

Expert roundtable on *Applying the Polluter-Pays Principle to Agricultural Emissions*

February 9th, 2023, 15:00-18:00 CET, Online event

Summary report

Background

On 9 February 2023, the consortium of Trinomics, Ecologic, IEEP, Umweltbundesamt and Carbon Counts held an expert roundtable on behalf of the European Commission (DG CLIMA) with the theme “*applying the polluter-pays principle (PPP) to the greenhouse gas emissions from agricultural activities*”. The expert roundtable was conducted as part of a broader study to investigate options for an emission trading scheme (ETS) on agricultural greenhouse gas (GHG) emissions, as well as options to reward farmers for long-term carbon removals.

For the roundtable, experts from academia and research institutes were invited to engaged in the discussion, bringing knowledge from across the fields of agricultural economics, sustainability of land-use systems as well as ETS and carbon pricing instruments. The discussion during the roundtable was structured in two parts:

- The first half of the roundtable engaged the experts on the challenges and opportunities of pricing agricultural GHG in general;
- The second half brought the focus to the design options for an ETS applicable to this sector.

This report summarises the expert roundtable discussion. No attributions to the specific experts’ positions are made in this summary report.

Participants

- **Invited experts:** Dr. Robert Huber (ETH Zurich); Prof. Alan Matthews (Trinity College Dublin); Dr. Ignacio Perez (JRC); Prof. Peter Vis (EUI); Prof. Jonathan Verschuuren (Tilburg University);
- **Additional experts:** Dr. Floor Fleurke (Tilburg University); Prof. Michael Leach (Tilburg University);

Main conclusions and recommendations

- Experts recommended that the PPP applied to agricultural emissions should take consideration of the **economic and social impacts across the whole value-chain**, highlighting the need for a holistic approach;
- Experts saw the **acceptance and buy-in of farmers as one of the biggest challenges to overcome for the successful implementation of a polluter-pays approach**. It was stressed that any policy design applying the PPP to agricultural activities should provide clear, tangible benefits to farmers, while supporting positive behavioural change. In this light, experts saw a particular added value in providing farmers with key information and data on their own activities, which could be collected and used as part of the monitoring, reporting and verification (MRV) purposes within a hypothetical ETS;
- Related to the previous point, **digitalisation and the use of advanced technologies were highlighted as a key area of interest by experts in the design and fulfilment of MRV duties**. A polluter-pays approach requires a significant amount of high-quality data about several aspects and activities happening in and around the farm. Advanced technologies are seen as key for the gathering and processing of such large data, including latest remote sensing techniques and artificial intelligence (AI). Moreover, experts suggested that MRV methodologies should be based as much as possible on existing reporting duties from other relevant instruments;
- When addressing the design of an ETS for agricultural emissions, experts stressed that **the impact lies in the combined use of instruments**, whereby attention should be paid to the alignment and potential conflicts with other policy instruments. Moreover, different policies should work together in addressing different objectives, where an ETS focuses on GHG emission reduction in a cost-effective way.

Part 1.

Pricing GHG emissions from the agricultural sector

Agriculture has a key role to play in climate mitigation, presenting at once a significant vulnerability to global warming, while in turn contributing to this phenomenon as an important source of GHG emissions. Applying the polluter-pays principle (PPP) to these emissions can incentivise action to mitigate climate change in an economically efficient way. On the other hand, the actual impact of pricing emissions will vary significantly depending on several aspects, while the application of this approach needs careful consideration of its possible unintended economic and social effects. The experts were asked about **the different strengths and limits of a PPP approach on agriculture emissions, and the most important variables to consider.**

Strengths and limits of a polluter-pays approach in agriculture

The experts generally agreed on the necessity of the agricultural sector to significantly decrease its emissions and define its contribution to climate change mitigation, and that a wide set of measures is available to address this issue. The majority of experts expressed a positive view on the application of a PPP to agricultural emissions among other available measures, though to different degrees.

Those arguing for the PPP as a cardinal mitigation measure, highlighted its advantages primarily in terms of **economic efficiency and cost-effectiveness**. Indeed, experts, while recognizing the possibility for several approaches, argued that examples of measures in place so far (e.g. voluntary schemes, subsidies and incentives) have not sufficiently incentivised GHG emission reductions in the agriculture sector. It was further stressed that the PPP provides a positive and clear price signal to farmers on the climate impact of their activities, while offering an incentive to drive innovative mitigation techniques. The latest agreements at EU level on the development of an ETS covering road transport and building emissions (the so-called *ETS2*) was used as an example to substantiate these arguments: such an option had been considered unlikely so far, based on the specificities and complexities of these sectors. In fact, the experts most approving of the PPP advised against framing agriculture as substantially different from other economic sectors, focusing instead on the effectiveness of the PPP and its possibility for adjustment throughout its implementation.

On the latter point, some experts expressed a differing view, pointing instead at the features that make agriculture a more challenging sector for the application of a polluter-pays approach. The most sceptical views highlighted the **complexity of the sector, coming primarily from its granularity and fragmentation**:

- First, this concerns the **multiplicity of gases** that the PPP would cover. Specifically, such an approach would cover other prominent emissions next to carbon dioxide (CO₂), primarily methane (CH₄) and nitrous oxide (NO₂), in contrast to existing ETSs. Moreover, the PPP should take fair account of farming activities that contribute to climate mitigation with negative emissions, by capturing and storing CO₂ (carbon removals);
- Secondly, experts stressed the challenge coming from the **fragmentation of the sector in a multitude of actors** with major differences in size and capacity. They argued for the added value of other approaches and policies, in particular regarding farm management options, innovative farming techniques (e.g. precision farming, sub-feeding), economic incentives rewarding sustainable farming practice, as well as the application of emission reduction targets;
- In addition, experts warned against the potentially negative effects of a PPP, its possible **risks to the economic viability** of European farm enterprises, and to the related competitiveness disadvantage in international trade (i.e. carbon leakage);
- Finally, the **administrative burden** - especially for small enterprises - is seen as an area of concern by some of these experts.

The need for a **holistic and complementary approach** brought together all experts in arguing that any policy should take account of the whole supply chain, from upstream inputs until the end-consumer. Experts generally agree that alignment and potential conflicts with other policies is a challenging yet crucial aspect to consider. There are potential synergies that should be scaled up, for instance with animal welfare rules, or policies targeting consumer health: these measures can lead to a shift in consumption, with positive implications on climate mitigation.

The experts saw as most appropriate an approach that considers the alignment with existing policy instruments, mentioning the **Common Agricultural Policy** (CAP) as a crucial area of interest where specific

sustainability objectives are being implemented. When asked about the interplay between the PPP and the subsidy and support structure of the CAP, some experts pointed out that EU financial support to farmers should gradually be reallocated to climate mitigation measures. Others pointed out that the CAP itself is undergoing a process of reform that closely integrates climate, environmental and water related components in its support to farmers.

Most important variables in applying the PPP to agricultural emissions

All experts agreed that **any polluter-pays approach requires a careful consideration of the significant diversity across farm enterprises**. A key variable to observe is the size of the enterprise. In particular, when looking at a first PPP implementation phase, it was suggested to focus on large players, with a reference to processor industry of meat and dairy products. Generally, experts agreed on the importance of taking into account the economic implications across the whole food-chain, not losing sight of the effects of the policy for consumers. In this regard, an expert mentioned the *Farm to Fork* strategy as a positive example of such an approach.

Carbon leakage was again raised as a tangible risk of this approach, mainly due to the low elasticity of demand of meat and dairy products, reducing the effects of supply-side measures. This concerns, more broadly, the implications for the international competition of EU farms and the related impacts on food prices. It was recommended to assess the developments of the **Carbon Border Adjustment Mechanism (CBAM)** and the impacts that this will have particularly on fertilisers prices. This point links with the claim already made on the importance of synergies between the various policy instruments.

As an alternative view on this, experts argued that **a farm-level system is preferable from a farmer's perspective**, in which one has **direct control over what mitigation actions** to undertake. It was argued that with a processor-level system, farmers may be treated indiscriminately, regardless of the sustainability of their farming practices and management. Accordingly, this would remove the right incentive for farmers to mitigate.

Experts generally saw the **acceptance and buy-in of farmers as one of the biggest challenges for the implementation of a polluter-pays approach**. In fact, as with any form of carbon pricing, there are risks of regressive distributional effects, which need to be mitigated through other measures. Some experts advised to complement the PPP with measures bringing a direct benefit to farmers, such as direct income support and incentives for adopting innovative mitigation measures. The design of this policy should identify the ways in which the PPP can benefit farmers themselves, offering them a clear prospect for the future of their business, requiring an close to farm-level approach.

Along these lines, experts stressed that in a PPP perspective, farmers should be acknowledged for the emissions sequestered through their activities. Experts agreed on the necessity for a system that rewards farmers for their long-term carbon removals.

Part 2.

ETS as a policy instrument to price agricultural GHG emissions

One of the main instruments for applying the polluter-pays principle in the EU is an emissions trading system (ETS). The impact of an ETS is strongly dependent on the design of different aspects. This includes the activities that would be covered, the entities that would have to pay for the agriculture emissions, how the monitoring of emissions is done and how the revenues raised from selling emission units in the ETS are used. Experts were asked about the **key design considerations in developing an ETS for GHG emissions agriculture**.

Key design considerations for an ETS

When asked about what sources of emissions should be included in the ETS, experts generally agreed that CH₄ and NO₂ should be included in the scope.

Experts mainly expressed differing views regarding how to keep an ETS feasible from a practical perspective. In particular, some argued that **most small-medium farms would not be able to keep up with a system of trading allowances** and the necessary transaction and administrative costs involved. They recommended to limit such a system to larger actors in the value chain, with greater capacity for these requirements. Moreover, experts made reference to the system currently in place in Australia, where a market has emerged for consultancy services supporting farmers with the monitoring, reporting and verification (MRV) duties. Even this scenario, however, brings about significant costs increases for the farmers. Experts mentioned other examples of private entities, farmers collectives or even institutional actors, integrating the system to relieve some of the administrative burden from farmers. As a response to these claims, some experts argued that transaction costs will not necessarily be a determining factor in the success of this policy, and that the necessary digital tools should be leveraged to collect and manage the necessary data.

Experts saw a system based on the estimation of farms' GHG emissions by the public authority as a good way to **reduce the administrative burden of farmers**, with the option for farmers to provide evidence to modify those estimations if their actual emissions were lower. Experts argued that additional advantages from this approach would be the opportunity for farmers to compare their emissions with those of others. In general, making their own emissions data available to farmers was seen as a definite added value for them, allowing them to improve the management of their own farm. This is linked to behavioural aspects that are seen as equally important to economic and pricing mechanisms.

Some experts indicated that a large share of the information to determine the emissions of individual farms should already be available, as there are already existing legal instruments that require farmers to record specific information. It was therefore advised to **adopt the methodologies currently used** to record emissions in national inventories, or from reporting requirements under other schemes (e.g. Ecoschemes, animal welfare legislation). Experts agreed that the methodology should stay as close as possible to already existing schemes and systems, so to build on available data and processes. Experts expressed differing views on the feasibility of having a homogeneous system across Member States.

Experts recognized that **MRV is a crucial and challenging aspect of an ETS on agricultural emissions, particularly verification of reported emissions**. Some, drawing on existing systems in Australia and New Zealand, argued that it is possible to carry out MRV at farm level, though incurring very high costs. Technological development in remote sensing and Artificial Intelligence (AI) have the potential to make these processes feasible. With verification, the options are either the government takes over the tasks, with significant costs, or delegates it to the private sector, which then need to be approved by the government, delaying the process. Experts argued that a self-assessment reporting would be model-based, not measured. These estimations would still leave the possibility to farmers to adjust specific parameters and input data.

When addressing the design of an ETS for agricultural emissions, experts stressed once more that **impact lies in the combined use of instruments**. Specifically, different instruments should target different objectives. It was argued that a cap-and-trade system could be better applied to larger entities, which could be large farmers but also upstream and/or downstream entities (food processors), while measures rewarding carbon farming practices, should be implemented at farm-level. Generally, it was argued that the system will need the cooperation of different actors and different instruments. Primarily, there will be the need for the cooperation of farmers, who should be included as much as possible in the policy process for setting up an ETS.

Technical workshop on Pricing agricultural emissions and rewarding climate action in the land sector

Summary report

Introduction

The following report contains a summary of the technical workshop that was held as part of the exploratory study “Applying the polluter-pays principle to agricultural emissions” commissioned by DG CLIMA to Trinomics and its partners IEEP and Ecologic, together with Umweltbundesamt and Carbon Counts. The workshop titled “Pricing agricultural emissions and rewarding climate action in the land sector” was held on 14 June 2023 in a hybrid setting in Brussels and online.

Project context

A 2021 [report](#) by the European Court of Auditors concluded that EU law does not apply the polluter-pays principle to agricultural emissions and recommends that the Commission should “assess the potential of applying the polluter-pays principle to agricultural emissions, and reward farmers for long-term carbon removals”. Against this background, the European Commission is exploring options for pricing greenhouse gas emissions from agricultural activities along the value chain through an Emission Trading System (ETS), as well as for rewarding farmers and other landowners for climate action.

Aims and agenda of this technical workshop

The aims of this technical workshop were to:

- Inform stakeholders of the options being explored in this ongoing study;
- Obtain different stakeholder perspectives on these options through a panel discussion; and
- Launch the online public stakeholder survey for gathering further input for this study, which opened on June 15th, 2023 and closed on July 28th, 2023.

Following the introductory part of the workshop, the workshop was divided in two main parts:

- (1) ETS options for pricing agricultural emissions along the value chain (AgETS); and
- (2) Policy models for rewarding climate action in the land sector through carbon farming.

This full agenda of the technical workshop is provided below. Further information on each panellist can be found in the section on each respective main parts of the workshop.

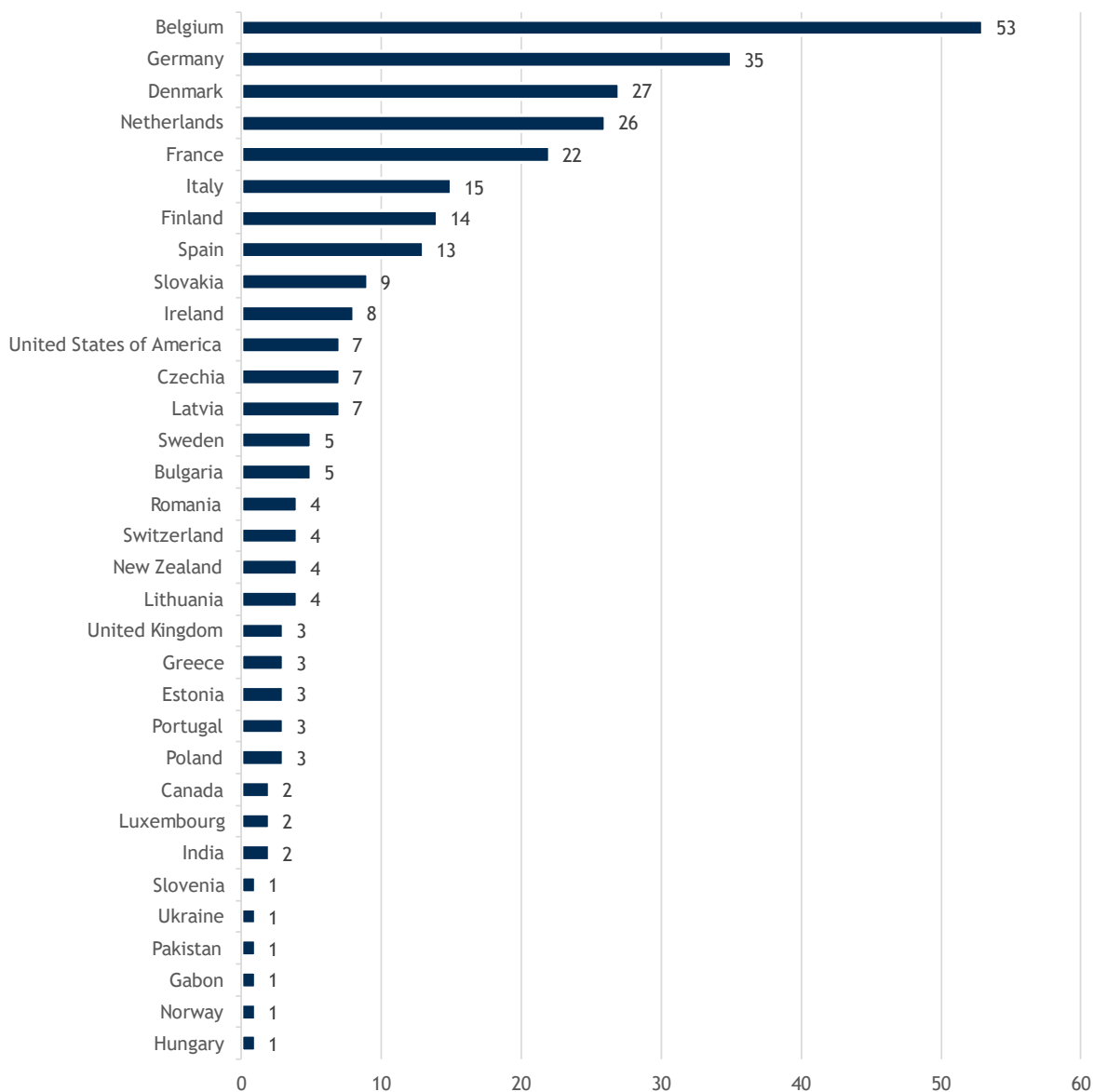
Time (CEST)	Activity	Who
13:30 - 13:35	Welcome	Moderator (Trinomics)
13:30 - 13:35	Policy context	DG CLIMA and DG AGRI
13:55 - 14:05	ECA recommendations for climate mitigation in agriculture	European Court of Auditors (Jonas Kathage)
Part 1: Emissions trading for pricing agricultural GHG emissions along the value chain		
14:05 - 14:20	Policy design options and considerations for an ETS	IEEP
14:20 - 14:55	Panel discussion with representatives from various stakeholder groups to provide different perspectives. Panellists: Jonathan Verschuuren (Tilburg University); Marion Picot (CEJA); Pierre-Marie Brizou (Danone); Amy Hughes (EDF)	Moderated by Trinomics
14:55 - 15:20	Audience Q&A (including possibilities to submit questions online)	Moderated by Trinomics
15:20 - 15:35	Break	
Part 2: Rewarding climate action in the land sector through carbon farming		
15:35 - 15:50	Policy models and considerations for using ETS revenues	Ecologic Institute
15:50 - 16:25	Panel discussion with representatives from various stakeholder groups to provide different perspectives. Panellists: Ivo Degn (Climate Farmers); Celia Nyssens-James (EEB); Shefali Sharma (IATP); Ana Rocha (European Landowners Organisation)	Moderated by Trinomics
16:25 - 16:50	Audience Q&A (including possibilities to submit questions online)	Moderated by Trinomics
16:50 - 16:55	Launch of the online stakeholder survey	Trinomics
16:55 - 17:00	Closing remarks	DG CLIMA

Stakeholder representation in the workshop

There was a total of 296 registrations for the technical workshop from a broad range of stakeholder groups.¹ An overview of the registrants per country of origin is shown in Figure 1 and per stakeholder group in Figure 2. Of these 296 registrations, 43 attended the workshop in-person in Brussels. The online attendance fluctuated between 100-130 throughout the workshop.

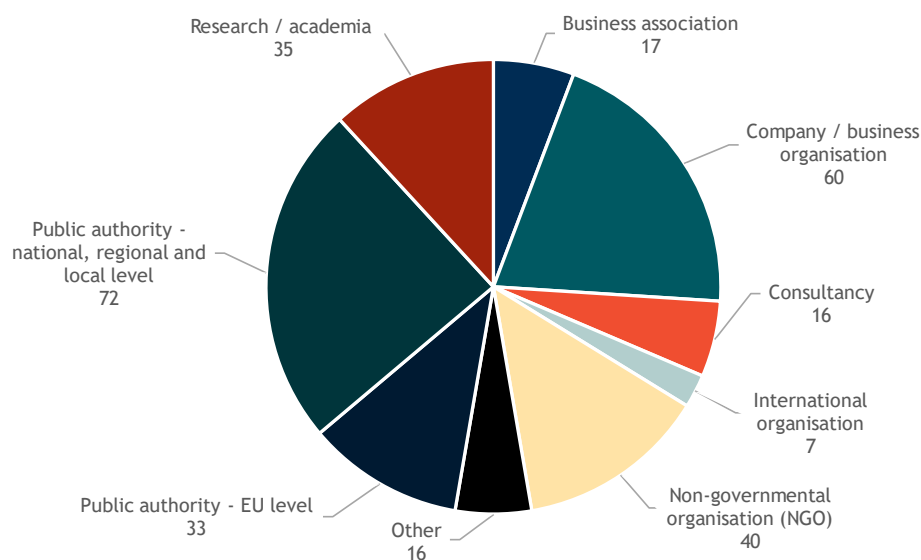
All registrants received a link to the recording of the workshop and the slides presented during the workshop. All registrants were also provided with opportunities to provide input through the stakeholder survey launched at the workshop.

Figure 1 Overview of the number of registrants per country of origin



¹ Excluding panellists that filled in the registration form.

Figure 2 Overview of the number of registrants per stakeholder groups



Summary of main takeaways from the workshop

Overall, the main discussions revolved around the need for a comprehensive approach to emissions reduction in agriculture, the **challenges of MRV**, the choice between **on-farm and downstream ETS**, and the importance of considering **broader sustainability issues**. The panellists and other workshop participants recognised the necessity of reducing GHG emissions in the agriculture sector while addressing the **specific needs of farmers** to ensure fairness and **long-term viability** of sustainable farming practices.

Potential approaches where revenues from an ETS on agricultural emissions is used to reward removals received mixed responses from the panellists and other workshop participants. Some argued the need to keep separate targets and incentives for reductions of agricultural emissions and carbon removals, while others emphasised the need for any form of financial resources to achieve carbon removals. **Ultimately, this comes down to a trade-off between seeking pragmatic solutions to incentivise land-based carbon removals towards climate neutrality in 2050 while addressing the potential risks related to carbon removal policies (e.g. emissions reduction deterrence and non-equivalence between carbon removals and emission reductions).**

Additional main takeaways specific to **Part 1** on emissions trading for pricing agricultural GHG emissions along the value chain are as follows:

- An ETS in agriculture should consider all major emissions sources and greenhouse gases, taking account of their respective global warming potential.
- Monitoring, reporting, and verification (MRV) in agriculture is complex, requiring a combination of on-farm measurements and proxy indicators.
- A downstream ETS is considered more practical, although challenges for small farmers should still be acknowledged.
- Farmers' needs and fair distribution of responsibilities are essential for political and social acceptance of the ETS.
- Complementary policies, such as renewable energy targets, efficiency and innovation measures, as well as policy instruments within the Common Agricultural Policy (CAP) are necessary alongside carbon pricing.
- Concerns were raised about imposing strict regulations on EU farmers while imported products may not adhere to the same standards.
- International cooperation is needed to address challenges related to imports and carbon leakage risks.
- Stakeholder engagement, transparency, and continuous improvement are important in implementing the ETS in agriculture.

Additional main takeaways specific to **Part 2** on rewarding climate action in the land sector through carbon farming are as follows:

- Agroforestry, peatland restoration and resilient agricultural systems are promising activities that can lead to high quality carbon removals.
- Carbon removal methods should also consider co-benefits for biodiversity.
- Incentives for carbon removals through soil organic carbon should be considered in the context of a healthy and sustainable carbon cycle rather than removing and storing as much as possible carbon in soils.
- Mitigation deterrence and non-equivalence between emission reductions and removals (including the non-permanence of removals compared to emission reductions) remain a key point of concern.
- Maintaining separate targets and incentives for emission reductions and removals should remain a key option for future climate policy in the land sector, because emission reductions and removals are equally important.
- Funding options for carbon removals should go beyond solely revenues or allowance demand from the AgETS, including the Common Agricultural Policy, funds for just transition and other sources.
- Practicality and long-term sustainability should also be considered when linking a reward system for carbon removals with an AgETS.

Policy context

Introductory remarks by Alexandre Paquot, CLIMA Director

Alexandre Paquot, the DG CLIMA Director for Directorate C Innovation for a Low Carbon, Resilient Economy highlighted the net-zero emissions target of 2050, enshrined in EU Law. He stressed the need to drastically reduce emissions, but also high-quality carbon removals as key to the achievement of these targets. Turning to the food and agricultural sector, its potential role as a front-runner in achieving climate neutrality is juxtaposed to the emissions reductions that are needed along the value chain. In light of the proposal for a land sector climate neutrality by 2035, he reiterated the need to consider additional policy measures, support, and finance, and explore carbon pricing to incentivise climate-friendly food production. Sector-specific challenges need to be carefully taken into account while advancing innovation and resilience, which includes, among others, the development of carbon removals in the land sector.

Introductory remarks by Michael Pielke, AGRI Acting Director

Michael Pielke, the DG AGRI Acting Director for Directorate B Sustainability pointed at the several climate commitments included in the new CAP, including the obligatory requirements for farmers receiving support, as well as voluntary commitments, known as Eco-schemes or Agri-Environment-Climate measures (AECMs), which go beyond the mandatory requirements. However, there are costs associated with changing farming practices, along with the need for development measures, investment support, and advisory services. He stressed the need to address the sector's unique characteristics when implementing emissions trading in agriculture is being considered. This approach must address the sector's unique characteristics, as emissions in the land sector come from diverse sources. Accordingly, it is essential to find a balanced system that preserves competitiveness, avoids carbon leakage, and considers the needs of micro-enterprise farmers. In addition, other impacts of carbon removals that go beyond climate change and include biodiversity, adaptation, water quality, and food affordability, were raised as additional elements to be considered.

Introductory remarks by Jonas Kathage, European Court of Auditors

Jonas Kathage from the European Court of Auditors (ECA) presented the main findings of the report on "CAP and Climate", which served as a trigger for the commissioning of this study. The aim of the report is to assess the effectiveness of CAP spending in achieving climate objectives. The EC attributed 100 billion euros to climate spending in agriculture under the CAP, prompting a closer look at its impact. During the 2014-2020 period, CAP support for climate mitigation did not result in a decrease in emissions compared to earlier CAP periods. Livestock, nutrients, and land-use change were identified as the main sources of emissions (excluding machinery). The assessment of the ECA brought forth the following recommendations:

Recommendation 1: The CAP should prioritize **reducing emissions in agriculture**. Member States should set emissions reduction targets, evaluate National Strategic Plans, and consider market-based instruments while supporting effective practices.

Recommendation 2: Measures should be taken to reduce emissions from cultivated drained organic soils, which are areas with high emissions but a relatively small coverage. The report also highlights **deficiencies in policy design**, including the absence of a mitigation target and challenges with monitoring. The lack of field-level data and limited improvement in ambition levels compared to previous periods were identified.

Recommendation 3: Develop an indicator to assess the impact of the CAP, assess the possibility to **apply the polluter pays principle and to incentivize farmers for carbon removals**. The report stresses the importance of implementing the polluter pays principle in the EU and prioritizing cost-effective measures.

Part 1.

Emissions trading for pricing agricultural GHG emissions along the value chain

Introduction

Julia Bognar from the Institute for European Environmental Policy (IEEP), the lead on the part of the study on Emissions trading for pricing agricultural GHG emissions along the value chain, presented the policy design options and considerations for an ETS. The five policy options explored as part of the study on an ETS for pricing agricultural GHG emissions (**AgETS**) were presented. The presentation started with reasons for why an ETS was chosen over other instruments for pricing emissions (e.g. tax, sectoral targets, penalties, etc.). This was followed by a description of the five policy options, which include **three options for an on-farm ETS** (covering respectively all GHG, livestock, peatlands); an **upstream ETS** (covering emissions from fertilizers producers and importers of feed); and a **downstream ETS** (covering emissions from food processors). In addition, cross-cutting as well as specific issues to the policy options were raised.

The presentation was followed by a panel discussion to bring together different views with the following panellists:

- **Amy Hughes** from the Environmental Defense Fund (EDF), who has worked on agricultural climate solutions for the past 7 years, with a focus on crediting solutions.
- **Marion Picot** from the European council of young farmers (CEJA), representing the young people who are willing to set up or have set up in agriculture.
- **Jonathan Verschuuren** from the Tilburg University, professor of European and international environmental law, who has been working on a research project on integration of agricultural emissions into the existing EU ETS since 2020, building on lessons from around the world.
- **Pierre-Marie Brizou** from Danone, who is in charge of the company's activities on regenerative agriculture in Europe including supporting farmers to implement such projects.

The Part 1 panel discussion is summarised by theme below.

Scope of emissions

During the discussion, the panellists focused on various aspects of implementing an AgETS. They discussed the importance of considering **all sources of emissions** and not just focusing on specific gases like N₂O or CH₄. It was noted that a comprehensive approach is necessary, taking into account different greenhouse gases and their **varying global warming potentials**. The panellists also highlighted the need to prioritise reductions and avoid unintended consequences. For example, while carbon sequestration in the soil is beneficial for climate mitigation, it requires nitrogen inputs that can increase N₂O emissions. On the other hand, it was mentioned the relative weight of CH₄ emissions given their global warming potential, suggesting for their prioritisation. They emphasized the importance of balancing emissions reductions with other factors such as the efficiency of food production and the potential of natural climate solutions. Along these lines, the merits of **regenerative agriculture** were stressed as a set of positive practices. From the farmers' perspective, the need was highlighted for an **integrated approach** that encompasses the whole business plan of the farm as a whole.

ETS design and point of obligation

Regarding the **scope of the ETS**, there was a consensus that downstream coverage, involving fewer actors such as food companies and retailers, would be more practical than on-farm or upstream approaches. On the other hand, having the system revolving around the farm offers farmers the **autonomy to drive the transition** in a way that is most resilient at farm-level. However, the **challenges faced by small and isolated farmers** were acknowledged, and the possibility of organisations that act as an intermediary for farmers was suggested to address some of these concerns. A possible solution for these challenges with small farmers was found in involving **only certain farms**, for instance livestock farmers, with a relatively **small number of actors**. However, panellists also indicated that instruments to reduce GHG emissions in the agriculture sector should not only be limited to an ETS, and stressed the value of having **several instruments** tackling multiple objectives as a single instrument or approach will not be enough to address all possible trade-offs.

Monitoring, reporting and verification

The panellists discussed the **complexities of carrying out MRVs** in the agricultural sector. They debated the trade-off between **precise on-farm measurements and proxy indicators**. While some argued for a proxy-based approach to reduce the burden on farmers, others stressed the importance of individual incentives and the need for ongoing research and data collection to inform the system. This is a trade-off that needs to be considered between accuracy and feasibility, where further research can play an important role in improving the accuracy of models for proxy indicators to avoid on-farm measurements.

Political and social acceptance

When it comes to creating buy-in for the ETS, the panellists emphasised the importance of addressing the specific needs of farmers and ensuring a fair distribution of responsibilities. They also highlighted the significance of considering broader issues such as access to land, investments, and knowledge for the long-term sustainability of farming practices. Finally, the panellists were prompted on the political dynamics and building coalitions to navigate the implementation of an ETS in agriculture. They emphasised the importance of stakeholder engagement, transparency and continuous improvement in the process.

Q&A session

Following the panel discussion, a Q&A session took place with questions for Julia Bogner (IEEP) as well as the panellists. The discussions during the Q&A session can be summarised in the following key topics:

- The panellists and other workshop participants discussed the role of carbon pricing in supporting the transition to more sustainable agriculture. They acknowledged that carbon pricing alone is not sufficient and emphasised the **need for complementary policies**, such as renewable energy targets and efficiency measures.
- Various **alternative policy measures** to reduce GHG emissions from agriculture were discussed. The potential of emissions taxes and incentives for concrete production models and practices was also mentioned. Moreover, the Industrial Emissions Directive (IED) was also raised as an instrument to be explored in the context of agricultural GHG, although, it was stressed that the IED would only apply directly to farmers and not to downstream actors.
- **Information gap and difficulties with MRV rules** were key challenges that were repeated in the Q&A session. In this respect, one workshop participant shared the experience from New Zealand on these challenges, with important improvements made in the country with the tracking of emissions at farm level, resulting in many farmers having developed individual emission reduction plans.
- The **issue of imports** was raised, with concerns about the fairness of imposing strict regulations on EU farmers while imported products may not adhere to the same standards, bearing the risk of carbon leakage. The panellists and other workshop participants recognised the need for international cooperation to address the challenges on imports.

Part 2.

Rewarding climate action in the land sector through carbon farming

Introduction

Aaron Scheid from the Ecologic Institute, the interim lead on the part of the study on rewarding climate action in the land sector through carbon farming, presented policy models for linking a reward system for carbon removals in the land sector with the AgETS. **Five models** were presented as part of the study that is currently developed for the DG CLIMA, and which formed the basis for the panel discussion. Three of these models envision a **direct link between AgETS and removals** (including an integrated system, an offsets system and a deduction system), one presenting an **indirect link**, and one **without any links**. Following the description of the five models analysed, the presentation raised the main challenges presented by a system integrating carbon removals in a AgETS, namely the risks associated with **emissions reduction deterrence** and the issue of **non-equivalence** of removals and emission reductions.

The presentation was followed by a panel discussion to bring together different views with the following panellists:

- **Célia Nyssens-James** from the European Environmental Bureau (EEB), Senior Policy Officer for Agriculture and Food Systems, where she works on the CAP, carbon farming, CAP and food systems to transition to the agriculture sector and addressing the environmental challenges in a synergistical way.
- **Shefali Sharma** from the Institute for Agriculture & Trade Policy (IATP), who is working on intersection of local, global and national policies on agriculture, food farm, climate and trade.
- **Ivo Degn** from Climate Farmers and the European Alliance for Regenerative Agriculture, representing the European grass root movement of regenerative farmers, bringing experience on MRV, certification, payments and transition on farms from regenerative farming.
- **Ana Rocha** from European Landowners Association (ELO), representing other landowner organisations throughout Europe, which include farmers, foresters and conservationists, focussing on the sustainable transition, for amongst, others food systems and payments for ecosystem services.

The Part 2 panel discussion is summarised by theme below.

Carbon removal methods to be rewarded

The discussion explored the nuances associated with evaluating and implementing various carbon removal methods. Panellists delved into identifying the most impactful **carbon removal methods**, mentioning agroforestry, peatland restoration (although that would be largely emission reductions rather than removals), and the transition to resilient agricultural systems as promising approaches. Additionally, they emphasised that achieving the desired level of removals to align with existing NDCs (Nationally Determined Contributions) would necessitate the utilisation of all available cropland globally, underscoring the imperative for a transformative shift in the agricultural sector. It was unanimously agreed that a **holistic approach** should be embraced, considering factors such as **permanence, scalability, and environmental impact**, while avoiding a rigid hierarchical approach that favours one removal method over others.

Linking removals with AgETS

The possibilities on linking the AgETS with carbon removals was thoroughly examined by the panellists. Throughout the discussion, diverse opinions emerged regarding the risks and opportunities associated with linking the AgETS and carbon removals. Several panellists were particularly critical on the first four policy models, where some form of equivalence between emission reductions and removals is created and could essentially be interpreted as a form of offsetting. Concerns were raised about the potential for mitigation deterrence and the establishment of false equivalences between emission reductions and removals, especially with MRV on carbon removals still lacking and the non-equivalence of different greenhouse gases.

Throughout the discourse, it was consistently emphasized that emission reductions and carbon removals should not be treated as interchangeable entities, but rather as separate and complementary components, each requiring distinct targets and incentives. They also emphasised the need to incentivise production models that effectively reduce emissions while promoting long-term sustainability.

The panellists critical of the first four policy models therefore did see the policy model of Disconnected markets as one worth considering. They did mention that reward system under Disconnected markets should

not only consider result-based payments though but consider a form of hybrid approach where activity-based payments also play a role. This is particularly relevant in the case on some sustainable agricultural practices. Participants delved into the intricacies of the natural methane cycle and deliberated over the issue of **soil organic carbon (SOC)** permanence. It was emphasized that relying solely on SOC does not provide a permanent carbon removal solution unless coupled with the utilization of biochar. However, incentives for carbon removals through soil organic carbon should be considered in the context of a healthy and sustainable carbon cycle rather than removing and storing as much as possible carbon in soils.

On the other hand, one panellist indicated that the four policy models with direct or indirect links to the AgETS should not be directly discounted. There is a need for carbon removals to take place and any way of funding these activities would be a positive development, even if it may not be possible to find perfect solutions in avoiding risks of mitigation deterrence and non-equivalence through policy design. In addition, it was encouraged to also consider other innovative solutions and alternative market-based instruments beyond the links with an AgETS.

Co-benefits of carbon removals

A focal point of the discourse revolved around the importance of prioritizing carbon removal methods that offer **co-benefits for biodiversity**. Participants underscored the critical role that biodiversity plays in upholding ecosystem integrity and resilience. They highlighted several potential avenues for carbon removal, including peatland restoration, close-to-nature forest management, reforestation efforts, and the preservation of grasslands. Participants therefore stressed the importance of establishing a connection between carbon removal incentives and initiatives promoting biodiversity conservation and water conservation, while also recognizing the need for separate water policies and climate policies. However, a consensus emerged that **further data collection and comprehensive monitoring are imperative** to fully understand the potential impacts of carbon removal activities on biodiversity preservation.

Other options for rewarding carbon removals

Participants engaged in exploring potential avenues for utilizing revenues for carbon removals, considering hybrid payment systems and the implementation of a robust Carbon Removal Certification Framework. The CAP was acknowledged as a significant funding source, further highlighting the importance of appropriate allocation of the CAP budget. Additionally, the panellists acknowledged the availability of funding sources beyond the ETS, suggesting a comprehensive approach to secure necessary financial resources.

Q&A session

Following the panel discussion, a Q&A session took place with questions for Aaron Scheid (Ecologic Institute) as well as the panellists. The discussions during the Q&A session can be summarised in the following key topics:

- A couple of **workshop** participants expressed concerns on the risks associated with linking under the same market-based mechanism removals and emissions reductions, reiterating the challenges raised by the panel.
- Other remarks pointed at the need for continued and strengthened investment into technology and innovation, looking jointly at investment needs in both energy and food systems. Responding to this, panellists reiterated that revenues coming from the AgETS would not exclusively come from farmers but also from other (downstream or upstream) actors. This is seen as a way to support farmers in their path to transition, instead of penalizing them.
- A workshop participant suggested to adopt a similar approach as in the energy sector, where revenues from carbon levies are used to finance subsidies that could reward both farmers and consumers for climate-friendly behaviour.

Closing remarks

Christian Holzleitner, Head of Unit of DG CLIMA C.3 - Low Carbon Solutions (III): Land Economy & Carbon Removals, provided some conclusive thoughts. He first stressed that, while the discussion throughout the workshop focused on the downstream and farm-level options for an AgETS, less attention was given to an upstream approach. Nonetheless, the merits of such an approach were raised, namely the positive behavioural change as well as the innovation potential stemming from the way fertilizers are applied, or from the livestock diet.

He also mentioned that the revenue from the AgETS could also be used to finance and address some of the challenges that have been raised, such as the MRV capacity for farmers and improved the quantification methods. In this context, the Carbon Removal Certification Framework currently under development was mentioned as an important policy initiative with close relevance and inter connections with the discussions addressed in this study.

Coming back to the debate on the linking of removals to emission reductions, he pointed out that under the current LULUCF regulatory framework, land sector targets consider removals and emission reduction jointly. A certain pragmatism was prompted in order to adopt effective and feasible solutions that can be adopted by stakeholders and that can deliver the ultimate aim of climate neutrality by 2050.

Finally, the **stakeholder survey** consultation was brought to the attention of all participants at the end of the workshop, encouraging all stakeholders to provide further feedback and input to these multifaceted and urgent questions on ETS options for pricing agricultural emissions and policy models for linking a reward system for climate action in the land sector to an AgETS.

Stakeholder survey on *Pricing agricultural emissions and rewarding climate action in the land sector*

Results report

1 Introduction

This report presents an analysis of the responses received from stakeholders to the targeted stakeholder survey on “Pricing agricultural emissions and rewarding climate action in the land sector”. The aim of this survey was to gather both evidence and the views of relevant stakeholders of the policy options and models explored in the study “Applying the polluter-pays principle to agricultural emissions” commissioned by DG CLIMA to Trinomics and its partners Institute for European Environmental Policy (IEEP) and Ecologic Institute, together with Umweltbundesamt and Carbon Counts (the project team).

1.1 Project context

A 2021 [report](#) by the European Court of Auditors concluded that EU law does not apply the polluter-pays principle to agricultural emissions and recommends that the Commission should “assess the potential of applying the polluter-pays principle to agricultural emissions, and reward farmers for long-term carbon removals”. Against this background, the European Commission is exploring options for pricing greenhouse gas (GHG) emissions from agricultural activities along the value chain through an Emission Trading System (ETS), as well as for rewarding farmers and other landowners for climate action.

1.2 Stakeholder survey

The survey was divided into the following parts:

Part 1. About you: questions about the profile of the respondent.

Part 2. General questions section: questions on the respondent’s views on pricing GHG emissions from agricultural activities along the value chain and rewarding farmers and other landowners for climate action (5 questions). This section did not require technical knowledge of policy instruments.

Part 3. Specialised questions section: questions on the topics/measures at hand which required expert knowledge to answer (32 questions).

At the end of the questionnaire, respondents were invited to provide any additional comments or elaborate on relevant issues that have not been addressed by the questions (2 questions).

The survey was publicly accessible for six weeks from June 15th until July 28th, 2023. E-mail invitations to respond to the survey were sent to 200+ contacts from organisations representing farmers, business along the agricultural value chain, foresters, authorities in the Member States, civil society organisations, and researchers in relevant fields. The stakeholder survey was promoted on the social media platforms LinkedIn and X (formerly Twitter) by the European Commission and the project team.

In total, 91 responses (n = 91) were submitted to the survey. This report presents the analysis of the responses from the stakeholder survey per question (Q-). Since most questions were not compulsory, not all respondents answered all questions. For some questions, respondents could select multiple answers. The number of responses is indicated with “r”. For the open questions, not all respondents provided answers relevant to the question; only relevant answers have been consolidated. Only when a set of answers could be related to specific stakeholder types has been highlighted in the results.

1.3 Contents of this results report

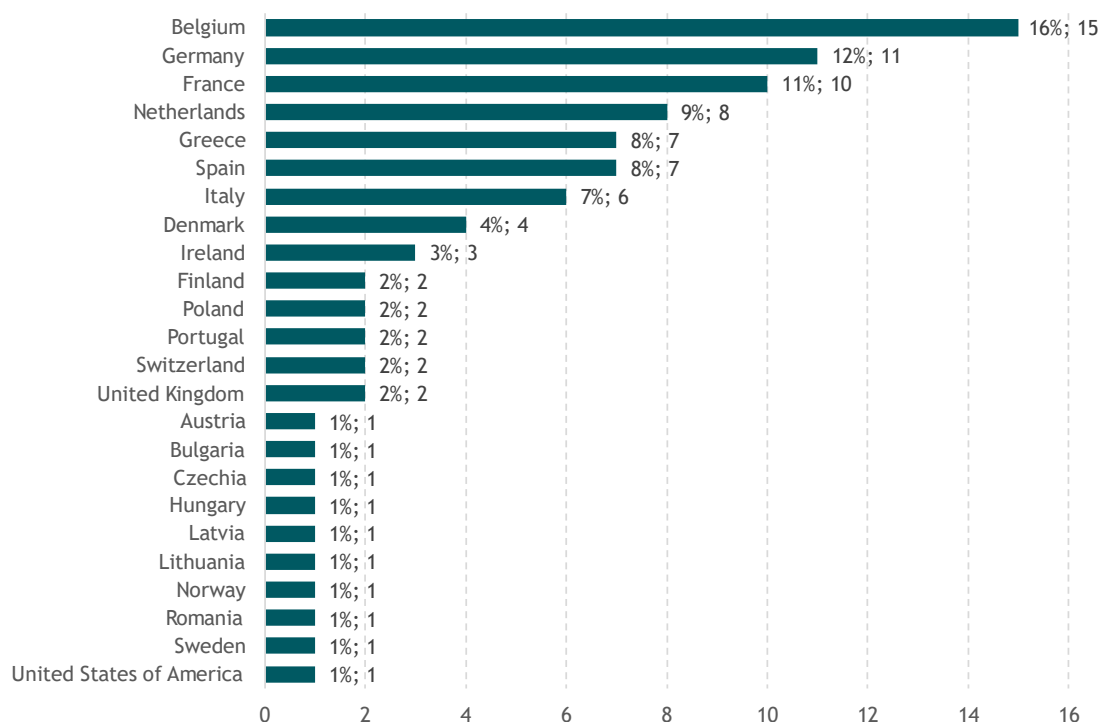
2	Results of targeted consultation	3
2.1	Respondent profile	3
2.2	General questions	6
2.3	Specialised questions	9
	2.3.1 Policy enablers	9
	2.3.2 Scope	12
	2.3.3 Policy design options	14
	2.3.4 Key challenges	21
	2.3.5 Impacts	27
2.4	Concluding questions	33
	Annex 1: Questionnaire of the stakeholder survey	35
	Part 1: About you	35
	Part 2: General questions section	37
	Part 3: Specialised questions section	38
	Concluding questions & remarks	45
	Annex 2: List of materials / publications suggested as part of Question 36	47

2 Results of targeted consultation

2.1 Respondent profile

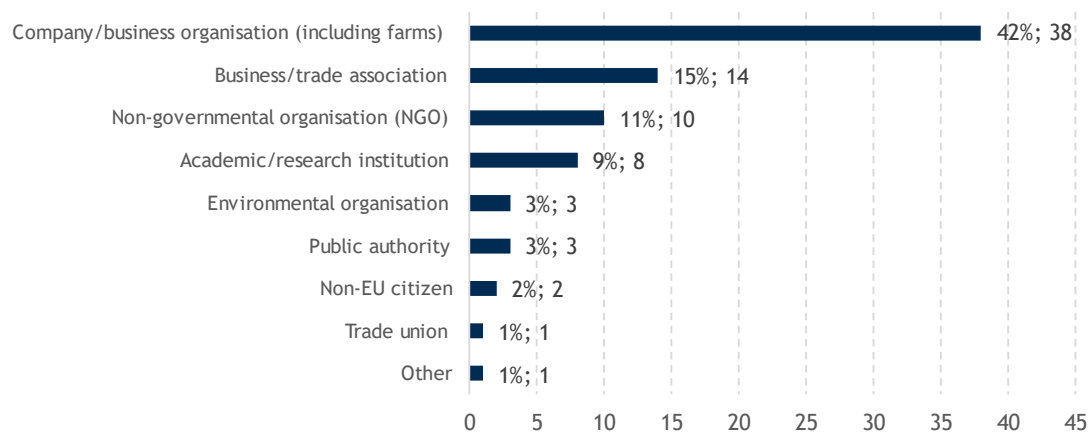
Of the 91 responses submitted to the survey, the most-represented country was Belgium (n=15; 16%), followed by Germany (n=11; 12%) and France (n=10; 11%), as visible in Figure 2-1. Some of the respondents having answered “Belgium” come from international organisations headquartered in Brussels, partly contributing to the high number of responses from that country.

Figure 2-1 Country of origin (n=91)



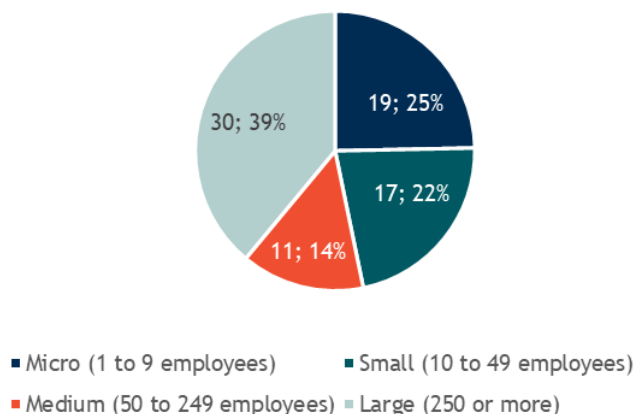
The most represented stakeholder types came from the business environment, including companies and business organisations (n=38; 42%) and business associations (n=14; 15%) (Figure 2-2).

Figure 2-2 Stakeholder type (n=91)



As shown in Figure 2-3, the majority of organisations were large (n=30; 39%) and almost one fourth were micro (n=19; 25%), showing a wide spread in the organisation size that responded to the survey. In the large and micro organisations, most respondents were companies (n=19; 63% and n=10; 53%).

Figure 2-3 Organisation size (n=77)¹



Most organisations responding to the questionnaire are active at the international level (n=52, 67%) as shown in Figure 2-4. About half of the international organisations were companies (n=28, 54%).

Figure 2-4 Organisation's scope of activities (n=78)¹

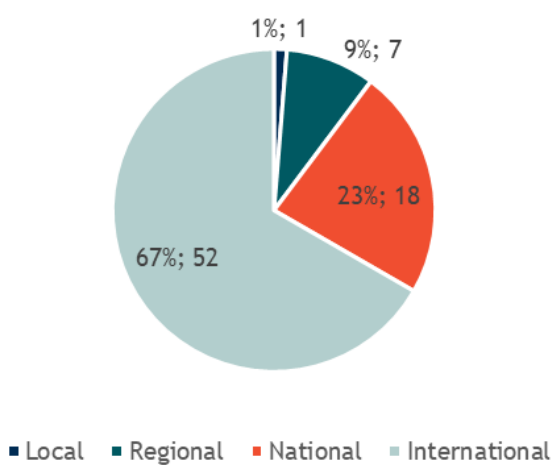
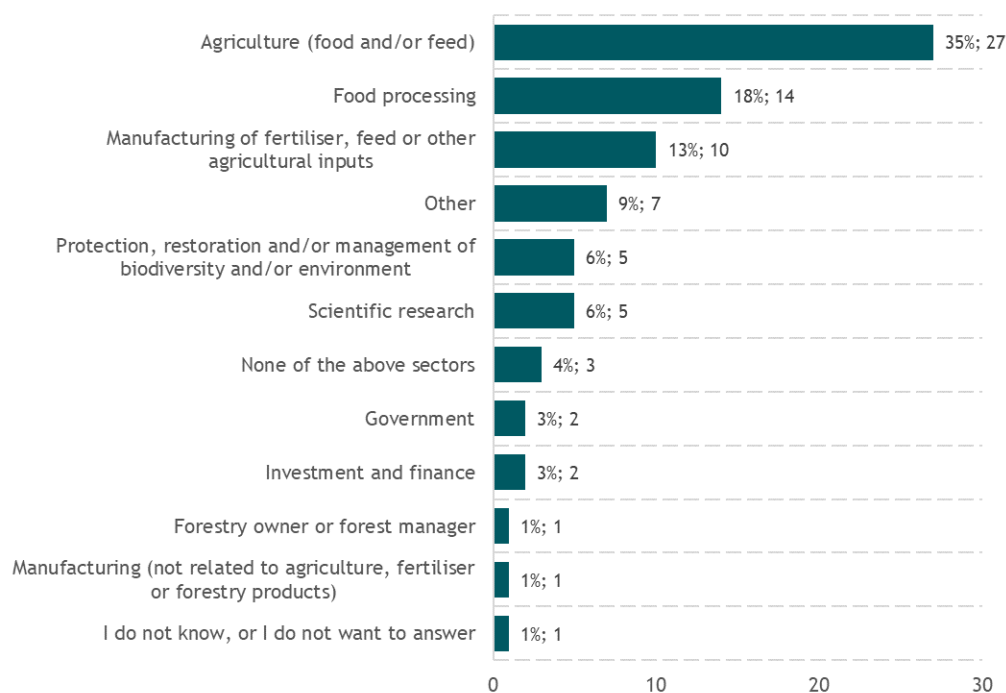


Figure 2-5 shows that sectors directly related to the topic of the questionnaire were most represented, with one quarter of respondents active in agriculture (food and/or feed) (n=27; 25%), food processing (n=17; 16%) and manufacturing of fertilisers, feed or other agricultural input (n=10; 9%). Respondents indicating "Other" belonged to organisations on carbon certification programmes, industry associations, thinktanks or consumer organisations.

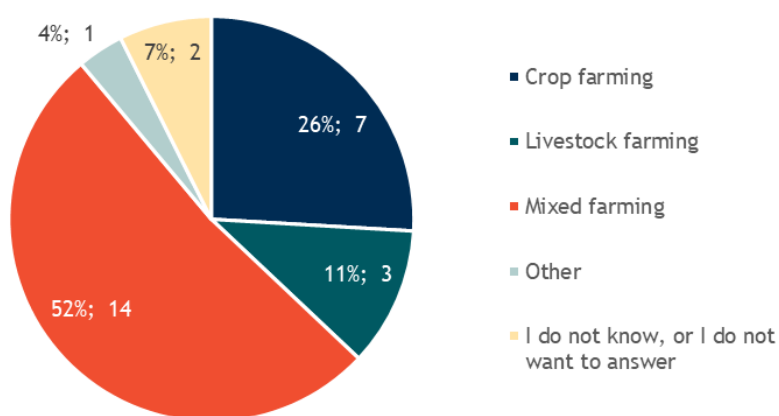
¹ This question was only asked to respondents that did not identify themselves as citizens.

Figure 2-5 Sectors in which the organisation of the respondent is most active (n=78)¹



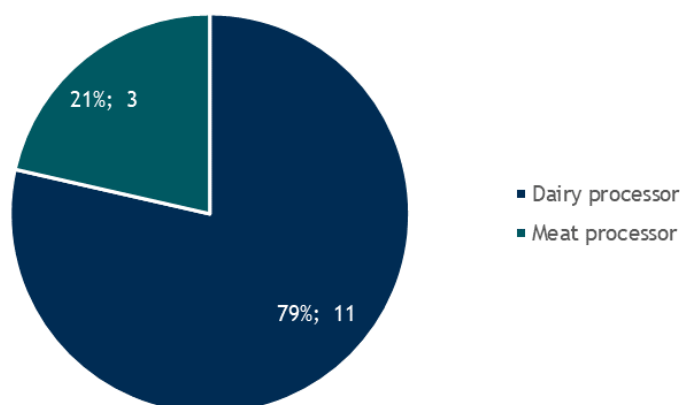
Respondents within the agriculture and food processing sectors were asked to specify their sub-sector of operation. The majority of those from the agriculture sector were active in mixed farming (n=14; 52%), followed by crop farming (n=7; 26%) (Figure 2-6). The majority of those from the food processing sector were active in meat processing (n=11; 79%), with the remainder active in dairy processing (n=3; 21%) (Figure 2-7). None of the respondents belonged to the sub-sector crop processor, which was also a possible answer to this question.

Figure 2-6 Sub-sectors of activity within the agriculture sector (n=27)²



² This question was only asked to respondents that answered that they were most active in the sector agriculture (food and/or feed).

Figure 2-7 Sub-sectors of activity within the food processing sector (n=14)³



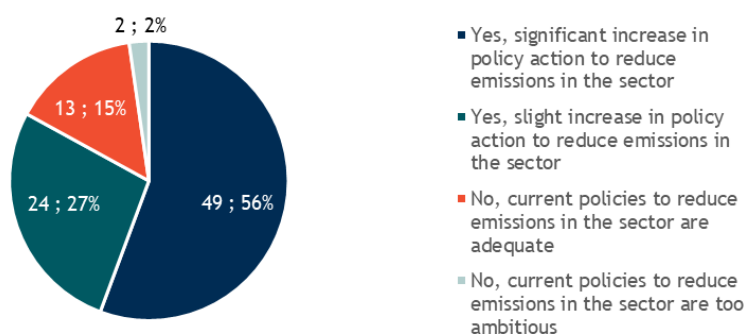
2.2 General questions

Q-1: Do you think more policy action (at the EU and/or Member States level) is needed to reduce GHG emissions in the agriculture sector?

As shown in Figure 2-8, more than half of the respondents to the question (n=49, 56%) thought that significantly more policy action is needed to reduce emissions in the agriculture sector, whereas a smaller number thought that current policies are sufficient (n=13; 15%) or too ambitious (n=2; 2%).

The majority in all stakeholder groups supported a significant or slight increase in policy action. In the stakeholder groups with the most respondents, most companies supported a significant increase in climate policy action in the agriculture sector (n=19; 53%) and most business/trade associations supported a slight increase (n=9; 64%). It should be noted that out of the 19 companies that supported a significant increase, 7 were active manufacturing of fertiliser, feed or other agricultural inputs and 2 in food processing. Only 3 were active in agriculture (food and/or feed) (of the total 27 respondents from that stakeholder group). Most respondents that indicated that current policy action is adequate came from companies (n=7; 53%) from agriculture (food and/or feed), food processing and manufacturing of fertiliser, feed or other agricultural inputs. The responses that current policies are too ambitious came from 1 business/trade association and 1 EU citizen.

Figure 2-8 Responses to Question 1 (n=88)



³ This question was only asked to respondents that answered that they that were most active in the sector food processing.

Q-2: In your opinion, how effective is putting a price on GHG emissions (i.e., carbon pricing) from the agriculture sector to incentivise GHG emissions reduction in that sector?

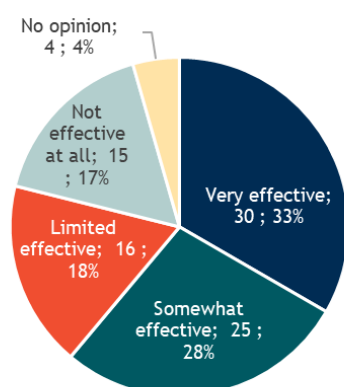
One third of the respondents to question 2 (Figure 2-9) thought that putting a price on GHG emissions from the agriculture sector to incentivise GHG emissions reduction in that sector is very effective (n=30; 33%), and a further 28% (n=25) thought it was somehow effective. On the other hand, a smaller proportion of the question’s respondents stated that doing so would have a limited effectiveness (n=16; 18%) or not be effective at all (n=15; 17%).

A majority of respondents in most stakeholder groups, with the exception of non-EU citizens and trade unions, answered that putting a price on GHG emissions was somewhat or very effective to incentive GHG emissions reduction in the agriculture sector. Responses from non-EU citizens were split between limited effectiveness and not effective at all (n=1; n=1), whereas the only trade union answered “not effective at all” (n=1). In addition, in three stakeholder groups, the most-chosen answer was “somewhat effective”: academic/research institutions (n=6; 75%), business/trade associations (n=8; 57%), and public authorities (n=2; 67%).

Of the respondents that answered that carbon pricing would not be effective at all, the majority came from companies or business associations (n=8; 53% and n=5; 33%), who were all active in agriculture (food and/or feed) or food processing.

In the open textbox of this question section (Q-5), 7 respondents emphasised their support for carbon pricing on agricultural GHG emissions, explaining that it is an effective tool to reduce emissions or that it would help the business case for more efficient products and technologies. Conversely, 14 respondents indicated that they opposed carbon pricing in the sector due to concerns about food security, negative impacts on (small) farmers, and/or the risk of production being moved to countries with less stringent requirements (carbon leakage). 1 respondent indicated the need for a carbon border adjustment mechanism to accompany an agricultural ETS to avoid negative impacts on food availability and EU competitiveness.

Figure 2-9 Responses to Question 2 (n=90)



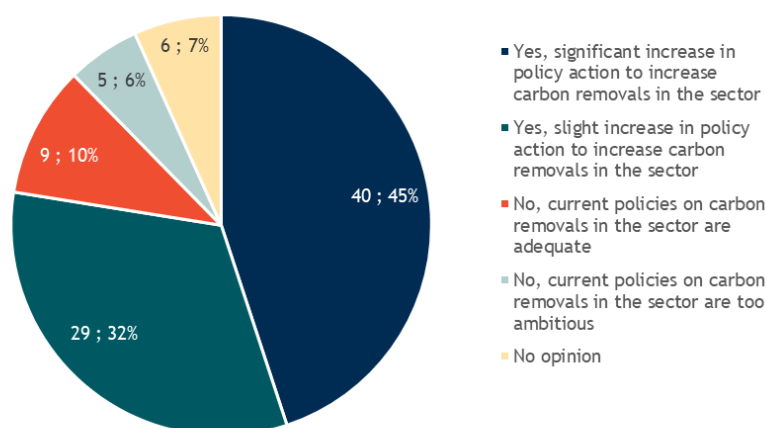
Q-3: Do you think more policy action (at the EU and/or Member States level) is needed to increase carbon removals in the Land use, Land use Change and Forestry (LULUCF) sector?

As visible in Figure 2-10, almost half of the respondents to the question thought that significantly more policy action is needed to increase carbon removals in the LULUCF sector (n=40; 45%), whereas a

smaller number thought that current policies are adequate (n=9; 10%) or too ambitious (n=5; 6%). The majority of the respondents that supported a significant or slight increase in policy action on carbon removals also supported an increase in policy action to reduce agricultural GHG emissions (n=63; 91%). Similarly, the most respondents that did not support an increase in policy action on carbon removals also did not support an increase in policy action to reduce agricultural GHG emissions (n=9; 64%).

All stakeholder groups had at least 50% of respondents supporting a slight or a significant increase in policy action to increase carbon removals in the sector. Three stakeholder types had a slight increase as their most-chosen answer: business/trade associations (n=7; 50%), company/business organisations (including farms) (n=16; 43%) and public authorities (n=2; 67%). The other stakeholder groups expressed a stronger preference for a significant increase.

Figure 2-10 Responses to Question 3 (n=89)



Q-4: In your opinion, how effective is financially rewarding carbon removals in the LULUCF sector to incentivise carbon removals in that sector?

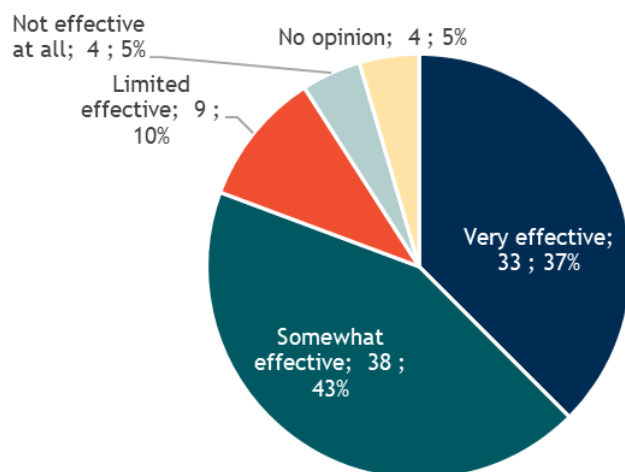
Over one third of the respondents to question 4 (Figure 2-11) believed that financially rewarding carbon removals in the LULUCF sector to incentivise carbon removals in that sector is very effective (n=33; 37%), and a further 43% (n=38) thought it was somehow effective. On the other hand, a much smaller proportion of the question’s respondents stated that doing so would have a limited effectiveness (n=9; 10%) or not be effective at all (n=4; 5%). Responses of a reward system not being effective came from two trade associations, 1 NGO and 1 trade union.

In two stakeholder groups, at least 50% of respondents answered that financially rewarding carbon removals in the LULUCF sector to incentivise carbon removals in that sector would be very effective: academic/research institutions (n=4; 50%) and EU citizens (n=7; 70%). In all stakeholder groups besides trade unions, at least half of stakeholders believed that doing so would be at least somewhat effective.

Among the 15 respondents that did not think carbon pricing in the agriculture sector was effective at all (Q-2), most of them indicated that they did consider financially rewarding carbon removals was very effective or somewhat effective (n=12; 80%). These were all companies and business associations active in agriculture (food and/or feed) or food processing.

In the open textbox of this section (Q-5), 7 emphasised their support for rewarding LULUCF carbon removal, stating that it would support the agriculture and land sector to transition. An additional 2 respondents indicated that while they were not against financially rewarding carbon removals, these should be activity-based rather than results-based. Finally, 5 respondents substantiated their opposition to such a system, expressing concerns about the scientific uncertainties surrounding the effectiveness of removals in long-term, costs associated with MRV and/or certification, and the risk that removals would be used to offset emissions.

Figure 2-11 Responses to Question 4 (n=88)



Q-5: If you wish, please briefly explain your answer to any of the previous questions (Q-1 to Q-4)

A total of 60 respondents replied to this open question. 21 respondents emphasised their general support for an agricultural ETS and/or a LULUCF carbon removal reward system. Another 19 respondents substantiated their concerns about such systems. Specific comments about the ETS and the LULUCF removal system are discussed above under the relevant questions (Q-2 and Q-4).

Some respondents mentioned the **need to take into account specific impacts** without expressing clear support or opposition in pricing agricultural GHG emissions and/or financially incentivising LULUCF carbon removals, notably social impacts (e.g., on households, small farmers) (n=4), other environmental impacts (e.g., biodiversity, climate adaptation, etc.) (n=2), and food security (n=1).

2.3 Specialised questions

2.3.1 Policy enablers

Q-6: Please rate the importance of having the following enablers in place for the successful implementation of an ETS on agricultural emissions

Table 2-1 shows that all of the policy enablers listed in the question were seen as important (rating of 4 or 5) by a majority of respondents to the question. The enabler judged most important was to improve the availability, accuracy and robustness of data on agricultural GHG emissions (average of 4.67). To financially reward good farming practices and to ensure involvement of farmers, landowners and all relevant stakeholders into policymaking were also two options strongly supported by respondents overall (respective averages of 4.59 and 4.57).

Conversely, mitigating the impact on food prices was comparatively seen as least important of the listed policy enablers (average of 3.75).

Table 2-1 Responses to Question 6 sorted by highest average rating [1 = minor importance, 5 = major importance, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Improve the availability, accuracy and robustness of data on agricultural GHG emissions	0%	3%	5%	17%	74%	1%	4.64	77
Financially reward good farming practices	0%	1%	11%	15%	71%	3%	4.59	75
Ensure the involvement of farmers, landowners and all relevant stakeholders into policy-making	0%	4%	9%	12%	72%	3%	4.57	76
Ensure the availability of cost-effective and user-friendly monitoring, reporting and verification methods of agricultural GHG emissions	0%	3%	12%	15%	69%	1%	4.53	75
Training on skills and knowledge on measuring emissions and implementing GHG emission reduction measures	0%	0%	11%	28%	58%	4%	4.49	76
Availability of funding for investment in GHG emission reduction measures	0%	3%	15%	28%	51%	3%	4.32	74
Minimise administrative and transaction costs for the actors participating in the ETS	1%	6%	12%	18%	58%	4%	4.31	77
Limit negative impacts on international competitiveness and carbon leakage	0%	5%	13%	23%	52%	7%	4.30	75
Availability of low-cost GHG emission reduction measures	3%	3%	15%	25%	52%	3%	4.25	75
Mitigate social impacts	1%	8%	9%	24%	50%	8%	4.23	76
Increase funding for research and development of measures to reduce agricultural GHG emissions	0%	5%	23%	22%	48%	1%	4.14	77
Mitigate impact on food prices	11%	12%	12%	18%	43%	4%	3.75	76

19 respondents selected “other” in their response to this question, but only 13 respondents specified what other policy enablers they considered of major importance. This included support to shift diets to plant-based food (n=3), awareness of the necessity to invest in GHG reduction (n=2), having a high CO₂ price (n=1), and providing support to ensure farms keep producing food (n=1).⁴

Q-7: Please rate the importance of having the following enablers in place for the successful implementation of a reward system for LULUCF carbon removals

Similarly to the question on policy enablers for a successful ETS on agricultural emissions (Q-6), as seen in Table 2-2, all of the policy enablers listed in question 7 on the setup of a reward system for LULUCF carbon removals were seen as important (rating of 4 or 5) by a majority of respondents to the question. The enabler judged most important was to ensure the involvement of farmers, landowners and all relevant stakeholders into policymaking (average of 4.59). To limit leakage risks and to improve the availability, accuracy and robustness data on the carbon removed from the atmosphere by carbon farming were also rated as important enablers by respondents (respective averages of 4.46 and 4.39).

Table 2-2 Responses to Question 7 sorted by highest average rating [1 = minor importance, 5 = major importance, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Ensure the involvement of farmers, landowners and all relevant stakeholders into policy-making	0%	4%	7%	14%	71%	4%	4.59	76
Limit leakage risks (i.e., rewarded carbon removal activities cause a decrease of removals or an increase in emissions elsewhere in the economy)	0%	1%	15%	16%	59%	8%	4.46	74
Improve the availability, accuracy and robustness data on the carbon removed from the atmosphere by carbon farming	4%	4%	5%	21%	63%	3%	4.39	76

⁴ The other responses were related to the design of an agricultural ETS rather than policy enablers.

Ensure the availability cost-effective and user-friendly monitoring, reporting and verification methods of carbon removals	3%	8%	5%	21%	61%	3%	4.32	76
Training on skills and knowledge on measuring emissions and implementing carbon removal activities	0%	3%	12%	32%	47%	7%	4.31	75
Mitigate impact on land prices and risk of land grabbing	1%	4%	14%	22%	52%	6%	4.28	77
Availability of low-cost Monitoring, Reporting, and Verification methods	5%	1%	12%	20%	56%	5%	4.27	75
Increase funding for research and development of carbon removal activities	1%	3%	19%	21%	53%	3%	4.25	77
Availability of funding for investment in carbon removal activities ⁵	4%	4%	7%	36%	50%	0%	4.25	28
Minimise administrative and transaction costs for the actors rewarded for carbon removals	5%	3%	13%	24%	49%	5%	4.15	75
Availability of low-cost carbon removal activities	3%	5%	15%	22%	47%	8%	4.15	74

18 respondents selected “other” in their response to this question, but only 12 respondents specified what other policy enablers they considered of major importance. This included the need for coherence with certain policies (CAP subsidies, subsidies for energy crops and livestock farming, and deforestation) (n=6), acknowledging the limited removal potential of some sub-sectors (e.g., dairy value chain) (n=2), and ensuring co-benefits are achieved (n=2).⁶

Q-8: If you wish, please briefly explain your answer to any of the previous questions on policy enablers

A total of 30 respondents replied to this open question. The following points were mentioned in the relevant answers:⁷

- 5 respondents stated that **addressing the social impacts of the policies** would be important, with mentions of environmental justice, a just transition, and ensuring that sustainable and healthy diets are affordable to all;
- 4 respondents emphasised certain **features that an MRV should have**, i.e., that it has to be an affordable system, and that is scientifically robust, efficient, and harmonised across the EU;
- 4 respondents mentioned the **need to remove harmful subsidies** (mentioning CAP subsidies and those supporting intensive farming);
- 4 respondents discussed the **need for broader agriculture system change** beyond harmful subsidies, mentioning a holistic transition of the farming sector, increasing resilience, addressing environmental pollution and degradation in agriculture, investments in a shift to plant-based diets, and reforming livestock rearing;
- 3 respondents stated that **reducing emissions should be prioritised over increasing removals**, indicating that removals needed more research before a reward system could be set up, with 1 indicating that carbon removals were not a valid solution for reducing emissions altogether;
- 2 respondents discussed the need for **policies to reduce carbon leakage** in the agriculture sector; and

⁵ Please note that this sub-question was mistakenly merged with the previous one (“Availability of low-cost carbon removal activities”) in the survey, and that this mistake was corrected by separating the two sub-questions when the survey was live. This explains why the number of respondents to this sub-question is low (n=28). Moreover, this typo means that whether respondents to the previous sub-question provided a reply for “Availability of low-cost carbon removal activities”, “Availability of funding for investment in carbon removal activities” or both until the mistake was fixed is uncertain.

⁶ The other responses were related to the design of an agricultural ETS rather than policy enablers.

⁷ Almost all answers were relevant to the responses in both Q-6 and Q-7 and could therefore not be allocated to either question. 2 respondents did not provide answers relevant to this question.

- 2 respondents advocated **different policies instead of an agriculture ETS/rewarding system for removals**, which were market regulation to ensure fair agricultural prices and investments in carbon friendly activities.
- 2 respondents stated that **the policies considered should be integrated into the CAP framework**.
- 1 respondent argued that **all of the policy enablers from questions 6 and 7 must be met**.

2.3.2 Scope

Q-9: Rate how important it is that these sources of agricultural GHG emissions are included under an ETS

All of the sources of agricultural GHG emissions listed in the question were seen as important (rating of 4 or 5) by a majority of respondents to the question (at least 50%). The emission sources related to livestock and fertiliser application were judged to be the most important by the respondents as shown in Table 2-3. The top three emission sources with the highest rating were manure management (average of 4.24), fertiliser application (average of 4.21), and enteric fermentation (average of 3.94). Notably, 14% of the respondents (n=10) indicated that emissions from enteric fermentation were of minor importance (i.e., score of 1). 7 out of these 10 (70%) respondents listed agriculture as their main activity and 2 were in the food processing sector (meat and dairy).

Table 2-3 Responses to Question 9 sorted by highest average rating [1 = minor importance, 5 = major importance, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Manure management	7%	3%	9%	20%	57%	4%	4.24	75
Fertiliser application	7%	5%	8%	17%	59%	4%	4.21	75
Enteric fermentation (livestock)	14%	3%	11%	15%	51%	7%	3.94	74
Drainage of peatlands	9%	7%	8%	23%	42%	11%	3.91	74
Rice farming	11%	3%	11%	27%	24%	25%	3.68	75
Urea and liming application	11%	9%	15%	25%	32%	8%	3.64	75
Burning crop residues	11%	14%	8%	24%	31%	12%	3.58	74
On-farm energy use	15%	15%	15%	20%	30%	5%	3.37	74

In the open textbox of Q-11, some respondents commented on **which broad activities should be covered (or not) by an ETS, and why**. Notably, some stated that (intensive) livestock rearing (n=5) and fertiliser application (n=2) should be included because they are large emitters of GHG. 2 respondents stated that as many activities as possible should be covered, whereas 2 other respondents stated that only the most-emitting ones should be covered by an ETS.

Others commented on **the need to ensure that emission reduction activities from agricultural practices would be reflected** in an ETS (n=3). Activities mentioned included no-till farming, permanent grassland, reduced fertilisation rate, green fertiliser use, permanent grassland/grassland renewal, herb-rich grasslands, crop rotation and water management on peat soils.

Q-10: Rate how important it is that these carbon removal activities are included under a reward system for LULUCF carbon removals

All but one of the carbon removal activities listed under the question were seen as roughly equally important (rating of 4 or 5; average of 4.20 or higher) by a majority of respondents to the question (at least 50%) as shown in Table 2-4. Only biochar was ranked lower by the respondents (average of 3.56).

Table 2-4 Responses to Question 10 sorted by highest average rating [1 = minor importance, 5 = major importance, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Afforestation & reforestation	4%	7%	7%	20%	53%	11%	4.24	76
Forest management	5%	5%	8%	17%	53%	12%	4.21	76
Increase in soil carbon (on mineral soils) ⁸	10%	0%	10%	13%	58%	10%	4.21	31
Agroforestry	5%	11%	5%	11%	61%	8%	4.20	76
Biochar	11%	8%	14%	21%	26%	20%	3.56	76

In addition, 19 respondents filled in the “if other, please specify” textbox to specify other carbon removal activities that should be included under a LULUCF carbon removal reward system. Most respondents to this question mentioned agriculture or specific agricultural practices (n=10), although these were mostly related to reducing agricultural GHG emissions rather than carbon removal activities. The specific practices mentioned include organic farming, cover crops, pastures, crop rotation, catch crops / winter crops, reducing land use and regenerative agriculture practices. Other responses mentioned forests (n=3; already covered in the list of options in the questionnaire), peatland rewetting (n=2; considered as an emission reduction measure in the first place rather than a carbon removal activity in this study), direct air carbon capture and storage (n=1), and planting vegetation other than trees (n=1).

In the open textbox of Q-11, following comments were made with relevance to the activities to be included under a LULUCF system:

- Respondents emphasised the **activities that should be covered (or not) by the reward system for carbon removal, and why**. On this topic, most discussions were around biochar, with 4 respondents arguing that biochar should be excluded due to concerns for land-use change, soil toxicity, biodiversity impacts, limited feasibility in some areas and the need for more research. 1 respondent argued that biochar was an easy way to increase soil carbon. 4 supported the inclusion of forestry due to its large potential for carbon sequestration;
- Some respondents discussed **the definition of each activity that should be covered in the reward system**. For instance, 3 argued that forest management should be understood as “close to nature forestry” and 2 that afforestation must be carefully regulated (potential side effects, need to be climate resilient and biodiversity-friendly); and
- Others commented on **additional activities that should be included**, citing long-lived wood products (e.g., in construction) (n=3).

Finally, 4 respondents stated that **removals can already be supported through the CAP**, implying that a reward system may not incentivise carbon removal activities.

Q-11: If you wish, please briefly explain your answer to any of the previous questions on scope

30 respondents replied to this open question. All replies have been discussed under Q-9 and Q-10.

⁸ Please note that this sub-question was mistakenly merged with the previous one (“Forest management”) in the survey, and that this mistake was corrected by separating the two when the survey was live. This explains why the number of respondents to this sub-question is low (n=29). Moreover, this typo means that whether respondents to the previous sub-question provided a reply for “Forest management”, “Increase in soil carbon (on mineral soils)” or both until the mistake was fixed is uncertain.

2.3.3 Policy design options

Q-12: Which actor(s) in the agricultural value chain should be the compliance entity under an ETS on agricultural emissions, and thus directly face a carbon price

Overall, food processors (i.e., a downstream ETS) were the preferred compliance entity, with 43% of respondents (n=30) rating it as 5 (strongly agreeing to a downstream ETS) and only 10% rating it a 1 or 2 (strongly or somewhat disagreeing) as shown in Table 2-5. The average rating for a downstream ETS was 4.00, corresponding to the respondents on average somewhat agreeing that food processors should be the compliance entity under an agricultural ETS. Conversely, an ETS with farmers as the compliance entity was the least favoured option (average of 3.17, which reflects neither a clear disagreement nor agreement to an on-farm ETS). Regarding the option of other actors (e.g., retailers, consumers) in the value chain as the compliance entity, a lot fewer respondents expressed an opinion of this option (n=42 instead of n=63 to 65).

Some notable observations regarding the relationship between the main activity of respondents and their replies to this question can be made:

- Out of the 23 respondents who replied 1 or 2 to “farmers”, 52% (n=12) identified as belonging to the agriculture sector. This option received an average score of 2.58 from respondents from that sector, indicating their general opposition of farmers being the compliance entity under an agricultural ETS.
- Out of the 19 respondents who replied 1 or 2 to “fertiliser and feed producers”, 16% (n=3) identified as manufacturers of fertiliser, feed or other agricultural inputs. This option received an average score of 3.22 from respondents from that sector. Instead, most respondents that rated this option negatively either communicated a strong preference for the compliance entity to be elsewhere in the value chain (i.e., n=6 for “farmers” and n=11 for “food processors” with a score of 4 or 5) or were against an agricultural ETS in general (n=3).
- Out of the 7 respondents who replied 1 or 2 to “food processors”, none identified as belonging to the food processing sector. This option received an average score of 3.83 from respondents from that sector. Out of the respondents who replied 1 or 2, 3 of these respondents expressed a strong preference for the compliance entity to be “farmers” (score of 5) and 3 were against an agricultural ETS in general.

Table 2-5 Responses to Question 12 sorted by highest average rating [1 = strongly disagree, 5 = strongly agree, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Food processors (downstream ETS)	6%	4%	17%	20%	43%	10%	4.00	70
Other actors (e.g., retailers, consumers)	15%	2%	12%	18%	23%	30%	3.48	60
Fertiliser and feed producers (upstream ETS)	19%	7%	14%	18%	32%	11%	3.40	73
Farmers (on-farm ETS)	22%	11%	14%	15%	27%	11%	3.17	73

Some respondents provided further feedback on who should be the compliance entity in Q-20:

- 3 respondents emphasised their support for an on-farm ETS;
- 3 respondents opposed the on-farm ETS due to the complexity of such a system and/or the difficult position of farmers;
- 1 substantiated their preference of having upstream actors as the compliance entity due to their high emission reduction potential; and

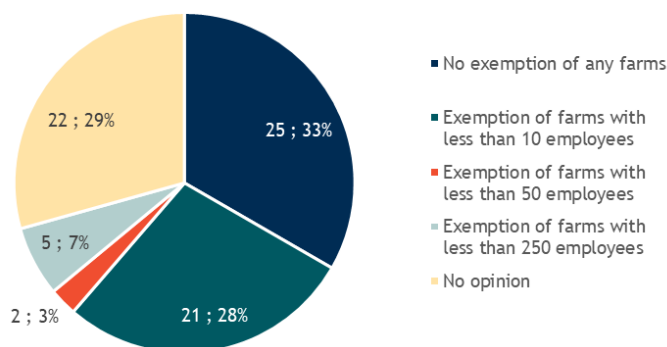
- 1 explicitly favoured picking retailers as the point of obligation because other actors (e.g., farmers, milk factories slaughterhouses etc.) face economic difficulties.

Q-13: Under the on-farm ETS option (option A1), what should be the threshold for exempting small farms

Answers regarding the threshold for exempting small farms under the on-farm ETS option were divided almost equally between not exempting any farms (n=25; 33%), exempting those with less than 10 employees (n=21; 28%), and no opinion (n=22; 29%) (Figure 2-12). Those who answered “no opinion” were mostly respondents who had no opinion in Q-12 on who the compliance entity should be (n=7) or who gave a low score (1 or 2) for farms on that same question (n=11).⁹

In the open textbox of Q-20, some respondents expressed their opposition to setting an exemption threshold based on the number of employees, and instead advocated for one based on GHG emissions (n=3) or livestock units/ha of land (n=2).

Figure 2-12 Responses to Question 13 (n=75)



Q-14: Under the upstream ETS option (option A2), what should be the threshold for exempting small feed and fertiliser producers

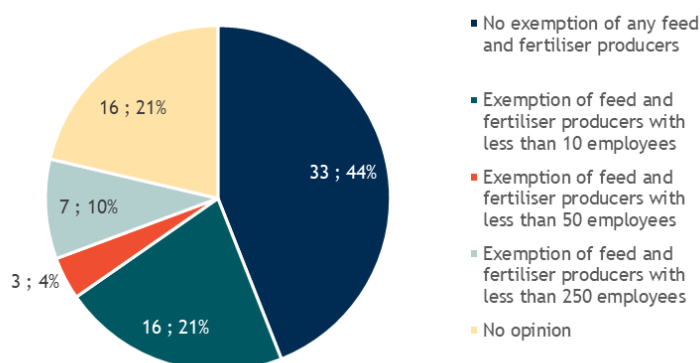
The most chosen answer was to have no threshold for exempting small feed and fertiliser producers under the upstream ETS option (n=33; 44%) (Figure 2-13). Those who answered “no opinion” were mostly respondents who had no opinion in Q-12 on who the compliance entity should be (n=5), or who gave a low score (1 or 2) for manufacturers of feed and fertiliser products on that same question (n=6).¹⁰

In the open textbox of Q-20, 4 respondents argued that a threshold for companies should not be set based on the number of employees, with 3 of them suggesting thresholds based on GHG emissions as a better alternative.

⁹ No other correlation between the answers and the previous questions, including on stakeholder groups with their main activity as “agriculture (food and/or feed)” or size of their organisation, was found.

¹⁰ No other correlation between the answers and the previous questions, including on stakeholder groups with their main activity as “manufacturing of fertiliser, feed or other agricultural inputs” or size of their organisation, was found.

Figure 2-13 Responses to Question 4 (n=75)

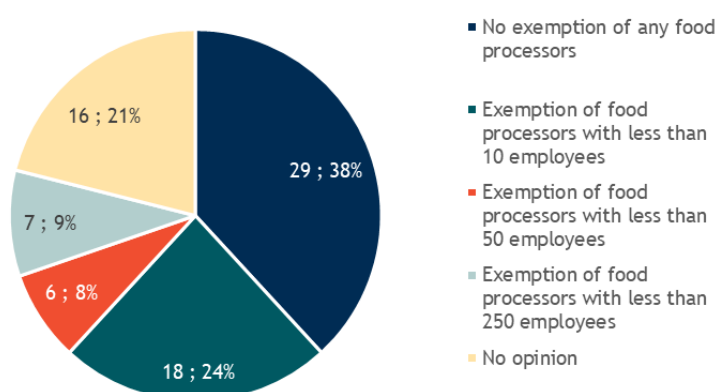


Q-15: Under the downstream ETS option (option A3), what should be the threshold for exempting small food processors

The most chosen answer was to have no threshold for exempting small food processors under the downstream ETS option (n=29; 38%) (Figure 2-14). 21 of the 29 respondents (72%) that answered no exemptions to this question also answered that there should be no exemption in Q-13 and Q-14. Similarly, 11 of the 16 respondents (69%) that answered no opinion in this question also did not have an opinion on exemption thresholds in Q-13 and Q-14.¹¹

Similar as under Q-14, the comments made by 4 respondents in the open textbox of Q-20 that the threshold for companies should not be set based on the number of employees is also applicable to this question, with 3 of them suggesting thresholds based on GHG emissions as a better alternative.

Figure 2-14 Responses to Question 15 (n=76)



Q-16: Which carbon removal activities should be allowed by entities covered under an agricultural ETS to meet their compliance obligation?

Over half of the respondents to this question indicated that all LULUCF carbon removal activities (i.e., both on farms and in forests) should be allowed by entities covered under an agricultural ETS to meet their compliance obligation (n=40; 53%). In contrast, almost a quarter of respondents (n=18; 24%) were

¹¹ No other correlation between the answers and the previous questions, including on stakeholder groups with their main activity as “food processing” or size of their organisation, was found.

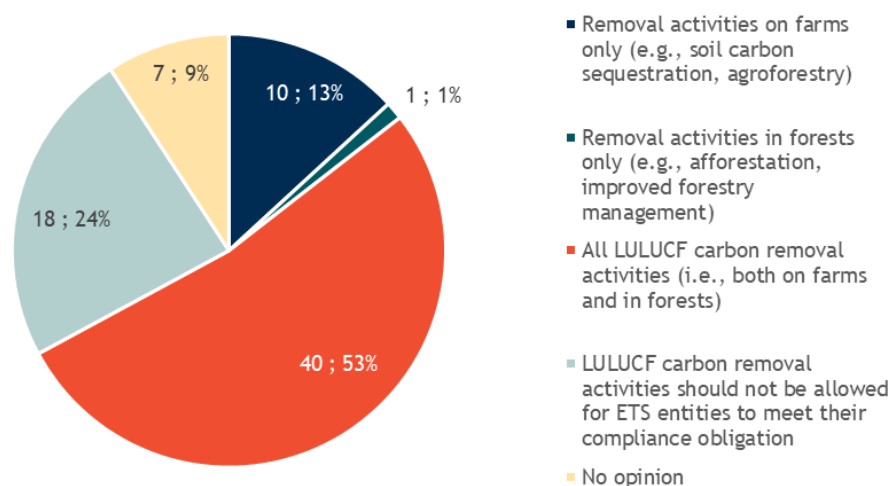
not in favour of allowing ETS entities to use LULUCF carbon removals to meet their compliance obligations. Another notable finding is that only one respondent (1%) answered that removal activities for meeting compliance obligation activities under an agricultural ETS should be limited to forests only (Figure 2-15).

Four stakeholder groups had at least half of their respondents supporting the option of allowing all LULUCF carbon removal activities as part of an agricultural ETS: company/business organisations (n=19; 66%), EU citizens (n=7; 78%), non-EU citizens (n=2; 100%) and public authorities (n=2; 67%). Conversely, most environmental organisations answered that LULUCF carbon removal activities should not be allowed for ETS entities to meet their compliance obligation (n=2; 67%). Other stakeholder groups were more split on the question. Notably, business/trade associations equally favoured removal activities on farms only and all LULUCF activities (each n=3; 27%), NGOs equally favoured allowing all LULUCF activities or none at all (each n=4; 40%), and academic/research institutions slightly favoured all LULUCF activities over removal activities on farms only (respectively n=3; 38% and n=2; 25%).

Trends per sector of main activity show that stakeholders from the agriculture sector were also split. Their most-chosen answer was to not allow LULUCF carbon removal activities to meet compliance obligations (n=8; 36%), followed by allowing all LULUCF activities (n=7; 32%) and removal activities on farms only (n=5; 23%). Food processors and manufacturers of fertiliser, feed or other agricultural inputs both largely favoured allowing all LULUCF activities (respectively n=3; 43% and n=7; 70%).

In the open textbox of question 20, 2 respondents stated that the LULUCF system should only be about setting certification rules.

Figure 2-15 Responses to Question 16 (n=76)



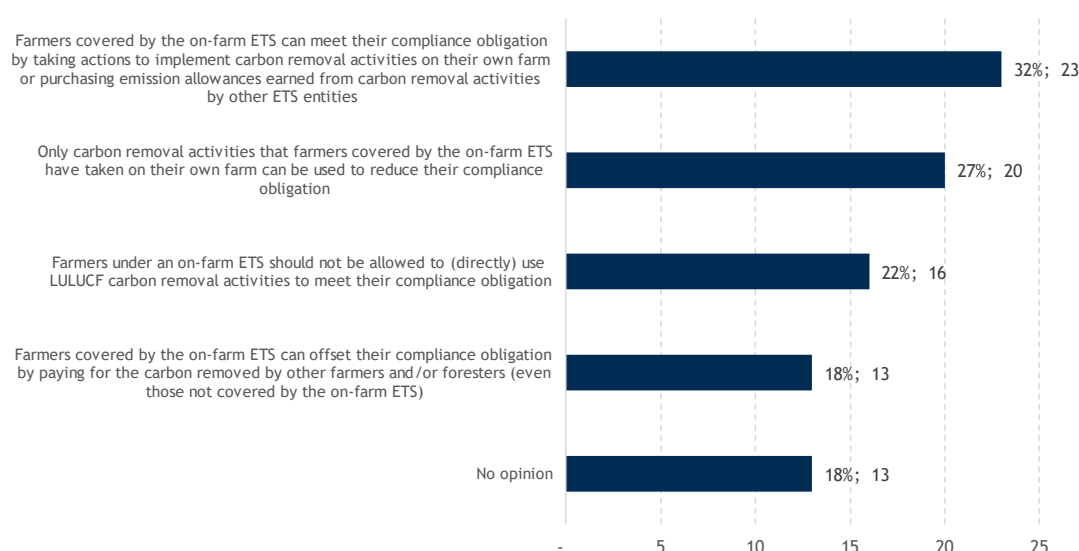
Q-17: Under the on-farm ETS option (option A1), which of the following options should be allowed as ways for farmers to meet their compliance obligation?

Respondents were asked to select one or more preferred options on how farmers should meet their compliance obligations under the on-farm ETS option. As visible in Figure 2-16, the most-chosen option was to make farmers take actions to implement carbon removal activities on their own farm or purchase emission allowances earned from carbon removal activities by other ETS entities (r=23; 32%).

The second most-preferred option was to only allow farmers to implement carbon removal activities on their own farm (r=20; 27%). The least-favoured option was to allow farmers to offset their compliance obligations by paying for carbon removals outside of their farms (r=13; 18%).

Respondents who stated that all LULUCF activities should be allowed to meet compliance obligations (Q-16) also largely answered that farmers should be allowed to meet their compliance obligation by taking actions to implement carbon removal activities on their own farm or purchasing emission allowances earned from carbon removal activities by other ETS entities (n=18; 49%). Conversely, respondents who stated that LULUCF carbon removals should not be allowed to meet compliance obligations (Q-16) mostly answered here that farmers under an on-farm ETS should not be allowed to (directly) use LULUCF carbon removal activities to meet their compliance obligation (n=13; 72%).

Figure 2-16 Responses to Question 17 (n=73; r=85)



Note: percentages can add up to more than 100% as some respondents provided multiple answers to this question.

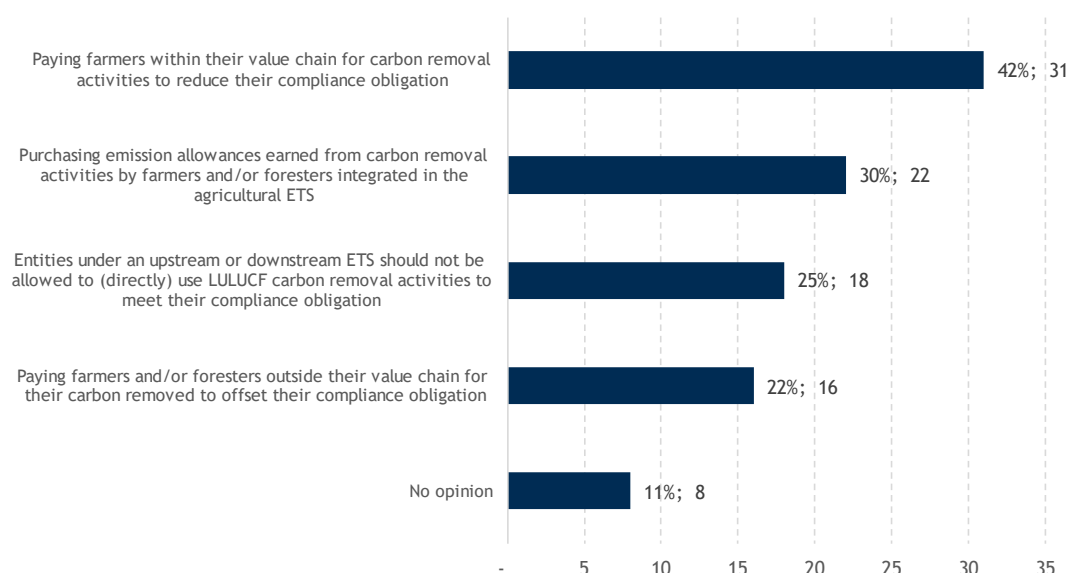
Q-18: Under the upstream or downstream ETS options (options A2 or A3), which of the following options should be allowed as ways for upstream producers or downstream processors to meet their compliance obligation?

Respondents were asked on the preferred option(s) on how upstream producers or downstream processors should meet their compliance obligations under the upstream or downstream ETS options. As visible in Figure 2-17, the most-chosen option was to make upstream or downstream actors pay farmers for carbon removal activities within their own value chain (r=31; 42%). This answer was given by 75% of manufacturers of fertiliser, feed or other agricultural inputs who expressed an opinion on this question (n=6), as well as by 45% of respondents from the agriculture sector (n=9) and 43% respondents of food processors (n=3). The least favoured option was to allow regulated entities to offset their compliance obligations by paying for carbon removals outside of their value chains (n=8; 22%).

Similar to Q-17, respondents who stated that LULUCF carbon removals should not be allowed to meet compliance obligations under an agricultural ETS (Q-16) mostly answered here that upstream producers or downstream processors should not be allowed to (directly) use LULUCF carbon removal activities to meet their compliance obligation (n=13; 72%). This implies that these respondents are generally

opposed to any form of using carbon removals to meet compliance obligations under an agricultural ETS. In the open text box of Q-20, 6 of these respondents further emphasised in the open textbox of Q-20 that there should not be a link between ETS allowances and carbon removal units due to the temporary nature of removals, high complexity, scientific uncertainty, incentive for land grabbing, reduced incentive for actual emission reductions due to compensation possibility.

Figure 2-17 Responses to Question 18 (n=73; r=95)



Note: percentages can add up to more than 100% as some respondents provided multiple answers to this question.

Q-19: What role should the government play in a reward system for LULUCF removals linked to an agricultural ETS?

Respondents were given the opportunity to select one or more preferred options on the role that the government should play in a reward system for LULUCF removals linked to an agricultural ETS. As visible in Figure 2-18, the preferred option was that the government only certifies the type of carbon removal activities that are eligible for meeting the compliance obligation under an agricultural ETS, but otherwise leaves the market to run itself (r=37; 51%).

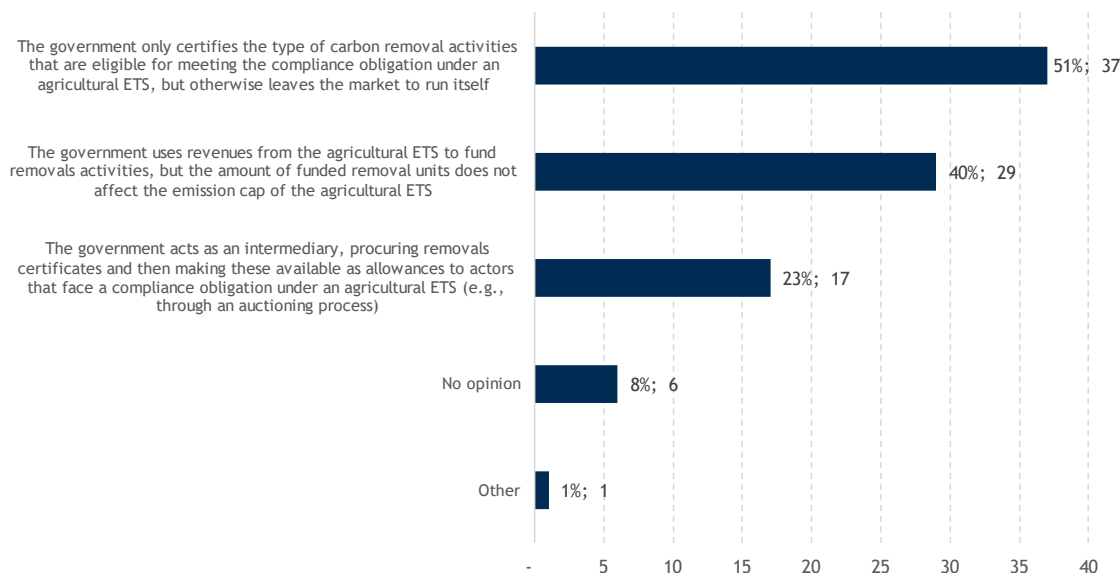
The least preferred role for the government is where it acts as an intermediary to procure removals certificates and make them available as allowances for compliance entities under an agricultural ETS (r=17; 23%). Specifically, 2 respondents emphasised in the open textbox of Q-20 that governments should not act as trading entities.

The respondent who selected “other” explained that greening the Common Agriculture Policy would be more impactful than an agricultural ETS or rewarding LULUCF removals.

Notably, 77% of 13 respondents that were generally opposed to any form of using LULUCF carbon removals to meet compliance obligations under an agricultural ETS (n=10; based on their responses to Q-16, Q-17 and Q-18) did consider the policy model where the government only uses the ETS revenues to fund removal activities without it affecting the ETS cap as an option. The remaining respondents (n=3) opposing any link between an agricultural ETS and carbon removal activities only saw a role for

the government to certify carbon removal activities without this having any connection to an agricultural ETS.

Figure 2-18 Responses to Question 19 (n=73; r=90)



Note: percentages can add up to more than 100% as some respondents provided multiple answers to this question.

Q-20: If you wish, please briefly explain your answer to any of the previous questions on policy design options

32 respondents replied to this open question. 3 respondents argued that **any pricing or reward system should be embedded within the CAP**. 3 other respondents stated that the **ETS revenues should be used to fund a broader set of practices than carbon removals** (e.g., activities with biodiversity benefits). Other answers to this question were already integrated into the relevant questions above (Q-12 to Q-19).

Additional analysis: respondent preferences on combinations between the agricultural ETS options and policy models for linking a reward system for carbon removals

Based on the responses to Q-12, Q-17, Q-18 and Q-19, a mapping has been done to compare the preferences of the stakeholders for the combinations of the presented agricultural ETS options and policy models for linking a reward system for carbon removals as shown in Table 2-6. Only answers where the respondent expressed a positive (Q-12, score 4 or 5) or negative (Q-12, score 1 or 2) preference to at least one ETS option in combination with at least one removal linking policy model (Q-17, Q-18 or Q-19) have been included (n=61). Therefore, Table 2-6 shows the preference of stakeholders for the combinations of the presented ETS policy options and removal linking policy models relative to one another. Answers related to a strong preference / disagreement for an ETS option in Q-12 (score = 5: strongly agree or score = 1: strongly disagree) have been given a higher weighting than weak preference / disagreement (score = 4; somewhat agree or score = 2: somewhat disagree).

Table 2-6 shows that the respondents consider the following two combinations as more preferred:

1. A downstream ETS where food processors can deduct carbon removals achieved in their own value chain from their compliance obligations; and
2. A downstream ETS where the ETS revenues are used to fund carbon removal activities without affecting the ETS.

Notably, of the respondents (n=13) that were strongly against the use of LULUCF carbon removals to meet compliance obligations under an agricultural ETS, they did consider the policy model where the government only uses the ETS revenues to fund removal activities without it affecting the ETS cap as an option in combination with a downstream ETS. Of these respondents, 60% (n=8) were from an NGO or an environmental organisation. In contrast, more than half of the respondents (53%; n=10) that were in favour of a downstream ETS where food processors can deduct carbon removals achieved in their own value chain from their compliance obligations had their main activity in agriculture or as manufacturer of fertilisers or feed. The rest came from a wide range of different sectors.

Conversely, any combinations with policy models where compliance entities can use carbon removals to offset their compliance obligation under the agricultural ETS or where the government acts as an intermediary between ETS allowances and removal activities were least preferred by stakeholders, particularly when combined with an on-farm ETS or upstream ETS. In general, stakeholders opposed an on-farm ETS in almost all combinations with the removals policy model, with only a neutral opinion of the removal linking policy model where the government uses revenues from the agricultural ETS to fund carbon removal activities.

Table 2-6 Comparison of stakeholder preferences for combinations between agricultural ETS options and policy models for linking a reward system for carbon removals (n=61)

Policy models for linking LULUCF carbon removals	Agricultural ETS options		
	On-farm ETS (A1)	Upstream ETS (A2)	Downstream ETS (A3)
Carbon removals activities are fully integrated in an agricultural ETS (B1)	-	+/-	+
Compliance entities can use carbon removals to offset their compliance obligations under the agricultural ETS (B2)	--	-	+
Compliance entities can deduct carbon removals from their own farm / value chain from their compliance obligations (B3)	--	+/-	++
Government as an intermediary between ETS allowances and removal activities (B4)	--	-	+
Government uses revenues from the agricultural ETS to fund carbon removal activities without affecting the ETS (B5)	+/-	+/-	++

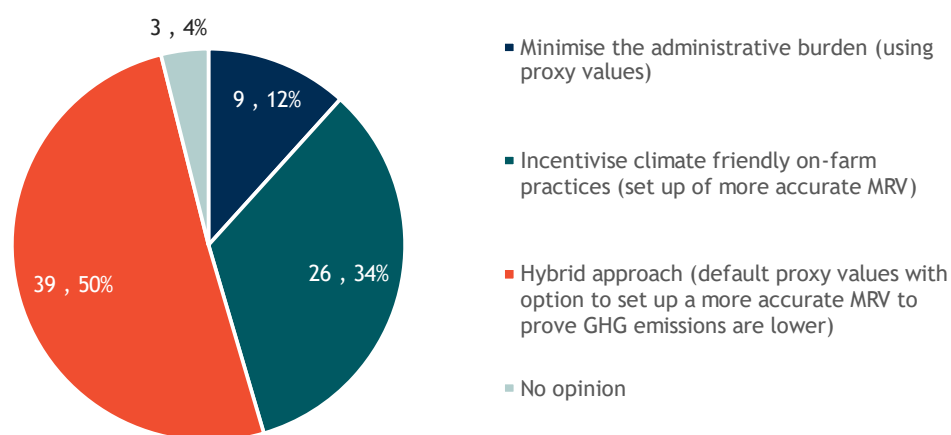
Note: A1-A3 and B1-B5 correspond to the ETS policy options and policy models for linking a reward system for carbon removals to an ETS as described in Part 3 of the questionnaire. ++ = strongly preferred, +/- = neither prefer or not preferred, - = strongly not preferred. Other colours are a gradual scale between the level of agreement.

2.3.4 Key challenges

Q-21: The monitoring, reporting and verification (MRV) of agricultural GHG emissions could be done with proxy values as a way to minimise the administrative burden. However, this approach would not necessarily recognise climate-friendly practices carried out on a specific farm, and implementing these practices would therefore not result in a lower compliance obligation under the ETS. Should an MRV approach prioritise minimising the administrative burden or incentivising climate friendly on-farm practices?

As shown in Figure 2-19, the majority of respondents (>50%) indicated their preference for a hybrid approach to MRV, which would consist of using proxy values, with the option to set up a more accurate MRV to prove lower GHG emissions.

Figure 2-19 Responses to Question 21 (n=77)



Q-22: Where do you see the main current challenges and/or future opportunities regarding improving accuracy and/or reducing costs of MRV for agricultural GHG emissions?

For this open question, 43 responses were submitted.

12 respondents highlighted **the challenges regarding the level of granularity of MRV**, with diverse opinions on the challenge in striking the balance between accuracy and feasibility, specifically:

- 5 respondents indicated that MRV should distinguish across different production models, farm practices, but also integrating broader environmental sustainability criteria (i.e. impacts on biodiversity, water quality and soil quality were mentioned);
- 3 respondents recommend using a mix of farm-level data together with proxy values, for greater feasibility; and
- 2 respondents suggested to have a crop-specific approach rather than at the level of farms, which would exclude an aggregate farm-level emissions data as well as the use of proxy values.

In terms of **future opportunities to tackle the inherent challenges of MRV** for agricultural emissions:

- 9 respondents identified **investing in innovative technological approaches** as a solution. In particular, high costs associated with data collection and verification should be alleviated through automated data verification systems. Specific technologies listed include satellite technologies, the use of artificial intelligence (AI), novel soil sensing techniques;

- 4 respondents identified the **development of farmers' MRV skills** as a crucial area of investment such as training for farmers in adopting innovative farming approaches adapted to their production and business model; and
- 1 respondent mentioned the need to **include good farming practices in the existing models** for MRV such as the inclusion of optimisation techniques of fertiliser use to reduce N₂O emissions.

Finally, 6 respondents indicated that, while they recognise the challenge with MRV, the focus should be on **investing in the development of sustainable agricultural practices at farm level** rather incentivising this through improved accuracy and/or reducing costs of MRV.

Q-23: Linking a reward system for LULUCF carbon removals with an agricultural ETS can come with significant challenges. How big of challenge would the following aspects be to overcome with policy design?

As shown in Figure 2-20, of the three challenges presented, more than half of the respondents considered them as important challenges (rating of 4 or 5). Non-equivalence was considered the biggest challenge (average of 4.13), followed by additionality (rating of 3.87) and emission reduction deterrence (average rating of 3.58).

Figure 2-20 Responses to Question 23 sorted by highest average rating [1 = minor challenge, 5 = major challenge, no opinion]

Response	1	2	3	4	5	No opinion	Average rating	n
Non-equivalence: that the carbon removed is not equivalent to a reduction in agricultural GHG emissions, e.g., because it is not permanent	1%	5%	20%	19%	47%	7%	4.13	74
Additionality: that the carbon removed would not have occurred without a reward system	7%	11%	9%	26%	38%	9%	3.87	76
Emission reduction deterrence: that the carbon removed decrease the effort to reduce agricultural GHG emissions	12%	9%	16%	23%	32%	7%	3.58	74

Q-24a: For each of the challenges, please explain succinctly how it could be overcome through policy design or another way: Non-equivalence

A total of 36 respondents filled in this question. Relevant answers have been consolidated below.

10 respondents provided potential solutions for overcoming this challenge:

- 7 respondents focussed on the importance of **harmonised standards and definitions** across the EU to ensure a robust and common legal framework, particularly on permanence (minimum stock period), with 1 respondent referring to the experience in Australia as an example;
- 2 respondents proposed a **split-gas approach**, which would assess the different greenhouse gases based on the global warming potential and their longevity, with different levies applied to them as well as different ways carbon removals can be used to compensate for them; and
- 1 respondent recommended to build **large-scale removal portfolios** ensuring portfolio-wise longevity.

12 respondents indicated that there is no assured way to overcome the challenge of non-equivalence and therefore argued for a strict **separation of carbon removals and emission reductions**. This would mean not having a link between the carbon removed from LULUCF activities and an agricultural ETS.

Q-24b: For each of the challenges, please explain succinctly how it could be overcome through policy design or another way: Additionality

A total of 33 respondents filled in this question. Relevant answers have been consolidated below.

8 respondents suggested that by **improving the quality, accuracy and implementing feasibility of the MRV and accounting system**, the issue of additionality would be tackled at the same time:

- 3 respondents further highlighted that harmonised rules and definitions are a crucial step in the achievement of accurate MRV, with 1 of them referring to the Commission proposal on Carbon Removal Certification Framework on setting standardised baselines as a way to manage the challenge of additionality;
- 1 respondent pointed to experience in Australia for lessons learnt, emphasising that it is essential that additionality is clearly regulated and assessed individually.

While not providing a solution to overcome the challenge of additionality, 6 respondents did highlight the complexities around determining additionality. They stressed the importance of **rewarding and acknowledging the actions of “early movers”** independently of the system adopted. They argued that, in setting a baseline to determine additionality, previous practices and efforts implemented before the setting of the baseline should not be disregarded. Therefore, they suggested that any policies should reflect the ongoing mitigation efforts of farmers by rewarding these early actions.

Furthermore, 14 respondents questioned the relevance of the additionality challenge:

- 6 respondents stressed their view on the need to **separate emission reductions and removals**, not allowing removals to be used as compensations or credits under an agricultural ETS, which they indicated would solve the additionality issue. In that case, removals would only have to be accounted under a LULUCF removals target;
- 6 respondents indicated that instead of results-based approaches for carbon removals, **practice-based approaches** would be preferred to incentivise specific sustainable agricultural practices. This would remove the need for an accurate quantification of the carbon removals achieved and thus a need for determining additionality. However, this would also imply not allowing removals to be used as compensations or credits under an agricultural ETS.
- 2 respondents believed the **challenge of additionality did not apply** as permanent removals such as enhanced rock weathering and/or biochar treatment of agri-waste were inherently additional by its nature.

Q-24c: For each of the challenges, please explain succinctly how it could be overcome through policy design or another way: Emission reduction deterrence

A total of 34 respondents filled in this question. Relevant answers have been consolidated below.

4 respondents provided potential solutions for overcoming these challenges:

- 2 respondents indicated that sufficiently **stringent emission reduction targets**; and
- 2 respondents proposed the use of **qualitative and/or quantitative restrictions** on the use of carbon removals to compensate for compliance obligations. This could include discount factors on carbon removal units.

3 respondents viewed risks of emission reduction deterrence directly linked to other challenges.

Addressing these challenges would also solve the issue of emission reduction deterrence:

- 2 respondents see the challenge of emission reduction deterrence as strictly linked to the **challenge of MRV accuracy**, hence if the latter is ensured then the former risk should also be mitigated; and
- 1 respondent argued that the risk of emission reduction deterrence can be addressed as long as the **principle of additionality** is ensured.

16 respondents proposed solutions where carbon removals cannot be used to compensate or offset emissions covered under an agricultural ETS:

- 12 respondents insisted on the **need to separate of emission reductions and removals** (same respondents as the ones on non-equivalence in Q-24a), to ensure emission reductions in the value chain in parallel to incentivising removals in the land sector.
- 4 respondents suggested to focus on the **development of sustainable practices at farm level** that are available for implementation by different types of farms, with tangible positive environmental outcomes (e.g., pollution reduction and biodiversity protection/restoration), instead of carbon removals. They argued that the development of guidelines for such practice-based approaches would result in lower MRV costs and would also entail positive environmental effects.

Q-25: Would an ETS on agricultural GHG emissions linked with a reward system for LULUCF carbon removals conflict with any existing EU policy? If so, which one(s)?

A total of 28 respondents answered this question, pointing at several areas of conflicts or areas for attention with existing EU policies.

10 respondents mentioned the **Common Agriculture Policy (CAP)** as a major area of attention to ensure alignment:

- 5 respondents pointed at the inconsistency of the proposed approaches (both ETS and removal reward linking models) with the CAP principle of **ensuring the economic sustainability of farms**;
- 3 respondents identified a conflict between the objectives of the proposed ETS and reduction-removals linking with **the subsidies under the CAP** that support polluting activities, calling for an overall reform of the CAP to make it compliant with EU climate and biodiversity objectives, and turning it into a primary instrument for sustainable and resilient agriculture; and
- 2 respondents argued that any ETS and carbon removal reward system should become an **integral part of the CAP**.

Other mentioned policy areas or legislation for attention of potential conflicts are as follows (often without clarifying specific areas of potential conflict):

- 5 respondents pointed at potential conflicts of the carbon removal linking models with existing EU policies with the **Biodiversity Strategy and the Climate Law**;
- 3 respondents mentioned the need for alignment of removal policy models linking emission reductions to removals with the **LULUCF Regulation**;
- 3 respondents mentioned potential conflict areas of linking carbon removals to emission reductions with the **Corporate Sustainability Reporting Directive (CSRD)** and the green claims;
- 2 respondents mentioned the **Farm-to-Fork strategy**;
- 2 respondents mentioned the need to ensure alignment of a proposed agricultural ETS with the **existing EU ETS**;

- 1 respondent mentioned **animal welfare** as an overarching policy area for attention;
- 1 respondent mentioned the **Soil Monitoring Law**; and
- 1 respondent mentioned the **Industrial Emissions Directive**.

Q-26: Please rate the expected administrative feasibility of each agricultural ETS option and policy model for linking a reward system for carbon removals to an agricultural ETS

As shown in Figure 2-21, respondents presented differing views regarding the feasibility of the ETS options. A majority of respondents (n=46, 63%) agreed that a downstream ETS would be either somewhat or very feasible. About half of respondents (n=36, 49%) rated an upstream ETS option as either very or somewhat feasible. An on-farm ETS saw the lowest respondents' scores for feasibility with 6 respondents rating it as very feasible compared to 12 respondents seeing the option as not feasible at all. For 10 of these 12 respondents, their main activity was in the agriculture (food and/or feed) sector.

In the open text box of Q-27, some respondents provided their rationale on their administrative feasibility rating for the ETS options. Their arguments were all based on the **number of entities, complexity of MRV and/or capabilities of the entities**. Most respondents commented on the on-farm ETS, with 7 respondents considering an on-farm ETS having a limited feasibility or not feasible at all, and highlighted the great challenge posed by the number of farms to be covered, hampering the feasibility of the MRV. This included concerns over the administrative costs for farmers for most of the options who often lacking the necessary capacities to operate in an ETS. At the same time, 4 respondents indicated that existing MRV methodologies for on-farm emissions can be used for an ETS and therefore rated an on-farm ETS as very feasible or somewhat feasible.

Figure 2-21 Responses to Question 26 on (a) Agricultural ETS options sorted by highest administrative feasibility

Response	Very feasible	Somewhat feasible	Limited feasibility	Not feasible at all	No opinion	n
Downstream ETS	26%	37%	15%	7%	15%	73
Upstream ETS	27%	22%	22%	8%	21%	73
On-farm ETS	8%	29%	30%	16%	16%	73

Figure 2-22 shows that respondents presented differing views regarding the feasibility of policy models linking removal remuneration to an ETS in the agricultural sector. Relatively more respondents expressed no opinion for this question compared to the ETS option in combination with a lower number of responses received. This might indicate that more respondents found it difficult to assess the administrative feasibility of the policy models.

From the answers of the respondents that were able to provide a judgement on the administrative feasibility, the policy model that was considered most feasible of the five was “disconnected markets”, where the government uses revenues from the agricultural ETS to fund removals activities, but the amount of funded removal units does not affect the emission cap of the agricultural ETS. The policy model where the government acts as an intermediary to procuring removals certificates and then making these available as allowances in an agricultural ETS was seen as the least administrative feasible by most respondents. Nonetheless, there were also respondents that saw the model with the government as an intermediary as the most feasible one, with 2 respondents substantiating this by arguing that in that model, there were the fewest number of entities involved.

Figure 2-22 Responses to Question 26 (b) Policy models for linking a reward system for carbon removals to an agricultural ETS sorted by highest administrative feasibility

Response	Very feasible	Somewhat feasible	Limited feasibility	Not feasible at all	No opinion	n
Disconnected markets	22%	16%	12%	21%	29%	68
Interconnected through deductions	14%	25%	17%	23%	21%	71
Interconnected through offsets credits	11%	19%	23%	26%	21%	70
Fully integrated in an ETS	12%	17%	23%	25%	23%	69
Interconnected with government intermediary	7%	21%	25%	25%	22%	68

Q-27: Where possible, please indicate any evidence basis that you use for your rating on the expected administrative feasibility

A total of 22 respondents answered this question. Relevant answers related to the administrative feasibility of the ETS options and removal linking models have been integrated in Q-26.

2.3.5 Impacts

Q-28: Please rate the expected impact on global competitiveness and trade balance of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS

As shown in Figure 2-23, respondents largely tend to associate somewhat negative or very negative impacts on trade and competitiveness to the three ETS options, with the share of negative scores being very close for all options. The on-farm ETS was seen as having the most negative impacts out of the three options (44% somewhat negative and very negative) and the downstream ETS the least negative (38% somewhat negative and very negative).

It is noteworthy that of the respondents that rated one or more ETS option as very negative (n=25), most of them (n=22) were stakeholders with their main activity in the food/feed value chain (i.e., agriculture, food processing or manufacturing of fertilisers or feed). These same respondents also indicated of having measures in place to limit the negative impacts of international competitiveness and carbon leakage as major importance (Q-6).

When elaborating on their scoring on trade and competitiveness in Q-29, respondents mentioned impacts such as supply-chain disruptions, the unequal impacts across different actors and food producers, the high administrative costs incurred through the system, and that some sectors will be impacted more than others, when most of its production is directed to exports (e.g., dairy products). Connected to the latter point, 5 respondents stressed the need to ensure a level playing field with international competitors, and hence called for accompanying measures in the form of Carbon border adjustment mechanism (CBAM) or other to address price asymmetries.

Figure 2-23 Responses to Question 28 (a) Agricultural ETS options sorted by least negative scores

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Downstream ETS	9%	18%	13%	18%	20%	23%	79
Upstream ETS	10%	15%	13%	16%	23%	23%	79
On-farm ETS	11%	10%	13%	15%	29%	22%	79

As shown in Figure 2-2-24, respondents largely related somewhat negative or very negative impacts on trade and competitiveness for all policy models, with the shares of negative scores were very close for all policy models ranging from 35% to 38%. The policy model “disconnected markets”, where the government uses revenues from the agricultural ETS to fund removals activities without affecting the agricultural ETS, had the least negative scores (35% somewhat negative and very negative). At the same time, this was also the policy model where most respondents did not have an opinion on the impact (32%).

It should be noted that of the respondents providing a negative score to the impact of the policy models on trade and competitiveness (27-30 responses), most are likely not direct answers to the question at hand. 18 respondents even answered somewhat negative or very negative to all policy models in this question, with 13 of these being respondents from companies or trade associations active in the agriculture value chain. Notably, the majority (72) of the 18 respondents provided a negative answer to all questions regarding impacts for all ETS options and carbon removal policy models (Q-28, Q-30 and Q-32). Their answers can therefore be interpreted as a general opposition against pricing GHG emission from agriculture, irrespective of its design or reward system for carbon removals. For 7 of these respondents, their general opposition can be confirmed as this is reflected in their clarification to this question (Q-31) and/or an earlier question (Q-5). Another 5 respondents provided a negative score for carbon removal policy models except for 1 or 2 of the policy models in all impact questions. For some of these respondents, the clarification in Q-29, Q-31 and/or Q-33 show that they provided a negative score to all models except their preferred model(s).

Figure 2-2-24 Responses to Question 28 (b) Policy models for linking a reward system for carbon removals to an agricultural ETS sorted by least negative scores

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Disconnected markets	4%	13%	16%	18%	17%	32%	77
Interconnected through deductions	6%	18%	13%	9%	26%	27%	77
Interconnected through offsets credits	8%	13%	14%	9%	28%	28%	76
Fully integrated in an ETS	9%	16%	12%	12%	26%	26%	77
Interconnected with government intermediary	8%	16%	10%	16%	22%	27%	77

Overall, about a fifth to a third of the respondents that answered this question selected “no opinion”, with a further 12-15 respondents not having filled in this question. 2 respondents indicating that further studies are needed to determine the impact on trade and competitiveness, indicating that a large portion of the respondents found it difficult to provide an answer to this question.

Q-29: Where possible, please indicate any evidence basis that you use for your rating on the expected impact on global competitiveness and trade balance

A total of 30 respondents answered this question. Relevant answers related to the expected impact on global competitiveness and trade balance have been integrated in Q-28.

In addition, 5 respondents provided suggestions for possible routes to overcome these impacts, including rewarding of early movers that have already implemented mitigation actions on their farms, and the acknowledgement of actions with negative climate impacts in the short-term but positive in the long-term due to resilience gains.

Q-30: Please rate the expected impact on food prices and consumer choices of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS

As shown in Figure 2-25, most respondents considered all three ETS options having a somewhat negative or very negative impact on food prices and consumer choices. The on-farm ETS was seen as having the most negative impacts out of the three options (46% somewhat negative and very negative) and the upstream ETS the least negative (36% somewhat negative and very negative).

When elaborating on their scoring on food prices and consumer choices in Q-31, 21 respondents indicated that food prices would increase in all ETS options. However, the respondents were not in agreement whether this had a positive or negative impact on consumer choices:

- 11 respondents, all mainly active in the food/feed value chain (i.e, agriculture, food processing or manufacturing of fertilisers or feed), emphasised the **negative impact of increased food prices** on a decrease in purchasing power of basic goods, reduced food security and increased imports from outside the EU; and
- 10 respondents from various stakeholder groups argued that the increase in food prices have a **positive impact on consumer choices**, as externalities would be priced in. This would incentivise consumers to shift to their consumption patterns to more sustainable choices and stimulate producers to develop more sustainable alternatives. 1 respondent even argued that while an ETS would increase prices, food prices would be relatively lower compared to a situation without an ETS, in which climate change impacts (e.g., drought and floods) would be more severe, leading to a much higher increase in food prices.

Figure 2-25 Responses to Question 30 (a) Agricultural ETS options sorted by least negative impacts

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Upstream ETS	9%	14%	19%	17%	19%	22%	78
Downstream ETS	10%	17%	12%	19%	22%	21%	78
On-farm ETS	10%	13%	10%	19%	27%	21%	78

As shown in Figure 2-26, respondents largely relate somewhat negative or very negative impacts on food prices and consumer choices for all policy models, with the shares of negative scores being very close for all policy models ranging from 34% to 36%. The policy model with the government acts as an intermediary to procuring removals certificates and then making these available as allowances in an agricultural ETS, has the least negative scores (34% somewhat negative and very negative). 2 respondents elaborated their negative rating for the policy models with a direct or indirect link between carbon removals and an agricultural ETS (i.e., fully integrated in an ETS or models named “interconnected”), indicating that these models risk greenwashing, which would have a negative impact on consumer choices.

However, of the respondents providing a negative score to the impact of the policy models on food prices and consumer choices (26-27 responses), most are likely not direct answers to the question at hand as noted in Q-28. Instead, their answers most likely reflect a general opposition against pricing GHG emission from agriculture, irrespective of its design or reward system for carbon removals. Some respondents provided a negative score for carbon removal policy models except for 1 or 2 of the policy models in all impact questions. For some of these respondents, this was to reflect their preferred policy model choice(s) rather than their view on the impact on food prices and consumer choices.

Figure 2-26 Responses to Question 30 (b) Policy models for linking a reward system for carbon removals to an agricultural ETS sorted by least negative scores

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Interconnected with government intermediary	9%	13%	13%	14%	20%	29%	75
Interconnected through deductions	8%	17%	13%	11%	24%	27%	75
Interconnected through offsets credits	8%	17%	12%	11%	24%	28%	75
Disconnected markets	5%	7%	18%	16%	19%	35%	74
Fully integrated in an ETS	9%	17%	11%	13%	23%	27%	75

Similar to Q-28, about a fifth to a third of the respondents that answered this question selected “no opinion”, with a further 13-16 respondents not having filled in this question. 2 respondents indicating that the impact on food prices and consumer choices largely depended on the actual design and implementation of the policies, including whether there is a phase-in of the policy and measures.

Q-31: Where possible, please indicate any evidence basis that you use for your rating on the expected impact on food prices and consumer choices

A total of 34 respondents provided views on this question. Relevant answers related to the expected impact on food prices and consumer choices have been integrated in Q-30.

In addition, 4 respondents provided suggestions for possible ways to overcome negative impacts on food prices and consumer choices, which included investing in innovative solutions to abate emissions, measures to limit the ETS costs being passed on to the consumers, and earmarking ETS revenues for using it to support consumers.

Q-32: Please rate the expected impact on income of farmers of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS

As shown in Figure 2-27, out of the three ETS options, respondents considered an on-farm ETS having the most negative impacts on the income of farmers (51% somewhat negative and very negative). In contrast, respondents were the least pessimistic about a downstream ETS (36% somewhat negative and very negative compared to 32% somewhat positive and very positive).

It is noteworthy that of the respondents that rated one or more ETS option as very negative on the income of farmers (n=30), 80% of them (n=24) were stakeholders with their main activity in the food/feed value chain (i.e, agriculture, food processing or manufacturing of fertilisers or feed). Specifically for the downstream ETS, of the 16 respondents that rated it as having a very negative

impact on the income of farmers, 69% (n=11) filled in food processing as their main activity. For the other responses, the stakeholder types were much more diverse.

When elaborating on their scoring on income of farmers in Q-33, 16 respondents mentioned that an ETS would increase costs on farmers and result in a drop in the farmer income. 6 of those respondents further emphasized that farmers have **limited bargaining power** within the value chain and will end up bearing the ETS. However, 4 respondents questioned whether a drop of farmer income should be considered a problem, since there is a **need to transform the sector to become more climate-friendly**; a drop in income would increase the relative number of climate-friendly farmers.

Figure 2-27 Responses to question 32 (a) Agricultural ETS options sorted by least negative scores

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Downstream ETS	5%	27%	14%	16%	21%	17%	77
Upstream ETS	6%	16%	13%	18%	30%	17%	77
On-farm ETS	12%	12%	8%	16%	35%	18%	77

Figure 2-28 shows that respondents largely consider all policy options having a somewhat negative or very negative impacts on the income of farmers, with the shares of negative scores being relatively close for all policy models ranging from 31% to 37%. The policy model where the government acts as an intermediary to procuring removals certificates and then making these available as allowances in an agricultural ETS, has the least negative scores (31% somewhat negative and very negative). Carbon removal activities fully integrated in an ETS had the most negative scores (37% somewhat negative and very negative).

It is noteworthy that of the respondents that rated one or more removal linking policy models as very negative (n=26), 77% (n=20) were stakeholders with their main activity as agriculture or food processing. Respondents with agriculture as their main activity were mainly negative about the models where removals activities were fully integrated in an ETS or interconnected through offsets or deductions, and most positive about the “disconnected market” model. Respondents with food processing as their main activity were negative about all policy models. In Q-33, 8 respondents from the food/feed value chain explained their negative scores: the potential for carbon removals, by nature, is limited in the agricultural sector and would not be able to generate much new income for farmers. While these do not directly reflect a negative impact on the income of farmers, the answers of these respondents most likely reflected their general opposition against pricing GHG emission from agriculture, irrespective of its design or reward system for carbon removals. Of the respondents that provided a negative score to the impact of the policy models on the income of farmers (26-27 responses), most are likely not direct answers to the question at hand as noted in Q-28. Also, some respondents provided a negative score for carbon removal policy models except for 1 or 2 of the policy models in all impact questions. For some of these respondents, this was to reflect their preferred policy model choice(s) rather than their view on the impact on the income of farmers.

Compared to Figure 2-27 on ETS options, Figure 2-28 showed approximately the double amount of respondents answering “no opinion”. This could be explained by that respondents found it difficult to see the impact of the removal linking policy models on farmers’ income compared to the ETS options.

Figure 2-28 Responses to question 32 (b) Policy models for linking a reward system for carbon removals to an agricultural ETS sorted by least negative scores

Response	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion	n
Interconnected with government intermediary	8%	13%	13%	11%	20%	35%	75
Interconnected through deductions	8%	16%	12%	11%	22%	32%	76
Disconnected markets	3%	12%	15%	15%	19%	37%	75
Interconnected through offsets credits	9%	14%	11%	11%	24%	32%	76
Fully integrated in an ETS	11%	14%	8%	5%	32%	30%	76

Q-33: Where possible, please indicate any evidence basis that you use for your rating on the expected impact on income of farmers

A total of 32 respondents provided views on this question. Relevant answers related to the expected impact on the income of farmers have been integrated in Q-32.

Q-34: If applicable, please describe any key impact(s) that have not been mentioned above and explain briefly why they are important to consider in an agricultural ETS and a reward system for carbon removals linked to such ETS

A total of 31 respondents provided views on this question. Several key impacts were provided for additional consideration:

- 6 respondents mentioned the need to assess the **overall climate mitigation impacts** of the ETS options and removal linking models, seeking a more holistic approach to the analysis of GHG emissions impacts, highlighting that emissions reduction should remain the priority of this policy. It was suggested for such a system to occur within the framework of a reformed CAP, with a strengthened climate mandate;
- 5 respondents recommended to assess the options based on their **expected impacts on biodiversity and the environment**. These include impacts on biodiversity and ecosystems, water and soil pollution, as well as animal welfare;
- 3 respondents suggested to provide more information on the expected impacts of each measure on the **economic viability of farms**;
- 3 respondents mentioned **human health** as an area of impact which should be further considered; and
- 2 respondents highlighted **food security and food poverty** as an area of assessment which should also be included.

2.4 Concluding questions

Q-35: If you wish to expand on any of your answers or if you wish to add comments or information on anything else, which is relevant to the study, please do so in the box below

40 respondents decided to expand on their answer to the questionnaire. Many respondents used this textbox to argue that **other policies should be investigated instead of an ETS and/or reward system**:

- 8 respondents criticised adopting a polluter-pays principle approach in the agriculture sector and argued that farmers should be rewarded for decreasing their GHG emissions instead;
- 8 respondents argued for more ambitious policy (transforming the CAP, broader food system transformation, removing harmful agricultural subsidies, favour other tools such as taxation, focus on the transition to plant-based diets);
- 2 respondents stated that a CAP reform / broader system transformation should be considered alongside the policy options considered in this study.

Other respondents discussed **details of the ETS, the reward system, or both approaches**:

- 9 respondents highlighted specific **ETS design details** that they considered important such as setting a high price on GHG emissions, prevent carbon leakage, not allowing free allocation, ensuring some degree of price stability, integration within the CAP, where to put the point of obligation, including other considerations beyond climate (e.g., biodiversity, soil, water), and the scope of emissions.
- 3 respondents repeated **issues regarding the LULUCF carbon removal reward system** already mentioned in previous open questions, including in relation to the precise quantification of removals, but also their permanence and sustainability (e.g., monoculture plantations should be avoided).
- 5 respondents emphasised again that the **ETS and LULUCF carbon removal reward system should not be linked** (i.e., that regulated entities under the ETS should not be able to compensate their emissions with removals). 1 respondent argued the opposite, stating that linking the two systems would incentivise carbon farming.

Finally, 3 respondents emphasised the adverse impacts the policies considered would have on food prices.

Q-36: If you consider there are materials / publications available online that should be considered further in relation to this study, please feel free to describe them (title and author) in the box below and include any relevant links

In total, 17 respondents suggested 35 unique references (see Annex 2 for a full list):¹²

- 8 references were reports and papers with policy recommendations on a variety of issues related to pricing GHG emissions from agriculture and/or funding carbon removals;
- 7 references were papers arguing against the combination of linking carbon removals with emission reductions, particularly when used as offsets;
- 6 references were papers on specific mitigation measures in the agriculture sector;
- 6 references were reports with policy recommendations on agriculture and climate change in general;
- 4 references were position papers on the EU Carbon Removal Certification Mechanism Framework; and

¹² 36 references were suggested in total, of which 1 duplicate.

- 3 references were studies on the carbon removal potential of land-based removal activities.

Annex 1: Questionnaire of the stakeholder survey

*(Mandatory questions are marked with a “**”)*

Part 1: About you

1) I am giving my contribution as:*

- Academic/research institution
- Business/trade association
- Company/business organisation (including farms)
- Environmental organisation
- EU citizen
- Non-EU citizen
- Non-governmental organisation (NGO)
- Trade Union
- Public authority
- Other (please specify):

Text box - limited to 200 characters

2) First name*

3) Surname*

4) Email address*

5) Please indicate your country of origin:*

(Dropdown menu with world countries)

If answer to Question 2) is other than “EU citizen” or “Non-EU citizen”, then Question 6) to 9) apply.

6) Organisation name

7) Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

8) Scope of your organisation’s activities

- International
- Local
- National
- Regional

9) Please indicate the sector you are active in [Please choose the most relevant sector]:*

- agriculture (food and/or feed)
- food processing
- manufacturing of fertiliser, feed or other agricultural inputs
- distribution / wholesaling of food products
- retailer
- forestry owner or forest manager

- manufacturing of forestry products
- protection, restoration and/or management of biodiversity and/or environment
- energy production
- government
- health care
- investment and finance
- manufacturing (not related to agriculture, fertiliser or forestry products)
- public health
- raw materials extraction / primary processing
- scientific research
- transport
- none of the above sectors
- other
- I do not know, or I do not want to answer

10) Please indicate which subsector you are active in [Please choose the most relevant sector]:*

Question only appears if one of the following answers is selected

- Agriculture (food and/or feed)
 - Crop farming
 - Livestock farming
 - Mixed farming
 - Other
 - I do not know, or I do not want to answer
- Food processing
 - Crop processor
 - Dairy processor
 - Meat processor
 - Other
 - I do not know, or I do not want to answer

I agree with the personal data protection provisions

Part 2: General questions section

When looking at the projections made by EU Member States in their National Energy and Climate Plans, the existing policy framework and the additional measures planned look insufficient to reduce agriculture emissions and increase the EU land-based carbon sink in line with the EU's goal to become climate neutral by 2050.¹³

- 1) Do you think more policy action (at the EU and/or Member States level) is needed to **reduce GHG emissions** in the agriculture sector?
 - Yes, **significant increase** in policy action to reduce emissions in the sector
 - Yes, **slight increase** in policy action to reduce emissions in the sector
 - No, current policies to reduce emissions in the sector are **adequate**
 - No, current policies to reduce emissions in the sector are **too ambitious**
 - No opinion

- 2) In your opinion, how **effective** is putting a price on GHG emissions (i.e., carbon pricing) from the agriculture sector to incentivise GHG emissions reduction in that sector?
 - Very effective
 - Somewhat effective
 - Limited effective
 - Not effective at all
 - No opinion

- 3) Do you think more policy action (at the EU and/or Member States level) is needed to **increase carbon removals** in the Land use, Land use Change and Forestry (LULUCF) sector?
 - Yes, **significant increase** in policy action to increase carbon removals in the sector
 - Yes, **slight increase** in policy action to increase carbon removals in the sector
 - No, current policies on carbon removals in the sector are **adequate**
 - No, current policies on carbon removals in the sector are **too ambitious**
 - No opinion

- 4) In your opinion, how **effective** is financially rewarding carbon removals in the LULUCF sector to incentivise carbon removals in that sector?
 - Very effective
 - Somewhat effective
 - Limited effective
 - Not effective at all
 - No opinion

- 5) If you wish, please briefly explain your answer to any of the previous questions:

Text box - limited to 600 characters

¹³ <https://www.eionet.europa.eu/etcs/etc-cme/products/etc-cme-reports/etc-cme-report-6-2021-agricultural-climate-mitigation-policies-and-measures-good-practice-challenges-and-future-perspectives/view>

Part 3: Specialised questions section

The exploratory study investigates various policy options to price GHG emissions from the agriculture sector via an EU-wide Emission Trading System (ETS) and how the revenues raised through such an ETS could finance carbon removal activities in the Land use, Land use change and Forestry (LULUCF) sector through different policy models.

The **main agricultural ETS options** that are being investigated in the study are:

- A1 An on-farm ETS covering on-farm GHG emissions:** farmers and landowners (above a certain size) would be obliged to participate in the ETS. This option would set a cap on the total allowable emissions. Covered farms would have a compliance obligation to surrender sufficient allowances to cover their GHG emissions, thereby ensuring emissions reductions. Farms could buy and sell emission allowances, leading to an effective price on emissions and thus a direct cost incentive to reduce their emissions. This option would impose a regulatory requirement on farmers to monitor their on-farm GHG emissions. This option could include all GHG emissions or only a subset (e.g., only livestock emissions and/or peatland emissions).
- A2 An upstream ETS covering GHG emissions associated with the use of feed and inorganic fertiliser:** producers of feed and inorganic fertiliser, which are upstream of farms in the value chain, would be obliged to participate in the ETS. These entities would have a compliance obligation to surrender an equal amount of emission allowances to the expected GHG emissions that their products would cause on farms. GHGs emitted during the manufacturing of the product are not covered by this policy option, because most of it is already covered under the current EU ETS. The GHG reduction incentive relies on the upstream entities to pass on the cost of GHG emissions to farmers, which could lead to GHG emission reductions through change in on-farm practices (more efficient use of commercial feed and fertilisers, switch to different practices) and/or use of low-emitting products. This option would impose a regulatory requirement on the upstream entities to determine the expected on-farm GHG emissions.
- A3 A downstream ETS covering GHG emissions associated with farm products processed:** Food processors (such as meat and dairy processors), which are downstream of farms in the value chain, would be obliged to participate in the ETS. These entities would have a compliance obligation to surrender an equal amount of emission allowances to the on-farm GHG emissions associated with production of the farm products that they process into food products. GHGs emitted during the processing of the final food product are not covered by this policy option, because a large portion of it is already covered under the current EU ETS. The GHG reduction incentive relies on the food processors working with (and financially supporting) their suppliers (farms) to reduce on-farm emissions and/or switching to farms with lower GHG emissions. This option would impose a regulatory requirement on the downstream entities to determine the on-farm GHG emissions.

The **main policy models for linking a reward system for carbon removals with an agricultural ETS** that are being investigated in the study are as follows, where each removal policy model can in principle be linked to every ETS option:

- B1 Fully integrated in an agricultural ETS:** not only farmers but also foresters are a part of the agricultural ETS, and both groups are rewarded with emission allowances if they generate carbon removals on their land. They can sell these emission allowances to entities under the agricultural ETS that face a compliance obligation for their GHG emissions. These would be other farmers in an on-farm ETS, feed or fertiliser producers in an upstream ETS, or food processors in a downstream ETS. In

an on-farm ETS, farmers could also use the emission allowances earned from generating carbon removals to meet their own compliance obligation with regards to their on-farm GHG emissions.

- B2 Interconnected through carbon removal offsets credits:** farmers and foresters (even those that may not be part of the ETS) can, on a voluntary basis, earn offset credits based on the amount of carbon removed and sell them to ETS entities that face a compliance obligation for their GHG emissions (farmers in an on-farm ETS, feed or fertiliser producers in an upstream ETS, or food processors in a downstream ETS). In an on-farm ETS, farmers could also use their own offset credits to meet their compliance obligation. However, the generated offset credits are not part of the ETS, and regulators can limit the amount and type of offset credits that can be used by ETS entities to meet their compliance obligation.
- B3 Interconnected through carbon removal deductions:** if combined with an on-farm ETS, only farmers that fall under the ETS can be rewarded for carbon removal activities; farmers would be allowed to deduct the amount of carbon removed in the same year from their GHG emissions that fall under the ETS, lowering the amount of emission allowances they need to purchase and surrender. There is no generation of removal credits that can be sold to other entities. If combined with a downstream ETS, only farmers that supply ETS food processors can be rewarded for carbon removal activities; food processors would be allowed to deduct the amount of carbon removed by their supplier farms from their compliance obligation. This creates an incentive for food processors to work with (and financially support) their supplier farms to implement carbon removal activities.
- B4 Interconnected with the government as an intermediary:** the government would use the revenues from selling emission allowances to ETS entities to purchase removal credits from farmers and foresters. The functioning of the ETS is directly impacted by this removal option because the government converts the purchased removals into emission allowances and makes them available to entities under the ETS, either by auctioning them or allocating them for free.
- B5 Disconnected markets:** the government would use the revenues from selling emission allowances to ETS entities to finance carbon removal activities from farmers and foresters. There is no link between the amount of carbon removed and the total number of emission allowances (i.e., the emission cap) under the ETS. The payments to farmers and foresters do not necessarily have to be based on the amount of carbon removed and could instead be activity-based.

Policy enablers

- 6) Please rate the importance of having the following enablers in place for the successful implementation of an ETS on agricultural emissions: [1 = minor importance, 5 = major importance, no opinion]
- Improve the availability, accuracy and robustness of data on agricultural GHG emissions
 - Ensure the availability of cost-effective and user-friendly monitoring, reporting and verification methods of agricultural GHG emissions
 - Minimise administrative and transaction costs for the actors participating in the ETS
 - Ensure the involvement of farmers, landowners and all relevant stakeholders into policy-making
 - Financially reward good farming practices
 - Increase funding for research and development of measures to reduce agricultural GHG emissions
 - Availability of low-cost GHG emission reduction measures
 - Availability of funding for investment in GHG emission reduction measures
 - Training on skills and knowledge on measuring emissions and implementing GHG emission reduction measures

- Limit negative impacts on international competitiveness and carbon leakage
- Mitigate impact on food prices
- Mitigate social impacts
- Other (please specify)

7) Please rate the **importance** of having the following enablers in place for the successful implementation of a reward system for LULUCF carbon removals: [1 = minor importance, 5 = major importance, no opinion]

- Improve the availability, accuracy and robustness data on the carbon removed from the atmosphere by carbon farming
- Ensure the availability cost-effective and user-friendly monitoring, reporting and verification methods of carbon removals
- Minimise administrative and transaction costs for the actors rewarded for carbon removals
- Ensure the involvement of farmers, landowners and all relevant stakeholders into policy-making
- Increase funding for research and development of carbon removal activities
- Availability of low-cost carbon removal activities
- Availability of funding for investment in carbon removal activities
- Availability of low-cost Monitoring, Reporting, and Verification methods
- Training on skills and knowledge on measuring emissions and implementing carbon removal activities
- Limit leakage risks (i.e., rewarded carbon removal activities cause a decrease of removals or an increase in emissions elsewhere in the economy)
- Mitigate impact on land prices and risk of land grabbing
- Other (please specify)

8) If you wish, please briefly explain your answer to any of the previous questions on policy enablers:

Text box - limited to 600 characters

Scope

9) Rate how important it is that these sources of agricultural GHG emissions are included under an ETS [1 = minor importance, 5 = major importance, no opinion]

- Enteric fermentation (livestock)
- Manure management
- Fertiliser application
- Drainage of peatlands
- Burning crop residues
- On-farm energy use
- Urea and liming application
- Rice farming

10) Rate how important it is that these carbon removal activities are included under a reward system for LULUCF carbon removals [1 = minor importance, 5 = major importance, no opinion]

- Afforestation & reforestation
- Agroforestry
- Forest management
- Increase in soil carbon (on mineral soils)
- Biochar

- Other (please specify)

11) If you wish, please briefly explain your answer to any of the previous questions on scope:

Text box - limited to 600 characters

Policy design options

12) Which actor(s) in the agricultural value chain should be the compliance entity under an ETS on agricultural emissions, and thus directly face a carbon price (Note that for the three options, the ETS would be designed in a way ensuring there is no double-covering of GHG emissions)? [1 = strongly disagree, 5 = strongly agree, no opinion]

- Farmers (on-farm ETS) - *see option A1 described above*
- Fertiliser and feed producers (upstream ETS) - *see option A2 described above*
- Food processors (downstream ETS) - *see option A3 described above*
- Other actors (e.g., retailers, consumers)

13) Under the on-farm ETS option (option A1), what should be the threshold for exempting small farms:

- No exemption of any farms
- Exemption of farms with less than 10 employees
- Exemption of farms with less than 50 employees
- Exemption of farms with less than 250 employees
- No opinion

14) Under the upstream ETS option (option A2), what should be the threshold for exempting small feed and fertiliser producers:

- No exemption of any feed and fertiliser producers
- Exemption of feed and fertiliser producers with less than 10 employees
- Exemption of feed and fertiliser producers with less than 50 employees
- Exemption of feed and fertiliser producers with less than 250 employees
- No opinion

15) Under the downstream ETS option (option A3), what should be the threshold for exempting small food processors:

- No exemption of any food processors
- Exemption of food processors with less than 10 employees
- Exemption of food processors with less than 50 employees
- Exemption of food processors with less than 250 employees
- No opinion

16) Which carbon removal activities should be allowed by entities covered under an agricultural ETS to meet their compliance obligation?

- Removal activities on farms only (e.g., soil carbon sequestration, agroforestry)
- Removal activities in forests only (e.g., afforestation, improved forestry management)
- All LULUCF carbon removal activities (i.e., both on farms and in forests)
- LULUCF carbon removal activities should not be allowed for ETS entities to meet their compliance obligation
- No opinion

17) Under the on-farm ETS option (option A1), which of the following options should be allowed as ways for farmers to meet their compliance obligation? (select 1 or more)

- Farmers covered by the on-farm ETS can meet their compliance obligation by taking actions to implement carbon removal activities on their own farm or purchasing emission allowances earned from carbon removal activities by other ETS entities - *see model B1 described above*
- Farmers covered by the on-farm ETS can offset their compliance obligation by paying for the carbon removed by other farmers and/or foresters (even those not covered by the on-farm ETS) - *see model B2 described above*
- Only carbon removal activities that farmers covered by the on-farm ETS have taken on their own farm can be used to reduce their compliance obligation - *see model B3 described above*
- Farmers under an on-farm ETS should not be allowed to (directly) use LULUCF carbon removal activities to meet their compliance obligation
- No opinion

18) Under the upstream or downstream ETS options (options A2 or A3), which of the following options should be allowed as ways for upstream producers or downstream processors to meet their compliance obligation? (select 1 or more)

- Purchasing emission allowances earned from carbon removal activities by farmers and/or foresters integrated in the agricultural ETS - *see model B1 described above*
- Paying farmers and/or foresters outside their value chain for their carbon removed to offset their compliance obligation - *see model B2 described above*
- Paying farmers within their value chain for carbon removal activities to reduce their compliance obligation - *see model B3 described above*
- Entities under an upstream or downstream ETS should not be allowed to (directly) use LULUCF carbon removal activities to meet their compliance obligation
- No opinion

19) What role should the government play in a reward system for LULUCF removals linked to an agricultural ETS? (select 1 or more)

- The government only certifies the type of carbon removal activities that are eligible for meeting the compliance obligation under an agricultural ETS, but otherwise leaves the market to run itself - *models B1, B2 and B3*
- The government acts as an intermediary, procuring removals certificates and then making these available as allowances to actors that face a compliance obligation under an agricultural ETS (e.g., through an auctioning process) - *see model B4 described above*
- The government uses revenues from the agricultural ETS to fund removals activities, but the amount of funded removal units does not affect the emission cap of the agricultural ETS - *see model B5 described above*
- Other (please specify)
- No opinion

20) If you wish, please briefly explain your answer to any of the previous questions on policy design options:

Text box - limited to 600 characters

Key challenges

21) The monitoring, reporting and verification (MRV) of agricultural GHG emissions could be done with proxy values as a way to minimise the administrative burden. However, this approach would not necessarily recognise climate-friendly practices carried out on a specific farm, and implementing these practices would therefore not result in a lower compliance obligation under the ETS. Should an MRV approach prioritise minimising the administrative burden or incentivising climate friendly on-farm practices?

- Minimise the administrative burden (using proxy values)
- Incentivise climate friendly on-farm practices (set up of more accurate MRV)
- Hybrid approach (default proxy values with option to set up a more accurate MRV to prove GHG emissions are lower)
- No opinion

22) Where do you see the main current challenges and/or future opportunities regarding improving accuracy and/or reducing costs of MRV for agricultural GHG emissions?

Text box - limited to 600 characters

23) Linking a reward system for LULUCF carbon removals with an agricultural ETS can come with significant challenges. How big of challenge would the following aspects be to overcome with policy design? [1 = minor challenge, 5 = major challenge, no opinion]

- **Additionality:** that the carbon removed would not have occurred without a reward system
- **Emission reduction deterrence:** that the carbon removed decrease the effort to reduce agricultural GHG emissions
- **Non-equivalence:** that the carbon removed is not equivalent to a reduction in agricultural GHG emissions, e.g., because it is not permanent

24) For each of the challenges, please explain succinctly how it could be overcome through policy design or another way:

	Open text (maximum 600 characters)
Additionality	
Emission reduction deterrence	
Non-equivalence	

25) Would an ETS on agricultural GHG emissions linked with a reward system for LULUCF carbon removals conflict with any existing EU policy? If so, which one(s)?

Text box - limited to 600 characters

26) Please rate the expected **administrative feasibility** of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS:

	Very feasible	Somewhat feasible	Limited feasibility	Not feasible at all	No opinion
Agricultural ETS options					
On-farm ETS (option A1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upstream ETS (option A2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream ETS (option A3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy models for linking a reward system for carbon removals to an agricultural ETS					
Fully integrated in an ETS (model B1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through offsets credits (model B2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Interconnected through deductions (model B3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected with government intermediary (model B4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disconnected markets (model B5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27) Where possible, please indicate any evidence basis that you use for your rating on the expected administrative feasibility:

Text box - limited to 600 characters

Impacts

28) Please rate the expected impact on global competitiveness and trade balance of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS:

	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion
Agricultural ETS options						
On-farm ETS (option A1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Upstream ETS (option A2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream ETS (option A3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy models for linking a reward system for carbon removals to an agricultural ETS						
Fully integrated in an ETS (model B1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through offsets credits (model B2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through deductions (model B3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected with government intermediary (model B4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disconnected markets (model B5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29) Where possible, please indicate any evidence basis that you use for your rating on the expected impact on global competitiveness and trade balance:

Text box - limited to 600 characters

30) Please rate the expected impact on food prices and consumer choices of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS:

	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion
Agricultural ETS options						
On-farm ETS (option A1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Upstream ETS (option A2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream ETS (option A3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy models for linking a reward system for carbon removals to an agricultural ETS						
Fully integrated in an ETS (model B1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Interconnected through offsets credits (model B2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through deductions (model B3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected with government intermediary (model B4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disconnected markets (model B5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31) Where possible, please indicate any evidence basis that you use for your rating on the expected impact on food prices and consumer choices:

Text box - limited to 600 characters

32) Please rate the expected impact on income of farmers of each agricultural ETS options and policy model for linking a reward system for carbon removals to an agricultural ETS:

	Very positive impacts	Somewhat positive impact	Neither positive nor negative impact	Somewhat negative impact	Very negative impact	No opinion
<i>Agricultural ETS options</i>						
On-farm ETS (option A1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upstream ETS (option A2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downstream ETS (option A3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Policy models for linking a reward system for carbon removals to an agricultural ETS</i>						
Fully integrated in an ETS (model B1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through offsets credits (model B2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected through deductions (model B3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interconnected with government intermediary (model B4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disconnected markets (model B5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33) Where possible, please indicate any evidence basis that you use for your rating on the expected impact on income of farmers:

Text box - limited to 600 characters

34) If applicable, please describe any key impact(s) that have not been mentioned above and explain briefly why they are important to consider in an agricultural ETS and a reward system for carbon removals linked to such ETS:

Text box - limited to 600 characters

Concluding questions & remarks

35) If you wish to expand on any of your answers or if you wish to add comments or information on anything else, which is relevant to the study, please do so in the box below.

Text box - limited to 800 characters

- 36) If you consider there are materials / publications available online that should be considered further in relation to this study, please feel free to describe them (title and author) in the box below and include any relevant links

Text box - limited to 800 characters

Annex 2: List of materials / publications suggested as part of Question 36

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- Guyomard, H., Bouamra-Mechemache, Z., Chatellier, V., Delaby, L., Détang-Dessendre, C., Peyraud, J. L., & Réquillart, V. (2021). Review: Why and how to regulate animal production and consumption: The case of the European Union. *Animal*, 15, 100283. <https://doi.org/10.1016/j.animal.2021.100283>
- Højte, S., & Birk Rasmussen, M. (2023). *The Fit for 55 package neglected emissions from agriculture, so now it is time to step up*. Concito. <https://concito.dk/en/news/the-fit-55-package-neglected-emissions-from-agriculture-so-now-it-is-time-to-step-up#:~:text=to step up->
- Holtkamp, F., Clemens, J., & Trimborn, M. (2023). Calcium cyanamide reduces methane and other trace gases during long-term storage of dairy cattle and fattening pig slurry. *Waste Management*, 161(February), 61-71. <https://doi.org/10.1016/j.wasman.2023.02.018>

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