



EUROPEAN UNION

# EUROPEAN MISSION SOIL WEEK

## Welcome and opening

21-23 November 2023



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#MissionSoilWeek #MissionSoil #EUMissions

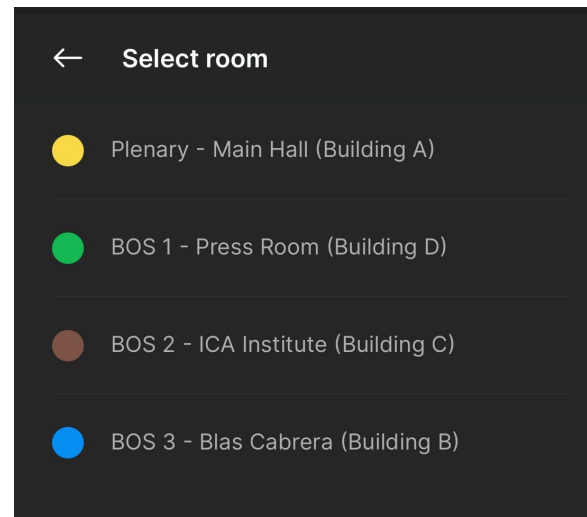


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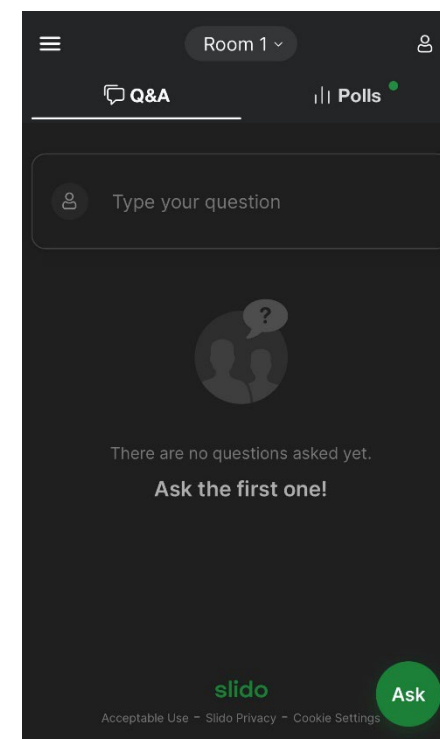


## Housekeeping rules

- **WIFI**
  - Network : EMSW
  - Password : Mission.Soilw3ek2023
- **Questions**
  - Go to [www.sli.do](http://www.sli.do) and enter event code **#ESMW2023** (or scan the QR code)
  - Select the 'room' of the session
  - Submit your questions



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## Programme Day 2 - Wednesday, 22 November

Time	Session Name	Building name
9:30 – 10:00	Social, economic, and cultural transformations for soil health	<i>Main hall – Building A</i>
10:00 – 11:00	PREPSOIL project: supporting the Mission Soil	
11:00 – 11:30	Coffee Break	
11:30 – 13:00	Breakout session 4 - Soil needs in PREPSOIL regions: engaging with multiple actors	<i>ICA Institute - Building C</i>
	Breakout session 5 – Knowledge transfer to farm advisors	
13:00 – 14:00	Lunch Break	<i>Main hall – Building A</i>
14:00 – 16:00	Breakout session 6 - Living Labs and other experiences from placed-based innovation	<i>Blas Cabrera Institute - Building B</i>
	Breakout session 7 - Soil biodiversity	<i>ICA Institute - Building C</i>
	Breakout session 8 - Business models for soil health	<i>Press Room - Building D</i>
16:00 – 16:30	Coffee break	<i>Main hall - Building A</i>
16:30 – 16:45	Reporting from breakout sessions	
16:45 – 17:30	The Mission's regional and local dimension	
17:30 – 18:15	Mission Manifesto and Mission Ambassadors	
18:15 – 19:00	Cocktail & Networking	



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Plenary Session

## **Social, economic, and cultural transformations for soil health**

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**Social, economic, and cultural  
transformations for soil health**

**Anna Krzywoszynska**

Associate Professor, University of Oulu, Finland

Board member for the Mission 'Soil Deal for Europe'

22.11.2023



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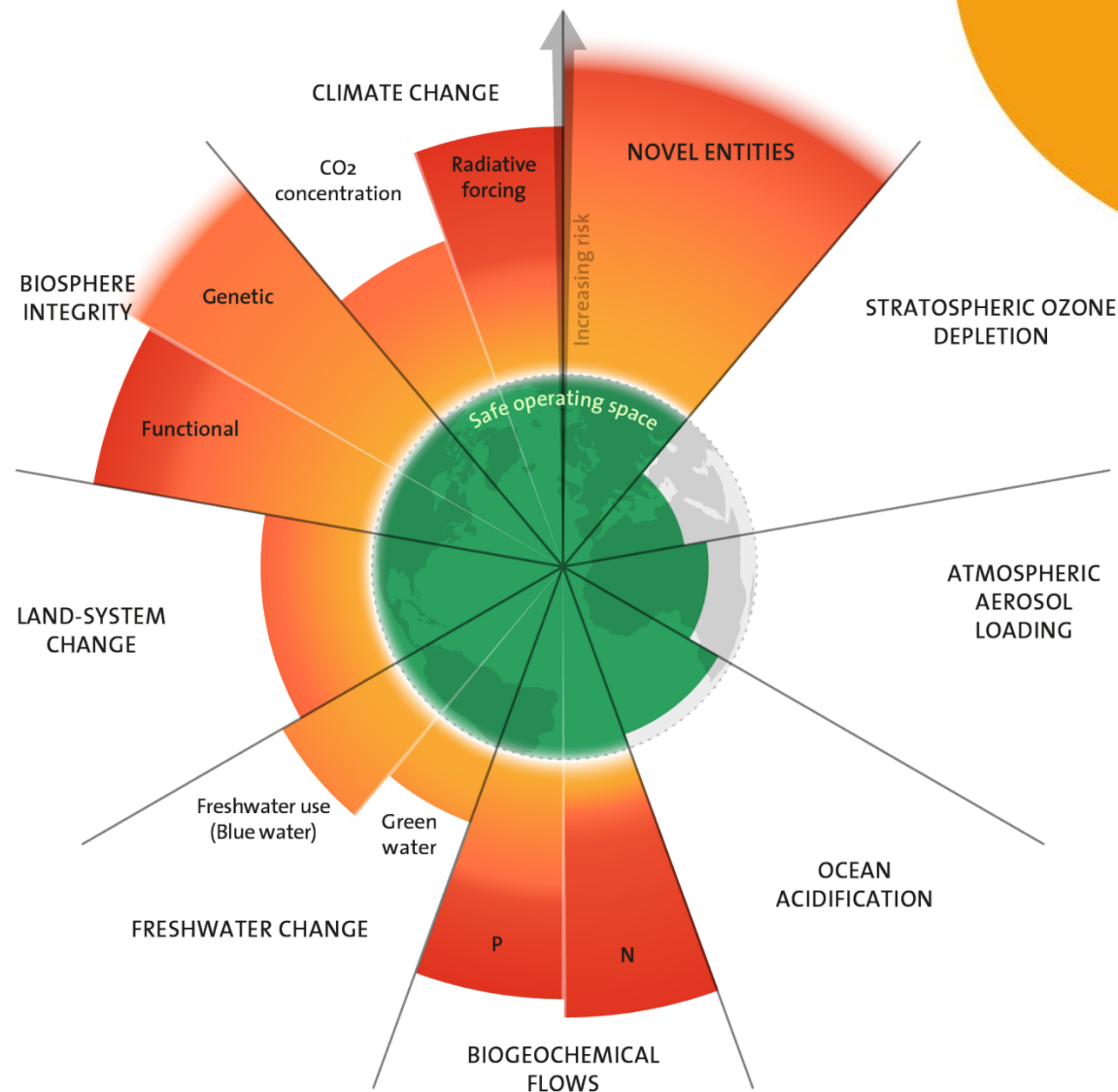
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# How to drive action on sustainability transformation?



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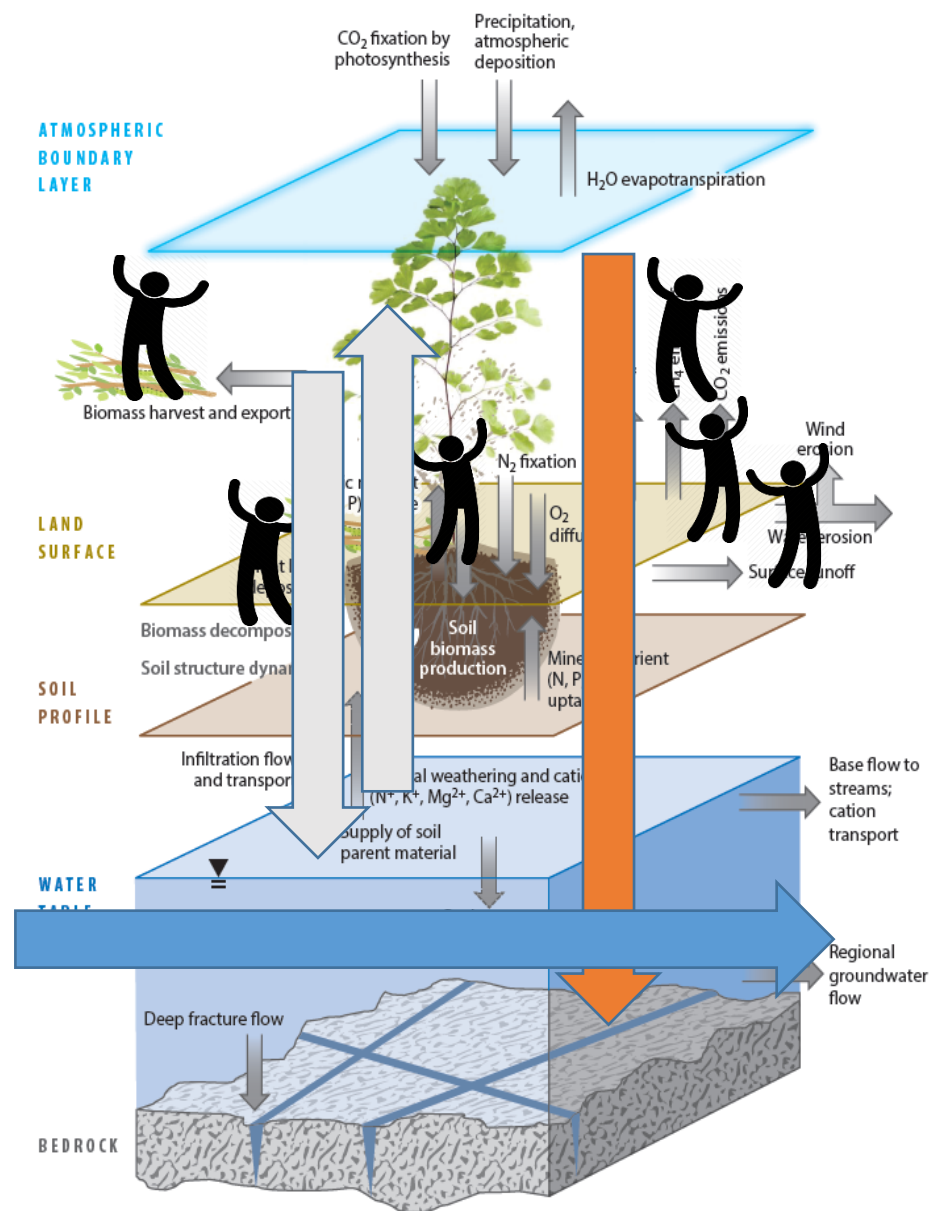
The 2023 update to the Planetary boundaries. [Licensed under CC BY-NC-ND 3.0](#). Credit: "Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023"

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“...to reveal consumer models that make us disobedient to our relationship with land and time. Through my artwork, I reveal the impact of the American dream on our society and the land”

# Sustainability as place-based







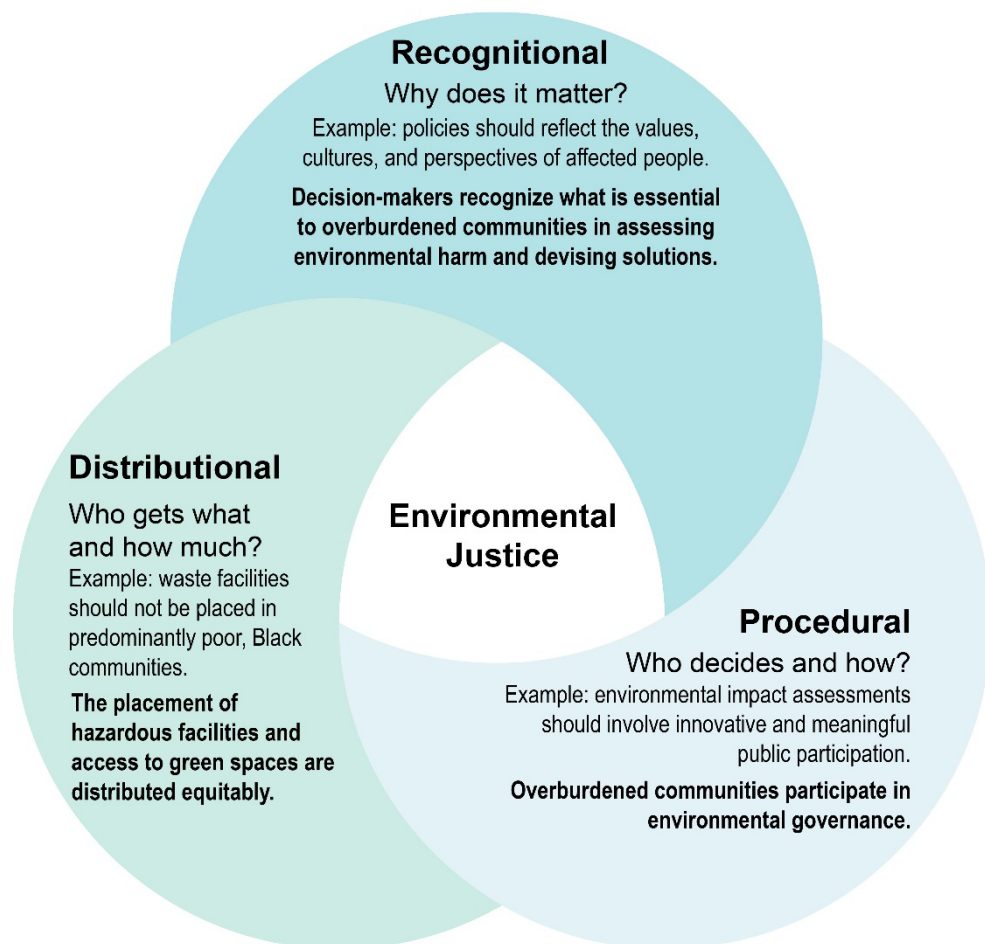
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# Sustainability must be just

- Röckstrom et al 2023 'Safe and just Earth system boundaries', *Nature*:
  - interspecies justice;
  - inter-generational justice;
  - intra-generational justice.

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## Three Dimensions of Environmental Justice

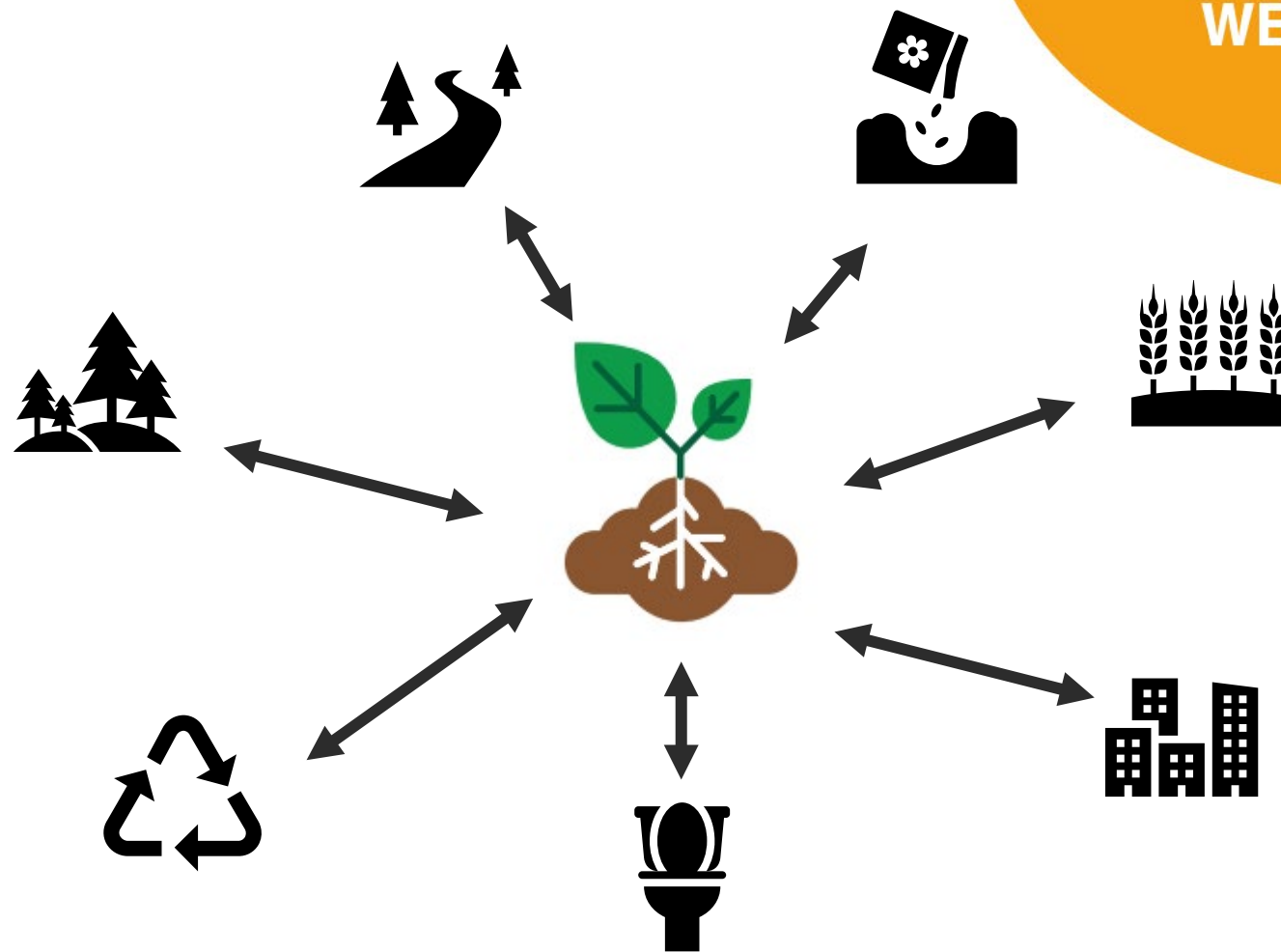


## Sustainability must be just

- Fifth National Climate Assessment, US Global Change Research Program.
- understanding social systems is an integral part of climate science and climate solutions-making;
- social systems inequitably distribute harm – environmental justice;

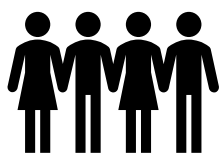
# Incremental approach sustainability transition

- Influencing within existing systems.



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# Towards the social basis of sustainability transformation



- Achieving soil sustainability and soil health requires not just changes to the variables that make up existing relations.
- Transformation of **ways of thinking, values, perceptions, meaning and ways of interacting.**
- This includes associated **institutional, cultural, economic, and political arrangements and power relations.**
- Individual, collective, and structural levels.
- A task for social sciences, humanities, and the arts.



Food and Agriculture Organization of the United Nations



# Soils and SDGs

Healthy soils perform/provide key functions and ecosystem services



## The Fifth National Climate Assessment

The Fifth National Climate Assessment is the US Government's preeminent report on climate change impacts, risks, and responses. It is a congressionally mandated interagency effort that provides the scientific foundation to support informed decision-making across the United States.

“For climate scientists, the principal driver of climate change is understood to be GHG emissions (and) climate mitigation involves reducing emissions. In contrast, people who have been excluded from the benefits of industrialization, or disproportionately harmed by industrial processes, might see the principal driver of climate change as the social systems and ethical arrangements that allowed for the simultaneous exploitation of land, animals, and peoples. If climate change is understood as an outcome of socioeconomic and ethical arrangements that resulted in exploitation and discrimination, then reexamining those arrangements also becomes necessary.”

The Fifth National Climate Assessment (NCA5) delivered by the US Global Change Research Program (USGCRP), Chapter 20: Social Systems and Justice.

## Co-producing strategies for sustainability transformations

- People's histories, educations, cultures, and ethics shape how they understand and experience environmental change (including e.g. soil health loss), and shape what they perceive as good adaptation and mitigation strategies;
- Social actors should be involved in determining what social change is necessary.

# Towards the social basis of sustainability transformation



Research on the societal and cultural approaches to soils is needed. For example:

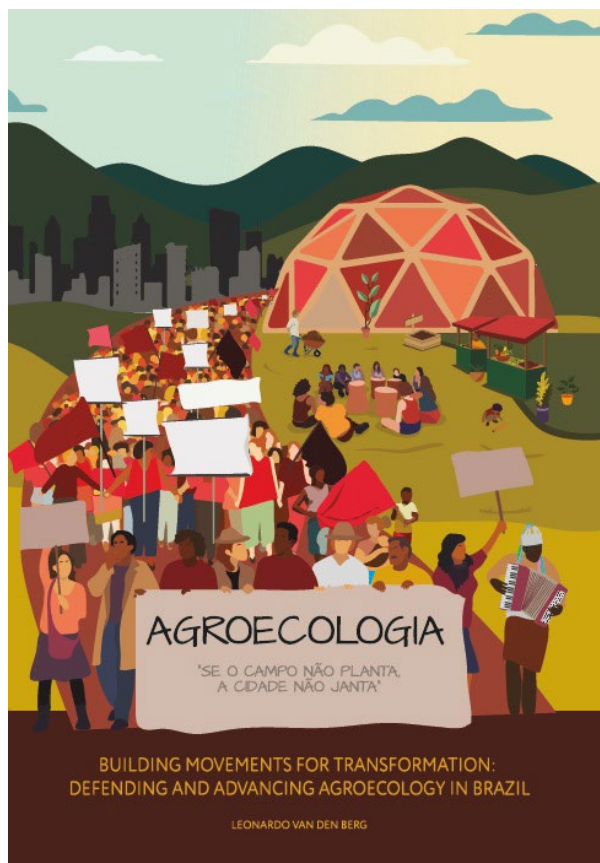
- What is the impact of globally traded food-based financial products on crops on soil health?
- What is the impact of collective values on how foresters understand the role of soils? What cultural norms and narratives can promote attention to soil health in forestry?
- How do historical and current inequalities in access to green space impact on people's understanding of the role of and value of soil in cities? How can these be challenged to embed experience of soil health in urban life in a meaningful way?

# The importance of transdisciplinarity

- Beyond “speaking truth to power”. Linear approach does not exist and does not work.
- Soil sustainability and soil health: need to understand the relationship with societal, cultural, political and economic dynamics.
- Need to explore how to transform those dynamics so that just sustainability is achieved.
- Transdisciplinarity: working from the onset with the agents of transformation (in social groups, not on social groups).

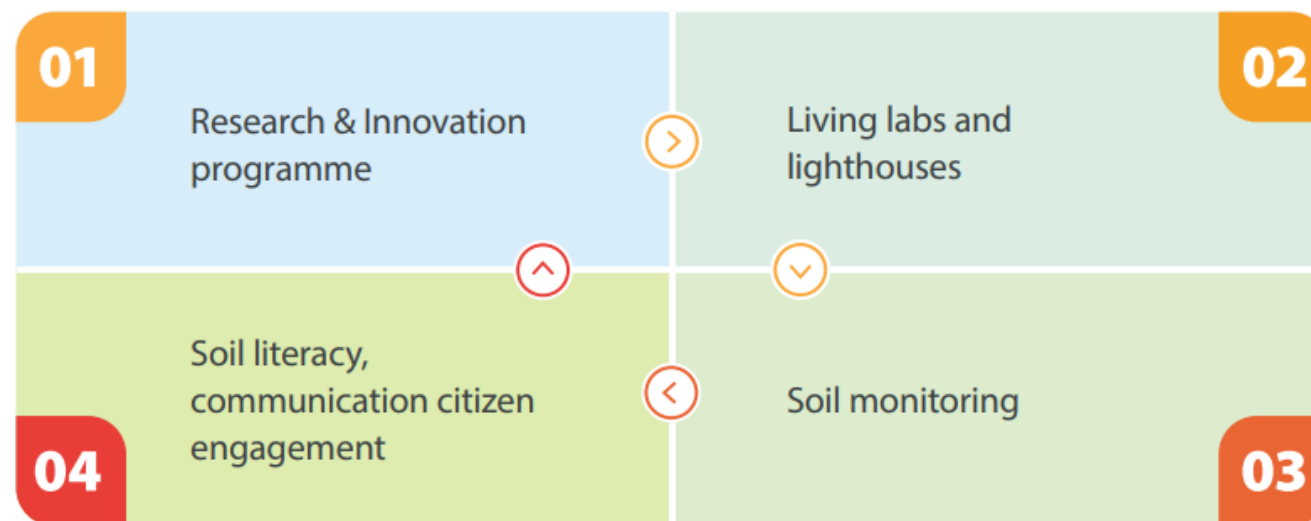


# The importance of transdisciplinarity



- Transformations are already occurring!
- There are many transformational spaces in society (living experiments), e.g.
  - community supported agriculture
  - farmers' socio-ecological justice movements
  - innovation groups e.g. silvopasture
  - citizen science groups around soil pollution... and many more
- Working with these agents of change to strengthen their capacities.

Transdisciplinary  
ambitions of the  
Mission Soil.

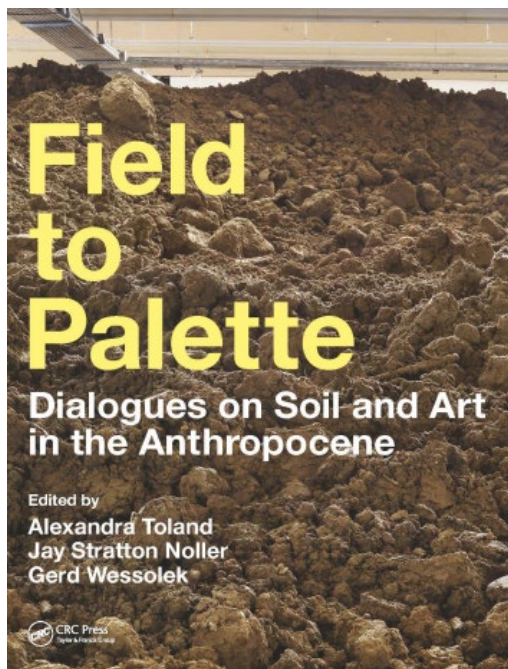


The mission will pioneer, showcase and accelerate the transition to healthy soils through ambitious actions in 100 living labs and lighthouses within territorial settings. This will be combined with an ambitious transdisciplinary R&I programme, a robust, harmonised soil monitoring framework and increased soil literacy and communication to engage with citizens.

# Transdisciplinarity in the Living Labs: criteria for success

- 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 policy-makers and other governance authorities (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.

# The arts and the sustainability transformation



- The purpose of the arts is not to communicate research!
- The arts are research: they generate new perspectives and insights about the relations between people and soils, and can have wide-reaching societal impact.
- See *Field to Palette: Dialogues on Soil and Art in the Anthropocene*, eds Alexandra Toland et al.



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Agnes Denes, *Wheatfield  
—A Confrontation*, Battery  
Park Landfill, downtown  
Manhattan, 2 acres of  
wheat planted and  
harvested, Summer 1982

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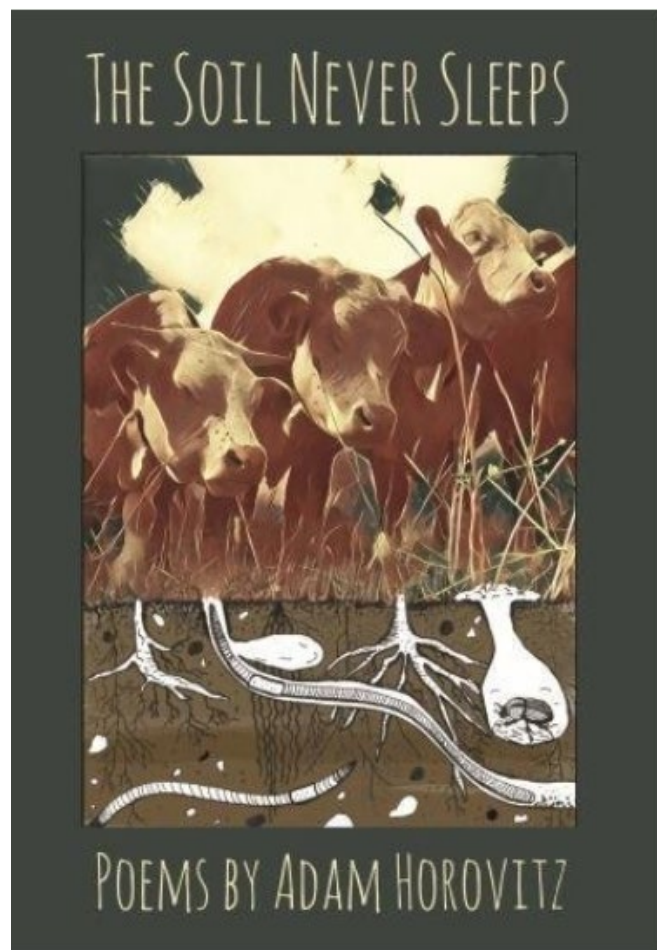
# Mission soil: transdisciplinarity research for a transformation of soil relations

- Achieving soil sustainability requires transformation.
- This is a societal transformation: a transformation of societal relations with soils at all levels, everywhere.
- This requires understanding current societal relations with soils (cultural, economic, political, and other aspects) - and understanding how to transform those.
- This needs transdisciplinary approach – research in society.
- This is aided by arts as a source of new concepts and sensibilities.
- Mission Soil promotes this approach.



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I would not dare,

now, to say I knew anything of land. It has no master;  
only people who strive to learn and understand  
the minutes of it, and the hours. The earth moves faster

than we can comprehend, so seek a segment, find a strand  
of it that you can love. Listen to the movement in one hedge.  
Attune to it. See what it will give. Make no demand.

If you've listened, you'll know we're balanced on the edge  
between oblivion and life and that the only charm  
for our salvation comes in the moments when we pledge

to do no lasting damage, cause as little harm  
as we can manage in field or office, city street or farm.

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# Thank you!

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@EUgreenresearch



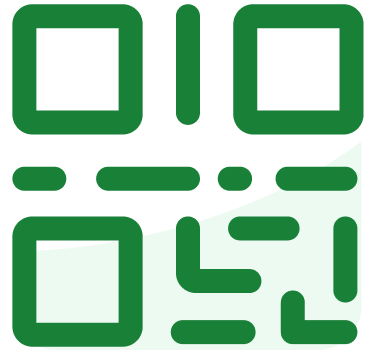
@euagrifood



European Research  
Executive Agency (REA)

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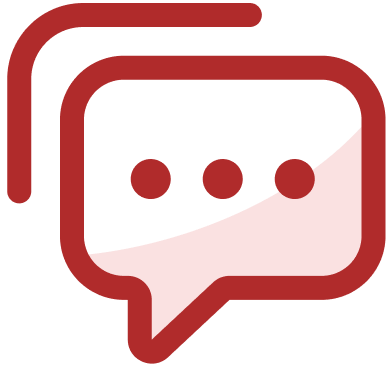
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**Join at [slido.com](https://slido.com)  
#ESMW2023**

ⓘ Start presenting to display the joining instructions on this slide.

slido



## **Audience Q&A Session**

① Start presenting to display the audience questions on this slide.



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# EUROPEAN MISSION SOIL WEEK



PREPSOIL and its work to support the Mission Soil

**Line Friis Lindner**

PREPSOIL Project Manager, Danish Centre for Food and Agriculture (DCA), Aarhus University, Denmark

22/11/2023



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# Setting the scene: facilitating the deployment of the Mission “A Soil Deal for Europe”



## Unhealthy soils

- Soils are threatened because of **human activities**. 2/3 of all soils in the EU are in an **unhealthy state**.
- Lack of **knowledge, awareness, education** affects its capacity to **provide ecosystem services**
- **insufficient access** to data and knowledge
- **lack in capacities** for monitoring soil health

PREPSOIL activities support the induction phase and “roll-out” of the Mission (2022-2025)

# PREPSOIL: Preparing the European Mission towards healthy soils

## Objectives:

Facilitate the deployment of the Mission across European regions through the creation and roll out of:

- Tools and spaces for interaction, knowledge-sharing and co-learning among a multitude of stakeholders to improve **soil literacy and raise awareness**;
- **Stocktaking** and dialogue to understand how regional **assessment of soil needs**, supported by harmonised **monitoring** mechanisms, can lead to action in **living labs and light houses for soil health**.



### PREP SOIL KEY PRINCIPLES

#### STOCKTAKING

From previous initiatives, especially on agricultural soils.

#### OPEN SCIENCE

By default, multiplying the impact.

#### FLEXIBLE

Smooth communication and adaptation to the Mission's needs.

#### CAPABLE

Consortium composed of the top EU researchers, agencies and stakeholder associations.



### SOIL LITERACY, COMMUNICATION AND ENGAGEMENT SPACES

#### STAKEHOLDER MANAGEMENT

Expansion of National Soil Hub concept, coordination and organisation of stakeholder identification, engagement and co-creation. At EU, national and regional levels. Multi-actor approach.

#### AWARENESS, CAPACITY BUILDING AND CONNECTIVITY

Specific campaigns and activities, including science-policy interface, planned to build awareness, and improve the knowledge base among citizens, land managers and urban planners, as well as fostering the generation of connections among different communities of practice.

#### WEB PORTAL

Multi-lingual knowledge hub, project's TV, virtual for interconnection, LL atlas, promotion of best practices and advocates, etc.



### BACKING UP THE MISSION'S IMPLEMENTATION PLAN



#### SOIL NEEDS

Evaluation of soil needs, at least in 19 regions, focusing in the landscape level, defining priorities for LL action.



#### MONITORING

Assessment of indicators for different land uses, exploring EO and citizen observatories, improvement of monitoring knowledge-base.



#### LIVING LABS

Co-creation of model business plans, incl. governance and sustainability, adapted to maturity level.

## PREPSOIL partners



## EUROPEAN MISSION SOIL WEEK

- **Name:** PREPSOIL - Preparing for the 'Soil Deal for Europe' Mission
- **Call Proposal:** HORIZON-MISS-2021-SOIL-01
- **Funded under:** Food, Bioeconomy Natural Resources, Agriculture and Environment
- **Duration:** 1 July 2022 – 30 June 2025
- **Partners:** 20 partners from 11 EU MS + 1 AC representing **multidisciplinary academic partners; EU umbrella organisations; and multi-actor associations.**

## Stakeholder management: multi-level engagement



Land Managers,  
Owners &  
Farmers



Students &  
Citizens



Companies &  
Businesses



NGOs



Authorities &  
Soil Monitoring  
Agencies



Academia &  
Innovation

PREPSOIL is reaching out to a wide audience: from universities to citizen scientists; from school students and teachers to soil monitoring agencies; up to society at large!



Local and regional



National



EU

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# Impact pathways supporting the Mission Soil

## 1. Increased soil literacy, awareness and societal appreciation

Engaging Communities of Practice from multiple regions

Informing society to enable informed decisions through improved access to examples of best practices in education and training

## 2. Improving the knowledge base and the access to critical information to take action on soil health

Create a multi-lingual Knowledge Hub as a single-entry point to soil literacy information

Exploring co-learning processes between CoPs

## 3. Interaction spaces for effective Mission deployment fulfilling EU and international commitments

Increasing the networking and knowledge exchange between communities of practice

Supporting innovative science-to-policy advice aimed at contributing to successful implementation

# 1. Increased soil literacy, awareness and societal appreciation:

Engaging Communities of Practice from multiple regions

- PREPSOIL is boosting a **citizen awareness effort** by **engaging** with multiple **Communities of Practice (CoPs)** - from local and regional movements, grass-root organisations and civil society organisations - to raise awareness about the importance of healthy soils to peers and society at large
- through **video interviews with multiple CoPs** to **showcase their work**



Andreas Capjon / Økern Portal Rooftop garden in Oslo, Norway  
66 Aufrufe • vor 1 Monat



Maina Joner at Skøyenåsen hagelag in Oslo, Norway  
68 Aufrufe • vor 1 Monat



Best Teaching Practices | The vital soil - The Nature School in Lund  
35 Aufrufe • vor 1 Monat



Farming in Balance (Odling i balans) - Hacksta gård (Sweden)  
67 Aufrufe • vor 1 Monat



Farming in Balance (Odling i balans) - Hidinge gård (Sweden)  
72 Aufrufe • vor 1 Monat



Urban gardens at "Suerte Saavedra (Spain)"  
307 Aufrufe • vor 2 Monaten



Best Teaching Practices | Raising Soil Awareness among Austrian Pupils and...  
35 Aufrufe • vor 3 Monaten



Getting started with Soil Living Labs in Norway | PREPSOIL workshops  
180 Aufrufe • vor 4 Monaten

[Prepsoil - YouTube](#)

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# 1. Increased soil literacy, awareness and societal appreciation:

Engaging and reaching out to a multitude of actors: Soil Advocates

- A continuous effort to engage with a multitude of stakeholders at the local/regional levels to enable a **generation of competent soil stewards**
- Purpose: engage with **inspirational “agents of transition”** through Call for Soil Advocates
- **Contribution** in PREPSOIL?
  - Voluntary contributions
  - give feedback on the usability of the developed tools and spaces (Knowledge Hub, Forum, mobile app, etc)
  - support communication efforts
  - network to exchange knowledge and experiences



<https://prepsoil.eu/soil-advocates>

# 1. Increased soil literacy, awareness and societal appreciation:

Informing society to enable informed decisions through improved access to examples of best practices in education and training

Open Calls for Best Teaching Practices for Healthy Soils at Primary and Secondary school level to:

- collect the **sources of information** suitable for citizen's soil literacy, best practices, and inspirational materials
- to allow educators to identify and promote **best practices of soil education** and establish **points of connection within the education community** enabling **co-learning and knowledge exchange** for a better inclusion of soil health in educational contents.



**Raising Soil Awareness among Austrian Pupils and Students**

In order to raise awareness and understanding of the importance of soil, ASSS, the Austrian Soil Science Society

**School:** Environment Agency Austria and more (see text),  
**Teacher:** Barbara Birli



**Carbon Cycle, Soil and Biodiversity within Italian students**

The aim of the project was to explore soil-related topics, a subject that is scarcely or not at all present in the Liceo

**School:** Liceo Scientifico e Artistico G Marconi, **Teacher:**



**The vital soil**

At Naturskolan (The Nature School) in Lund, we have taught about soil using outdoor pedagogy. At the Nature school, we

**School:** Naturskolan, **Teacher:** Carolina Lindeblad



**PREP SOIL**

**Open till 15<sup>th</sup> January 2024**

Apply to the 2nd Call for Best Primary & Secondary Teaching Practices for Healthy Soils

<https://prepsoil.eu/best-teaching-practices>

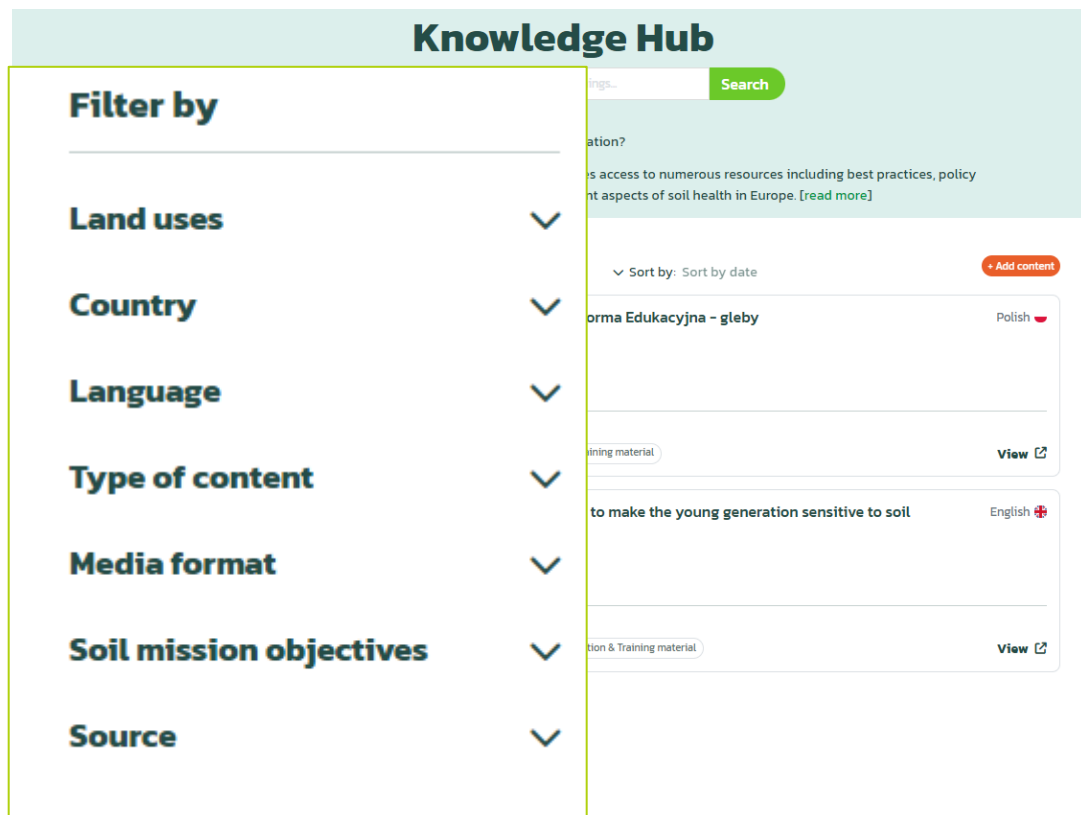
## 2. Improving the knowledge base: The Knowledge Hub

- One-stop-shop - **multi-lingual** - for soil health, providing a single-entry point to **soil literacy information**
- Improved **access of information** to raise awareness and **take action** on soil
- **User needs in the centre** with filtering options for:
  - Land use
  - Soil Mission Objectives
  - Country
  - Language
  - Type of content
  - Media format
  - Source
- The Knowledge Hub will allow to make informed decisions regarding soil management through **integrated online resources in all MS and AC** and improved access to evidence-based information, data and training.



[Knowledge Hub | Prepsol](#)

## 2. Improving the knowledge base: The Knowledge Hub



**Knowledge Hub**

Filter by

- Land uses
- Country
- Language
- Type of content
- Media format
- Soil mission objectives
- Source

Search

Sort by: Sort by date

+ Add content

Polish

View

English

View

### Type of content:

- Best practices and tools
- Conference deliverable
- Education & training material
  - Primary education
  - Secondary education
  - Vocational education and training
  - Higher education
- Interview
- Policy documents
  - International policy document
  - EU policy document
  - National policy document
  - Regional policy document
  - Policy recommendation
  - Science-based policy advice
- Scientific
  - Publications and reports
  - General article

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Submissions  
welcome!

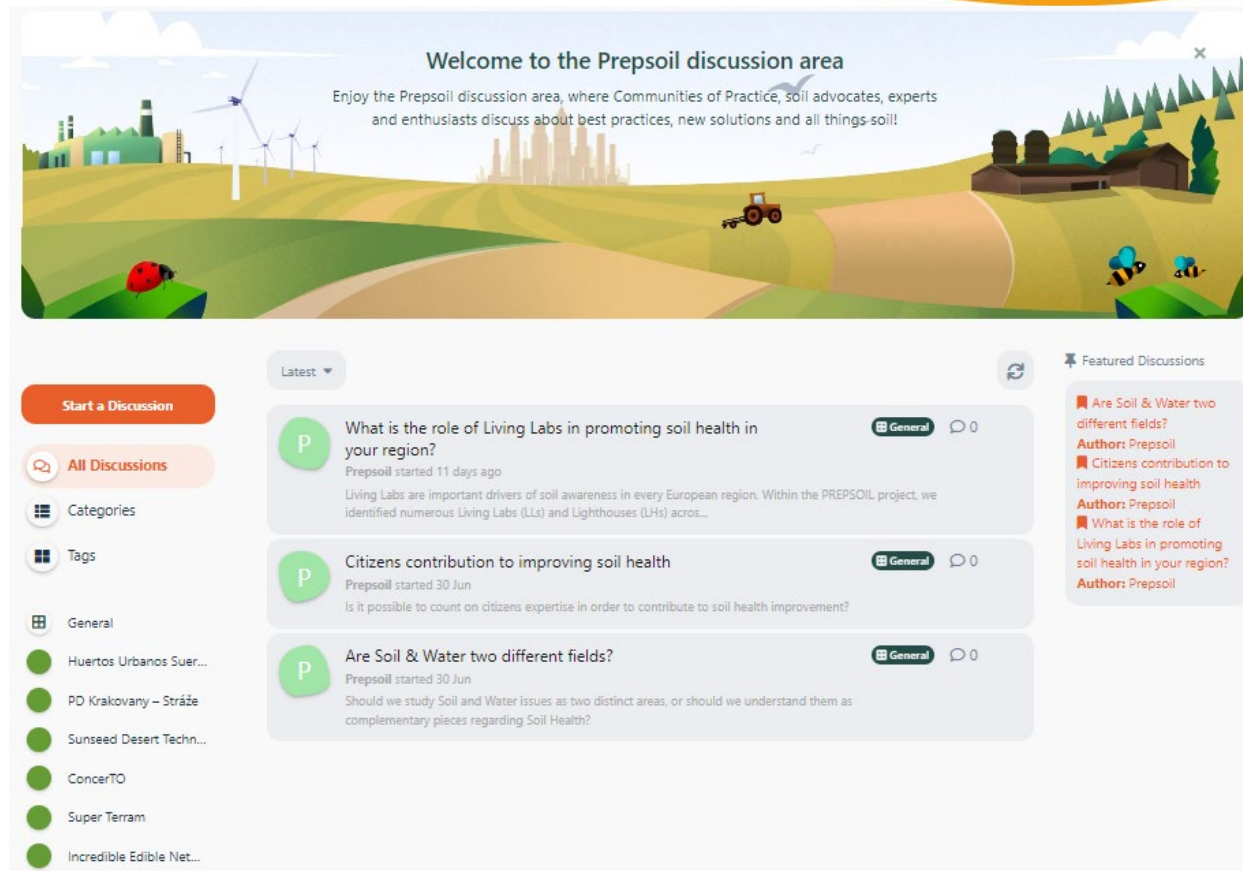
[Knowledge Hub | Prepsoil](#)

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### 3. Interactive spaces for effective Mission deployment: The web-based Forum

- local/regional communities of practices (CoP) will **engage, network, exchange knowledge, interact, publish and share documents**, discuss via posts, welcome members and organise virtual meetings
- the Forum will be extended to other **thematic CoPs**, i.e., science-policy advisory experts and soil monitoring officers

[Forum | Prepsoil](#)



Welcome to the Prepsoil discussion area  
Enjoy the Prepsoil discussion area, where Communities of Practice, soil advocates, experts and enthusiasts discuss about best practices, new solutions and all things-soil!

Start a Discussion

All Discussions

Categories

Tags

General

Huertos Urbanos Suer...

PD Krakovany – Straže

Sunseed Desert Techn...

ConcerTO

Super Terram

Incredible Edible Net...

Latest

What is the role of Living Labs in promoting soil health in your region?  
Prepsoil started 11 days ago  
Living Labs are important drivers of soil awareness in every European region. Within the PREPSOIL project, we identified numerous Living Labs (LLs) and Lighthouses (LHs) across...

Citizens contribution to improving soil health  
Prepsoil started 30 Jun  
Is it possible to count on citizens expertise in order to contribute to soil health improvement?

Are Soil & Water two different fields?  
Prepsoil started 30 Jun  
Should we study Soil and Water issues as two distinct areas, or should we understand them as complementary pieces regarding Soil Health?

Featured Discussions

Are Soil & Water two different fields?  
Author: Prepsoil

Citizens contribution to improving soil health  
Author: Prepsoil

What is the role of Living Labs in promoting soil health in your region?  
Author: Prepsoil

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Consortium composed of the top EU researchers, agencies and stakeholder associations.



## SOIL LITERACY, COMMUNICATION AND ENGAGEMENT SPACES

### STAKEHOLDER MANAGEMENT

Expansion of National Soil Hub concept, coordination and organisation of stakeholder identification, engagement and co-creation. At EU, national and regional levels. Multi-actor approach.

### AWARENESS, CAPACITY BUILDING AND CONNECTIVITY

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### WEB PORTAL

Multi-lingual knowledge hub, project's TV, virtual for interconnection, LL atlas, promotion of best practices and advocates, etc.

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# Thank you!

Email: [lfl@dca.au.dk](mailto:lfl@dca.au.dk)

Website: <https://prepsoil.eu>

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# EUROPEAN MISSION SOIL WEEK

**Regional soil needs assessment:  
region selection procedure**

**Saskia Keesstra**

Climate-Kic/Wageningen Environmental Research

22/11/2023



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## PREPSOIL SOIL NEEDS ASSESSMENT

- **OBJECTIVES:**
- To identify the existing 'soil needs' in contrasting regions in European MS and AC that represent the main European pedo-climate zones and land uses
- To kick off a wider appraisal effort across the EU regions.
  
- **By:**
  - **Select the regions:** ensure good representation of different key identifiers (land uses, environmental zones, soil types, accessibility/established stakeholder networks).
  - **Assess soil needs:** options to restore soil health: determine the status of soil health; options and drivers for its improvement at landscape and land use levels
  - **Provide a starting point for recommendations on priority actions to be implemented in LLs/LHs.**



### DEFINITIONS:

**Soils Health:** *the continued capacity of soils to support ecosystem services*

**Soil Needs:** *the requirements from existing and emerging socio-economic and geo-biophysical perspectives that determine soil health and related services to human society*

## SELECTION OF THE REGIONS

- Representative contrasting regions?
- Regions? How big? smallest/largest? NUTS-2? NUTS-3?
- Representative of what?
  - Of what Europe currently is?
  - Or what is should become?



## SELECTION OF THE REGIONS

- We defined that a region should be:
  - a specific land use dominates but interacts with the other land uses (at least one other)
  - common drivers cause the current unsustainable land/soil management
  - sustainable management (from both a biophysical and socio-economic point of view) is planned or is already in place



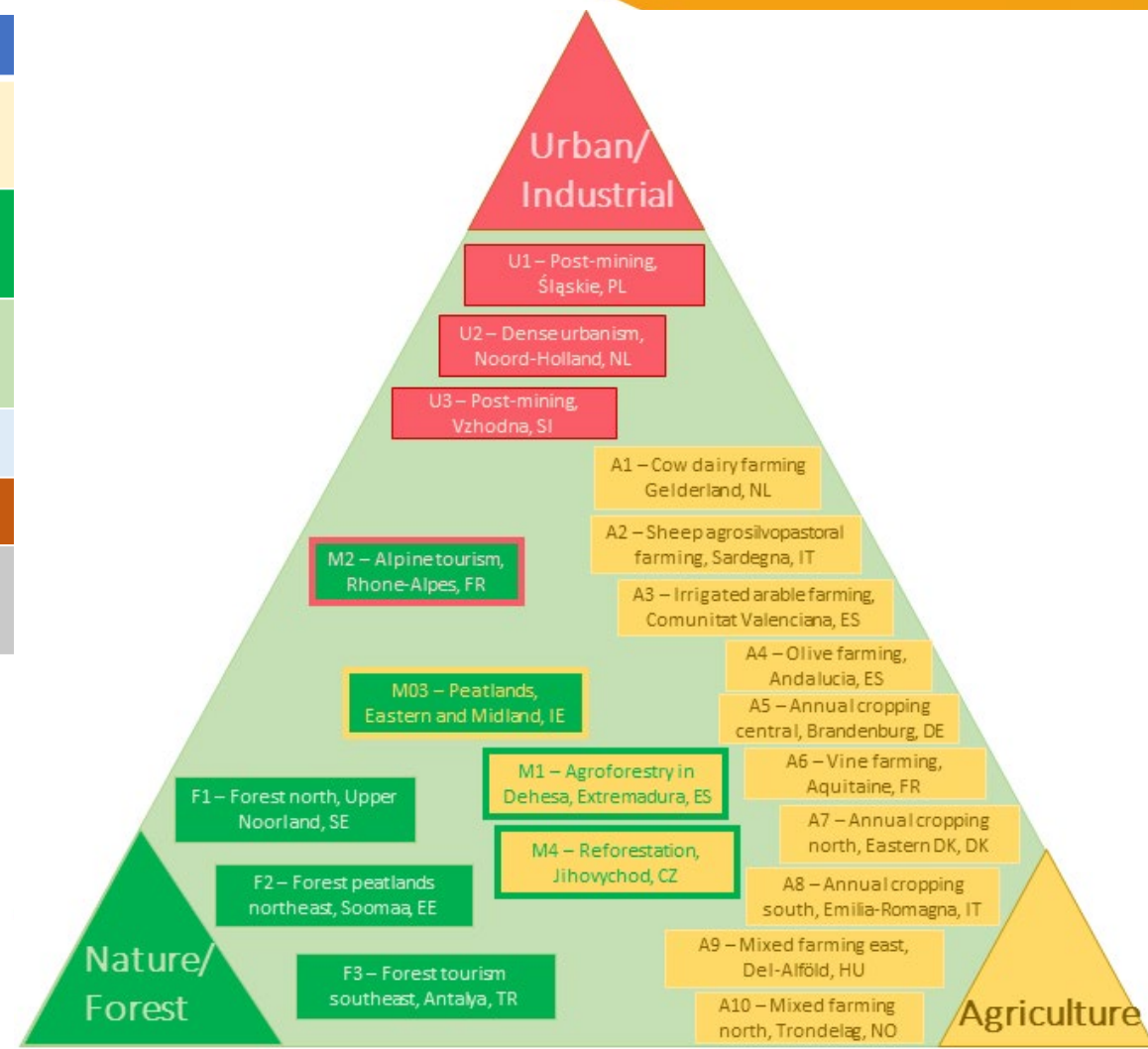
A region is representative of other regions in EU (so the majority of Europeans will recognize themselves):

Common characteristics:

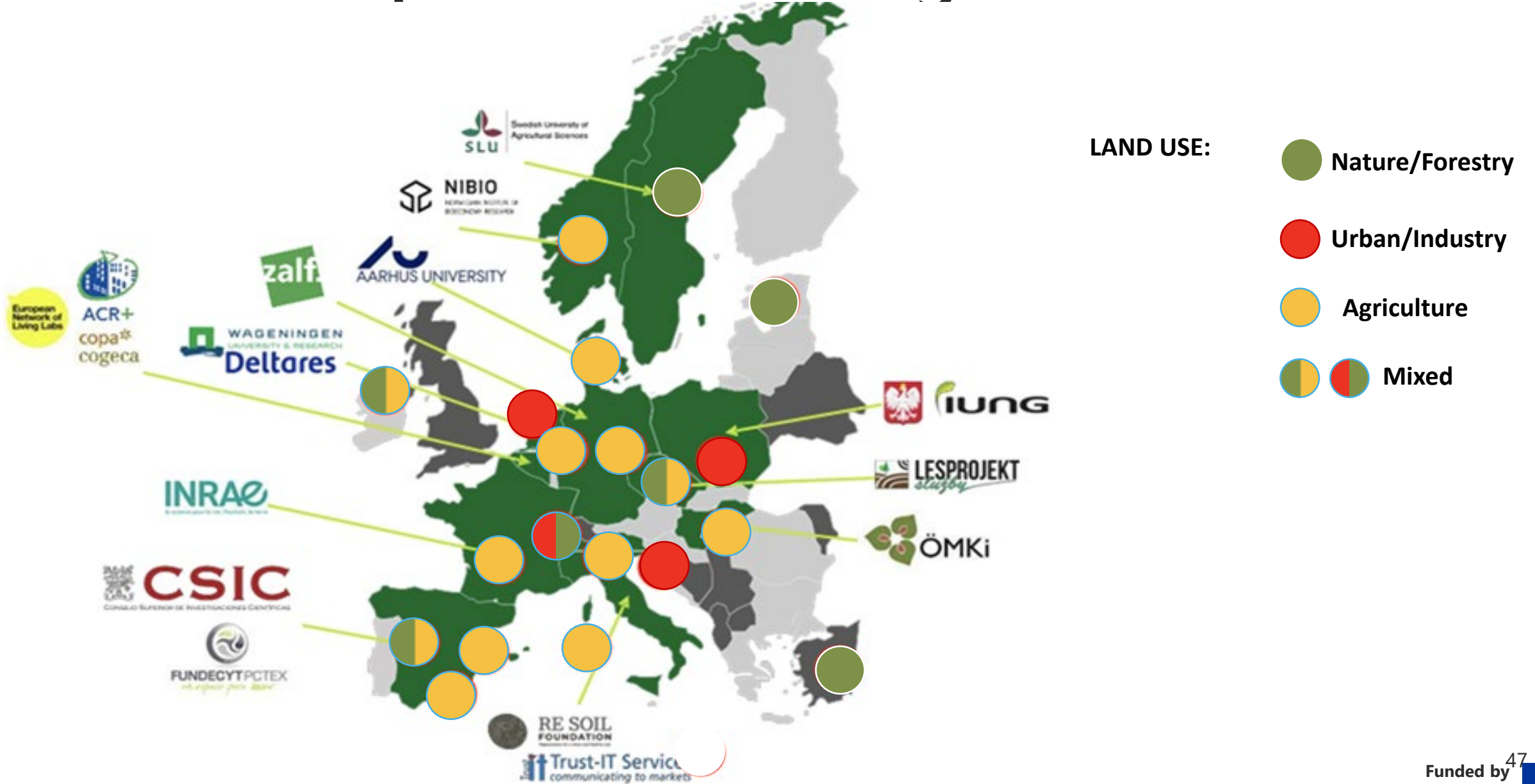
- Soil (threat)/soil needs
- Drivers: e.g Climate (change)
- Land use/management type
- Socio-economic conditions
- accessibility/established stakeholder networks.

## SELECTION OF THE REGIONS: LAND USE CATEGORIES

Type	Sub-types			
<b>Agriculture</b>	non-perennial cropland	Perennial cropland	grassland	mixed
<b>Forestry</b>	Forest on mineral soils	Forest on organic soils		
<b>Natural</b>	(semi-)natural drylands	(semi-)natural peatlands	Natural forests	
<b>Urban</b>	urban	peri-urban		
<b>Industry</b>	industrial	post-industrial	mining	post-mining
<b>Mixed</b>	All combinations	Areas changing land use		



# 20 Representative Regions



# Regions and their issues

- **In each region:**
  - a workshop
  - 10 targeted interviews are organised with local members,
- **The outcomes of these workshops:**
  - Synthesis report of soil needs and drivers of changes for each land use type
  - Regional focused Strategic Research and Innovation Agenda (mid-2025).
  - This information will support the creation of recommendations on co-creating innovative activities to improve soil health, as well as new Living Labs and Lighthouses.

Land use type	Issue and region
Agriculture	Cow dairy farming, Gelderland, Netherlands
Agriculture	Sheep Agrosilvopastoral farming, Sardegna, Italy
Agriculture	Irrigated arable agriculture, Comunitat Valenciana, Spain
Agriculture	Olive farming, Andalucía, Spain
Agriculture	Annual Cropping Central, Brandenburg, Germany
Agriculture	Vine Farming, Aquitaine, France
Agriculture	Annual cropping North, East Denmark, Denmark
Agriculture	Annual cropping South, Emilia-Romagna, Italy
Agriculture	Organic mixed agriculture East, Dél-Alföld, Hungary
Agriculture	Mixed farming North, Trøndelag, Norway
Forestry	Forest north, Upper Noorland, Sweden
Forestry	Forest peatland Northeast, Soomaa, Estonia
Forestry	Forest tourism Southeast, Antalya, Turkey
Mixed Land use	Agro-forestry in Dehesa, Extremadura, Spain
Mixed Land use	Alpine tourism, Rhône-Alpes, France
Mixed Land use	Peatlands, Eastern and Midland, Ireland
Mixed Land use	Reforestation, Jihovýchod, Czech Republic
Post Industrial	Post-industrial, Śląskie, Poland
Post Industrial	Post-mining, Vzhodna Slovenija, Slovenia
Urban	Dense urbanism, Noord-Holland, Netherlands



# Workshops and interviews done

- 20 posters with information on the regional soil needs (hallway)
- Afternoon breakout session: four selected regions present their findings



# Regional Workshops



26 May 2023  
**High Tech Agriculture – Münchenberg (Germany)**  
 The Münchenberg "PREPSOIL Regional Soil Needs Workshop" takes place on the 26th of May, 2023. This workshop aims to...

Germany, Agriculture



19 May 2023  
**Reforestation – Žďár nad Závovou (Czech Republic)**  
 The Žďár nad Závovou "PREPSOIL Regional Soil Needs Workshop" takes place on the 19th of May, 2023. This workshop aims to...

Czech Republic, Agriculture, Czech Republic, Forestry



17 May 2023  
**Post mining – Zagorje ob Savi (Slovenia)**  
 The Zagorje ob Savi "PREPSOIL Regional Soil Needs Workshop" takes place on the 17th of May, 2023. This workshop aims to...

Slovenia, Natural



26 April 2023  
**Forests – Antalya (Turkey)**  
 The Antalya "PREPSOIL Regional Soil Needs Workshop" takes place on the 26th of April, 2023. This workshop aims to...

Turkey, Forestry



26 April 2023  
**Vineyard Soils – Bordeaux (France)**  
 The Bordeaux "PREPSOIL Regional Soil Needs Workshop" takes place on the 26th of April, 2023. This workshop aims to...

France, Agriculture



25 April 2023  
**Dairy Farming – Achterhoek (The Netherlands)**  
 The Achterhoek "PREPSOIL Regional Soil Needs Workshop" takes place on the 25th of April, 2023. This workshop aims to...

Netherlands, Agriculture



10 May 2023  
**Mountain Soils – Grenoble (France)**  
 The Grenoble "PREPSOIL Regional Soil Needs Workshop" takes place on the 10th of May, 2023. This workshop aims to...

France, Natural, France, Urban



04 May 2023  
**Agricultural Land in Po Valley – Rimini (Italy)**  
 The Rimini "PREPSOIL Regional Soil Needs Workshop" takes place on the 4th of May, 2023. This workshop aims to debate on...

Italy, Agriculture



03 May 2023  
**Forest production on drained peatlands – Soomaa region (Estonia)**  
 The Estonian "PREPSOIL Regional Soil Needs Workshop" takes place on the 3rd of May, 2023. This workshop aims to...

Estonia, Forestry, Estonia, Natural



20 April 2023  
**Urban Soils – Amsterdam (The Netherlands)**  
 The Amsterdam "PREPSOIL Regional Soil Needs Workshop" takes place on the 20th of April, 2023. This workshop aims to...

Netherlands, Urban



13 April 2023  
**Agroforestry – Badajoz (Spain)**  
 The Badajoz "PREPSOIL Regional Soil Needs Workshop" takes place on the 13th of April, 2023. This workshop aims to debate...

Spain, Agriculture, Spain, Forestry



13 April 2023  
**Annual Cropping – Aarhus (Denmark)**  
 The Aarhus "PREPSOIL Regional Soil Needs Workshop series" takes place on 13th April, 8th, 10th and 11th May. This series...

Denmark, Agriculture



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# Thank you!

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# EUROPEAN MISSION SOIL WEEK

**Soil needs assessment in 20 European regions:  
approach and key results**

**Katharina Helming, Lukas Bayer, Keerthi Bandru**  
Leibniz Centre for Agricultural Landscape Research (ZALF)  
and PREPSOIL consortium

22/11/2023



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## SOIL NEEDS ASSESSMENT

### DEFINITIONS:

Soils Health: the continued capacity of soils to support ecosystem services (Soil Mission)

Soil Needs: the requirements from **existing** and **emerging socio-economic** and **geo-biophysical** perspectives that determine **soil health** and related **services to human society** (PREPSOIL)



A Systems Approach

A Regional Approach

A Participatory Approach

A Scalable Approach



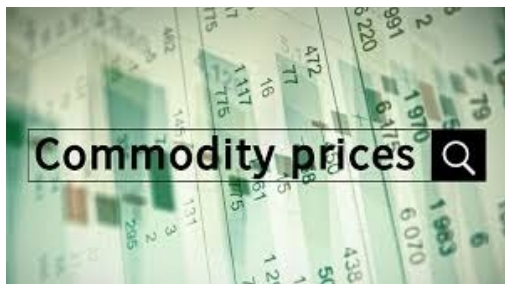
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# SOIL NEEDS ASSESSMENT



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Drivers



Pressures



Human Environment Interactions

Responses



Impacts



States

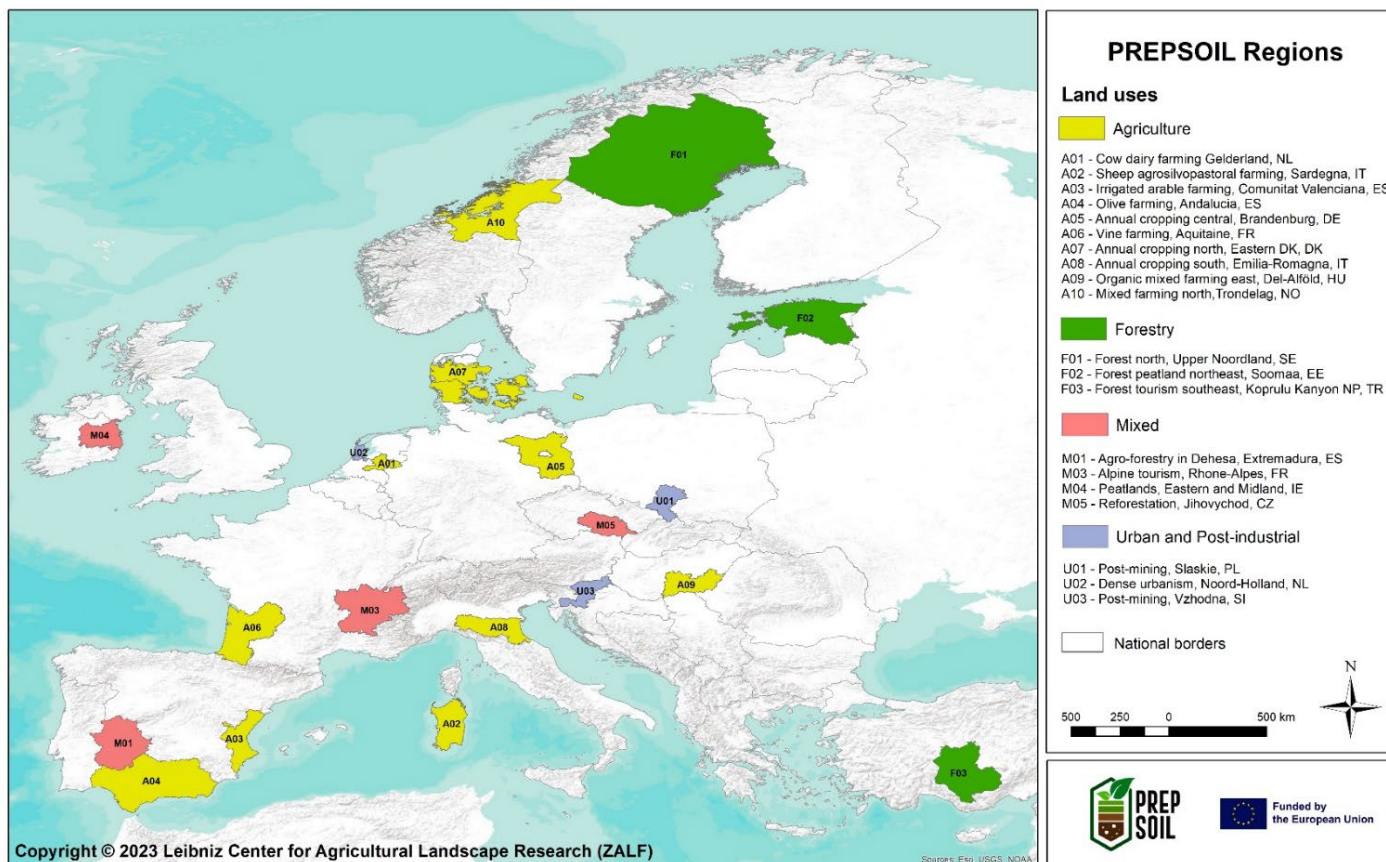


## DPSIR Framework

- **Drivers** that improve soil health management
- **Pressures:** precautionary soil management
- **States**, that make up healthy soils
- **Impacts**, that are beneficial to ecosystems and humans
- **Responses**, protective of soils and limiting of ecosystem service decline



## 20 European Regions



Dominant Land Uses

Environmental Zones

Soil types (WRB)

Soil threats

Soil Mission Objectives



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# SOIL NEEDS ASSESSMENT

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## Assessment process in 20 regions: 3 steps

Step 1: literature study: knowledge on soil needs and stakeholder inventory;

Step 2: stakeholder workshop and  $\pm 10$  interviews.

- discuss and validate the literature review
- explore future vision **for** the region
- elucidate perspectives on barriers and opportunities for soil health transitions (Living Lab approach)

• Step 3: a summary of the soil needs for each region.







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# SOIL NEEDS ASSESSMENT



## EUROPEAN MISSION SOIL WEEK

### Stakeholder workshops

Brandenburg, Germany  
Annual cropping



Silesia, Poland  
Post-mining

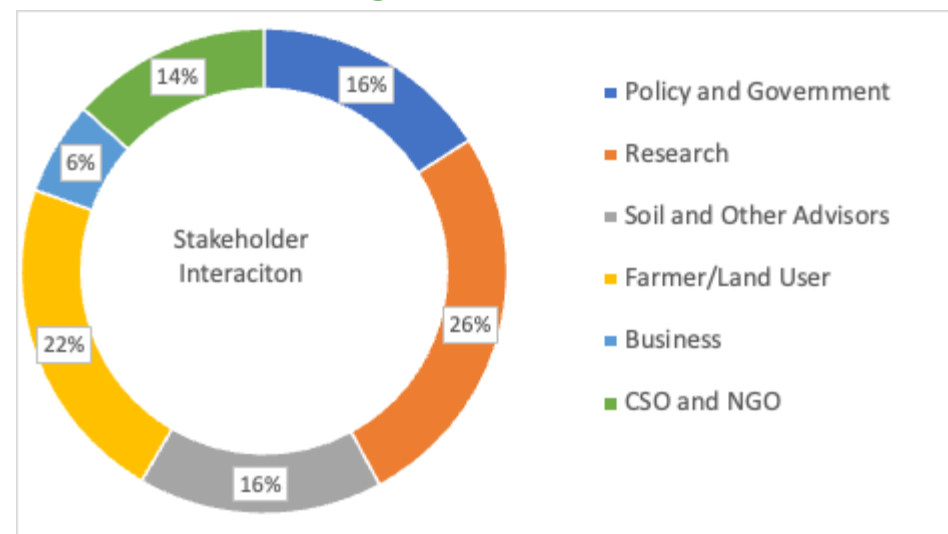


Sardinia, Italy  
Sheep farming



Valencia, Spain  
Irrigated farming









### Stakeholder groups involved



> 500 individuals in total

## Regions

## Soil health objectives addressed

Land Use Category	Region/Soil Mission 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
Agriculture	A01: Cow Dairy Farming								
	A02: Sheep Agrosilvopastoral								
	A03: Irrigated Arable Farming								
	A04: Olive Farming								
	A05: Annual Cropping Central								
	A06: Vine Farming								
	A07: Annual Cropping North								
	A08: Annual Cropping South								
	A09: Organic Mixed Farming East								
	A10: Mixed Farming North								
Forestry	F01: Forest North								
	F02: Forest Peatland Northeast								
	F03: Forest Tourism Southeast								
Mixed	M01: Agroforestry in Dehesa								
	M02: Alpine Tourism								
	M03: Peatlands								
	M04: Reforestation								
Urban and Post-Industrial	U01: Post-mining								
	U02: Dense Urbanism								
	U03: Post-minig								



# Drivers of soil management



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CAP  
Bureaucracy  
Sunk Investments  
Path dependencies

**Policy-Economy**



Migration  
Eco-tourism  
Dietary preferences  
Community activities

**Socio-Culture**

**Environment**

Climate Change  
Fires/heat/floods  
Invasive Species  
Land Scarcity

**Technology**

Digitalisation  
Robotics  
De-industrialisation  
Communication



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## SOIL NEEDS ASSESSMENT

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### Soil Needs in Agriculture:

Soil improving management solutions are available but barriers are high

- Remove economic, policy and knowledge barriers to soil improving management
- Redirect policy (CAP) to support provision of ecosystem services alongside production
- Integrate agro-ecological principles with modern technologies in a systems approach
- Acknowledge cultural identity, ownership, and a sense of belonging to an area.
- Consider path dependencies and land use history



Agriculture



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## SOIL NEEDS ASSESSMENT

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### Soil Needs in forestry and natural land

- Remove drainage in peatland for SOC sequestration and climate change mitigation
- Consider watershed relationships in agricultural and urban water management (irrigation, drainage)
- Adapt forest management to climate change (drought, excessive water, fire) with diversification,
- Avoid soil compaction with continuous cover, leave top branches on the soil when harvesting
- Utilise the eco-tourism movement for economic diversification of the regions; be aware of side effects



Forestry &  
Natural



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## SOIL NEEDS ASSESSMENT

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### Soil Needs **Urban/Industry** land uses

- Use nature-based solutions and de-sealing where possible to limit excessive heat and rainfall
- Support community lead activities for a greening transition
- Follow novel approaches in housing, which limit land take and soil sealing
- Replace economic activities in post-industrial areas
- Remediate mining and contamination sites



Urban & Post -  
industrial/mining



## Soil Needs in mixed land uses

- Provide access to training and cooperation amongst land users, even more due to the higher complexity of land use
- Support climate change adaptation, and awareness of higher flood, landslide, erosion, fire risks
- reverse of rural exodus and attention to rural renewal
- Introduce long term land tenure systems for feeling of belonging and responsibility.
- balance land use: close to villages lands are overutilised while remote areas are abandonend



Mixed



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# SOIL NEEDS ASSESSMENT

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## Synthesis

- Understanding soil needs requires understanding **human – environment systems interactions**
- Improving the soil means addressing the **causes** and not the **symptoms**
- Consideration of **regional configurations** necessary
- Activities in **living labs** can take up the soil needs assessment approach







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# Thank you!

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Implications for stakeholder  
interaction, living labs,  
monitoring, science-policy

**Line Friis Lindner**

PREPSOIL Project Manager, Danish Centre for Food and  
Agriculture (DCA), Aarhus University, Denmark

22/11/2023



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## Supporting the Mission's Implementation Plan

- The Mission Soil proposes a novel approach to R&I for impact based on strong stakeholder and citizen engagement.
- PREPSOIL focuses on the generation of spaces for interaction, co-learning and building awareness to back up the Mission's Implementation plan
- PREPSOIL undertakes activities on (i) **appraisal of soil needs** at regional level, (ii) providing direction and capacities for the future **soil health monitoring** mechanisms, (iii) mapping and preparing the implementation of **regional Living Labs**; **science-policy** interface; and strengthening **stakeholder interactions**.

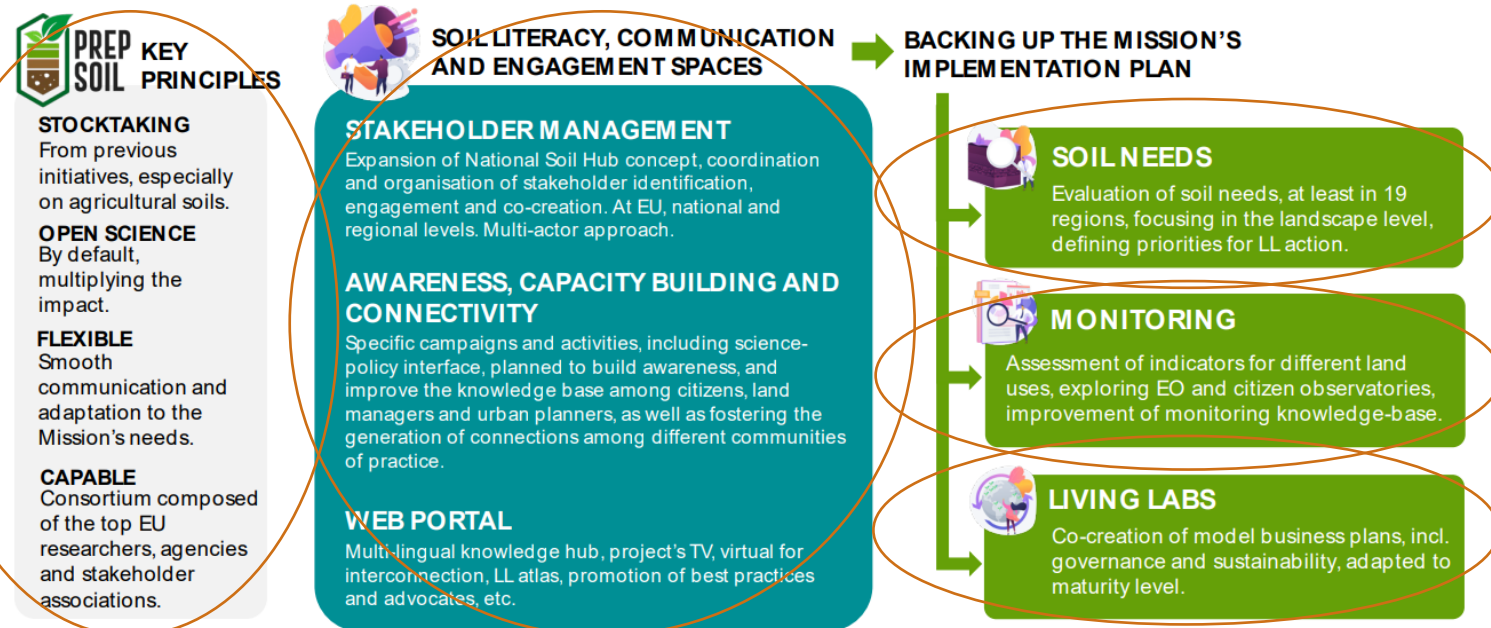


Figure 1. Project's overall concept

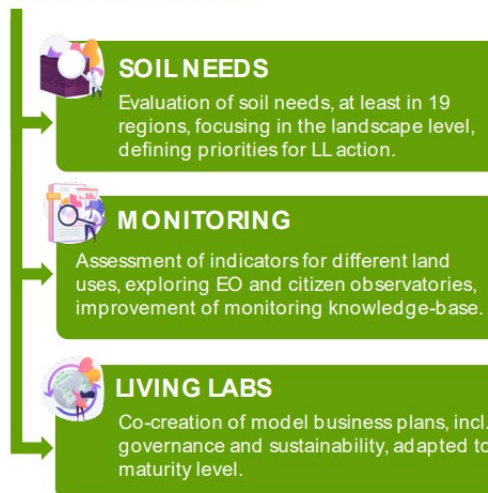
# SYSTEMIC INNOVATIONS: Living Labs and Lighthouses as place-based co-creation and innovation ecosystems

## Aims:

1. Interactive LL Map: stock-taking current experiences around LLs
2. Investigate current modes of financing LL and LHs
  - workshops on model business plans reflecting different contexts of each LL/LH, including the state of maturity, cooperation forms, innovation approaches, growth/exploitation
  - convene discussions on potential financing models, incl. private and public actors.
3. Service package with a set of recommendations for the Mission co-created with pilot LLs/LHs to accelerate their roll out and maturity

[Map of Living Labs and Lighthouses | Prepsoil](#)

## BACKING UP THE MISSION'S IMPLEMENTATION PLAN

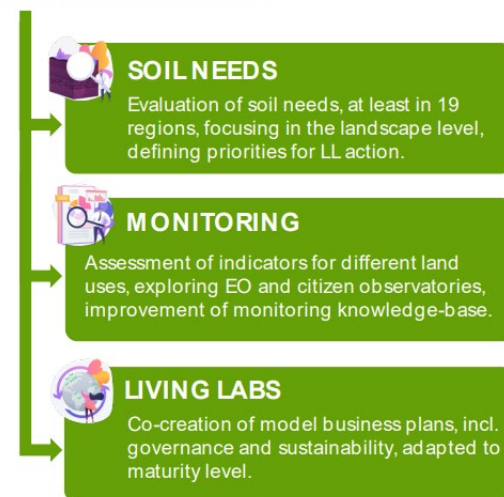


# MONITORING: Providing direction and capacities for the future harmonized soil health monitoring mechanisms

## Aims:

1. Contributing to improving the knowledge base for the Mission's soil monitoring framework, including data harmonisation
2. Evaluate the potential contribution of satellite-based earth observation (EO) techniques for soil health monitoring
3. Integrating citizen science (CS)
  - identify potential contributions as well as gaps in CS approaches for different soil use contexts; case study among LLs assessing the potential of using CS in soil monitoring
  - developing and testing mobile app to engage with citizens' scientists and students' parents and families to gather data from real-life observations
4. Identify and fulfil the capacity building needs of decision makers and public officers (incl. LL members) to assess monitoring outputs.
  - EU-level pilot training workshops to improve decision-makers' knowledge base on soil health monitoring (course material will be available on Knowledge Hub)
  - discussion on soil health monitoring in the Forum

## BACKING UP THE MISSION'S IMPLEMENTATION PLAN



# CONNECTIVITY: Science-policy interface strategy supporting national and regional Soil Mission activities including Living Labs

## Aims:

1. Co-development of best-of-practice methods for science-policy interface and advice at the national/regional (LLs) level in order to facilitate constructive interactions and alignment between stakeholders and public governance in support of the Mission Soil objectives.
2. Guidelines for consecutive steps for science-policy interaction, needs analysis and knowledge synthesis
3. Pilot-testing in four to six of the LL regions to refine methods and ensure wider utilization aiming for scientifically informed policy-making connecting science with policy.

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SOIL LITERACY, COMMUNICATION  
AND ENGAGEMENT SPACES →

### STAKEHOLDER MANAGEMENT

Expansion of National Soil Hub concept, coordination and organisation of stakeholder identification, engagement and co-creation. At EU, national and regional levels. Multi-actor approach.

### AWARENESS, CAPACITY BUILDING AND CONNECTIVITY

Specific campaigns and activities, including science-policy interface, planned to build awareness, and improve the knowledge base among citizens, land managers and urban planners, as well as fostering the generation of connections among different communities of practice.

### WEB PORTAL

Multi-lingual knowledge hub, project's TV, virtual for interconnection, LL atlas, promotion of best practices and advocates, etc.

## STAKEHOLDER INTERACTION: Engagement and awareness raising supporting a broad deployment of the Mission

### Aims:

1. Organise multi-level stakeholder interactions and engagement from the EU to the national, regional, and local levels
  - via the National Soil Hubs, dialogues with LLs/LHs, mobilisation of cities and regions via network partners
  - with dedicated stakeholder mapping and engagement procedures
2. Planning how the current EJP SOIL Hubs can be expanded into wider multi-actor forums at national level, providing input to soil info repository, and act as a forum, which can drive MS discussions and actions revolving around the Mission.
3. Foster awareness raising and facilitate access to knowledge through several actions of dissemination and communication, including the development of the Knowledge Hub and Forum.



SOIL LITERACY, COMMUNICATION  
AND ENGAGEMENT SPACES →

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#### WEB PORTAL

Multi-lingual knowledge hub, project's TV, virtual for interconnection, LL atlas, promotion of best practices and advocates, etc.

# PREPSOIL: Facilitating the deployment of the Mission across European regions



## STOCKTAKING

From previous initiatives, especially on agricultural soils.

## OPEN SCIENCE

By default, multiplying the impact.

## FLEXIBLE

Smooth communication and adaptation to the Mission's needs.

## CAPABLE

Consortium composed of the top EU researchers, agencies and stakeholder associations.



## SOIL LITERACY, COMMUNICATION AND ENGAGEMENT SPACES

### STAKEHOLDER MANAGEMENT

Expansion of National Soil Hub concept, coordination and organisation of stakeholder identification, engagement and co-creation. At EU, national and regional levels. Multi-actor approach.

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### WEB PORTAL

Multi-lingual knowledge hub, project's TV, virtual for interconnection, LL atlas, promotion of best practices and advocates, etc.

## BACKING UP THE MISSION'S IMPLEMENTATION PLAN



### SOIL NEEDS

Evaluation of soil needs, at least in 19 regions, focusing in the landscape level, defining priorities for LL action.



### MONITORING

Assessment of indicators for different land uses, exploring EO and citizen observatories, improvement of monitoring knowledge-base.



### LIVING LABS

Co-creation of model business plans, incl. governance and sustainability, adapted to maturity level.



<https://prepsoil.eu>



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<https://www.linkedin.com/company/prepsoil/>



<https://www.youtube.com/@prepsoil>



<https://prepsoil.eu/newsletter>

Figure 1. Project's overall concept





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# Thank you!

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### Announcement from NATI00NS

Soil health thematic online events: December and January

Website for the thematic events

[nati00ns.eu/thematic-events](https://nati00ns.eu/thematic-events)

Follow NATI00NS on LinkedIn

[linkedin.com/company/nati00ns](https://linkedin.com/company/nati00ns)



14.12.2023

De-sealing urban and post-industrial soil

11.01.2024

Innovative women improving food & soil health

18.01.2024

Industry engagement for sustainable soil health

24.01.2024

Regional Smart Strategies for soil health

25.01.2024

Soil health from a forestry perspective

TBD

Soil de-contamination



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# Side activities– DAY 2

## Meet the Projects



ENGAGING CITIZENS IN SOIL SCIENCE:  
THE ROAD TO HEALTHIER SOILS

## Photo exhibition

Knud Bay Smidt

Jacek Cislo

Božidar Grgošic

Diana Joca

Eniko Kelemen-Zobor

Dominika Koszowska

Eric Lucot

Cristina Mancini

Mariya Maslova

Sergio Ibáñez Pascual

Félix González Peñaloza

Marcin Switoniak



# Side activities– DAY 2

**Poster Exhibition: Soil  
needs in PREPSOIL regions**

**Building E - Cloister**





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Plenary Session

## Reporting from breakout sessions

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## **Breakout sessions**

**Breakout session 6**

**Living Labs and other experiences  
from placed-based innovation**

**Breakout session 7**

**Soil biodiversity**

**Breakout session 8**

**Business models for soil health**

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Plenary Session

## **The Mission's regional and local dimension**

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EUROPEAN UNION

# EUROPEAN MISSION SOIL WEEK



**Francesco Molinari**

Project Manager

*EU-funded project HuMUS*



**Angèle Liaigre**

EU Project Advisor Cities

*ERRIN Bioeconomy Working  
Group Leader at Northern  
Netherlands*



**Raquel Bravo Rubio**

Chief of Communication and  
Institutional Relations Department

*City of Madrid*

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# EUROPEAN MISSION SOIL WEEK



Plenary Session

## Mission Manifesto and Mission Ambassadors

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# EUROPEAN MISSION SOIL WEEK

## The Mission Soil Manifesto

**Kerstin Rosenow**

Head of Unit, Head of Mission Soil Secretariat  
Research and innovation unit,  
DG Agriculture and rural development, European Commission

Date 22 November 2023



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## The Mission Soil Manifesto *Launched in April 2023*

- ❑ Is a non-legally binding document  
*To formalise stakeholder and citizen participation in and support to Mission activities*
- ❑ Can be signed by:  
*Regional and local public authorities, private and public organisations, NGOs, philanthropic organisations, schools, universities, research institutes, associations, individuals*

### A Manifesto to:

1. *Recall the importance of soils for people and the planet*
2. *Acknowledge the status of soils*
3. *Recognise the urgency to act*
4. *Support the Mission and its objectives*
5. *Take action as policymakers, organisations, or individuals*

Everyone can contribute to protect and restore European soils

<https://ec.europa.eu/eusurvey/runner/mission-soil-manifesto>



Today we launch the #MissionSoil Manifesto.

All organisations and citizens that want to become part of a community of practice that cares for #soil health are invited to sign the manifesto

Sign here: [ec.europa.eu/eusurvey/runner/mission-soil-manifesto](https://ec.europa.eu/eusurvey/runner/mission-soil-manifesto)



## EUROPEAN MISSION SOIL WEEK



#MissionSoilWeek #MissionSoil #EUMissions

## Mission Soil Manifesto – Statistics

As of 6 Nov 2023

Type of signatory	
<b>Individuals</b>	<b>1476</b>
<b>Legal entities</b>	<b>277</b>
<b>Total</b>	<b>1753</b>

### Signatories as individuals:

- 84 % of the total signatories
- 80% are based in the EU; 20% outside the EU
- The majority is employed in the field of research (34%)
- Contribution from all MS (main from ES, IT, FR, DE and BE)
- Contribution from more than 30 non-EU countries

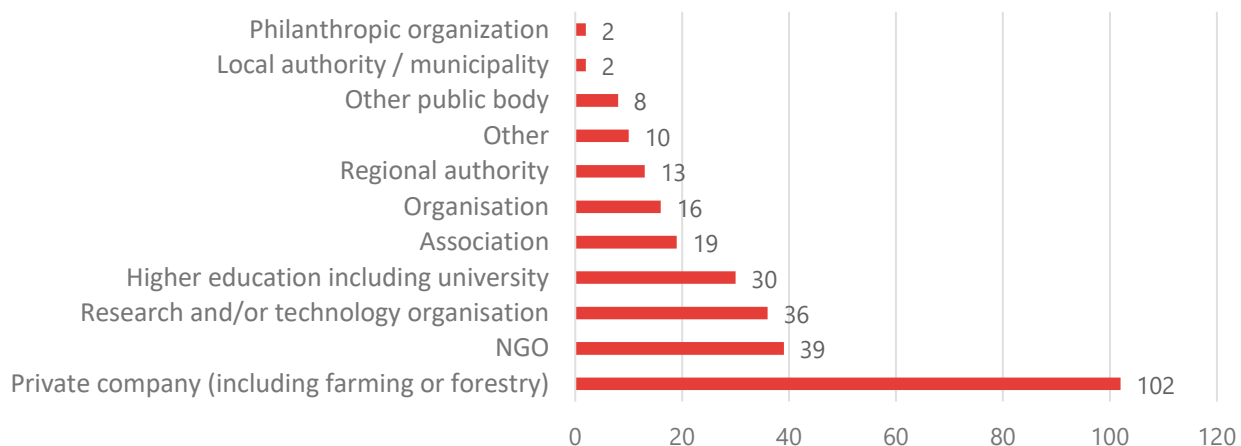
INDIVIDUALS by occupation	
Researcher/Scientist	505
Employee	289
Other	271
Educator/teacher	120
Student	94
Agricultural advisor	55
Politician/policy maker	42
Farmer	40
Artist	29
Urban/Spatial planner	13
Journalist/media	12
Forester	6
<b>Total</b>	<b>1476</b>

INDIVIDUALS EU	
<b>Belgium</b>	<b>122</b>
Bulgaria	20
Czechia	8
Denmark	5
<b>Germany</b>	<b>148</b>
Estonia	2
Ireland	13
Greece	25
<b>Spain</b>	<b>208</b>
<b>France</b>	<b>153</b>
Croatia	4
<b>Italy</b>	<b>155</b>
Cyprus	3
Latvia	1
Lithuania	12
Luxembourg	6
Hungary	7
Netherlands	52
Austria	32
Poland	31
Portugal	89
Romania	16
Slovenia	27
Slovakia	18
Finland	14
Sweden	15
<b>Total</b>	<b>1186</b>

INDIVIDUALS non-EU	
Albania	2
Andorra	1
Argentina	1
Armenia	1
Australia	1
Bangladesh	1
Bosnia and Herzegovina	2
Brazil	2
Canada	10
Dominican Republic	1
Egypt	1
Ethiopia	1
India	110
Iran	2
Israel	1
Japan	1
Montenegro	1
Morocco	2
Mozambique	1
Nepal	1
New Zealand	1
Nigeria	2
North Macedonia	1
Norway	12
Pakistan	2
Russian Federation	2
Serbia	6
South Africa	1
Switzerland	42
Turkey	16
Uganda	1
Ukraine	8
United Arab Emirates	1
United Kingdom	47
United States of America	5
<b>Total</b>	<b>290</b>

### Signatories as representatives of legal entities:

- Total of 277 = 16% of the total Manifesto signatories
- 87 % of entities are based in the EU, 13% outside of the EU
- Most signatories representing legal entities (37%) come from the private sector (incl. farming, forestry), followed by NGOs (14%).



**Regions and municipalities play a key role in the implementation of the Mission Soil, but the number of Manifesto signatories is still limited**

**We are calling on local and regional authorities to join the Mission and sign the Manifesto**

Legal entities based in the EU	
Belgium	27
Bulgaria	5
Czechia	7
Denmark	4
Germany	16
Estonia	2
Ireland	1
Greece	11
Spain	36
France	20
Italy	34
Cyprus	4
Latvia	1
Lithuania	1
Hungary	7
Netherlands	8
Austria	8
Poland	13
Portugal	16
Romania	6
Slovenia	1
Slovakia	6
Finland	4
Sweden	3
<b>Total</b>	<b>241</b>

Legal entities based outside the EU	
Bangladesh	1
Benin	1
Bosnia and Herzegovina	1
Cameroon	1
India	1
Israel	1
Malaysia	1
Nepal	1
North Macedonia	1
Norway	2
Pakistan	1
Switzerland	3
Turkey	6
Ukraine	5
United Kingdom	6
United States of America	4
<b>Total</b>	<b>36</b>

## Signatures still possible

- A communication tool capable of generating interest
- Average monthly growth of 15 % since April
- Positive trend and wide geographic coverage

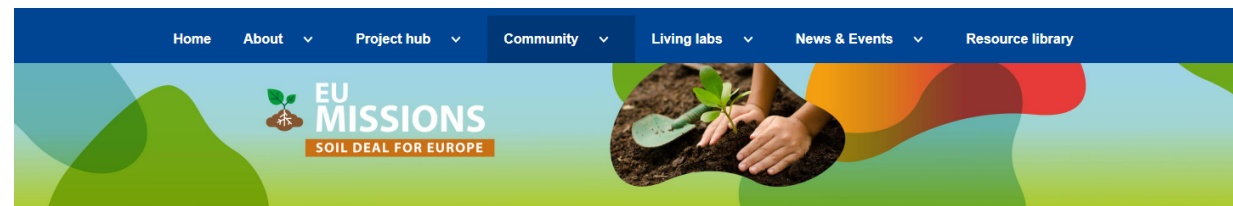
### Benefits for signatories

#### As individual:

- Be part of a community of soil health advocates with who share knowledge and best practices

#### As a legal entity:

- Show commitment to soil health among communities
- Being publicly displayed on the Mission Soil Platform



[Home](#) > [Community](#) > [Signatories and Friends](#)

## Signatories and Friends

## Mission Soil Platform

The Mission Soil Manifesto brings together a range of stakeholders who care for soil health. The Signatories of the Mission Soil Manifesto represent a diverse group of legal entities including municipalities, regions, NGOs, research institutions, agricultural communities and private companies. They are committed to addressing the urgent challenges facing our soils and promoting sustainable land management practices.

Explore the profiles of our signatories below to learn about how they engage in soil health activities. Together, we are creating a vibrant community dedicated to caring for soil health.

If you want to join us in our collective efforts to secure the future of our soils, [sign the Manifesto!](#)

**277**  
legal entities have signed the  
Mission Soil Manifesto

**1753**  
people endorse the Mission Soil  
Manifesto and have already become  
Friends of the Mission Soil

### These legal entities have already signed the Manifesto:

Type

Country

Search

Regional authority	Regional authority	Regional authority
<p><b>ANCI Toscana - Associazione Nazionale dei Comuni Italiani Toscana</b></p> <p><a href="#">Visit our website</a></p> <p>Italy</p>	<p><b>Commision of Environment of High Consultative Council of Presidency of Valencian Regional Government</b></p> <p><a href="#">Visit our website</a></p> <p>Spain</p>	<p><b>Generalitat Valenciana</b></p> <p><a href="#">Visit our website</a></p> <p>Spain</p>



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# Thank you!

**Website:** [mission-soil-platform.ec.europa.eu](https://mission-soil-platform.ec.europa.eu)



@EUAagri



@EUAagri  
@EUgreenresearch



@euagrifood



European Research  
Executive Agency (REA)

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# EUROPEAN MISSION SOIL WEEK

## Mission Soil Manifesto signatories



**Maria Cruz Ferreira  
Costa**

Director General

*Secretariat at the Regional  
Ministry, Región de Murcia*



**Frida Nilsson** *video message*

CoR Rapporteur on Soil  
Monitoring Directive, Member of a  
local assembly

*European Committee of the  
Regions, Lidköping Municipality*



**José Miguel de Paz  
Bécares**

Researcher

*Valencian Institute of agricultural  
research*



**Livia Lazzarotto** *video message*

Policy Officer

*Directorate for Agriculture and  
Rural Development of the  
Tuscany Region*

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# Mission Ambassadors

# EUROPEAN MISSION SOIL WEEK



**Yanniek  
Marijn Schoonhoven**

Regenerative organic Farmer  
and Co-founder

*Regeneration Academy, La  
Junquera farm and village*



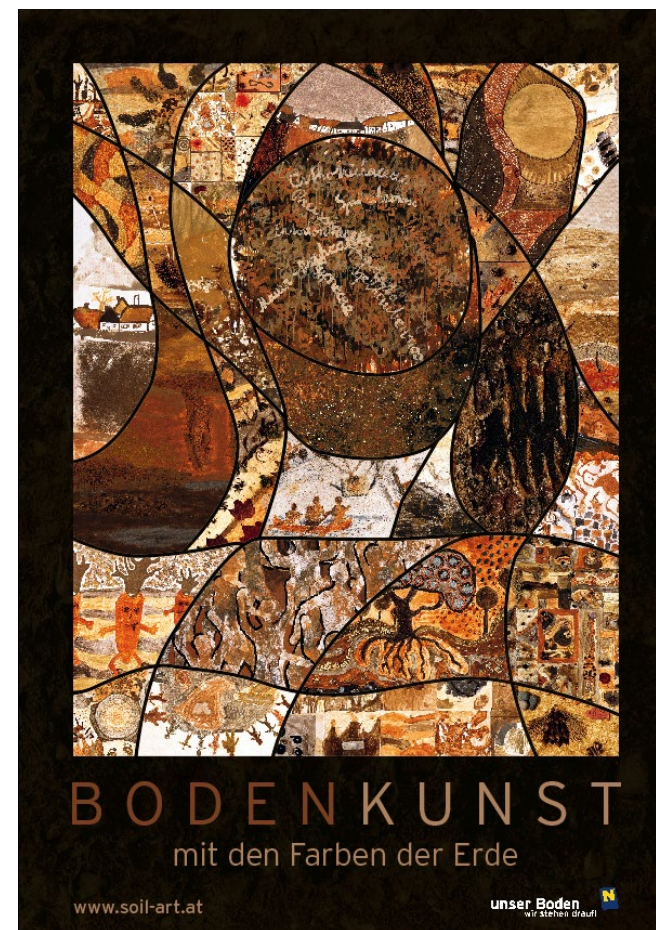
**Alfred Grand**

Farmer former Member of  
the Mission Board 'A Soil  
Deal for Europe'

*GRAND FARM*

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## Painting with the colors of the earth





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# Thank you!

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