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20-21 October 2020

EIP-AGRI Workshop Shaping the EU mission 'Caring for soil is caring for life'



Greetings to EIP-AGRI from Cees Veerman (Chair), the 15 mission board members and Secretariat of the Mission Board for Soil Health and Food .



Outline of talks from the Mission Board

- Introduction (Bridget Emmett)
- R&I needs (Alfred Grand)
- Living Labs and Lighthouses (Alfred Grand)
- Supporting Environment (Bridget Emmett)

Introduction to the Mission for Soil Health and Food



CARING FOR SOIL IS CARING FOR LIFE

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

Prof Bridget Emmett, Member of the Mission Board for Soil Health and Food.

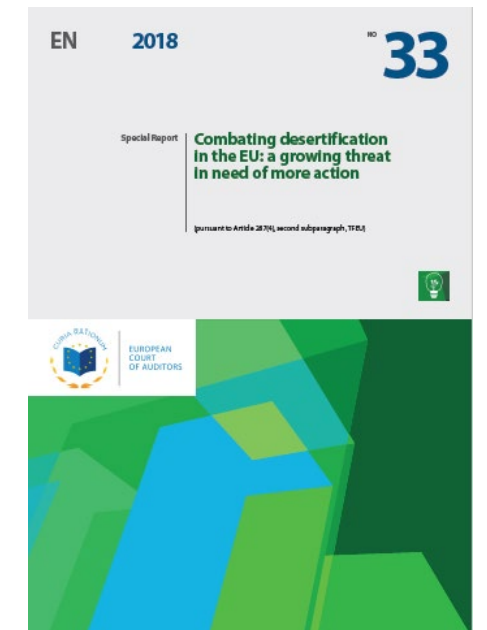
(& Head of Soils and Land Use, UK Centre for Ecology and Hydrology)

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Why a Soil Health and Food Mission?

- Soil is a **scarce, non-renewable resource**: it takes hundreds of years to generate 1cm of top soil.
- **Soils are threatened: 60-70% of all soils in Europe are unhealthy** as a direct result of current management practices; indirect effects of air pollution and climate change add to that pressure.
- **A lack of policy coordination** and action for soil health has been identified e.g. by the European Court of Auditors
- **Soils health is key implementation of the Green Deal** and its strategies for Farm to Fork, Biodiversity, Forestry, Zero Pollution and Climate.



What is healthy soil?

The mission defines this as:

”the continued capacity of soils to support ecosystem services”

This definition recognizes soils deliver a range of **vital, interconnected ecosystem functions** related to water regulation, biodiversity, nutrient cycling, climate mitigation and adaptation, landscape features and cultural services.



Are 60-70% of EU soils unhealthy?

Annex 1 of the mission presents a new synthesis of the current evidence for soil health in Europe

- 2.8 million potentially **contaminated sites**, but only 24% are inventoried and 65,500 remediated;
- 83% of EU soils with **residual pesticides**; 21% of agricultural soils with cadmium concentrations above the limit for drinking water; and 6% with heavy metal content potentially unsafe for food production;
- 65-75% of agricultural soils with nutrient inputs at levels risking **eutrophication of soils and water** and affecting biodiversity;
- 2.4% **soil sealed** and only 13% urban development on recycled urban land;
- Cropland soils **losing carbon** at a rate of 0.5% per year and 50% of peatlands drained and losing carbon;
- 24% of land with **unsustainable water erosion rates**;
- 23% of land with high density subsoil indicating **compaction**;
- 25% of land at High or Very High risk of **desertification** in Southern, Central and Eastern Europe in 2017 - and an increase of 11% in desertification in just 10 years;
- the **costs associated with soil degradation in the EU exceed 50 billion € per year.**



Why are we in this situation?

- A hidden problem beneath our feet with little media or policy attention
- Poor uptake of existing knowledge
- A lack of innovation
- Linearity – not circularity
- Fragmented communities not working together across the system
- A fragmented policy, regulatory and business environment relating to the protection of soil health

The mission has actions to tackle each of these issues.....

The mission

- A clear and ambitious goal with a timeline:

By 2030, at least 75% of soils in each EU Member State are healthy, or show a significant improvement towards meeting accepted thresholds of indicators^{*}, to support ecosystem services.

** Soil health indicators proposed by the mission cover measurable physical, chemical, biological and landscape parameters. The measurements will account for the variability in soil type, land use and climate with benchmarks defined by MS themselves according to agreed protocols.*

A new approach

- **Soils as dynamic, living systems** that deliver essential ecosystem services local to landscape, national and global scale.
- Recognising soils are part of **ecosystems and landscapes**.
- A **community approach** as it is people and their actions that need to change.
- Recognising the **diversity of soils** and their services so tools and mechanisms need to be adapted to the local context and allow for wider societal involvement.
- Soil health should be continuously **monitored in a harmonised way** to track progress and hold ourselves to account.

How do we deliver this goal?

The mission has defined 8 specific objectives and targets....



1. **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%)

8 objectives and targets (continued)



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 with reduction of 30-50% of soils with high density subsoils
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

What does success look like?

- Sustainable management practices halting soil loss in drylands between 20 to 50%; and in last 10 years has reduced soil loss by 20% in arable systems (Schwilch et al. 2015; Panagos et al. 2016)
- Introduction of cover crops increasing soil organic carbon by 6% (Bai et al. 2019)
- Adoption of phosphorus loss reduction measures and recycling options reducing phosphorus losses by over 50% (Koppelaar et al. 2013).

Supporting actions to help meet mission objectives and targets

Mission has identified **building blocks and supporting actions** to support these activities:

1. A cross-scale, inter and transdisciplinary **R&I programme**;
2. Co-creation of knowledge and testing of solutions in **Living Laboratories and Lighthouses**;
3. A consistent set of 8 indicators in a robust **soil monitoring programme** at EU and MS level equivalent to that for air, water and biodiversity;
4. **Training, education, communication and citizen engagement** embedded in all activities
5. **A supporting environment** e.g. public policies, incentives, investments, information need to be mobilized

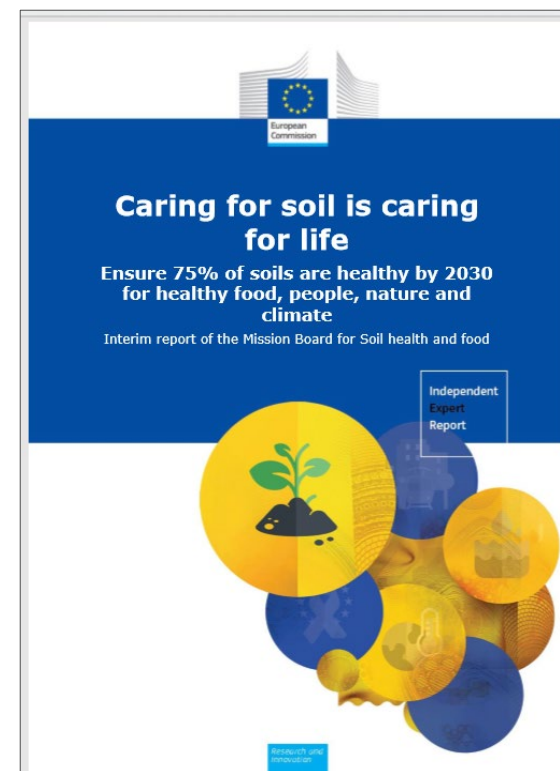
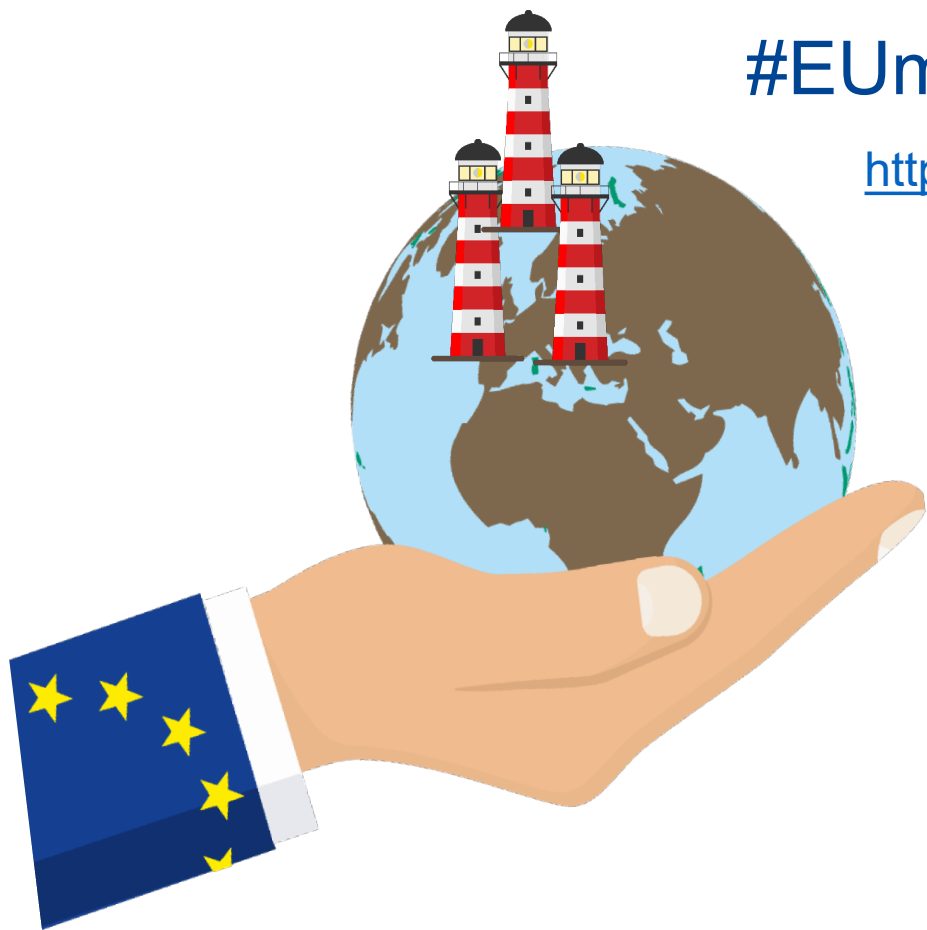


Thank you and questions?

#Mission Soil

#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>

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EIP-AGRI workshop

Shaping the EU mission

'Caring for soil is caring for life'

Online 20-21 October 2020

All information of the workshop is available on
www.eip-agri.eu

on the event webpage
<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-workshop-shaping-eu-mission-soil>

