil Mission Call - Lena Madden, Technological University of the Shannon (TUS)

Dr Lena Madden

Funded by the European Union

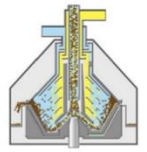
SOILCRATES

About me

TUS
Technological University of the Shannon: Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne: Lár Tíre Iarthar Láir

Shannon ABC
applied biotechnology centre

- Instrumentation Lab
- Microbiology Lab
- Environmental Monitoring Lab
- Growth chambers
- Immunology Lab
- Cell culture lab

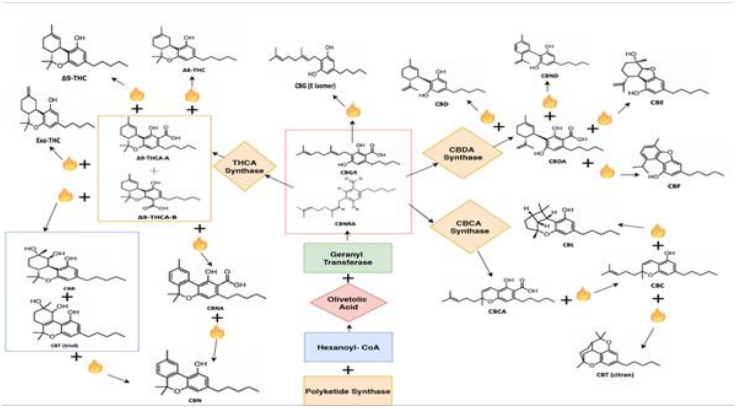


CABS – Centre for ‘Circular Agroecology and Biotechnology Solutions’

Dr Lena Madden – Centre Lead
Dr Patrick Murray – Centre Co-Lead
Dr Catherine Collins – Senior researcher
Dr Sushanta Kumar Saha – Senior researcher

- Based at Shannon ABC laboratory - Limerick
- 4 multi-million research projects
- 7 postdoctoral researchers
- 10 PhD students
- 25 partners in farming industry including industrial farms and NGOs

Hemp, biochar and community work



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

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TUS

Hemp4Soil

Loop Head Peninsula Together

EUROPEAN UNION

EU MISSIONS

SOIL DEAL FOR EUROPE

EUROPEAN UNION

EU MISSIONS
SOIL DEAL FOR EUROPE

Living labs & lighthouses: what to expect?

- **Provide evidence of which practices** translate sustainable soil management principles and regenerate soil to healthy conditions
- **Solutions adapted to local, socio-cultural-economic conditions** across Europe (systemic approach) **accessible** to land managers.
- **Greater involvement of (unusual) stakeholders**: land managers, farmers, foresters, SMEs… (FSTP)
- Help defining the **most cost-effective remediation techniques**.
- Provision of relevant **soil data**.
- **Lighthouses to provide practical tools** for advisors to best inform soil managers on how to move to SSM practices
- **Support policy making**, in particular, the Soil Monitoring Law implementation.
- **Mobilisation of additional funding**: other EU programmes, Member States, private, philanthropy.
- Improved **citizen awareness** and increased **social capital** (norms, networks, relations between actors) in regions where LL are developed, triggering further positive long-term developments in soil health and ecosystem services.

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SOILCRATES

UNIVERSIDAD DE GRANADA

Louis Bolk Instituut

BALLYHOURA DEVELOPMENT CLG

OMED

CINAM

wetsus

Noardlike Fryske Wâlden

WAGENINGEN UNIVERSITY & RESEARCH

Sustainable Innovation Institute

IRISH CBD OIL
Wild Atlantic

AGROBIO 40

IRSA CNR

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

CLOUGH JORDAN COMMUNITY FARM

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AMPHOS 21
an RSK company

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SOILCRATES in TUS

SOILCRATES

LIFE – Health and Wellbeing Biosciences Research Institute

- Shannon Applied Biotechnology Centre
- CABS – Centre for 'Circular Agroecology and Biotechnology Solutions'
- Chimera – microbiology solutions for food and health
- CELLS -
- SHE Research - Bridging the Gender Data Gap in Sport and Health

SDRI Research Institute

- Sustainable Development
- Energy
- Rural Development
- Social Enterprises
- Technology for Education

SRI Software Research Institute

- Artificial Intelligence,
- Data,
- Augmenting User Interactions,
- End-to-end Applications
- Intelligent Infrastructure.

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SOILCRATES

- Lead partner: Province of Fryslân (Ingrid van Huizen)
- Scientific coordinator: Van Hall Larenstein (prof. dr. Emiel Elferink)
- Administrative support: LGI (Martin Pecanka, Samy Strola)

Specific objectives

Living Labs
#4

EU objective
#6 Soil structure for soil biodiversity

FSTP
Demo's & Activities

Start
October 2024
End
2028

Secondary objectives
#8, #2, #4 and #5

Focus
Agriculture on mineral soils

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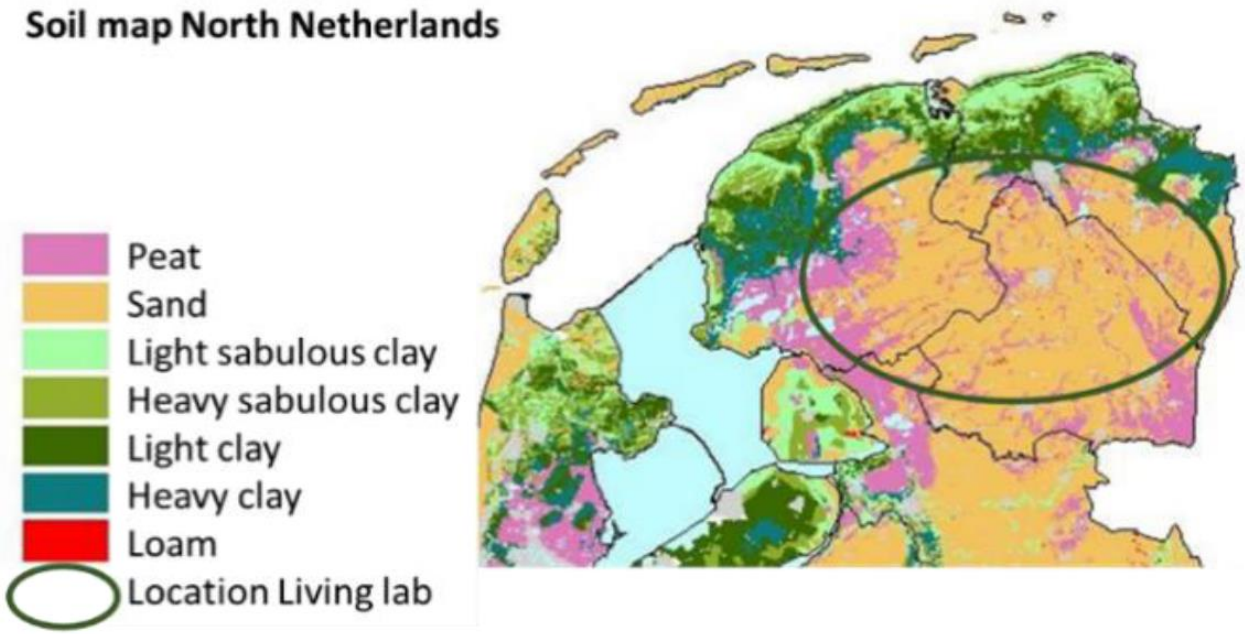
Soil map North Netherlands



Name of LH	Type of LH	Facilities	Activities
't Kompas	Arable research farm	Field plots, mixed crops, meeting rooms	Research good practices, demonstration, workshops
Biosintrum	Soil research site	100 mesocosms, long term plots, meeting rooms	Demonstration, inspiration, workshops, symposium
DairyCampus	Research farm, clay	Field plots, meeting rooms	Research good practices, workshops, symposium

Name of ES	Type of site	Facilities	Activities
Eythemaheert	Dairy farm, sand	Fields, grass	Testing good practices, regenerative
Ecolana	Mixed farms, clay	Fields, livestock and arable	Testing good practices, regenerative
Agricycling	Mixed farms, divers	Fields, P-removal, process sites	Testing reuse of organic waste
Botmas	Arable farm, clay	Fields, mixed crops, strip cropping	Testing good practices, regenerative
Bakkerbio	Arable farm, clay	Fields, mixed crops	Testing good practices, organic
Agro Graafstra	Arable farm, sand	Fields, sugar beet, potatoes	Testing good practices, common
v/d Lageweg	Dairy farm, sand	Fields, grass	Testing good practices, common farm

Living lab: **Netherlands**

Lead partner: Van Hall Larenstein

Land use: mix of arable land and grassland for dairy farming.

Typical crops: potato, sugar beet, cereals, maize, grass

Participants at start: > 50 individual farmers, 3 provinces, 3 local authorities, > 20 companies, 3 NGO's, 6 research institutions, 3 vocational education institutions.

Challenges: Soil structure; by increase use organic amendments and reduce fertiliser, by increase crop biodiversity/ cover, by reduced disturbance (compaction)

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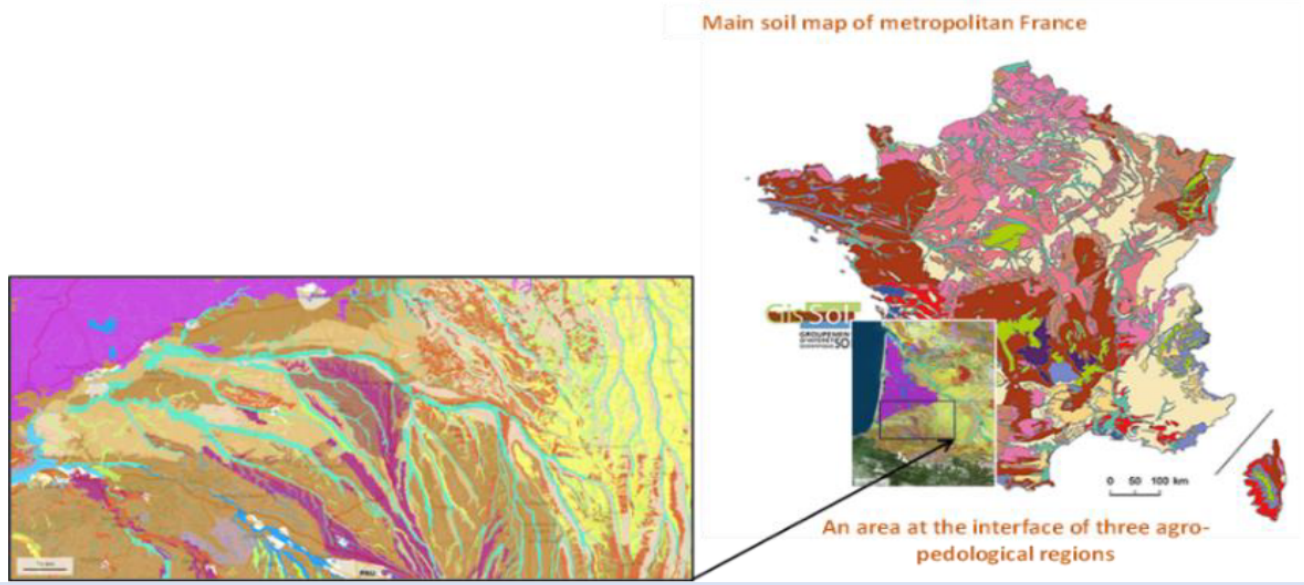

Name of the LH	Type of LH	Facilities	Activities
Coteaux de Gascogne (CACG) Farm "de la Mirandette"	Land planning and rural development regional company	Field plots, fodder mixed crops, meeting rooms	Indicators measures, Soil monitoring, Experimental irrigation for soil conversation
AGROLandes "Haut-Mauco"	Technology-park dedicated to agricultural and agro-industrial innovation: 80-hectare business park including 20 hectares of crop production plots and 10 hectares of irrigated plots	Irrigation system, solar trackers, meeting rooms	Indicators measures Soil evolution monitoring Crop yields and health monitoring

Name of ES	Type of site	Facilities	Activities
Larrous_Bergouey, Viellenave_Pyrénées-Atlantiques	Ecofar: polyculture, breeding	Agroforestry, livestock	Study of soil health Solution testing
Noël Lassus_Saint-Puy_Gers	Farm viticulture, breeding	Zero Phyto	Testing good practices
Pierre Pujos, Saint-Puy_Gers	Farm: polyculture, breeding	Zero Phyto	Testing good practices
Yvan Alquier, Mimizan_Landes	Farm: cereals	Soil conservation agriculture, water issue	Testing water reuse
Jérémy Lapeyre, Orist_Landes	Farm: cereals	Soil conservation agriculture, water issue	Testing water reuse
Jérémy Cazaubieilh, Geaune_Landes	Farm: viticulture	Zero Phyto	Testing good practices

CINAM

Living lab: **French**

Lead partner: CINAM university

Land use: arable farming, vinyards, cattle and poultry farming

Typical crops: wine, polyculture of maize, buckwheat, sunflower, soy, grass

Participants at start: 2 farmers organisation, farmer association, 6 local authorities, 8 companies, 2 research organisations

*Challenges:*Soil structure: by irrigation and drainage through enhancement of soil biota in perennial and annual crops,

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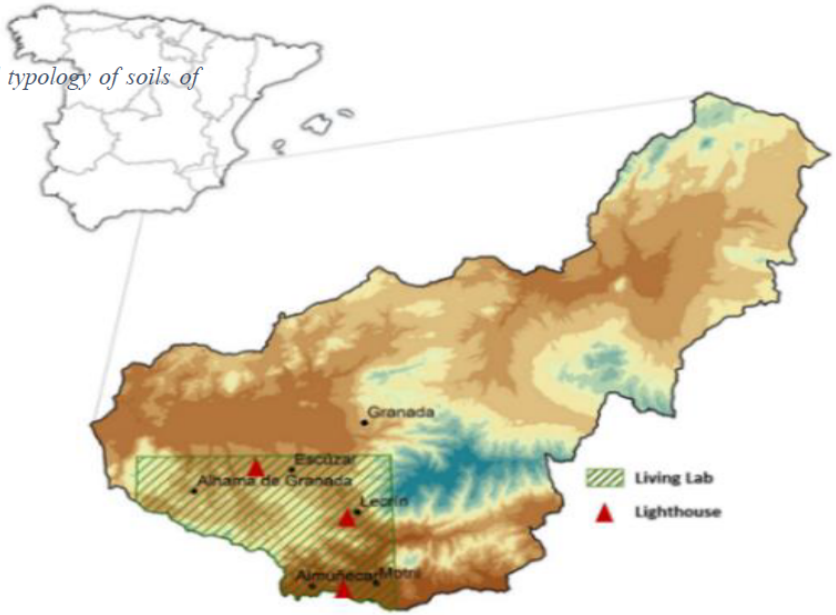

Figure 5: Location and typology of soils of the LL Spain.

Name of LS	Type of LH	Facilities	Activities
Tierra de Aguas	Oil and Almond farm	Field plots, oil press, meeting rooms	Research good practices, Food-Hub center
Lecrín	Vineyard and citric crops	Field plots, interpretation center	Research, nature classroom
Zahorí	Subtropical crops farm	Field plots, meeting rooms	Research, workshops, good practice demonstrations
Name of ES	**Type of site**	**Facilities**	**Activities**
Comarca de Alhama de Granada	Extensive non-arable/arable crops	Irrigated and rainfed olive tree cultivation, rainfed almond tree cultivation, Food-Hub center	Testing good practices: No tillage, cover crops, organic amendments, reduce water use, and increase soil biological biodiversity
Valle de Lecrín	Extensive non-arable/arable crops	Cultivation of orange trees and vineyards	Testing good practices: No tillage, cover crops, organic amendments, reduce water use, and increase soil biological biodiversity
Comarca de la Costa Granadina	Non-arable terrace farming	Irrigated mango, avocado and custard apple crops	Testing good practices: No tillage, cover crops, organic amendments, reduce water use, and increase soil biological biodiversity

Living lab: **Spain**

UNIVERSIDAD DE GRANADA

Lead partner: University of Granada

Land use: olive & fruit orchards, cropping

Typical crops: olives, almonds, citrus fruits, terraced vineyards, traditional farming practices

Participants at start: 3 farmers associations, 2 companies, regional governments

Challenges: Soil structure: by soil management to reduce compaction; by improving irrigation efficiency, by use of organic amendments (nutrient cycling).

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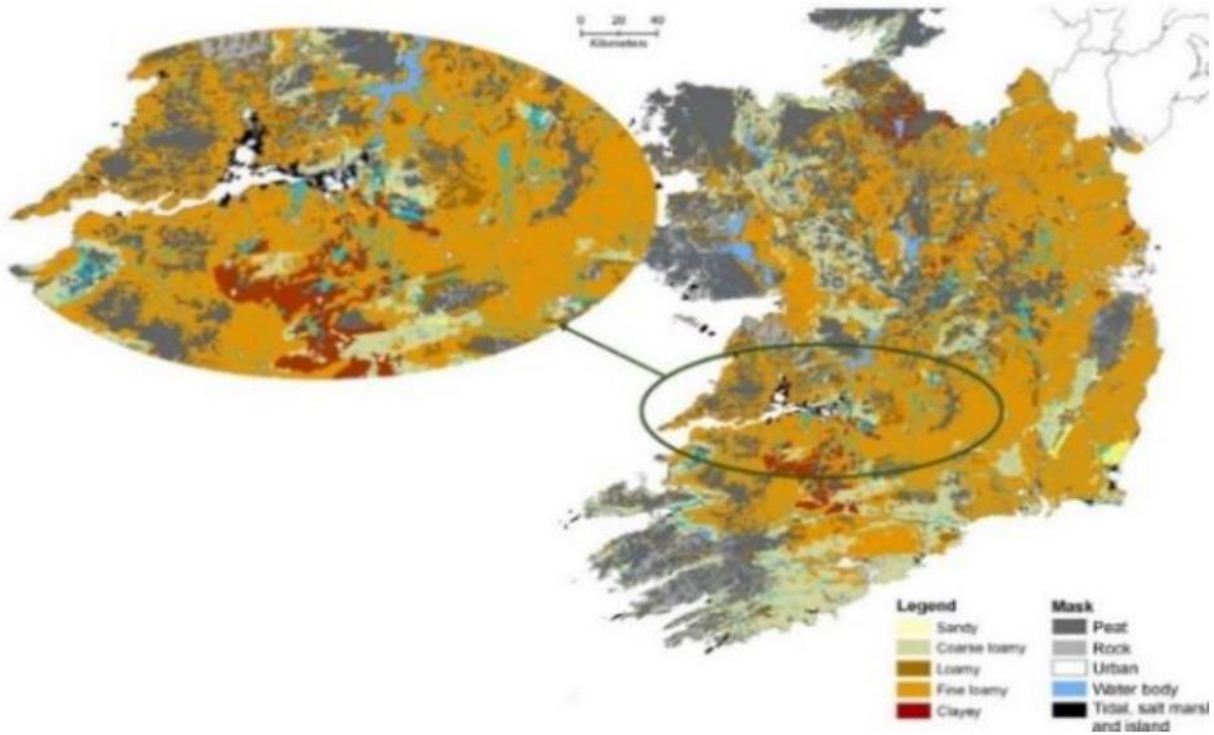


Figure 4: Location and typology of soils of the LL Ireland.

Name of LH	Type of LH	Facilities	Activities
Wild Atlantic Hemp farm	Cultivation of hemp	Open fields, green houses, mini soil-lab	Study of Soil health and carbon levels, soil augmenters such as microbial teas and biochar
Cloughjordan community farm	Dairy and mix crop teaching farm	Open fields, green houses, mini soil-lab, animal sheds. Community rooms and facilities	Studies of soil health, farmers support, Soil health projects participation
Name of ES	**Type of site**	**Facilities**	**Activities**
Cloncannon Biofarm	Dairy and mix crop teaching farm	Open Fields, green houses	Studies of soil health, farmers support
Padraic O'Reilly	Dairy , sillage	Open fields	Studies of soil health

Living lab: **Ireland**

TUS

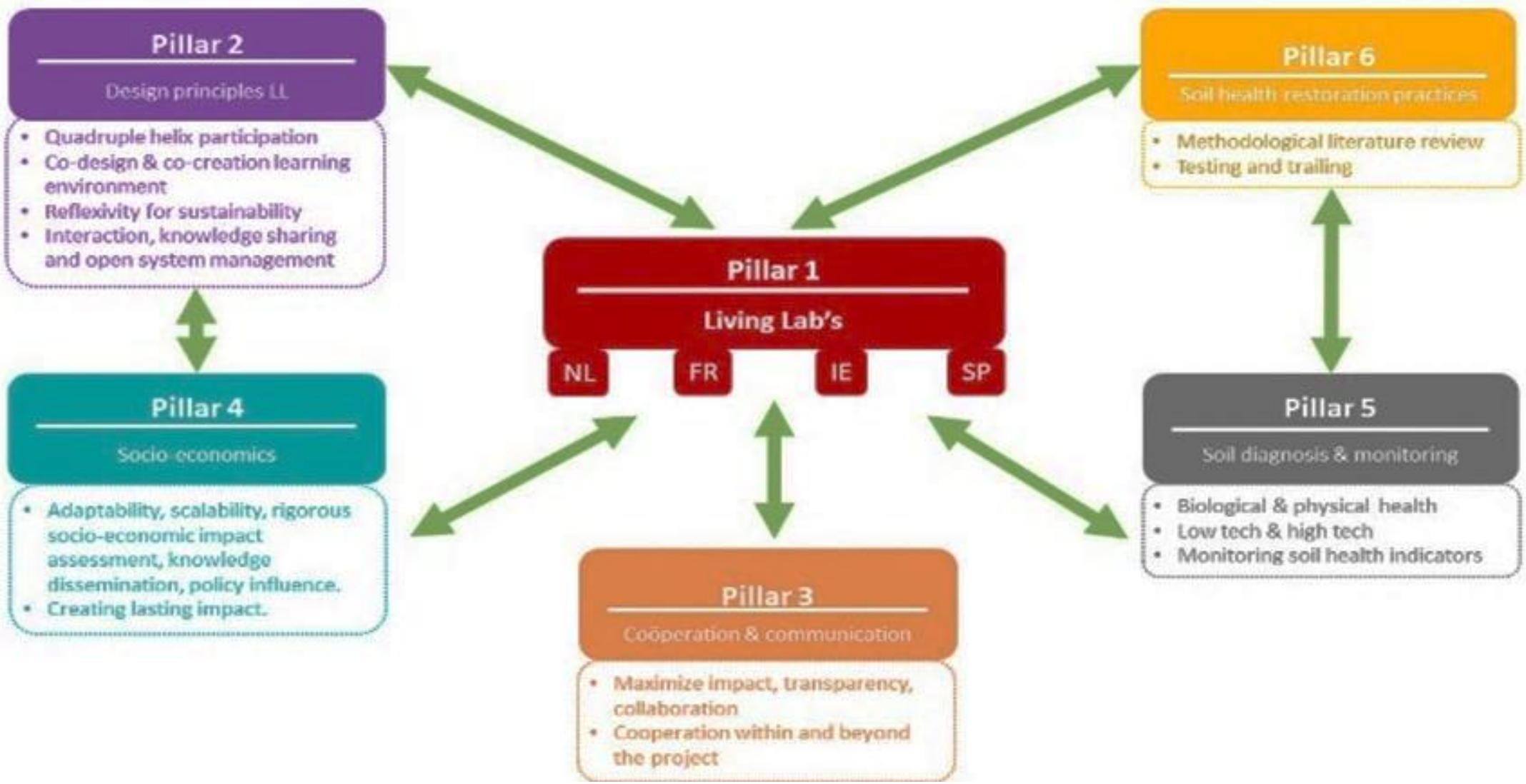
Lead partner: Technological University Shannon

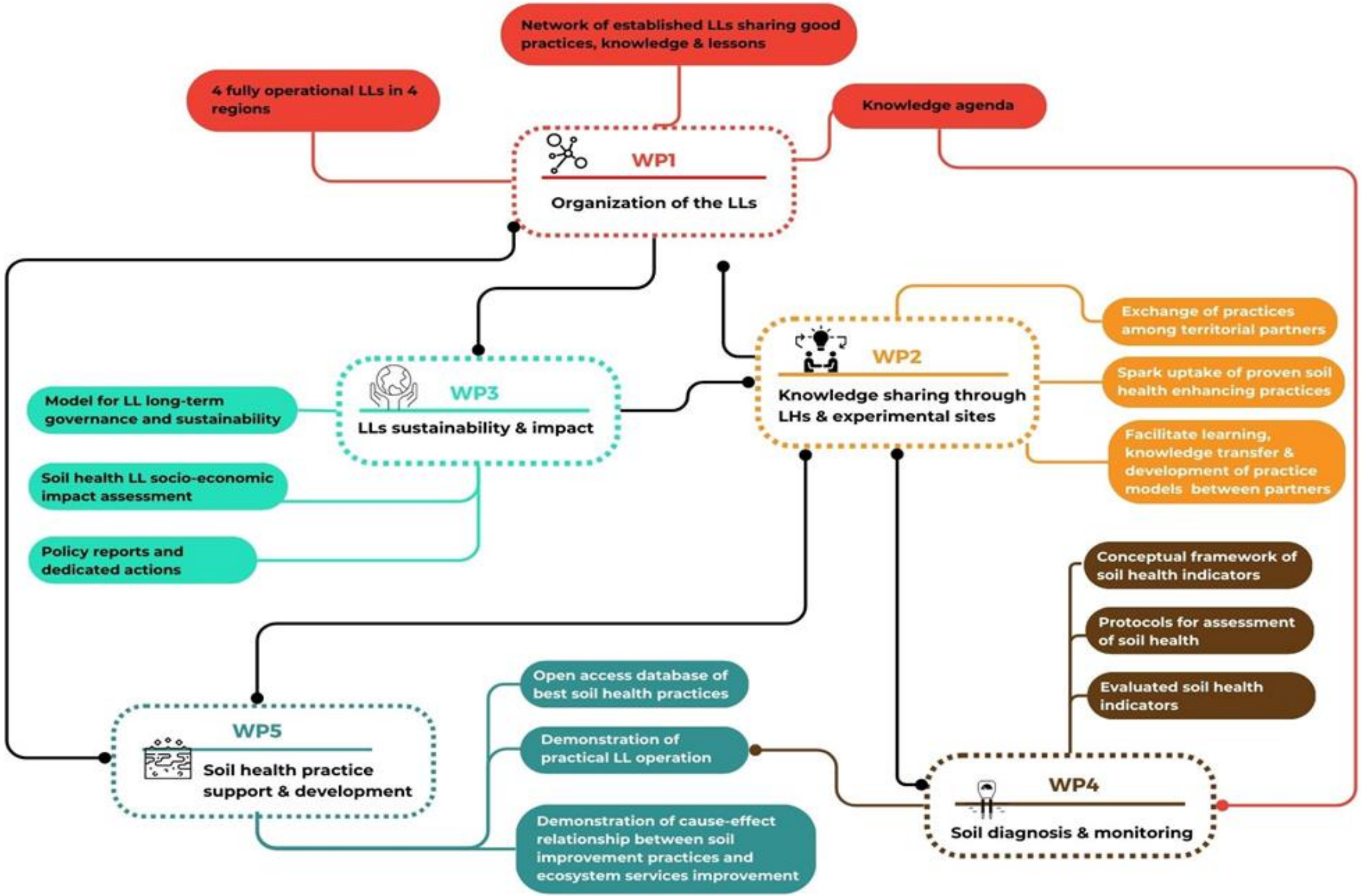
Land use: grasslands for beef and dairying farms and mix crop farms.

Typical crops: cereals, maize, grass, forage

Participants at start: 3 farmers associations, farmers, 3 counties, companies & industry, research institution

Challenges: Soil structure; by increase organic amendments and reduce fertiliser, by increase crop biodiversity/ cover, by reduced disturbance (compaction)


Pillar 2
Design principles LL
• Quadruple helix participation
• Co-design & co-creation learning environment
• Reflexivity for sustainability
• Interaction, knowledge sharing and open system management
Pillar 6
Soil health restoration practices
• Methodological literature review
• Testing and trailing
Pillar 1
Living Lab's
NL
FR
IE
SP
Pillar 4
Socio-economics
• Adaptability, scalability, rigorous socio-economic impact assessment, knowledge dissemination, policy influence.
• Creating lasting impact.
Pillar 5
Soil diagnosis & monitoring
• Biological & physical health
• Low tech & high tech
• Monitoring soil health indicators
Pillar 3
Coöperation & communication
• Maximize impact, transparency, collaboration
• Cooperation within and beyond the project


Network of established LLs sharing good practices, knowledge & lessons
4 fully operational LLs in 4 regions
Knowledge agenda
WP1
Organization of the LLs
WP2
Knowledge sharing through LHs & experimental sites
Exchange of practices among territorial partners
Spark uptake of proven soil health enhancing practices
Facilitate learning, knowledge transfer & development of practice models between partners
WP3
LLs sustainability & impact
Model for LL long-term governance and sustainability
Soil health LL socio-economic impact assessment
Policy reports and dedicated actions
Conceptual framework of soil health indicators
Protocols for assessment of soil health
Evaluated soil health indicators
WP4
Soil diagnosis & monitoring
WP5
Soil health practice support & development
Open access database of best soil health practices
Demonstration of practical LL operation
Demonstration of cause-effect relationship between soil improvement practices and ecosystem services improvement

Thank you!

25 Sep 2024

14:15 - 16:15 EEST (GMT+3) - Timișoara, Romania

NATI00NS Side Event @OpenLiving Lab Days SESSION 2

? Q&A Session

Teréz Krisztina Szabó

Hungarian Innovation Agency - NATI00NS

Ruth Pereira

University of Porto LivingSoiLL

Rumyana Georgieva

Agricultural University of Plovdiv - ICOSHELLs

Elvira Marín Irigaray

Director Aland GOV4ALL

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