

Caring for soil is caring for life

#MissionSoil #HorizonEU #EUmissions

Cees Veerman

Chair of Mission Board for Soil health and food

This presentation is delivered by a member of a Horizon Europe Mission Board, which is an informal group of experts set up by the European Commission to provide advice for the identification and implementation of missions in the future Horizon Europe programme. The contents of the presentation do not represent the official views of the European Commission nor do they constitute a commitment of any kind on its behalf.



The proposed mission:
Caring for soil is caring for life

**ensure 75% of soils are
healthy by 2030
for food, people, nature and
climate**



The need for mission “Caring for Soil is caring for Life”



- Healthy Soils are the **basis for nutritious and safe food**
- Soils deliver **vital, interconnected ecosystem functions**: water regulation, hosting biodiversity, nutrient cycling, climate mitigation and adaptation, carrying landscapes and cultural services
- Soil is a **scarce, non-renewable resource**: it takes hundreds of years to generate 1 cm of top soil but only a couple of years or less to destroy it
- **Soils are threatened: 60-70% of all soils in Europe are unhealthy** as due to current management practices, pollution, urbanisation and the effects of climate change
- **Soils health is key in the implementation of the Green Deal** and its strategies (Farm to Fork, Biodiversity, Forestry, Zero Pollution and Climate): to address these major challenges

Why do we have to act now?



Soils need our attention! EU Examples:

- 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!

What do we want to achieve with this mission?



by 2030, at least 75% of all soils in each EU Member State are either **healthy** or show a **significant measurable improvement for all indicators** where levels are below accepted thresholds, to support the provisioning of essential ecosystem services

for food, people, nature and climate

What do we want to achieve with this mission?



1. **Reduce land degradation**, including desertification and salinization
 - **Restore 50% of degraded land** moving beyond land degradation neutrality
2. **Conserve soil organic carbon stocks** (e.g. in forests, permanent pastures, wetlands)
 - Increase carbon concentration on cultivated land by 0.1-0.4% per year;
 - the area of peatlands losing carbon is reduced by 30-50%.
3. **Stop soil sealing** and increase re-use of urban soils (the current rate of soil re-use is increased from current 13% to 50%)

What do we want to achieve with this mission?



4. **Reduce soil pollution and enhance restoration** - at least 25% area of EU farmland under organic agriculture; an additional 5-25% of land with reduced risk from eutrophication, pesticides, anti-microbials and other contaminants; a doubling of the rate of restoration of polluted sites
5. **Prevent erosion and stop erosion** on 30-50% of land with unsustainable erosion rates
6. **Improve soil structure** to enhance habitat quality for soil biota and crops; reduction of high-density subsoils by 30-50%
7. **Reduce by 20-40% the global footprint of EU's food and timber imports** on land degradation
8. Significantly improve **soil literacy** in all Members States

How do we want to meet the mission objectives?



- strategic research and innovation priorities: system approach, interdisciplinarity, co-construction, regional differentiation, societal support, cross-scale
- co-creation, testing and demonstration of solutions in living labs and lighthouses
- a set of 8 indicators and a consistent system for monitoring the status of soils
- strengthening independent advisory services for farmers and foresters
- engaging citizens and society at large
- encouraging changes to policies and day-to-day practices of land managers, industries and consumers

→ soil health depends on the actions of all of us!

Cooperation across sectors and citizen engagement at the core of the mission



Co-implementation at the core of the mission:

researchers, land managers, businesses, policy makers and citizens working together in:

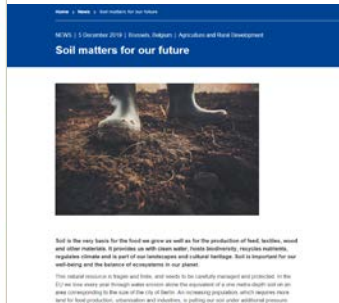
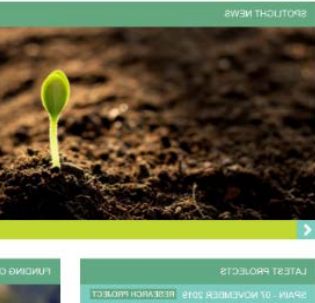
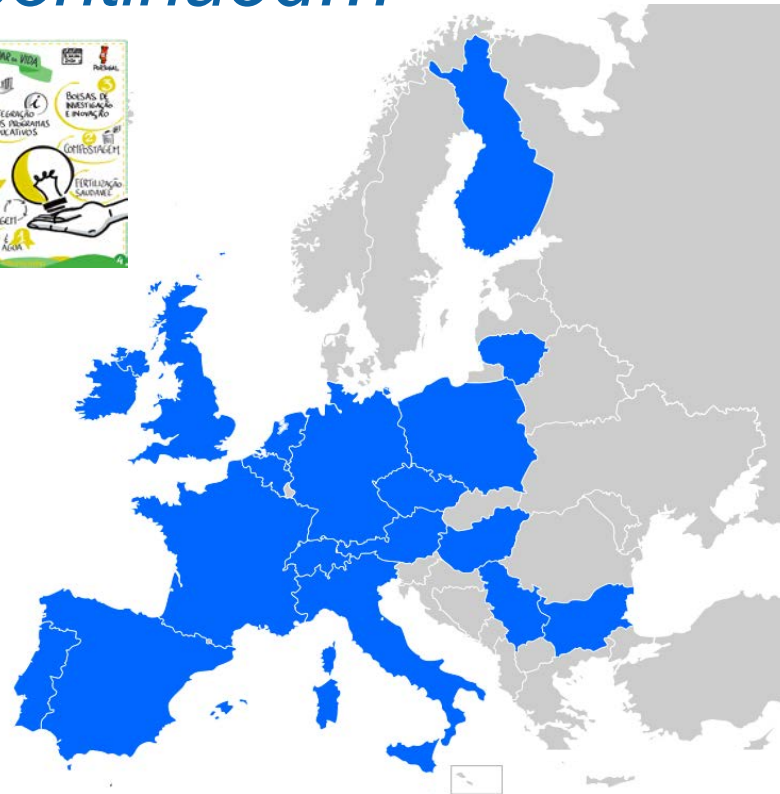
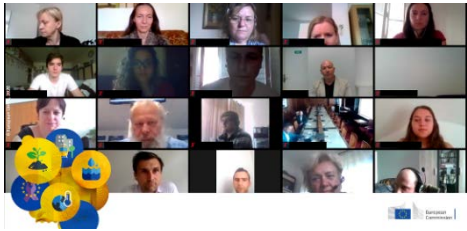
Living laboratories \Longrightarrow create knowledge and design, test and disseminate innovative solutions

Lighthouses \Longrightarrow test and demonstrate good practices

R&I priorities

1. Improve uptake/use of existing knowledge
2. Develop needed innovation in technologies and practices
3. Adapt global food chains and move towards a resilient society
4. Set up an efficient monitoring system

Communication and citizen engagement in the EU and beyond, *to be continued...*



- **World Soil Day – video - tweet:** more than **30,000 views** in less than 24h
- **2 major #EIPAgriSoil campaigns**
- **Articles, press releases, newsletters, social media, videos** (**Mission video** more than **110,000 views** in August)
- **Around 60 co-creation and citizen engagement events** (up to 29/10)
 - in AT, BE, BG, CH, CZ, DE, ES, FI, FR, HU, IE, IT, LT, NL, PL, PT, RS, UK + online reaching worldwide, and a co-organised session with Japan
 - including **2 International fairs:** International Green Week, Salon de l'Agriculture
- **Survey**
 - sent to more than **7000** contacts (EN, FR, DE, PL, CS, PT)
 - **more than 2500** contributions received



Expected Impacts



- **Soil health is the starting point for systemic transformations across value chains and territories**
 - **Practices in agriculture, forestry and in urban areas will support healthy soils and their ecosystems services**
 - **Healthy soils are the basis for nutritious and safe food**
 - **Food and bio-based value chains reward soil friendly practices and minimise their impact on soils**



Expected Impacts

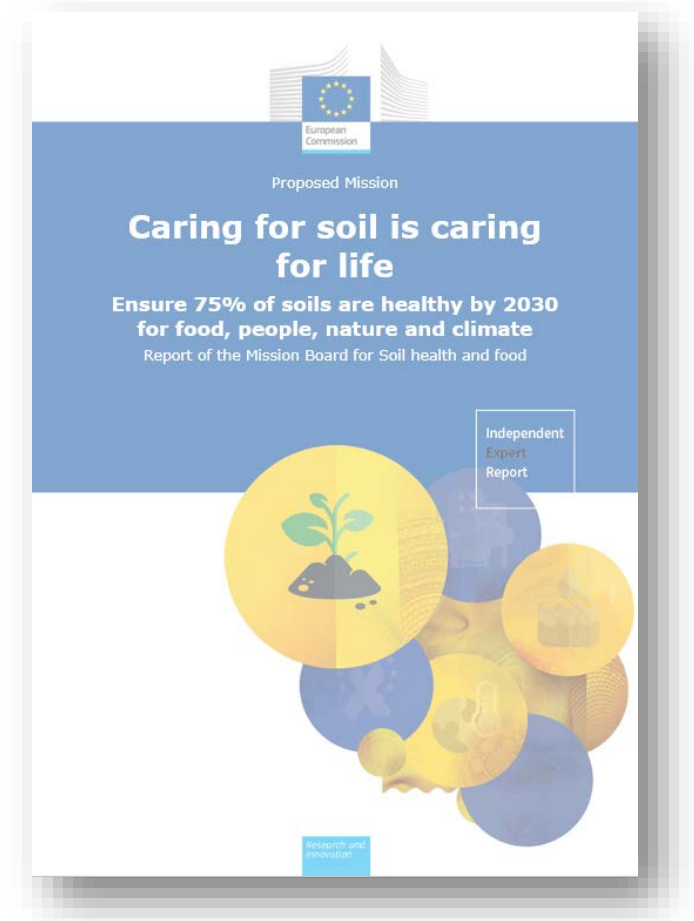


- Soils help us **mitigating and adapting to climate change**
- **Consumers and society** are aware of the importance of healthy soils and **on the role of citizen's in preserving this resource**
- The impact of production and consumption patterns in Europe on soils at global level is reduced – **a lower global footprint**

Thank you!

#MissionSoil
#EUmissions #HorizonEU

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



Useful links

- **EU mission Caring for soil is caring for life (mission report)**

<https://op.europa.eu/en/publication-detail/-/publication/4ebd2586-fc85-11ea-b44f-01aa75ed71a1/language-en/format-PDF/source-159637857>

- **Video on the Mission on Soil health and food** https://www.youtube.com/watch?v=53bbzE2lpKc&feature=emb_logo

- **Mission report handover to the European Commission (EU R&I Days)**

<https://youtu.be/oAG5-CQIOoc>

- **Soil mission session (EU R&I Days)**

<https://research-innovation-days-conference.online/hubs/mission>

- **On a mission to save our soils - the EU's plan to rebuild the land (Futuris episode, euronews)**

<https://www.euronews.com/2020/09/21/on-a-mission-to-save-our-soils-the-eu-s-plan-to-rebuild-the-land>

Photo credits

Slides 6, 12: © Alfred Grand

Slide 10: © Kerstin Rosenow – International Green Week 2020. © Arianna Pasa – Salon de l'Agriculture 2020

Slide 11: © Gustav Gullstrand - Hästhult, Sweden. ©Jed Owen – Gardener in a fall garden. © Alexander Schimmec – Thanksgiving. © Ignacio Brosa - Englischer Garten, Munich, Germany. Source: unsplash.com