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#HorizonEU

HORIZON EUROPE



Horizon Europe: research and innovation
in the agriculture sector and rural areas

Rural Networks' Steering Group
16 MAY 2022

Orsolya Frizon Somogyi
DG AGRI/F2



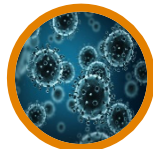
Enabling sustainable farming



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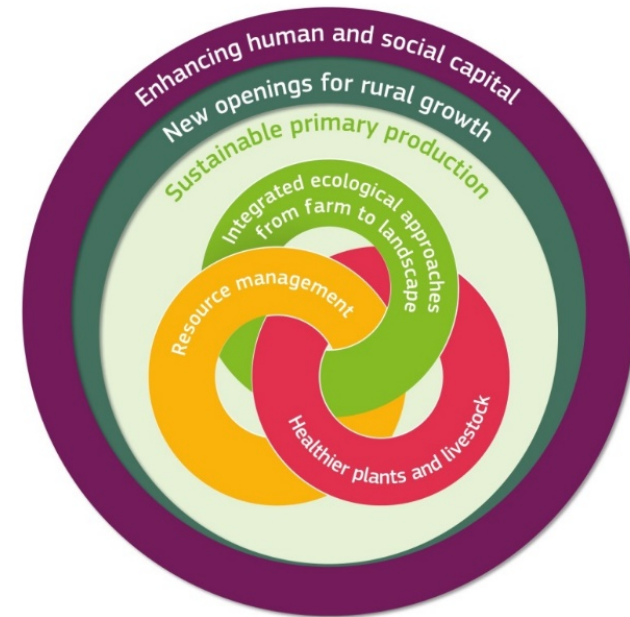
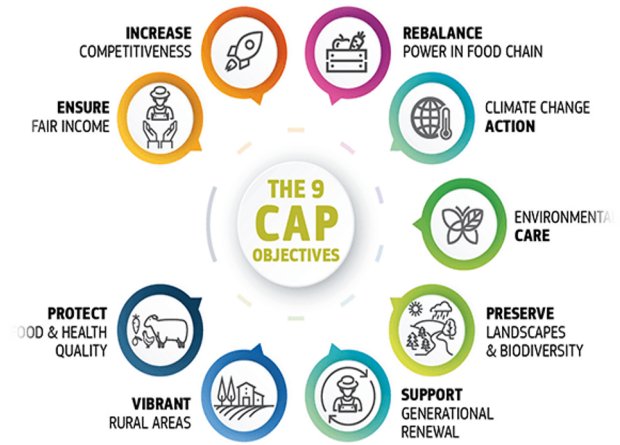
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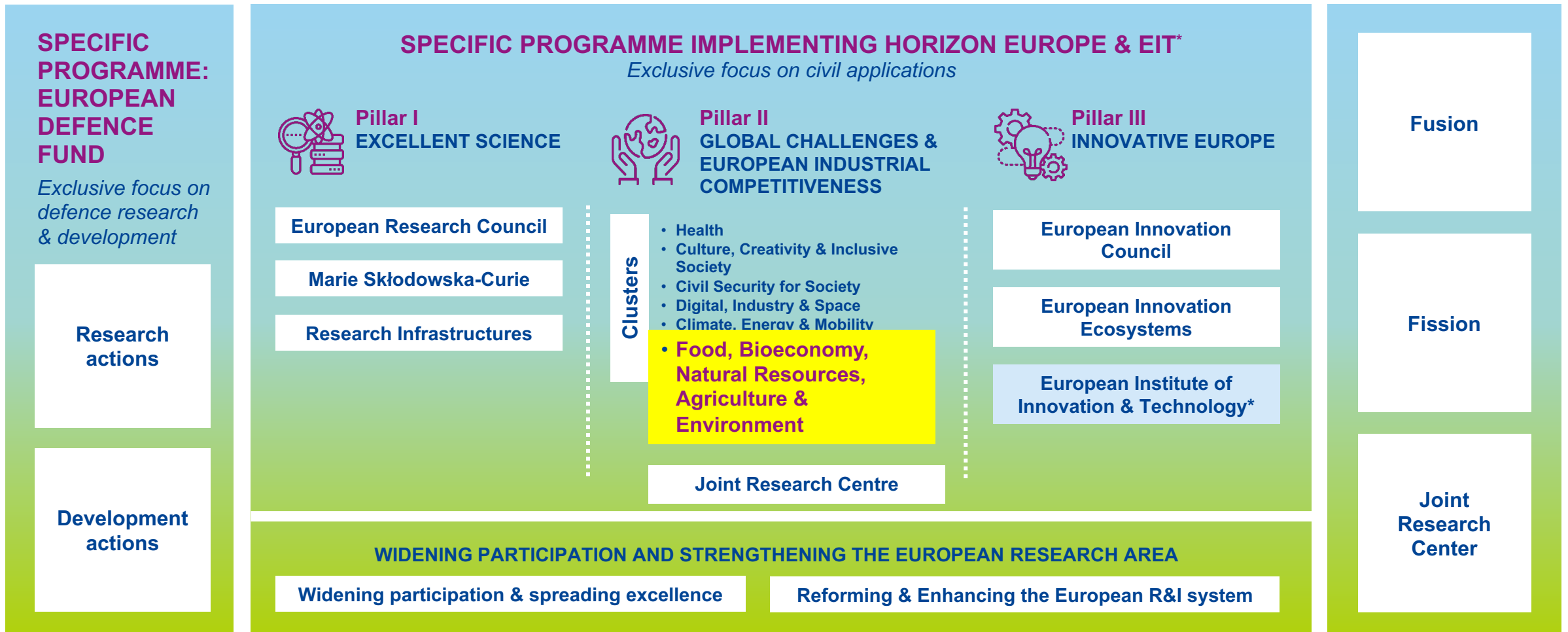


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CLUSTER 6 IN HORIZON EUROPE

EURATOM



* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Cluster 6 budget over 7 years: 9 bio EUR

Horizon Europe Cluster 6 – from expected impacts to destinations...



Enabling sustainable farming

Examples of priority R&I actions in **destination FARM2FORK...**

R&I priorities 2021

- ✓ Developing sustainable and competitive land-based **protein crop** systems and value chains
- ✓ R&I scenarios for boosting **organic farming** and organic aquaculture in Europe
- ✓ **Digitalisation** as an enabler of **agroecological farming systems**
- ✓ Research & innovation roadmap for **blockchain** technologies in the agri-food sector
- ✓ Tackling outbreaks of **plant pests**
- ✓ EU-China international cooperation on **integrated pest management** in agriculture
- ✓ **Animal welfare 2.0**
- ✓ **Vaccines** and **diagnostics** for priority animal diseases
- ✓ **One health approach** for food nutrition security and sustainable agriculture
- ✓ Uncovering **lock-ins and levers** to encourage **farmers** to move to and stay in **sustainable food production systems**
- ✓ Towards an EU approach to assess and **internalise positive and negative externalities** of food for incentivising sustainable choices

R&I priorities 2022

- ✓ **Agroecological approaches** for sustainable weed management
- ✓ **Agroecological approaches** in African agriculture systems
- ✓ Innovative solutions to **prevent adulteration of food bearing quality labels**: focus on **organic** food and **geographical indications**
- ✓ Smart solutions for the use of **digital technologies** for small- and medium-sized, farms and farm structures
- ✓ Risk assessment of new **low risk pesticides**
- ✓ Socio-economics of **pesticide use** in agriculture
- ✓ Emerging and future **risks to plant health**
- ✓ **Enhancing biosecurity** in terrestrial livestock production
- ✓ **Ecology of infectious animal diseases**
- ✓ Support for international research on **infectious animal diseases**




Enabling sustainable farming

Examples of priority R&I actions
in **other destinations...**



- ✓ Demonstration network on **climate-smart farming**
- ✓ International Research Consortium on (agricultural) **soil carbon**




- ✓ Fostering **breeding** of organic crops, legumes and root-base traits



- ✓ Optimization of **nutrient budget** in agriculture
- ✓ EU-China international cooperation on **nature-based solutions** for **nutrient management** in agriculture



- ✓ **Smart solutions for smart rural communities**



- ✓ Supporting knowledge exchange between all **AKIS** actors in the Member States by means of an **EU-wide interactive knowledge reservoir, thematic and advisory networks**



Next Work Programme 2023-2024
– **large-scale R&I partnerships:**



Agroecology living labs and research infrastructures



Animal health and welfare



Agriculture of data

Horizon Europe Cluster 6

- WP2021-2022: published June 2021, calls are closed
 - the projects for 2021 are selected
 - for 2022 the proposals are under evaluation
- WP23-24: the WP is under elaboration planned to be published December 2022

Complementarity between the CAP and Horizon Europe: deployment of R&I solutions, identification of R&I gaps

- AKIS
- ENRD, European and national CAP networks
- Advisory system
- EIP
- Smart village strategies
- LEADER
- Eco schemes, agri-environment-climate management commitments
- Investments (productive and non productive)...



R&I Missions

Linking EU's research and innovation to major societal needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and **5 missions areas**.



Missions: a new instrument under Horizon Europe to address major societal challenges

Adaptation to
Climate Change



Mission Manager
DG CLIMA

Cancer



Mission Manager
DG RTD

Climate-neutral
and Smart Cities



Mission Manager
DG MOVE

Restore our
Ocean and Waters



Mission Manager
DG MARE

Soil Deal
for Europe



Mission Manager
DG AGRI



Developing the mission

Mission Board “Soil health and food”

Chair	Vice-Chair				
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<small>Emil CENZČALA (CZ)</small>	<small>Bridget Anne ERMET (UK)</small>	<small>Luchezar Hristov FILCHEV (BG)</small>	<small>Emile Antoine FRISSON (BE)</small>	<small>Alfred GRAND (AT)</small>	
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R&I days 2020
the Mission Board hands over its report **“Caring for soil is caring for life”**



September 2019

R&I days 2019
creation of the Mission Board
Soil health and food

until September 2020

Mission board develops its recommendation for a mission.
More than 60 events to promote and co-create the mission

September 2020

until June 2021

Commission services prepare the **mission implementation plan**

29 Sept 2021

Official launch of the missions through a **Commission Communication**



Why a mission on soil health?



- Healthy soils are the **basis for nutritious and safe food.**
- Soils deliver **vital, interconnected ecosystem functions**
 - water purification and regulation (protection from droughts and floods)
 - hosting biodiversity
 - nutrient cycling
 - climate mitigation and adaptation
 - range of cultural services
- Soil is a **scarce, non-renewable resource.**
- **Soils are threatened: 60-70% of soils in Europe are considered to be unhealthy** due to current management practices, pollution, urbanisation and the effects of climate change.



We need to act now!

Soils need our attention!

- 2.8 million potential contaminated sites (only 24% inventoried) posing major health risks
- 65-75% of agricultural soils with nutrient inputs at levels risking **eutrophication of soils and water** and affecting biodiversity
- Cropland soils **losing carbon** at a rate of 0.5% per year; 50% of peatlands drained and losing carbon – this is contributing to the climate crisis
- 24% of land with **unsustainable water erosion rates**
- 25% of land at High or Very High risk to **desertification** in Southern, Central and Eastern Europe in 2017
- The **costs associated with soil degradation in the EU exceed 50 billion € per year**

The effects of climate change put further pressure on soils and accelerate land degradation!



Goal of mission “A Soil Deal for Europe”: 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

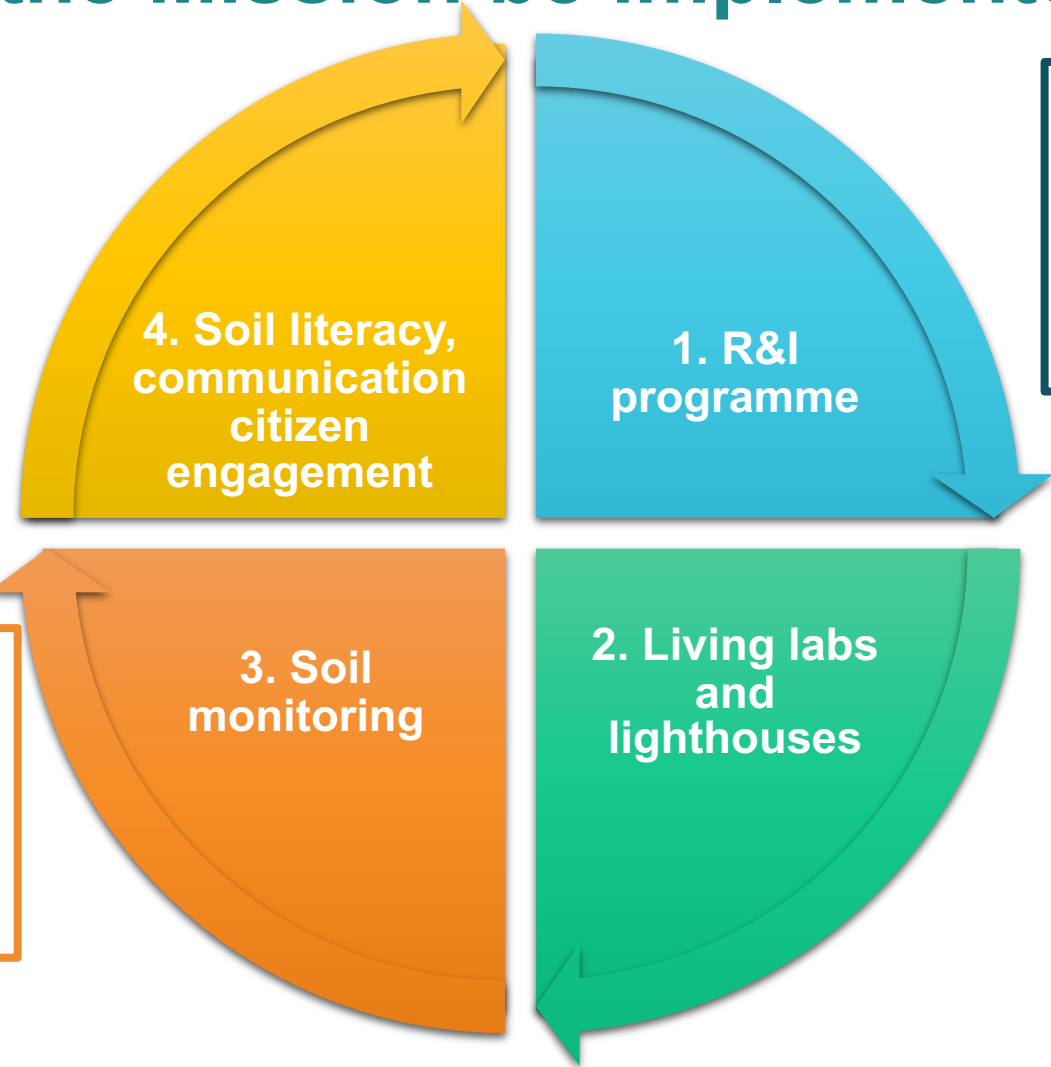


Each specific objective is backed by **one or more quantified targets** and **measurable indicators**. Objectives apply to **all types of land use**.



How will the Mission be implemented?

Communication, training and advise targeted to different target groups; specialised "soil advisors"



Knowledge, data, technologies and infrastructures to support practices and business models for soil health

Co-implementation of mission by: researchers, land managers, regions, businesses, policy makers, citizens and international partners

Harmonization of soil health monitoring and reporting across Europe; contribution to European Soil Observatory

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



Activities under the four building blocks to address soil health and the drivers of soil health



Implementation of the Mission

First call for proposals under the mission in the area of Soil health

- *Horizon Europe Mission Work-Programme 2021*
 - *Application period closed*
- *Horizon Europe Mission Work-Programme 2022*
 - ***Call is open*** for application deadline is 27 September 2022





Living Labs and Lighthouses

- **Living labs are a core element of the mission**
 - They are real-life sites in rural or urban areas in which people from various sectors and backgrounds experiment and test solutions in a co-creative manner.
 - Each living lab contains a cluster of 10 – 20 sites (e.g. farms) working together at regional or sub-regional level.
 - Specific criteria for living labs have been developed under the mission to ensure common approach and comparability of data and experiences.
- **Lighthouses are sites of exemplary performance** with regards to a certain practice
 - They are individual sites, such as a single farm, to showcase good practices.
 - They are places for demonstrations, 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.





A gradual development of 100 Living Labs across Europe

Phase 1 (2021-2024)

Engagement activities with stakeholders foreseen at regional level to ensure common understanding of the criteria and a balanced coverage of rural and urban areas and across all Member States.

A network support structure to be established to cater for the needs of the emerging living labs.

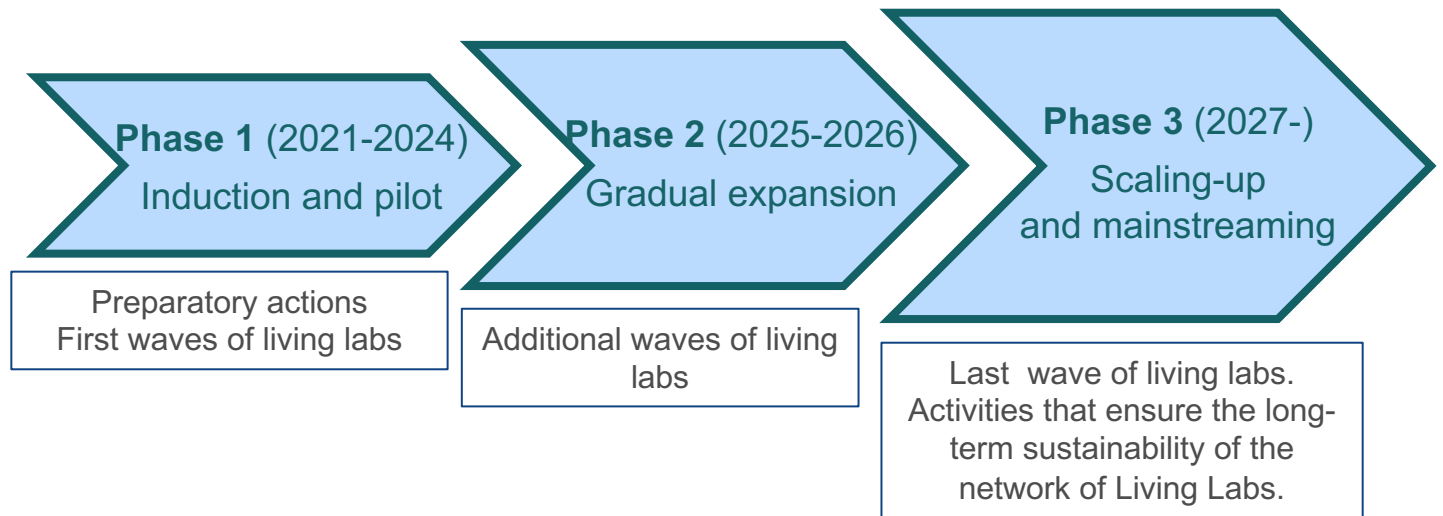
First waves of Living Labs to be in place as from 2024.

Phase 2 (2025-2026)

Expansion of living labs all over Europe through additional calls.

Phase 3 (2027 onwards)

Further waves of living labs, along with accompanying measures to facilitate the mainstreaming, continuation and sustainability of the living labs beyond the Mission.



A network of living labs and lighthouses will be gradually established through consecutive calls under Horizon Europe.



Soil literacy, communication and engagement

- Foster **soil education** across society
- **Engage and activate regions and municipalities** to design their own strategies and actions for the protection of soil health
- Engage with the **private sector and consumers** to embed soil health in business practices
- Strengthen soil health advice and **improve access to training for practitioners** in line with Agricultural Knowledge Innovation Systems (AKIS)
- Create **citizen-led soil stewardship** and **citizen science**
- Bring **soils closer to citizens' values**





WP sequence and logic 2021 - 2022

- Mission implementation platform
- JRC support to work on soil monitoring
- Living lab support structure

Carbon farming

- Network on carbon farming

Soil pollution and restoration

- Strategies, methods and financial models for decontamination and reuse of land

Soil biodiversity

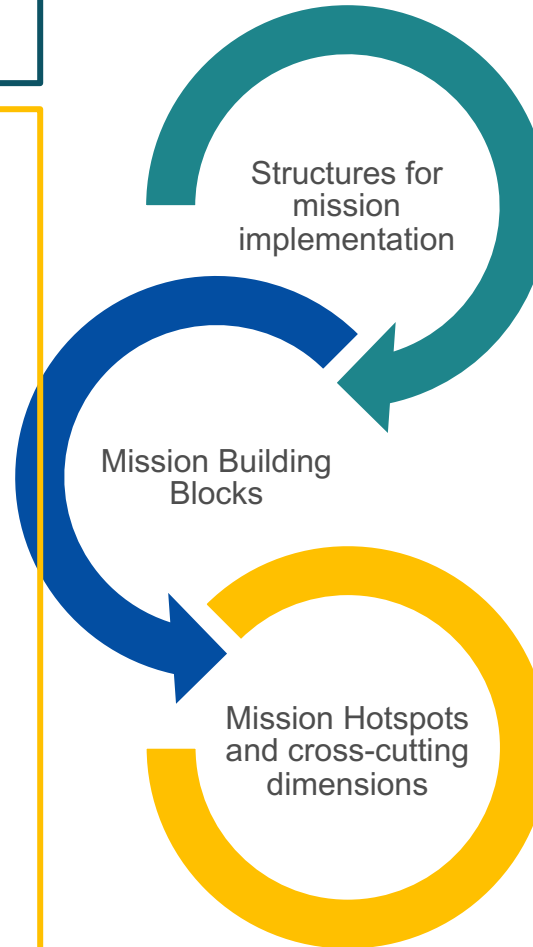
- Soil biodiversity and its contribution to ecosystem services

Circular economy solutions

- Food processing residues for soil health
- Innovations for soil improvement from food waste

Business dimension

- Incentives and business models for soil health



R&I supporting mission objectives and Knowledge management

- Soil health and nutritional and safe food
- Social, economic and cultural factors driving land management and land degradation
- Roadmaps on soil mission objectives
- Mission’s knowledge repository

Living labs and lighthouses

- National engagement sessions on LLs and LHs

Monitoring

- Indicators for soil health and functions
- Soil carbon and GHG balance monitoring
- Citizen science for soil health

Citizen engagement

- Engage with municipalities and regions
- Next generation soil advisors
- Soil education across society
- Citizen science for soil health



Building synergies between the Soil Mission and the CAP

Activities under mission and the CAP will be closely coordinated and mutually benefit each other.

Soil Deal Mission

- Generates knowledge and innovations for sustainable soil and land management.
- Engages with farmers and foresters in Living Labs and Lighthouses to co-create test and demonstrate solutions.
- Disseminates, raises awareness and provides training to enhance “soil literacy”.
- Improves methods for assessing and monitoring soil health.



Common Agricultural Policy

- **EIP AGRI** Operational Groups replicate solutions in regions where no living labs and lighthouses are operating. **EIP AGRI network** promotes good practices and information on successful mission projects.
- **Agricultural advisory services** support the deployment of best available soil management practices.
- **CAP networks:** foster innovation in agriculture and in rural areas, support interactions...
- Innovations tested under the mission are up-scaled through **investments**.
- Flagship initiative of the Long-term vision for the rural areas

CAP strategic plans are crucial to build bridges and fully exploit synergies between the Soil Deal Mission and the CAP!

17/18 May 2022: EU Missions info days

EU Missions info days | European Commission ([europa.eu](https://europea.eu))

28-29 September 2022: European Research and Innovation Days





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Thank you!

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