SUSTAINABLE SOILS ALLIANCE

22nd June 2022

Update to the Green Strategy: Call for Evidence

This response is from the Sustainable Soils Alliance (SSA), with input from members of the Consortium developing a UK Farm Soil Carbon Code (UKFSCC). The SSA was launched in 2017 to address the current crisis in our soils. It aims 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). As part of this work, the SSA is the host and co-founder of a Consortium of academics, farming organisations, businesses and international code experts looking to develop a set of minimum standards for agricultural soil carbon codes that will give farmers and investors' confidence in the integrity of soil carbon benefits from regenerative farming practices.

1. *How can the UK best support the development of high integrity voluntary markets for carbon and other ecosystem service markets?*

Investment from the voluntary carbon market 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 carbon-positive farming practices - a transition that has been limited to date by diverse economic, social and environmental barriers which need to be addressed for the market to fulfil its potential.

As a subcategory of natural capital, the marketplace for soil carbon 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 and barriers to growth of the marketplace have taken place.

A high-integrity marketplace must have robust measurements and procedures to ensure additionality and permanence and avoid leakage at its heart. In the case of the farm soil marketplace, sequestered carbon must be scientifically measurable according to high-integrity methodologies. 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.

The UK Farm Soil Carbon Code Consortium has reviewed all the major soil carbon standards operating internationally and is considering how lessons can be learned for the development of high-integrity markets in the UK. 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. 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, for example via double-counting of benefits without the use of market registries or the sale of benefits that would have happened without intervention, and so are not additional.

As a result, there have been calls for the government to introduce a single, government-backed soil carbon code on a similar footing with the Woodland Carbon Code and the Peatland Code. However, our stakeholder consultation has shown that many of the existing market players already have credible standards, and rather than replacing these with a new code, which would stifle competition, it has been argued that the role of government should be to assess the integrity of existing codes, signposting farmers and investors to the most credible and providing guidance to those that need to be improved.

As a result, and as a matter of urgency, it is crucial that a set of minimum standards are established to ensure high-integrity approaches to MRV, additionality, permanence and leakage in the existing soil carbon market, alongside the development of an open-access code aligned with these minimum standards that is operated on a not-for-profit basis, to enable new entrants to this market. This work is already underway, led by the UK Farm Soil Carbon Code Consortium funded by the Environment Agency. This would then enable continued competition between existing, typically internal, private standards and new open standards, in the same way that both peatland and woodland carbon markets now enjoy competition between codes (see Wilder Carbon) which is driving up standards in these markets.

The UK Farm Soil Carbon Code Consortium has provided methods and a clear demonstration that it is possible to develop such a set of minimum standards for soil carbon markets. This approach could then be replicated for the development of minimum standards to govern the emergence of codes governing the sale of other ecosystem services from regenerative agriculture (e.g. water quality) and for carbon and other ecosystem services in other habitats and land uses across the UK.

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. To enable this, there are three options that may be considered:

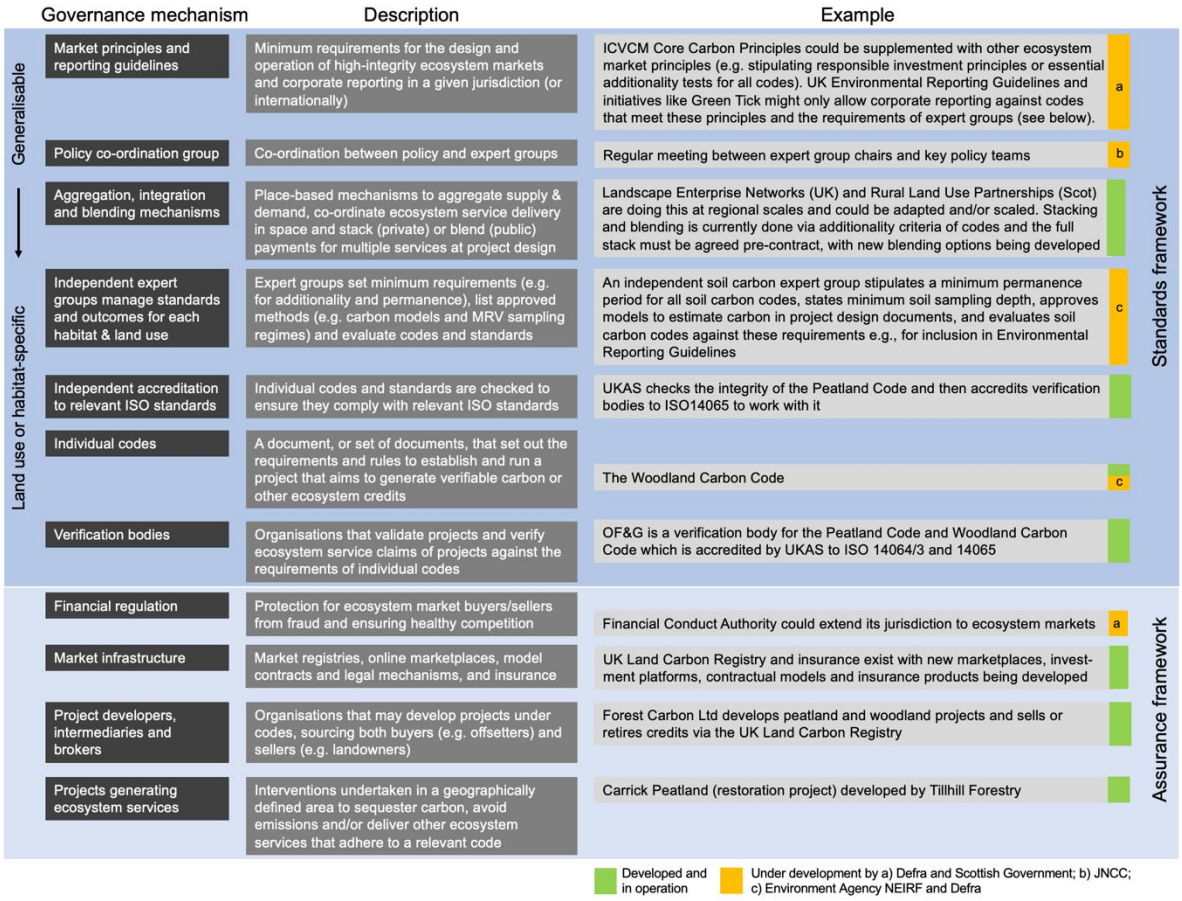
1. The British Standards Institute (BSI) has a well-established process for developing these sorts of standards, and combined with insights from the initial work conducted by the UK Farm Soil Carbon Code Consortium, should be able to facilitate the development and operation of minimum standards for all 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, considering for example, responsible investment principles and work by ICVCM on core carbon principles;
2. Although closer to the government, the JNCC would be an equally credible organisation that could develop and manage these standards on behalf of each of the UK governments. Crucially it has the evidence-based expertise to ensure minimum standards remain consistent with the fast-moving pace of research in each of the relevant areas;
3. A combination of BSI and JNCC might offer the best of both worlds, with BSI developing and owning/operating the minimum standards, and JNCC facilitating expert groups to regularly review and feed updates into the BSI process, based on the latest evidence. Such groups could also be responsible for horizon scanning for threats to, and unintended consequences

of, market development, for example developing recommendations for public interest tests for land acquisition or community wealth funds, for discussion by the coordination group, to ensure recommendations would work across ecosystem services, habitats and land uses.

As can be seen from Figure 1, there are several other missing components that are needed to ensure the integrity of carbon and other ecosystem markets in the UK:

1. Market principles and reporting guidelines have the capacity to standardise how codes are developed, operated and used, and the claims that can be made by investors. By creating high-level criteria for high-integrity markets, and only sign-posting codes and standards that meet these criteria, it is possible to drive market activity towards the most robust codes.
2. Coordination between expert groups is needed, to ensure continued consistency between minimum standards for different habitats and land uses, as these develop over time in response to new evidence. Co-ordination 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.
3. 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. Where possible, a place-based approach should be taken that engages relevant stakeholders, for example learning from Landscape Enterprise Networks or Scottish Government's pilot Rural Land Use Partnerships.
4. If there is sufficient evidence that there are irregularities in these emerging markets, it may be possible to argue for the Financial Conduct Authority to extend its jurisdiction to ecosystem markets, protecting the financial interests of farmers, investors, and intermediaries.

Figure 1: Components needed to ensure the integrity of carbon and other ecosystem markets in the UK (also available here)



Marketplace growth will also depend upon a broader, holistic understanding of the impact of the ecosystems marketplace, the early identification of unintended consequence and proportionate steps taken by regulators to address them. When it comes to farm soil carbon, these unintended consequences might include:

- Increased nitrous oxide: Some practices may store more carbon in soil but also increase emissions of nitrous oxide, another GHG.
- Leakage: Investment in local offsets must not lead to leakage - increases in emissions elsewhere to compensate for domestic productivity loss.
- Taking land out of production: Investors in natural capital (private/individual and corporate/institutional buyers) are increasing competition in the farmland market, putting up the price of land “land sparing”, because land is taken out of production, and put aside or “spared” for carbon.
- Overall soil health: GHG removal is only one of the potential ecosystem and other benefits of increased carbon stocks, which include productivity biodiversity, clean water, flood risk management etc. There is a risk that a focus on carbon offsetting will lead a) to unrealistic expectations of the economic prize at stake, b) an undue focus on offsetting as the principal motivator of change at the expense of other ecosystem marketplaces and c) an emphasis on carbon as the exclusive indicator for soil health at the expense of other outcomes (structure etc).

2. *How can we ensure that these markets encourage robust action on the UK's climate and environmental goals, and appropriately scale up finance flows to support these?*

Public money has been committed for the creation of a Farm Soil Carbon 'Code' through the Environment Agency Natural Environment Readiness Fund (NEIRF); however, this work, including the creation of minimum standards will address only some of the critical knowledge and investment gaps needed for the marketplace to flourish.

We hope that government investment and explicit support for the code project as the foundations of a robust, credible marketplace will be kickstart investment from public and private sources. It should provide the critical first step the market confidence needed to unlock pent-up private investment capable of transforming UK farming and contributing to the target laid out in the 2021 Spending Review to raise at least £500 million in private finance to support nature's recovery. Other steps the government can take to scale up investment might include:

- **Investment in Modelling:** Decisions about how best to manage soils sustainably and pro-actively 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.

- **Enable financial stacking:** Investment from carbon offsetting is only one of the financial drivers underpinning the sequestration of carbon into soils (see above). 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.

  In many instances, only when public and private eco-system 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.

- **Start-up costs:** In recognition of the potential barrier for certain farm soil carbon projects from MRV costs we see a role for the government in covering some of the start-up expenses involved. We would draw your attention to Australia where the Government offered grants to support baseline measurement costs, the US independent quantification and analysis platform, COMET, was developed under USDA guidance. Government support along these lines will help reduce costs to projects and deliver economies of scale relevant to a UK marketplace.

- **Public/Private finance:** Government support is not just about direct funding, but how this funding will sit alongside private schemes. A good example is the Soil Standards embedded in the SFI (England), under which farmers will be paid (between £22 and £58 per ha) for practices that protect/ improve their soils. Defra estimates this could save up to 60,000 tonnes of CO2 each year from 2023 to 2027, increasing to 800,000 tonnes per year by 2037.

Defra sees public 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. Indeed, the principle of additionality may disqualify farmers who receive money via the Standards from participating in private markets (especially where carbon credits used for off-setting are at stake).

- **'Community' responsive:** As part of work developing the UK Farm Soil Carbon Code, we have identified a number of UK soil carbon projects that would not be viable or are not served by the existing codes and/or marketplace. We would like to highlight the need therefore for an open access 'Community Code' to address particular needs of these players – to open up a market place that would otherwise be closed to them because of cost.

  The community code would be built around UK specific needs, in line with the minimum standards that are already being developed - as the woodland and peatland codes were - and include clearly defined approaches to specific challenges - e.g. how to integrate them with other ecosystem services and the thorny issue of additionality - how to successfully blend public and private income sources. The code would ideally sit alongside the existing and future UK habitat carbon codes with credits registered and issued through the UK Land Carbon Registry.

3. *How should the UK harness the economic opportunities associated with high integrity growth in voluntary carbon markets and ecosystem services markets?*

Alongside the voluntary carbon marketplace, we are seeing greater interest and momentum in insetting, where businesses are looking to avoid, reduce or sequester upstream or downstream within their value chains. Within the UK supply chain, this is particularly prevalent among dairy businesses looking to secure low carbon futures. Any policy framework for the voluntary carbon market, should acknowledge this parallel 'marketplace' which will be instrumental in driving investment and hence economic opportunities for farmers. However, we should emphasise that, whether offsets or insets are at stake, the need for robust MRV to demonstrate and certify carbon reductions are needed.

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. *How can UK environmental and economic regulators increase demand for high quality, accredited ecosystems services?*

Robust policy frameworks and governance mechanisms are needed to ensure the development and operation of high-integrity ecosystem markets across the UK, in response to the following challenges:

- 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.
- In response, standards are being developed to increase the integrity of outcomes in a number of ecosystem markets. However, they are being developed in isolation from each other and from accompanying public funding mechanisms. This limits opportunities to stack payments for multi-functional outcomes or blend public and private finance.
- When ecosystem markets start scaling (as has been seen with the Woodland Carbon Code), they can drive land acquisitions and contribute towards increasing land values, with the potential for negative unintended consequences for the rural economy and local communities, who rarely benefit directly from ecosystem markets.

Many of the governance elements needed to address these challenges are already in place. For example, the Woodland Carbon Code and Peatland Code have been checked by UKAS and verification bodies have been or are in the process of being accredited to relevant ISO standards to verify projects to these codes

However, these standards only go so far, and cannot prevent the emergence of low-integrity schemes. By way of example, two different soil carbon schemes could be using very different models to estimate likely soil carbon gains during validation and different soil sampling depths to verify outcomes and yet both have their projects verified by UKAS-accredited bodies in line with relevant ISO standards - meaning a significant difference in the integrity of their respective outcomes.

To fill this gap, several governance mechanisms are needed, as outlined in Figure 1 (see response to question 1). These mechanisms will bring consistency, clarity, alignment, and robustness to the marketplace and therefore increase demand.

Over and above this, there are other areas where regulatory intervention might bring clarity and common standards to the marketplace – and hence increase demand:

- Changes in agricultural soil carbon are not currently included in the UK GHG Inventory, so would not count towards targets under the Paris Agreement. We would like to see the creation of a pathway for new carbon Codes to be evaluated for inclusion in the UK's Environmental Reporting Guidelines, to signpost investors towards high-integrity projects.
- We would like to see greater clarity and vision on how different ecosystem markets will operate in future - specifically what should be the relationship between the UK Land Carbon Registry, existing soil carbon programmes and new and emerging Codes. The UK Land Carbon Registry and some insurance products already exist with new marketplaces, contractual models and insurance projects under development