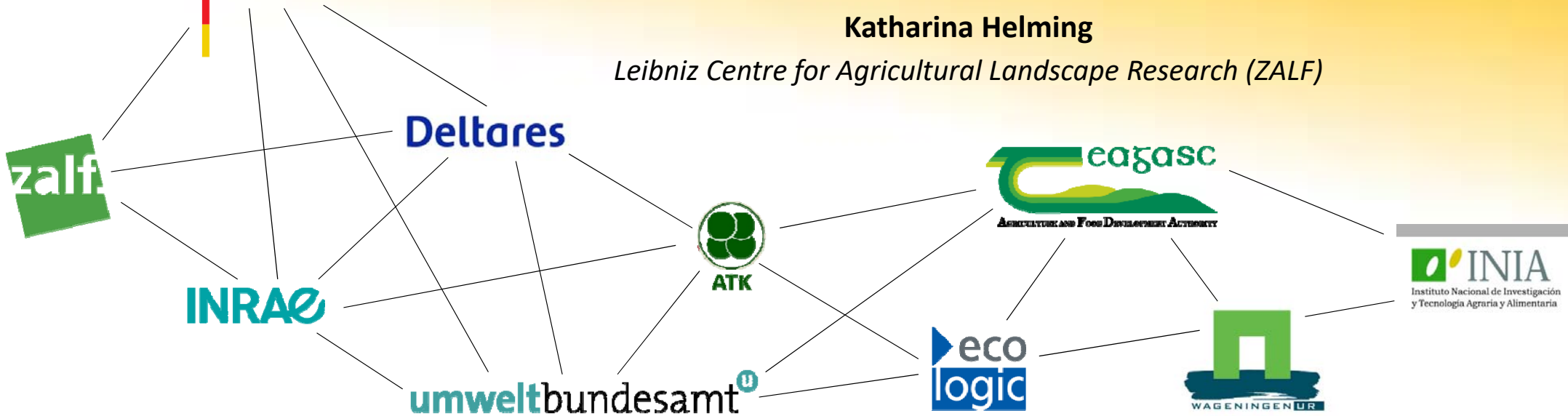


## Roadmap for R&I on sustainable soil and land management

1.11.2020 – 20.10.2022



**Katharina Helming**

*Leibniz Centre for Agricultural Landscape Research (ZALF)*

# The role of soil health for sustainable development

## UN SDGs

- Increased provision of biomass for **food, feed, fibre, and bioenergy** (SDGs 2 and 7)
  - Mitigation of and adaptation to **climate change** (SDG 13)
  - Improved provision of **ecosystem services, biodiversity and disaster control** (SDG 15)
  - Mitigation of land take by **urbanisation** (SDG 11)
- This progress can only be achieved with a multi-actor **partnership** across locations and sectors (SDG 17)



## Mitigation of trade-offs between SDGs

# Develop a European R&I Roadmap for sustainable soil and land management



# SMS Objectives

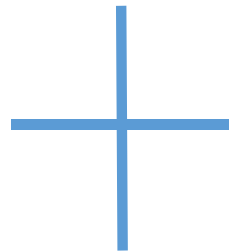
---

## Enhance the transition to sustainable soil and land management through:

- Assessment of the *state-of-the-art of* R&I in soil and land management
- Mapping of related knowledge and activities
- Identification of R&I gaps & needs for soil and land management
- Proper definition of Living Labs and Lighthouses
- Development of an R&I Roadmap

# SMS Coverage

Soil



Land



Cover all land use sectors  
Cover all land use actors  
Cover all soil functions

# The SMS Systemic Research Framework

## Knowledge themes

Knowledge domains

	  <b>Increase biomass production for food, fibre, energy</b>	 <b>Mitigate land take</b>	 <b>Mitigate and adapt to climate change</b>	  <b>Reduction and remediation of soil erosion, pollution, degradation</b>	 <b>Increase provision of ecosystem services &amp; biodiversity</b>	 <b>Improve disaster control</b>
	<b>Living Labs &amp; Lighthouses</b>					
	Technical, economic and social innovation					
	Data management, sensing and monitoring					
	Assessment and modelling					
	Awareness, training and education					
	Science based policy support					
	Institutions and governance					
	Specific regions and sectors					

In line with the objectives of the Soil Mission





# SMS Actors

## Advisory Board

JPI Urban Europe: Margit Noll

JPI FACCE Governing Board: Gudrun Langthaler

JPI FACCE Scientific Advisory Board: Frank Ewert / Gianluca Brunori

JPI Climate: Petra Manderscheid

EJP Soil: Claire Chenu

LANDMARK project: Rachel Creamer

ICLEI – Local Governments for Sustainability: Holger Robrecht

Ecosystem Service Partnership: Benjamin Burkhard

## Actors (Users) Network



# SMS project objectives

## Co-creation covering all relevant actors, sectors and policy fields:

- Co-analyse R&I knowledge and activities on sustainable soil and land management
  - **Mapping and assessment** of the state-of-the-art
  - Identification of **R&I needs & gaps**
  - Definition and stock-taking of Living Labs and Lighthouses
- Co-develop a R&I **roadmap** on soil systems and land management
  - Integrates thematic (what) with procedural (how) recommendations
  - Identifies strategic criteria for future R&I
- Co-design an **active platform** for R&I roadmapping:
  - Facilitate the coordination of R&I activities
  - Promote good practices for land and soil management research using Living Labs and Lighthouses
  - Assist in continuous co-design of the R&I roadmap together with researchers, practitioners, young professionals, policy makers, and informed citizens.

Stocks

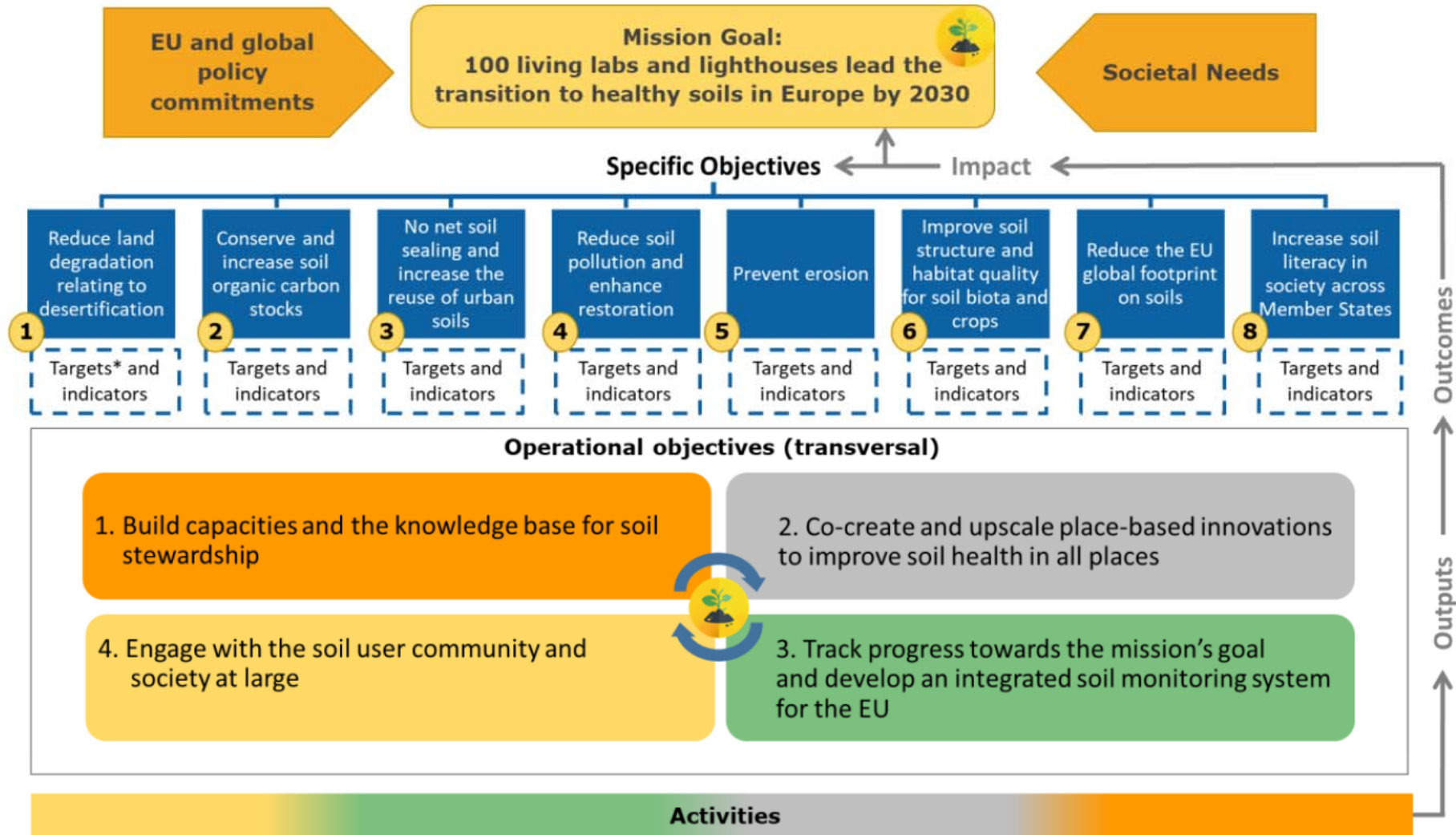
- Needs

= Gaps

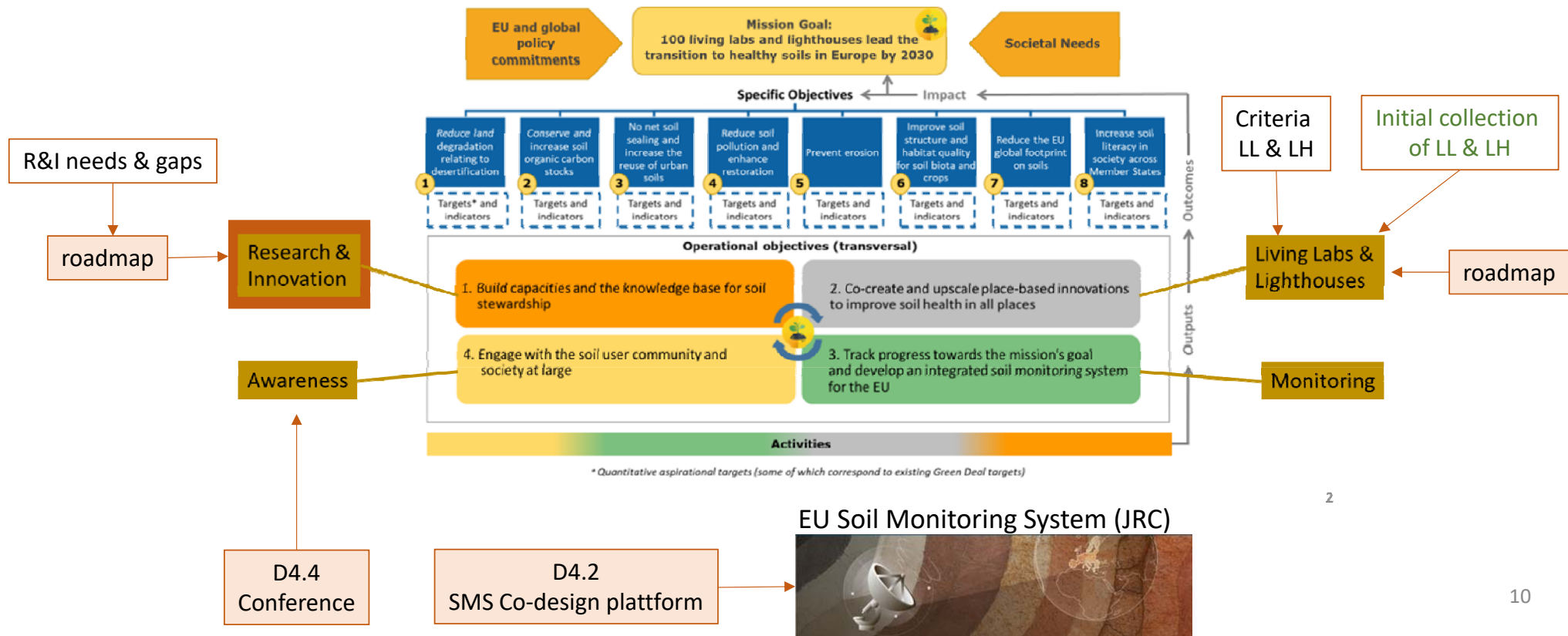
Actions



# The HE Soil Mission



# SMS support to HEU Mission Intervention logic scheme



2

# Major gains from the SMS

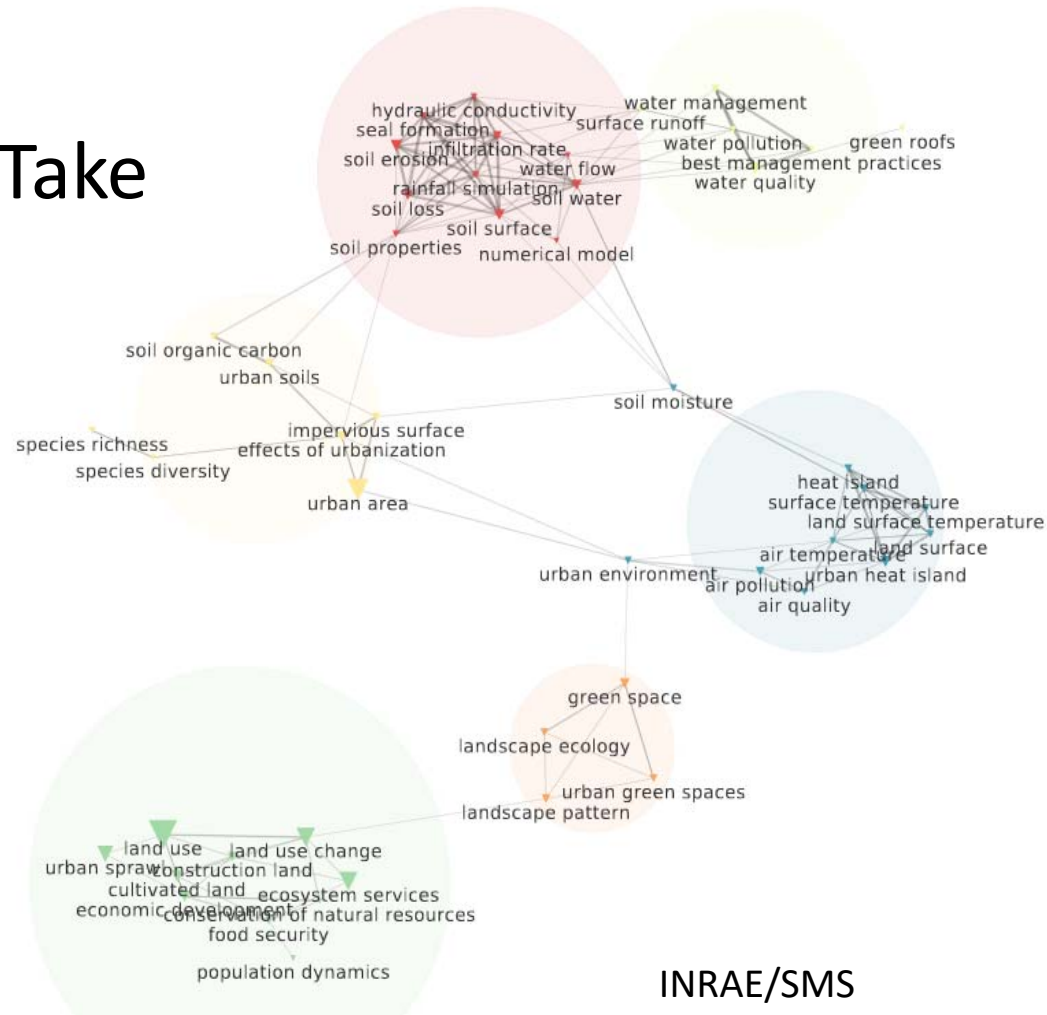
---

- A Detailed overview of R&I activities, needs and gaps
  - Mapping of the state of the art
  - Interactive identification of R&I gaps and blind spots
- A Soil Mission Support Roadmap
  - Guidelines and topics for goal leading R&I
  - Supporting R&I in Living Labs and Lighthouses
- An interactive Soil Mission Platform
  - Ongoing co-creation and roadmapping
  - Public access to mapping results

# Preliminary results: knowledge stocks (systematic literature analysis)

## Example: Mitigation of Land Take

Key word based topic clusters in scientific literature.

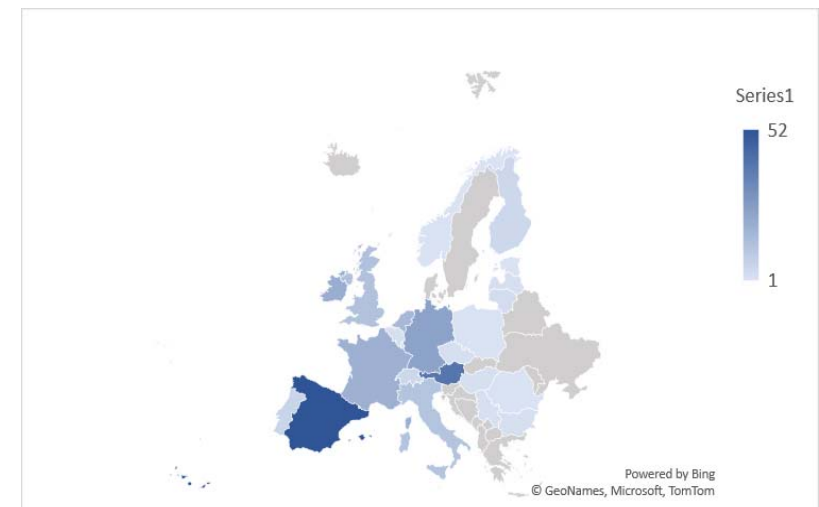


# Preliminary Results: criteria for living labs & lighthouses

## Selection criteria for Soil Health Living Labs

<b>SCALE</b>	<b>Multiple</b> experimenting or test <b>sites</b> ; orchestration of the LL sites is conducted on regional/landscape scale	
<b>AIMS</b>	Aimed at achieving <b>societal and environmental impacts / benefits</b> in relation to the <b>soil mission objectives</b> by means of <b>co-creation or co-design</b> processes	
<b>ACTIVITIES</b>	Co-creation/co-design/co-development of research and innovation in a <b>transdisciplinary and multi-actor approach</b> and <b>robust setup</b>	
	<b>Monitoring/evaluation</b> on soil health /ESS of the research / innovation influence/	
<b>PARTICIPANTS</b>	<b>Multiple participants</b> in a <b>public-private-people</b> partnership, including <b>real users</b>	
<b>CONTEXT</b>	Participatory and open approach in a <b>real-life context</b> (place-based) and within a context familiar to the users (agricultural, urban, forest)	
	Living Labs are conducted on the (middle to) <b>long term</b>	

## Country division of preliminary list of living labs & lighthouses



Cooperation with CSA ALL-Ready

# Web-GIS application of living labs

Home / Outputs / Map

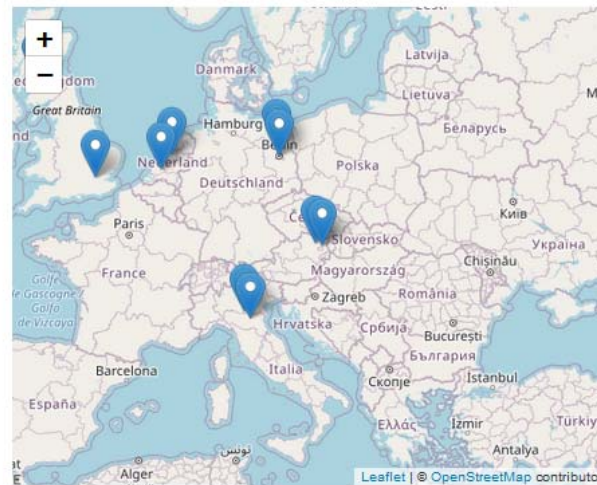
Please select:

All  Living labs  Lighthouses

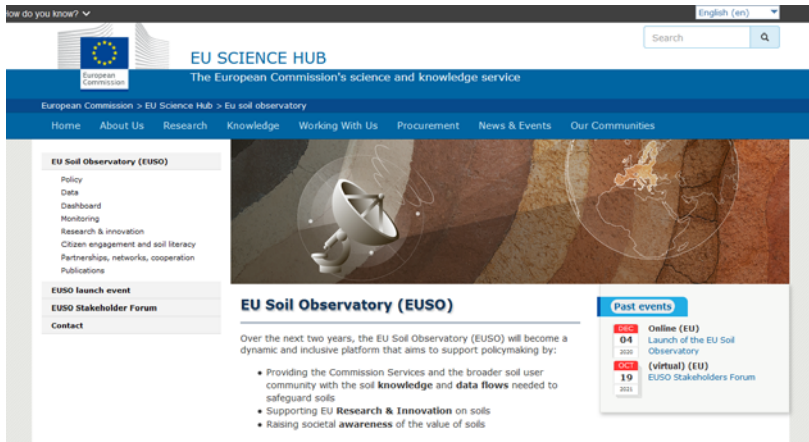
Optional filters for living labs or lighthouses:

Agriculture/Horticulture  Forestry  Urban  
 Protected areas  Industry  Infrastructure  Other

Submit



► List of selected living labs or lighthouses





# Support Soil health!

helming@zalf.de



Berlin Kreuzberg  
16. Nov. 2020  
Photo: G. Helming