SUSTAINABLE SOILS ALLIANCE

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Soil Carbon's place in Scope 3 GHG Removals
Guidance, Policy, Barriers and Opportunities for Businesses

1. Carbon Removals in the Food and Drink Sector

- Food and drink/agriculture sector has the potential to reduce its Scope 3 footprint - those emissions they are indirectly responsible for, up and down its value chain - through the process of land-based GHG removals, including afforestation and soil carbon sequestration.
- Since COP 26, policy, shareholder and consumer pressure has grown on the sector to measure and reduce its Scope 3 footprint, which can account for up to 90% of all emissions for a typical business (Wrap, 2022).
- Due to the complexity and uncertainty involved with quantifying carbon removals, and the current lack of guidance, these are currently infrequently included in corporate inventories.
- In parallel, the UK Government has targeted a broad 34% reduction in emissions from the agriculture sector by 2035. Emissions from agriculture and land use have been "relatively flat" since 2008 with a modest reduction of 3% (Climate Change Committee, 2023). The Climate Change Committee notes that the land use sector must become a net sink by the mid-2030s, meaning it should be removing carbon from the atmosphere.

2. The Role of Soil

- Soil carbon is attractive as a removal technique because it can take place alongside food production (as opposed to tree planting). Soil carbon sequestration can improve soil health and has the potential to deliver GHG, yield and resilience benefits.
- A significant challenge with soil carbon is quantifying its potential. Agricultural soils are the world's largest carbon sink and some analysts estimate that the sequestration potential across the UK in soils is between 1-2 t C02e per hectare per year, but rates vary significantly according management, systems, crops and soil types.
- Evidence showing the potential for soil carbon sequestration in different soils/farming systems is patchy. The evidence demonstrating the impact of transitioning to a regenerative system is especially thin, with little data about the impact on soil carbon balance (i.e. soil carbon stocks versus GHG emissions), soil health, or yield, especially over a full farming system rotational system. This lack of evidence is hampering the widespread take-up of regenerative (policy makers and corporate) and leaves the process vulnerable to accusations of greenwashing.

3. Emerging International Guidance

Removals are not regulated, however the two leading standards-setting organisations for Paris agreement-aligned corporate climate commitments are developing guidance pathways for reducing and accounting for supply chain emissions, including land-based removals, as follows:

Science-based Target Initiative

- The SBTi, a partnership formed by the World Resources Institute, World Wildlife Fund, UN Global Compact and Carbon Disclosure Project, has published its guidance for companies to set targets that account for land-based emission reductions and removals – including soil.

- The SBTi requires food and beverage, agriculture, and land use manufacturers and retailers to reduce Scope 3 emissions by 72%, if these companies wish to align with SBTi. Companies are expected to track both emission reductions and carbon removals to achieve their science-based targets.
- The SBTi says the following on land use change, land use management and carbon removals:

    - Examples of carbon removals and storage include enhancing soil organic carbon, shifting to erosion control, larger root plants, tillage reduction, cover cropping, restoration of degraded soil, biochar amendments.
    - Removals may not be used to meet any other energy/industry targets under the SBTi. For example, removals from soil carbon may be included in a forest, land and agriculture (FLAG) target but would have no impact on energy/industry target.
    - Only removals on land owned or operated by a company or within a company's supply chain can be included in FLAG pathways and count toward achieving a FLAG target.
    - If a business sells a carbon credit on the voluntary carbon market (VCM), it cannot also count the removal or reduction within the corporate supply chain. Reductions and removals can only be counted once.

SBTi are currently developing resources to guide companies throughout the FLAG target setting process, including the target submission form updated for companies to submit information on FLAG and non-FLAG emissions. They will help companies be ready to submit FLAG targets for validation once the SBTi is prepared to accept these submissions. These resources will be released in 2023.

GHG Protocol

The SBTi defers to the GHG Protocol on technical elements of Scope 3, specifically the GHG Protocol *Land Sector and Removals Guidance*. A draft was published for external consultation and is expected to be published later this year. It explains how companies should account for and report GHG emissions and removals from land management etc in GHG inventories as follows:

- Land-use change emissions and land management emissions (e.g. those covered by the farm carbon tool-kits (methane, soil emissions, fertiliser)) must be included.
- Removals are optional, but have to be reported separately, i.e. not 'netted off'.
- The Guidance looks to ensure that any carbon removal claims reported in inventories are verifiably real and there are some protections in place to ensure that if they're reversed they are counted as an emission.
    - If included there are specific requirements on monitoring carbon removal from land management. The proposed monitoring framework has high data requirements and governance around claiming removals. i.e. the bar for removals is going to be higher than the bar for emissions.
    - Data sources have to be primary e.g. soil sampling for carbon stocks. Secondary data (e.g. a generic industry emissions factor) are not possible.
    - Where removals can be reported, based on primary data, businesses have to show that those removals persist – because nature based solutions are prone to reversal over the short term.

Companies may account for and report scope 3 CO2 removals only if the following requirements are met. These are subject to ongoing pilots and so could change.

- Ongoing storage and monitoring: there is a process in place for continuing to see a removal is persisting e.g. soil carbon is still in soil.
- Traceability: the reporting company can track back to processes e.g. cover cropping.
- Primary data: the removal can be verified by observation or experiment empirical evidence and needs to still be in the value chain (i.e. not sold as an offset).
- Uncertainty: uncertainty calculations are included in removals codification methods.

- Reversals accounting: emissions are reported if removals are reversed or monitoring ends.

a) WRAP

- WRAP is a significant player at UK level because it translates the global recommendations from the GHG Protocol and SBTi into simpler terms and interprets the information specifically for the UK food and drink sector. In May 2022 Wrap published its *Scope 3 GHG Measurement and Reporting Protocols for Food and Drink.*
- This document is 'Version 1', and will be reviewed and refreshed periodically to reflect the most recent advances in science and calculation methodologies as relevant to the sector (e.g the 2023 GHG Guidance and 2 years thereafter).
- WRAP has created an emissions factor database (15,000 food products) which serves as a foundation to show where gaps are and what quality of data is needed when transitioning to primary data for scope 3 reporting (needed to demonstrate soil carbon removals).
- This work is supported by the Retail Net Zero Collaborative Action Programme (launched in April 2023). This will include the adoption of one set of standards for measuring and reporting scope 3 GHG emissions - agreeing on protocols for collecting and processing data.

4. The Role of Government Policy

- Government oversight over Scope 3 reductions has been light touch, despite calls for mandatory reporting on emissions for all food companies to be included in the government's Green Finance Strategy (GFS). In a recent Independent Review of Net Zero, Rt Hon Chris Skidmore MP recommended that by 2025, half of UK food and beverage businesses should measure and report against a government and industry-agreed standard. Instead the GFS has promised a call for evidence on Scope 3 GHG emissions reporting, *to allow for a cost-benefit analysis of producing and using this information,* expected in the third quarter of 2023.
- The government is investing in consistent data collection/reporting through the Food Data Transparency Partnership (FDTP). The FDTP was set up in 2023 to establish common definitions, metrics and standards for food data *to enable comparison and introduce consistent reporting so as to create a level playing field; develop clear and standardised consumer information and provide the necessary evidence to support government and stakeholders to make informed policy, decisions or evaluation*.
- The priority for this team is consistent company reporting and eco-labelling, with a focus on carbon/Scope 3 where methodologies are more advanced, as well as examining consistent on-farm carbon MRV (Measuring, Reporting and Verification). An advisory board has been convened and will consult at the end of the year on how companies report Scope 3 GHG emissions alongside the already mandatory Scope 2.
- The Green Finance Institute is advising the Government on the design and implementation of a UK Green Taxonomy - a common framework for investments that can be defined as environmentally sustainable. The objective is to tackle 'greenwashing' and improve the understanding of environmental impact to help companies and investors make informed green choices, support investment in sustainable projects and boost efforts to tackle climate change. Within this, the Land, Nature, and Adapted Systems (LNAS) Advisory Group will inform Defra on definitions of economic activities that can be considered environmentally sustainable and will initially focus on developing criteria for sustainable agriculture and fisheries, including climate mitigation and adaptation. The group will also examine nature-based solutions in delivering adapted and resilient systems in the UK.

5. Insets vs Offsets

- An important consideration for the governance of Scope 3 removals is the use of the term ‘insets’, and how it contrasts with ‘offsets’.
    - The term ‘insetting’ is commonly used to refer to those intentional actions taken by an organisation within its own value chain to reduce Scope 3 emissions. Inset emissions are directly avoided, reduced, or sequestered – usually through investment in sustainable practices that prevent emissions from happening in the first place.
    - Offset investment comes from outside the food supply chain by organisations that want to finance environmental projects that reduce carbon emissions elsewhere to compensate for their own carbon footprint.
- There is no formal definition of ‘insets’, and the term is not used by the formal guidance instruments above – and some argue that using the term alongside ‘offsets’ is misleading and unhelpful.
- As it stands, insetting/removals projects do not face the same governance/accounting/MRV requirements as offsets, for the following reasons:
    - They are not a fungible "credit" like an offset. Insets represent relative emissions reductions, in essence comparing the lifecycle analysis of business-as-usual vs sustainable production.
    - Because there are no external buyers incentivizing insetting projects with credit purchases, there is less expectation to prove additionality (i.e. that any gains would not have happened without the project finance).
    - There is no need for permanence or leakage clauses because emissions removed through insets never occurred and therefore are inherently permanent and whole.
    - Insets are internal to a corporation's supply chain so registries and third party certifiers are not required.

6. Governance

To some stakeholders, this distinction is problematic. They see no reason why removals/inset projects should operate to a lower bar than offsets, and that lower standards would undermine their integrity. They point to issues relating to consistent metrics, double-counting, verification and transparency as follows:

i. *Measurement*

- There is no fully agreed upon standard for measuring Scope 3 emissions. Soils data in particular is not collected in a standardised format. Companies use different data sources, boundaries, and processes, and may or may not include entire intervention/management ‘categories’. There is already evidence in the UK of businesses using different methods on the same supply chain/land parcel.
- Some on-farm carbon cutting tool kits include carbon sequestration, but these do not comply with Tier II IPCC guidelines for GHG reporting for soil, using instead a combination of measurement, modelling and emissions factors.

ii. Double counting

- One of the challenging concepts around insetting is that all businesses in a supply chain can claim the same carbon improvements achieved by the farmer. This is because carbon footprints in a supply chain overlap already - the farmer's direct emissions are also the supply chain emissions of a crop buyer and food brand.
- For example, when Cargill produces sugar which gets mixed into a can of Coca-Cola that’s then delivered onto the shelves at Tesco, all three players count the carbon intensity of the initial sugar production. So, if Cargill’s carbon insetting program accelerates farmers’ regenerative practices,

then Cargill, Coca Cola, and Tesco can all factor in the same emissions reductions to their net carbon balance.
- This is potentially advantageous since it enables all actors in a supply chain to contribute separately for the interventions and the collection of the data – increasing the revenue for the farmer responsible for delivering the interventions and reducing cost for themselves.
- However this has led to accusations of triple/double-counting. Some stakeholders insist that other than the one developing the insetting project and the company taking into account the insetting reductions for Scope 3 purposes the 'benefit' from carbon removals should only be accounted for once. It should not be attributed multiple times to multiple parties – as this could result in a significant underestimation of net emissions and an underestimation of the total sector reductions needed.

iii. Verification

- The lack of global standards means insetting projects do not require verification or certification. Nevertheless, many insetting companies choose to work with an independent verifier or auditor to certify their results according to mutually agreed criteria, as verification gives an insetting project more credibility.
- These might take advantage of emerging resources such as the Value Change programme led by Gold Standard and the Carbon Removals and Land Sector Initiative led by World Resource Institute that will provide further guidance on how to account for impacts of insetting interventions.

iv. Transparency/Registration

- There are also concerns about the lack of traceability and transparency as a carbon asset changes hands, gets physically transformed, and divided up as the underlying commodity goes through harvesting, storage, processing, transformation, packaging, distribution, and sale.

v. Data availability

- Where businesses deal directly with individual farms, the most practical way for businesses to implement Guidance is via the suite of available farm GHG accounting tools (farm carbon toolkit etc.). These tools were developed to help farmers make decisions and are not currently fully aligned to guidance criteria (although many will move in that direction, once the guidance is no longer in draft.
- Where there is no direct oversight/contact, secondary data, e.g. lifecycle databases have to be used – raising questions about the alignment of those datasets to each other and to the new guidance.

7. Research and Communications gaps

The initiatives above (GHG, SBTi etc.) will generate needed pieces of market infrastructure that will address some of these challenges and bring clarity and consistency to the removals 'marketplace'. In addition, 3rd party projects are piloting ecosystem market frameworks e.g. WWF/3Keel are developing a test framework for how an inset-transition might work (UK). Food and drink businesses are also piloting collaborative GHG positive/'regenerative' projects throughout their supply chains, exploring different frameworks and using different incentive/payment models (offset, ecosystem services, outcomes, subsidy).

These will address some of the technical, economic and practical challenges at stake, however there are additional, communications and research 'gaps' that need to be addressed if soil's potential in Scope 3 removals is to be realised. These include:

i. Supply Chain Confidence

Farmers are presented with mixed messages about their soil carbon. These include promises about potential income from offsets (often based on exaggerated potential) and future supply chain/government expectations, including their own Net Zero requirements. Businesses need to start engaging with farmers to address this confusion, including the following:

- Their own long-term plans and intentions and how these might be tailored to and align individual farm operations and long-term company goals.
- Demonstrate shared value and emphasise the importance of partnerships (in contrast to offsets).
- Any collaboration should be about more than carbon, but soil health and specifically long-term climate change resilience as well as mitigation.
- The potential and limitations of soil carbon sequestration – mythbusting the more extravagant/sceptical claims.
- Provide confidence in data ownership - explain what data will be needed from them and why.

ii. Financial drivers

A critical barrier to soil-based removals is uncertainty around the underlying flow of finances – both for the farmer (e.g. de-risking the transition) and supply chain businesses (who pays/benefits)? Questions include:

- How to apply market-based accounting to Scope 3 decarbonisation - who is investing and who benefits? How transparent are the carbon and money flows?
- How to fairly translate on-farm results into robust, declarable removals?
- How to quantify and support farmers through possible initial yield loss (what incentives work)?
- What are the costs and overheads (data collection, consultants etc.)?

iii. Consumer Education

There is public scepticism around the inclusion of removals carbon accounting, thanks to negative publicity around offsets and avoided emissions, while consumer understanding of soil's overall environmental importance is low. Communicating about soil's place in Scope 3 provides an opportunity to address these challenges simultaneously, using the following messages:

- Scope 3 is a positive story around long-term, collaborative supplier-farmer relations – not just simple carbon accounting.
- Any gains are UK based – contributing to national target-setting and improving national farmer incomes. Rather than certain remote/exaggerated calculations linked to deforestation.
- Soil carbon and soil health are inextricably linked. This opens the door to more emotive issues – biodiversity, flooding and in particular the state of UK rivers.

iv. Internal (Board and buyers) audiences:

In the midst of a labour/cost of living/energy crises, internal audiences need to see the ROI (Return of Investment) on any initiative. Boards will increasingly understand the urgency of Net Zero/Scope 3, but messaging should be accompanied by other economic arguments about why investment in soil is vital. These include:

- Soil carbon and Scope 3 is not just an imposed, external obligation, but fundamental to long-term productivity/ business viability. Climate change resilience and mitigation are two sides of the same (soil-dependent) coin. Soil carbon increase needs to be linked with soil health (especially structure/water retention), climate change resilience and long-term insurance against yield/productivity costs.
- Regenerative/soil health will increasingly become a marketing/branding opportunity as consumers become more soil-literate and interested in farm provenance. Eco-labelling and claims will accelerate this over time – as will suspicions of greenwashing.

- Supporting farmers through any potential yield drop after a transition to regenerative is not a bottomless money-pit, but (if done right) a limited-period investment that becomes self-sustaining relatively quickly.

v. Building the Evidence Base

Efforts to both understand and scale up soil improving/regenerative farming practice across the UK are hampered by a lack of evidence to underpin its impact on crop yields, soil health, climate mitigation, inputs use or farm productivity.

The food and drink industry is well placed to fill this knowledge gap because of its established supplier relationships - two options are already open to them to help build the evidence base to support an improved knowledge-base for UK transition:

1. Establish robust soil health and soil carbon baselines for fields, farms and projects looking to transition in/over the next 5 years.
2. Initiate benchmarking of soils in established regenerative farms, ideally combined with 'matched' conventional farms.

Innovations in new technology make these options increasingly affordable, especially if shared among pioneer businesses in the food and drink industry. These steps should be seen as an initial research step, which can later be extended to include gathering data from farmers on yields, inputs and productivity.

A full breakdown of the costs and activities involved in such a research project are available in a separate proposal.