



# Bringing Science to Society through Co-Innovation and Co-Creation – The Soil-Health and Food Mission

EURAGRI conference, 27-28<sup>th</sup> September 2021

Évora (Portugal)

***“EU-Research on soils and the mission concept”***

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# *“EU-Research on soils and the mission concept”*



# Soils in the context of agricultural research under Horizon 2020 (2014 – 2020)






European Commission

AGRIRESEARCH FACTSHEET  
**SOILS**

### Why do research and innovation on soils matter?

Research is crucial to better understand, monitor and measure the specific effects of agricultural and forestry activities on soils and their various productive and ecosystems functions. Additional knowledge is needed on long-term processes of soil formation, on soil fertility and other above-mentioned functions and how to improve their delivery by optimising soil biological, chemical and physical properties. Designing ways to increase soil carbon content, enhance soil biodiversity and reduce soil erosion is highly crucial for food security. New avenues for soil and crop management are emerging from an increased understanding of the 'soil-food web', the complex interactions between plants and soils which support water and nutrient uptake by plants or increase resistance against pests and diseases. Knowledge and tools developed through research and innovation can serve to further develop soil enhancing production systems and enhance the role of livestock in soil management. Research efforts serve to enhance the function of soils as carbon and nitrogen sinks, thereby supporting the role of agriculture and forestry in mitigation of greenhouse gas emissions, combating desertification and land degradation.

### Soil research and innovation under Horizon 2020 Societal challenge 2

 <b>26</b> Projects or expected grants	 <b>197 M€</b> EU contribution 2014-2020	 <b>247</b> Participations in selected projects
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### Key themes

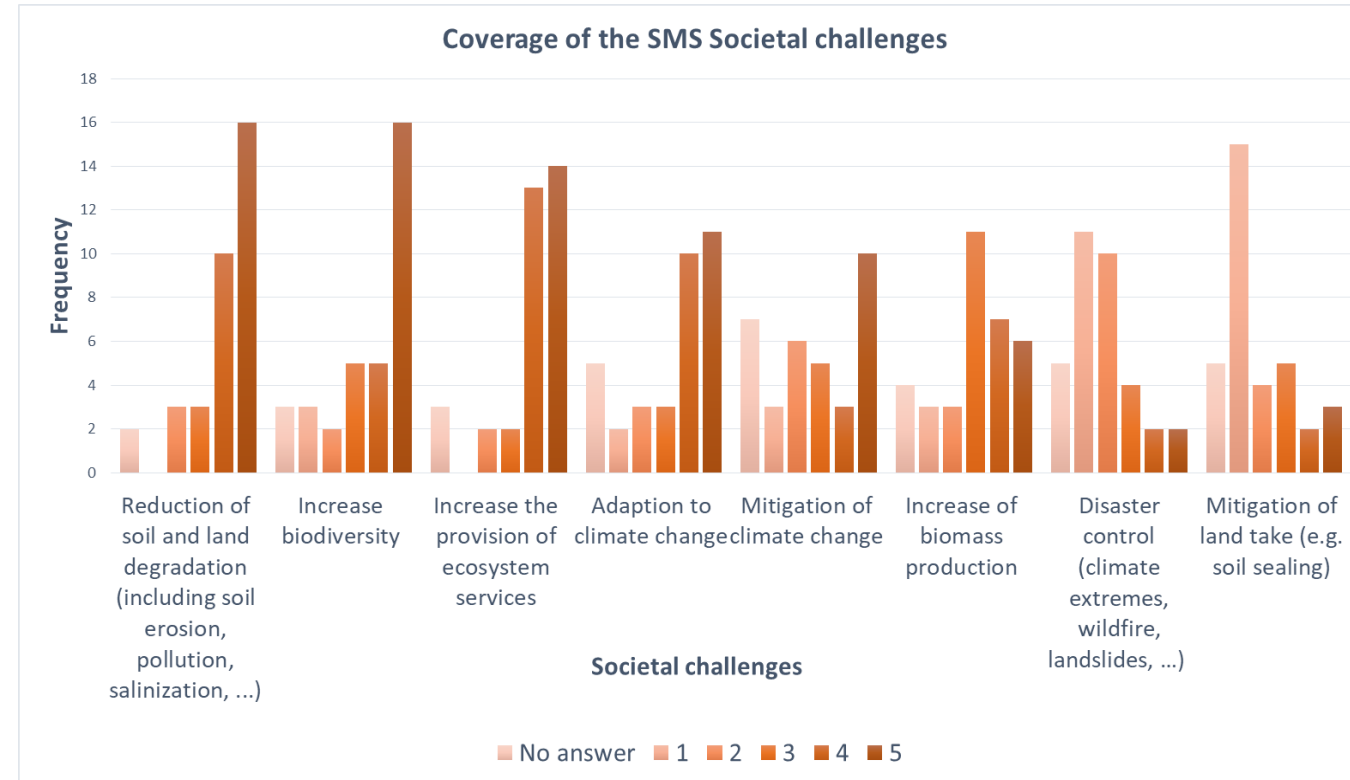
Soil functions – soil water resources  
–assessment tools – soil-improving cropping systems – cooperation.

Agriculture and Rural Development

- 13 soil-related topic in areas such as:
  - Soil quality and functions;
  - Belowground biodiversity and its interaction with plants;
  - Soil monitoring system for Africa;
  - Healthy soils for healthy food production (EU-China)
- 26 projects, most applying the multi-actor approach
- About 200 M€ EU contribution
- About 250 participants
- Numerous openings for training for young scientists and practitioners
- Creation of a dynamic community working on soil health across Europe

# Preliminary analysis of the Horizon 2020 soil portfolio

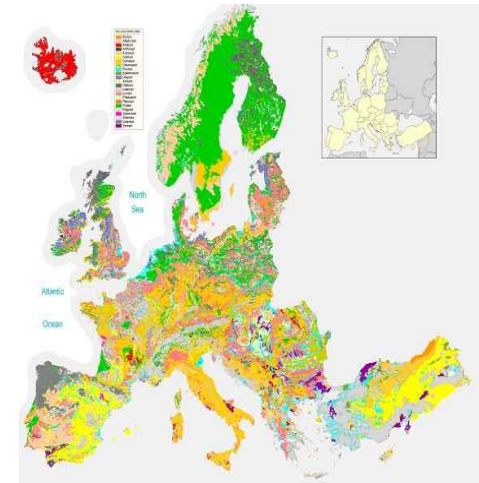
- Analysis undertaken by the Horizon 2020 project “SMS”
- Research mostly on agricultural soils addressing challenges of:
  - land degradation
  - biodiversity
  - provision of ecosystem services
- “Types of knowledge” created by project portfolio:
  - assessing and modelling effects of management practices
  - technological innovations
  - policy support
  - awareness raising



Rating from 1 = ‘not at all’ covered to 5 = ‘extensively’ covered.

# Needs for future soil research funding

- Research on **land uses other than agriculture**;
- Relevant topics for non-agricultural soils such as **soil sealing, soil pollution, carbon dynamics**;
- **“Ready-to use” innovations for soil management:** technological, organisational, economic, biological;
- Knowledge, data and tools to improve **soil monitoring**;
- Sustainability and comparability of **soil data**;
- **Training and education** of researchers, practitioners and society at large on soil related topics;
- More **balanced participation of partners across Europe** taking into account the diversity of pedo-climatic and socio-economic conditions in Europe.
- Need for mechanisms to translate knowledge into practical solutions and new practices -> **EIP AGRI**



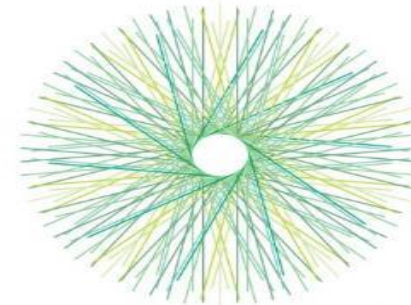
JRC Soil Atlas of Europe

A more detailed thematic analysis of research gaps and needs was undertaken by projects SMS, INSPIRATION, CIRCASA and EJP Soils.

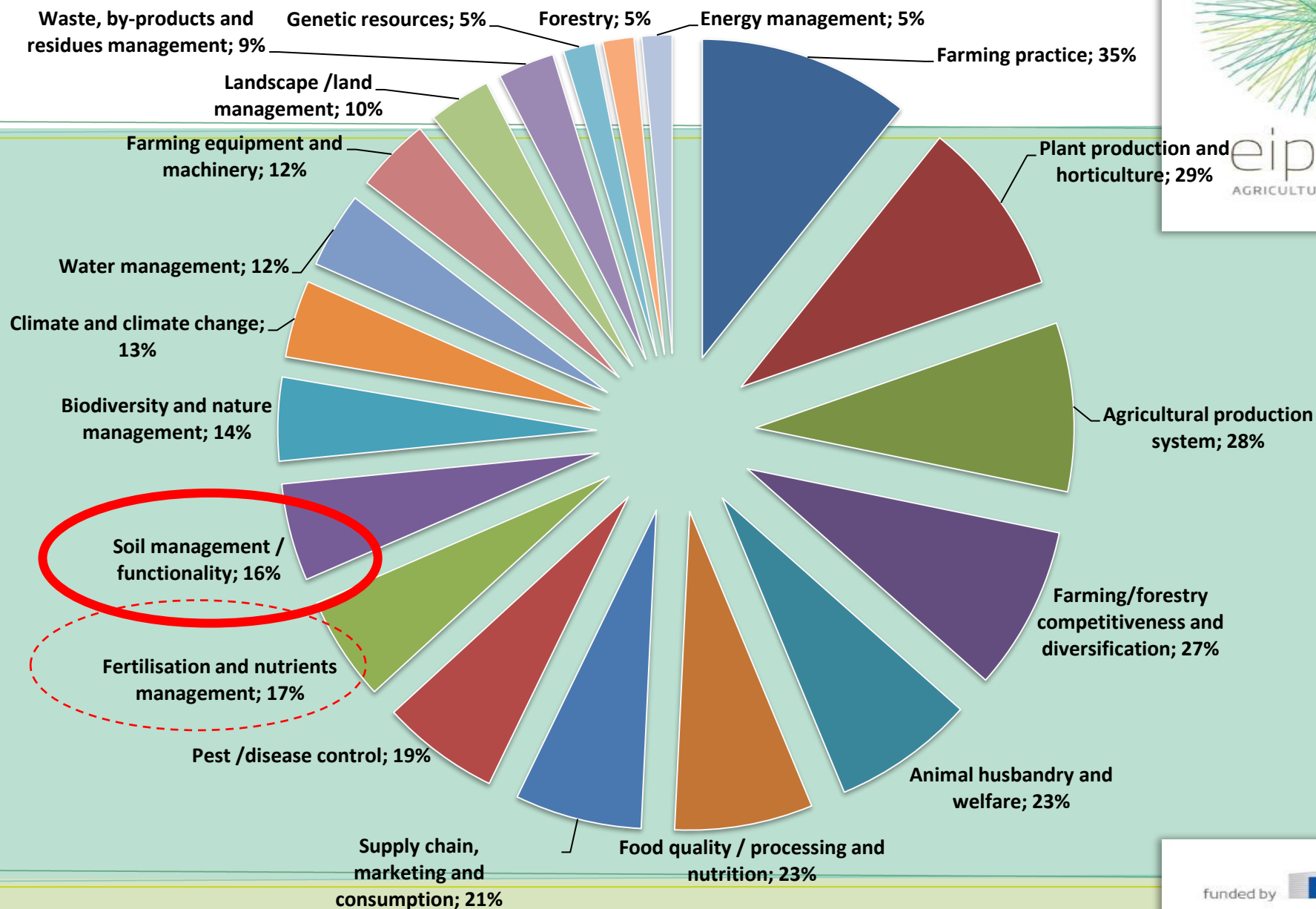
# European Innovation Partnership (EIP) AGRI connecting research and the Common Agricultural Policy



# Distribution of OG projects by theme



eip-agri  
AGRICULTURE & INNOVATION



funded by

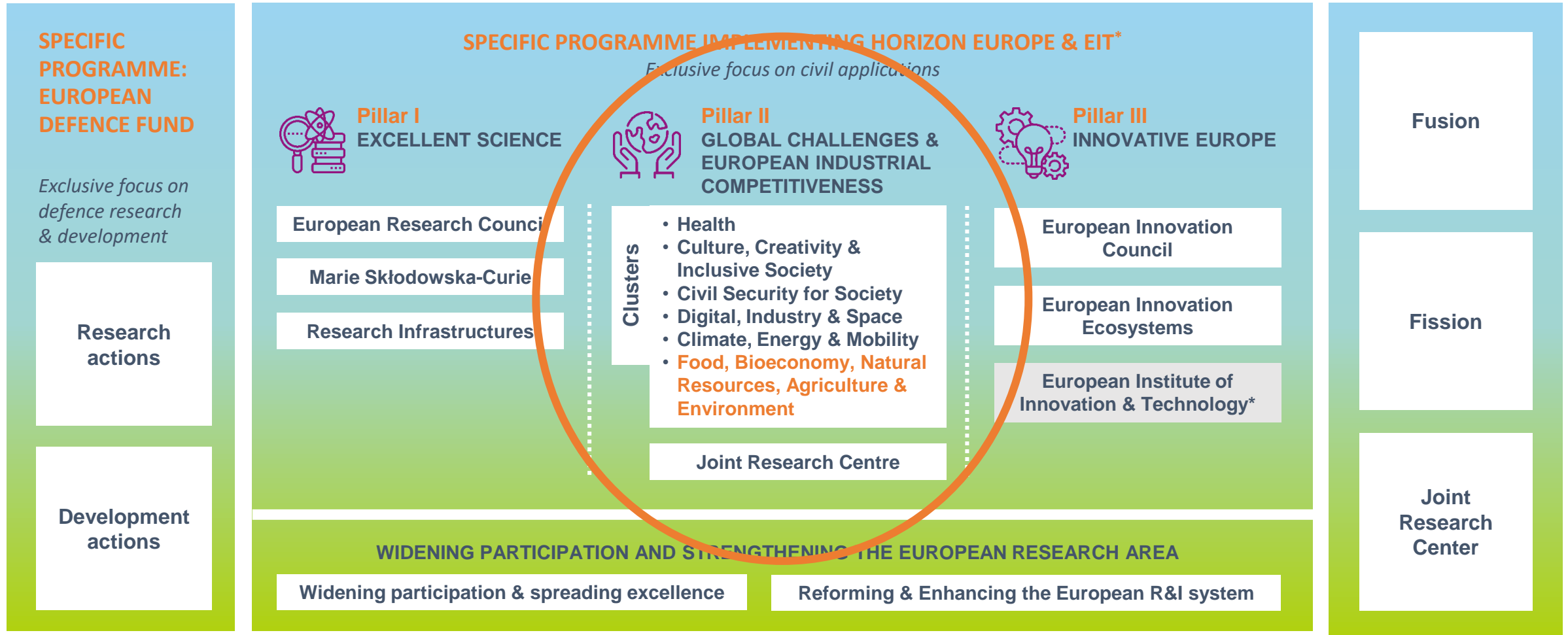


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# Horizon Europe (2021 – 2027)

## HORIZON EUROPE

## EURATOM



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

EU's key funding programme for research and innovation with a **budget of €95.5 billion**



# EU Missions

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**.

# Five Mission Areas



**Adaptation to  
climate change,  
including societal  
transformation**



**Cancer**



**Healthy oceans,  
seas, coastal &  
inland waters**



**Climate-neutral &  
smart cities**



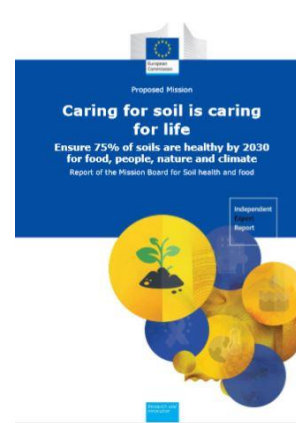
**Soil health &  
food**



# Co-creating the mission – from the MB report to the COM communication

## R&I days 2019

creation of the Mission Board and the Mission Assembly Soil health and food



## R&I days 2020

the Mission Board hands over its report “Caring for soil is caring for life”



expected launch of the missions with a **Commission Communication** + later on amendment of **Horizon Europe Work Programme** (December 2021)

September 2019

until September 2020

September 2020

until June 2021

Sept/Oct 2021

### Mission Board “Soil health and food”



the Mission board prepares its recommendation for a mission with involvement of Member States, the Mission Assembly as well as stakeholders and citizens: more than 60 events to promote and co-create the mission all around Europe

Commission services prepare the **mission implementation plan (IP)** with the advise of the Mission Board

# The Mission in the area of soil health and food contributes to the Green Deal

- Integration of the Mission in Green Deal strategies and policies
  - **Farm to Fork Strategy**
  - **EU Biodiversity Strategy for 2030**
  - **Climate Adaptation Strategy**
  - **Forest Strategy**
  - **Zero Pollution Action Plan for air, water and soil**
  - **Organic Action Plan**
  - **Long term vision for rural areas**
  - **new Soil Strategy (to come)**
- Common Agricultural Policy

+ **European Parliament** “welcomes the launch of the Horizon Europe mission for soil health and food” (resolution of 28 April 2021)

## Examples of soil relevant Green Deal Targets

### By 2030

- 25% of land under organic farming
- Reduce the overall use and risk of chemical pesticides by 50% and the use of more hazardous pesticides by 50%
- Reduce fertilizer use by at least 20%
- Reduce nutrient losses by at least 50%
- Reduce by 30% microplastics released into the environment
- Reduce net greenhouse gas (GHG) emissions by at least 55% compared to 1990 levels.

### By 2035

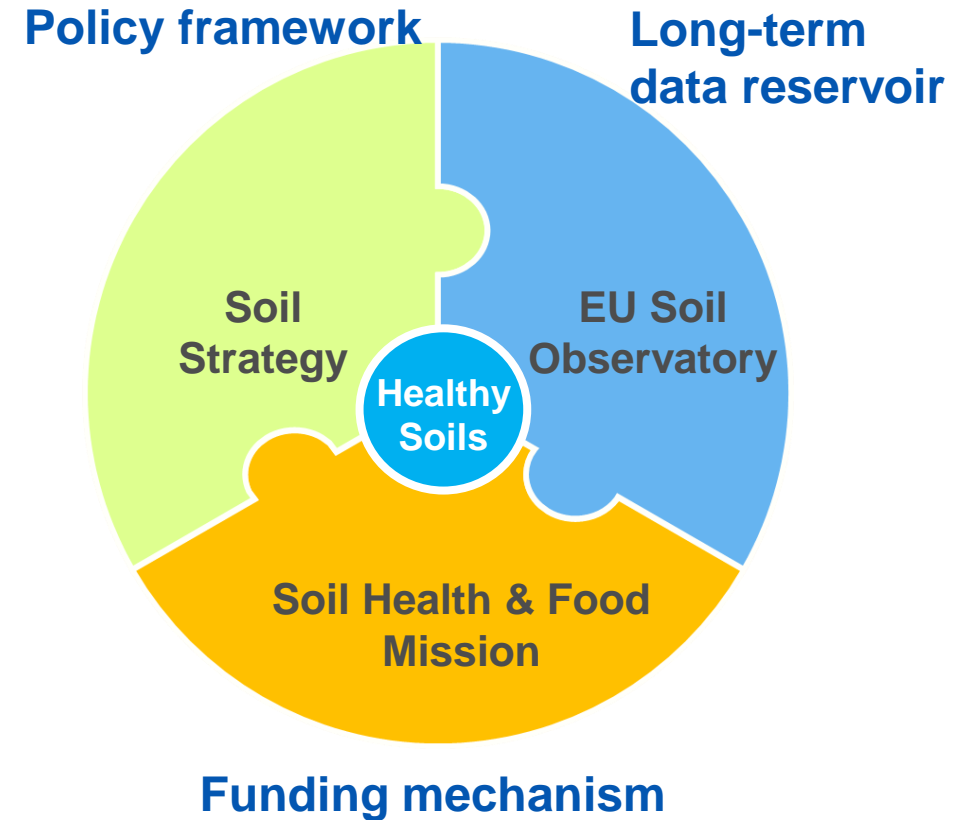
- the EU should aim to reach climate neutrality in the land use, forestry & agriculture sectors

# A supporting framework for action on soil health

Together

- the **upcoming EU Soil Strategy**,
- the **EU Soil Observatory (EUSO)**,
- the **Mission on Soil Health and Food**

will provide a **powerful framework** to steer the **systematic changes** that need to happen across all sectors of society to reap the **benefits of healthy soil**



# Upcoming: first call for proposals under the mission in the area of Soil health and food.

## Horizon Europe Mission Work-Programme 2021/2022

**Topic HORIZON-MISS-2021-SOIL-01-01:** “Preparing the ground for healthy soils - building capacities for engagement, outreach and knowledge”

Action to identify regional “soil needs” and monitoring requirements, map existing living labs and lighthouses and help to create a one-stop shop for soil information.



**Deadline: 20 October 2021**

## Updated Horizon Europe Mission Work Programme 2021/2022 (planned):

- to be adopted and published end of December 2021
- Deadline for submission of proposals: end of March 2022
- more substantial number of topics to initiate the mission
- currently under negotiation with Member States



# Thank you!

#MissionSoil  
#EUmissions # HorizonEU

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



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