

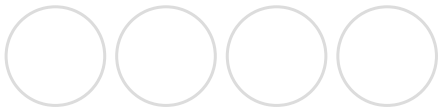


UK farmers to be given first ever targets on soil health

New bill will be first step by ministers to protect and restore soil as fears grow over a future soil fertility crisis

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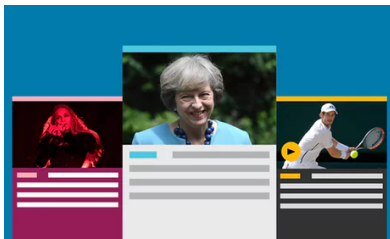


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A new bill will be brought before parliament this year mandating, for the first time, measures and targets to preserve and improve the health of the UK's soils, amid growing concern that we are **sleepwalking into a crisis of soil fertility** that could destroy our ability to feed ourselves.

The UN has warned that the world's soils face exhaustion and depletion, with an **estimated 60 harvests left** before they are too degraded to feed the planet, and a 2014 study in the UK found matters are not much better, **estimating 100 harvests remaining**.

Rebecca Pow, parliamentary private secretary to environment ministers, told the Guardian the agricultural bill, expected to be published later this year, would contain a section devoted to soil health, in the first attempt by ministers to reverse decades of soil loss **and threats to fertility**. She said it was too early to tell exactly what form the regulation would take, but indicated that it was likely to set a target of reversing the declines and restoring soil health across the country by 2030.



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This would be in line with initial proposals in the government's recently announced **25-year environmental plan**. Pow said such a commitment would be "difficult" but "possible" to meet, adding: "Healthy soil is essential, and there are ways of measuring it, such as the organic matter in the soil. Farmers can be given incentives to improve soil management, such as by crop rotation. It has taken a long time but I think we have turned the corner on getting soil on the political agenda."

Soils are at risk **from erosion by wind and water**, made worse by the loss of natural features such as hedgerows and trees; from heavy agricultural machinery; from over-grazing, climate change and intensive agriculture. Poor soils also lead to problems with water supplies, and can affect air quality as fertilisers produce ammonia which reacts with other gases to form particles that

harm the lungs. As much as 3m tonnes of topsoil are lost in the UK each year, while restoring lost soils can take centuries.



Q&A

Soil

Why is soil causing concern?

Soil is fundamental to agriculture, but it is not a renewable resource: it can take millennia for just a few centimetres to form, but can be washed or blown away in seconds. Soil is under threat as never before from modern farming, climate change, pollution and more. The UN has warned that there could be only 60 harvests remaining before the world's soils reach the limits of agricultural production. All of this at a time when the world's population is expanding. Soils are also one of the world's biggest stores of carbon.

Can't we use fertilisers?

Although fertilisers can help restore soils, without sufficient structure or organic matter to hold it together, fertilisers just wash away, running into water courses or the sea where they can create dead zones, or drifting off as ammonia gas.

Soils have been around longer than humans - what's changed?

Intensive farming methods can harm the soil: heavy machinery compacts soils, making them more vulnerable to flooding. Overuse of soils can also exhaust their fertility, and the landscaping around intensive production leaves soils vulnerable to erosion.

Can anything be done?

Fortunately, there are various methods of retaining and improving soil health. Fields are often ploughed from the top of a hill to the bottom, which funnels water downhill, washing away topsoil and nutrients. Simply ploughing fields **in line with the contours of the land** would prevent this. Other techniques include restoring natural features and practising crop rotation. Another much-touted method, “no-till” agriculture, is controversial as it relies on GM crops and chemicals.

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However, successive governments have made almost no moves to target soil health, even as intensive farming has increased. The EU mooted a soils directive for several years but abandoned it in the face of heavy lobbying, some of it from the Conservative-led coalition.

Farming minister George Eustice also pledged to put soil “at the heart” of the government’s strategy. He told a conference in parliament held by the Sustainable Soils Alliance on Tuesday: “When it comes to soil, we see a central plank in this huge new policy [on farming] being around soil, [and] the connections between the way we manage our soils and our air quality, the way we care for our soils and our water quality.”

He spoke of his own farming background: “Soil is very dear to my heart. In environment policy, it has been overlooked in recent decades. But principles of soil [preservation] have been passed down for generations, our grandfathers and great-grandfathers. So to me soil is not just about science, but there is also a kind of art to it.” He said the protection of soils would involve learning lessons from traditional agriculture, “from our grandfathers”, coupled with modern technology.

Environment secretary Michael Gove has also **spoken out about the importance of soils**, suggesting that after Britain leaves the EU’s common agricultural policy, maintaining healthy soils will be one of the “public goods” that farmers are expected to provide in return for taxpayer subsidies.

Campaigners at the conference welcomed the government’s intentions, but called on ministers to ensure that the wording of the agriculture bill goes beyond vague aspirations to encode clear measures and responsibilities, on regulators, farmers, industries and public bodies.

Neville Fay, founder and director of the Sustainable Soils Alliance, told the Guardian there were many steps the government could take to prevent soil loss and give farmers and others an incentive to preservation and improvement. These

would include requiring the [Environment Agency](#) and other government bodies to include soil health in their assessments, and making sure farmers did not lose out by restoring natural features such as hedgerows and leaving fields fallow or in rotation with non-commercial soil-improving crops. “We need the government to set milestones, so we can judge what we are achieving, and we need data on the current state of our soils,” he said. “Soil is essentially irreplaceable when lost.”

Philip Lymbery, of Compassion in World Farming, laid the blame for soil problems squarely with modern large-scale agriculture. “Trees disappear, hedgerows disappear, then insects disappear, birds disappear. We are putting huge pressure on our soils. To make [our soils better] we need to move away from industrial agriculture.”

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