CREDIBLE is an EU-funded Horizon project that promotes carbon farming in the EU. It aims to build trust for the implementation of carbon farming by supporting the development of consensus on methodologies that enhance soil's capacity as a carbon sink. With 11 Focus Groups, it engages experts and stakeholders in discussing key issues on soil carbon sequestration, quantification, data and policy.

Minimum requirements to ensure carbon farming delivers sustainability benefits (Focus Group 2.1[1])

Key messages

1. Sustainability standards are essential to correct and create trusted carbon markets raising new funds for the transition of the agricultural sector towards resilient and sustainable business models.
2. Carbon removal certification is a tool to support the transition towards economically, ecologically, and socially sustainable agricultural systems.
3. Ecosystem services are highly interwoven and need to be recognized, quantified and rewarded. They are not a co-benefit of carbon removals but a core benefit to be considered as part of carbon removal solutions.
4. We identified seven approaches to implement sustainability standards into a carbon removal certification framework.
5. The integration and monitoring of sustainability standards needs to be reflected in higher value carbon credits and subsequent payments.
6. The isolation of climate services carries the risk of reducing the value of climate-friendly agricultural measure while neglecting or even damaging other ecosystem services.

[1] This focus group aims to discuss how existing carbon farming certification mechanisms and their methodologies promote sustainability outcomes and identify best practices. The focus group features participants from carbon farming mechanisms, farmer associations, soil scientists, and policy experts. We aim to support the EU Expert Group on Carbon Removals by providing recommendations on how the objective of sustainability can be operationalised within the proposed regulation on carbon removals certification. Our recommendations should also be applicable for wider carbon removal certification discussions on sustainability. While we recognize the relevance of methodology design, quantification of soil organic carbon, monitoring, reporting, and verification (MRV), etc., it is important to note that these issues are not within the scope of our discussions about sustainability.

Introduction

The certification of carbon dioxide removals is a tool to enhance nature-based removal solutions in the land sector while contributing to vibrant rural areas, regenerative food systems and restored landscapes. An effective and efficient carbon dioxide removal framework could correct and create trusted markets raising new funds for the transition of the agricultural sector towards resilient and sustainable business models. The reduction of carbon markets to the commercialization of carbon dioxide removals carries the risk of reducing the value of agro-ecosystems while neglecting or even damaging other ecosystem services, which needs to be avoided.

During the Carbon Farming Summit in Valencia 2024 all participants of Breakout session 9 on sustainability standards agreed that “Sustainability standards are essential for trusted carbon markets, funding the agricultural sector’s transition towards sustainable business models” (see Annex I).

To build trusted and reliable standards, methodologies have to be developed that can effectively recognize sustainable and integrated agricultural practices, while ensuring social and environmental aspects at regional level. The integration and monitoring of sustainability standards needs to be reflected in higher value carbon credits and subsequent payments.

Sustainability objectives to enhance climate mitigation

Context: EU Carbon Removal Certification Framework and sustainability

The European Commission’s proposed regulation for a framework for carbon removal certification aims to scale up high quality carbon removals. A provisional agreement has been reached between the Council of the European Union and the European Parliament (EP) (Annex II). The proposed regulation establishes a voluntary framework for certifying permanent carbon removals, carbon farming and carbon storage in products, aiming to establish minimum standards for removal activities. The framework establishes four eligibility criteria for certification, one of which is sustainability. The minimum sustainability requirements shall consider the principle of “do not significant harm” and may generate co-benefits for one or more of the sustainability objectives (Article 7). Additionally, these requirements should address impacts within and outside the union as well as local conditions and align with existing directives. Moreover, they should promote sustainability of forest and agriculture biomass raw material. However, clarification is still needed regarding how these sustainability requirements will be operationalised.

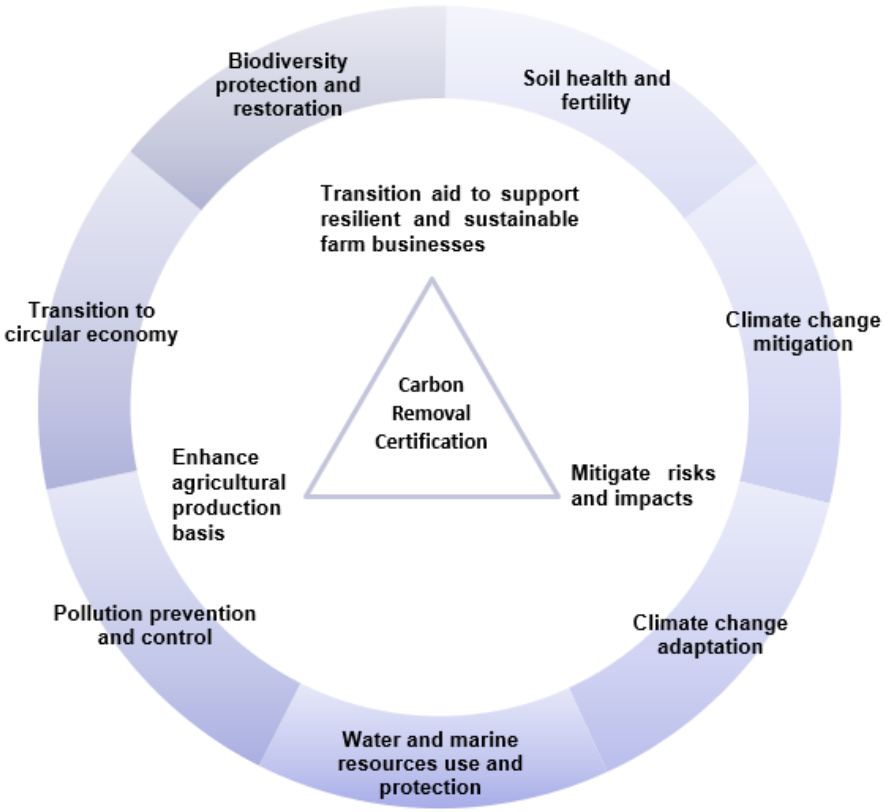
There is a spectrum of different objectives to build a trusted certification standard to incentivize the uptake of nature-based carbon dioxide removals. The most important economic resource of a carbon dioxide removal certificate is **trust**:

- **Trust that the certificate supports a resilient and sustainable farm business model while sustaining food production.** Carbon credits have to be seen as a tool to support and enable the transition towards sustainable farm business models.
- **Trust that the certificate is enhancing the production basis of farms.** Especially healthy soils are the one most important resource for agricultural production. But also, other environmental and social objectives are crucial for viable farm business such as good labour and working conditions, resource efficiency and a good ecological condition of natural resources.
- **Trust that the certificate is in compliance with environmental and social objectives of the European Union.** The identification and monitoring of risks and impacts supports the avoidance, mitigation and management of risks and impacts as part of the way of doing business in a sustainable way.

These three overarching objectives are crucial to build a trusted carbon certification standard (see figure 1) and can act as framework to define necessary sustainability criteria. The EU Carbon Removal Certification Framework defines six sustainability objectives as a core set of requirements including:

- climate change mitigation beyond the net carbon removal benefit and net soil emission reduction benefit,
- climate change adaptation,
- sustainable use and protection of water and marine resources,
- pollution prevention and control,
- transition to a circular economy, including the efficient use of sustainably sourced bio-based materials, and
- protection and restoration of biodiversity and ecosystems including soil health, as well as avoidance of land degradation (mandatory for carbon farming activities)[2].

Figure 1: Sustainability objectives as the foundation of a trusted carbon certification standard



[2] The provisionally adopted regulation requires carbon farming activities to generate at least a biodiversity and ecosystem benefit.

Key reflections from the Carbon Farming Summit in Valencia 2024

- Sustainability as a core aspect of carbon removal certification and not a voluntary co-benefit.
- Revise the current terminology “Carbon Farming”. Misleading terminology with a too narrow focus on carbon and no reference to sustainability aspects.
- Enhance knowledge support and education around carbon removal certification.
- Involvement of the whole agri-food value chain to ensure the vertical integration of sustainability standards.
- Emphasize biodiversity as the main sustainability aspect.

Existing approaches to implementing sustainability objectives

To understand how sustainability objectives can be operationalized into a carbon removal certification framework, it is helpful to understand and learn from existing frameworks on sustainability.

Existing frameworks on sustainability

Sustainability is a socio ecological process, defined by the UN as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987), which encompasses economic development, natural resources conservation and social equity. Carbon farming actions are part of a wider effort towards sustainability, integrating environmental, social, and economic objectives to create a more resilient and regenerative agricultural system. Frameworks such as the Sustainable Development Goals (SDGs 2015),[3] the EU Taxonomy [4], the Performance Standards of the International Finance Corporation (IFC PS) (IFC 2012)[5] and the FSC Ecosystem Service Procedure[6] provide a starting ground in how to integrate sustainability into carbon removal certification. As part of a short assessment all four frameworks were analysed regarding their suitability for operationalizing sustainability standards into carbon removal certification (Table 1). None of the four existing frameworks are sufficient to operationalize sustainability standards within the CRCF. However, they offer a basis to learn from and develop robust and trusted sustainability standards for carbon dioxide removals.

Table 1: Assessment of four sustainability frameworks

Sustainability Framework	Positive	Negative
EU Taxonomy & DNSH Principle	Reduces environmental risk and impacts caused by a project or activity.	Excludes agriculture from the technical screening.
Identifies environmentally sustainable economic activities	Prioritises environmental aspects.	No motivation for sustainable transition in Taxonomy-excluded activities.
	Builds stakeholder trust. Implementing this framework shows commitment to sustainable practices.	Minimum social safeguards, potentially overlooking social concerns.
SDGs	Sets measurable targets and indicators which ensure accountability.	Broad objectives can raise implementation challenges.

[3] United Nations Sustainable Development Goals (SDGs)
[4] EU Taxonomy for sustainable activities - Regulation (EU) 2020/852
[5] Performance Standards. International Finance Corporation (IFC) 2012
[6] https://anz.fsc.org/ecosystem-services

Holistic approach that incorporates sustainable development principles across global, local sectors, and stakeholders	Adaptability for global adoption, through tailored approaches.	Monitoring and reporting difficulties
	Holistically addresses multiple sustainability aspects through the different goals.	Conflicts may arise in the prioritisation of the goals.
IFC PS	Standardizes environmental and social management aspects in projects.	Focus on the banking and industry sector, excluding the agri-food sector.
Defines Performance Standards (PS) for social and environmental sustainability aimed at World Bank Group clients	Internationally recognized standards.	Compliance limitations, specifically in areas lacking strong governance structures.
	Fosters stakeholder trust by demonstrating commitment to sustainable practices.	Largely unknown in the agri-food sector.
FSC Ecosystem Services Procedure	Reduces risks of unintended consequences through strict social and environmental do no harm safeguards.	Designed for the forestry sector and forest ecosystem services.
Establishes requirements for FSC-certified forest managers to demonstrate the impact of their activities on ecosystem services	Promotes the responsible use of forest resources, biodiversity conservation and the well-being of local forest-dependent communities.	

Implementation of sustainability standards

To gain insights about the practical implementation of sustainability in carbon removal certification, we reviewed review literature assessing how sustainability is implemented in existing voluntary carbon markets and beyond.[7] We identified seven approaches, presented in Table 22.

Table 2: Approaches to ensure sustainability outcomes through carbon removal certification

Approach	Description	Examples
Identification and management of risks and impacts	Ex-ante whole farm evaluation identifying risks and impacts that considers the complexity of a project and how it can contribute positively across different dimensions of sustainability (with or without third party verification).	- Ex-ante qualitative assessment of sustainability impacts - SDG assessments - Development of a performance standard (IFC PS1)
Transparent reporting	Provision of detailed and disclosed documentation of the sustainability impacts of certified carbon farming activities and assigning roles and responsibilities for managing	- Project documents published - Detailed and public registries - Verification reports published - Mechanism-level evaluations - Internal person responsible for sustainability requirements

[7] We drew on Scheid et al., Carbon farming co-benefits. Approaches to enhance and safeguard biodiversity, 2023; Schneider et al., Methodology for assessing the quality of carbon credits, 2022; Wissner et al., Ensuring safeguards and assessing sustainable development im-pacts in the voluntary carbon market, 2022; van Baren et al., Review of certification methodologies for carbon farming – survey results and first assessment of coverage of the QU.A.L.ITY criteria, 2023; Böttcher et al., Sustainability criteria for carbon dioxide removals, 2023

	environmental and social risks when implementing removal activities.	
Stakeholder processes and policies	Process for involving relevant stakeholders in the different stages of the carbon certification process (promoting social and environmental integrity) and assessment which local stakeholders are impacted by a project.	- Stakeholder engagement - Indigenous consent - Grievance system - Gender policy - Impact assessment
Land acquisition and land use competition	Project-related land acquisition or land use change can have adverse impacts on communities and persons that use this land and need to be avoided. Also, the increase of rental prices of agricultural land related to carbon farming certification needs to be avoided. Enhancing the carbon stored in soils can conflict with other forms of using the land, such as expanding settlements or infrastructure or the use of land for biomass production.	- Development of a performance standard (IFC PS 5)
Activity eligibility conditions	Setting minimum standards (eligibility criteria for activities, actors or contexts) to ensure that carbon farming activities pose low or no risk to sustainability and providing guidelines for project developers to demonstrate that their project follows the requirements	- Detailed eligibility criteria for activities (e.g. CAP interventions) - Methodology-level sustainability assessments (ex-ante) - Guidance documents (e.g. IFC guidelines, positive lists, handbook)
Quantitative monitoring of sustainability	Quantifiable information that measures the compliance with established standards (with or without third party verification)	- Ex post monitoring of sustainability impacts - Quantitative sustainability indicators - Quantification of eco-system services
Rewards for sustainability benefits	Rewarding for sustainability benefits, either due to direct financial incentives, increased consumer willingness to pay for sustainability outcomes or funding for training and advisory services to ensure landowners achieve sustainability goals.	- Sustainability outcomes reported on certificates/credits - Premium labels (e.g. CCBS) - Training and advisory services

The seven approaches identified can be further differentiated into the three building blocks 1) general approaches which can be designed and implemented on a project level, 2) activity related approaches which can be designed and implemented based on the farm activity and 3) the rewarding of sustainability benefits (see figure 2).

The sustainability approaches that overarchingly apply to all carbon removal certification activities are the identification and management of risks and impacts, transparent reporting, stakeholder processes and policies and land acquisition and land use competition.

The development of eligibility criteria and guidelines for activities, actors, or context to ensure that carbon removal activities do no significant harm while delivering sustainability objectives need to be activity based. Also, the monitoring of established standards needs to be developed and applied based on the activities.

Alongside these approaches the use of additional payments (direct or indirect) will be essential to maximize the impact of carbon removal activities.

Figure 2: Building blocks of sustainability approaches to ensure trusted carbon certification standards

Key reflections from the Carbon Farming Summit in Valencia 2024

- All approaches identified in Table 2 are crucial and should be integrated into one comprehensive carbon removal certification framework.
- Differentiate between quantification and monitoring and reporting of sustainability objectives.
- Need for a contractual framework to make the mentioned sustainability approaches legally binding.
- Develop success criteria for sustainability objectives (e.g. water quality, soil health, improved biodiversity).
- Carbon removal actions and sustainability standards are highly context dependent which needs to be taken into consideration.
- Sustainability requirements should be feasible for farmers and land-users to implement and monitor, while avoiding complex administrational burden for them.

Annex I: Research questions discussed during the Carbon Farming Summit 2024

- *Which **sustainability objectives** need to be included and defined as part of EU Carbon Removals Certification Framework?*
- *Which **approach(es)** should the EU Carbon Removal Certification Framework implement to ensure sustainability benefits for carbon farming activities? And how can these approaches be made legal binding?*
- *What are the **challenges of delivering sustainability** objectives through carbon farming certification (e.g. transaction costs, risk to upscaling, monitoring) - and how can these be managed?*
- *How could **activity-based sustainability requirements** look like? On which level should activities be defined (farm activity, land-use typology)?*

Mentimeter question result

At the end of Breakout Session 9, the participants were asked to answer the following key message: "**Sustainability standards are essential for trusted carbon markets, funding the agricultural sector's transition towards sustainable business models**" (voting options: strongly agree, agree, neutral, disagree, strongly disagree, don't know)

The outcome shows that all participants (37 in total) agreed with the core message.

Annex II: Comparison of the EU Framework for Carbon Removal Certification amendments

CHAPTER 2: QUIALITY CRITERIA	
Article 7: Sustainability	
European Commission (Proposal)	**European Parliament (Provisional agreement)**
Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a Union certification framework for carbon removals	Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a Union certification framework for <u>permanent</u> carbon removals, carbon farming and carbon storage in products
1. A carbon removal activity shall have a neutral impact on *or* generate co-benefits for *all* the following sustainability objectives: (a) climate change mitigation beyond the net *carbon removal* benefit referred to in Article 4(1); (b) climate change adaptation; (c) sustainable use and protection of water and marine resources; (d) transition to a circular economy; (e) pollution prevention and control; (f) protection and restoration of biodiversity and ecosystems.	1. <u>An</u> activity shall <u>not significantly harm and may</u> generate co-benefits for <u>one or more of</u>, the following sustainability objectives: (a) climate change mitigation beyond the net carbon removal benefit and <u>net soil emission reduction benefit</u> referred to in Article 4(1) and (1a); (b) climate change adaptation; (c) sustainable use and protection of water and marine resources; (d) transition to a circular economy, <u>including the efficient use of sustainably sourced bio-based materials;</u> (e) pollution prevention and control; (f) protection and restoration of biodiversity and ecosystems <u>including soil health, as well as avoidance of land degradation</u>. <u>(fa) 1a. A carbon farming activity shall at least generate co-benefits for the sustainability objective referred to in point (f) of this paragraph.</u>

2. For the purposes of *paragraph* 1, *a carbon removal activity* shall *comply with* minimum sustainability requirements *laid down in the certification methodologies, set out in* the delegated acts adopted pursuant to Article 8.	2. For the purposes of paragraph 1 of this Article, an activity shall comply with minimum sustainability requirements laid down in the certification methodologies set out in the delegated acts adopted pursuant to Article 8. The minimum sustainability requirements shall take into account the impacts both within and outside the Union and local conditions. Those minimum sustainability requirements shall, where appropriate, be consistent with the technical screening criteria for the 'do no significant harm' principle. The minimum sustainability requirements shall promote the sustainability of forest and agriculture biomass raw material in accordance with the sustainability and GHG saving criteria for biofuels, bioliquids and biomass fuels laid down in Article 29 of Directive (EU) 2018/2001.
3. Where an operator or group of operators report co-benefits that contribute to the sustainability objectives referred to in paragraph 1 beyond the minimum sustainability requirements referred to in paragraph 2, they shall comply with the certification methodologies set out in delegated acts referred to in Article 8. The certification methodologies shall incentivise *as much as possible* the generation of co-benefits going beyond the minimum sustainability requirements, in particular for the objective referred to in paragraph 1, point (f).	3. Where an operator or group of operators reports co-benefits that contribute to the sustainability objectives referred to in paragraph 1 of this Article beyond the minimum sustainability requirements referred to in paragraph 2 of this Article, they shall comply with the certification methodologies set out in the delegated acts adopted pursuant to in Article 8. The certification methodologies shall include elements to incentivise as much as possible the generation of co-benefits going beyond the minimum sustainability requirements, in particular for the objective referred to in paragraph 1, point (f), of this Article.

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