

How to make soils healthier

Reviving farmland makes food production more sustainable

The Challenge

The fall in soil health must be reversed. Thinning, poorer soils can shrink the size of food harvests, lead to the loss of valuable soil from agricultural land and pollute European rivers. There is evidence that taking certain steps, such as planting crops in a certain order or sowing a winter cover crop to not leave the soil bare, bolsters soil quality. The challenge is to decide what steps work best in which regions of Europe and with which crops: wheat or maize fields, vineyards or olive groves. Soil-improving cropping systems will be tested out in 16 study sites across Europe.

► Our story

Soil health in Europe has been slipping in recent decades. The slide down in quality owes to big changes in agriculture. Previously, traditional farming mixed animals and crops together, and added organic manures from farm animals to crop fields. Today, larger, more specialized farms no longer add organic matter to soil. Fertilizer and agrichemicals are added on modern farms, but these can pile up costs and hide a worrying dip in soil health and fertility. Another negative for soil is heavier farm machinery, which compacts the soil and encourages rainwater to run off.

The effects are not academic. While fertilizer and other inputs have risen, the grain gathered from maize and wheat fields has flat-lined. European farms need to take steps to revive soil health. This is the mission of a new project called SoilCare, which is seeking sustainable ways to improve soil on farms and to test soil improvement strategies.



► The solution

Insights from a variety of sites will help solve the puzzle of which farm strategies work best to reduce soil erosion and improve soil fertility. An interactive map will be drawn up to advise which approaches are most suited in different regions, with different crops. Taking such steps will be a form of investment; they will not generate instant returns, but ensure that European farms are productive, require fewer inputs and are more sustainable in future years.

► What's it for?

- *Current and potential impacts of various improvements for soil health will be measured; these will take the shape of cropping systems*
- *To generate an interactive mapping tool to signpost the best approaches to reviving soil health in different parts of Europe*
- *The impact of agricultural and environmental policies on strategies to help soil health will be looked at, and barriers to adoption for farmers will be sized up to see what encouragements might be needed*
- *The results from different measures trialled on 16 study farms across Europe will flow into improving policy for soil health*
- *Lessons learnt will help ensure long-term sustainability of European food production*

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