

## The Economics of Soil: Private Asset or Public Good?

*“Soils are the most important element of our natural capital, but receive the least attention. They are the bedrock of biodiversity – without healthy soils we don’t have the basic building blocks of ecosystems and hence nature is in trouble.” Dieter Helm*

### **1. Soil: now a universal issue?**

Two government ministers, the Rt Hon Elizabeth Truss MP, Chief Secretary to the Treasury and the Rt Hon Greg Clark, Secretary of State for BEIS were among the speakers at a Parliamentary event hosted by Rebecca Pow MP and the Sustainable Soils Alliance on the topic of ‘*The Economics of Soil.*’

After Defra Ministers Gove and Eustice had spoken at previous Alliance events, here was a clear indication that interest in the issue of soil extends beyond the environmental community - and this was reflected in the other panellists who represented farming, NGO and academic interests, but also those of water companies, corporates and even financial services.

Rebecca Pow opened the event saying:

*“One third of our soils and more than half of our agricultural soils are degraded, and this costs the economy. This is a critical year for the development of our agro-environmental policy, and it will be very important to work out how soil fits into this framework. To make the right decisions now, we have to put a value on our soils. And that’s where today’s event comes in.”*

This was reinforced by Liz Truss’ address, which clearly set out how thinking about environmental value is becoming integral to Treasury thinking:

*“The environmental announcement at last week’s Spring Statement reflects the priority the Treasury is putting on this issue. The Chancellor talked about the numerous ways the environment contributes to our quality of life and sustainability as a country and it’s interesting that what was once considered to be a Defra issue has now become central to the way we think about the economy.”*

### **2. Soil’s extensive role**

The sudden interest in soil health reflects the growing appreciation of its importance for society and the economy in general. In laying out soil’s importance Emma Howard Boyd, Chair of the Environment Agency, explained that soil holds three times as much carbon as the atmosphere, reduces the risk of flooding by absorbing water and delivers 95% of our global food supplies.

### **3. The numbers are big**

The widespread interest also reflects the numbers at stake. Professor Joe Morris of Cranfield University estimated the quantified economic costs of soil degradation in England and Wales (through erosion, contamination, compaction, sealing etc.) at between £1.05 to £1.75bn/year, averaged out at £1.4bn.

SSA Science Panel Chair, Professor Chris Collins, considered soil’s carbon value which, based on a recent Countryside Survey of a total of 100mt carbon and a trading price of £20, puts the potential

value of England's soils at £15bn. To add to this, Andrew Voysey of Soil Capital listed a series of other soil-related costs such as sediment removal in urban drainage for flood regulation (£55m), and in drinking water (£29m), and lost nutrient value from Potassium loss (£20m).

#### **4. Barriers to change**

Responsibility for managing our soils lies largely with British farmers, and Greg Clark credited their willingness to adopt innovative techniques. When it came to soil, however, there was a consensus amongst speakers that the entrenched barriers to innovative, regenerative farming (cover crops, grass leys, agroforestry, no-till) were significant, and often insurmountable.

Cambridgeshire farmer Stephen Briggs identified some of the causes for this stifling of innovation. These included the prevailing multi-functional and multi-operator land use system, the vested interests of the supply industry who act as both advisors and salesmen, and short land tenures which did nothing to promote long-term soil health improvement.

Andrew Voysey also addressed this 'web of influence'. Further, he cited the economic signals from advisors and input providers, but added banks, off-takers and policy makers to the voices that explicitly and implicitly advised against change.

#### **5. Rationale for government intervention**

During the event much reference was made to the fact that 80% of the costs associated with degraded soils occur off-site and so are either invisible or of limited concern to those whose actions may be causing them. Professor Morris described a fundamental 'disconnect' between the way soils are used and the broader consequences for society and the economy.

On a similar note, Guy Thompson of En Trade explained that land managers don't know the value of the environmental services they have to offer from their land and government doesn't understand land's potential. The lack of mechanisms to measure and demonstrate this and so align incentives accordingly represents a market failure and failure of soil governance, and therefore justification for government intervention.

#### **6. What form of intervention?**

There was particular consensus around the importance of public funds to kickstart a shift in attitude and understanding. Emma Howard Boyd was among those who expressed support for Defra plans for healthy soils to be one of the "public goods" that farmers provide in return for taxpayer subsidies.

A note of caution came from Sue Pritchard, Director of the Food, Farming & Countryside Commission. She warned against the current narrow definition of public funds and the possibility that under a future government soil health could be watered down or excluded from the list of public goods. Despite recent political attention being paid to soil there was a risk that practical action would become lost in debates between different departments' policy priorities.

In its place she argued for greater use of the Public Value Framework (Barber Review) approach which would overcome siloed thinking between ministries, promote better coordination towards environmental outcomes and the avoidance of competing/contradictory outcomes. She gave the

example of BEIS funding projects that lead to externalities which Defra then had the responsibility to address.

### **7. Regulations**

Across the board, there was consensus that economic incentives in isolation would not be effective if not aligned with an accompanying regulatory framework. Professor Collins summed up the challenge as a catch 22 situation whereby *we do not know the true value of our soils and so we do not regulate them - if we did regulate them, we would know how to value them*. He referenced the fact that in 2015 there had been only two prosecutions for poor soil management.

In a similar vein, Sue Pritchard likened certain farming methods to asset-stripping. Properly joined up thinking and strategic oversight as part of a clear regulatory framework was needed – tinkering and financial incentives were not enough.

Dr Toby Willison, an Executive Director of the Environment Agency, talked about the judicious use of the regulatory stick - but emphasised the importance of evidence-based education and partnership.

### **8. Business is part of the solution**

Dr Jessica Davies of the University of Lancaster felt that society in general had been slow to take soils seriously, but that awareness and action on soil health was now building. Businesses increasingly understood that soils affected their bottom line - but that the costs were hidden in market and supply chain volatility: in the costs of water scarcity and remediation, and the costs of climate change.

In support of her argument she cited a report she co-authored with 20+ businesses across five continents which found that the business case for investing in soil health was abundant and diverse – delivering revenue, resilience and reputational benefits.

### **9. But government needs to lead the way**

Dr Davies' report also emphasised that, whilst long-term changes were needed to drive soil health, initial investments were crucial for helping farmers to overcome early hurdles. This point was echoed by Guy Thompson who felt that only government investment could ensure collective, systems-wide change at a meaningful scale for the nation.

However, this investment need not be indefinite, according to Andrew Voysey who said that a 'jolting' of finance and commerce to focus on the superior economics of healthy soils meant private funds would replace public ones in the medium term. The killer argument for public money was its capacity to speed up transition – to generate the necessary momentum to encourage others to prioritise and switch their incentives too.

### **10. And carbon is key**

Both Professor Collins and Dr Willison endorsed the importance of soil carbon as key to and improving critical soil functions. But understanding the role of soil carbon in climate change was also key to unlocking its economic importance, and Stephen Briggs referenced the potential of a domestic carbon trading framework that could cycle carbon on behalf of industries that use and emit it.