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Conceptualizing fit-for-region carbon farming for the EU Carbon Removals and Carbon Farming (CRCF) Regulation

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Key messages

- A dual approach is needed that integrates both specific carbon farming practices and holistic agricultural models to ensure sustainability and alignment with EU policies.
- Promoting biodiversity is essential, as diversified agricultural systems can enhance both productivity and ecosystem services.
- Carbon farming methodologies must be context-specific, tailored to regional climatic and soil conditions for effective adaptation.





- Collaboration among stakeholders is vital to develop regional value chains that support local sourcing and sustainable practices.
- Stronger regional policies are necessary to allocate funding to eco-schemes, facilitating the scaling of carbon farming initiatives. An active government role can bring benefits in terms of integration of stakeholders and capacities, transparency, equality, use of best available data and regulatory coherence.
- Living Labs serve as effective platforms for co-creating tailored solutions and fostering innovation in carbon farming practices.

Introduction

Focus Group 1.5 reflections on fit-for-region carbon farming approaches addresses the local agri-food systems knowledge through regional examples and lessons learned. This report consolidates insights from various regions, building upon the M39 Expert Group findings published in January 2024, and draws from expert insights gathered during FG 1.5 meetings on September 9, 2024, and January 15, 2025, supplemented by desk research. The 1st European Carbon Farming Summit emphasized that EU climate actions should promote holistic sustainability transitions in sectors impacted by climate policies and the framework for land-based carbon removals. It advocates for defining agricultural and forestry practices within the context of biodiversity benefits and comprehensive sustainability criteria, while also addressing economic and social sustainability as well as food security. Therefore, carbon sequestration methods must be practical and beneficial for farmers, especially when considering transitions in land use or cropping systems in peatlands and organic soils. Given the distinct development of agricultural practices across various regions, it is essential to recognize specific regional characteristics and opportunities in sustainable transformations. This approach utilizes insights from operational projects, regional authorities, and stakeholder discussions to adopt a bottom-up perspective, complementing policy-oriented approaches and incorporating lessons learned on measures, trade-offs, and farmer perspectives.

Regulatory Framework

The regulatory framework aims to integrate various sustainability dimensions while promoting carbon removal and enhancing biodiversity within agricultural practices. During our FG meetings, as well as based on outcomes from the session in Valencia, the regulatory framework should revolve around individual carbon farming practices, biodiversity considerations, climatic and soil type factors, regional





value chains, policy considerations, regional integration, support of Living Lab approach supplemented by regional examples and lessons learned.

Individual carbon farming practices vs. sustainability transformation

- The need for a dual approach, defining specific practices that qualify for carbon removal credits while considering holistic agricultural models that meet sustainability criteria. This approach allows for governance simplicity, faster scalability, and alignment with existing policy frameworks (CAP, LULUCF).
- For instance, the French Label Bas Carbone emphasizes rigorous assessments and external audits to verify carbon sequestration practices. Ireland's Carbon Farming Framework actively engages farmers and stakeholders to shape methodologies based on public consultation, aligning practices with national climate goals.

Biodiversity considerations

- Biodiversity is essential to sustainable agricultural practices, affecting plant disease control and ecosystem resilience. There is a potential trade-off between biodiversity and agricultural productivity, emphasizing practices such as crop rotation and diversification.
- The Emilia-Romagna region exemplifies this by promoting practices like minimum tillage and organic farming to enhance biodiversity while improving carbon sequestration.
- Research indicates that diversified agricultural systems can boost ecosystem services and yield, as shown by studies confirming win-win outcomes for biodiversity and food production.

Climatic and Soil Type Considerations

- All initiatives must be context-specific, taking into account Europe's diverse pedo-climatic regions and their unique agricultural challenges.
- For example, Northern Europe's high proportion of organic soils demands a focus on emission mitigation, while lower latitudes can support a longer growing season.
- The Carbon Action Platform in Finland illustrates the importance of adapting farming practices to local conditions, using data from 101 pilot farms to monitor and tailor carbon farming strategies effectively.

Regional Value Chains





- Recognizing the significance of local sourcing and shorter supply chains, the framework encourages collaboration among agrifood value chain operators to adopt carbon farming practices that reduce carbon footprints.
- The Flemish Action Platform for CRCF is an example where collaboration among multiple stakeholders is facilitating understanding and implementation of carbon farming methodologies, creating eco-schemes that enhance soil carbon through crop selection strategies. This engagement fosters sustainable practices while supporting local economies.
- Leveraging the public, government lead initiatives to develop carbon farming scheme capacities can help navigate sub-regional and regulatory diversity and tap into needed implementation and governance capacities. Empowering the local governments and stakeholders to innovate within a supportive national framework is essential for accelerating progress. It is essential to translate the EU Framework into actionable strategies for the regions.

Policy Considerations

- Member states are required to allocate a minimum percentage of their agricultural funding to eco-schemes for advancing environmental and climate benefits. The framework advocates for stronger conditionality rules to safeguard soil and carbon reserves and stresses innovative support measures designed for sustainability enhancement.
- Emilia-Romagna's commitment to carbon farming through its Rural Development Programme exemplifies proactive regional policies with significant financial allocations aimed at encouraging carbon-conserving practices.
- In Finland, the government has passed a law that allows for part of the GHG emission reductions requirements of the transport sector to be compensated by emission reductions or carbon sequestration measures in other sectors (in the ESR and to a more limited extent in the LULUCF sector). This is implemented with a so-called flexibility mechanism within the biofuel blending requirement regulation. The mechanism foresees a system of carbon removal methodologies and MRV which aligns with the CRCF.

Integration into Regional Strategies

- Very important is consideration of alignment of carbon farming practices with regional climate adaptation and mitigation strategies.
- The lessons learned from Italy's LIFE ClimatePositive project indicate the necessity of integrating various stakeholder perspectives and best practices into larger regional policies, enhancing carbon management while addressing local forestry needs.





Living Lab Approach

- Living Labs serve as real-life environments for co-creating carbon farming solutions, facilitating experimentation, stakeholder collaboration, and capacity building around innovative agricultural practices.
- For instance, the LILAS4SOILS project, focusing on fostering carbon farming practices across Mediterranean regions, engages various stakeholders to test methodologies in real-life settings, ensuring that carbon farming solutions are tailored to local conditions while promoting environmental and business viability.

Communication with Farmers and Transparency regarding Carbon Removals

- Communicate with farmers and foresters clearly and transparently the implications of carbon certification contracts and other commitments, such as sustainability incentive programs within the food industry. Selling carbon credits for compensation or to an external buyer voids any contribution to value chain or regional climate targets. Carbon credit markets present a significant risk, especially in the context of supporting local and regional needs and value chains. Very important is to maintain a holistic perspective (regions' and farmers' perspective) and clarify boundaries of the CRCF and define its incremental value.
- Concretize the values (economic, agronomic, environmental, risk mitigation) for the land owners and practitioners to increase interest. Developing standardized methods for assessing carbon sequestration and biodiversity impacts across various agricultural contexts would facilitate greater transparency and trust in carbon farming initiatives. Understanding the socioeconomic conditions that influence farmers' willingness to engage in carbon farming is crucial for designing effective incentive structures. Knowledgeable and holistic farm management advice can help find optimal ways to incorporate carbon farming practices in order to maximize their agronomic and economic value.

Recommendations

The key considerations stressed several times during the FG 1.5 meetings are that the successful implementation of carbon farming schemes requires a holistic approach that prioritizes the voices of farmers. Engaging with farmers not only fosters trust but also ensures that the solutions developed are practical, relevant, and aligned with their needs and realities. **Carbon Farming (CF) schemes must adopt a multi-objective framework that supports sustainability transformation across various environmental, social, and economic dimensions.** To achieve these targets, robust





implementation and advisory structures are important, providing farmers with the guidance and resources needed to adopt sustainable practices successfully. **The core idea is to encourage pioneers who started with CF early to become sample/pilot farms (lighthouses) and develop the mechanism to compensate these farmers for advising others. Learning from existing regional initiatives is essential for refining carbon farming strategies.** Furthermore, leveraging the Horizon Europe Living Labs creates valuable opportunities to develop and test pilots that can address specific regional challenges, fostering innovation and collaboration within the agricultural community.

Figure 1 represents the attributes of region-fitted carbon farming schemes considering the holistic perspective including regional value chains, regional strategies, holistic agricultural/forestry models, capacity building and information flow. Key stakeholders are:

- farmers, farmer associations
- producers along the agri-food value chains
- advisors
- policy makers.



Figure 1. Scheme attributes that promote collective engagement and implementation by farmers, ensuring holistic sustainability at both regional and landscape levels. Source: authors





Background information

The recommendations presented in this document have emerged from discussions and collaborations among stakeholders involved in carbon farming initiatives, particularly within the context of the FG 1.5. These discussions drew upon the collective experiences of various regions, highlighting the challenges, opportunities, and lessons learned from existing CF practices across Europe.

In developing these recommendations, we considered previous knowledge that spans academic research, policy analysis, and grassroots agricultural practices. Insights from scientific studies underline the critical need for agricultural systems that not only focus on carbon sequestration but also prioritize biodiversity and ecosystem resilience. These findings reinforce the notion that carbon farming models must integrate biodiversity considerations at their core.

The identification of needs and barriers within this framework was informed by the experiences shared by farmers, policymakers, and researchers during our FG 1.5 meetings supplemented by desk research. Common challenges include confusion regarding the methodologies for carbon credits, insufficient engagement with local stakeholders, and a lack of tailored approaches that consider regional climatic and soil specifics. The discussions revealed that many farmers are hesitant to adopt carbon farming practices due to unclear benefits and the complexities of engaging with existing carbon credit markets. This feedback underscores the urgency of creating clear, practical pathways and supportive policies to promote carbon farming on a broader scale.

We believe that the recommendations provided represent options for addressing the identified barriers, primarily because they are grounded in stakeholder insights and empirical evidence. The emphasis on a dual approach—integrating both individual practices and holistic agricultural systems—reflects an understanding that agricultural transformation requires not only technical innovation but also systemic change.

The recommendation for better collaboration among regional value chains acknowledges that agricultural systems are interconnected. An inclusive approach that engages food processors, retailers, and policymakers alongside farmers can create sustainable pathways for carbon farming that benefit all stakeholders. This collaborative model is illustrated through examples such as the Flemish Action Platform for CRCF, where efforts are underway to bridge gaps in understanding and practice among farmers, ultimately fostering adoption and scaling of effective carbon farming measures. Strong and supportive policy frameworks are another critical aspect of the recommendations. It is recognized that effective policies must allocate sufficient funding to eco-schemes and establish clear

conditionality rules. Drawing from discussions about the challenges faced in regions like Emilia-





Romagna, whereby comprehensive financial support has led to successful carbon farming initiatives, we argue that empowering local governments and stakeholders to innovate within a supportive national framework is essential for accelerating progress.

Living Labs are proposed as vital mechanisms for fostering innovation through real-world experimentation. By providing platforms for multi-actor collaboration, these environments encourage the co-creation of solutions tailored to specific regional challenges. The integration of participatory approaches ensures that the voices of farmers and other stakeholders are prioritized, thereby enhancing trust and relevance in the adopted practices.

Developing standardized methods for assessing carbon sequestration and biodiversity impacts across various agricultural contexts would facilitate greater transparency and trust in carbon farming initiatives. Understanding the socio-economic conditions that influence farmers' willingness to engage in carbon farming is crucial for designing effective incentive structures.

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Meeting minutes of FG 1.5