



Caring for soil is caring for life

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

WHY A MISSION ON SOIL?

Soils is essential for all life-sustaining processes on our planet. Soils are threatened all over Europe and globally, mostly as a result of human activities. **Land degradation** is caused amongst others, by unsustainable management practices in agriculture and forestry, contamination from industries and soil sealing through urbanisation and infrastructures. Food choices, processes in the food chain and food waste are also affecting soil health.

OBJECTIVES and TARGETS

1. **Reduce land degradation** including desertification and salinization
 - 50% of degraded land is restored moving beyond land degradation neutrality
2. **Conserve and increase soil organic carbon stocks**
 - reversed to an increase by 0.1-0.4% per year the current carbon concentration losses on cultivated land
 - carbon losing from managed peatlands is reduced by 30-50%
3. **No net soil sealing and increase the re-use of urban soils for urban development**
 - switch from 2.4% to no net soil sealing
 - soil re-use rate increased to 50% to help meet the EU target of no net land take by 2050
4. **Reduce soil pollution and enhance restoration**
 - at least 25% area of EU farmland under organic agriculture
 - further 5-25% of land with reduced risk from eutrophication, pesticides, anti-microbials, agrochemicals and contaminants
 - a doubling of the rate of restoration of polluted sites
5. **Prevent erosion**
 - stop erosion on 30-50% of land with unsustainable erosion rates
6. **Improve soil structure to enhance habitat quality for soil biota and crops**
 - soils with high-density subsoils are reduced by 30 to 50%
7. **Reduce the EU global footprint on soils**
 - the impact of EU's food, timber and biomass imports on land degradation are reduced by 20-40%
8. **Increase soil literacy in society across Member States**
 - soil health is firmly embedded in schools and educational curricula
 - uptake of soil health training by land managers and advisors is increased
 - understanding of impact of consumer choices on soil health is increased

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MISSION PORTFOLIO

1. **Living Laboratories (LLs) and Lighthouses (LHs)** within and across farms and forest, landscape and urban settings

This mission aims to reverse the traditional linear and often disciplinary vision of research and development by establishing a dense network of “**living laboratories**” and “**lighthouses**” for various types of land uses (farms, forests, industrial areas and urban settings) and functioning very close to land managers and their needs.

- **Living Laboratories (or living labs) are spaces for co-innovation** through participatory, transdisciplinary and systemic research.
- Some of these living labs will be “**Lighthouses**” i.e. **places for demonstration of solutions, training and communication**

2. A consistent selection of **eight indicators** to be used in a robust **soil monitoring programme** by each Member State equivalent to that for other natural resources (air, water and biodiversity)

R&I activities will cover two fundamental dimensions: **soil health** and **drivers of soil health**, having the following Priorities:

P1: Integration and uptake of current knowledge;

P2: Accelerating Innovation in technologies and practices;

P3: Towards global resilience through circular eco-economy and adaptation of food and biomass systems;

P4: Next generation monitoring and surveillance programs.

3. An ambitious cross-scale, inter and transdisciplinary **R&I programme**

The mission proposes to use **eight indicators to assess current status and track change**:

1) Presence of soil pollutants, excess nutrients and salts; **2)** Soil organic carbon stock; **3)** Soil structure including soil bulk density and absence of soil sealing and erosion; **4)** Soil biodiversity; **5)** Soil nutrients and acidity (pH); **6)** Vegetation cover; **7)** Landscape heterogeneity; **8)** Forest cover.

The mission argues against a silo approach where only a single indicator is tracked, **as improvement in one indicator should not come at a cost of another**. Measurements are soil-specific showing characteristically different ranges of values for different soil types according to their land use. An unhealthy soil is present if any indicator is below an agreed threshold defined for that soil type, land use and climate zone.

4. **Training, education, communication and citizen engagement** embedded into all activities

Barriers for improving soil health include the lack of literacy across all sectors of society as well as the insufficient communication and engagement between communities. The mission success will also depend on actions taken by all citizens.

Training and education, communication and engagement activities are needed:

- **Training and education** to increase the emphasis placed on soil in education, promote integrated research on soil (especially in links with other missions), encourage more and better learning opportunities for society at large, and reward best practices;
- **Communication and citizen engagement** to bring soils closer to the attention of citizens and stakeholders and engage citizens to be a main player in the mission process.
Living labs and lighthouses will be main vehicles for citizen engagement, bringing together researchers, practitioners, communities and other stakeholders to develop together solutions with a tangible impact and to share and spread already existing sustainable practices.