



Questions and Answers on a Directive on Soil Monitoring and Resilience

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Why do we need EU legislation on soils now?

Over **60% of European soils are unhealthy** and scientific evidence shows that this is getting even worse. Unsustainable use of EU natural resources, in particular the degradation and pollution of soils, is one of the major drivers of the climate and biodiversity crises. In particular, soil degradation has already cost billions of euro - **an estimated over €50 billion per year** due to the loss of essential services they provide.

This degradation is mainly driven by unsustainable management of land, sealing, contamination and overexploitation combined with impact from climate change and extreme weather events.

Degraded soils **reduce the provision of ecosystem services** such as **food, feed, fibre, timber, nutrient cycling, carbon sequestration, pest control or water regulation**. Moreover, degraded soils intensify the pressure on the remaining healthy soils. All this comes at a cost to farmers, and affects the capacity to produce healthy and nutritious food. Reversing the trend is urgent in order to **prevent and better respond to natural disasters and droughts, to achieve EU agreed goals on climate and biodiversity, to ensure food security and safety, and to protect the health of citizens**.

Soils **currently do not receive the same level of legal protection** in the EU as air and water. The European Parliament, other EU institutions, stakeholders and citizens have therefore called on the Commission to develop an EU legal framework for the protection and sustainable use of soil. In response, the EU Soil Strategy for 2030 announced that the Commission would table a legislative proposal in 2023 to achieve the vision that by 2050 all soil ecosystems should be in healthy condition.

How will this proposal improve soil health?

The ultimate objective of the proposed law is to have **all soils in healthy condition by 2050**, in line with the EU Zero Pollution ambition. To achieve this, the law provides a **harmonised definition of soil health**, puts in place a **comprehensive and coherent monitoring framework** and lays down rules on **sustainable soil management and remediation of contaminated sites**.

Supported by the Commission, Member States will **first monitor and then assessment the health of all soils in their territory**, so that appropriate measures can be taken by authorities as well as landowners. The collected data will feed into the deployment of technological and organisational solutions to manage soils, in particular in farming practices, including crop diversification, precision farming, plant development, digitised soil management tools and others. This will enable farmers and other landowners to implement the most appropriate treatment methods and will assist them in maintaining and increasing soil fertility and yields, while minimising water and nutrient consumption. In addition, soil data allows an enhanced analysis of trends on droughts, water retention and erosion, enhancing disaster prevention and management.

High-quality data on soils will increase the uptake, large-scale development and success of new sustainable business models such as carbon farming and will ultimately help improving the state of forests.

Sustainable soil management will become the norm in the EU. Member States will have to define positive and negative practices of soil management. Regeneration measures, to bring degraded soils back to a healthy condition, should also be defined and implemented, based on Member States' soil health assessments. Such an assessment will also **serve the development and implementation of other EU policies and related plans and programmes**, such as LULUCF, CAP and water management.

There are an estimated 2.8 million potentially contaminated sites in the EU. To tackle this legacy

from past polluting activities, the proposal requests Member States to **identify all potentially contaminated sites and map them transparently in a public register**, investigate these sites and address unacceptable risks for human health and the environment, thereby contributing to a toxic-free environment by 2050. **The remediation shall be done in line with the 'polluter pays' principle**, so that the costs are borne by the ones responsible for the contamination.

Who will benefit from healthier soil and how?

Ensuring the sustainable use of soils and their regeneration will help strengthen the **resilience of European food and farming**. Improving soil health is also essential for **disaster prevention and management**. This is ever more important as climate-induced extreme weather events, such as droughts, floods, wildfires are becoming a more frequent reality in Europe. Depollution and decontamination of soils will also **greatly improve the health of citizens, especially of vulnerable groups**, who are proven to be disproportionately affected by pollution.

The proposal will reduce the costs from soil degradation and of the decreased provision of ecosystem services caused by it. This cost, conservatively estimated at around €50 billion per year, is currently borne by the wider society, and especially by farmers and other land owners.

Farmers will benefit because their livelihoods and future depend on the long-term health of the soils on which crops are growing and livestock is grazing. 95% of our food is directly or indirectly produced on soils. **Soil erosion can cause a yearly agricultural productivity loss of €1.25 billion per year in the EU.**

The increased uptake of **sustainable management practices will maintain or improve soil fertility, productivity and yields**, and can reduce costs through the increased availability of ecosystem services and need for less inputs. Some examples of specific benefits include:

- Improved **monitoring, development of remote sensing solutions and enhanced data collection** will render a more granular view on the state of their soils
- Independent advisors can help farmers implement **sustainable soil management** practices based on more and better data and knowledge
- **Certification of soil health** can bring better recognition of the best practices carried out by farmers, as they can be financially rewarded for keeping the soil in good condition
- Farmers will have more access to **innovation, funding, data, knowledge, advice and training, notably via the [Horizon Europe's Mission "A Soil Deal for Europe"](#).**

The Soil Monitoring Law will in addition generate **new business, innovation and job opportunities** in sectors such as **advisory services, training, certification, environmental consultancy and soil testing**. It will support industries as they develop soil-friendly and climate neutral value chains.

Investigating and cleaning up brownfields will allow to **build new infrastructure without consuming new land**, applying a circular approach to this limited resource.

The law will also improve our knowledge on soils since soil health will be monitored everywhere in Europe, thereby **generating updated and solid new data**.

How will the law affect farmers?

The proposal includes elements to **increase the knowledge and data availability on the health of soils**, including agricultural soils, and to **maintain or improve soil functions**, including the production of food, feed and biomass. The proposal does not impose any direct obligations on landowners and land managers, including farmers.

Member States must define sustainable soil management and regeneration measures with a view to achieve healthy soils in the EU by 2050. The proposal only sets out certain principles to be respected when defining those measures at Member State level but **does not define specific management practices to be applied or banned**. These should be **adapted at national level by the Member State**, taking into consideration the specific local, climatic, and social-economic conditions, as well as land uses and soil types, and existing knowledge on **what works best for their territory and their farmers**.

The proposal further includes an obligation to establish these measures in **synergy with existing plans, programmes and targets** required under other EU legislation. Member States may therefore decide to include the identified practices under national and European support mechanisms, such as

the voluntary measures under the Common Agricultural Policy. Farmers may decide whether or not to enrol in those support programs.

Farmers will be provided with data and knowledge on the state of their soil, so that they can take informed action to improve the health of their soil. The proposal includes several elements through which **Member States can help farmers** identify the most suitable practices for their specific circumstances. These include the **identification of sustainable management practices**, access to **financial instruments** to support the implementation of sustainable soil management, and **easy access to advice, training activities** and capacity building. The voluntary option for farmers to **have their soil health certified** – through a certification scheme that will be developed in synergies with the carbon removal certification – will also bring benefits and new opportunities, as they can be rewarded by the market for good soil stewardship, and receive financial support or incentives.

How will healthier soils help against climate change and weather-related disasters?

Soils store more carbon than the atmosphere and all biomass combined.

The natural capacity of resilient soils, wetlands and forests to store water is higher than what could be achieved through costly new artificial reservoirs. Improved water retention can mitigate floods as well as droughts and make the environment more resilient to landslides and soil erosion. Overall, nature-based solutions for flood prevention, for instance, have high benefit-cost ratios.

Wider application of sustainable soil management in the EU will increase carbon sequestration and water retention. This will help mitigate and adapt to the impact of climate change and assist in achieving the goal of a climate-neutral and resilient Europe by 2050. Healthy soils retain up to 25% of their mass in water, contributing to disaster risk prevention and acting as long-term reservoirs to refill groundwater bodies. Healthy soils with a high-water infiltration rate also support the establishment of wildfire-preventing and resistant vegetation cover.

The **monitoring of soil health** (e.g., soil organic carbon content and water retention capacity) will improve the implementation of climate mitigation policy and measures as well as our understanding of how to adapt to climate change and prevent disasters.

Certification of healthy soil is expected to increase the value of the carbon removal certificate and provide recognition for sustainable soil management and related food products.

Will it bring additional costs, restrictions or bureaucracy?

The **administrative burden of the proposal will be limited** because Member States are not required to prepare soil plans or programmes, but to use the assessment on soil health to inform the development of plans and programmes under existing policies on climate, agriculture, disaster risk management, water, air and nature, amongst others, and to meet their targets. The proposed law creates **full synergies with current policies**, so that the new generated data and assessment of soil health can inform and provide a service to reach EU's agreed objectives.

The proposal **gives authorities and soil managers the flexibility to choose** the most appropriate measures and how to apply them. However, it is important that the authorities consult and work closely with relevant stakeholders and citizens, notably farmers and other soil managers.

The burden for **monitoring the state of soil will be shared between the Commission and the Member States**. The Commission will support the Member States by reinforcing its current EU soil sampling programme [LUCAS Soils](#), and by developing new remote sensing products through Copernicus. Reporting to the Commission will only be required every five years and a common data platform will allow timely access to data and to avoid unnecessary reporting.

What is the role of the EU and what is the role of national and local authorities?

A **European framework is needed** because the **impacts of damaged soils** to the environment, economy and society are **cross-border** and are of a large scale - and because the European level is well placed to provide cost-effective support to national authorities. But this proposed framework will leave a lot of decision-making on the national and local level.

Regarding soil monitoring, **Member States will need to put in place all the monitoring arrangements and carry out soil measurements**. This monitoring will be done within soil districts, also to be established by the Member States. The **Commission will support the Member States' efforts in monitoring soil health**: for example, by carrying out soil surveys as it has done

for several years ([LUCAS soil](#)), as well as by exploring and developing soil remote sensing products and to set up a digital soil health data portal building on the existing [EU soil observatory](#).

Regarding **sustainable soil management**, the **Commission** will give any needed **guidance to Member States** to define and establish sustainable soil management practices. But the proposal leaves **flexibility to national and local authorities** to identify the best measures depending on the type and condition of various soils, **in consultation with land managers and other relevant stakeholders**. The EU will also help the development of these practices by **supporting research, especially through the Horizon Europe mission 'A Soil Deal for Europe'**.

What support is available at EU level?

['A Soil Deal for Europe'](#), one of the five EU missions of **Horizon Europe**, is an ambitious programme promoting sustainable soil management, soil monitoring and soil literacy in rural and urban areas. It is therefore a key instrument to implement the Soil Health Law. The Mission Soil:

- provides **funding for research and innovation** on areas such as carbon farming, soil contamination and restoration, soil biodiversity or circular economy
- offers **innovative solutions for land managers**, such as remediation techniques, sustainable farming practices, materials and tools for advisors and spatial planners
- creates a **network of 100 living labs and lighthouses to test and showcase** solutions for sustainable soil management across Europe, for all types of soils and land uses
- **promotes soil monitoring** and **enhances the access to soil data** and information for land managers, policy makers and other stakeholders
- promotes outreach to **raise awareness** about the importance of soils and supports education and advice regarding soil health.

Numerous other EU instruments offer funding opportunities: the Common Agricultural Policy, Cohesion Policy funds, the LIFE programme for environment and climate action, the Technical Support Instrument (TSI), the Recovery and Resilience Facility (RRF) and InvestEU.

Financing for certain practices can also be expected under the proposal for an EU carbon removal certification framework. The certification of soil health rewards farmers and soil managers for the ecosystem services provided by their soil to the society.

Finally, as announced in the EU Soil Strategy, the Commission is setting up a dialogue with the public, private and financial sectors to see how financing the prevention of soil degradation and the regeneration of soil health can be improved.

For More Information

[Factsheet on Soil Monitoring Law](#)

[Commission's proposal for a Directive on Soil Monitoring and Resilience](#)

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