"Landscape to Carbonscape: the roadmap to a soil carbon marketplace"

Workshop Summary

On July 14 2021, The Soil Association and the Sustainable Soils Alliance hosted "Landscape to carbonscape: the roadmap to a soil carbon marketplace". This public and stakeholder event explored the mechanisms whereby soil carbon is being bought and sold in the UK and overseas, and the various economic, scientific, practical and legal issues that need to be addressed before a robust, scalable and coherent marketplace can be established.

The event heard from businesses already involved in monetising carbon sequestration (morning session) and experts in nature-based carbon code development (afternoon session). There were also contributions from among the 200+ participants, many of whom were experts from the worlds of finance, policy-making, farming, science and environmental campaigning.

The following is an overview of some of the critical points raised during the workshop. They are not attributed but represent a general consensus from the discussion. Slides and a recording from the event are available and can be viewed here.

Morning Session

<u>Market Fundamentals</u>

- Representatives of the five participating businesses (see Annex 1) provided an overview of their individual perspectives and experiences of trading in soil carbon (individual company presentations are available here). There was considerable optimism about the potential size of the market, based on global demand, insights from investors and farmers and recent experience selling carbon in Europe and around the UK.
- There was also a clear acknowledgement of the risk (environmental and economic), associated with establishing such a market, and the dangers of a cowboy marketplace emerging if these were not addressed.
- To that end, there was considerable consensus about some of the practicalities and principles at stake. These challenges included:

    - **Credibility:** Any sequestered carbon needs to be 'real' - scientifically verifiable, according to robust, high-integrity methodologies.
    - **Verifiability:** The methodologies and measurements need to be verified by a trusted, independent third-party organisation and in some instances according to a formal or official protocol, code or standard.
    - **Additionality**: Any sequestered carbon be over and above what would have occurred anyway under business-as-usual conditions.
    - **Permanence:** Since sequestration is reversible, incentivised practices must be continued to retain the carbon over an agreed period of time.
    - **Transparency:** Rules need to be established to avoid double-counting - separate market players claiming the same carbon offset for their own purposes.
    - **Leakage:** Carbon sequestered should not lead to CO2 or GHG increases elsewhere.
    - **Fairness:** Schemes should not reward land managers who are not making efforts elsewhere in their operations - or long-term carbon loss.

Business Methodologies

- There was some alignment among the participating businesses about their respective approaches to addressing these concerns in their programme design – the use of baselining, the validation of their respective approaches (at the beginning) and the verification that change has actually taken place (at the end) through varied levels of in-field sampling to establish change in carbon.
- For example, both Soil Capital and Gentle Farming aligned their protocols against the same ISO standard 14064 (a generic tool for corporate GHG emission verification) and used the same modelling methodology (the Cool Farm Tool), but use different third party bodies to validate their particular programmes. Both businesses also combined measurement with modelling to achieve accurate results about change over time.
- There was agreement about the need for greater clarity around the roles of the various intermediary organisations and the standards/protocols. For example, it was clarified that the ISO Standard does not provide explicit guidance about soil carbon sequestration or its quantification but instead refers to methodologies and eligibility criteria.

Core Principles

- Ensuring the permanence of any sequestered carbon is a particular challenge, and as yet there are no practical ways of incentivising permanence over e.g. 100 years. Current schemes are using a shorter (e.g. ten-year) timeframe, while other options include the use of buffers, payment over an extended period and restricting inversions (e.g. ploughing) in a rotation. Demonstrating to farmers the benefits to their overall social health, and not just financial income was another means to ensure long-term practice adoption.
- Additionality can have unintended consequences e.g. where farmers intentionally degrade their soil in order to meet eligibility criteria.
- Saturation was also discussed - in particular with regards to permanent pasture where many soils had already reached peak carbon.

Investor and farmer perspectives

- It was emphasised throughout that soil carbon sequestration needs to be understood in the context of overall improvements in soil health - as a proxy indicator for biodiversity gain, flood risk management, improved soil structure and other benefits.
- There is an appetite among investors for a strong, local and personal story about the farmer experience. Carbon sequestered in the UK adds value for UK investors.
- There is a need for an entity to help farmers navigate the marketplace - understand the transaction and measurement costs, the monetary return and therefore the right product (environmental claim, offset) for their circumstances.
- Intermediate organisations need to be fully transparent to avoid conflict of interest. Whatever intermediary and transactional costs there are, these need to be kept as low as possible.
- The role of industry or government intervention as a means to give structure and credibility to the marketplace was discussed. It was agreed that this needed to strike the balance between generating peace of mind, consistency and a level playing field with not stifling innovation in a marketplace that is still evolving.

Data ownership

- Decentralised, transparent data showing was discussed. This falls into two categories: farm-specific data, and data about the carbon and its ownership. The former is sensitive as it relates to land value etc., and requires privacy while the latter needs to be fully transparent to avoid double claims and should ideally be stored on an independent registry with a clear explanation of its status (e.g. retired).

Practices

- There was also consensus about the type of farming actions/practices promoted in the various programmes. Both Soil capital and Gentle Farming factor everything that takes place “in the field”, including embedded emissions from imports, but not farm buildings etc.
- The practices that have the greatest impact on carbon include fertiliser use, cover crops, tillage, organic inputs through diversified rotations, and infield agroforestry. Soil Heroes include biodiversity lines and minimum or no-till farming as a prerequisite for participation.

- To establish whether practices have taken place, the respective businesses use a combination of soil testing and independent auditing - over both the data and on-farm testing- alongside satellite technology for verification.

Systems-based approaches

- There was discussion about the difference between, and alignment of organic and regenerative farming systems. Organic farming points to a system that is necessarily regenerative – it can be minimum tillage, but generally not no till. There is a trade-off between carbon loss and chemical usage.
- Both systems should be promoted but organic farming requires certification as it is currently governed in the UK by an EU Regulation.
- The downside of a systems-based approach (for the market) is that less sampling means estimations about results achieved are conservative (lower). Farmers can be reluctant to adopt a one-size-fits-all approach.

Afternoon Session

Need for a UK Code

- Mark Reed from Scotland's Rural College (SRUC) explained the rationale for a UK Soil carbon code – that existing mechanisms were not adapted/cost-effective to the size of UK land holdings and that investors were constrained in what they can say or report. The Code is needed to provide market confidence, without which a cowboy market might evolve - exposing both investors and farmers and delegitimizing soil carbon before the market gets going.
- A Code would provide assurance to both investors and farmers that the carbon and funding they receive is real and secure, and within these parameters the market might grow responsibly.
- Much of the Code work is already underway, including a review of international soil carbon standards, protocols and codes, a review of on-farm soil carbon interventions to determine which can most reliably sequester and store soil carbon and farmer and investor interviews to establish their perspectives.
- Matthew Orman from the Sustainable Soils Alliance explained that a consortium of farmers, academics, technology businesses and NGOs including the Sustainable Soils Alliance and the Soil Association has been awarded a grant under the Environment Agency's Investment Readiness Fund to develop and pilot the UK Farm Soil Carbon Code. He explained that the grant would cover many of the research elements needed to create the code, but that the consortium was still fundraising from private, corporate and grant sources to cover other elements. He explained that the Code development would be transparent and consultative – and invited all participants at the workshop to get involved.

The Woodland Carbon Code

- Vicky West from Scottish Forestry gave an overview of the history, size and scope of the Woodland Carbon Code, and lessons to be learnt from its establishment for farmland soil carbon. These included acknowledgement of the wider benefits of woodland creation (water, wildlife community, economy), the need for strong governance, close engagement with government bodies and endorsement by/alignment with national targets, green growth plans and official/standard reporting guidelines.
- Woodland carbon monetisation faced the same challenges/solutions as soil carbon - additionality, leakage, baselining, permanence (which for woodland is ensured by legislation), measurability, use of buffers, claims, transparency, avoidance of double counting. Third party validation is carried out by the Soil Association and OF&G and verification (that carbon has been sequestered) takes place at 5/10-year intervals.
- Both Woodland and Peatland codes use the Land Registry to track issuance, ownership transfer and use of all carbon units. These come in two forms: pending (will be delivered in the future) and verified units. There are plans to increase the transparency of carbon pricing, establish an automated sales platform and expand eligibility into new markets - including CORSIA.

The international Soil Carbon Marketplace

- Robert Parkhurst gave an overview of the history of carbon offsetting, starting with the Kyoto Protocol (1997) which established many of the critical principles (permanence etc.), the EU Emissions Trading

Scheme (2005), and the voluntary market (from 2005). He explained how voluntary markets have served as a testing ground for compliance/regulated markets.
- The future of offsetting lies with initiatives like Corsia (airlines) which aims to cap airline emissions at 2020 levels and is forecast to need 2.5 billion tons by 2035, the implementation of the UN Paris agreement and the growth of the voluntary market - In 2021, more credits have already been generated than in all of 2018 and nearly as much as 2019.
- Robert echoed the importance of Standards as a means to achieve certainty - around practices, quantification, monitoring, auditing and crediting, and credibility - the need for an independent entity to oversee the process of generating and retiring credits, resolve disputes between parties and interface with media and stakeholders.
- Robert gave the example of the Climate Action Reserve Grassland Project Protocol, one of the first successful non-forestry schemes which credits the avoided conversion of grasslands to croplands. It has generated 146,506 credits since 2015, demonstrating the market's growth potential if scaled internationally.

<u>The merits of off-setting</u>

- A recurring issue throughout the workshop was the merits or otherwise of offsetting and whether this was a 'distraction' from reducing emissions elsewhere – or an invitation to pollute. This was particularly relevant for farmers who might be claiming money for soil carbon without making emissions reductions across their operations.
- From a legal point of view, there is a need to distinguish between those sectors of the economy that are legally obliged to report and reduce their emissions and those that are not. Because agriculture is considered 'too complicated' to regulate, it is in a position to sell the credits/certificates it incurs.
- It was emphasised that the marketplace is not only about credits, but also about certificates which enable businesses to evidence emissions reductions without having an impact on their net zero accounting.

<u>Labile vs stable soil carbon</u>

- There was a discussion about the difference between labile (short term) and stable carbon – and whether current methodologies used are making this distinction.
- Helaina Black (formerly at James Hutton Institute) explained that current modelling does take soil carbon fractions (slow and fast turnover) into account. She explained that there is growing interest in the use of labile as an indicator of longer term storage – and whether methods are on the right pathway.

<u>Biodiversity</u>

- There was a consensus about the importance of measuring carbon alongside biodiversity increase both to establish the holistic environmental impact and to maximise possible revenue streams (environment banking). Some Standards look to integrate the UN Sustainable Development Goals (SDGs) into any scheme. For example, the Gold Standards requires adherence to SDG 13 (climate change) and at least 2 others goals.
- Alongside soil carbon markets, there is a growth in habitat markets – creditising ecosystems that implement biodiversity-increasing practices.

In her closing remarks, Liz Bowles from the Soil Association emphasised that any talk about soil carbon markets needs to focus above all on climate change mitigation and reversing the decline in nature – this is the objective behind marketplace development. Helping farmers reduce emissions and respond to the climate emergency should be the foundation of any code.

All schemes need to be robust, with adequate verification to satisfy buyers and very clear governance. Given that funding support is also now in place for saltmarsh and hedgerow codes there is an opportunity for collaborative working where possible to enhance farmer and land manager usability with the farmland carbon code.

Finally, she drew attention to the high levels of interest in the workshop among an expert stakeholder group, with over 400 individuals signing up for the conference and over 250 participating. She invited everyone to get involved in the creation and design of the code in the year ahead.

Annex 1: Speakers and Programme

10:00 Welcome
Liz Bowles (Soil Association)

10.10 A soil carbon marketplace: Background and context
Matthew Orman (Sustainable Soils Alliance)

10.25 The view from the marketplace (Farming)
Thomas Gent (Gentle Farming)

10.35 The view from the marketplace (Broker/Facilitator)
Andrew Voysey (Soil Capital) and Rob Reed (Soil Heroes)

10:55 Break

11.05 The view from the marketplace (Buyer)
Robert Hall (Federated Hermes) and Tom Morton (ClimateCare)

11.25 Panel discussion with Q&A

12:15 Lunch

12:45 A soil carbon code: what will it offer?
Professor Mark Reed (SRUC)

13:00 Learning from experience: The woodland carbon code
Vicky West (Scottish Forestry)

13:10 Learning from experience: The international perspective
Robert Parkhurst (Sierra View Solutions)

13:20 Panel discussion with Q&A

13:55 Closing remarks

14:00 Close