Report and recommendations on minimum requirements for high-integrity soil carbon markets in the UK

Version 1.0

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Background

This draft report has been prepared to help shape the development of agreed standards and minimum requirements for investment in soil carbon in the UK (Minimum Requirements). It was developed with funding from Defra's Natural Environment Investment Readiness Fund (NEIRF), which seeks to create a pipeline of nature projects ready to operate on private sector investment and support innovation and development of high integrity ecosystem service markets. The report has been prepared with input from the Environment Agency and in consultation with the policy officials from the UK and Devolved Governments to maximise policy relevance.

The proposed Minimum Requirements for soil carbon codes were developed by a team of more than 15 individuals from ten institutions, including the University of Leeds, Scotland's Rural College, Farming & Wildlife Advisory Group South West, James Hutton Institute, and the Sustainable Soils Alliance (for the full list of team members and organisations see: https://sustainablesoils.org/soil-carbon-code). The intent of this document is to provide an initial draft set of Minimum Requirements and solicit feedback from key stakeholders. The final report will be delivered in October 2022 as an input to inform the development of policy frameworks and formal standards for soil carbon investments in the UK.

Introduction

There are currently two recognised standards for investing in nature-based solutions to generate carbon credits to sell into voluntary carbon markets, the UK Woodland Carbon Code and the UK Peatland Code. The UK Government supports the further development of high integrity markets for carbon and other ecosystem services. This includes the development of robust mechanisms for investment in a broader range of projects and activities, including other natural habitats as well as projects and activities to support farmers to deliver carbon services alongside food production. A nascent agricultural soil market is

developing in the UK, based on proprietary soil carbon codes now in operation, and significant growth is expected in the near future. There are concerns that some of these codes may not yield additional or permanent climate mitigation benefits and may not provide adequate protection to buyers and sellers. This challenge is replicated across ecosystem markets in other habitats and land uses, and in response to this, UK governments are developing policy frameworks to promote the development of high-integrity markets for ecosystem services. This includes both the development of new codes where necessary, alongside the development of overarching principles and Minimum Requirements that codes must adhere to, that will ensure the integrity of markets for multiple services across most of the UK's major habitats and land uses.

This document proposes an Evaluation Framework based on evidence-based principles for the development and operation of high-integrity agricultural soil carbon markets (Black et al., in press). It also recommends governance arrangements which provide guidance on the Evaluation Framework. The focus of this document is for farmed lands and does not include peat soils over 50 cm deep (which are covered by the Peatland Code), agroforestry or wetlands within agricultural holdings. It includes both Minimum Requirements for the creation of robust carbon codes and recommendations about how to make code stronger than the Minimum Requirements.

1.0 Recommendation 1: Establish robust governance arrangements

The proposed Governance Framework will provide guidance for the evaluation of soil carbon codes, explaining how codes will be evaluated, decisions reached, support given and the principles underpinning the evaluation process kept up to date. The proposed Governance Framework consists of:

- An Organisation with ownership and responsibility for governing the evaluation framework (section 2.0), decision-making process and advice given to codes that have been evaluated (the Organisation is currently presumed to be the British Standards Institute (BSI), pending the outcome of negotiations between Defra and BSI)
- The Organisation will appoint an Executive Board, Evaluation Committee and Technical Advisory Group to govern the Minimum Requirements for agricultural soil carbon codes set out in section 2.0. The Executive Board will be responsible for decision making around updates to Minimum Requirements based on recommendations from the Technical Advisory Board and the assessment of whether or not codes have met the Minimum Requirements based on recommendations from the Evaluation Committee. It will also liaise with policy colleagues from each of the four UK governments in collaboration with JNCC when issues are identified in the operation of the soil carbon market, where policy or regulatory

intervention may need to be considered. The Evaluation Committee will be composed of experts who will apply the Minimum Requirements to evaluate codes, making recommendations to the Executive Board. The Technical Advisory Board will be responsible for reviewing new evidence as it emerges, or relevance to the Minimum Requirements or their operation, and making recommendations for changes to the requirements as necessary.

- The decision-making process for evaluating a code against the Minimum Requirements laid out in section 2.0, includes:
    - Evidence required for evaluation (see section 2.0)
    - Criteria for codes to meet an agreed formal standard (informed by the Minimum Requirements laid out in section 2.0)
    - Appeals process
- Advisory role: where possible, the Evaluation Committee and Technical Advisory Group will provide support and guidance to codes submitting (or re-submitting) evidence for evaluation, to support the development of high-integrity soil carbon markets in the UK.

2.0 Evaluation framework

This Evaluation Framework will be designed to assess the evidence provided by Codes to determine their ability to meet internationally recognised criteria for the design and operation of high-integrity soil carbon markets. The criteria used in this draft are based on a comprehensive review of international agricultural soil carbon markets by Black et al. (in press). The principles for providing evidence will be maintained and updated by the Executive Board based on feedback from the Evaluation Committee and Technical Advisory Board, ensuring that they align with Defra's proposed high-level ecosystem market principles.

The Evaluation Framework will be used to inform decisions on whether soil carbon codes adhere to a formal standard, currently presumed to be developed by BSI. Where there is insufficient evidence to demonstrate that all the evaluation criteria (below) have been met, codes will be provided with feedback and (where possible support) on the remedial actions necessary to meet these criteria. Formal accreditation to ISO standards alone will not guarantee that projects meet the criteria set out below. The Minimum Requirements for high-integrity Soil Carbon Codes that follow are currently open to consultation, and subject to change.

2.1 Evidence Required for All Codes:

2.1.1 Quality of evidence underpinning eligible practices, demonstrating the likelihood of soil carbon sequestration or emissions reduction in eligible project types/locations

All Practices allowed by the Code must demonstrate through publicly available evidence that the Practices implemented are likely (a) to lead to an increase in soil organic carbon (SOC) stock, and/or decrease SOC stock loss rate, and/or reduce greenhouse gas (GHG) emissions from soils and (b) to 'do no harm' to biodiversity, carbon stocks elsewhere, water and air quality. Evidence should consist of empirical data relevant to UK pedo-climate and agricultural systems including grey literature, but preferably peer-reviewed scientific articles and/or a meta-analysis of peer-reviewed studies.

Practices must be implemented through clearly defined projects on specific fields with a clearly defined and quantified baseline. All these requirements must be defined in the Code.

2.1.2 Evidence from pilot projects to demonstrate the functionality and integrity of all key code structures and processes

Prior to evaluation and consideration under the Evaluation Framework, all Codes must have piloted their project registration, validation, measurement, reporting and verification and governance processes, which have demonstrated that the Practices included in the Code are technically appropriate and practical across the proposed region of application.

2.1.3 Evidence for GHG emissions reduction and soil carbon sequestration

The Code must include SOC stock increases, reduced SOC stock loss, and farm and soil derived GHG emission reductions. Hereafter, we refer to this combination of climate benefits from soil carbon projects as net carbon abatement. At a minimum, the Code must address carbon dioxide (CO_2) emissions from agricultural soils and, where significant, nitrous oxide (N_2O) and/or methane (CH_4) emissions from soils. The Code must also include GHG emissions from livestock and farming equipment used within the field boundaries where those emissions are significant. In many cases, implementing new practices decrease emissions from farm equipment.

Hereafter, we refer to this combination of climate benefits from soil carbon projects as net carbon abatement. Net carbon abatement must be expressed as CO_2e as the standard unit of measurement which can integrate across these different sinks and sources. The global warming potential (GWP) used by the Code must be clearly

stated and a rationale for the use and a process for updating the GWP must be stated in the Code.

2.1.4 Evidence that codes comply with UK legal and regulatory frameworks

Codes must require projects to provide evidence demonstrating they comply with all relevant local, regional, national or UK laws and regulations.

2.2 Minimum requirements for code specification:

2.2.1 Additionality criteria (and how these allow stacking where they are met)

Codes must provide criteria about what qualifies as an additional practice. At a minimum:

- A Code must establish a historic Review Period prior to the baseline period (no less than 4 years). This Review Period must consider whether a Practice was implemented and then reversed, thereby rending the field ineligible for participation in the Code. Farmers must not be allowed to stop or reverse Practices with the objective of implementing them in the future to participate in carbon markets. Any lands with reversed land use shall not be eligible for crediting within the Code.
- No Practices may be credited by a Code if they are required by local, regional, national or UK law or regulation relevant to the region, jurisdiction and operations where a project is implemented.
- Codes shall only credit projects where changes in Practices have been newly adopted on an individual farm. It is possible to demonstrate additionality prior to a project registering with a Code, if the project developer can supply evidence to the satisfaction of a VVB that carbon finance from selling carbon credits was considered in the planning stages of the project (for example the inclusion in minutes of board meetings or planning documents, cashflow or emails).
- Codes must provide evidence that newly adopted Practices would not have been considered viable and/or sustainable by a farmer without revenue from Soil Carbon Credits.
- Codes should not prevent the stacking of payments for other ecosystem services where the payments are required for financial viability. Codes should not prohibit payments from other financing mechanisms, other than those that explicitly pay for SOC stock increase / reduced GHG emissions as an outcome. Additionality requirements of the Code must be met in

addition to the requirements of all other financed schemes within the same project boundary.

2.2.2 Quantification of credits

Soil Carbon Credits can only be generated from a conservative and verified change in net carbon abatement over and above a baseline (expected removals or emissions of the same area in absence of a project) as a direct consequence of the project Practices. Therefore, Codes should require an approach that will determine how the baseline for business-as-usual would respond over the project duration. This can be achieved using a calibrated and validated process-based models (see 2.3.5), which uses at least one soil carbon sampling campaign (see 2.3.4). The Code needs to clearly define the boundary of the crediting Practices. Any GHG emission source within the boundary that is not considered de minimis should be quantified.

The quantification of Soil Carbon Credits that can be issued by a project must consider the different forms of uncertainty generated throughout the process and generate credits using a conservative approach. The uncertainty evaluation must include the uncertainty generated in the quantification process and modelling and measurement. The Code must indicate what approach is mandated to account for uncertainty, e.g. discounting and indicate how the chosen approach is implemented, documented and verified and why it is an appropriately conservative quantification approach.

If GHG emissions from fossil fuels are included in the Code, they should be quantified using emission factors specific to the fuel (e.g. for transportation fuels).

The Code must include criteria for what emissions must be quantified, monitored, and reported and what emissions are considered de minims.

2.2.3 Permanence

A Code must require projects to include mechanisms to reduce the risk of loss of net carbon abatement, e.g. water management across the project. It must also indicate how permanence will be maintained by a project beyond the project crediting period consistent with international standards. The entities responsible for monitoring and maintaining permanence must be included in the Code.

For every year that a credit is issued, there must be a minimum of 10 years of permanence. For example, if you have 5 years of credits issued, the total timeframe of the project is 15 years (5 years of crediting and 10 years of permanence). The objective of the Minimum Requirements is to incentivize the increase and maintenance of the soil carbon gains. Strategies for ensuring permanence through other contractual and mechanisms should clearly stipulate how they will ensure the Practices are maintained through the permanence period. All forms of permanence should address the risk of reversals and other non-permanence risks with appropriate risk management mechanisms put in place.

Codes must clearly define the difference between the crediting and permanence periods. The Code must include monitoring requirements for the project to determine potential releases which occur after the crediting period and during the permanence period. Monitoring during the permanence period must occur on a regular basis throughout the permanence period. Codes need to have clearly articulated processes for identifying and quantifying if / when release of net carbon abated has taken place (see also 2.2.4). The Code must consider how it encourages the long-term adoption of Practices to ensure the permanence of the carbon sequestered. Farmers are required to notify landowner of soil carbon contracts that exceed current farming contracts to the landowner (see also 2.2.17).

2.2.4 Mechanisms to address unintended reversals of net carbon abatement

Mechanisms must be included in the Code for assessing, accounting, compensate for any unintended reversals of net carbon abatement, such as natural disasters including drought, extreme temperatures, fire, and floods which can release GHGs and/or reduce SOC stocks.

A buffer pool, insurance, or similar approach must be included in the Code for the replacement of unintended released of soil derived CO_2e. Replacement of Soil Carbon Credits must be from nature-based solution projects. Buffer pools can be created for a single project or aggregated for all projects developed under the Code.

2.2.5 Replacement of unintended reversals

If the Code uses a buffer pool to compensate for unintended reversals, the Code must provide:

- Evidence for determining the risk and criteria for contributions to the buffer pool

- Quantification method for the contribution to the buffer pool
- Procedure for the cancelation of credits after an unintended reversal
- How long credits are maintained in the buffer pool and if the credits are returned to the project
- Criteria for what events are allowed to draw from the buffer pool
- A description of how the buffer pool is structured (e.g. the buffer pool project specific or aggregated across all projects)
- A process for evaluating the risk of depleting the buffer pool by a large unavoidable event
- A process for compensating for released carbon if the buffer pool is insufficient to cover an unintended reversal event

If the Code uses insurance to compensate for unintended reversals, the Code must provide:

- A process for determining the risk of the project
- A procedure for claiming an unintended reversal
- Criteria for what events are allowed to make a claim
- A description of how the insurance product is structured

2.2.6 Intentional Reversals

Codes must include procedures to address situations where farmers reverse Practices that result in the intentional reversal of net carbon abated, e.g. tilling a field that generated Soil Carbon Credits for implementing no till Practices. The procedures should include a quantification of the amount of CO_2e reversed. Procedures could include the repayment of any revenue generated through Soil Carbon Credits or retiring Soil Carbon Credits in the amount of the net carbon abatement that is reversed.

2.2.7 Assessing and accounting for leakage

Accounting for leakage is complicated to assess and quantify. The impact of a single or multiple farms in a region on global commodities is extremely small. The Minimum Requirements in this section are intended to be an initial attempt at addressing leakage and the concept is expected to be revisited in future versions of the requirements.

Codes must provide criteria for and prohibit a sustained and material reduction in yield compared to the regional average over the crop rotation or within a four year reporting period, whichever is longer. Codes should include reporting requirements to demonstrate that leakage is minimal beyond the project boundary (e.g., farmers could be required to sign a legal attestation stating that all fields were evaluated in setting the baseline for the project).

2.2.8 Accreditation

All Codes must stipulate clearly which parts of the process are required to be carried out by an accredited Validation and Verification Body (VVB). Where a Code owning/ operating organisation is conducting any part of the validation and verification process internally, they must be accredited by UKAS (or an alternative International Accreditation Forum member) for doing so. Where a code owner or operator is not accredited directly, but subcontracts the validation and verification of projects to a third-party VVB, that VVB (or multiple VVBs) must be accredited by UKAS (or an alternative IAF member) and must be identified in a public listing alongside (or within) the code.

2.2.9 Appointment of validation and verification bodies/experts

The Code must include processes for the approval of independent third parties to validate the initial project design and verify the project. All VVBs must be accredited to an established standard. Codes must include provisions for the periodic rotation of auditors and/or VVBs throughout the lifetime of the project; projects should not be verified continually by the same auditor and/or VVB for more than two crediting periods or 10 years, whichever is the shortest.

2.2.10 Project validation and verification

The Code must require an initial validation of the project to confirm that it meets the requirements of the Code before a project is formally approved and accepted by the Code. Once a validation is approved, the project must undergo a verification by an independent third party, called a Validation and Verification Body (VVB), prior to any issuance of credits. The verification does not need to occur annually but must precede the issuance of any credits. Verifications must be conducted at least once every four years. Codes must include clear criteria for the design of the verification plan, conduction of the verification, and procedures that determine if a project meets or does not meet the verification criteria.

The VVB must develop a verification plan for the project that includes review of:

- the project boundaries, GHG emissions sources, GHG sinks, and GHG reservoirs;
- the project eligibility;
- that the project boundary is appropriately defined;
- the project calculations, measurements, and modelling;
- data management systems, including review of the data collection process and procedures; and
- project compliance with all local, regional, national or UK law and regulation relevant to the region, jurisdiction and operations where a project is implemented.

2.2.11 Stakeholder engagement by projects

The Code must include procedures for the systematic engagement of stakeholders during the design of a project. The engagement procedures should consider the potential economic, environmental, and equity impacts on the local community and other stakeholders who may be affected by the project and provide mechanisms to ensure that all relevant voices are heard, and concerns are addressed effectively by project developers. Incorporation of criteria based on the United Nations Sustainable Development Goals is strongly encouraged.

2.2.12 Registries

The Code must provide information about how projects and their associated credits are tracked. Codes must include process and procedures for the listing and approval of projects as well as for the issuance, trading, and retirement of credits. This information must be contained in a transparent, public, and independent database registry. The registry must include the date for the listing of the project, credit issuance, and credit retirement. It must include the volume of credits issued and the status of the credits, e.g. retired, buffer pool, invalidated, etc. The registry must also include documentation about the project including a summary of the project, monitoring report, and the review from the verifier. The retirement of credits must include the date retired, the entity retiring the credits, and the reason for retirement. Provisions must be included that ensures credits are listed and retired in only one registry.

2.2.13 Know your customer (KYC) and anti-money laundering checks

The Code must provide what information is required to confirm the entities engaged with the Code. This would include unique, verifiable identification for the farmer, project developer, and buyer of the credits. Any additional requirements, such as notarized forms and documents must be provided. The processes for identifying and confirming the identities of all entities participating in the Code and methods for addressing any conformities must be provided in the Code's procedures.

2.2.14 Co-Benefits

Where co-benefits are associated with Soil Carbon Credits, the Code must provide information about the procedures for quantifying, monitoring, reporting, and verifying of the co-benefits. While these methods may not go as far as the rigour expected for carbon measurements, they should be demonstrable to justify any price premium and claims that buyers may wish to make about co-benefits. Examples could include benefits, such as, water quality, water quantity, biodiversity, equity, and local employment. The Code must define if the co-benefits are bundled or stacked. Where co-benefits are stacked, there must be additional requirements for additionality and MRV (See section 2.2.1).

2.2.15 Resale of carbon credits

The Code must state whether credits can be traded or sold more than once. If so, the criteria for trading or resale must be provided, including if there is a limit to the number of trades or exchanges can be made and how subsequent sales are tracked to avoid double-counting.

2.2.16 Crediting Period

The Code must state the number of years over which a project is allowed to generate Soil Carbon Credits, also known as a Crediting Period. Crediting Periods are typically more than a single year or growing season. Projects shall be allowed to use the same version of the Code for during the Crediting Period.

The Code must state if the Crediting Period can be renewed and, if so, the number of times it can be renewed and the requirements for subsequent Crediting Periods. Each crediting period, Projects must use the most recent version of the relevant Code at the time the crediting period commences. The first Crediting Period must not be longer than 10 years.

2.2.17 Land ownership

The Code must clearly articulate who is paid for the implementation of the Practices. Any legal requirements, e.g. conservation covenants, on the land must be disclosed to the landowner as a part of the validation process. See also section 2.2.11. The code must also include mechanisms to manage any changes in land ownership during the crediting and permanence periods, and how to ensure the continuation of Practices adopted as part of the code.

2.3 Minimum requirements for MRV:

2.3.1 Data collection and recordkeeping requirements

The Code must specify what data (including data standards and formats) must be collected by a project and detail what records are necessary to support the generation of credits. The Code must also clearly state the ownership, use, management, and retirement of the data collected and used. Data ownership should reflect and respect land ownership and land user rights as well as licensing conditions. The Code must differentiate between data that is collected by the farmer, collected by the project developer or sourced elsewhere (such as soil maps, weather data, emission factors). For any data that obtained through analysis or processing, such as soil laboratory analysis or modelling, the protocols, processes and procedures, including quality management, must be sufficiently detailed to enable independent verification of the resultant data.

Codes may allow multiple farmers to develop an aggregated project where the farmers register their fields as a single project under the Code and have the project developed by a single project developer.

2.3.2 Construction of baselines

The Code must provide criteria for establishing a reliable project baseline for the existing pre-project management (i.e. “business-as-usual”) which will be the foundation for the quantification of Soil Carbon Credits from the project Practices over the project period. At a minimum, the baseline must incorporate at least one soil sampling campaign (see section 2.3.3) within the project boundary and reflect the typical crop rotations in the pre-project management scenario. Codes that allow the use of models for the establishment of the baseline must include data from a full rotational cycle for the business-as-usual land management or from at least four years, which every is longer.

2.3.3 No Net-harm

Projects must provide evidence that no net-harm has been caused during the Review Period. This assessment must determine that the project will result in net environmental benefits and that the project was not implemented in order to generate credits resulting from the reversal of Practices that had previously sequestered carbon.

2.3.4 Soil sampling requirements

Soil sampling must be required by codes to provide directly measured data on soil carbon stocks. These data must be used by projects to:

1. establish reliable baselines (see 2.3.2)
2. quantify credits (see 2.2.2)
3. improve the performance of models if models are used in the Code (see 2.3.5)

A sampling plan must be created, which ensures that soil sampling will obtain an accurate and representative measurement of soil carbon stock across the entire project area and which represents the soil types, geographies, and farming systems within the project. The sampling plan must be adequate to determine a statistically significant change in SOC stocks over the crediting period. Soil sampling must be conducted across the project at least every 5 years throughout the crediting period and include sampling at the beginning and end of each crediting period.

Codes must ensure that soils are sampled to sufficient depth to obtain an accurate assessment of soil C stock at baseline and throughout the crediting period. For this, sampling of soils must obtain reliable measurements of both soil carbon content (% / g/kg) and soil bulk density (g/cm^3) at specified soil depths across the project area, delineated by a project sampling plan for the quantification of Soil Carbon Credits.

Soil depth should be set to sample at and below the depth of impact of the business-as-usual and proposed project Practices. Standard soil sampling is required to 30cm at least unless the soils are shallower with sampling recommended to 30-60cm and 60+cm, dependent on total soil depth and Practices. All analytical methodologies must be reliable, reproducible, and operated by appropriate facilities with established quality management procedures, which can be shown to be compliant with or accredited by appropriate certification bodies (e.g. UKAS) against ISO or equivalent

methods specific to each analytical method used. Methods should be appropriate for a project's geography, soil types, Practices and farming systems, account for inorganic soil carbon and change in bulk density over time (e.g. using equivalent soil mass assessments of soil carbon stocks).

Uncertainties generated during the sampling, measurement, and calculation of soil properties must be reported and included in the documentation reviewed by the VVB to verify the Soil Carbon Credits. All relevant mathematical and statistical calculations, and the data used in these calculations, must be fully detailed and freely available for reporting and verification.

All method documentation (including how samples are taken, whether they are composited or not, how they are stored and transported, and number of samples taken, etc), quality control data, and associated calibration data must be documented in full and available for independent audits and verifications.

2.3.5 Soil carbon modelling requirements

Codes that allow the use of models for the quantification of Soil Carbon Credits must stipulate the use of process-based / statistical or empirical models that meet current Tier 2 or 3 IPCC requirements. It must be demonstrated that the model is suitable for application to the soil types, geographies, Practices, and farming systems under consideration by a project. Models must be calibrated and validated before use and models must be validated prior to any quantification of Soil Carbon Credits. Model validation, performance and predictions must be verified by a qualified third party e.g. VVB.

Model calibration is required to establish a set of model parameters that display a good fit with observed data. Model calibration must use fully independent data which are fully independent from those being used for the quantification of Soil Carbon Credits . All models must explicitly state assumptions and model parameters values and use version control and subject model codes for regular audits. Audit trails must be maintained for model revisions and any model updates.

Codes must require model validation that will demonstrate reliable and repeatable model performance and include model prediction error as a measure of uncertainty. Datasets suitable for validating model performance and uncertainty should reflect a project's characteristics e.g. soil types, geographies, soil sampling depth, farming

system and management Practices. Soil sampling data from a project should be used in the validation process.

Models must not show systematic bias in predictions of soil carbon stocks and / or GHGs emissions. Where model outputs are not reliable and repeatable with respect to project sampled soil data, the model will require recalibration. All models must be recalibrated at regular intervals throughout a project, with a minimum interval of every four years.

The data used for calibration and validation must be available to the VVB for auditing. These data must include quantified changes in SOC stock and/or GHGs emissions for relevant geographies, practices, and farming systems.

2.3.6 Data retention

The code must provide information on what records must be retained, for how long, in what format, and by whom (i.e. farmer, project developer, registry, code owner). The code should indicate that data ownership, access and privacy requirements must be addressed. All Codes must comply with the UK General Data Protection Regulation.

3.0 Glossary

- **Additionality:** Practices implemented by a farmer that are above and beyond "business as usual," exceed the baseline, and are not required by regulation.
- **Baseline scenario:** The land use and management Practices that were in place prior to the implementation of Practices. The baseline (or reference) is the state against which change is measured.
- **Buffer Pool:** A holding account of Soil Carbon Credits used as a general insurance against unintended reversals of net carbon abatement.
- **Carbon dioxide equivalent (CO_2e):** The quantity of a given GHG multiplied by its total Global Warming Potential. This is the international standard unit for comparing the degree of warming which can be caused by different GHGs.
- **Calibration:** The process of confirming that a model can reliably predict the project environment under consideration by comparing model outputs with empirical data from and / or representing the project environment.
- **Code:** A standard, methodology, protocol, or scheme that quantifies, monitors, reports, and independently verifies Soil Carbon Credits.

- **Crediting Period:** The time period during which Soil Carbon Credits are generated.
- **Discounting:** The practice of issuing less credits than are quantified to be conservative and ensure that the project is a net benefit to the climate.
- **Greenhouse Gas (GHG):** Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), hydrofluorocarbons (HFCs), or perfluorocarbons (PFCs).
- **Insurance:** Products or mechanisms purchased by the project to protect against Unavoidable and Intentional Reversals of Soil Carbon Credits.
- **Intentional Reversal:** Any reversal that is due to the project's negligence, gross negligence, or wilful intent within the project boundary.
- **Leakage:** This refers to an increase in GHG emissions or a loss in SOC that occurs as a result of the project's activities but beyond the scope and/or boundaries of the project's quantification of net carbon abatement, e.g. crop yield reductions or intensification of land management.
- **Monitoring:** The process of collecting data, tracking and analysing information over time and overall implementation progress, with the purpose of providing information for reports.
- **Net carbon abatement**: SOC stock increases, reduced SOC stock loss, soil derived GHG emission reductions or a combination thereof.
- **Permanence period:** The time period following the crediting period in which soil carbon is retained.
- **Practice:** A change made on a field that in intended to increase net carbon abatement in a project
- **Project:** A Project is a set of specific fields and/or farms where specific Practices are implemented using a clearly defined and quantified baseline. All these requirements must be defined in the Code. All fields managed by farmer must be included in a Project, but Practices do not need to be implemented on all fields.
- **Project Boundary:** The fields within the geographic boundaries of a project.
- **Reporting:** The document prepared prior to the issuance of Soil Carbon Credits that includes quantification of SOC stocks, GHG emissions and monitoring results. Reporting should be done in a public and transparent manner.
- **Resale / trade (of credits)**: Soil Carbon Credits can be exchanged between entities after issuance by a registry and until the credits are retired.

- **Retirement (of credits)**: The transfer of a Soil Carbon Credit to a retirement account. Retirement is a permanent state where the Soil Carbon Credit cannot be transferred or retired again.
- **Review Period**: The period of time prior to the Baseline scenario where the implementation of Practices are evaluated. Projects that implement Practices during the Review Period are ineligible for crediting.
- **Soil Carbon Credits:** A fungible instrument that represents the increase in soil SOC stock, and/or decrease SOC stock loss and/or reduce GHG emissions from agricultural soils. Credits are measured in metric tonnes of carbon dioxide equivalent (CO_2e).
- **Soil Organic Carbon (SOC) stock:** The organic carbon measured or modelled in the soil for a given area within a project, measured in ton/ha.
- **Unavoidable Reversal:** The loss of net carbon abatement quantified through Soil Carbon Credits resulting from actions not in the direct control of farmers, such as natural disasters including drought, extreme temperatures, fire, and floods which can release GHGs and/or reduce SOC stocks.
- **Validation (model):** The process of evaluating the performance of model predictions relative to empirical data.
- **Validation (project):** The review and approval that a project meets the requirements of a Code.
- **Verification:** The third-party, independent process used to ensure that a project's GHG emissions or emission reductions have met the minimum quality of the Code for calculating and reporting GHG emissions and emission reductions.