SUSTAINABLE SOILS ALLIANCE

Sustainable Soils Alliance

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Environmental Audit Committee

The role of natural capital in the green economy

The Sustainable Soils Alliance (SSA) was launched in 2017 to address the current crisis in our soils. Its aim is to campaign to restore UK soils to health within one generation by seeing soil health elevated to where it belongs as a priority alongside clean air and clean water. The SSA is a non-profit organisation (CIC number 10802764).

1. What potential contribution can private capital investment make to measures to secure nature recovery?

There is both a significant need and opportunity for private investment to secure nature recovery and in particular fill the gap between the available public money and the amount needed to tackle the twin challenges of climate change and biodiversity loss in the UK. The 2021 Green Finance Initiative *Finance Gap for Nature* report puts this figure at £56bn over the next 10 years, of which £3.75 billion is the amount of private investment needed to transition to more sustainable soil management in the UK.

When it comes to soil, the scale of potential, available investment is hard to quantify, because:

a) The marketplace for soil carbon as a subcategory of natural capital, is still immature (many schemes only launched formally in 2021), and engagement in these projects across the UK remains small with the result that no holistic analysis of the scale, quality and scope of the marketplace have taken place.

b) The range and variety of potential private capital sources. Globally, businesses have a growing influence on land management, either directly through operations (including owned, leased or managed land), indirectly through value chains, markets and finance and increasingly remotely through carbon or biodiversity offsetting (regulated and voluntary markets). Examples include:

- Businesses in the food and drink supply chain who recognise the importance of healthy, carbon rich, well-structured and biodiverse soils for long-term productivity and resilience to extreme weather in the face of climate change, and see the need to invest in land management practices that will support soil protection and improvement.
- Businesses that see a value in investing in healthy, well-structured, covered soils that are able to store and filter water as a means to mitigate against the impact of flooding (insurance companies), and to reduce the need for downstream treatment infrastructure (water companies).
- Businesses who want to avoid, reduce or sequester carbon upstream or downstream within their value chains (Scope 3 emissions). In the UK, the pioneers of this approach have been dairy businesses looking to secure low carbon futures, but other food and drink manufacturers and retailers are increasingly investing in supply chain emissions reductions and removals (soil carbon sequestration, tree planting). Banks have also identified a significant exposure to land-based emissions through their loans to the farming sector.

- Businesses that are looking to offset greenhouse gas emissions from their processes and bolster their environmental credentials by investing in removal/emissions reduction projects outside their own operations.

Investment from these businesses has the potential to stimulate and accelerate the growing commitment to net-zero farming by farmers, supply chains, consumers and financial institutions and the adoption of nature and carbon-positive farming practices - a transition that has been limited to date, reflecting diverse economic, social and environmental barriers which the government has a responsibility to address.

This investment is particularly important given the limited funds available for soils protection and improvement through Environmental Land Management and Countryside Stewardship.

2. How can investment best be aligned with environmental benefits, so as to achieve or surpass the Government's targets for nature recovery?

Investing in soils is a long-term and often uncertain endeavour, which puts added onus on government to support long term thinking. There are some critical but rudimentary mechanisms needed to achieve alignment between private investment in measures that protect and improve soils - and government targets for soil, biodiversity, sustainable farming etc.

- **Robust Standards:** Ecosystem markets are proliferating across ecosystem services, habitats and land uses. As it stands, there is no way of ensuring high-integrity outcomes that protect buyers, sellers and the natural environment. Specifically, there is no easy way for buyers or sellers to differentiate between low versus high integrity ecosystem service outcomes in emerging markets, creating confusion and undermining market confidence. Robust policy frameworks and governance mechanisms are needed to ensure the development and operation of high-integrity ecosystem markets across the UK (see BSI standards below).
- **Consistent metrics:** Soil science is fragmented with research organisations, arm's length bodies and different industries using specialty-specific terms and resources to describe, measure, and interpret soils to reflect their individual mandates, expertise and priorities. There is no common, standardised technical framework for describing/classifying, grouping and mapping soils that might enable consistent soil assessment and interpretation, and therefore an understanding of how – and why – the government and wide range of private investors with a vested interest in soils can collaborate towards a shared outcome. There is universal understanding of the importance of decisions-grade data for use and application by public and private sectors – however this can only be achieved following the establishment first of all of consistent metrics to ensure this data is replicable from one application to the next.
- **Digital Interface:** The public and private land use sectors need to align on a data language (with associated metrics) to enable blended finance. For the market to work the public and private sectors need a way of digitally interfacing. We would draw the committee's attention to Making Tax Digital as the perfect model to allow public and private platforms to communicate. Making Ordnance Survey (OSMM) maps freely available for farmers would give them decision-grade data to enable the blended finance market to operate effectively.
- **Enable financial stacking:** As outlined above, there are a number of potential drivers of soil protection and improvement, and the sequestration of carbon in particular. In many instances, only when public and private ecosystem support are combined will there be the necessary investment and joined-up thinking needed to give farmers confidence and motivation for long-term change (i.e. permanence) to their land management changes. By aggregating demand for multiple services, it will be possible to design packages of measures including those that sequester and store soil carbon that provide multiple co-benefits, including improved water quality, biodiversity, resilience to drought, and improved yields (see Reed et al, 2020) as has been successfully done in Landscape Enterprise Networks.

- **Public/Private finance:** Defra maintains that it sees public (Environmental Land Management, Countryside Stewardship) and private schemes operating alongside one another; however, this raises the challenge of additionality - ensuring the government pays for additional benefits and avoids paying for the same thing twice, whilst not 'crowding out' private funding and investment. Private investors will be equally keen to avoid paying for things twice. Greater transparency about what outcomes/results the government is paying for and why under ELM/SFI/CS would help public and private schemes disaggregate the benefits the different parties are paying for – and who will 'own' them.

3. What measures are necessary to (a) establish and (b) maintain the high-integrity markets in ecosystem services which are expected to attract private investment? What confidence do investors currently have in the UK's arrangements for these markets?

Universal, high-integrity Ecosystem Standards

- The nascent UK soil carbon market is currently operating at limited scales, with a range of investors including those interested in offsets, insets and return on investment, mainly focussing on regenerative cropping systems. These different schemes take different approaches to measurement, reporting and verification (MRV) which vary in their levels of rigour, use different models to estimate likely carbon gains when developing projects, and have varying approaches to additionality, permanence and leakage.
- The proliferation of soil carbon market schemes and their differences in approach are creating confusion for farmers and investors alike, and concerns about the integrity of some schemes are undermining market confidence, risking de-legitimising soil carbon markets through the sale of easily reversible, "hot air" credits. This does not necessarily indicate a poorness of quality but is emblematic of a market still establishing itself, and a learn-as-you-go approach.
- In 2021 Environment Agency Natural Environment Readiness Fund supported the funded *The UK Farm Soil Carbon Code Consortium* (led by the Sustainable Soils Alliance) to develop a set of minimum standards for soil carbon markets. These were published in December 2022, and are being used by the British Standards Institute as part of its Nature Investment Standards Programme - one of a suite of interventions the UK government is putting in place as part of its forthcoming Green Finance Strategy and Nature Markets Framework to boost market confidence and increase private sector investment into nature recovery and nature-friendly farming.
- High-integrity, landscape-specific standards should provide the critical first step the market confidence needed to unlock pent-up private investment capable of transforming UK farming. It is highly desirable for any set of minimum standards for carbon and other ecosystem market codes to be agreed and operate nationally, given that these markets all currently operate at this scale.

Invest in Modelling

- The BSI Standards process is a step in the right direction, however it needs to be accompanied by a full scoping exercise to understand the full scope of technical, cost and legal barriers that prevent market fulfilment and nature-based solutions fulfilling their potential.
- Decisions about how best to manage soils sustainably and proactively in the transition to net zero should take advantage of the growing evidence base for the economic, social and environmental impacts of different land uses. When it comes to the storage of carbon in soils (soil carbon sequestration), the evidence base is thin - especially when it comes to understanding the impact of specific management options on specific soils and under specific environmental and social conditions.
- As a priority, we urge the government to invest in filling this knowledge gap, and specifically scenario modelling to predict outcomes of different soil management interventions on soil carbon sequestration across all UK farming systems. This would provide vital information to UK farmers and land managers to help them make critical land use and management decisions under growing

demands and markets for land-based carbon, alongside the increasing pressures on agricultural food production.

Farmer Confidence

- Confidence is not only important for investors. Harnessing the economic opportunities at stake also requires intervention on the supply side specifically to address behavioural barriers (willingness to change) among farmers, including low awareness of the importance of soil organic matter, concerns around contract length (required for permanence) and concerns that adoption of private schemes might compromise eligibility for Environmental Land Management (England).
- A February 2020 DEFRA Farm Practices Survey revealed practices relating to greenhouse gas mitigation are widespread with 66% of farmers currently taking action to reduce GHG emissions from their farm. However, only 32% of farmers keep track of soil organic matter. This gap demonstrates a willingness among farmers to address GHG emissions, but a comparatively low awareness of the potential for soil carbon to contribute to this - 43% of farmers that don't measure SOM in their soils gave the reason it is 'not important enough to test for'.
- Additional barriers/opportunities have been raised by three separate pieces of research (two completed, one ongoing) that examine farmer attitudes towards the farm soil carbon marketplace. Results reveal a preference for blended (public + private (blended) financing, measured 2 (over modelled) soil carbon sequestered, and rewards for historic good practice and short (≤10 year) contracts and permanence periods. Further detail about these surveys can be found here.

4. What contribution will data from the Natural Capital and Ecosystem Assessment (NCEA) programme make to the objective measurement of changes in environmental outcomes?

- In January 2023 the Government's second statutory Environmental Improvement Plan set out the actions that will drive the country towards reaching its long-term environmental targets and goals, including improving and protecting soil health.
- The Natural Capital and Ecosystem Assessment (NCEA) will be the tool for establishing progress against these targets. Soil monitoring within the NCEA programme will yield valuable new data to improve understanding of national soil condition and set up long-term monitoring capability to track change over time.
- The government has not yet published what the soil-specific indicators for the NCEA will be – indeed these are not scheduled to be agreed upon for another 12-18 months, meaning no baseline of the country's soil health will be known until 2028. In addition, it isn't clear how much of the NCEA budget will be earmarked for soils, making it impossible to know whether sufficient resources are being dedicated to monitoring soils in England.
- As a result, it is too early to tell what data the NCEA will generate about the state of England's soils, and therefore how private schemes can support the achievement of nationwide targets – both in terms of providing consistent, translatable data that can feed into the national picture, and the impact of the interventions private schemes are paying for.

5. How can the proposed UK Green Taxonomy support high-quality investments which deliver genuine benefits to nature? What financial disclosures should the taxonomy require?

- Agriculture, and soil management in particular, have proven to be among the more challenging elements of the green taxonomy process. Specific animal and crop production practices could make substantial contributions to biodiversity, net zero etc, however agriculture was initially excluded from the EU taxonomy because of perceived conflict with the CAP, and farmers' access to subsidies.
- Similar challenges will be faced in the UK, and specifically the LNAS Advisory Group which will develop criteria for the inclusion of sustainable agriculture and fisheries in the UK taxonomy.
- Establishing whether or not an economic activity can be defined as 'environmentally sustainable' is complicated when it comes to soils. A snapshot of some of the issues at stake is as follows:

- The environmental impact of actions on soil will be very context-specific – specifically on different soil types (e.g. heavy vs light, shallow vs deep, freely draining vs poorly draining), in different climatic conditions (e.g. wet vs dry), and under different land uses (e.g. cropping vs grazing).
- Healthy soils deliver a range of ecosystem services. In some parts of the country and under certain farming systems carbon loss/storage will be the priority/opportunity, in other areas, it will be addressing soil structure/depleted biodiversity. To enable this, an understanding of which soils lie where or how to identify soil types – their potentials/risks is needed.
- The 'do-no-harm' principle is potentially problematic. Some 'no-regrets' actions (minimum tillage) would be inappropriate on farmland where subsoils are compacted and need restoration. There will be times when interventions favour one outcome (carbon storage), but at the expense of another (biodiversity, pollution prevention) e.g. the use of glyphosate/machinery to remove cover crops.
- Much of the terminology in sustainable agriculture (e.g. regenerative) lacks a clear definition, set of principles of metrics and so is hard to apply in a legal setting. Only 'organic' is widely and universally understood and underpinned by regulation.

6. How can the operation of natural capital markets ensure genuine net gains for nature? How do such markets address the risk of 'greenwashing' of investments and the offsetting of natural recovery in the UK against environmental degradation elsewhere?

- In order for natural capital markets to ensure genuine gains for nature and defend against accusations of greenwashing, they must operate according to universal, robust standards aligned with international protocols and underpinned and maintained by a credible, authoritative body.
- In particular, a high-integrity marketplace must have a) robust measurements and b) procedures to ensure critical principles are reflected (additionality, permanence, avoidance of leakage).
- In the case of the farm soil marketplace, sequestered carbon must be scientifically measurable according to high-integrity methodologies and supported by geography/landscape specific models. Determining when and how agricultural practices increase carbon stocks, and how to measure and credit their gains, is complex - the efficacy of soil carbon interventions depends on local climate conditions, land management history, and soil characteristics. On top of that, any changes in soil carbon occur slowly, which makes it difficult to reliably track changes once new practices are implemented. Improved modelling and measurement and the use of technology can be expected to close this knowledge gap over time.
- To that end we welcome the announcement earlier this year that The British Standards Institute (BSI) has a well-established process for developing these sorts of standards, and combined with insights from the initial work conducted by the *UK Farm Soil Carbon Code Consortium*, should be able to facilitate the development and operation of minimum standards for all the UK's key land uses, habitats and ecosystem services. They would also be able to develop high-level ecosystem market principles that could guide the development of minimum standards that are comparable across habitats/land-uses and ecosystem services.
- Alongside these standards, coordination is also needed with policy teams in each of the UK countries to ensure the operation of minimum standards and identification of threats to/from market development can feed into policy processes in each country and avoid competition between countries where different regulatory or incentive regimes drive investment towards or away from different parts of the UK.
- Integration mechanisms are also needed to ensure: a) markets for one ecosystem service do not compromise the delivery of other services; b) private payments are possible for multiple ecosystem services where possible from the same location ("stacking"); and c) effective blending of public and private payments for ecosystem services, where possible using public funds to de-risk and leverage private finance or pay for outcomes in locations and for services in which there is market failure.

7. What role can the UK's financial markets play in developing the flow of international capital into the development of the UK's natural capital?

n/a

8. What role does the UK have in establishing international standards for natural capital investments, alongside other jurisdictions and financial centres?

n/a