

POLICY OPTIONS FOR AGRICULTURAL EMISSIONS IN THE EU

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This paper discusses policy options for pricing agricultural emissions, building on the Commission’s 2023 scoping study and subsequent stakeholder dialogue. As the EU works toward its 2040 climate goals, agriculture can play a greater role in emissions reductions. Denmark’s presidency offers a window of opportunity to discuss a forward-looking EU framework for agricultural emissions. Such a framework will need to balance climate ambition with fairness, ensuring farmers are supported, carbon leakage is avoided, and robust monitoring systems are in place to track progress.

Greenhouse gas emissions from agriculture in the EU have remained relatively stable in recent years, accounts for 13% of total EU net GHG emissions¹. According to the EEA², emissions from agriculture have decreased by 2% during 2005-2021, compared to 20% decline in the period 1990-2005. Turning to 2030, emissions reductions are expected to decrease between 5-8% compared to 2005 in the scenario taking into account additional measures, and despite improvements in efficiency³. This is below **the estimated needed contribution of 12% reduction** to reach the climate target for 2030 in the impact assessment accompanying the Fit for 55 package and the EEA Mix55 scenario⁴.

As the EU moves toward its 2040 climate targets, the agriculture sector is expected to play a greater role in achieving emissions reductions. There is a growing policy imperative for more **coordinated action on agricultural emissions**, driven by: varying levels of **integration of agriculture in EU National Energy and Climate Plans (NECPs)**⁵; persistent barriers to the **adoption of low-emission practices**, particularly for small farms; and fragmented, complex systems for **monitoring and verifying emissions and removals**. Addressing these challenges is essential to align the sector with the EU’s 2040 climate goals and ensure fair and effective mitigation efforts across Member States. In particular, more consistent and standardised systems for monitoring, reporting and verification (MRV) at farm level are needed. The proposed **Carbon Removal Certification**

¹ [EEA dataviewer, 2023](#)

² Ibid.

³ EU Climate Action Report 2023. Available [here](#).

⁴ Impact assessment accompanying the fit for 55 package (SWD(2021) 609 final) and EEA, 2023, Trends and projections in Europe, 2023. Respectively [here](#), and [here](#).

Frelih Larsen et al. (2024). Towards climate friendly and resilient agri-food systems in Central Eastern Europe: the role of agroecological practices, sustainable diets, and holistic policies. Ecologic Institute. Available [here](#).

Framework (CRCF) could contribute to this by establishing a clearer structure for tracking and certifying agricultural emissions and removals.

In 2023, the Commission published an exploratory study⁶ outlining potential **policy pathways for pricing agricultural emissions and rewarding climate action in the agri-food value chain** for the post-2030 framework. The Commission (DG CLIMA) has commissioned a new study to improve the understanding of climate change mitigation policy options across the agri-food value chain for the post-2030 framework. The new study will comprehensively assess a range of policy options for climate mitigation incentives across the agri-food value chain. Influenced by the Strategic Dialogue on the Future of EU Agriculture, the study is working with stakeholders and experts to assess the feasibility and relevance of market-based approaches⁷. To this end, the study team organised several technical workshops to seek input and evidence from stakeholders.

This policy backgrounder provides an overview of the policy options and specific design features which will be assessed in the study.

OBJECTIVES

The design of a suitable policy approach will need to achieve emissions reductions in the agricultural sector, while providing **financial incentives** and **minimising negative impacts on the sector, and maximising synergies with other environmental objectives**, such as biodiversity. In particular, the policy option will need to mitigate impacts on the incomes of farmers, in the context of ageing population, rural depopulation and re-specialisation of agricultural production. The EU has experienced a **sharp decline in the number of farms**, primarily affecting small farms under 5 ha⁸. However, total Utilised Agricultural Area (UAA) has remained largely unchanged and **large farms (≥100 ha) grew in terms of their share of UAA (+24%) and in the number of farms (+29%) between 2005 and 2020**⁹. In addition to the decreasing number of farms, farm organisations have expressed concerns over the challenges farmers face with obtaining a fair remuneration for their production, especially considering current revenue imbalances in the value chain. In turn, this imbalance potentially curtails farmers' ability to invest in practices that could reduce GHG emissions.

Therefore, achieving emissions reductions must be balanced with social and economic sustainability. Policy design should take into account the **structural diversity of the agriculture**

⁶ European Commission, *Pricing agricultural emissions and rewarding climate action in the agri-food value chain*, 2023. Available [here](#).

⁷ See reports from the technical workshops held from June 2024 to April 2025 [here](#).

⁸ Between 2005 and 2020, the number of farms in the EU-27 decreased by 36,7%, from approximately 15 million to 9 million, while the average (mean) size of EU farms increased from 10.9 ha to 17.4 ha. Source: [Eurostat, 2022](#).

⁹ Source: [Eurostat, 2022](#).

sector and its essential role in ensuring food security and affordability. It should aim to **minimise administrative burdens** while maintaining a **robust and credible monitoring, reporting and verification system**. Crucially, the policy should provide financial incentives for adopting climate-friendly practices and emissions monitoring, support innovation across the agri-food value chain, and help make emissions mitigation a viable business opportunity, thereby strengthening the economic position of farmers.

Farm organisations have expressed concerns on the **competitiveness of EU agri-food products**, both within the EU internal market and for its exports. If an agri-food climate policy raises EU production costs or shift consumer behaviour, imports may rise if cheaper, non-EU alternatives remain available. Carbon leakage can occur—where production shifts to countries with weaker climate rules, potentially increasing overall global emissions and undermining both EU climate goals and the competitiveness of EU producers. Therefore, an agri-food climate policy option will need to **minimise negative impacts on international competitiveness** and provide robust **safeguards against carbon leakage**¹⁰. These measures must also remain compatible with international trade rules while protecting the competitiveness of EU producers.

TRADING OF CARBON FARMING UNITS

A core element across the proposed policy options is the **use of carbon farming units**, issued under the upcoming CRCF. These units certify verified greenhouse gas (GHG) emission reductions or carbon removals achieved through agricultural practices. By assigning a financial value to these actions, the CRCF aims to integrate agriculture more directly into climate policy and carbon markets, creating a new source of revenue for farmers who engage in climate mitigation activities alongside food production.

To support this system, a market for CRCF units must be established—enabling obligated entities (such as processors or retailers) and potentially other actors to **purchase CRCF units to meet regulatory requirements or voluntary commitments**. There are two main design options for how this trading could occur:

- **Direct supply chain**, in which the trading of CRCF units for compliance purposes can only occur between farmers and obligated entities who are in direct supply chain contact. These actors would only trade CRCF units related to the reduction of emissions in the scope of the policy

¹⁰ You can find more information on competitiveness issues in the third input paper of the Commission's technical workshops on Carbon farming in the agri-food value chain, available [here](#) (December 2024). The workshop report is available [here](#).

- **Whole agri-food chain**, in which a broader market for trading between all farmers in the supply chain of similar obligated entities could sell units to any company in the agri-food sector
- **All sectors**, in which the CRCF market is expanded to allow for all farmers or land managers to sell CRCF units that can be used by any private or public entity, so that obligated entities would compete with companies from other sectors for the procurement of CRCF units

Another design aspect under consideration for the trading of CRCF units is how trading will occur between non-obligated farmers and obligated entities. In cases where trading occurs between farmers and downstream actors, carbon delivery could either be integrated into existing agricultural commodity contracts or handled through **separate agreements**, one covering the purchase of the product, and another for the associated CRCF units. An alternative design option could be the establishment of a **centralised pool for CRCF units**. Under this model, farmers (or other land managers) would submit their certified CRCF units to a central authority, which would then offer these units to obligated entities through standardised contracts or auctions. This system **reduces the transaction costs, administrative burden**, and complexity that would otherwise fall on individual farmers—especially small or medium-sized ones—if they had to negotiate bilateral deals in a fragmented market.

The centralised pool also offers a **more stable and predictable market environment**. By aggregating supply and demand, it can support price discovery, ensure a more even distribution of revenue opportunities across regions and farm sizes, and reduce volatility. Depending on the policy option, the centralised pool could operate either alongside or in place of market-based trading systems.

POLICY OPTIONS

In the 2023 exploratory study, the focus of potential policy options were solely emission trading systems (ETS), as the study's objective was to explore polluter-pays policy options for agriculture. The **2025 follow-up study** has expanded the scope of exploring policy options to include a wider **range of regulatory and market-based mechanisms aimed at reducing GHG emissions and enhancing carbon removals from agriculture**¹¹. These include one option focused on public procurement of carbon farming outcomes, two options based on a mandatory climate performance standard, and two options involving an agri-food emissions trading system.

Each policy option differs in terms of its design and the **point of obligation**, i.e. the actor held legally responsible for compliance. Depending on the option, this may be **retailers, processors**, or

¹¹ You can find more information on the design of options discussed in the first input paper for the Commission's technical workshops on Carbon farming in the agri-food value chain, available [here](#) (September 2024).

farmers. The point of obligation has great impact on the emissions to be covered by the policy option. For example, if the point of obligation is on meat and dairy processors, then the scope of emissions could potentially cover livestock emissions from enteric fermentation and manure management, which entail 65% of all agricultural emissions. The policy options under discussion for the upcoming 2025 study has translated various policy options as follows below:

Carbon Farming Public Procurement (Option CFPP)

This option proposes to establish a voluntary system for the public procurement of carbon farming units (CRCF units). In this system, the Commission and or Member States would voluntarily purchase carbon farming units, via an **EU-wide procurement system**, from operators (e.g. crop farmers, livestock farmers, owners of forested land). These carbon farming units would be generated according to the **rules laid out by the CRCF Regulation**. The Commission would organise an EU-wide procurement system, with regular purchases via e.g. reverse auctions. The system would be open for Member States to join (e.g. auction-as-a-service).

Private actors from the agrifood value chain, or from all sectors, could then buy these units from a centralised pool. Such entities could purchase CRCF units to meet any voluntary climate protection commitments, or to complement compliance obligations in case mandatory systems were to be set up in the future. This system would help **reduce GHG emissions on farm by providing financial incentives to farmers** to implement carbon farming activities, who would generate revenues from the selling of CRCF units.

Mandatory Climate Standards

Under these policy options, mandatory climate standards are established for the reduction of scope 3 emissions for either **meat and dairy processors** (MCS1) or **food retailers** (MCS2), both above a certain threshold.

The overall ambition level should be in line with the Commission's proposed target for net emission reductions by 2040, and the EU's objective of climate neutrality by 2050. Compliance could be achieved through **changing product portfolio** or by the **trading of CRCF units from supply chain farmers or from a centralised pool**. The point of obligation on retailers would greatly increase the GHG emissions scope, since the GHG emissions related to the on-farm production of all food products would be concerned.

The industry baseline and reported emissions would be calculated with default factors and expressed in tCO₂/unit of product. Companies that could demonstrate they have already taken action for emissions reductions in the absence of any mandatory requirements (so called 'frontrunners') may benefit from setting the baseline using default emission factors at or above the sectoral average, which would reward them for their efforts.

Farmers may be impacted by specific GHG emissions reductions requirements or changes of farming practices set by processors or retailers within the supply chain. The option of CRCF units

purchased by public authorities from a centralised pool could reduce risks for farmers who would voluntarily participate, since they would benefit from a minimum price for the provision of CRCF units, and support small and medium-sized farms with start-up costs.

Agri-Food Emission Trading Systems

The Agri-Food Emission Trading System, separated from the EU ETS 1 and 2, includes two variations: **Option AgETS1** with the **food processor** as point of obligation and targeted at reducing scope-3 emissions, and **Option AgETS2** with **farm owners** as point of obligation and targeted directly at reducing on-farm emissions.

Under an **AgETS 1**, obligated **meat and dairy processors** must obtain allowances for each unit of their scope 3 emissions. Overall emissions for the sector and the corresponding allowances are capped and will decrease over time but **will never achieve zero** in view of the agriculture sector's specific traits. Obligated entities could be based on the CSRD scope, therefore exempting SMEs.

As per with the mandatory climate standard option, the ambition level of this option should be in line with EU's climate ambitions. **In the first years**, free allowances would be given to entities, and calculated based on default values and historical activity levels. The cap would constitute the sum of all resulting emissions in the first year. A linear reduction factor should apply to this cap to set it on a trajectory that aligns with the 2040 and 2050 targets.

In a second stage, once more data is collected on actual emission intensities, a performance benchmark can be used. A performance benchmark is based on the best performers (e.g., the top 10% lowest emitters in the industry). For example, if the top 10% of dairy processors emit only 3 tons CO₂ per ton of dairy, then 3 becomes the new benchmark. So, a company still producing 100 tons of dairy would now get allowances for 300 tons of CO₂, even if their emissions are higher. If they emit more than that, they will need to buy extra allowances.

Obligated entities could comply by **purchasing AgETS allowances via auctions or purchasing CRCF units from a centralised pool**. Public authorities could play a role of intermediary, by facilitating forward contracts between obligated entities and farmers (e.g., via price guarantees such as contracts for difference / feed-in tariffs), possibly combined with advance payment. This would ensure that farmers are fairly remunerated and do not have to bear heavy startup costs upfront.

In the case of auctions, entities would bid for a limited number of allowances, and the highest bidders would obtain them at a market-determined price. The revenue generated from these auctions would go to public authorities, who could reinvest it in climate-related initiatives, such as supporting farmers through forward contracts or funding carbon removal projects.

Under an **AgETS 2**, obligated entities would be **owners of arable farms, mixed farms and livestock farms**. The scope would be based on a turnover and/or farm size threshold. This system would be mandatory for big farms, and voluntary for small farms.

The monitoring of GHG emissions could be based on a default method, or a certified method (mandatory in a second phase). Under the **default method**, the farmer would rely on a minimum number of data points that are already universally collected by public authorities to calculate the GHG emissions. With the default method, farmers can comply by purchasing AgETS allowances via auctions. Early on, allowances would be distributed for free to ease the transition. In the following years, the same system as AgETS 1 would be used, with the linear reduction factor and performance benchmarks.

A key challenge that requires addressing when implementing an AgETS relates to the MRV of emissions and removals¹². While an AgETS system could be based on a default method, this approach would not create incentives for on-farm changes in practices. In the contrary, a certified method would be based on activity data at farm level. Under the **certified method**, the obligated entity would collect farm-level data and go through CRCF certification. Farmers producing food with a lower GHG footprint can use CRCF units to meet some of their compliance needs.

Under both ETS options, a centralised authority would **run auctions** for AgETS allowances and **manage the CRCF unit pool**.

ENABLERS FOR A SUCCESSFUL IMPLEMENTATION OF AN AGRI-FOOD CLIMATE POLICY

Critical enablers that will determine whether an agri-food climate policy can be implemented effectively and equitably. A core priority is the **expansion of independent, high-quality farm advisory services**, coordinated across public and private actors. Universal, affordable access to advisory support is essential to ensure all farmers—especially smaller ones—can adopt climate-friendly practices. Public investment should improve training, standardisation, and the integration of advisory services within Agricultural Knowledge and Innovation Systems (AKIS). At the same time, **enhanced access to agricultural insurance** and **short-term working capital** is needed to manage transition risks and support farm operations during adaptation. Proposals such as EU-wide financing platforms, public-private risk-sharing mechanisms, and tailored insurance schemes will be key, particularly if aligned with the realities of agricultural income cycles and climate exposure.

Longer-term transformation will require **targeted investment in infrastructure, equipment, and climate-smart technologies**. A dedicated **Just Transition Fund** could blend grants, concessional loans, and guarantees to de-risk private investment, while aligning with tools like EIB loans or ETS revenues. In parallel, the development of a **unified digital MRV system** is essential to simplify

¹² For more information on MRV aspects and further discussion on the effectiveness of the different options, you can consult the second input paper of the Commission's technical workshops on Carbon farming in the agri-food value chain, available [here](#) (November 2024). The workshop report is available [here](#).

farm-level data collection, reduce compliance burdens, and improve data use across CAP reporting, Scope 3 disclosures, and GHG inventories. A “one-stop-shop” approach—backed by standardised tools, carbon literacy training, and digital infrastructure—can make participation more inclusive while improving transparency and accountability. These efforts should be paired with clear **EU-wide rules on emissions allocation and claim stacking**, enabling trusted collaboration across the value chain.

Finally, **developing new value chains** will be critical to link climate mitigation with economic opportunity. Public support should help scale **low-carbon food products** through improved processing infrastructure, procurement incentives, and retail sourcing frameworks—while also building demand for **alternative proteins** and plant-based ingredients. Similarly, the bioeconomy transition will require support for **products based on agricultural waste or low-emission crops** such as paludiculture, alongside regulatory reforms and investment in circular solutions. Addressing structural challenges in **land access and generational renewal**, including more transparent land markets and stronger lease protections, will be vital to ensuring equitable participation. On the demand side, policies that **shift consumption away from high-emission foods**—such as public procurement, fiscal incentives, and education—can reinforce supply-side action and support a fair, climate-resilient food system.

NEXT STEPS

The development of this study is progressing in close collaboration with stakeholders. A stakeholder survey has recently been completed to gather feedback on the design features of the proposed policy options, and a series of **in-depth interviews** with key stakeholders is currently underway. In parallel, **modelling work** is being conducted to assess the potential environmental and macro-economic impacts of each option. The final results of the study are expected to be published in **November 2025** and will provide evidence to inform future EU policymaking on agricultural emissions.



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