



Reviewing the Contribution of the Land Use, Land-use Change and Forestry Sector to the Green Deal

Workshop IV Report: Carbon Farming in the CAP Strategic
Plans

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1. Overview

The following report contains a summary of the fourth workshop that was held as part of a four workshop series under the study “Reviewing the contribution of the LULUCF sector to the Green Deal” commissioned by DG CLIMA to experts from COWI, Technopolis Group and Exergia. The workshop entitled “Carbon farming in the CAP Strategic Plans” was held on the 25th May 2021.

2. Workshop objectives

The objective of the workshop was to explore design options for carbon farming schemes in the CAP Strategic Plans and to facilitate the exchange of experiences and good practices among relevant stakeholders.

The workshop, that was held as open webinar, was organised by DG AGRI and DG CLIMA and was divided into two main parts:

- Carbon farming as a new business model
- Lessons learnt from existing carbon farming projects

The workshop gave an overview on the Common Agricultural Policy (CAP) and its intertwining with carbon farming and presented the role of the land sector towards climate neutrality through different experiences in the Member States and from EU funded ongoing projects related to carbon farming.

Several interactive polls were introduced during the workshop to obtain direct feedback from the participants together with a survey that was collected subsequent to the event.

3. Introduction

The workshop began with an introduction from the moderator, **Tomasz Kowalczewski** (COWI) who welcomed the participants and introduced the guidelines for the workshop. The agenda is presented in Figure 1 below.

Agenda		
10:00 – 10:05	Introduction	Tomasz Kowalczewski, COWI
10:00 – 10:10	Welcome	Pierre Bascou, DG AGRI
10:10 – 10:15	The role of the land sector towards climate neutrality	Yvon Slingenberg, DG CLIMA
10:15 – 10:25	The CAP and carbon farming	Gijs Schilthuis, DG AGRI
Carbon farming as a new business model		
10:25 – 10:45	Setting up and implementing result-based carbon farming mechanisms in the EU	Asger Olesen, FSC & Clunie Keenleyside, IEEP
10:45 – 10:55	CAP instruments for sinks	Emmanuel Petel & Christine Falter, DG AGRI
10:55 – 11:10	Carbon farming with agroforestry	Patrick Worms, CIFOR-ICRAF, EU Agroforestry Federation & Gerry Lawson, UK Centre for Ecology and Hydrology, EU Agroforestry federation
11:10 – 11:20	Carbon farming schemes from Denmark – concrete examples of possible combined support	Thomas Skovgaard & Adam Høyer Lentz, Danish Ministry of Food, Agriculture and Fisheries
11:20 – 11:30	Carbon farming under nordic conditions	Perttu Virkajärvi, Luke & Pia Lehmusvuori, Finnish Ministry of Agriculture and Forestry
11:30 – 11:35	Carbon farming in The Netherlands	Sjoerd Miedema, De Nijle Mieden
11:35 – 11:40	Break	
Lessons learnt from existing carbon farming projects		
11:40 – 11:50	LIFE Carbon Farming Scheme	Jenni Kähkönen, STI
11:50 – 12:00	Interreg North Sea Carbon Scheme	Marjon Krol, ZLTO
12:00 – 12:10	Interreg North-West Europe Carbon connects	Valentina Sechi, Wetsus
12:10 – 12:15	Break	
12:15 – 12:55	Q&A discussion	Christian Holzleitner, DG CLIMA
12:55 – 13:00	Conclusions	Christian Holzleitner, DG CLIMA

Figure 1: Agenda.

4. Participants

Overall, 532 individuals registered to the workshop, from a broad range of stakeholder categories. Of these 415 participated in the workshop and provided their association beforehand, which is shown in Figure 2 below.¹

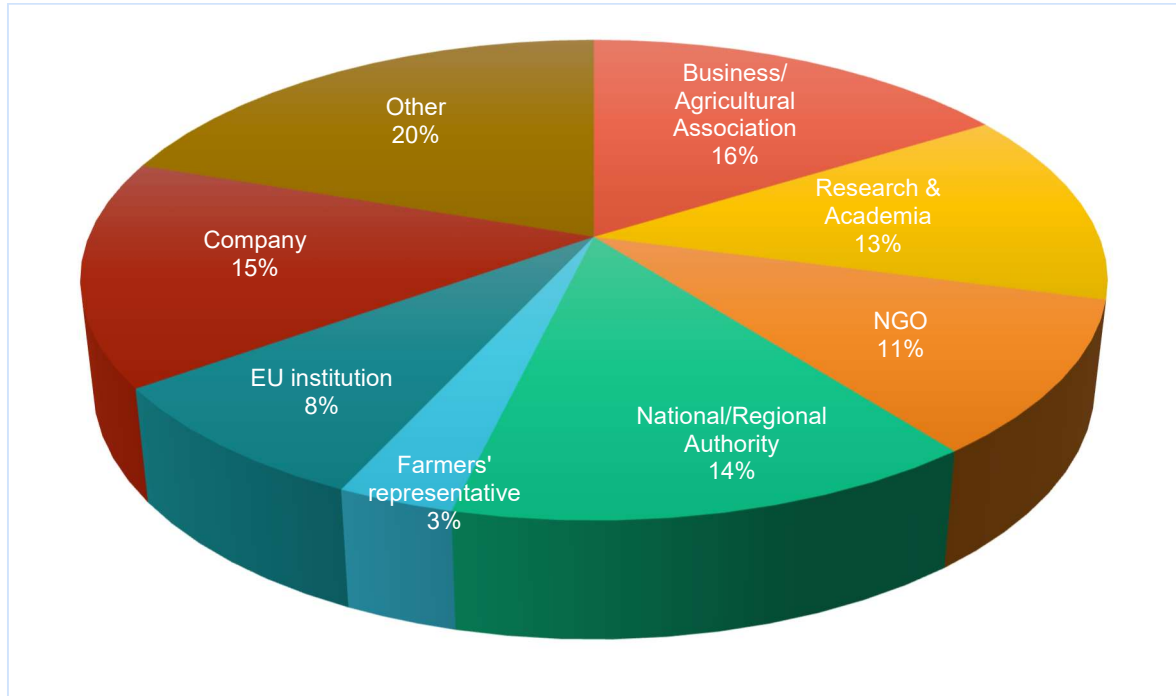


Figure 2: Makeup of stakeholder background of workshop participants

5. Welcome and setting the scene

Pierre Bascou from the European Commission (DG AGRI) provided an introductory presentation to set the scene for the workshop. He emphasised the overarching objective of the workshop, namely, to discuss the link between carbon farming and the Common Agricultural Policy.

Mr. Bascou pictured the vision for 2050, in which he highlighted that land and agriculture will have an important role in achieving climate neutrality. Carbon farming can represent a promising method to incentivise farmers to uptake more sustainable practices and therefore play a key role in the green transition for the EU economy, he remarked.

He then referred to the potentials of the new CAP for Member States to begin the testing of carbon farming schemes.

Mr. Bascou concluded that increasing organic matter and organic soils in land will be particularly relevant along with the protection of carbon stocks.

5.1. The role of the land sector towards climate neutrality

Yvon Slingenberg from the European Commission (DG CLIMA) introduced the role of the land sector towards climate neutrality.

¹ While National/Regional Authority was one of the selection options for participants to identify themselves, the category is generalized as 'Public authority' within this report.

Ms. Slingenberg stated the need to reduce greenhouse gas (GHG) emissions and pointed that in the 2050 scenario, agricultural emissions from livestock and fertilisers will make for the largest part of the EU emissions.

However, not only the land sector will contribute to the decarbonisation in other sectors through the development of a circular bioeconomy, but it will also provide large part of the removals needed to balance the hard-to-abate emissions, restoring the carbon sinks in soils and forests whilst increasing biodiversity and preserving ecosystems.

As a result, the European Commission is promoting carbon farming as a new green business model that is expected to provide new income opportunities for land managers. This model will become a pivotal example of how climate-driven action can lead to the generation of new revenues for the involved stakeholders.

Furthermore, Ms. Slingenberg emphasized the importance of establishing a credible governance system that guarantees additionality and permanence of carbon removals and pointed at the current development by the Commission of the regulatory framework for the certification of carbon removals.

Finally, Ms. Slingenberg referred to the recently published “Technical Guidance Handbook” that shall help practitioners start up and upscale carbon farming initiatives in the EU, which was presented more in detail by Mr. Asger Olesen (FSC) and Ms. Clunie Keenleyside (IEEP) later in the workshop.

5.2. Interactive session

An interactive software was used to gather the participants’ views through a number of poll questions.

The first poll question asked them to select their stakeholder category. 165 participants took part in the poll with the same breakdown of participant categories presented in Figure 2. Another 99 participated in various parts of the polls but did not indicate their stakeholder category. While the unspecified category is not indicated below, it is included as part of the other poll questions.

The largest groups of participants identified itself as coming from Research & Academia (21%) and public authorities (19%).

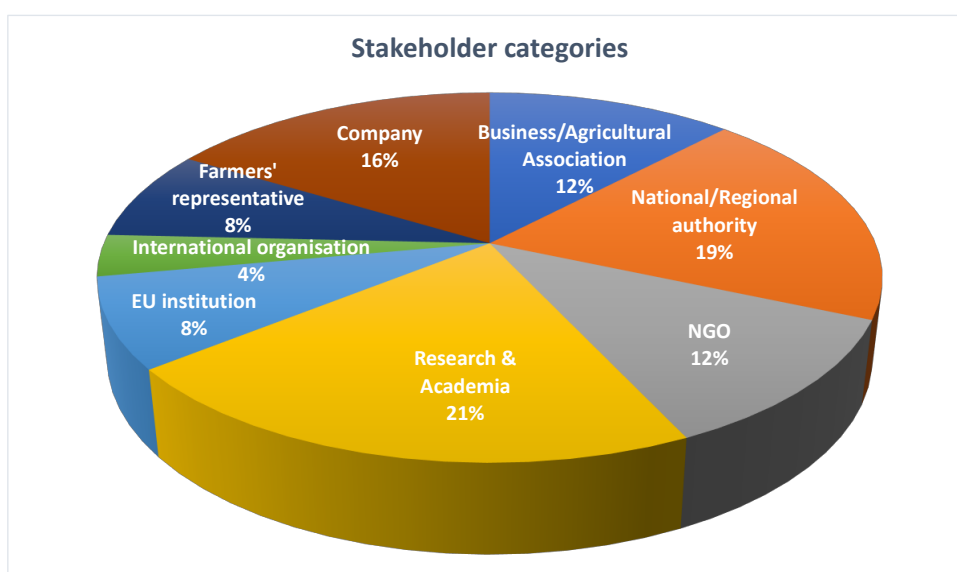


Figure 3: Responses to poll question 1.

The second poll question asked the participants what should be the scope of Carbon farming within the CAP. Multiple options were allowed, in particular:

- Increased carbon soil
- Protecting carbon in organic soils
- Carbon sequestration in biomass (e.g. afforestation)
- Carbon storage in biomass (e.g. harvested wood products)
- Reduction of emissions from livestock
- Reduction of emission from fertilizers use

203 participants took part in the **second poll question**. As shown in Figure 4 below, the most participants selected increased carbon soil as scope for Carbon farming within the CAP, followed by protecting carbon in organic soils and reduction of emissions from livestock and fertilizers use. Most categories were aligned across these options with only a few choosing other options with a higher frequency. Only participants from NGOs chose protecting carbon in organic soils over increased carbon in soil.

The least selected option was carbon storage in biomass (e.g. Harvested Wood Products) followed by carbon sequestration in biomass (e.g. afforestation), particularly from participants identified as NGOs as well as from international organisations and farmers' representatives. Still, within Research & Academia, carbon sequestration in biomass was selected with nearly the same frequency as the other options.

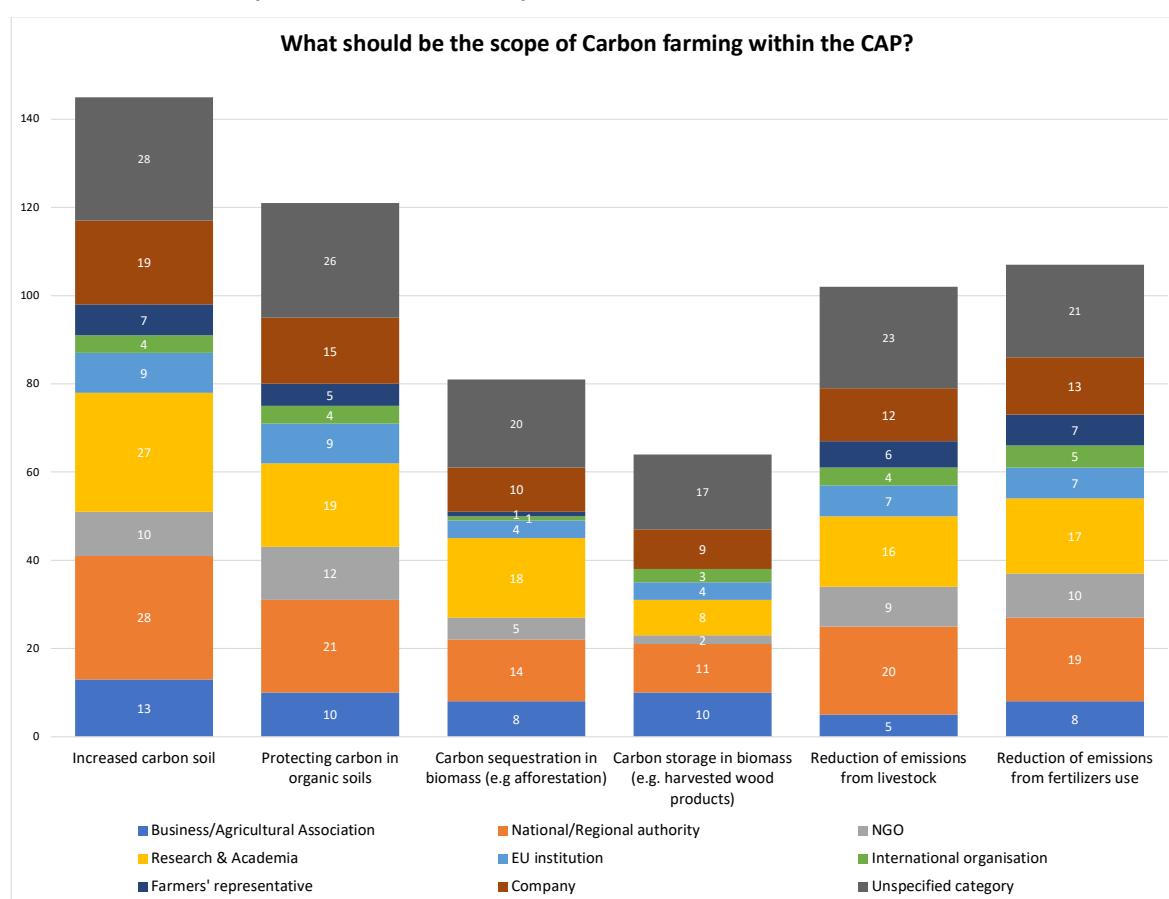


Figure 4: Respondents' answers to poll question 2.

5.3. The common Agricultural Policy and carbon farming

Gijs Schilthuis from the European Commission (DG AGRI) presented the main elements of the ongoing reform of the Common Agricultural Policy (CAP) in the context of Carbon Farming.

Mr. Schilthuis highlighted the importance of the CAP in contributing to the objectives of the European Green Deal, remarking that climate challenges were already embedded in the new CAP proposal. The major change comes from the shift from compliance to performance supported by a set of indicators and an upgraded set of environment and climate related instruments. He emphasized the ongoing negotiations between the European Parliament and the Council as paramount to ensure that the CAP reform will contribute to the goal of climate neutrality.

The CAP offers several policy instruments that will provide viable ways to strengthen climate change mitigation. Core actions will be undertaken by the Member States through their national CAP Strategic Plans due to be submitted to the European Commission by the end of 2021. The plans will be assessed in 2022 and subsequently implemented from 2023. Member States will develop their CAP Strategic Plans based on a SWOT analysis of their agricultural sector and rural areas, such as by examining, among the others, emissions and sinks, soil organic carbon. The SWOT will form the basis of a needs assessment, which will feed into an intervention strategy built around the necessary agricultural practices through mandatory and voluntary actions, budget allocations, and targets set at the level of result indicators such as for areas under specific agricultural practices. CAP Strategic Plans will have to take into account the findings, ambitions and targets developed in relevant national planning tools for environment and climate.

In December 2020 the Commission issued recommendations to all Member States for their CAP plans, addressing their specific problematic areas including in relation to the ambitions of the European Green Deal. It will be for Member States to decide on concrete approaches and tools appropriate in their national context. Depending on their assets and challenges, Member States can ground their agriculture's contribution to climate protection in a mix of practices. The CAP is a substantial instrument but will need to be employed in combination with other EU and national regulatory measures and sources of funding.

Furthermore, Member States have to reach out and involve stakeholders in preparing and monitoring the implementation of the forthcoming CAP instruments. All CAP plans will be made public.

5.4. Interactive session

The third poll question asked the participants what practices are more suitable for carbon farming via the CAP Strategic Plans. Multiple options were allowed, in particular:

- Peatland restoration and rewetting
- Grassland management
- Management of mineral soils
- Agroforestry
- Afforestation
- Decrease of livestock emissions
- Other
- Not possible to define

203 participants took part in the **third poll question**. As shown in Figure 5 below, there were three options that were selected with the highest frequency, starting with grassland management, followed by agroforestry and peatland restoration and rewetting. Whereas grassland management was the most equally chosen option across the respondent categories, those from public authorities as well as farmers' representatives were more likely to select management of mineral soils, rather than peatland rewetting.

In addition to the options of 'Other' and 'Not possible to define', afforestation was the practice that received the least amount of responses, whereas management of mineral soils and decrease in livestock emissions had almost the same amount of responses with a big share represented by the respondents falling in the unspecified category.

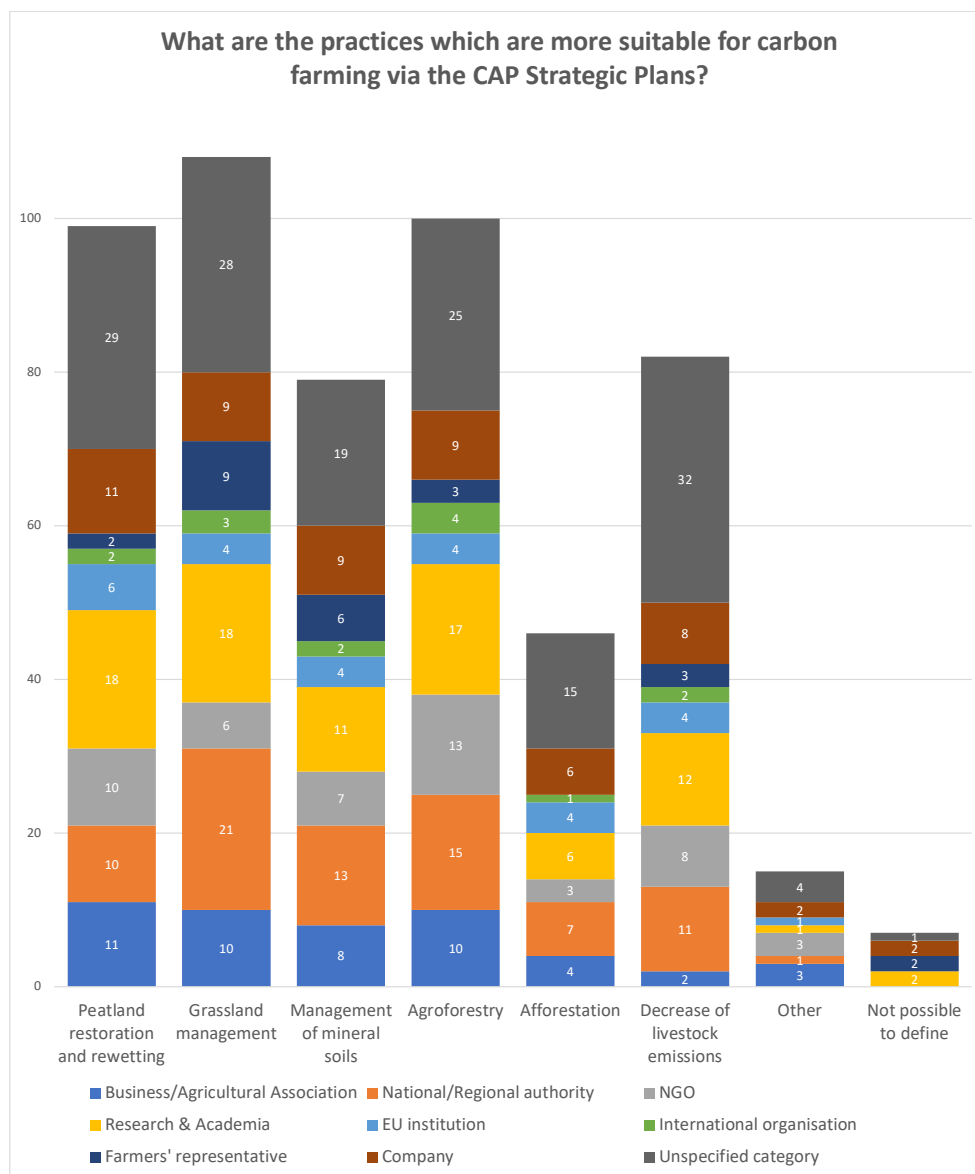


Figure 5: Respondents answers to poll question 3.

6. Part 1: Carbon farming as a new business model

This part of the workshop covered the various elements necessary for deployment of carbon farming as a new business model in the EU and experiences to date. Along with a presentation of the Technical Guidance Handbook on the implementation process, several examples on how to set up and implement result-based carbon farming mechanisms (e.g. peatland restoration or agroforestry), were provided and discussed in greater detail. The presentations gave concrete examples of existing carbon farming schemes in Denmark, Finland and the Netherlands.

The perspective of Member States in the development of their Strategic Plans to implement carbon farming was also provided. The speakers presented and referred to different EU and national funding mechanisms, including eco-schemes under the new CAP, noting that the potential of carbon farming implementation varies greatly among the Member States.

6.1. The Common Agricultural Policy and carbon farming

Asger Olesen (FSC) and **Clunie Keenleyside** (IEEP) presented the Technical Guidance Handbook commissioned by the European Commission, to provide analytical support for the Operationalisation of an EU Carbon Farming Initiative.

Mr. Olesen noted that the study had relied on previous work developed within the Kyoto Protocol, national schemes in Australia and New Zealand as well as private and local initiatives in the EU. Five case studies were developed within the field of peatland restoration and/or rewetting, agroforestry, livestock, grassland, and soil organic carbon. These case studies explored the technical readiness and implementation of carbon farming. Peatland restoration and/or rewetting is considered the most technically complete and available good practice, so the speaker focused on presenting examples of action on peatlands during their presentation, presenting the analysis carried out on initiatives in different countries from the EU such as MoorFutures (Germany), Peatland Code (UK), MaxMoor (Sweden) and Green Deal implementation procedures in the Netherlands. Such schemes rewarded ex-ante avoided emissions through ending of drainage, whereas incentives for removals revealed to be not yet developed.

Mr. Olesen concluded that:

- for pre-operational and pilot phases, all schemes have relied on a mix of funding instruments (public and private grants, expert support, etc.),
- scalable operation for revenue needs a downstream delivery model carefully designed and
- three different delivery models from existing practices were of relevance.

Ms. Keenleyside further explained the Technical Guidance Handbook.

First, she explained how result-based payments (RBP) can achieve a range of specific environmental objectives, among which reducing GHG emissions and promoting carbon sequestration. RBP are based on indicators to monitor the environmental objectives. From the land's manager point of view, the RBP is linked to verifiable indicators of either the direct environmental objective or a reliable proxy of that indicator. As such, it results in a system where the higher the quality of the indicator, the higher the payment. This system minimises the risk for the land manager while he oversees the management and choice of indicators.

Ms. Keenleyside also introduced the different costs associated to a shift to carbon farming. Up-front investments in land-use change are the main source of expenses for land managers. There are also additional opportunity costs and ongoing implementation costs. On the other side, scheme manager should bear the costs for pilots, knowledge and innovation, monitoring, reporting and verification.

Ms. Keenleyside gave examples of two RBP pilot carbon farming projects. The first example is the Swiss regional pilot Ebenrain that was funded by a Swiss bank to offset emissions locally. This provided a six-year commitment for farmers, ensuring them wider benefits to include advice, a menu of measures, and staged payments linked to soil sampling in the first, third and sixth year.

In the Portuguese project Montado a wide variety of result-based indicators was developed:

- Valorise effective management of natural regeneration system
- Preserve soil health and functionality
- Tree layer capable of regeneration
- Biodiversity of Mediterranean grassland and other elements conserved

Lastly, Ms. Keenleyside presented how the Technical Guidance Handbook should enable land managers to find the suitable and relevant type of carbon farming scheme for their proposed area of development with a decision-tree approach, including the selection of rewarding mechanisms, for example based on action-based payments, result-based payments and hybrid schemes.

6.2. CAP instruments for sinks

Emmanuel Petel and **Christine Falter** from the European Commission (DG AGRI) presented the instruments available in the CAP.

Mr. Petel introduced the definition and eligibility rules for agricultural land and remarked that the basic definition will not change with regard to agricultural activity and the three land use types: arable land, permanent grassland and permanent crops. Nevertheless, there will be a better recognition for paludiculture as activity as well as for agroforestry systems under the three land use types.

Enhanced conditionality is an integral part of the future CAP framework. It must cover farmers receiving CAP payments, including small farmers as they manage a significant share of the area.

Common minimum rules are necessary to safeguard the level-playing field between farmers. In this regard, enhanced conditionality includes three GAEC relevant for mitigating and adapting to climate change which are as follows:

- GAEC 1: Maintenance of permanent grassland based on a ratio of permanent grassland in relation to agricultural area;
- GAEC 2: Protection of wetland and peatland under the topic of Climate Change (mitigation and adaption);
- GAEC 10: Ban on converting or ploughing permanent grassland in Natura 2000 sites under the topic of Biodiversity and Landscape.

Other GAECs referring to soil erosion, burning of residues, landscape features are also contributing to climate objectives.

Another key part of the CAP is the eco-schemes under the funding of Pillar I. Member States will have to allocate a portion of their Pillar I funding to eco-schemes aiming to directly benefit the environment and climate (without co-financing). Participation will be voluntary for farmers. Agricultural practices that could be supported by eco-schemes will need to meet certain conditions related to their environmental objectives, ambitions and areas of action. In relation with eco-schemes, the Commission has issued in January 2021, an indicative list of practices to be supported including agroforestry and carbon farming measures.

Furthermore, Ms. Falter presented on the topic of Pillar II for the new CAP, the possibilities of rural development funding for agroforestry and peatland restoration. In terms of agroforestry, there will be continuity with the current CAP. The EAFRD support will be available for establishment, regeneration or renovation, and maintenance of agroforestry systems. However, maintenance will be situated under a different intervention than for the establishment, regeneration and renovation. Additionally, the support rate of the establishment, regeneration or renovation will go up from 80% (current CAP) to up to 100% in the new CAP.

Concerning the support for peatland under Pillar II, it will be available for:

- Restoration of drained peatland / rewetting
- Payments to conserve and restore wetland and peatland in Natura 2000 areas
- Diversification of the rural economy (e.g. recreational or touristic infrastructure etc.)

Lastly, it was concluded that good articulation between the different CAP instruments in the CAP strategic plans to address carbon farming in the future will facilitate for the advancement of the field.

6.3. Agro-forestry within the CAP

Patrick Worms and **Garry Lawson** (EURAF) presented the topic of agroforestry within the CAP.

Mr. Worms introduced the presentation defining the differences between the two terms “forest” according to the definition based on the UNFCCC Marrakesh Accords and the EU definition of “agroforest”. The latter definition leaves an open interpretation for Member States to define the maximum and minimum number of trees per hectare.

Mr. Lawson presented an overview of the forest areas and existing trees in the Member States. While the planting rates can be considered remarkable with high levels of reforestation and planted seedlings, there are still great differences between Member States such as Slovenia or Spain, where notable higher percentages of trees are situated outside forest areas.

Agroforestry mitigates 3 tonnes carbon/ha per year and it meets the requirements for permanence (as it produces construction timber and has deep-soil impacts), has some environmental benefits (N₂O and ammonia leakage reduction, animals can stay longer outdoors, increase farm biodiversity, increase soil organic carbon). Agroforestry needs anyway incentives to cover the establishment and maintenance costs.

Despite the presence of agroforestry within the last CAP, the figures show that the uptake by Member States and farmers has not achieved the expected results. For instance, only 2.5% of the planned expenditure by 2019 of EUR 64M was actually spent. Member States tend to underspend forestry and agroforestry budgets, directly influencing the targets and achievements set up by the CAP. As such, Member States should clarify and extend the conditions required for full basic payment eligibility in parcels containing trees (e.g. when agriculture is conducted on more than 50% of the surface area).

In the context of the new CAP, five agroforestry eco-schemes could be offered by Member States to farmers through a satisfactory completion of various stages covering: planning for trees on farms; establishment of landscape features; enrichment of landscape features; silvopasture or silvoarable establishment; regeneration of mature silvopasture or silvoarable lands.

Lastly, it was stressed that it shall be ensured that agroforestry is included in the CAP Strategic Plans of each Member State.

6.4. Carbon farming schemes from Denmark – concrete examples of possible combined support

Thomas Skovgaard and **Adam Høyer Lentz** (Danish Ministry of Food, Agriculture and Fisheries) presented carbon farming schemes in Denmark.

The Danish government has put forward two plans with ambitious goals, namely, to reach 70% greenhouse gas reductions by 2030 and climate neutrality by 2050. The agriculture sector in Denmark has an incentive to reach this target as the country has almost two-thirds of land under cultivation. This land accounts for 30% of all GHG-emissions in the country. In this context, carbon rich peat soils represent one of the primary emission sources, emitting 4,8 million tonnes of CO₂eq (in 2019).

Mr. Skovgaard presented the Danish objective to reduce CO₂ emissions from carbon rich (organic) soils within the area of peatland restoration and rewetting. To accomplish this goal, Denmark offers landowners a variety of payment schemes. Such schemes are financed

either as lowland schemes under the Rural Development Programme (RDP), as a Climate Lowland scheme 100% nationally financed, or as a Climate Forest Fund financed with a combination of national and private funds. The scope of this project is the total area of cultivated organic soil, accounting for 7% of the total cultivated area and equal to 170,000 hectares of land.

All schemes will be based on voluntary efforts due to the uneven location of organic soils throughout the country. Landowners are compensated for their loss of income, and from 2023 they expect to pay the compensation as a one-time compensation.

Moreover, the government proposal towards 2030 is to restore, rewet or set aside at least 88.500 hectares of carbon rich peat soils, which is expected to have a climate impact of 0,9 million tonnes of CO₂ emission reduction.

A varied picture of the upcoming challenges was then presented, focusing on both barriers and synergies. Barriers could include the risk of emission of phosphorus to the environment; the possibility of peatland projects to be in conflict with regulation related to the protection of nature (e.g. Natura 2000); the level of compensation and the implementation time required by peatland projects. On the other side, peatland projects have the advantage to enhance nature and biodiversity and reduce nitrogen leaching. Moreover, Denmark can count on high level of data and ongoing national research and the flexibility accorded by the fact that there is more than one scheme.

Lastly, the 'Targeted nitrogen regulation' scheme was given as an example of maintenance and enhancement of soil organic carbon with a primary objective to reduce leaching of nitrogen to the aquatic environment. This is obtained through establishing catch crops or implementing alternative nitrogen reducing measures (e.g. set-aside or sowing energy crops), for which farmers will be financially compensated. As a result, catch crops will maintain or enhance the level of organic carbon in the cultivated soils for an expected climate impact of 0,5 million tonnes of CO₂ emissions reduction in 2030.

6.5. Carbon farming under Nordic conditions

Perttu Virkajärvi (Luke) and **Pia Lehmusvuori** (Finnish Ministry of Agriculture and Forestry) followed up with a presentation of a case study of carbon farming under Nordic conditions, focusing on Finland.

Mr. Virkajärvi began the presentation giving insights about the Finnish agricultural conditions, remarking that the soil organic carbon content is high in most part of Finland which is a challenge for LULUCF emissions. Additionally, the cold winter and long snow cover have implications for the choice of crops and forage species, as well as a larger presence of spring types of cereals and rape seed.

Mr. Virkajärvi presented further the results of a study concerning agricultural emissions in organic soils. The data showed that annual crops have the highest emission factor in relation to other agricultural systems. Although the mitigation potential per tonne of CO₂ is lower, there is a larger application area on mineral soils that partly compensates this lower change in emission per hectare compared to the organic soils.

Ms. Lehmusvuori followed with a separate presentation on the carbon farming eco-schemes that Finland intends to include within the CAP strategic plan to achieve environmental and climate objectives. Finland has planned to offer eco-schemes for crop cover during winter and grass cultivation without plant protection products and fertilizers and with certain species.

With regard to the agro-environmental commitments under the RDP, Finland has planned to include several measures, namely catch crops; soil improving crops; grass cover on peatland fields after arable crops without plant protection products and fertilizers; application of organic matter to arable land; controlled drainage management; constructed wetlands management; grazing of semi-natural pastures; and organic production.

6.6. Carbon farming in the Netherlands

The presentation by Mr. **Sjoerd Miedema** (De Nije Mieden) gave the local perspective of an organic farmer implementing carbon farming in the Netherlands. He was the first Dutch carbon farmer working with peat meadows who has also achieved lower carbon emissions through peatland activities.

Mr. Miedema's main point is that soil can play a key role in increasing the sink with a direct effect on improving biodiversity. He proposed implementing measures that avoid mineral fertilisation, the use of chemicals and tillage. He stressed the importance to reward front-runners and rethink the role of farming as key to the solution.

6.7. Interactive session

The **fourth poll question** asked participants to identify the barriers to the uptake of carbon farming schemes. Multiple options were allowed, in particular:

- Lack of tailored advisory services
- Uncertainty about funding opportunities
- Regulatory obstacles
- Insufficient reward for co-benefits
- Lack of MRV capabilities
- Cooperation or collective actions insufficiently supported

143 participants took this poll. As shown in figure 6 below, the most relevant barrier to the uptake of carbon farming schemes is uncertainty about funding opportunities. This choice was homogenously given across the respondent categories, except for international organisations and companies that stressed more the importance of insufficient support for cooperation or collective actions (both categories) and the lack of MRV capabilities (companies).

Beyond funding opportunities, the other two barriers that stood out within this poll question are insufficient rewards for co-benefits as well as lack of tailored advisory services.

Regulatory obstacles was the least selected option with respondents from public authorities selecting it among the less important barriers and those from NGOs considering it on the contrary the most relevant one.

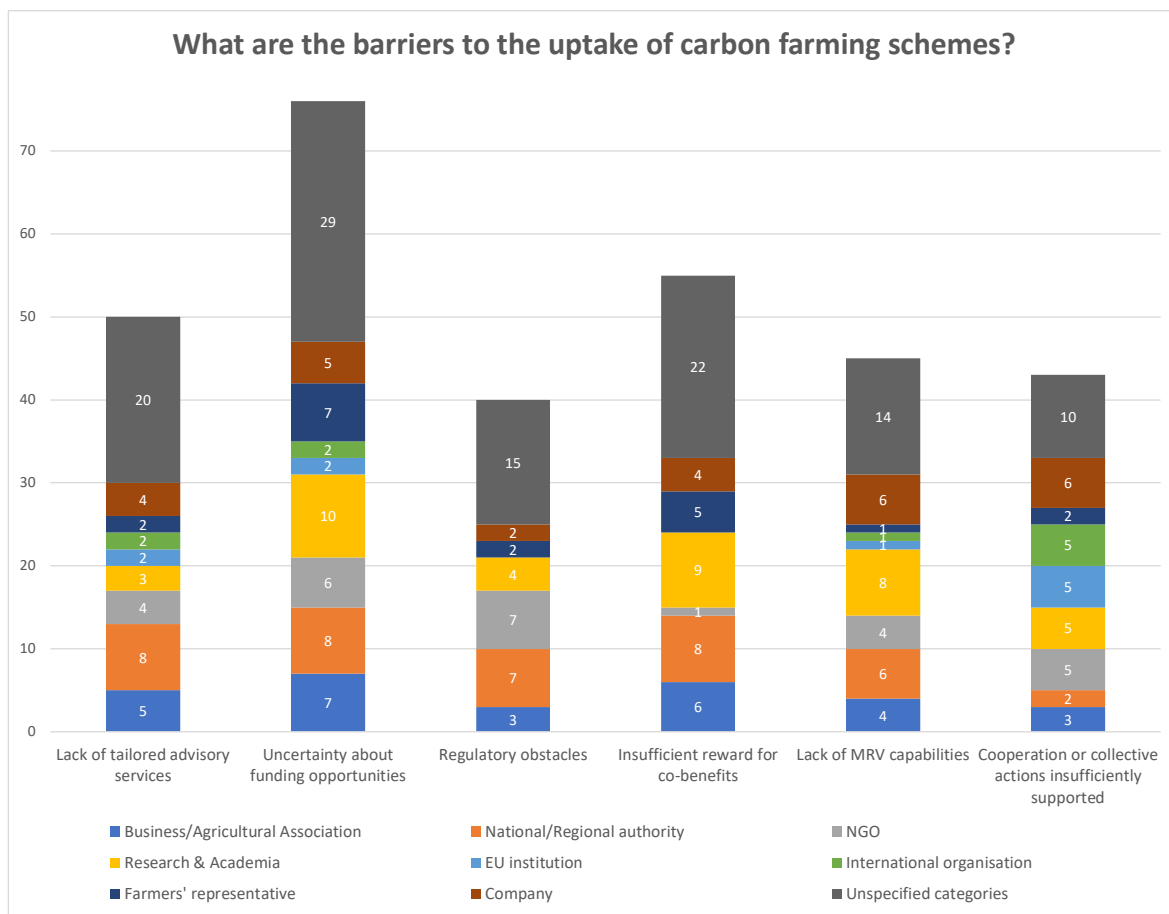


Figure 6: Respondents' answers to poll question 4.

The **fifth poll question** targeted participants from public administrations. They were asked if they were planning to include Carbon farming schemes in their CAP Strategic Plan. Respondents could choose among the following options:

- Yes
- No
- Possibly
- Not yet decided
- Already did

89 participants identifying themselves as coming from all categories took this poll. As shown in Figure 7, almost half of the respondents replied positively to the inclusion of Carbon farming schemes in the CAP Strategic Plans. 50% of the respondents identifying themselves as from public authorities signalled the plan to include carbon farming schemes in their CAP plans, whereas 25% replied, respectively, that this is a possibility or that it hasn't yet been decided.

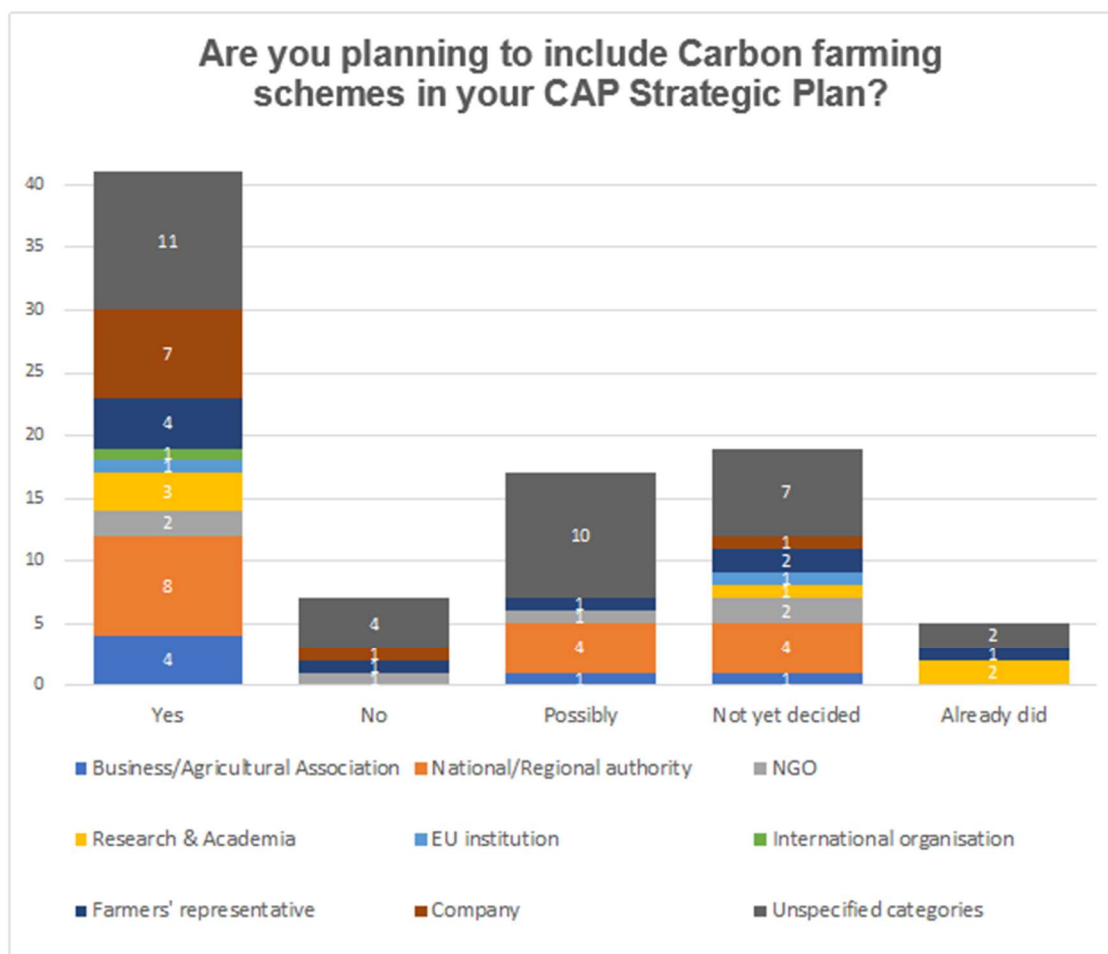


Figure 7: Respondents' answers to poll question 5.

7. Part 2: Lessons learned from existing carbon farming projects

The second part of the workshop focused on the lessons learned from the existing carbon farming projects. The presentations gave an overview of the implementation of carbon farming schemes facilitated through EU funding and presented existing carbon farming business models.

The lack of awareness about carbon farming in the agricultural sector and the fact that certain policies are considered by farmers restrictive rather than supportive were emphasised. However, there is a market for carbon farming as actors become increasingly attentive to aspects of sustainable farming. Nevertheless, motivation should be the guiding principle rather than obligation. A European framework should be tailored to the needs of local initiatives to encourage local and regional investment in carbon farming. A particularly promising carbon farming option is climate action on peatlands, due to its mitigation potential and lower implementation challenges. Moreover, actors would greatly benefit from more information on the advantages from restored peatland, a common certification and accreditation system, a centralised organisation for coordinating GHG monitoring standard, and a common framework of incentives and (eco-)credit systems.

7.1. LIFE Carbon Farming Scheme

Jenni Kähkönen (ST1) presented the outlines of their project, LIFE Carbon Farming Scheme, financed by the EU LIFE program.

The project's main objectives is to:

- Develop understanding how to incentivise carbon farming
- Identify the factors that compose an efficient market
- Demonstrate carbon sequestration in different regions in Europe

In order to address the supply and demand of carbon removals, the project has developed "The case farm pilot", where viable carbon farming methods are tested and reviewed, and the carbon sequestration potential is estimated in test farms located in different European climate zones.

Additionally, an open survey for farmers has been launched that aims at increasing the knowledge of stakeholder priorities regarding various aspects of nature-based carbon sequestration, and to better understand how to incentivise actions through policy and market mechanisms.

The project has also developed a trading pilot in Puro.earth marketplace, which quantifies the achieved carbon removal using soil amendment fibre from pulp and paper mill sludges to store stable carbon into agricultural soils.

With regard to funding mechanisms to support carbon farming, Mrs. Kähkönen emphasised that the certification of carbon removals and measuring, reporting and verification are key pre-requisites to incentivise a favourable environment for funding. Furthermore, she put forward the key actions to improve the funding market:

- Ensuring initiation of carbon sequestration activities through public financing
- Sales of negative emissions through voluntary markets
- Regulatory markets will enable growth of carbon sequestration activities

Finally, the following next steps of the LIFE project were presented:

- Report on how to incentivise farmers and foresters to take up scalable carbon sequestration actions in EU including the study of the cost of value chain
- Summary of review of the risk assessment and policy aspects for best practices for a carbon farming scheme
- Report of the results of carbon credit trading demonstration in Puro.earth marketplace with test farmers and foresters
- Report on 5-10 best methods to bind carbon in European agricultural and forest ecosystems and prevention of the carbon loss (soil management, fires)
- Final Guidance at the end of project in spring 2022

7.2. Interreg North Sea Carbon Scheme

Marjon Krol (ZLTO) presented the Carbon Farming project, undertaken by seven partners including farmers associations, knowledge institutes and public institutions from four different countries. The project is 50% funded by the Interreg North Sea Region program under the European Regional Development Fund for the period of 2018-2022. The project's main objective is to develop business models for carbon sequestration to incentivise farmers to invest in carbon farming.

Ms. Krol presented the results of a survey conducted to map the barriers farmers encounter when starting carbon farming. These show that there is a lack of knowledge about carbon farming. Additionally, economic uncertainty and contradictory and restrictive policy are considered main obstacles for farmers. Based on these results, the project developed three work packages focusing on developing techniques for carbon sequestration (W1), the study

of four different business models for carbon farming (models within and outside the agri-food chain, models at the farm level and models including government institutions) (W2), and the development of 15 pilot projects to test the different business models (W3).

Ms. Krol emphasised that carbon farming serves multiple goals and has the potential to increase climate ambitions due to the motivation of companies to distinguish themselves in sustainability. The project encourages local farmers to work together in a transparent, unique and visible manner that creates additional benefits for biodiversity, landscape and water.

Ms. Krol recommended focusing on motivation instead of obligation. This can be provided by an integral framework where policy goals are connected and do not conflict with local aspirations. The focus should remain on the benefits for the farmers. Knowledge dissemination remains a powerful tool to create awareness and make transparent the added value of carbon farming for farmers. A motivating reward system should stimulate the blending of public and private rewards, allowing customisation for farmers. Further actions should continue to support the market and embrace and support local initiatives and an efficient measuring, reporting verification system.

7.3. Interreg North-West Europe Carbon Connects

Valentina Sechi (Wetsus) presented the Carbon Connects project, which is an Interreg project funded by the European Regional Development Fund. The project is carried out by 18 partners.

The main objective of Carbon Connect is to change the traditional GHG-emitting land management practices to sustainable low carbon alternative practices in the main peatland containing regions of North-West Europe. The program provides a farmer-to-farmer learning programme that promotes the benefits of alternative land management and the adoption of sustainable low carbon farming practices. So far, a report was produced to evaluate potential business models of low carbon alternative practices, and established pilots for field-testing these practices.

When working with peatland restoration, the project identified an uncertainty in terms of a missing market for peatland related products. Additionally, there exists a technical challenge for rewetting and for alternative crop establishment. There is also a lack of societal recognition of the importance of peatlands among farmers.

Finally, the project detected a policy gap revealing that there is:

- no common matrix to estimate the benefit from restored peatland;
- no common certifications and accreditation system;
- no centralised organisation for coordination of GHG monitoring standard;
- and no common framework of incentives and (eco) credit systems.

Ms. Sechi concluded that the current carbon-credit systems and incentives do not effectively support sustainable peatland management practices and restoration. Although a few examples at national and regional level have been implemented, international standards are far too expensive for most small peatland areas. Ms. Sechi suggested that an easy and less expensive accreditation system based on proxies to assess GHG emission reduction (e.g. GEST) can be suitable for the peatland context.

Quality can be guaranteed, and costs lowered if the accreditation is carried out to a regional standard. To ensure that the work continues in the expected progression, common guidelines are needed that measure and account for carbon credits and other ecosystem services.

8. Q&A and closing remarks

Following the presentations, a discussion took place, moderated by **Christian Holzleitner** from the European Commission (DG CLIMA) and based on the questions obtained from the interactive polls and the discussion in the chat. The most commonly raised ones concerned the current state of rewarding of farmers that are frontrunners in implementing carbon farming, the feasibility of combining public and private funds, and the co-benefits of carbon farming.

With regard to the possibility to reward farmers that are already practising carbon farming, Gijs Schilthuis (DG AGRI) pointed to the experiences already shared in the workshop, specifically the example from the Netherlands, showing that farmers in Member States are indeed rewarded for their implementation locally, although there might be more efforts needed to make this universal.

With regard to the possible combination of public and private funds, he remarked that the role of public authorities is not necessarily the provision of public capital but also to ensure the certainty in the planning process as this will most likely attract additional funding streams from private capital.

He encouraged the audience to have a look at the Technical Guidance Handbook, as it provides examples on how activities can have additional local environmental benefits. He concluded by underlining how the carbon farming initiative which will be launched this year by the Commission is part of the European Green Deal in combination with other initiatives and actions that aim to change the way we consume, farm and transport. All these aspects need to be coordinated and developed in the same direction, which is precisely the challenge that we are currently tackling.

Christian Holzleitner (DG CLIMA) provided the closing remarks on the workshop. He stated that the workshop has given an overview of the overall market size for carbon removals and how could look like in the future. There is a need to continue to push this discussion forward.

He stressed the importance of finding a balance between food production and carbon farming. Carbon removals should be a business integrated into EU sustainable farming that should be provided with additional funding mechanisms that ensure further progression in the field. Ongoing initiatives from the European Commission will further incentivise action for carbon farming schemes.

He concluded by noting that the transition will not be at low-cost and that therefore funds need to be mobilised from different sources, such as from the CAP budget as highlighted in the workshop, but also from major polluters.

9. Survey analysis

9.1. Background for survey

On top of the polls that were taken and commented during the workshop, a specific survey was launched after the workshop. The objective of the survey was to collect relevant input with regard to the funding mechanisms to support carbon farming initiatives, as well as to the drivers and barriers faced by stakeholders in the implementation process. The survey included the following specific questions:

- What type of stakeholder are you? (Options: Academic/research institutions, Environmental Organisation, Public authority, Business association, EU Citizen, Trade Union, Company/Business organisation, Non-EU Citizen, Training provider,

Consumer organisation, Non-governmental organisation (NGO), Other with if you selected Other, please specify)

- How do you see the interaction between CAP funding and other financing opportunities such as State aid or private markets?
- What are the biggest or most common implementation challenges for the setting up and implementation of Carbon Farming schemes under the CAP?
- What kind of action could be taken at EU level that would enable a stronger uptake and upscaling of carbon farming initiatives (for examples, foster peer-to-peer knowledge, remove or simplify regulatory barriers etc.)?
- What is the scope of Carbon farming (for example, should it aim at incentivising carbon sequestration in soil or biomass or to protect or store carbon or reduce emission)?

9.2. Overview of respondents' categories

44 responses were collected². The highest number of replies was provided by participants from public authorities making up 23% of all respondents, followed by those from academic/research institutions and NGOs as well as a few environmental organisations. The category 'other' was made up of farmers and their representatives and one non-EU citizen. Participants identified as EU citizens, trade unions, training providers or consumer organisations did not provide any contribution. The figure below presents the breakdown of the respondents' categories.

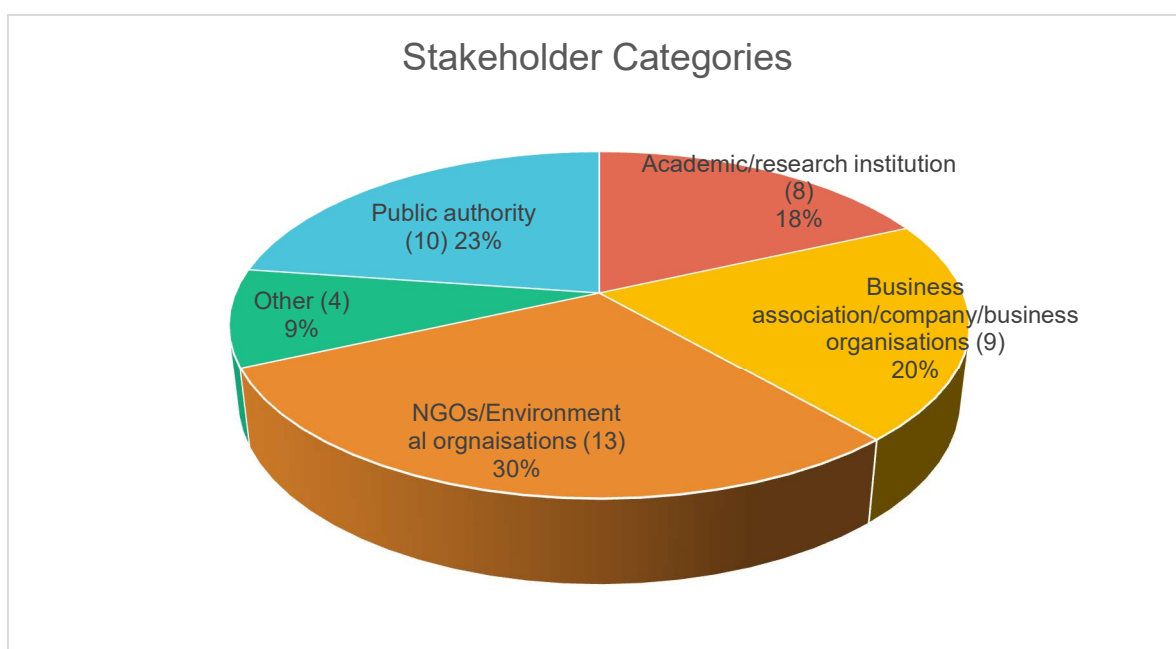


Figure 8: Breakdown of type of stakeholder that took part in the survey after the workshop.

² 45 responses were collected in total, but one was removed as it was a copy of another response. 44 responses were then analysed.

9.3. How do you see the interaction between CAP funding and other financing opportunities such as State aid or private markets?

Public authorities (9 replies). Respondents supported the interaction between different funding opportunities, remarking that private carbon markets can act as an example for the CAP to ensure that the focus from the CAP is on climate mitigation and adaption within the LULUCF sector. State aid, on the other hand, will remain the subject of further negotiations and is currently driven by different national priorities than the CAP plans. While one respondent remarked that carbon farming schemes should be fully market-based in the end, others added that the information on the interaction between funding schemes is still unclear and should be approached more coherently in the Member States. It was suggested that CAP funding, state aid and private markets should jointly contribute with broader policy measures.

Academic/research institutions (8 replies). There was a consensus among these respondents that CAP funding remains crucial and they welcome modalities between CAP, state aid and private markets as long as the framework is well designed. They agreed that farmers are the base of bioeconomy. Cost-effectiveness and a focus on environmental aspects and biodiversity was mentioned as important elements with regard to double funding (e.g. carbon farmers receiving financial benefits from both the CAP as well as from a private market). Concerns were expressed regarding the use of CAP funding to reward carbon farming, especially in terms of the risk associated with greenwashing (i.e. CAP money will be received by farmers anyway with no additional incentive to go beyond baseline practices).

Business associations/company/business organisations (9 replies). There was high support to the interaction between CAP funding and other financing opportunities. Remarks included their support for a hybrid solution that fosters a transition to regenerative agriculture and carbon farming practices. CAP funding will complement private markets that have a role to cover a share of ongoing management and profit requirements. One of the respondents suggested that farmers could access in particular both CAP funding as well as carbon credits on the market, whereas one respondent remarked that a private market carbon credit-system may not be a good option due to requirement of 'additionality' and the lack of consensus on soil carbon measurement methods and carbon sequestration-certification. Focus on certification standards was highlighted. Attention to forestry and agroforestry was also highlighted as a relevant distinction so that ecosystem services are properly compensated through a carbon market.

Environmental organisations/NGOS (13 replies). Respondents highlighted that the interaction between CAP funding and other funding opportunities should be a priority, mentioning that CAP funding contributes to lowering barriers for entry and to the costs of change of operations and behaviour. They highlighted that CAP should provide incentives to continue low carbon agriculture based on results from pilots. It was also remarked that funding for carbon farming, especially on forestry, should be supported outside the CAP including measures such as mandatory investments in carbon certificates to stimulate industry participation. Furthermore, it was suggested that the interaction should be put on public funding in combination with private non-market-based financing such as Extended Producer Responsibility mechanisms and value chain financing. Some respondents were less in favour of an interaction in funding and remarked that the current system is not climate focused enough, often steering public and private funding towards greenwashing. The concern was raised that large amounts of private funding can lead to perverse effects and disincentivise farmers from transitioning to forming systems that deliver more benefits. They also remarked that that funding should be paid directly to farmers who can show results that improve carbon storage in soil and that climate perverse subsidies need to be phased out (e.g. CAP payments that encourage the drainage of soils).

Other (3 replies). It was remarked that the CAP and other funding mechanisms should integrate carbon credit supply from agriculture into the EU ETS or to benchmark prices. It was also mentioned that there is a need for public-private partnerships and an understanding of how the farmer can measure sustainability and the impact on the environment. A further remark pointed out to the possibility of better funding forestry through well-functioning private market solutions rather than the CAP.

9.4. What are the biggest or most common implementation challenges for the setting up and implementation of Carbon Farming schemes under the CAP?

Public authorities (9 replies). A range of challenges were mentioned and no clear consensus about the main challenge was identified. There was the mention of lobbying activities from the big players that are not motivated by sustainability; the lack of knowledge and training to farmers in implementation of interventions and best practices; coordination across policy fields and departments; MRV and ensuring performance and liability of emission reductions; a control framework for the EU-wide carbon farming scheme; the lack of identified areas of peatland and wetland in Member States; low level of compensation and long-term stability and low profitability in the forestry sector; and the conceptual conflict between food security and the increase of non-productive land. It was additionally noted that it is not clear if it is the state or the individual that will benefit in setting up and implementing carbon farming schemes under the CAP.

Academic/research institutions (8 replies). There was agreement that one big challenge is to develop robust monitoring, reporting and verification with cost-effective tools, including environmental indicators, ensuring quality markets and removals. Some respondents highlighted the challenges linked to permanence and leakage, the payment unit and the long-term responsibility and to helpful cost-benefit models and robust result-based schemes.

Business associations/company/business organisations (9 replies). This group highlighted as big challenges to decide on the importance of additionality, how to define carbon leakage, to find scientific consensus on soil carbon measurement and to communicate agronomical advice on carbon farming techniques to EU farmers. Moreover, the economic equation (i.e. the balance between costs and compensation), the lack of economic impact calculation of co-benefits, a missing legal framework that recognises standards, the cost of MRV, the difference between annual payments in Pillar I and multi-annual payments in Pillar II, and the permanence and the remuneration of farmers for protecting carbon stocks remain crucial obstacles. According to some respondents, an effective MRV system, the timeframe with different speeds of carbon farming, competing ecosystem services, sequestration below the root zone and bordering practices, lack of a clear carbon market, costs of investments to transition to regenerative agriculture, implementation of carbon credits and carbon certification standards, and soil carbon measures are the biggest challenges.

Environmental organisations/NGOs (13 replies). The biggest challenge is to ensure a trustworthy and acceptable monitoring, reporting and verification system of carbon removal and an appropriate pricing mechanism. Other challenges mentioned are the reduction of livestock and ruminant emissions in oversaturated soil; keeping transaction costs low to maintain confidence in results and to deal with the risk of non-permanence, risk of leakage and additionality; the coherency with overall climate policy given the different priorities of the CAP and coherency with EU Climate Law; and the lack of a CAP performance framework that incentivises Member States to implement ambitious carbon farming schemes based on the impacts of GHG rather than on the assessment of uptake. Another key issue mentioned was the lack of homogeneity as regards knowledge, skills, natural conditions, and baselines of farmers across the various Member States. There are costs

linked to ensuring efficiency with consultancy, training and adoption to the specific farm context, including accuracy and accountability of carbon sequestration in arable land. There is a need to link carbon farming to EU nature restoration plans, promote biodiversity, and ensure clear guidance on the benefits to small farmers. For peatland in particular, the biggest challenge is losing the access to payments from Pillar I as well as certain protection for grassland that can hinder paludiculture. Moreover, synthetic pesticides remain an issue along with the lack of a systematic approach that focuses on increasing sequestration. Finally, there should be a strict separation from the EU ETS to limit the disincentives for other sectors in need of decarbonisation.

Other (4 replies). Bringing many actors together and ensuring that they understand what carbon sequestration is and how to measure and reward these practices constitutes a big challenge. Additionally, proving additionality and avoiding double payments for the same services, as well as permanence were mentioned as further challenges. It was suggested to develop the carbon credits market and provide blended finance. Finally, the lack of general funding, the administrative burden and the need to acknowledge the carbon already sequestered by farmers were also addressed.

9.5. What kind of action could be taken at EU level that would enable a stronger uptake and upscaling of carbon farming initiatives (for example, foster peer-to-peer knowledge, remove or simplify regulatory barriers etc.)?

Public authorities (9 replies). Lobbying should be regulated and there should be educational programmes for communities, farmers, public authorities on the importance of rewarding carbon farming. Additionally, the respondents expressed the opinion that the best regulatory practices are through information sharing through advisers and EU innovation partnerships and through removing and simplifying regulatory barriers such as the administrative burden of MRV or investments in new technology on the landowner side. The remote sensing technologies were supported as a desirable tool to improve farm and forest level monitoring. Clear and affordable carbon farming schemes with a certification system for different types and sectors of agriculture should be in place.

Academic/research institutions (8 replies). There was not a common consensus on this question. Some respondents indicated that the payment for carbon should go directly to farmers/ foresters/land managers to pay for their contribution to carbon sequestration. Also, there was a call for large scale experimentation alongside research and practice to propose schemes that are well researched scientifically and can be adapted to different MS and bioclimatic conditions. There was broad agreement that more technical assistance and the building up of knowledge should be supported by the EU. In addition, eco labelling, networks for competitive business approaches and good advisory boards for farmers might be desirable. There was one indication that action to be taken at EU level should integrate the agricultural sector into a carbon pricing scheme and put a stronger emphasis on climate mitigation in the CAP Strategic Plans by also removing barriers related to CAP funding schemes. One point was made to focus on promoting biochar in soil.

Business associations/company/business organisations (9 replies). The EU should create a community of practice, develop independent advice and provide a legal framework for recognition of carbon farming standards. Further, the respondents indicated that there is a need to identify national and regional task forces to work on the topic of soil fertility, soil carbon, and climate mitigation and adaption. The respondents also called for the avoidance of administrative burden on farmers and foresters in order to secure efficiency for compensation for ecosystem services. It was mentioned that regional approaches with knowledge building help farmers to better understand and appreciate their own efforts in the long-term. Public private partnerships with incentives from CAP funding and encouraging enrolment in high quality carbon farming to issue verified soil carbon credits

were presented as the best solution. Important input was focused on MRV requirements as well as on the introduction of new technologies and a clear certification standard governance. Other solutions proposed the use of CAP as a platform to increase knowledge and human barriers currently faced by carbon farming schemes; use the Farm Advisory Services as a platform for farmer-to-farmer exchanges and events to disseminate information and expertise on the uptake of new practices; make use of the possibilities for allowing testing of new types of market-based carbon farming schemes by using the EIP-AGRI Operational Groups; and facilitate carbon farming practices (conservation agriculture, soil cover with cover crops, afforestation, grassland management) by enabling a result-based system for CO₂ equivalents removed or emissions avoided. The need for actions that should be focused on information, advice and training to raise carbon literacy amongst farmers was highlighted. Public and private reward schemes can support mutual compatibility.

Environmental organisations/NGOs (11 replies). According to the respondents, the focus should be on the rewilding of marginal landscapes as well as the rewetting of peatlands without allowing for continued emissions in other sectors. In that regard, separate accounting frameworks should be implemented. It was also stated that the CAP's policy instrument already addresses some challenges and takes action at the EU level to enable stronger uptake. Investment support, cooperation measures, advisory services, agri-environment climate measures, and eco-schemes are measures that make carbon farming more attractive to farmers. Solutions included enhancing evidence through climate tracking methodology; monitoring innovation in the CAP administrative system more focus on knowledge co-creation and exchange (e.g. through living labs and demonstration farms); attention to the demand-side levers; support for a shift to the management of grasslands; and a new framework to underpin carbon farming with mandatory baselines and ambitious targets. Some respondents believe that emitting industries should be held responsible to reduce their carbon balance and implement sustainable practices through a carbon market not within the CAP. Others called for the eligibility of paludiculture in the upcoming CAP whereas peatlands should be taken into account in the Green Deal and LULUCF regulation. The need for independent MRV as well as for training to farmers for accuracy of measurements were highlighted. It was mentioned that there should be a consideration of co-funding of inputs and tools required for successful soil management towards increase of carbon removals.

Other (4 replies). Good practices can be spread through communication and knowledge transfer. In addition, there should be a condition of increasing soil organic carbon to receive CAP payments. One respondent mentioned that carbon farming should be a green business model based on carbon markets. Finally, industries should reduce their carbon-balance through, e.g. carbon farming certificates, and the contribution to carbon farming through the use of wood from sustainable forestry should also be acknowledged.

9.6. What is the scope of Carbon farming (for example, should it aim at incentivizing carbon sequestration in soil or biomass or to protect or store carbon or reduce emissions)?

Public authorities (8 replies). The respondents remarked that incentivizing a change in agricultural management would inherently result in more removals and that carbon sequestration is part of some interventions planned in the CAP strategic plans, e.g. agroforestry, which has the potential for sequestration in soil and biomass.

Academic/research institutions (8 replies). It was noted that the biggest challenge would be to combine four scopes: reduce emissions, protect existing carbon, improve sequestration in biomass with respect to permanence, and improve carbon sequestration in soils. Other respondents flagged the need to optimize carbon management on-farm to

incentivize carbon sequestration in soil and to protect or store carbon and reduce emissions. The scope has to give priority to the climate mitigation goals and take into consideration all options with appropriate measures that can more easily tackle barriers such as MRV or long-term planning. Also, it was mentioned that the scope should be wide and country specific. Further it was indicated that the proposed approach should be effective and profitable at the same time. One respondent stressed that biochar is the best option for soil carbon in climate mitigation and for direct negative emissions.

Business associations/company/business organisations (9 replies). It was highlighted that the scope should be as wide as possible, but under the condition that each farmer should be able to implement their own tailor-made mitigation strategy. There was agreement that it is important to take into account both the external climate factors that influence ecosystems as well as the natural biogeophysical aspects of carbon when establishing this approach to take into account the multifunctionality of forests. It was also underlined that the objectives vary depending of the different types of land. For example, peatlands need protection while in agricultural land, increasing sequestration is more important. The need for large scale implementation of farm practices to reduce the agricultural carbon footprint, via carbon sequestration or reducing emissions was highlighted. Existing stocks should be protected through regulatory requirements for the maintenance of existing stocks rather than ongoing payments and grant-aid to help with upfront capital investments (e.g. for peatland restoration). It was also noted that the scope of carbon farming should include a step-wise approach supported by a regulatory framework which starts with soil carbon and carbon stored in trees, leading to the development of carbon schemes that can be adapted and improved.

Environmental organisations/NGOs (13 replies). The focus was given to the fact that carbon farming should help the food systems to adapt to planetary boundaries, restore biodiversity and implement animal welfare. Further it was mentioned that the scope has to be global, focusing first on storing carbon in soil and biomass and second on decarbonization. The improvement of soil fertility through carbon farming practices was mentioned. Carbon farming should ensure the increase of nature-based carbon removals without affecting emission reductions and to include other metrics beyond carbon removal to avoid trade-offs with biodiversity. It was also highlighted that carbon farming should cover land management practices and not be limited to carbon dioxide or costly result-based schemes that require high precise results measurement. Avoided emissions should only be included if they are a result of an active change in management. Objectives such as biodiversity restoration/protection, climate adaptation, water quality, and soil health should all be fully integrated in a carbon farming scheme. In addition, there should be more stringent penalties for activities that remove forest materials unsustainably. It was said that peatland rewetting is the most effective measure for storing carbon in the ground. Existing carbon stocks must be protected, and only additional carbon removals must be counted.

Other (4 replies). The replies were not homogeneous. Whereas on one side it was remarked that carbon farming is beyond the scopes listed and should promote good practices, on the other side it was noted that it should include incentives for additional carbon sequestration in the soil as well as in products with a compensation for keeping soils with high carbon stocks in good shape. A broad scope should focus on innovative practices as part of regenerative farming.

9.7. Summary

The survey shows that the respondents are overall positive with regard to the **interaction between CAP funding and other funding opportunities**. Respondents emphasise the importance of keeping the focus on raising awareness and on support for farmers who implement local initiatives. Some stakeholders agree that CAP direct payments to farmers is a better method for incentivising them to improve carbon storage in soil rather than relying on carbon market schemes as main solution, as large amounts of private funding can lead

to perverse effects and ultimately disincentivise farmers. However, some respondents also remarked that private carbon markets can act as a good example for the CAP in ensuring that the focus remains on climate mitigation and adaption in the LULUCF sector. Some scepticism is shown with regard to the use of CAP funding for carbon farming, especially in relation to additionality and the lack of consensus on soil carbon measurement methods and carbon removal certification. The interaction between funding schemes is still unclear and should be approached more coherently in the Member States. However, respondents mostly support a hybrid solution of funding mechanisms, indicating a need for a careful overview and monitoring of private markets.

A **wide range of implementation challenges** was pointed out. The most common challenge is the lack of robust monitoring, reporting and verification systems and knowledge about the relevant costs. Furthermore, the importance of additionality and how to define carbon leakage on one side, as well as the relevance of knowledge awareness and agronomic advice on carbon farming techniques for farmers on the other side could be identified as second and third most mentioned challenges.

In addition, the following challenges were mentioned as relevant:

- lack of a clear carbon market
- lack of homogeneity in knowledge, skills, natural conditions and baselines of farmers across the various Member States
- balance between costs and compensation for the transition to regenerative agriculture
- lack of economic impact calculation of co-benefits
- missing legal framework that recognises standards
- difference between annual payments in Pillar I and multi-annual payments in pillar II
- ensuring coherency between the EU Climate Law and the overall climate policy and the different priorities of the CAP
- lack of a CAP performance framework that incentivises the Member states to implement carbon farming based on the assessment of uptake rather than on the GHG impacts
- lack of identified areas of peatland and wetland in Member States
- as regards peatland, losing the access to payments from Pillar I as well as certain protections for permanent grassland that can hinder paludiculture
- conflict between food security and the increase of non-productive land
- low level of compensation and long-term stability and low profitability in the forestry sector
- reduction of livestock and ruminant emissions
- low transaction costs to maintain confidence in results
- administrative burden in the implementation process

When respondents were asked the same question during the workshop, the lack of MRV capabilities was the third most common answer. There is therefore a certain divergence of views in the two stakeholder feedbacks. However, the lack of knowledge about the MRV costs and the relevance of knowledge for farmers that are frequently mentioned in the survey as big challenges connect to the uncertainty about funding and the lack of tailored advisory services which are, respectively, the first and third most common barrier to uptake

of carbon farming in the poll question. Moreover, several challenges highlighted in the survey relate directly or indirectly to funding as well as to the need to reward co-benefits in a more robust manner, which was the second most common option chosen in the poll.

With regard to the **type of actions that would encourage uptake**, there was agreement that larger information for landowners on the benefits of carbon farming would promote uptake. Advisory services at EU level was one of the main suggestions across all categories of respondents. Better MRV through, e.g. better training of farmers on improved accuracy in measurement, was also cited as a key action for setting up a highly effective carbon farming initiative. In addition, forms of cooperation for the implementation of good practices for climate and environment should be promoted whereas lower administrative burden for farmers and landowners would be key to encourage uptake within carbon farming and this goes hand in hand with a strong regulatory backbone.

As regards the last question on the possible **scope of carbon farming** it was repeatedly stated that incentivizing carbon sequestration and storage in soil or biomass and emission reduction goes hand in hand. The scope should be broad in order to maximize uptake. Many respondents referred to the country-specifics and how it is important to take into consideration the different biogeoclimatic conditions of the Member States when evaluating the scope of carbon farming.

The results from the survey are partially in line with the replies given by the respondents during the workshop. There is convergence in the respondents' feedback to the poll and the survey with regard to increased carbon in soil as key scope of carbon farming. Still, many survey respondents mentioned that while increased carbon in soil is highly important, the scope should also include increased carbon storage in biomass, whereas this - together with sequestration in biomass - were the two answers in the workshop that had the lowest response frequency. When comparing the response levels given to the poll and the survey, it can be concluded that they are similar (with some small deviations) indicating that on a general level there is an overall agreement on a broad scope for carbon farming.

Also the poll question regarding the practices that are more suitable for carbon farming via the CAP Strategic Plans had some cross-over with the survey answers. The answers to the poll question highlight key areas of land management that could help shape the scope of carbon farming due to their potential for uptake. The survey answers frequently mention the need for attention to agroforestry and peatland, which are, respectively, the second and third most common answers to the poll. Another point of convergence is with regard to grassland management as this practice is mentioned several times across the survey answers as falling within the scope of carbon farming, while constituting the most common answer to the poll.

