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Breakout Session

Living Labs and other experiences from placed-based innovation

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Moderators

Rachel Creamer

Professor

Wageningen University and Research (Netherlands)

Fabio Volkmann

EU Multi-Stakeholder Process Coordinator

Climate Farmers

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The session objectives

- **General concept** of Living labs
- Living labs **under the EU Mission** 'A Soil Deal for Europe'
- **Implementation** of Living Labs under the Mission, including the supporting mechanisms
- Existing experiences and **real Living Labs**
- **Discussion**: expectations, challenges and opportunities

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Our speakers

Muriel Mambrini-Doudet

Director Research and Program Evaluation, IRD

Mission Soil Board member

Jelena Vidovic

Research Programme Officer

DG Agriculture and rural development
European Commission

Dolinda Cavallo

International Project Manager

ENoLL

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1. Concept and state of play (14:00-15:00)

Living labs for soil health, why, how and what can be really expected – Keynote speech
Muriel Mambrini-Doudet, Director Research and Program Evaluation, IRD, Mission Soil Board member

Living labs under the EU Mission 'A Soil Deal for Europe'
Jelena Vidovic, Research Programme Officer, DG AGRI

Harmonised support to Living Labs & Lighthouses: ENoLL & SOILL
Dolinda Cavallo, International Project Manager at ENoLL

Discussion and questions from the audience

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Agenda

1) CONCEPT AND STATE OF PLAY (14:00-15:00)

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Q&A

2) REAL LIVING LABS (15:00-16:00)

A Living Lab for oil cultivation in Europe: insights from SOIL O-LIVE
Antonio Jose Manzaneda Avila, Professor, University of Jaén, Spain

ÖMKi On-Farm Living Laboratory
Judit Berényi Üveges, Lead researcher, PhD, Hungarian Research Institute of Organic Agriculture

Restoring healthy soils in cities through desealing
Christophe Schwartz, Professor at de Lorraine, Director of the Department of Soil and EnvironmentalSciences at INRAE, Advisor for soils at the French Ministry of Higher Education and Research

Living Labs & Place Based Innovation in Ireland
John Gilliland, Brook Hall Estate, ARC Zero & Queens University Belfast

Panel discussion

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Living labs for soil health, why, how and what can be really expected

Muriel Mambrini-Doudet

Director Research and Program Evaluation, IRD

Mission board

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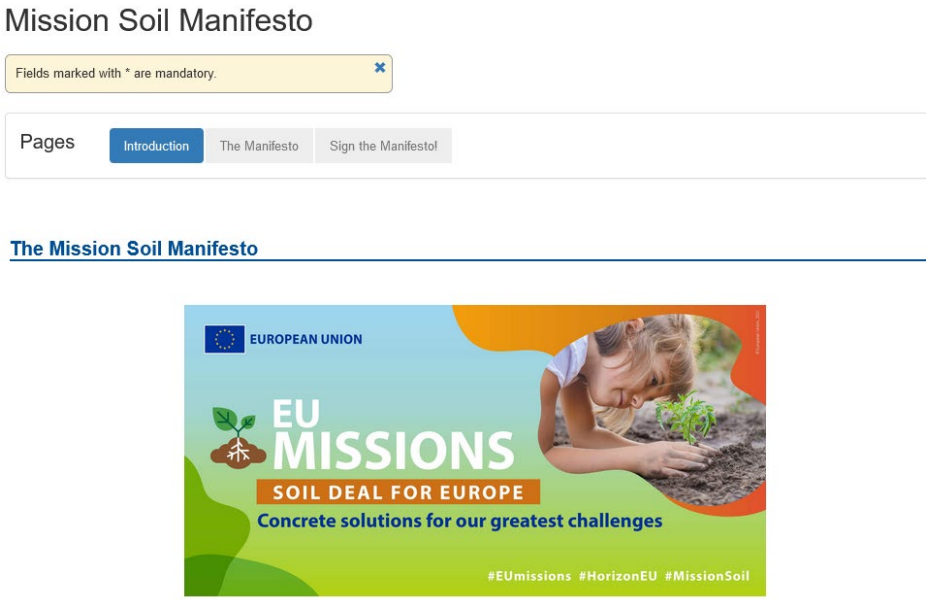
Improving Soil Health, what is needed

- 1. Soil is essential for the life of humans and nature. Need to acknowledge that soil is the basis of our well-being.
- **2.** We need to protect and restore soils. No soil should be left behind.
- **3.** Soil protection and restoration need to be embedded in all human activities that have direct and indirect impact on land. All can contribute, actions should be encouraged at all levels: global, national, regional and local.
- **4.** The commitment of everyone is essential. Raising awareness on the importance of soil and enlarge the community actively involved in caring for this precious resource is key.



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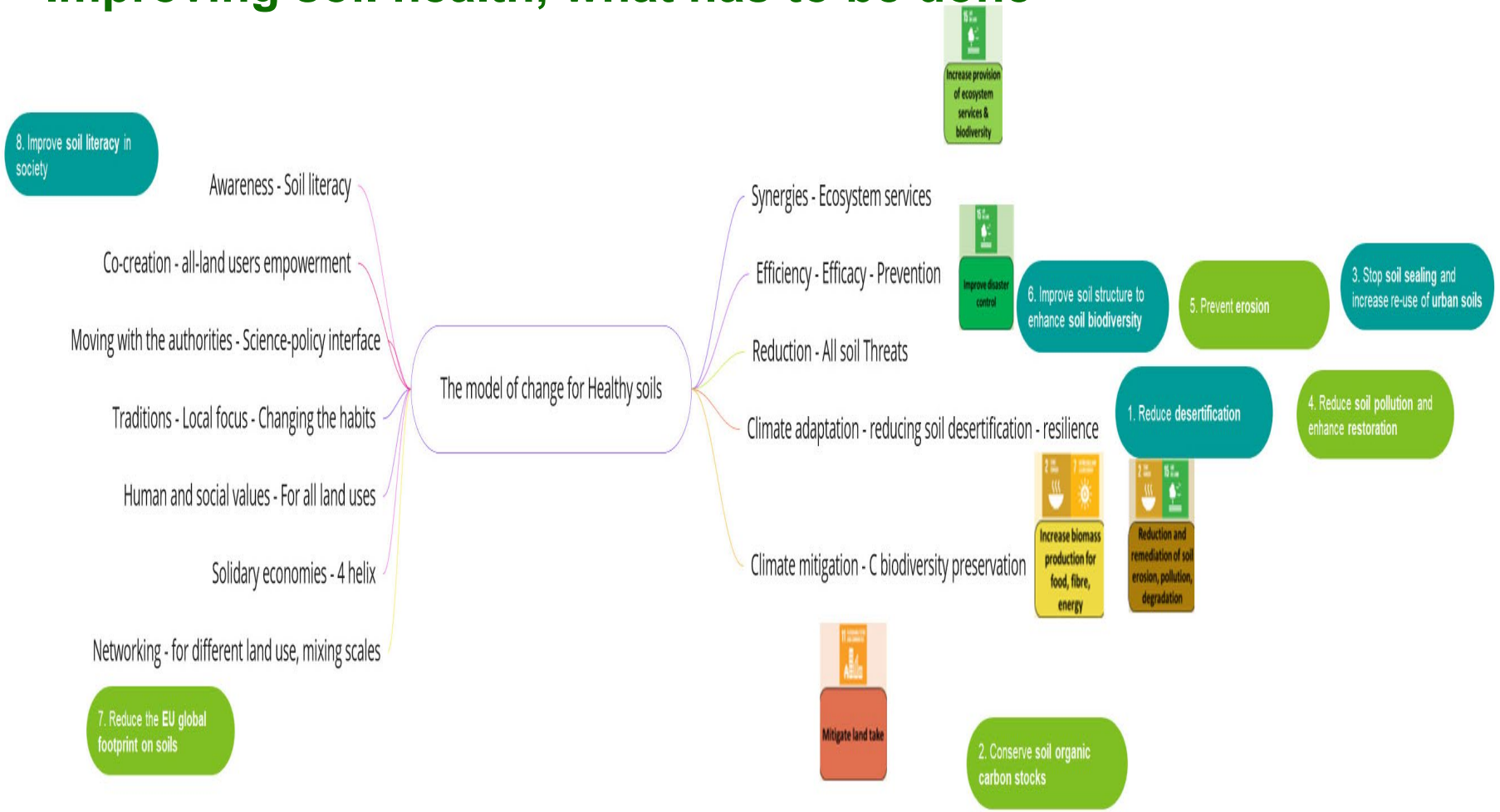
Improving soil health, what has to be done



PREP SOIL

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Improving Soil Health, success factors

- SF1: Building awareness and engagement of the society at various levels, improving soil literacy and connecting people with soils.
- SF2: Co-creating activities and exchanging practices with as many land users and related actors as possible to drive collective experimentation and co-ownership of solutions and results.
- SF3: Working under adequate policy frameworks, involving policymakers and other stakeholders (including private businesses or influential associations) as co-design actors; ensure a good science-policy-practice interaction.
- SF4: Taking in consideration how land use is related with social, cultural, and economic needs and local contexts while paying specific attention to existing structures and values to understand drivers and barriers regarding sustainable land use and soil management.
- SF5: Stimulate efforts to develop economic models fit to circular and solidary economies and the involvement of the actors from the wide value chain- in the co-creation process.
- SF6: Combining and networking activities at local, regional, national and global scales to ensure concerns regarding different land uses and up-scaling can be considered.

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Living labs are… open innovation arrangements

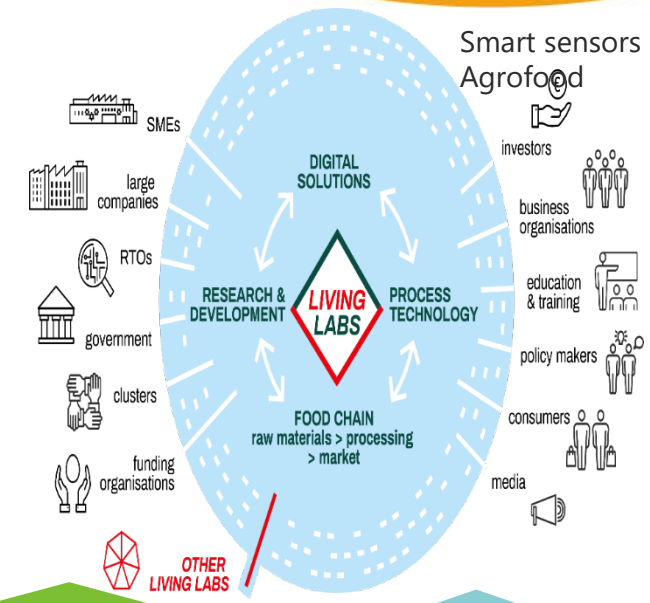
3 Principles

- Co-creation
- With users
- In reality

Creative relations at landscape level

User-centred innovation

Place-based



Multiple actors with complementary knowledge

Social and behavioural sciences

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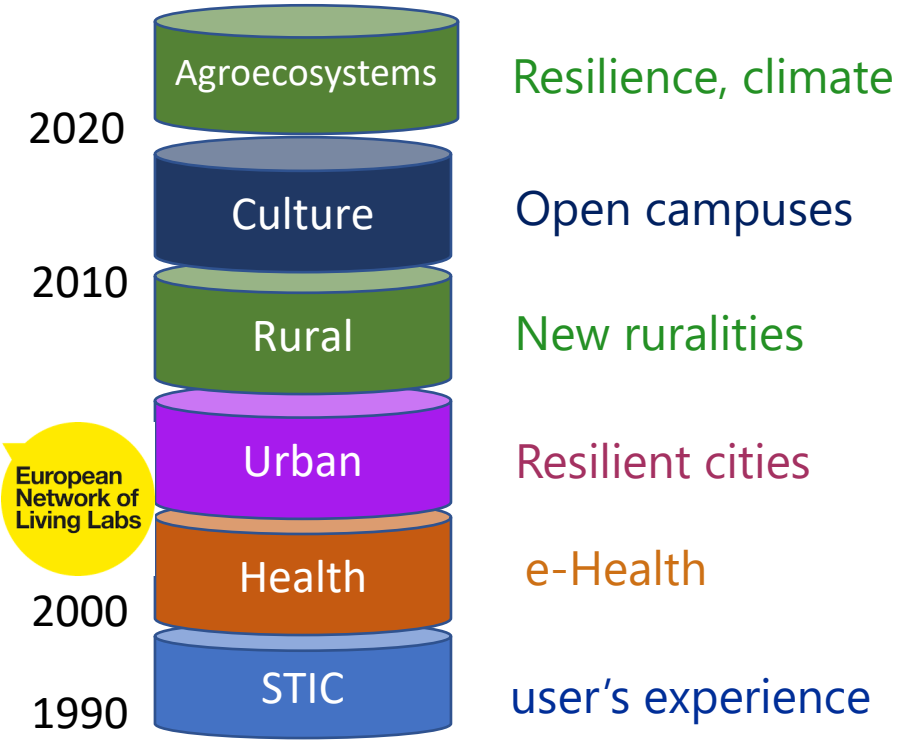
A long history, communities of practices



Resilience, climate change

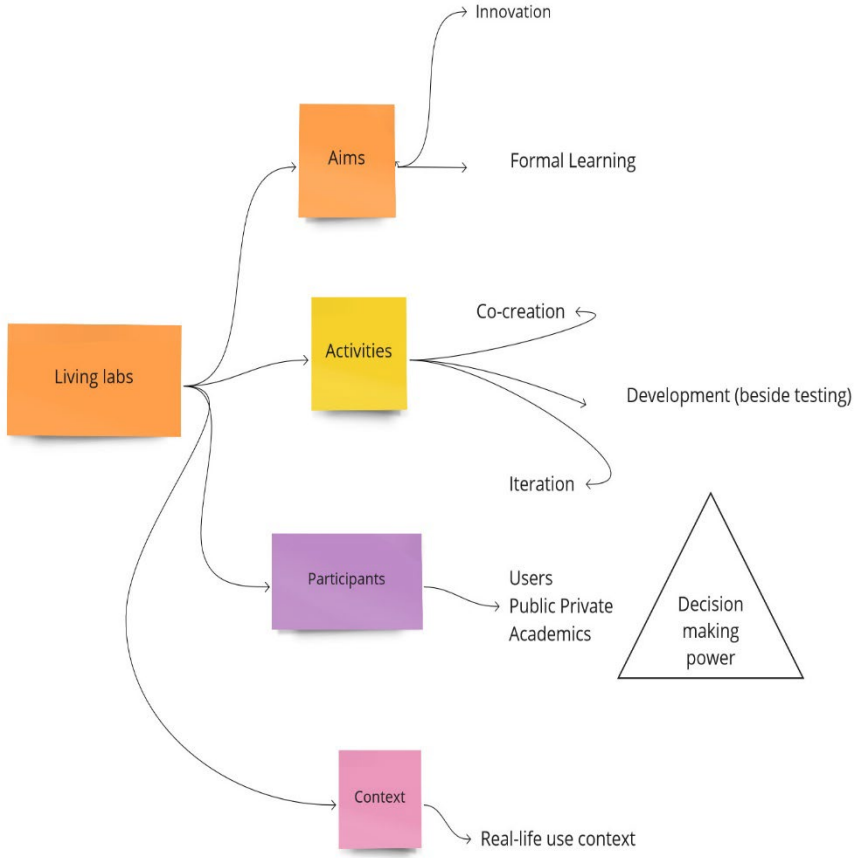
Open campuses

New ruralities

Resilient cities

e-Health

user's experience



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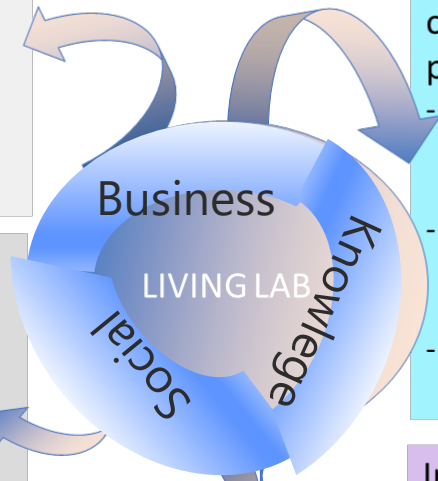
With a large set of impacts

Behavioral transformation
- Knowledge exchange among stakeholders and co-production
- Tacit knowledge taken into account in the innovation process
- Entrepreneurship enclination

Co-production of products and services
- New markets
- Social innovation
- Technical interoperabilities
- Incubation of accurate public policies

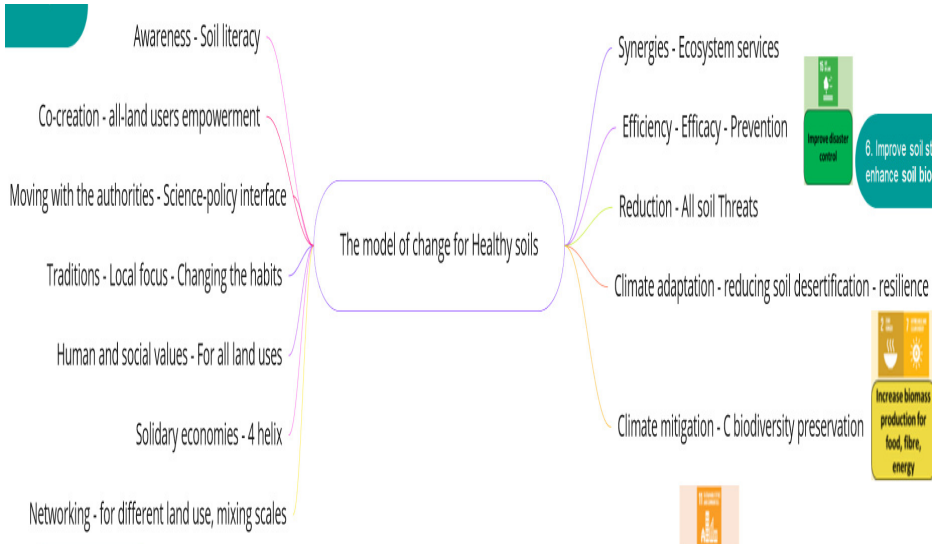
Strenghtening of local policies
- For innovation
- For training (ini and vocational)
- For spacial planning



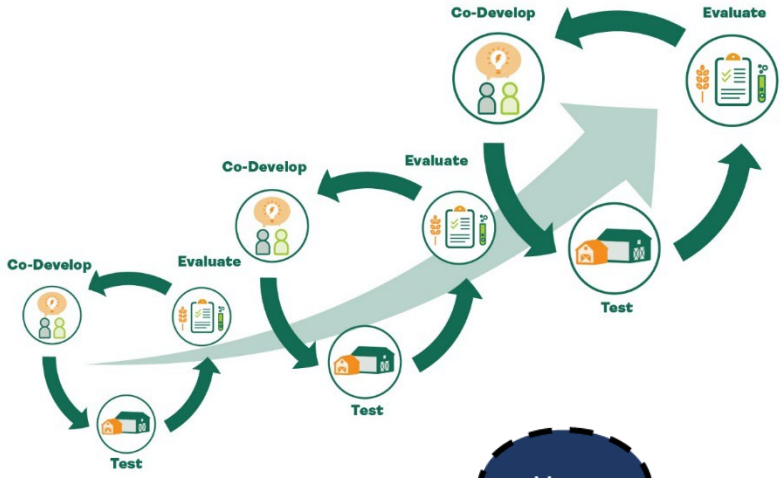
Empowerment through the learning effects of the co-conception and the experimental processes
- Academics: Interdisciplinarity; new research assumption; key factors of adoption
- Business: New market, new labour; risk evaluation; new partnership; OK for SMEs
- End-User: Capacitation; democratization of innovations

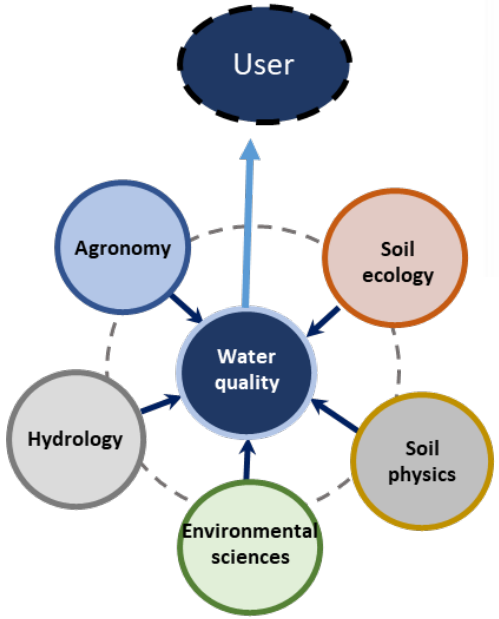
Innovation efficiency
- Minimization of the risk of failure
- Shortening of the experimental/trial cycles
- Increase of the outreach of the innovation (unforeseen use)
- Development of an innovation litteracy

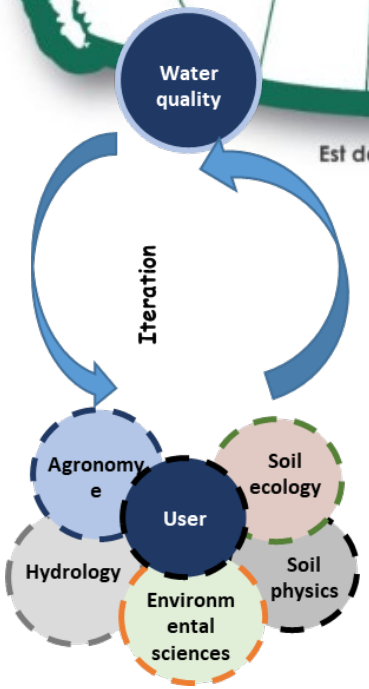
Accelerator of transitions



Some proofs of concepts







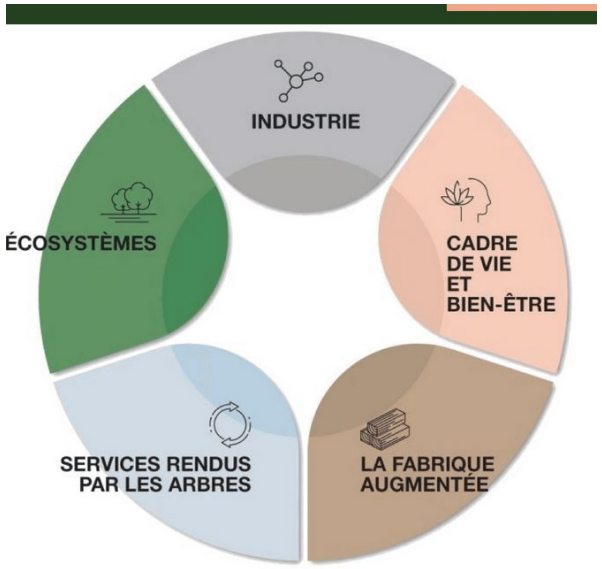
Representation of one of the researchers, M Chantigny

SOIL HEALTH & WATER QUALITY
75 à 85 participants (32 labs, 15 partners)

On going innovations
- Crop rotations conserving organic matter
- Using drone thermal imagery to detect drought stress in crops
- Creation of new wetlands on farm
- Test fertilizers which decrease contaminants …


Soil Mission Support
Düsseldorf
Belgie / Belgique / Belgien
Frankfurt am Main
Guernsey
Luxembourg
Grand Est
Rennes
Nantes
Centre-Val de Loire
France
Schweiz/ Suisse/Svizzera Svizra
Auvergne-Rhône-Alpes
Nouvelle-Aquitaine
Torino
Occitanie
Monaco
Marseille


TERRITOIRE D'INNOVATION
DES HOMMES ET DES ARBRES
Les racines de demain
L'ambition commune d'un territoire
- Territoire d'Innovation en Grand Est -


INDUSTRIE
ÉCOSYSTÈMES
CADRE DE VIE ET BIEN-ÊTRE
SERVICES RENDUS PAR LES ARBRES
LA FABRIQUE AUGMENTÉE

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Participants: Public-Private-Academics-People

Context: Real life use context

Activities: Development Co-creation Iteration

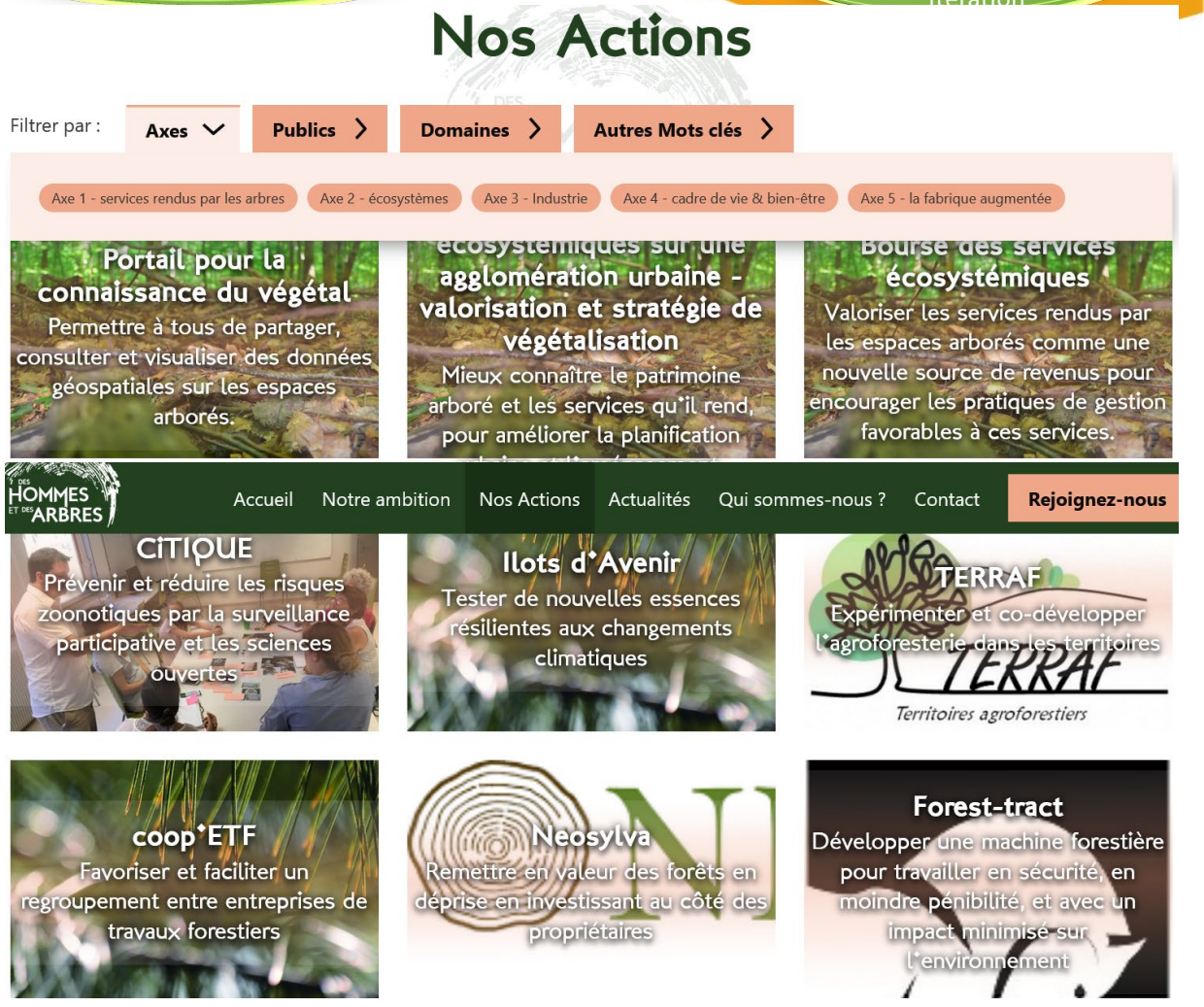
Participants

40 Action holders and 60 supporting partners: training and research & development players; local authorities, Metropolitan areas, Nature Parks; associations, third-party sites and fablabs; small and large companies; architects and developers, social landlords; inter-professional organisations, competitiveness clusters; representatives of forest owners and managers; investors and business coaches

Aims: Innovation Formal learning

Common Vision

Trees are an essential asset of our territory, in the city, in the forest and in the countryside.
Understand, preserve and develop the services they provide is a source of well-being, innovation, prosperity and ecological transformation.



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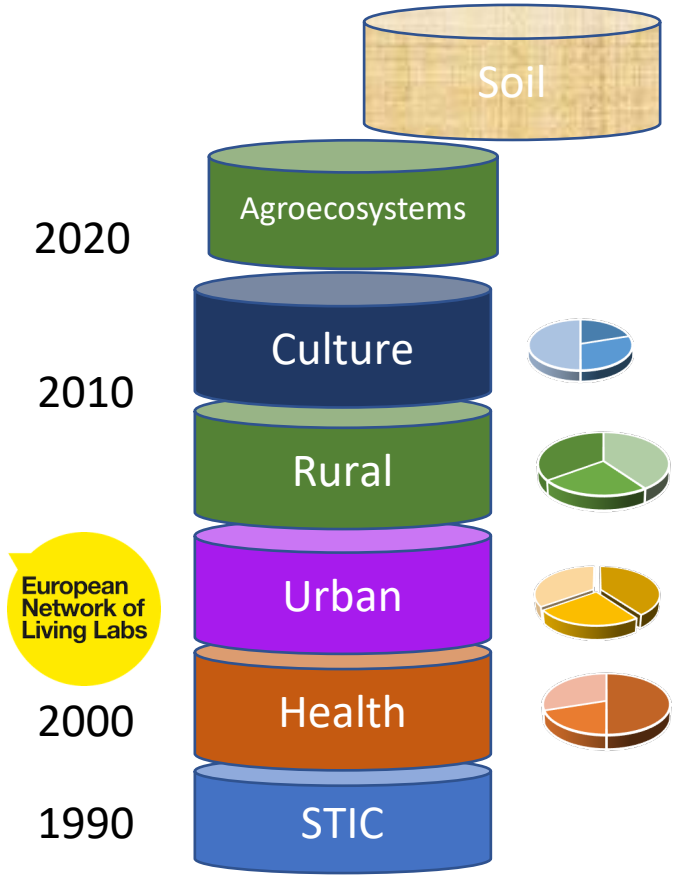
Living labs for soil health, special requests

- Aim: LLs under the same project should contribute to at least one of the eight specific objectives of the Mission and work together on thematically related soil health challenges. LLs should seek to improve soil health without moving problems elsewhere or generating negative impacts in other spheres.
- Participants: the participants should include land managers and land users, academics coming from different disciplines (including those not directly concerned by soil), industry representatives as well as a mixture of public and private body representatives in particular those involved in local policy making and governance. The involvement of citizens should also be foreseen.
- Activities: on top of activities usually developed in LLs, special attention should be put on services to extend the social, economic and environmental outcomes and impacts and contribute to soil literacy.

The future in motion



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Living lab for soil health

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The future in motion

AIM

LLs under the same project should contribute to at least one of the eight specific objectives of the Mission and work together on thematically related soil health challenges. LLs should seek to improve soil health without moving problems elsewhere or generating negative impacts in other spheres

PARTICIPANTS

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ACTIVITIES

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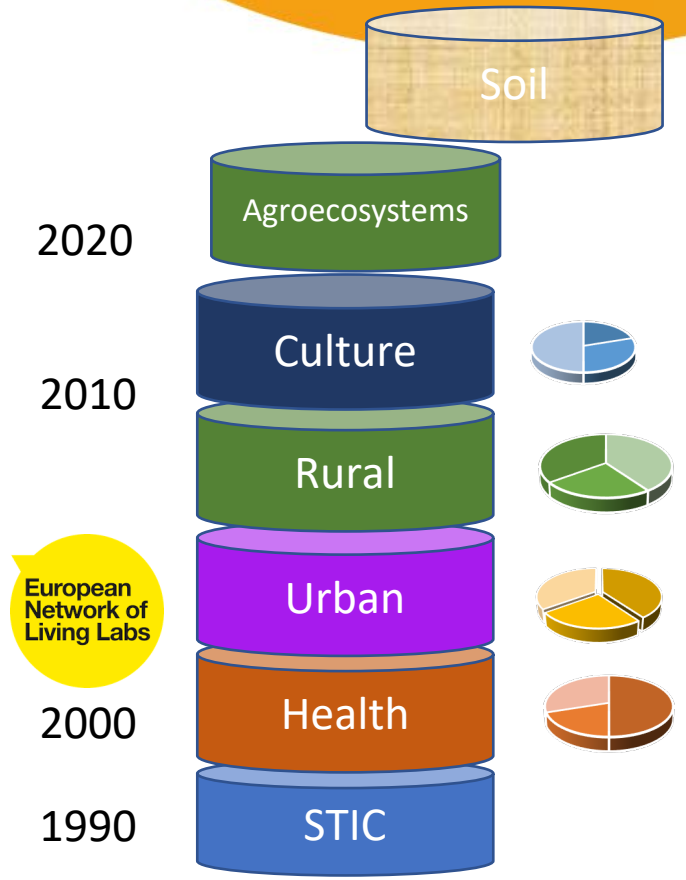

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Thank you!

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Living labs under the EU Mission 'A Soil Deal for Europe'

Jelena Vidović

Research Programme officer Mission Soil Secretariat
DG Agriculture and rural development
European Commission

22 November 2023

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Goal of the mission

100 living labs and lighthouses to lead the transition towards healthy soils by 2030

Specific objectives

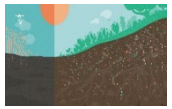
1. Reduce **desertification**
2. Conserve **soil organic carbon stocks**
3. Stop **soil sealing** and increase re-use of **urban soils**
4. Reduce **soil pollution** and enhance **restoration**
5. Prevent **erosion**
6. Improve soil structure to enhance **soil biodiversity**
7. Reduce the **EU global footprint on soils**
8. Improve **soil literacy** in society

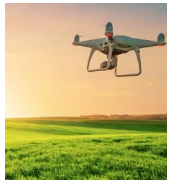
- Objectives apply to **all types of land use and all territories** and are relevant for a **range of sectors**.

Agriculture, forestry

Urban and spatial planning; housing, transport territorial development

Industries: food and beverage, pharmaceutical; decontamination, fertilisers, climate neutral products and services





Earth observation and digital industries

Nature and climate protection

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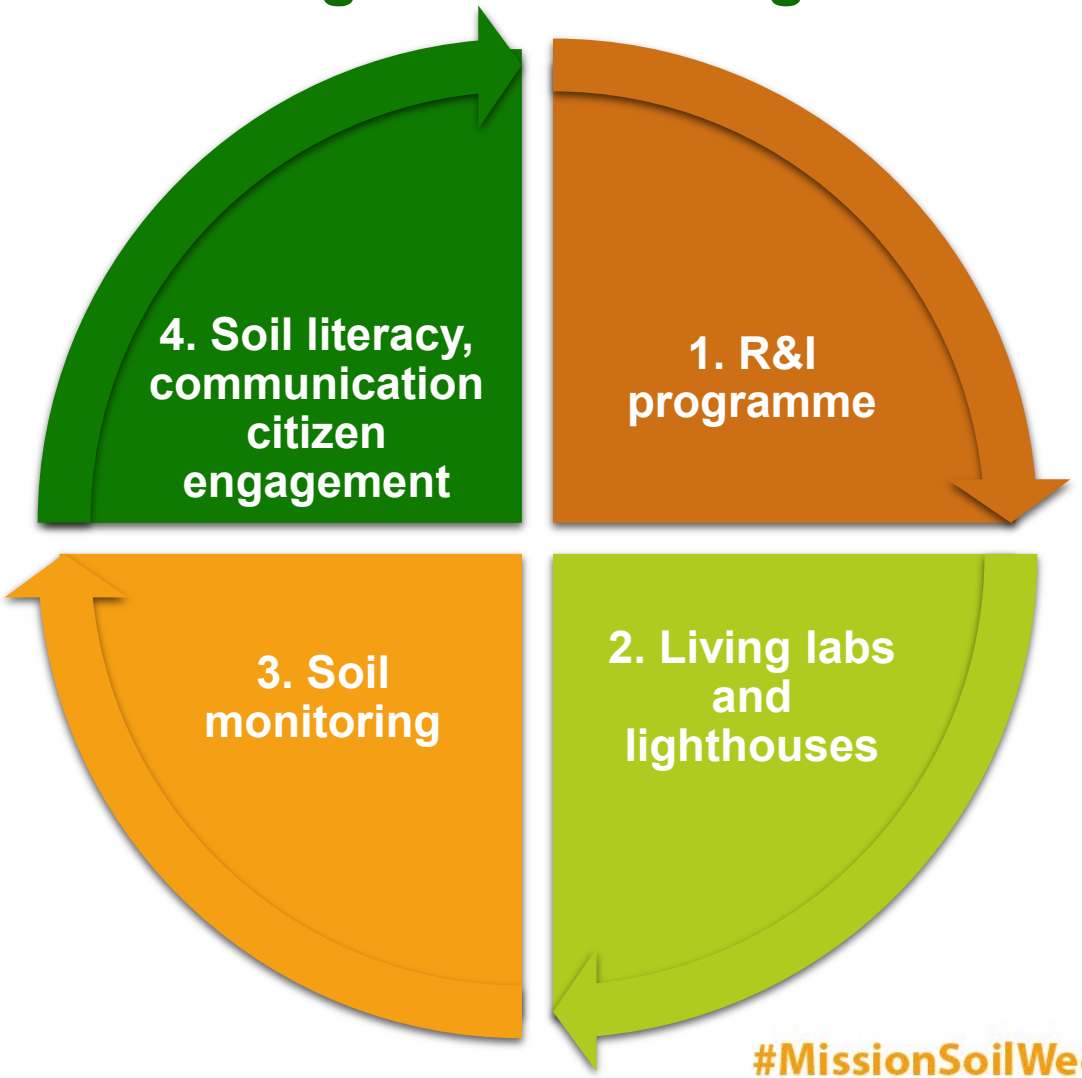
Mission implemented through four building blocks

Communication, training and advise



Knowledge, data, technologies and infrastructures

Improving and harmonizing **soil health monitoring** across Europe;

A comprehensive **network of real-life sites** for co-creating, testing, demonstrating and upscaling of solutions

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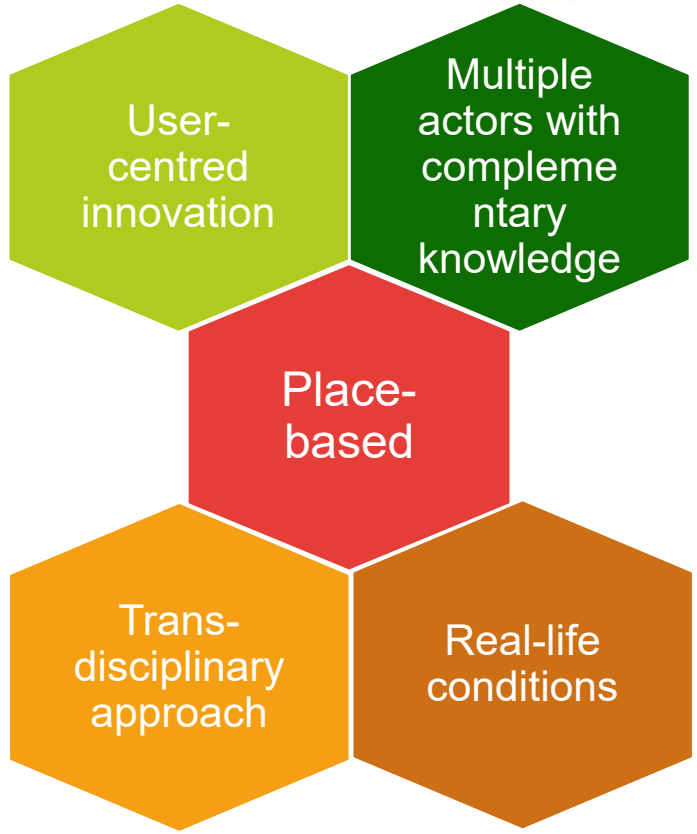
Living labs and lighthouses according to the Mission Soil (1)

Living labs are a core element of the mission

- **Aim**: innovation, co-creation, improving soil health and ecosystem services
- **Activities**: co-design/co-development/co-creation, networking, knowledge exchange (Demonstration for LH)
- **Participants**: Public-private partnership (science, policy, practice, citizens)
- **Context**: transdisciplinary, multi-method and multi dimensions, place-passed, real life, scientific set up, openness, communication, dissemination



Lighthouses are individual sites of exemplary performance

- Individual sites, such as a single farm
- Showcase good practices, training and communication

Living labs and lighthouses are key to **accelerate the adoption of sustainable practices by users** and co-developed methods adapted to the local conditions.

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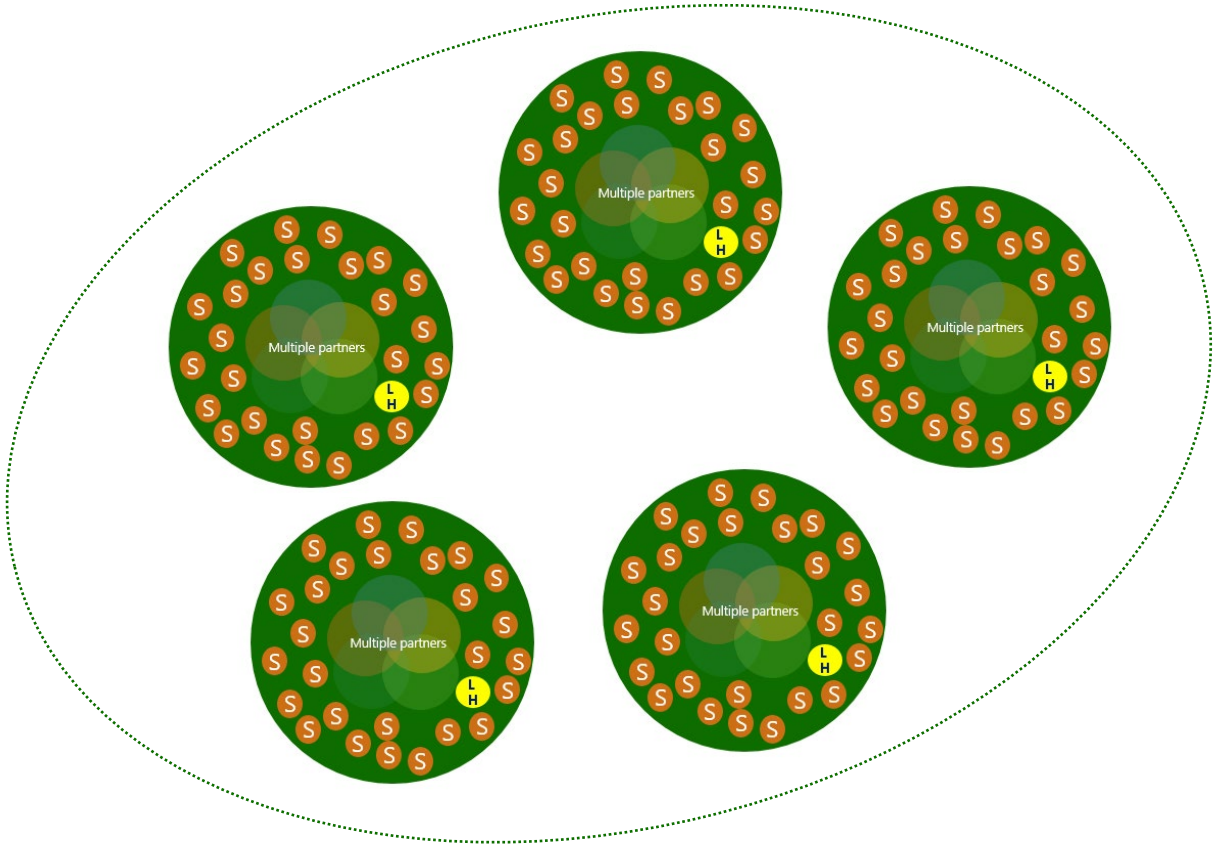
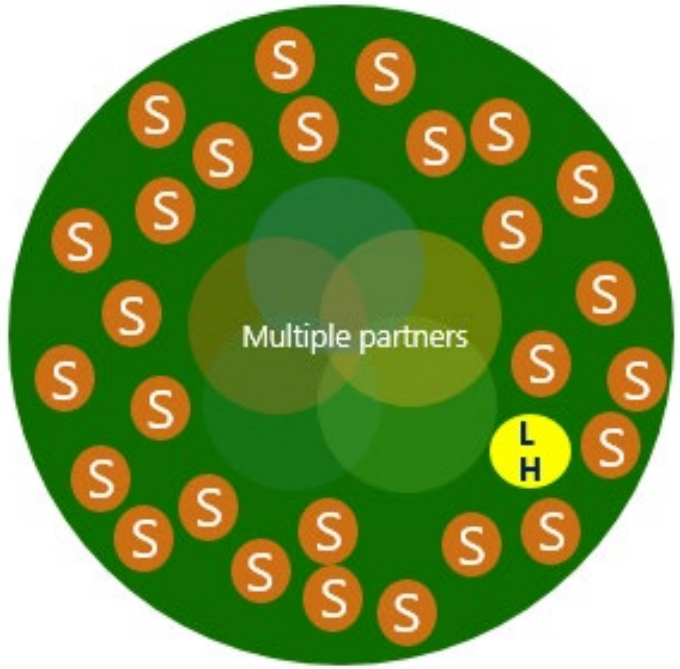
Living labs and lighthouses according to the Mission Soil (2)

1 project (LL cluster) with 5 Living labs



Each LL cluster covers at least 3 ***Member States*** *and/or* ***Associated Countries***

Each living lab with 10-20 sites



LLs can be located in ***rural or urban areas****, covering one or several land types*

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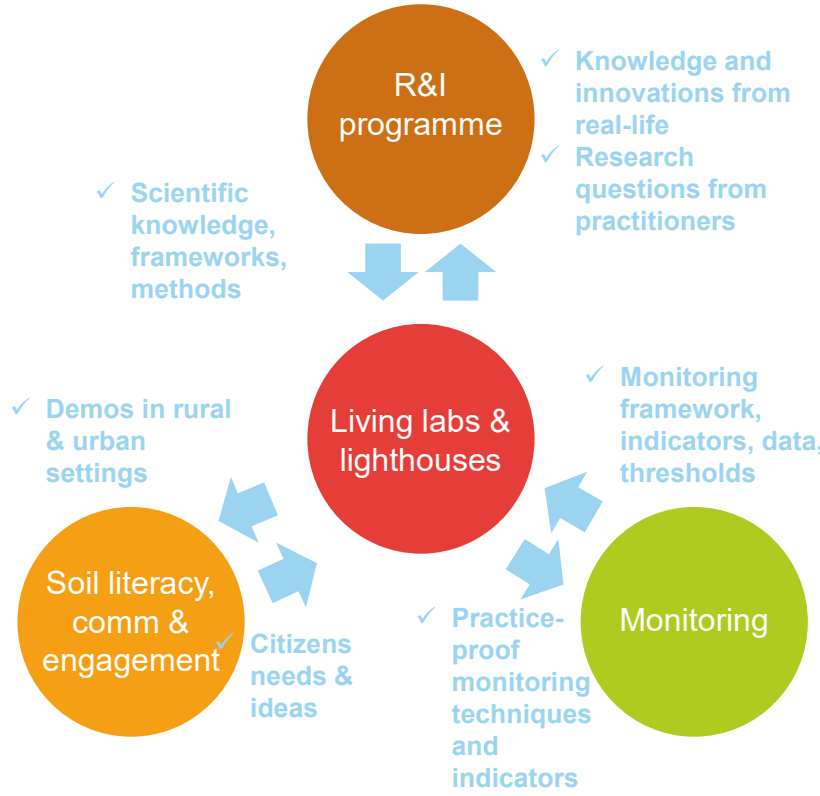
Why living labs?

- To empower a **rapid green transition**
  - Living labs have the potential to accelerate and scale up uptake of solutions

- **No 'one-side-fits-all'**: diversity of pedo-climatic conditions, cropping/production systems, cultural-socio-economic contexts
  - Solutions need to be co-created, tested, adapted and showcased on the ground

- Sustainable farming management practices **fit well with living labs principles**:
  - Adapted to local ecosystems → « Real-life testing»
  - Closing the knowledge-practice divide
  - End-users centric: involving actors at territorial level to achieve large scale impact (multi-actor approach)
  - Social and behavioural dimensions
  - Systems approach



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Living labs & lighthouses: what do we expect?

- **Greater involvement of (unusual) stakeholders**: land managers, farmers, foresters, SMEs… (FSTP)
- **Balanced network** of LLs across Europe covering major pedo-climatic areas, land uses and mission's specific objectives
- **Provide evidence of which practices** translate sustainable soil management principles and regenerate soil to healthy conditions
- 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

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Living labs gradual development across Europe

Phase 1 (2021-2024)

Work programme 2021:
Preparatory actions

- **PREPSOIL**
- **NATI00NS**

Work programme 2022:

LL Support Structure

- **SOILL**

Work programme 2023:

- **Call for creation of 1st soil health LL**

Phase 2 (2025-2026)

Expansion of LL:

Launch of successive calls for expanding the network of LL

→ Look at wide coverage of geographies (EU and AC), themes (Mission's objectives) and land uses (agricultural, forest, urban, industrial)

Phase 3 (2027 onwards)

Scaling up of LL:

Launch of last calls for setting LL

→also measures to facilitate the mainstreaming, continuation and sustainability of the LL beyond the Mission timeframe

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Living labs gradual development across Europe: Phase 1(2021-2024)

WP 2021: Preparatory Actions

- PREPSOIL: Engagement, co-learning, exchanges, outreach... and identification of **specific regional soil health needs** which may result in priority actions to be implemented in LL.
- Nati00ns: National engagement events, helpdesk service, matchmaking platform, coaching sessions, capacity building material, factsheets, thematic events and webinars

WP 2022: LL Network Support Action

- SOILL will act as a one-stop shop to assist new applicants as well as the already created LL under the Soil Mission
  - ✓ Give **advice**, help to **harmonise** approaches within and across LL, as well as enhance **exchange** of experiences
  - ✓ **Monitor** and assess activities to **report** on the main developments and outcomes (every 6 months) as well as progress achieved (every 12 months).

WP 2023: 1st Living Labs

- Launch of 1st call for establishing a transnational cluster of LL

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First call for co-creation of LL projects (WP23)

Co-creating solutions for soil health in Living Labs

- HORIZON-MISS-2023-SOIL-01-08
- HORIZON-RIA HORIZON Research and Innovation Actions
- Budget: 36 M€
- Indicative number of grants: 3
- Proposals: 37

Carbon farming in living labs

- HORIZON-MISS-2023-SOIL-01-09
- HORIZON-RIA HORIZON Research and Innovation Actions
- Budget: 12 M€
- Indicative number of grants: 1
- Proposals: 7

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Living labs & lighthouses: achieving Mission Soil objectives

- Improved **awareness by land managers of soil health challenges** (objectives 1-6) and uptake of innovative solutions in living lab areas and beyond;
- **Measurable improvement of soil health**, at least in the living lab areas, as manifested by criteria developed under the soil health monitoring programme for mission objectives 1-6;
- **Increased social capital** (norms, networks, relations between actors) **in regions where living labs have been developed**, triggering further positive long-term developments in soil health and ecosystem services related domains;
- **Improved citizen awareness** in the regions where living labs have been developed

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Thank you!

For further information and questions please contact the Mission Secretariat:

EU-HORIZON-MISSION-SOIL@ec.europa.eu

Mission A Soil Deal for Europe:

http://ec.europa.eu/mission-soil

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Harmonised support to Living Labs & Lighthouses: ENoLL & SOILL

Dolinda Cavallo

International Project Manager, ENoLL

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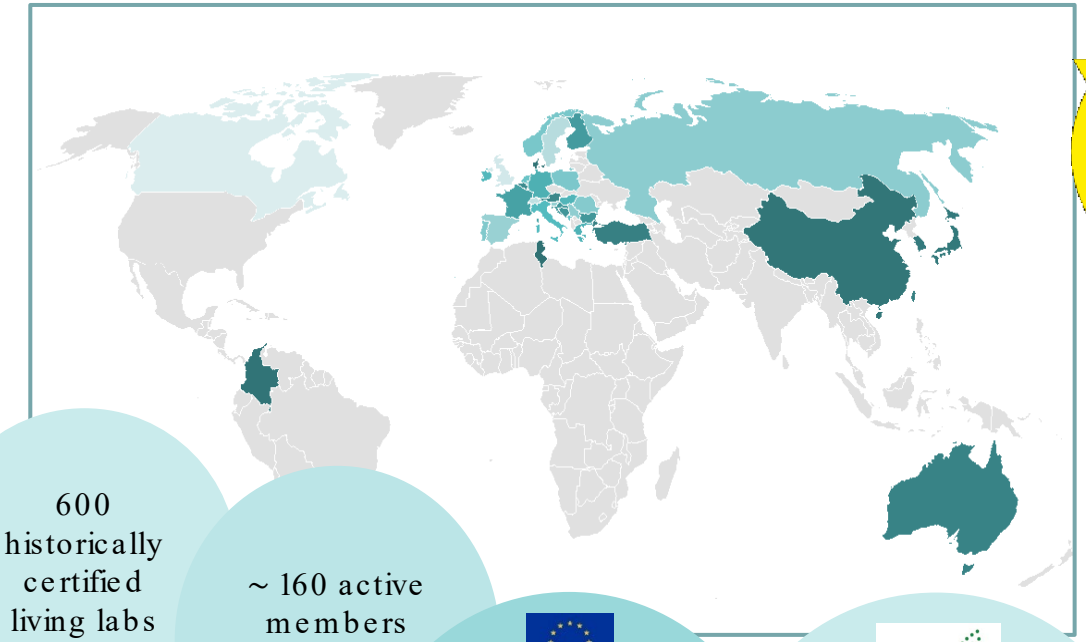
ENoLL – European Network of Living Labs

ENoLL is the international non-profit association of certified Living Labs



600 historically certified living labs

~ 160 active members (89% in Europe)

5 continents 36 countries

Active in 20+EU-funded projects to support LL creation and strengthen the impact of LL

ALL Ready

PREP SOIL

NATIOONS

SOILL

European Network of Living Labs

Living Labs are **open innovation ecosystems** in **real-life environments** based on a **systematic user co-creation approach** that integrates research and innovation activities in communities, placing **citizens at the centre of innovation**

- Founded in 2006 under the auspices of the Finnish European Presidency
- ENoLL focuses on facilitating knowledge exchange, joint actions and project partnerships among its members
- Its aim is to **promote** the Living Labs concept, **support EU policies, enhance Living Labs and their sustainability** and **enable their implementation at a global level.**
- ENoLL growing community includes members that operate by the main living lab principles such as **multi-stakeholder co-creation, iterative active user involvement** and **real-life intervention.**

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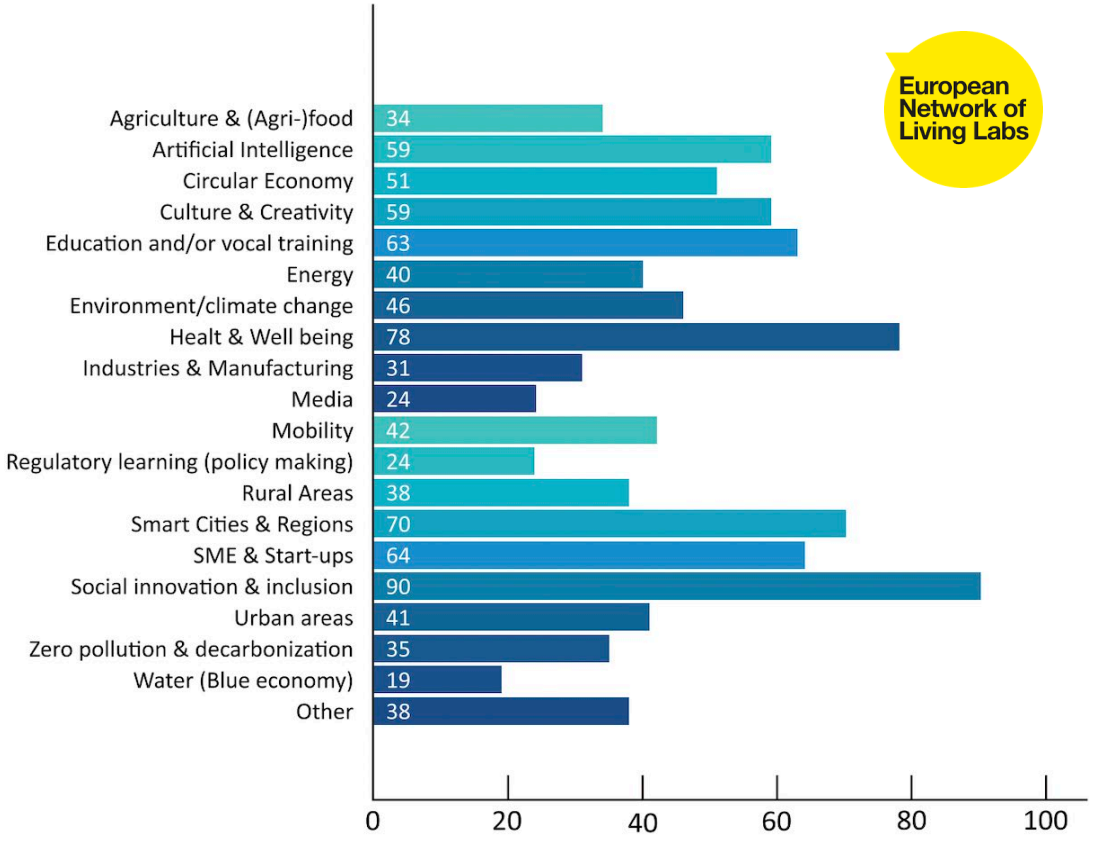
ENoLL Living Labs area of work & services



Multiple areas of work & transversal approach

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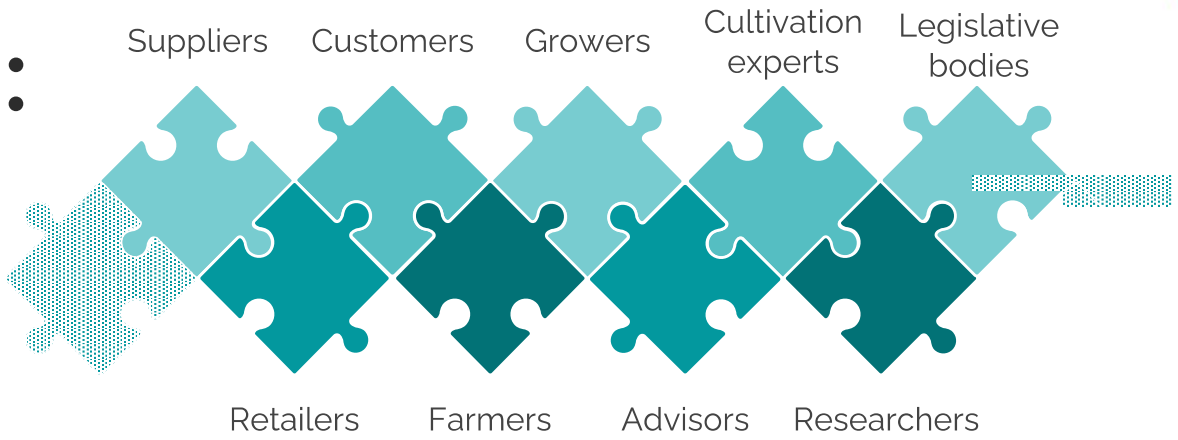
Living Labs: agri-food



Discovery Center

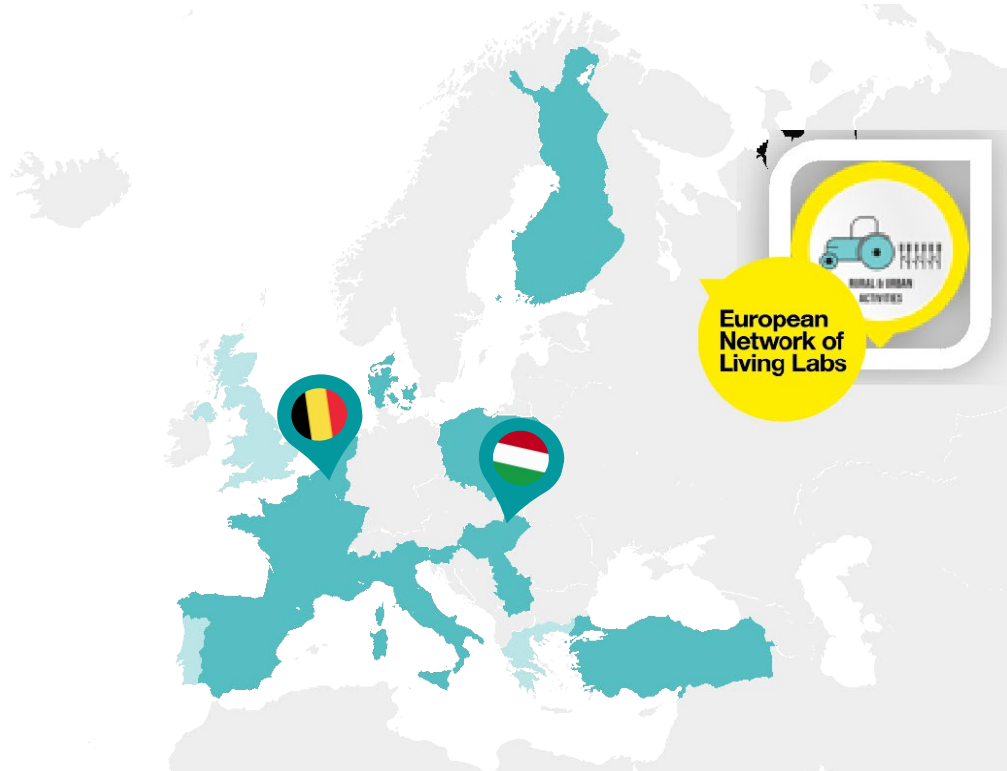
Hungary

The Discovery Center LL aims to become a prominent research network and hub for sustainable **soil management** and **precision agriculture**, encompassing the core environmental conditions of the Carpathian basin. The LL is dedicated to involving users from diverse stakeholder groups through its inclusive approach, fostering collaboration among users and research ideas. It places a strong emphasis on employing well-defined and documented methods and activities..

Agrotopia

Belgium

The living lab 'Agrotopia' is supported by the 9000 m² **Agrotopia rooftop research greenhouse** on top of the agricultural market in Roeselare. 6000 m² cultivation area, a compartment for multilayer indoor growing with artificial lighting, and a 12 m high vertical compartment allow to co-create, develop, validate, and demonstrate innovative best practices for vegetable hydroponic systems.



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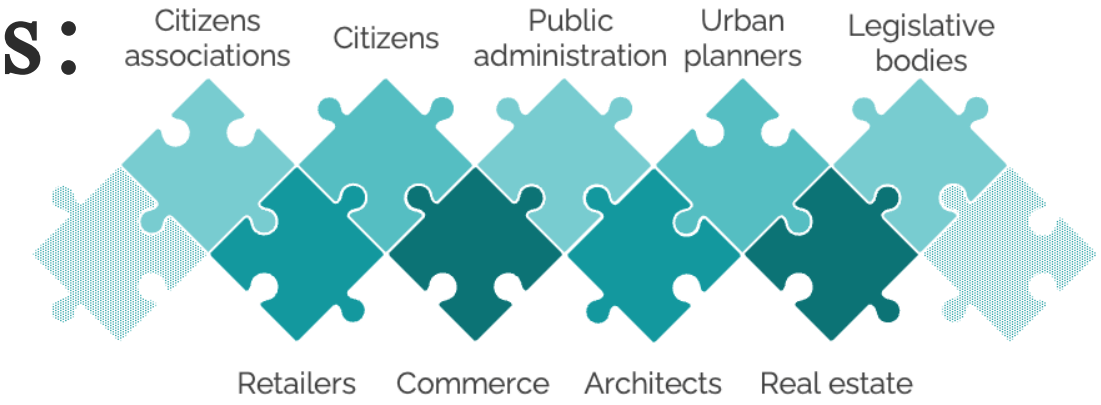
Living Labs: urban



Eindhoven Living Lab

Netherlands

EINDHOVEN

The city of Eindhoven has a strong commitment towards its citizens to enhance the quality of life, by mobilising the creative power of **triple helix parties and citizens/ end users** all together. Bringing together partners on the one hand and creating/ contributing to structures in which partners can meet on the other hand are the two main points that are to characterise 'Eindhoven Living Lab', which is the 'umbrella approach' to incorporate these Living Labs and future ones into one, more integrated and integral approach.

Torino City Lab

Italy

TORINO CITY LAB

Torino City lab works as a real-life laboratory aimed at creating simplified conditions for companies interested in conducting **testing in real conditions** of **innovative solutions for urban living**.
Since 2021, the "House of Emerging Technologies of Turin - CTE NEXT" has been inaugurated, which grafts on Torino City Lab, expanding its purposes towards the acceleration of start-ups and technology transfer in the field of emerging technologies enabled by 5G in verticals of interest to Turin.

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ENoLL: a path to grow

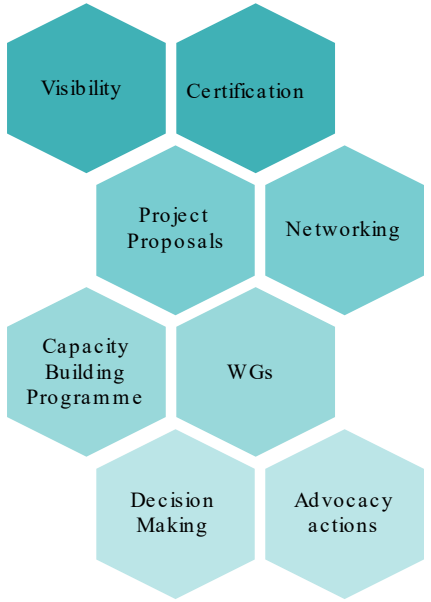
MISSION

ENoLL mission is to be an **Ambassador** of European values of **co-creation** and **open innovation**, to provide value to its **members** and external **stakeholders** by offering them **opportunities** to develop their **capacities & knowledge** in order to strengthen them in **developing and scaling-up** impactful innovative products & services and expanding their own value to their own stakeholders

VISION

ENoLL aims to be the leading organization empowering the **global** development of Living Labs as **enablers** of **impactful** open innovation ecosystems where everyone can co-create and innovate via cross-border & cross-sectoral **collaboration** in an **inclusive** way

MEMBERS VALUE OFFER



Certification & Labelling
Quality evaluation procedure, formal certification

Capacity Building
Learning programmes for LL creation and ENoLL certification

Working Groups
Knowledge exchange & collaboration on hot topics

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ENoLL Working Groups

ENoLL Working Groups focus on key topics of interest within the ENoLL Community. They are open to members and externals who are interested in working with others in a specific domain.

- Agriculture, Agri-food & Rural Living Labs
- Culture & co-creativity
- Digital Sustainability
- Energy & Environment
- Health & Well Being
- Mobility
- Joint Working Group on Living labs as regulatory learning tools
- Social Impact of AI
- Social Innovation & Digital Rights
- Joint Working Group with the European Commission on Digital sustainability, Zero pollution

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ENoLL Certification and Labelling

All Living Lab organisations that wish to become a member of ENoLL undergo a **rigorous quality evaluation procedure**.

Once they are officially admitted within the network, they are granted the **ENoLL certification**, meaning that they are **formally labelled as a Living Lab**. ENoLL is the only institutional body to be entitled to assess the maturity of a Living Lab.

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ENoLL's road to harmonization

What?

A new ENoLL evaluation framework structure to evaluate Living Labs considering all three levels of a Living Lab (macro-meso-micro - Schuurman, 2015)

Why?

Assess the maturity of all diverse types of Living Labs to help them becoming more impactful & sustainable

Which applications?

- Support structure for harmonised experts' evaluation of LLs across EU projects
- Support structure for experts' evaluation of LLs for ENoLL certification
- Self-assessment tool for LL maturity
- Benchmarking tool of LL across borders and sectors

The harmonized framework

1. **Strategy** (macro)
   - Governance
   - Business model
   - Culture & collaboration
2. **Operations** (all levels)
   - Human Resources
   - Operations
   - Equipment & infrastructure
3. **Openness** (all levels)
   - Innovation partnerships, projects & processes
   - Ownership of results
4. **Users & reality** (all levels)
   - User-centricity
   - Lifecycle & real-life
   - Tools & methods
5. **Impact & value creation** (all levels)
   - Co-created values
   - Impacts
6. **Stability & harmonization** (macro)
   - Stability
   - Harmonization & scale-up

Collaborate with us!

Koen Vervoort
ENoLL Sr Stakeholders Strategist

VITALISE · water mining · REwaise · OPEN LAB · PREP SOIL

https://www.researchgate.net/publication/371315414_Harmonizing_the_evaluation_of_living_labs_a_standardized_evaluation_framework

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Living Labs EU-wide recognition

22 topics within **Horizon Europe** explicitly ask to set-up/ use Living Labs

Living Labs recognised as a research infrastructure in the **European Research Area**

Joint Working Groups ENoLL & European Commission

Living Labs cited as one of the five flagships of the **New European Innovation Agenda**

Partnership for Agroecology

Structure and support a network of Living Labs and research infrastructures to accelerate the transition towards agroecology throughout Europe

A Soil Deal for Europe Mission

Creation of 100 Living Labs and Lighthouses in Europe, to lead the transition towards healthy soils by 2030

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Soil Health Living Labs: Criteria, principles, and synergies

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 and long-term setup for ecosystem assessment**
- **Openness,** communication, dissemination

Open innovation
Co-creation

Contribution to Mission Specific Objectives, indicators

Quadruple Helix
Citizen science

Multi-method approach

Real life setting

Set governance, business model

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Living Labs for Soil Health

PREPSOIL

Preparing for the 'Soil Deal for Europe' Mission

July 2022 – June 2025
GA 101070045

prepsoil.eu

- Taxonomy & features specification
- Identification & mapping
- Model business plan
- Service package

NATI00NS

National engagement activities to support the launch of the Mission 'A Soil Deal for Europe' 100 LLs and LHs

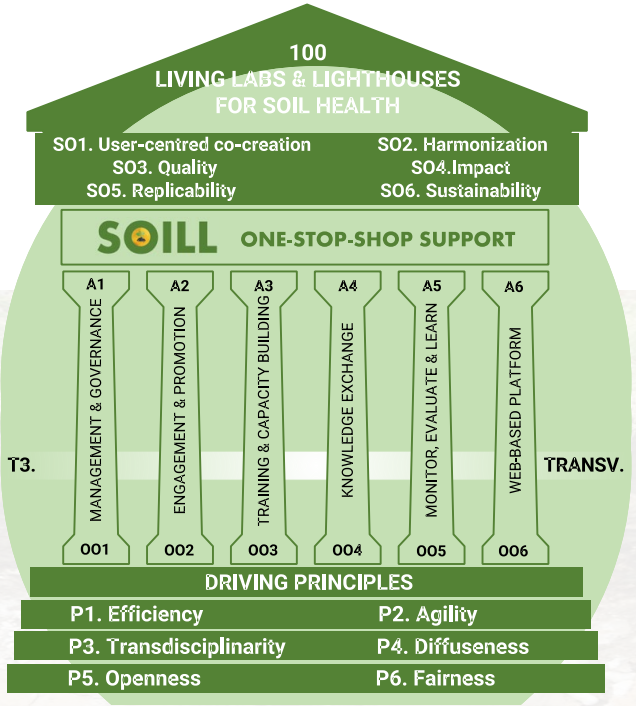
November 2022 – October 2024
GA 101090738
nati00ns.eu

- National engagement sessions
- Supporting applicants
  - Coaching
  - E-learning & capacity building
  - Matchmaking
  - Helpdesk

SOILL

Support structure for Soil Health Living Labs

January 2024 2024 – December 2028
GA 101112782



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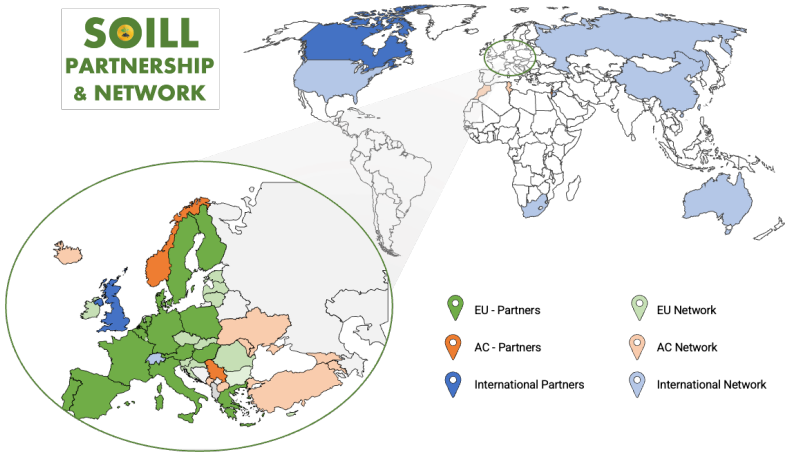
SOILL Support Structure for SOIL Living Labs

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 labs 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.



Calls for SHLLs

SOILL

2024 2025 2026 2027 2028 2029 2030

SOILL-Startup

Future Specific Agreements

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SOILL-Startup

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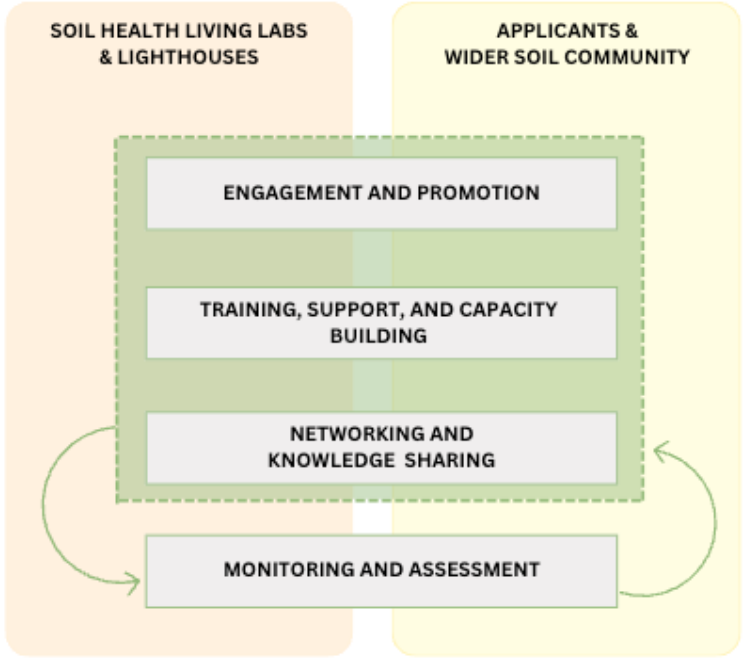
Startup of the Support Structure for SOIL Living Labs

To **co-design** and **launch the SOILL one-stop structure** for coordination, support, enlargement, and promotion of the network of 100 Soil Health Living Labs and Lighthouses in **participatory collaboration** with the **first waves** of Living Labs and Lighthouses and **key stakeholder and initiatives**.

- Living Labs & Lighthouses network
- Applicants
- Soil community
  - EU projects and initiatives
  - Thematic associations
  - NCPs & Soil advisors
  - Research infra
  - Policy makers



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SOILL-Startup

What to expect?

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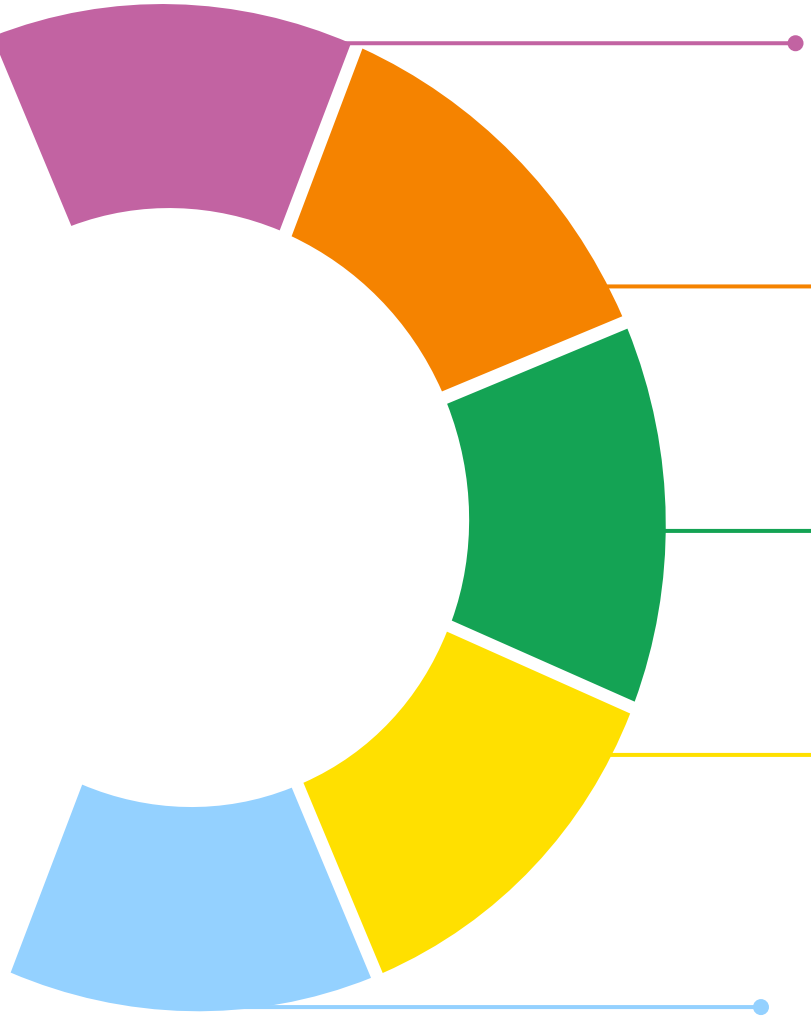

Coordination and support

- SOILL Hub – collaboration / knowledge
- Catalogue of LLs/ LHs
- Helpdesk
- Specific Points of contacts

Engagement and promotion

- Annual engagement event/ conference
- Embedded community events
- Applicants engagement events
- Publishable catalogue
- Dedicated webpages
- Promotional videos

Training, support, and capacity building

- Network training – annual summer school
- Training tools catalogue
- Applicant trainings
- Individual training/ coaching

Networking and knowledge sharing

- Mapping of stakeholders &applicants
- Mapping of common areas &WG launch
- Annual mutual learning events
- Online collaborative space
- Mutual visits organisation
- Matchmaking

Monitoring and assessment

- Framework for monitoring and assessment (LL/ LH +projects KPIs)
- Recommendations and guidelines
- Periodic progress monitoring

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SOILL-Startup

What's in for…

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Soil Health Living Labs & Lighthouses

- Support in creating/strengthening synergies and collaborations
- Facilitated exchange of knowledge, methods, and experiences.
- Dedicated collaboration space and marketplace.
- Set of tools and training to support operations and scale-up.
- Regular progress monitoring, reporting, and recommendations
- Tailored CB programme and dedicated helpdesk and point of contacts.
- Support in day-to-day operations and harmonization approach.
- Support in developing long-term strategies
- Promotion of the LL/LH, its activities/solutions, achievements, and results.

Applicants

- Up-to-date information on Mission LL concept and implementation, funding, and collaboration opportunities.
- Matchmaking tools and opportunities.
- Dedicated helpdesk.
- Dedicated Capacity Building and mentoring programme.
- Guidelines and recommendations.

NATIOONS

2025

Soil community

- Centralised point of contact and of information on the SHLL/LHs network.
- Regular up-to-date information on SHLL/LHs, progress, activities, solutions, achievements, and results.
- Facilitated exchange of knowledge, methods, and experiences.
- Identification of collaboration opportunities for further development, uptake, and scale-up.
- Access to marketplace and matchmaking tools.
- High-quality advocacy, delivery of policy support documents and recommendations to encourage the political buy-in to support SHLL/LHs development.

Thank You

Our contacts

Dolinda Cavallo

International Project Manager –
dolinda.cavallo@enoll.org

More info:

- **SOILL & SOILL-Startup**
  SoilFPA.Coordinator@enoll.org
- **Projects & Proposals**
  projects@enoll.org
- **Membership, certification & more**
  info@enoll.org
- **Capacity Building**
  capacitybuilding@enoll.org

European Network of Living Labs

https://enoll.org/

info@enoll.org

https://www.linkedin.com/company/enoll-european-network-of-living-labs-

https://twitter.com/openlivinglabs

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Thank you!

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@EUAgri

@EUAgri
@EUgreenresearch

@euagrifood

European Research Executive Agency (REA)

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Q&A

Muriel Mambrini-Doudet

Director Research and Program Evaluation, IRD

Mission Soil Board member

Dolinda Cavallo

International Project Manager

ENoLL

Jelena Vidovic

Research Programme Officer

DG Agriculture and rural development
European Commission

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Our speakers

Antonio Jose Manzaneda Avila

Professor, Coordinator of the SOIL O-LIVE project

Institute for the Research of Olive and Olive Oil (INUO) in the University of Jaén, Spain

Judit Berényi Üveges

Lead researcher, Ph.D

Hungarian Research Institute of Organic Agriculture

Christophe Schwartz

Professor at Université de Lorraine

Director of the Department of Soil and Environmental Sciences, INRAE

Advisor for soils at the French Ministry of Higher Education and Research

John Gilliland

Agriculture and Environmental Advisor

Brook Hall Estate, ARC Zero & Queens University Belfast

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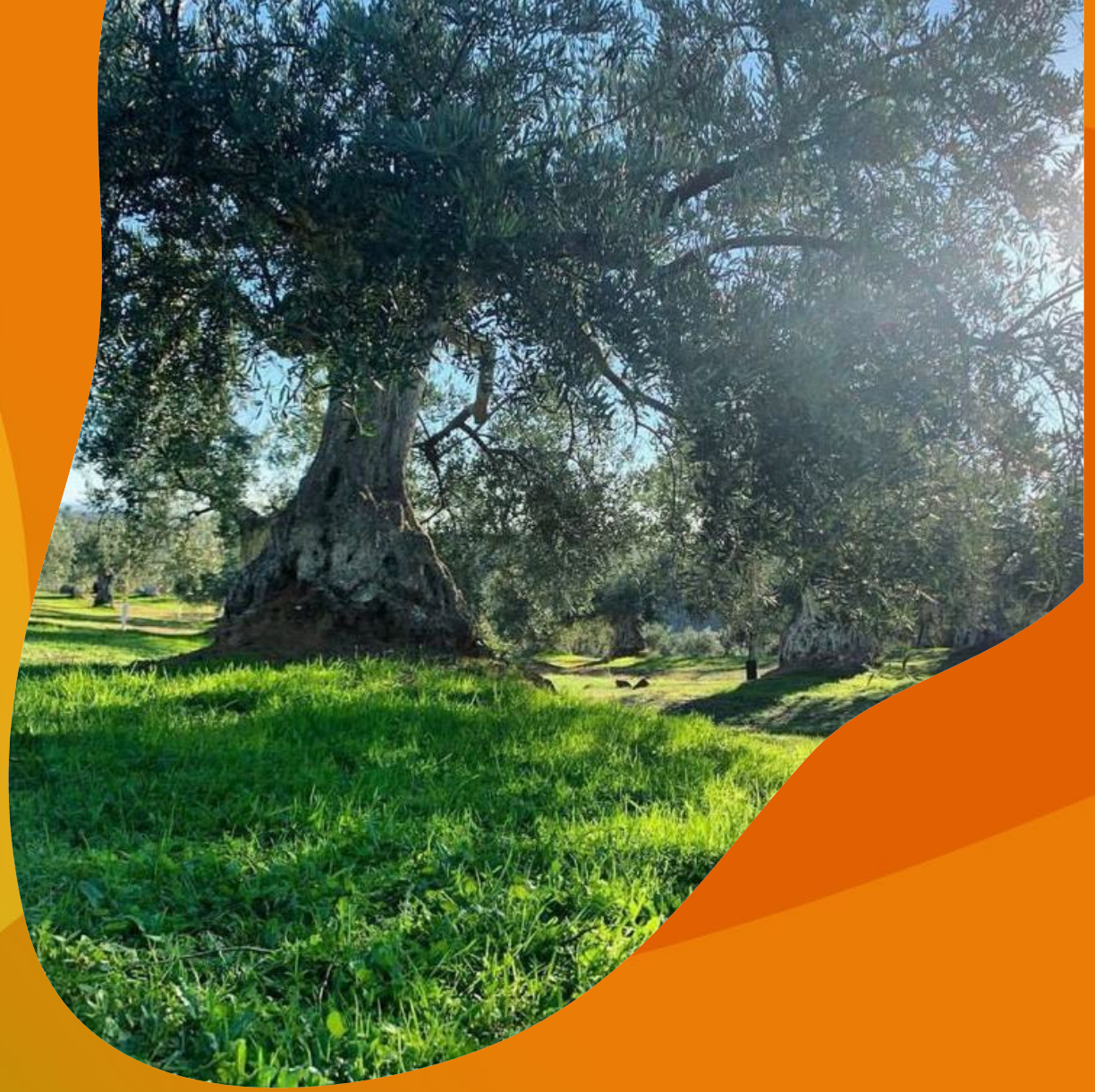
A LIVING LAB FOR OLIVE CULTIVATION IN EUROPE: INSIGHTS FROM SOIL O-LIVE

Antonio J. Manzaneda

Universidad de Jaén

23/11/2023



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SOiL O-LiVE

SOIL BIODIVERSITY AND FUNCTIONALITY OF MEDITERRANEAN OLIVE GROVES

Call: HORIZON-MISS-2021-SOIL-02-03
Linking soil health to nutritional and safe food

Project Information

SOIL O-LIVE
Grant agreement ID: 101091255

DOI
10.3030/101091255

Start date
1 January 2023

End date
31 December 2027

Funded under
Food, Bioeconomy Natural Resources, Agriculture and Environment

Total cost
€ 6 988 660,00

EU contribution
€ 6 988 660,00

Coordinated by
UNIVERSIDAD DE JAEN
Spain

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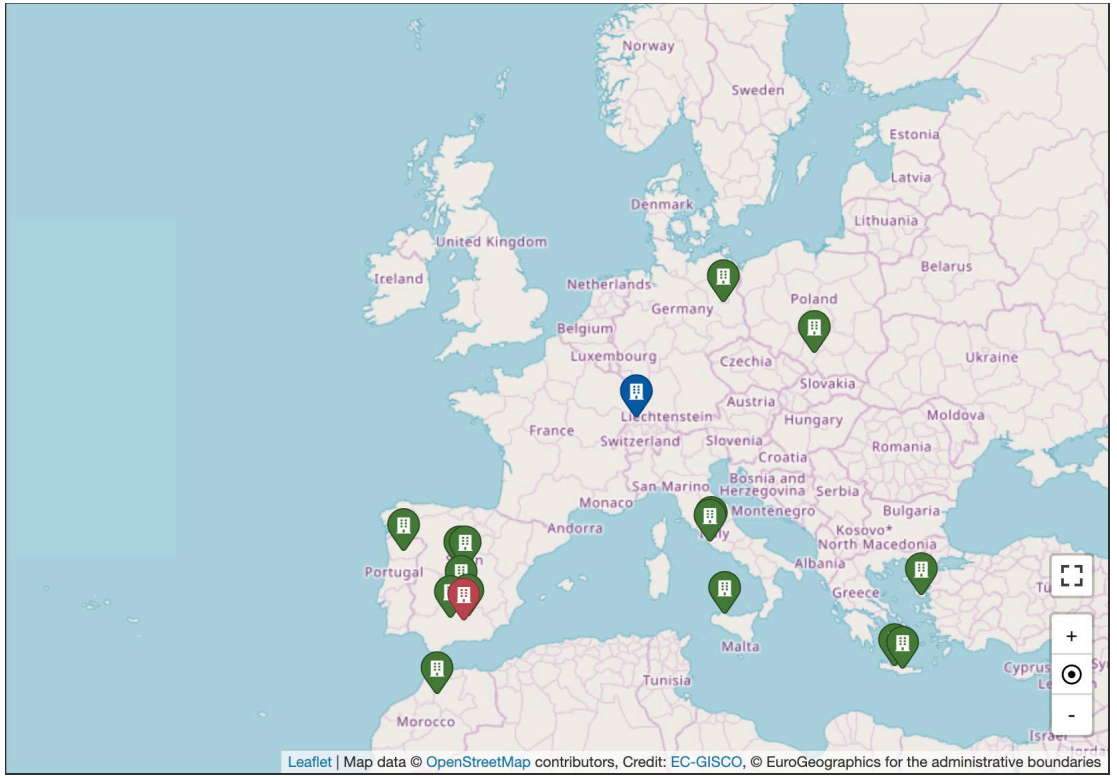
Participants

- UNIVERSITA DEGLI STUDI ROMA TRE
- FREIE UNIVERSITAET BERLIN
- UNIVERSIDAD DE CASTILLA - LA MANCHA
- PANEPISTIMIO AIGAIOU
- CSIC
- UNIVERSIDADE DE TRAS-OS-MONTES E ALTO DOURO
- ASOCIACION ESPANOLA DE NORMALIZACION
- ELLINIKO MESOGEIAKO PANEPISTIMIO
- ELLINIKOS GEORGIKOS ORGANISMOS – DIMITRA
- UNIWERSYTET SLASKI W KATOWICACH
- UNIVERSITA DEGLI STUDI DI PALERMO
- CONSIGLIO NAZIONALE DELLE RICERCHE
- ECOLE NATIONALE D'AGRICULTURE DE MEKNES
- DEOLEO GLOBAL SA
- NUTESCAL S.L.
- UNIVERSITY OF BASEL



JRC EUROPEAN COMMISSION

INTERNATIONAL OLIVE COUNCIL

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Olive is the most important fruit tree in Europe, particularly in the Mediterranean Basin, with significant socioeconomic impact.

Olive produces edible fruits and high-quality, storable oil – a crucial part of the Mediterranean diet

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https://agridata.ec.europa.eu/extensions/DashboardOliveOil/OliveOilProduction.html

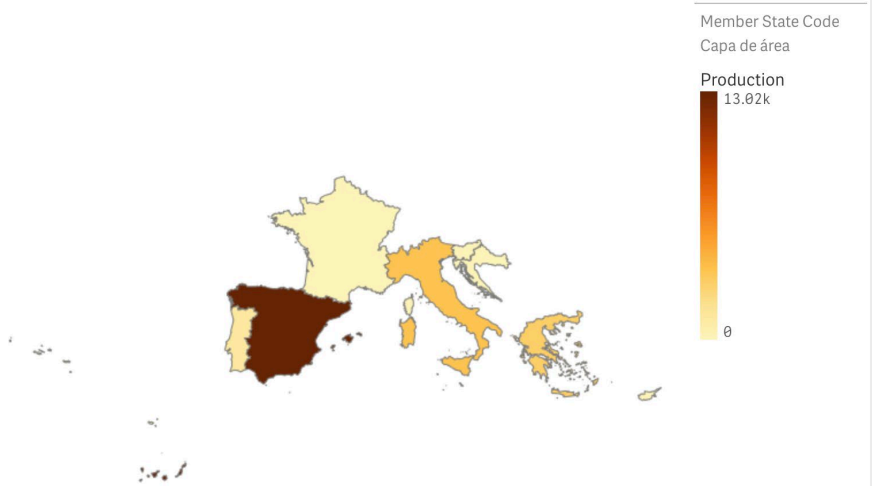
European Commission | **Olive oil production**
Directorate-General for Agriculture and Rural Development

SELECT VIEW: **Absolute**

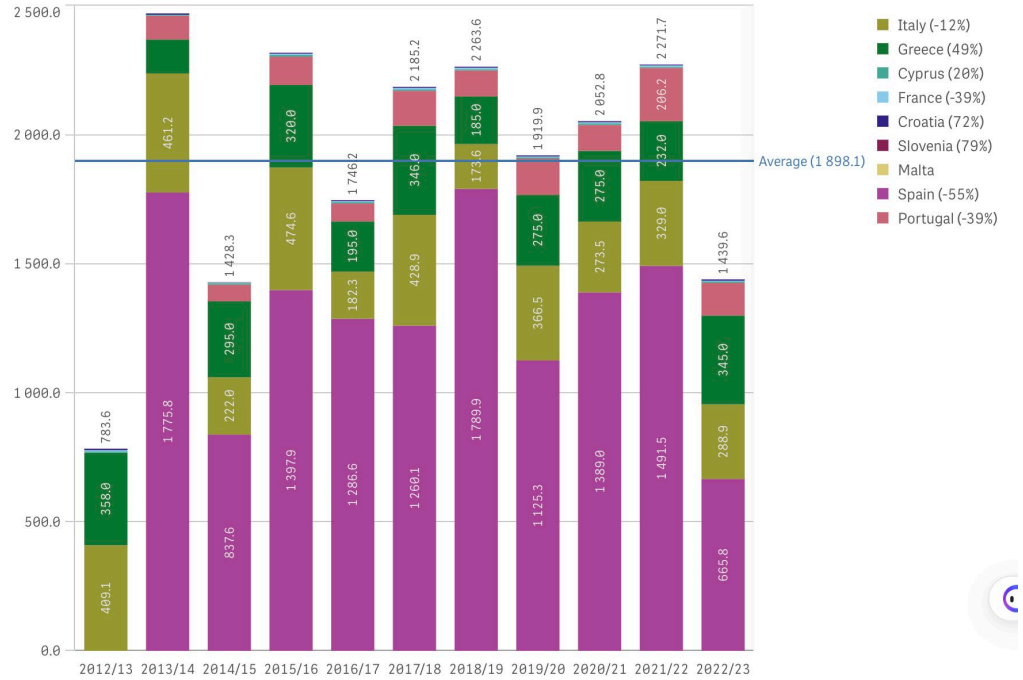
Member State | Marketing Year | By Year | Production Quantity | Latest production data update: 30/10/2023 | Re-set Selections | Print to PDF

Map | Pie

Geo distribution of Olive Oil production - Absolute total values
(based on production by (1000t)) for years 2009-2022



Olive Oil production
(based on production by (1000t)) for years 2009-2022



(variation 2022/23 vs 2021/22)

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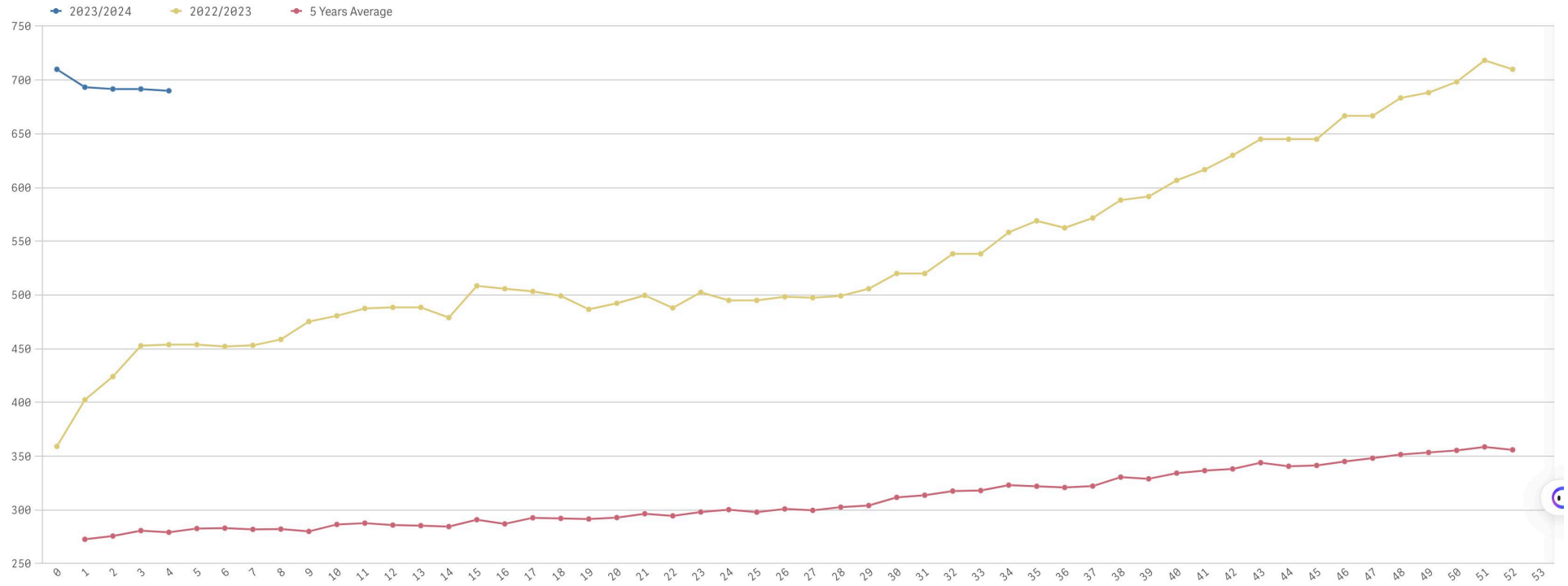
European Commission | **Olive oil prices**
Directorate-General for Agriculture and Rural Development

SELECT VIEW: **Period Comparison**

Marketing Year	Member State	Market	Product
2023/2024	Spain	Badajoz (ES431)	Virgin olive oil (up to 2%)

Reset Selections | Download to PDF

Spain - Virgin olive oil (up to 2%) - Badajoz (ES431)
(€/100kg)



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Evolution of land dedicated to olive growth (hectares)

YEAR	WORLD	EUROPE	(%)
1981	5.999.445	3.356.978	55.95
1991	7.432.408	4.311.989	58.2
2001	8.441.532	4.775.994	56.6
2011	10.067.577	4.870.977	48,4
2021	10.338.179	5.045.169	48.8

https://www.fao.org/faostat/en/#data/QCL

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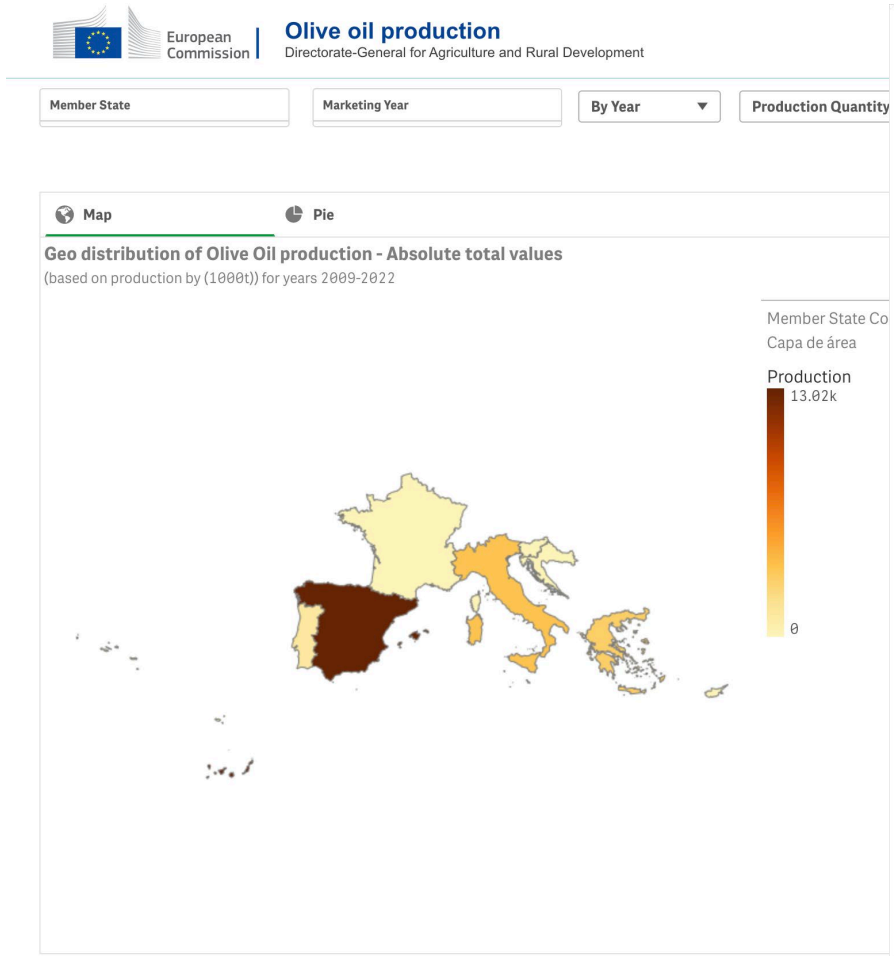
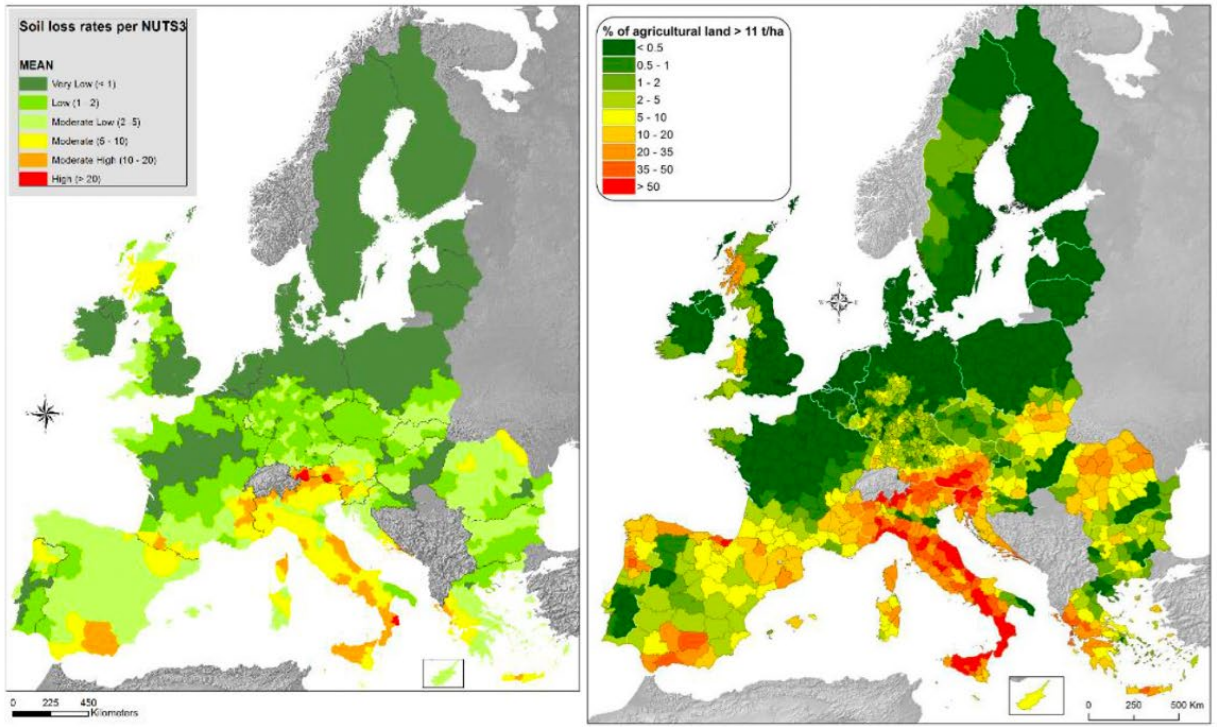
Environmental issues – Soil health





Soil erosion by water (tonnes per ha per year), 2010, EU-28, NUTS 3 (left) and Severe soil erosion in agricultural lands (right) - % of agricultural land with > 11t/ annually.
Source: Joint Research Centre, European Commission

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Environmental issues – Strong soil erosion

29-47 tones of soil x ha yr^{-1}

29- 40% of fertile soil

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Environmental issues – Poor management

Soil pollution copper & pesticides
Soil compaction
Poor carbon stock
Salinization

Likely:
Excess of N
Diffuse pollution – Microplastics

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SOIL O-LIVE
SOIL BIODIVERSITY AND FUNCTIONALITY OF MEDITERRANEAN OLIVE GROVES

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To perform the first rigorous diagnostic of the whole environmental situation of olive orchard soils at a broad scale, comprising the most important areas and agronomic modes of olive production across the Mediterranean region and its relationships to olive oil quality across the food chain.

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SPECIFIC GOALS

GOAL 1:

- To analyze the impact of pollution and land degradation on soils from olive groves in terms of multi-biodiversity and ecological function at different levels of organization and scales.

GOAL 2:

To investigate the relationship of soil health status with the quality and safety of olive oil.

GOAL 3:

To implement effective soil amendments and cutting-edge ecological restoration practices that promote manifest soil biodiversity and functionality enhancements that should be eventually translated to improvements in olive oil quality and safety.

GOAL 4:

To define rigorous ecological thresholds
that allow the implementing future explicit norms and regulations to design a novel future certification for healthy soils in European olive oil.

lWeek #MissionSoil #EUMissions

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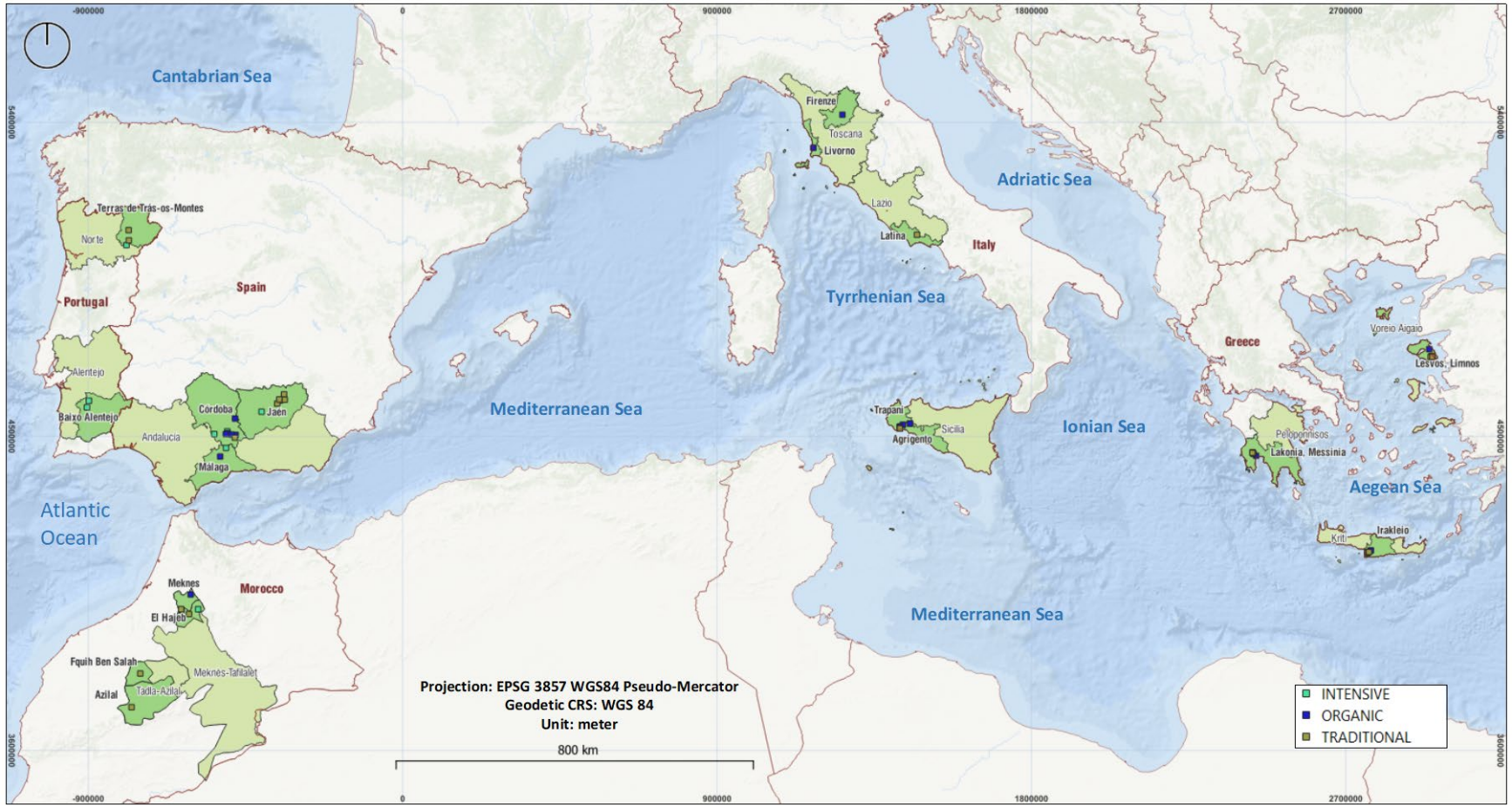
SOIL O-LIVE
SOIL BIODIVERSITY AND FUNCTIONALITY OF MEDITERRANEAN OLIVE GROVES

EUROPEAN MISSION SOIL WEEK



52 selected olive orchards

We will be able to develop measurable key performance indicators (KPIs) that elicit the connection between soil health and the main food quality-related characteristics for olive oil.

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Thank you!

amavila@ujaen.es

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soilolive.eu

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@EUAgri

@EUAgri
@EUgreenresearch

@euagrifood

European Research Executive Agency (REA)

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ÖMKi On-Farm Living Laboratory

Judit Berényi Üveges

Lead researcher, Ph.D,

Hungarian Research Institute of Organic Agriculture

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ÖMKi in a Nutshell

ÖMKi
Ökológiai Mezőgazdasági Kutatóintézet
Research Institute of Organic Agriculture
Forschungsinstitut für biologischen Landbau
CUTTING-EDGE RESEARCH. ORGANIC INNOVATION. SUSTAINABLE FUTURE.

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Aim: Fostering scientific research of organic agriculture in Hungary.

- **2011:** Foundation of ÖMKi, the Hungarian Research Institute of Organic Agriculture Public Benefit Non-profit Ltd.
- **2012:** Launch of on-farm participatory research network
- **2020:** Living Lab accreditation by ENoLL

What kind of research we do?

- Practice oriented results that can be implemented in everyday farming
- Research that connects farmers, processors, advisors and the actors of the value chain

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ÖMKi On-Farm Living Lab

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- Agroecology-focused nationwide participatory experimentation network variety of field trials technology tests co-designed and co-implemented with farmers with the aim to improve and/or develop new organic/agroecological practices, products, technologies
- Participating farmers gain feedback directly from their own production experiences, creating space for open innovation and dynamic knowledge co-creation between stakeholders

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Research Living Lab Ecosystem

Crop diversification for food system stability

- Ancient cereal variety tests and product development
- Landrace tomatoes - cultivation technologies
- Soybean and legumes in the crop rotation

Soil-building cultivation technologies

- Species-rich inter-row cover in vineyards and orchards
- Organic nutrient management
- Improving soil management and soil helath (reduced-till, cover crops, etc.)

Precision farming solutions for organic agriculture

- Remote sensing for plant protection
- Sensors for developing customized feeding and disease prevention system

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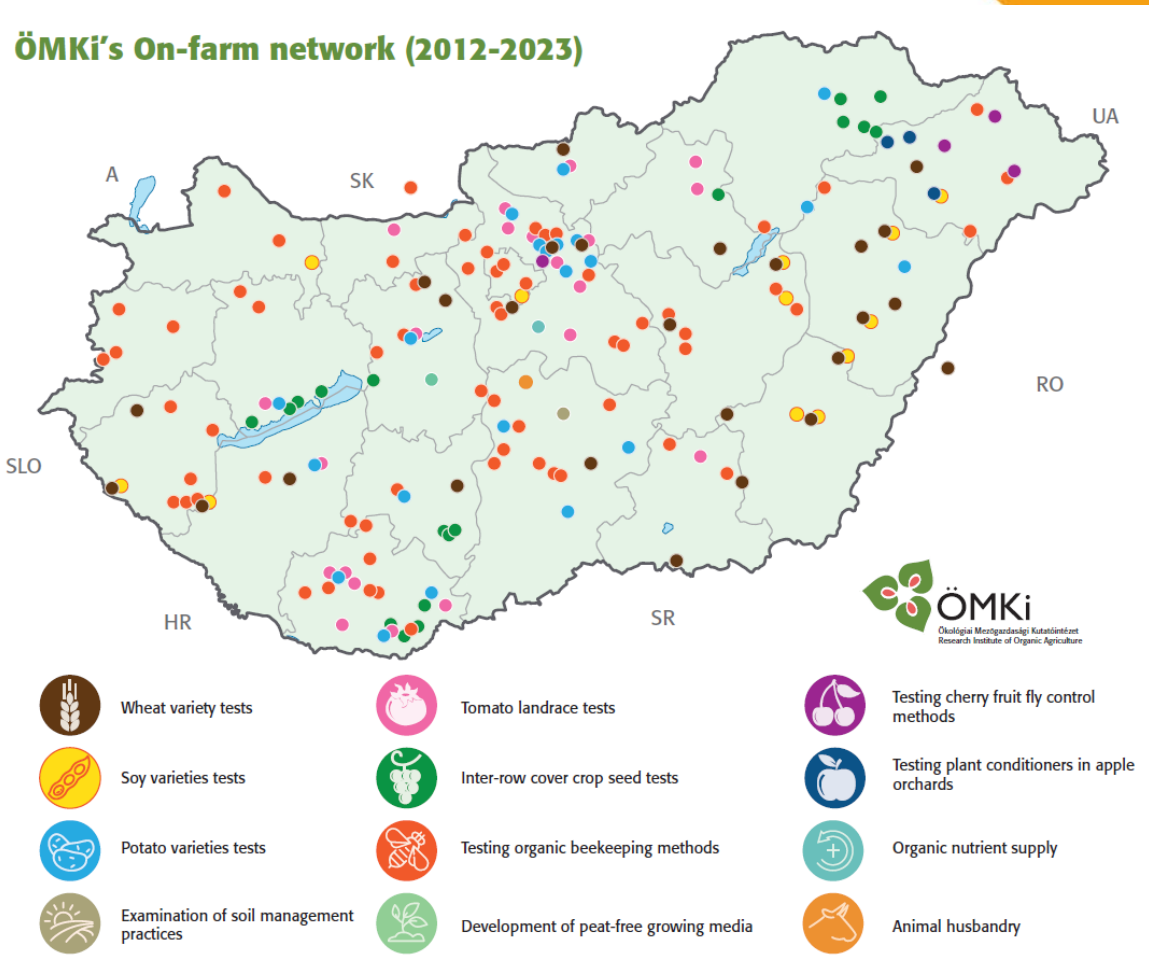
Identified challenges related to soils:

- soil degradation in arable organic farms and orchards

- lack of sustainable growing media for organic farmers

- difficulties in nutrient management in organic farms



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- Yearly summaries
- Technology publications
- Scientific publications

Defining **practice oriented questions** together with farmers

- Farmers from around the country, other R&D institutes, breeders, traders etc.

Simple experiments that **fit into the farms' everyday practice**

Data capturing by ÖMKi and the farmers

Evaluation, presentation (ÖMKi) and **discussion** (together)

- Field days
- Presentations
- Workshops

Publication, open access (ÖMKi)

Aim: reaching and sharing new scientific results that are implemented in practice.

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Research Institute of Organic Agriculture
Forschungsinstitut für biologischen Landbau

Participatory on-farm research method

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Some achievements and conclusions

Advantage:

- direct relation and open discussion with interested parties
- ready to use solutions in real life setting

Challenge:

- harmonising on-farm research with CAP requirements

Message:

- Sometimes takes more effort to do research with farmers but the common experience during the experiment has a great value.

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Thank you!

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Website: www.biokutatas.hu

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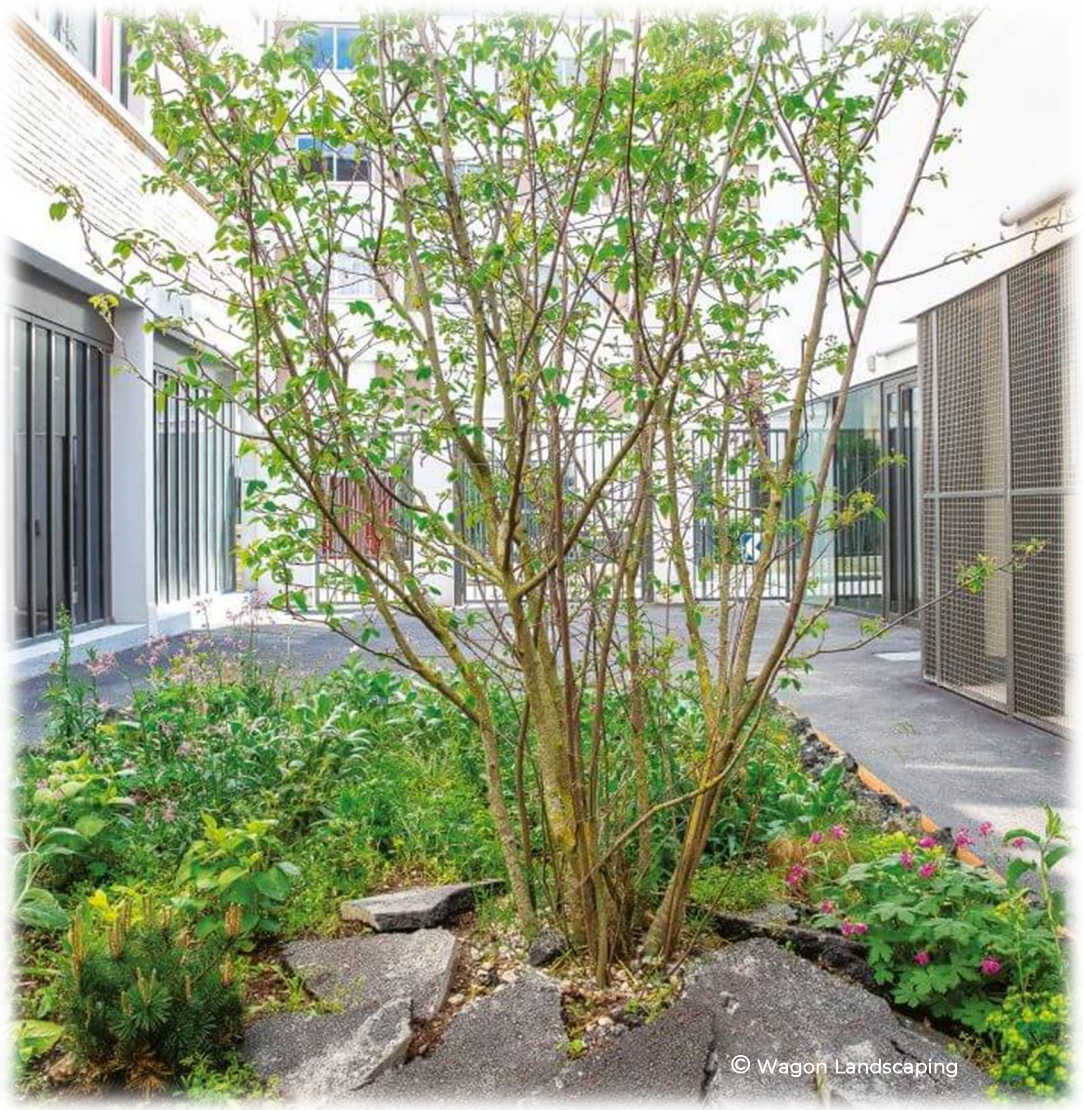


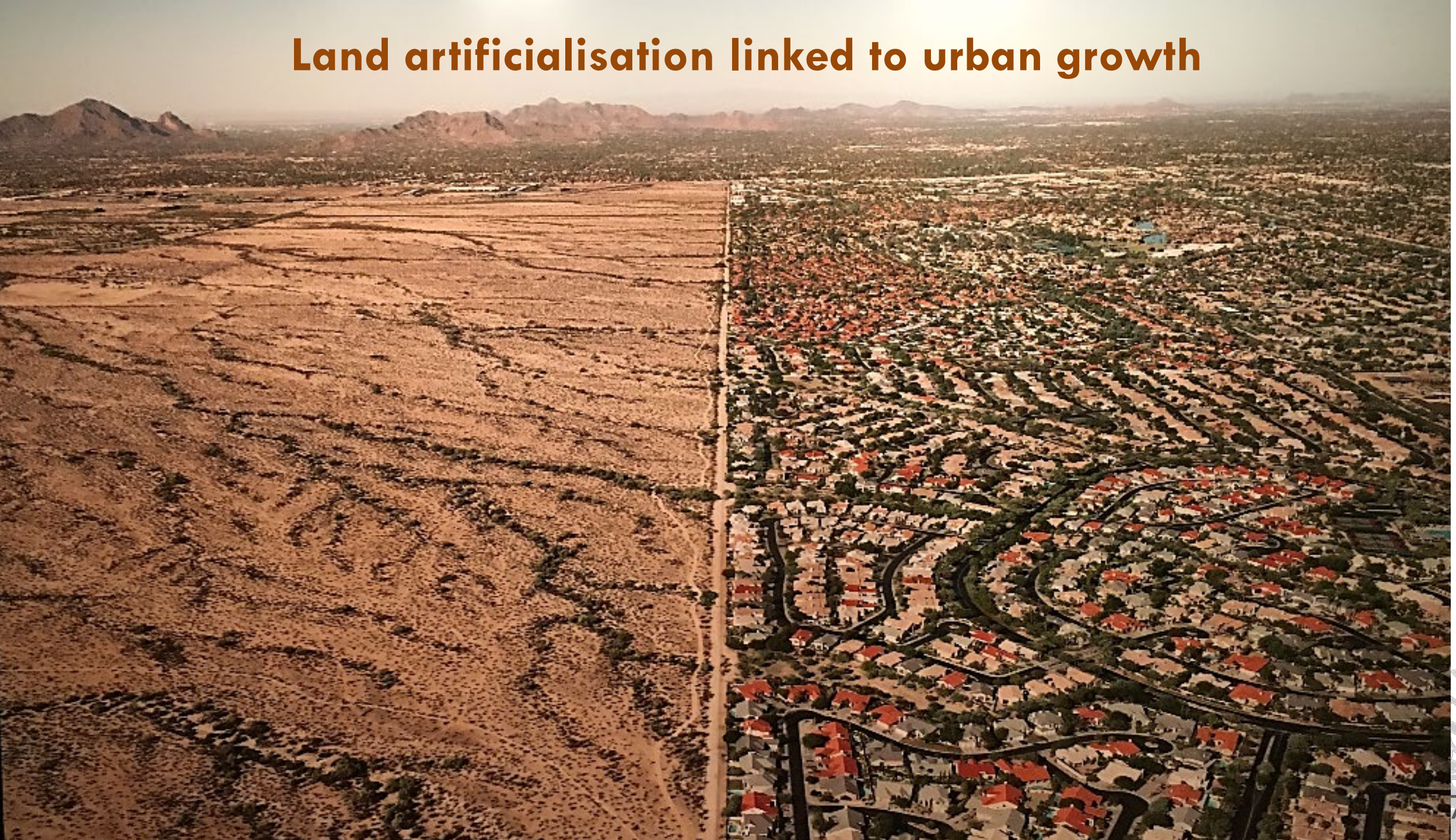
Restoring healthy soils in cities through desealing

a living lab approach

C Schwartz, V Beaujouan, A Bulot, JN Consalès, M Cozzi, R Dagois, H Daniel, P David, M Gontier, A Herbreteau, M Lothodé, J-C Louvet, S Ouvrard, M Pied, G Séré, M Teixeira Da Silva, F Vadepied, C Vieillard, L Vidal-Beaudet

Soil Health BENCHMARKS
Funded by the European Union

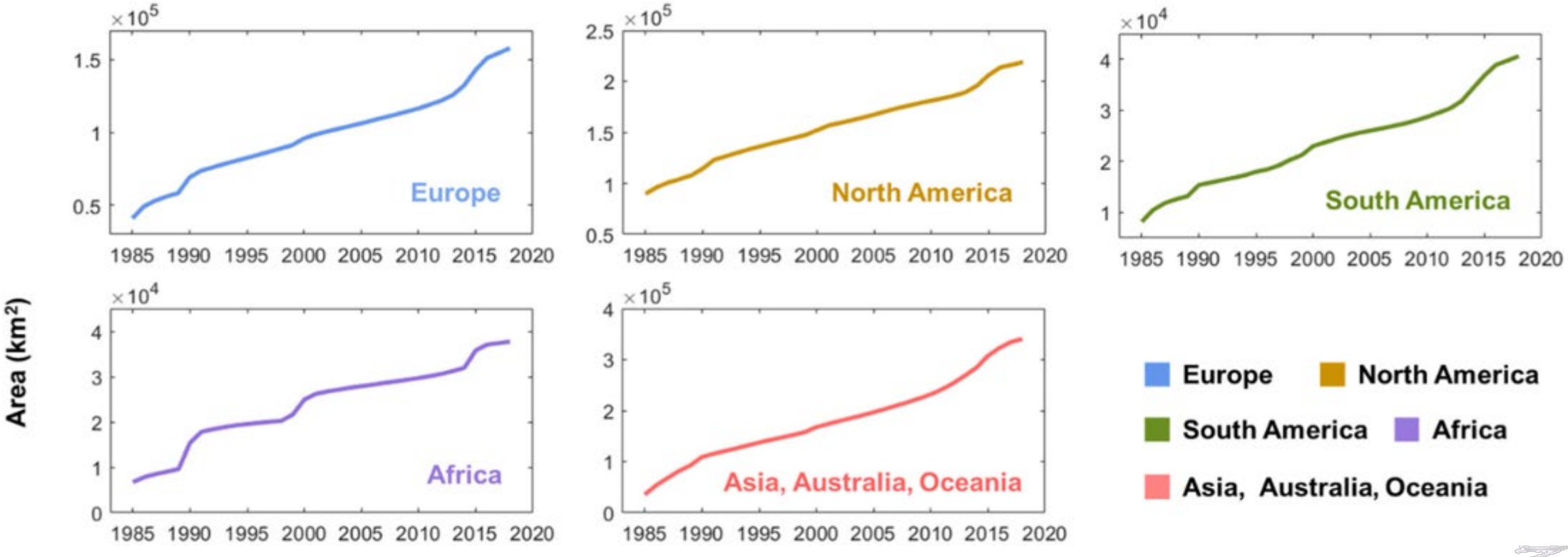
Land artificialisation linked to urban growth



Edward Burtynsky, 'Salt River Pima-Maricopa Indian Reservation / Suburb, Scottsdale, Arizona' (detail), 2011

Soil sealing: a major cause of soil degradation and a growing awareness of the issues

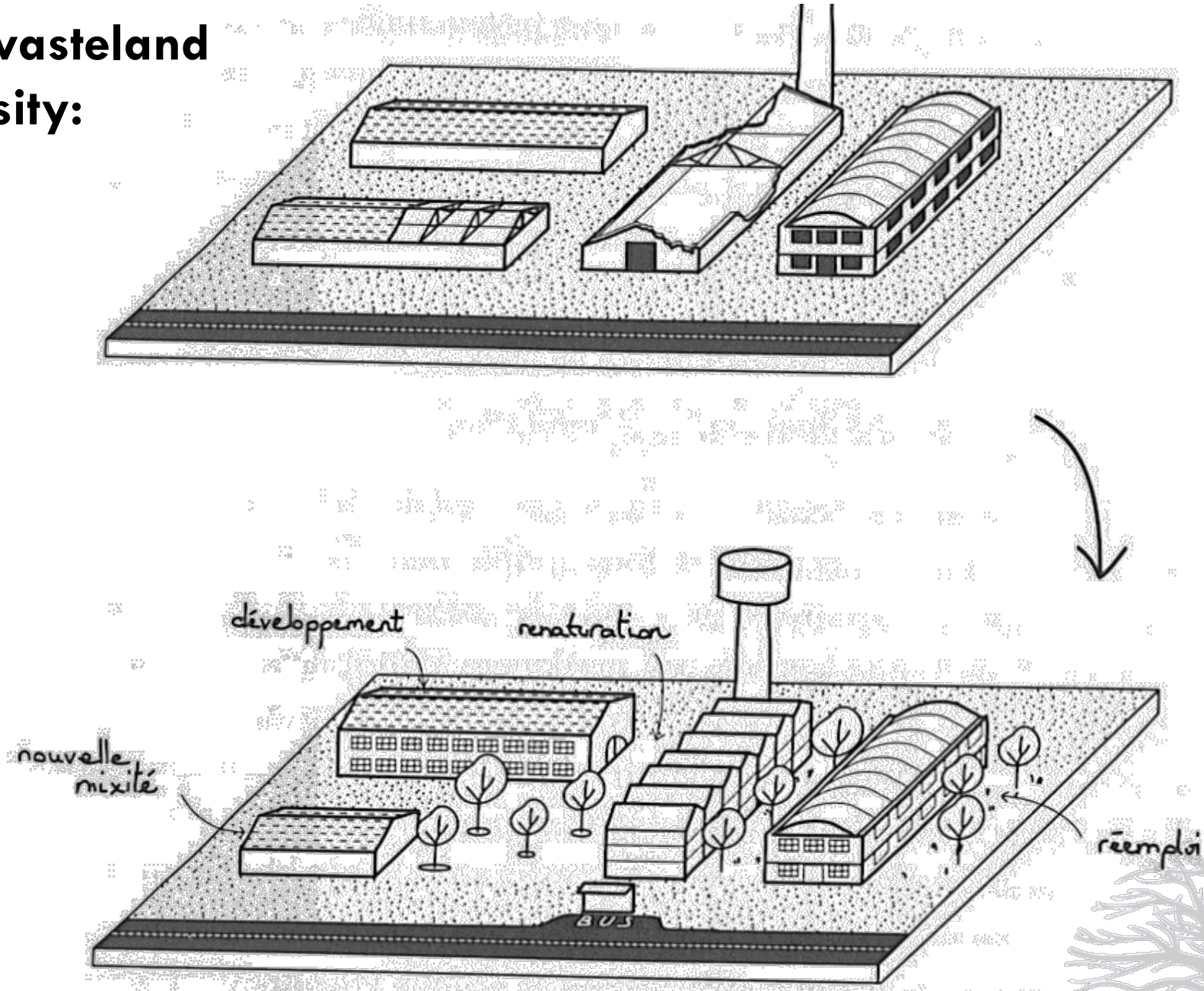
Sealing: disconnection of the underlying soil from the other compartments of the ecosystem (biosphere, atmosphere, hydrosphere, anthroposphere) by covering it with an impermeable material (e.g. asphalt, concrete) or drastically modifying the properties of the soil to make it impermeable (Burghardt, 2006)



Gong *et al.* (2020)

Requalification of urban wasteland and increasing urban density: a need for fertile soils

How can soil desealing
make cities resilient
in the face of climate change?



La ville stationnaire, Actes Sud, 2022

BUT!

Scarce scientific studies on soil desealing

recent, complex concepts,
little applied and little studied in the context of research

- Initially, it meets the challenge of the permeable city
  - infiltration of rainwater
  - reducing pollution from sewage networks
  - flood control
- New challenges in adapting the city to climate change
  - greening the city to cool it down
  - modifying surface coverings
  - maintain biodiversity
  - make soils multifunctional

LSE

Objectives of the DESSERT project
Desealing of soils, ecosystem services and resilience of territories

- set out the methodological framework
  for the study of (de)sealed soils at different working scales
- define the representativeness of the soil profiles studied
  and the soil samples taken from the profiles
- propose a common set of indicators
  for the physico-chemical fertility
  and toxicity of (de)sealed urban soils
- demonstrate the feasibility
  of reversing sealed soils to a multi-functional state
  depending on the future land use
- propose a technical guide
  to assist in the design of desealing for designers,
  developers and managers

LSE

A consortium built to encourage essential cross-fertilisation
a living lab approach

RESEARCH UNITS

urban ecology

Urban agronomy

ecological engineering

engineering sciences

urban soil science

Aix-Marseille-Université (IUAR) UMR Telemme

L'Institut agro Angers-UMR BAGAP

L'Institut agro Angers- UP EPHor

Université de Lorraine /INRAE-LSE

partners of BENCHMARKS

planning & urban development

landscape

planning & environment

PRIVATE COMPANIES

public works

Wagon Landscaping

SCE

D&L Enromat Groupe Durand

Plante et Cité

ASSOCIATION AT THE SERVICE OF LOCAL AUTHORITIES, CONSULTANCY OFFICES AND COMPANIES

Angers Loire Métropole

Métropole du Grand Nancy

Cannes

METROPOLIS - CITIES

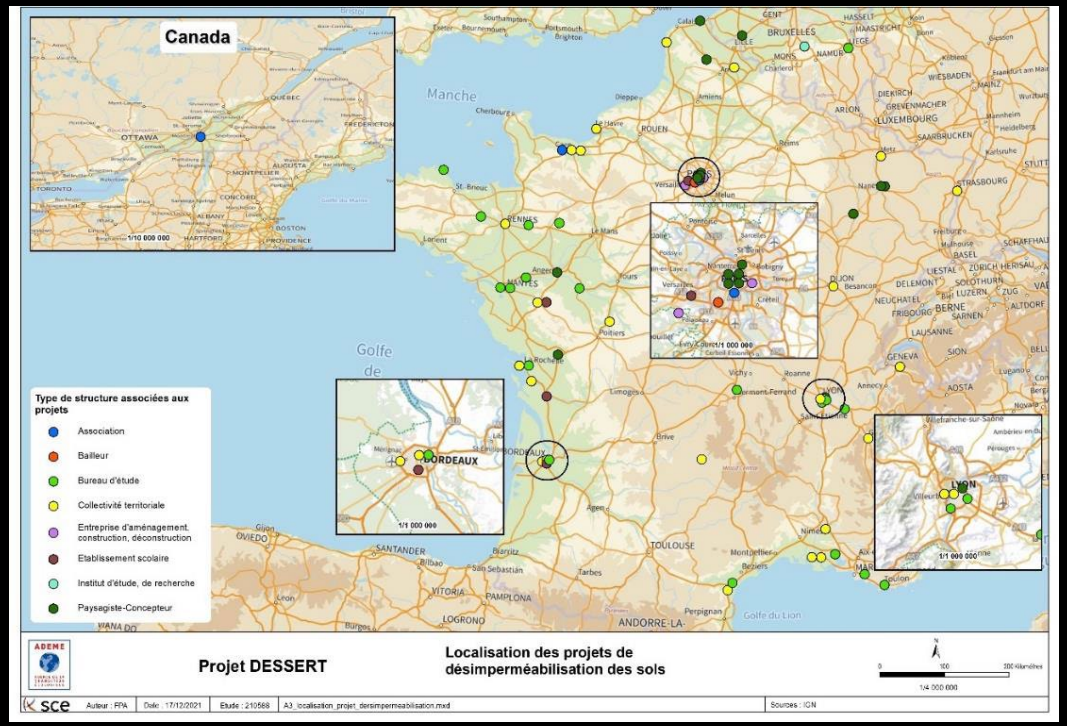
Citizen

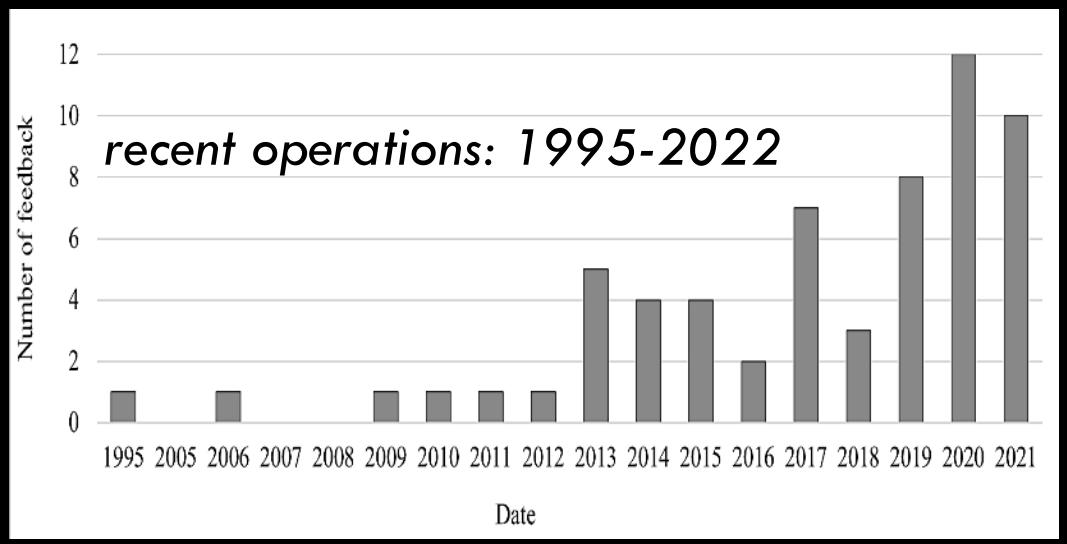
Digging soil pits to understand the hidden face of sealed soil

Ekranic Technosols

Learning from experience: results of a survey

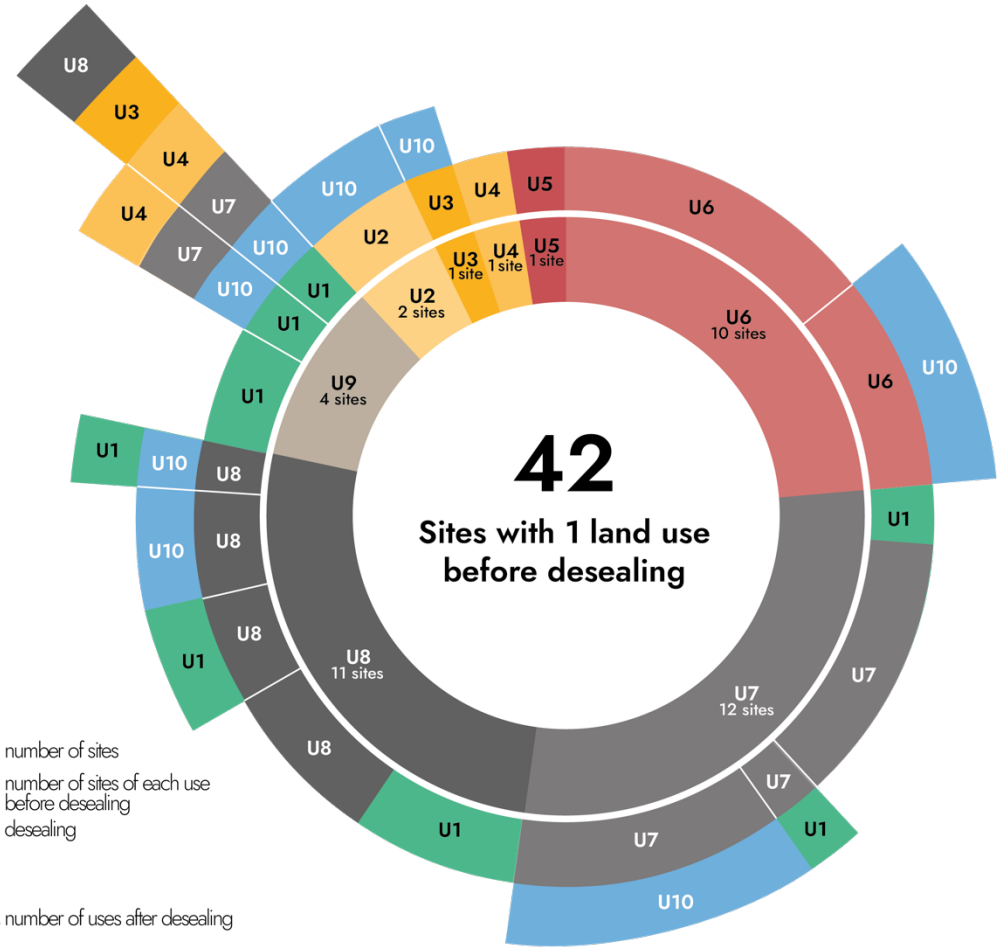
61 projects identified throughout France
and abroad, in towns of all sizes,
with a wide variety of surface areas involved

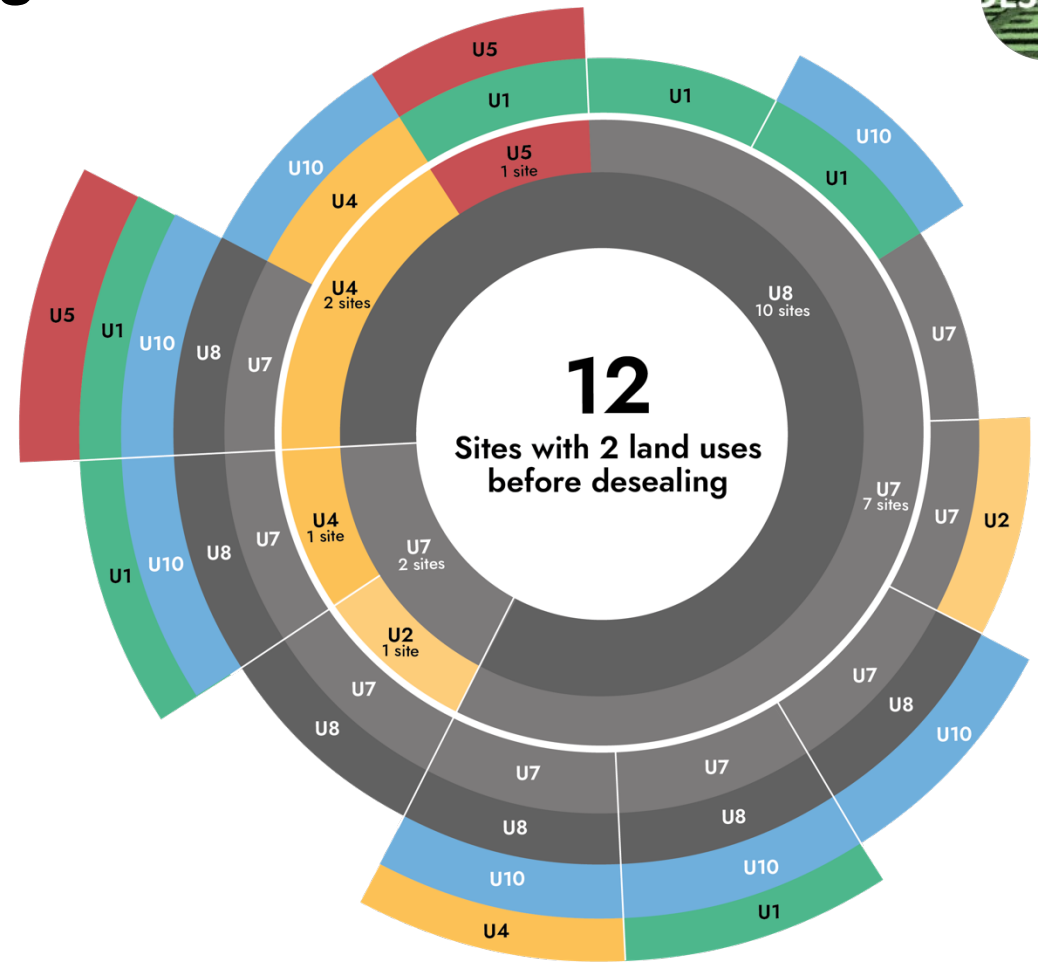


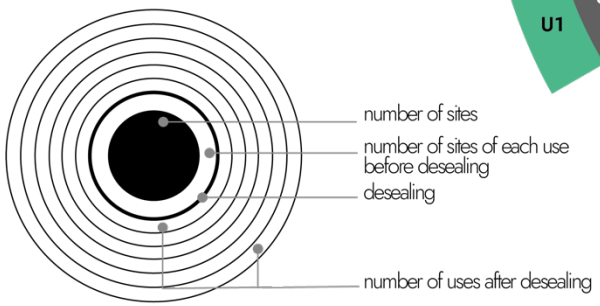


Uses of sites before and after soil desealing

Vieillard et al., submitted







half of the sites gain
one to 5 uses after desealing

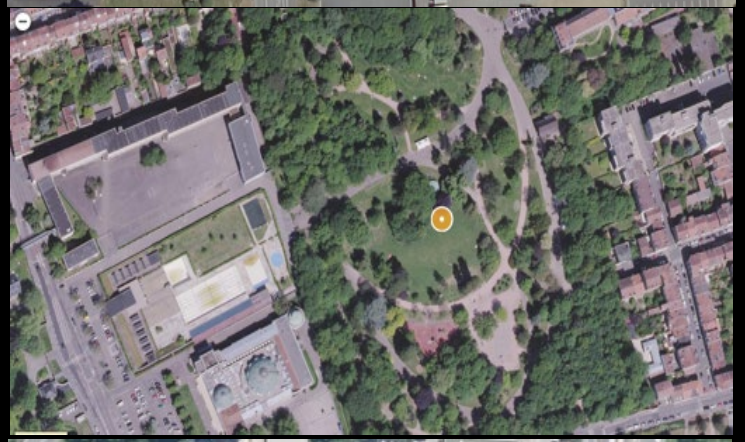
roads and car parks are mostly accompanied
by the use of rainwater management after desealing

U1 = parks, gardens; U2 = acc. public buildings; U3 = acc. commercial buildings; U4 = acc. housing; U5 = recreational activities, sports; U6 = schools; U7 = acc. roads; U8 = car parks, squares; U9 = brownfield sites; U10 = rainwater management facilities

Experimenting in the field and in the laboratory

acquiring our own references



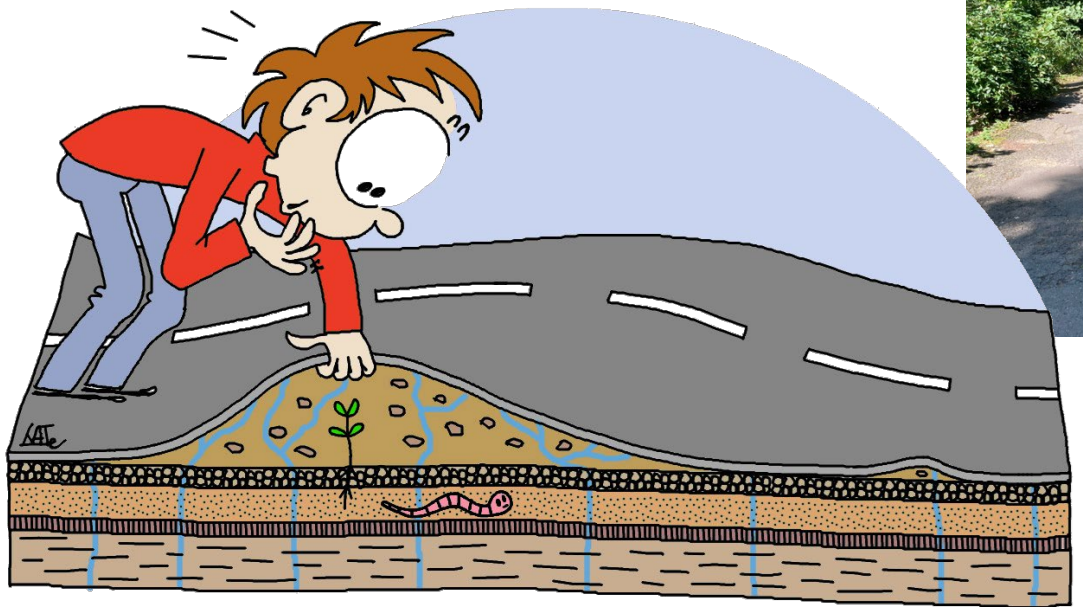








Translate what has been learned into a guide to help with the design of urban soils desealing



special thanks to:

Soil Health BENCHMARKS

Funded by the European Union

ADEME AGENCE DE LA TRANSITION ÉCOLOGIQUE

MODEVAL - URBA
Modelling and evaluation to help stakeholders in the regions and cities of tomorrow

DESSERT

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Living Labs & Place Based Innovation in Ireland

John Gilliland

Brook Hall Estate, ARC Zero & Queens University Belfast

22nd November 2023

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ARCZero
ACCELERATING FARMING TOWARDS CARBON NEUTRALITY

Awarded EIP-Operational Group Funding

To Accelerate seven Farms' Journey to Net Zero, 2020

Department of Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

The European Agricultural Fund for Rural Development: Europe investing in rural areas

rural Development Programme

Roger & Hilary Bell *Sheep*

Simon Best *Arable & Beef*

Patrick Casement *Sheep & Sucklers*

John Egerton *Suckler Beef*

John Gilliland *Willow & Dry Stock*

Hugh Harbison *Dairy*

Ian McClelland *Dairy*

AgriSearch NI
Driving Excellence & Innovation

BIRNIE CONSULTANCY

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If you Can't Measure, you Can't Manage…….

Created Comprehensive Baselines, Repeat Every Five Years

Aerial LiDAR Survey
at 40 scans per metre

Soil Sampling to one
metre deep

Measuring actual
Methane emissions

Empowering Knowledge….. Delivering Behavioural Change……

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Where did we start…. We investigated our Numbers…

Baselined & Benchmarked…. Empowered Behavioural Change

2021 Agrecalc Analysis	Enterprises	Gross Emissions t CO2-e/yr	Gross Sequestration t CO2-e/yr	Net Emissions t CO2-e/yr	% Reduction
Ian McClelland	Dairy	1,101	309	792	28%
Hugh Harbinson	Dairy	2,009	549	1,459	27%
John Egerton	Beef & Sheep	1,475	444	1,031	30%
Roger & Hilary Bell	Sheep with Beef	754	456	298	60%
Simon Best	Arable with Beef	1,799	738	1,061	41%
Patrick Casement & Trevor Butler	Beef & Sheep	492	548	-56	111%
John Gilliland	Willows with Dry Cows	151	156	-4	103%

Every Farm is Different, No Single Silver Bullet
Some Farms are already beyond Net Zero

agrecalc

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Where did we start…. We investigated our Numbers…

Baselined & Benchmarked…. Empowered Behavioural Change

Total ARC Zero CO2e Stocks	Soil Carbon	Tree Carbon	Total Carbon	% C in Soil
Ian McClelland	31,813t	1,310t	33,123t	96%
Hugh Harbison	68,054t	1,969t	70,023t	97%
John Egerton	31,813t	1,310t	33,123t	96%
Roger & Hilary Bell	50,819t	688t	51,507t	98%
Simon Best	237,915t	6,493t	244,407t	97%
Patrick Casement & Trevor Butler	54,556t	4,022t	58,578t	93%
John Gilliland	19,468t	4,937t	24,405t	80%
		Total	515,166t	

97% of all Carbon in Soils….. Only 3% in Trees

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Delivered Behavioural Change, Collectively….

Baselined & Benchmarked…. Empowered Better Quality Decisions….

GHG Reduction 2021 to 2023	Enterprises	2021	2023	% Reduction in GHGs
Ian McClelland	Dairy	1.3kg CO2e/kg FPC Milk	1.1kg CO2e/kg FPC Milk	13%
Hugh Harbison	Dairy	1.25kg CO2e/kg FPC Milk	1.2kg CO2e/kg FPC Milk	4%
John Egerton	Beef	32.8kg CO2e/kg dwt	25.6kg CO2e/kg dwt	22%
Roger & Hilary Bell	Lamb	22kg CO2e/kg dwt	15.7kg CO2e/kg dwt	28%
Simon Best	Wheat	0.99kg CO2e/kg grain	0.47kg CO2e/kg grain	53%

All Farms Reduced their Emissions……

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Delivering Behavioural Change, Individually

One Change…… delivering Multiple Wins…..

- Planted Multi Species swards in Routes of Overland Flow of Water
- Displaced 100% N fertiliser
- Improved water infiltration
- Improved soil biodiversity
- Improved Soil Organic Stocks

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Delivered Behavioural Change, Individually…..

Impact of Different Land Uses on Soil Health & Carbon Stocks

28yrs old Willow Coppice

120yrs old SilvoPasture

200yrs old Grassland

30yrs old Trees

250yrs old Trees

BROOK HALL Estate & Gardens

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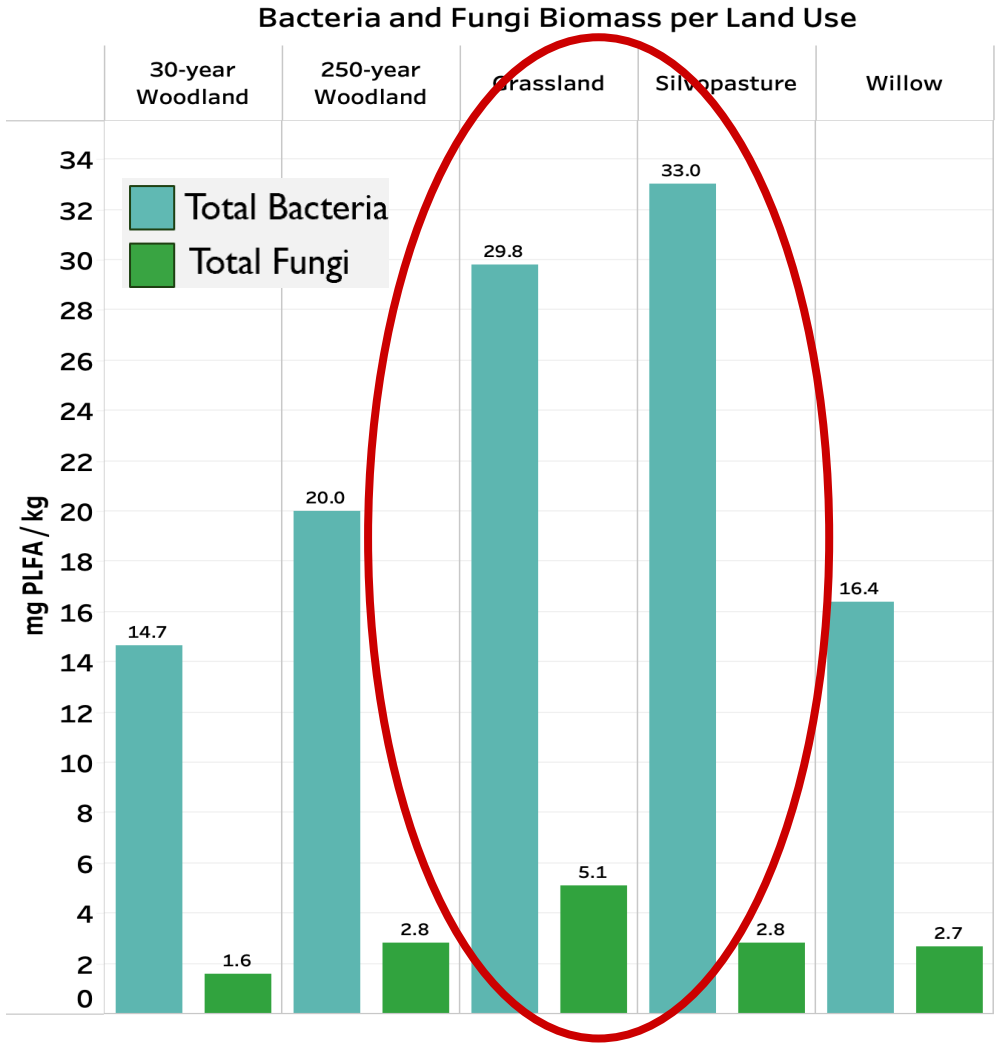
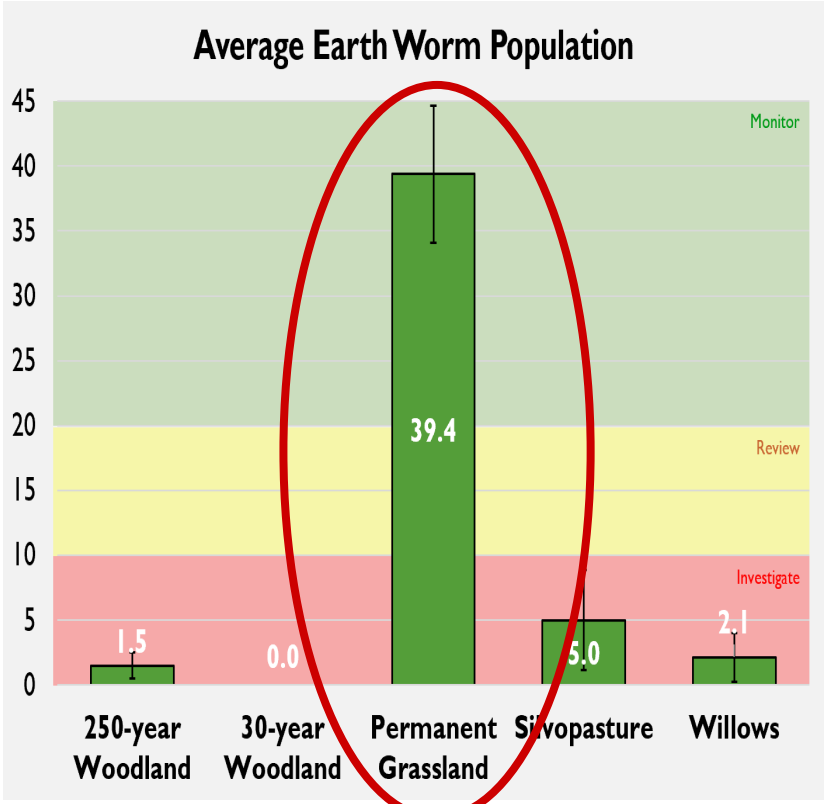
Delivered Behavioural Change, Individually…..

Impact of Different Land Uses on Soil Health & Carbon Stocks





R. Buffara, WUR, 2023

The Role of Livestock Faeces On Soil Biology?

The Collapse of Soil Biology Under Trees?

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Estate & Gardens

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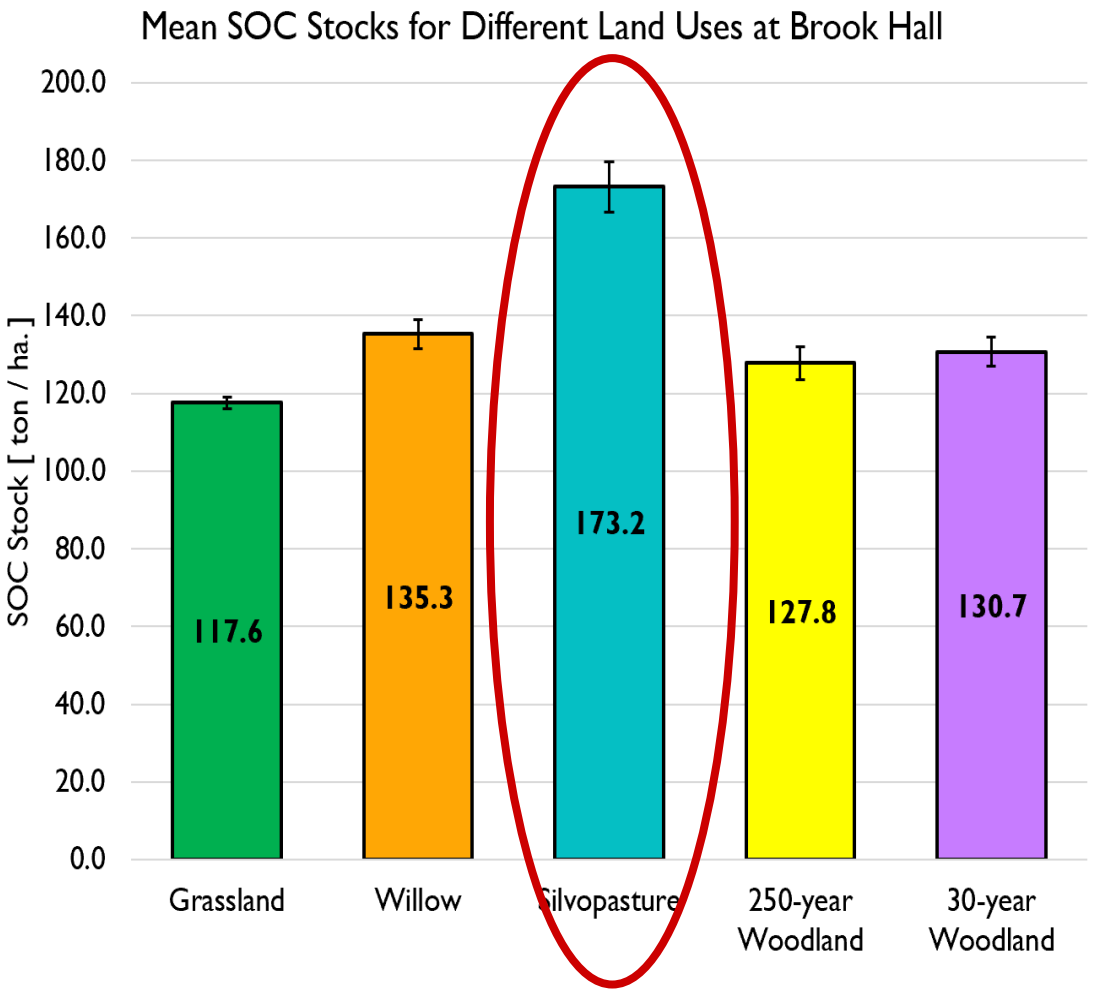
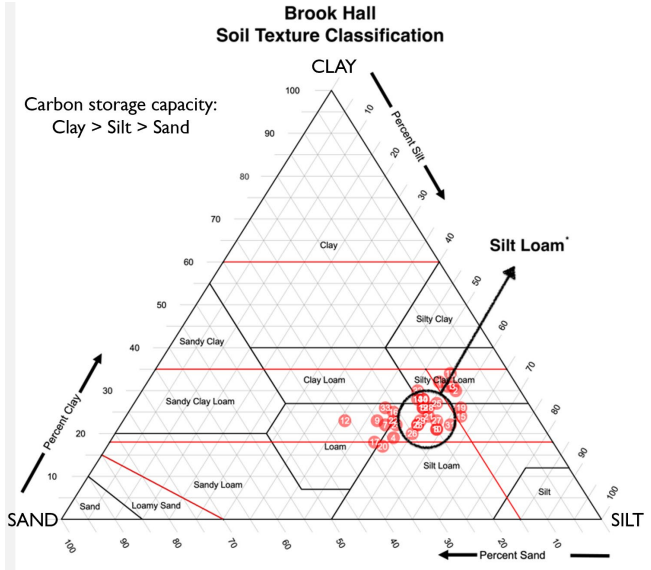
Delivered Behavioural Change, Individually…..

Impact of Different Land Uses on Soil Health & Carbon Stocks





R. Buffara, WUR, 2023

The Role of Complex Root Architecture in Building Carbon Stocks?

The Weakness of Monocultures & Simple Root Architecture?

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Delivered Behavioural Change, Individually…..

Amalgamating Land Uses for Optimal Public Good Outputs…..

Grazing Willow Trees, 27% Mitigating Methane, Stimulating Soil Biology,
Building Soil Carbon Stocks, Producing Food, Simultaneously…..

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Estate & Gardens

afbi AGRI-FOOD & BIOSCIENCES INSTITUTE

Foyle Food Group

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Delivering Impact from our Living Lab

Through Articles, Open Farm Walks & Presentations……

8 NI NEWS

R1 N | IRISH FARMERS JOURNAL Saturday 24 September 2022

Digging deep for soil carbon stocks in Fermanagh

FARMER WRITES: New soil samples have been taken across the farm to sample for carbon down to 1m, writes **John Egerton**

A couple of weeks ago I was honoured to be asked to take part in the ASA (Agricultural Science Association) conference in Kilkenny.

My brief was a farmer's perspective on the whole issue around climate change and how farmers are going to deal with it.

I told conference attendees a little about the history of our farm and the fact that I have three sons who all hope to obtain a living from it. Then I went on to talk about the work that we are doing in the ArcZero (Accelerating Ruminant Carbon to Zero) project, alongside six other NI farmers.

To be honest, I think they were shocked at the amount of detailed information that we have already gathered and how far down the road we are in relation to a proper, verifiable balance sheet for our farms that accounts for both carbon emissions and sequestration. I think many were a little envious of what we have already achieved.

The one thing that forced this home was when I told them I was storing over 9,000t of carbon in the top 30cm of my soil, as well as in my trees and hedgerows. Very few farmers anywhere in the world know how much carbon they are storing.

Soil cores

Last spring, we had a young man come out and take soil cores to 30cm at multiple locations from every field that I own. Every time he took a sample, he GPS marked it for future reference to enable us to go back to the same place to resample a few years down the line.

It was a very labour-intensive operation, as he had to physically hammer in each cylinder and dig the sample out. The samples were then sent away to ascertain how much carbon was stored in the soil.

We could then multiply up to get a total carbon figure for each field, and ultimately, the whole farm.

Our intention is to come back to the same sites in the future and resample to see what changes have occurred.

The hope is that we will be able to identify what farming practices have led to these changes, which will help inform us about the best practices for getting more carbon stored in the ground.

Soil carbon being sampled down to 1m on the Egerton farm.

same sites as before and it was certainly a lot quicker than the manual sampling done in 2021.

It was actually quite something to see.

They lifted a core sample of the first metre of the soil, which gave me a lovely view of what lies beneath my feet.

The first place they started was in one of my wettest fields, which I have tried to drain on three separate occasions. I could see plainly why my attempts at draining had failed. I had 6cm-7cm of topsoil and then it was pure blue clay, best described as a complete impermeable sticky mess.

Then we went to other fields and the drill could only get down around 20cm before it hit rock and couldn't get any deeper. I am curious to see if, long-term, my wetter soils have the potential to store more carbon than the drier soils. The guys that took the samples told me it was the first time they had operated on a farm in NI.

Parting thought

Back to the conference in Kilkenny. I left them with a parting thought: We farmers are looking after the country's carbon within our farms. We need to be rewarded for that instead of being vilified because our cows recycle carbon when they are trying to digest some forage.

It seems to be getting lost in the whole environmental debate, but the farmers are not the problem – instead we are very much part of the solution

- 1,000 Farmers
- 7 Farm Walks
- 24 Articles
- 32 Presentations

ARCZero
ACCELERATING FARMING TOWARDS CARBON NEUTRALITY

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Delivering Impact with our Living Lab

The N. Ireland, Soil Nutrient Health Scheme

- €43m Scheme to Baseline every field & tree in N. Ireland
- One Zone per Year, Over Four Years, 800,000ha
- Aerial LiDAR, Precision Soil Sampling; & To be Resurveyed
- Individual On-Line Training, focusing on Soil & Water improvement
- 92% Farmer take up in 1st Two Zones
- **If you can't Measure, you will never Manage….**

afbi AGRI-FOOD & BIOSCIENCES INSTITUTE

Department of Agriculture, Environment and Rural Affairs www.daera-ni.gov.uk

cafre College of Agriculture, Food & Rural Enterprise

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Living Labs & Placed Base Innovation in Ireland. By using Innovation & Empowerment to deliver Behavioural Change, Improved Soil Health & Other Public Goods have been delivered…

Thank you!

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Panel discussion

Antonio Jose Manzaneda Avila

Professor, Coordinator of the SOIL O-LIVE project

Institute for the Research of Olive and Olive Oil (INUO) in the University of Jaén, Spain

Judit Berényi Üveges

Lead researcher, Ph.D

Hungarian Research Institute of Organic Agriculture

Christophe Schwartz

Professor at Université de Lorraine

Director of the Department of Soil and Environmental Sciences, INRAE

Advisor for soils at the French Ministry of Higher Education and Research

John Gilliland

Agriculture and Environmental Advisor

Brook Hall Estate, ARC Zero & Queens University Belfast

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Thank you!

For further information and questions please contact the Mission Secretariat:

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Mission A Soil Deal for Europe:

http://ec.europa.eu/mission-soil

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