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Our position

Soil Health Law

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American Chamber of Commerce to the European Union
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Executive summary

The European Commission's Soil Monitoring and Resilience Directive (Soil Monitoring Law) rightly aims to establish a comprehensive soil monitoring framework, policymakers must refine the legislation to address farmers' roles, farming practices and the challenges of managing soil health, including the management of nutrients, water, pests, diseases and weeds and preventing soil degradation.

A comprehensive **soil health definition should take into account the function of the soil** and consider a holistic and qualitative framework that includes yield, climate change mitigation, restoration and conservation of biodiversity, and conservation of water resources. It should also distinguish between natural and productive soils as well as accommodate future scientific knowledge.

Farmers also need **financial support to access cost-effective, transparent and accessible methods for monitoring soil health** provided or subsidised by the Commission and/or Member States.

Finally, instead of developing a prescriptive list of practices, the legislation should **focus on outcomes** and include a toolbox that gives farmers the flexibility to align measures to specific farm conditions and incorporate new science-proven practices.

With these revisions to support farmers in prioritising soil health and implementing sustainable soil management practices, they can improve crop yields, reduce environmental impact and contribute to a sustainable agricultural system.

Introduction

Soils are a critical component of agricultural productivity and performance, and their proper functioning is a top priority for farmers. In addition to supporting crop growth, soils can help mitigate climate change and conserve biodiversity. The European Commission's EU Soil Strategy for 2030, a key part of the European Green Deal, recognises the importance of healthy soils in achieving climate neutrality, biodiversity conservation, food and water security and a circular economy.

To achieve these goals, the Commission has proposed a Directive on Soil Monitoring and Resilience and a Soil Health Law, which aim to establish a legislative framework for delivering healthy soils by 2050. To successfully implement more sustainable agriculture, EU policymakers should amend the legislation in three critical areas: the definition of soil, the monitoring of soil health and soil management practices, each of which is explored below.

Comprehensive soil health definition

Soil health is a complex measure that is influenced by several factors, including soil type, climate, soil use and agricultural regulations. Farmers face numerous challenges in managing soil health, including

nutrient, water, pest, disease and weed management, as well as preventing soil degradation due to erosion, compaction and salinisation.

Instead of limiting the soil health definition to pre-determined values as proposed in the Directive, farmers would benefit from a **gradual score**. This would take into consideration the function of the soil and provide a holistic and qualitative framework that includes yield, climate change mitigation, restoration and conservation of biodiversity, and conservation of water resources to distinguish between natural and productive soil.

That gradual score can be referred in the Article 7, paragraph 1 and would be described in a new table that should be part of Annex I. A gradual score would include physical, chemical and biological soil health indicators. One science-based reference would be a five-class gradual scoring system ranging between 0 (very low) and 1 (very high)[1].

To be consistent with this gradual score proposal, it is important to also reflect the scoring in Article 9, paragraph 2, from 'Soil is unhealthy where at least one of the criteria referred to in subparagraph 1 is not met ("unhealthy soil")' to 'Healthy soil criteria will also have to be scored against contextual scales of soil type, climate, mineral content and land use.'

As for the qualitative criteria, policymakers should incorporate the following elements into part C of Annex I.

Part C: soil descriptors without criteria *(highlighted areas are additions)*	
Aspect of soil degradation	**Soil descriptor**
Excess nutrient content in soil	Nitrogen in soil (mg g^{-1}) (spring assessment) Plant available P (mg/L^{-1}) as an addition total P.
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon) (g cm^{-3})
Loss of soil biodiversity	Soil basal respiration (mm3 O2 g^{-1} hr^{-1}) in dry soil Member States may also select other optional soil descriptors for biodiversity such as: - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass; - abundance and diversity of earthworms (in cropland); - invasive alien species and plant pests - QBS mesofauna analysis – diversity, abundance, richness biomass

[1] Maaz et al. 2023: https://doi.org/10.1016/j.scitotenv.2023.161900 e Ross et al. 2023: https://pubs.acs.org/doi/10.1021/acs.est.2c04516

Yield (ensures sustainable food production and link between healthy soils and productivity)	Yield (dt/Ha) (crop type recorded) Quality (not limited to): • Oil content (%) • Specific weight (Kg/Hl) • Protein content (%)
Climate change mitigation, restoration and conservation of water resources	Plant available water (PAWC%) as an addition to SWC

A comprehensive definition should also accommodate future knowledge, as science and technology evolve to find more soil health indicators. For that, the legislation should include a new paragraph in Article 7 as follows: '*The Commission is empowered to adopt delegated acts in accordance with Article 20 to amend Annex I in order to incorporate new soil descriptors and criteria in it as result of scientific and technical progress.'*

Soil monitoring system

Monitoring soil health is crucial for sustainable agriculture, but some methods can be costly and time-consuming, making them impractical for small-scale farmers. This can lead to a lack of information about soil health, which can harm the environment and agricultural productivity.

To achieve sustainable soil management, accurate data on soil health are essential, which should be part of farmers' integrated crop management(ICM) practices. The comprehensive soil health criteria should be supported by measurements that are focused on outcomes instead of a list of prescriptive measures, until the applicable scientific knowledge has evolved further. In this way monitoring can indicate whether degraded soils at particular sites are improving over time and if soil management interventions are working effectively. Also, trajectory tracking can be used to track if soils already in good health are staying healthly, or if not, identify interventions to reverse any reported declines.

At the same time, the legislation should acknowledge that some methods for monitoring soil health can be costly and time consuming, making them impractical in certain contexts. This can be a significant barrier for small-scale farmers who may not have the financial resources or time to invest in these methods. Additionally, some methods require specialised equipment or expertise, which can limit their accessibility to farmers and other stakeholders. This in turn can result in a lack of information about soil health, which can lead to poor decision-making and ultimately harm the environment and agricultural productivity. Therefore, farmers must have **financial support from the Commission and/or Member States for implementing cost-effective, transparent and accessible methodologies and digital technologies** for monitoring soil health, in addition to policies conducive to private support. The future Common Agricultural Policy reform should allocate enough funds to finance EU-wide protection and restoration of soil health and sustainable use of soils.

Soil management practices

The Commission's proposal requires Member States to draft mandatory lists with sustainable soil management practices that must be implemented across their entire territory. However, those lists can limit farmers' ability to incorporate innovative interventions that science may offer in future.

Instead of mandatory Member State lists, the Directive should include a **toolbox of sustainable, science-proven practices** that gives farmers the flexibility to align measures to specific farm conditions. Instead of Article 10 requiring Member States to 'define' the sustainable practices respecting the list in Annex III, the Member States should 'propose' practices and allow landowners to use the Annex III list as a reference.

One example of a sustainable farming practice that is not listed in the proposal is **regenerative agriculture**. Such practices promote soil health and sustainable land use and include crop rotation, cover cropping, reduced tillage, optimised application of biological and chemicals inputs and agroforestry. These interventions can increase soil organic matter, improve soil structure and enhance soil fertility, leading to higher crop yields, reduced greenhouse gas emissions, protection of natural ecosystems and the preservation of biodiversity. Because crop protection inputs have a role in the Integrated Pest Management system, policymakers should incorporate the following in Annex III, item C: 'Inputs should be tailored to agronomic need and avoid the release of substances into soil that may harm human health or the environment or degrade soil health'.

By prioritising soil health and implementing flexible, sustainable soil management practices, farmers can improve their crop yields, reduce their environmental impact and contribute to a more sustainable agricultural system.

Conclusion

Soil health serves as the foundation for successful crop production and as a powerful carbon sink. It is critical that all stakeholders work to improve soil health globally. The Commission's proposal for a Directive on soil health sets up a legislative framework that represents a first step towards the goal of delivering healthy soils by 2050 throughout the EU.

The recommendations above would help the Directive provide the flexibility and financial support farmers need to incorporate sustainable agriculture practices that improve soil health and increase agricultural systems' resilience to climate change.