Farming out climate action

Does the EU need an Emissions Trading System for Agriculture?

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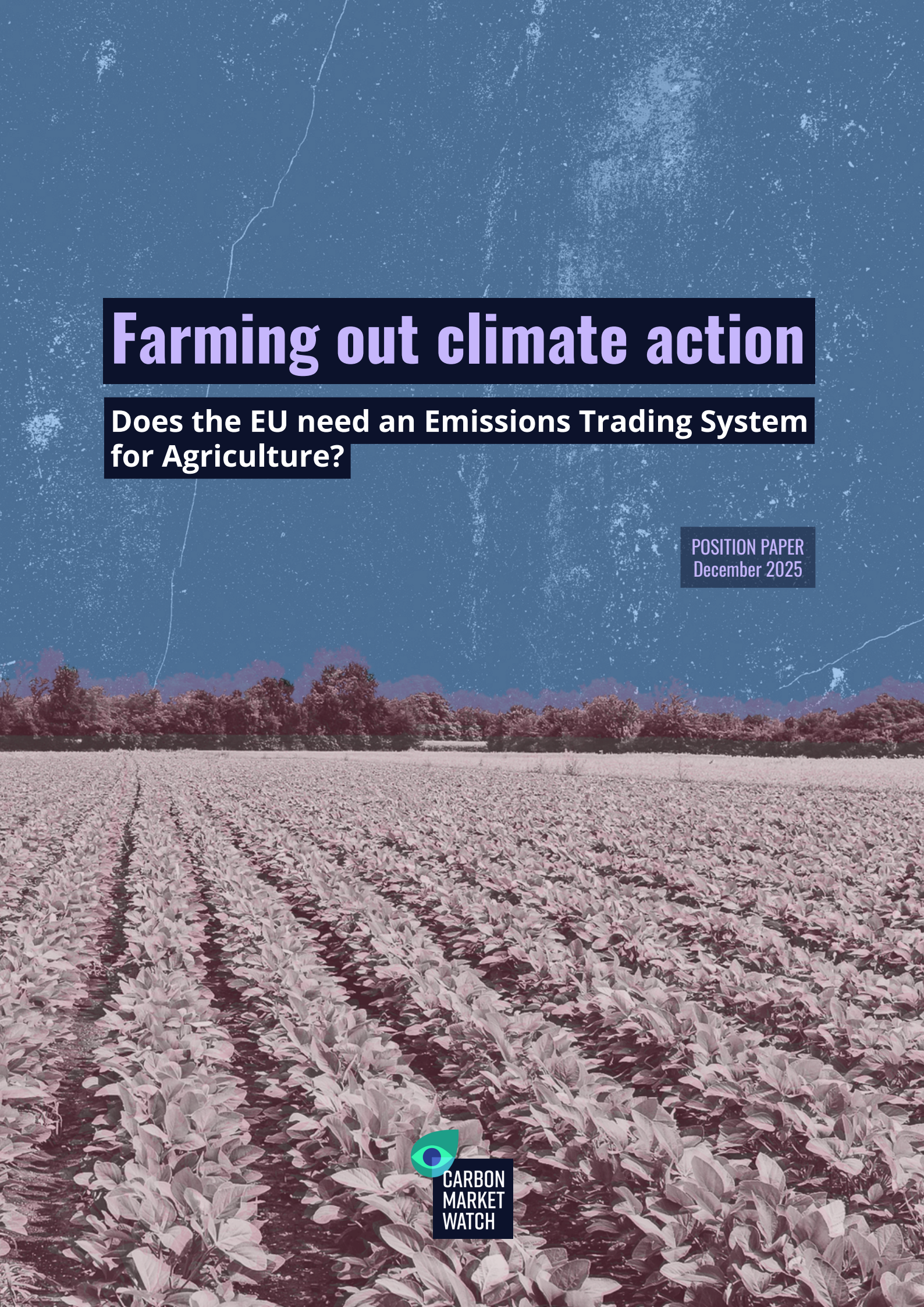

CARBON MARKET WATCH

Introduction

According to the European Environment Agency, agricultural emissions represent 11% of the total EU greenhouse gas emissions, of which around two-thirds are livestock emissions (enteric fermentation and manure management) and around one-third the application of pesticides and fertilisers[1]. Agriculture is also a major cause of environmental degradation.

Pricing agriculture's pollution could reduce emissions by making the cost of cleaner alternatives more competitive, while incentivising behavioural changes and raising revenues, which can be used towards initiating a just transition, particularly for small-scale farmers.

A potential Emissions Trading System for Agriculture (Agri-ETS) must be socially fair and environmentally effective. Plans must include a stringent cap, a linear reduction factor aligned with carbon neutrality, and targeting the largest emitters. There can be no inclusion of free allowances, and no offsetting with future carbon farming credits deriving from the Carbon Removals and Carbon Farming (CRCF) Regulation.

Furthermore, to avoid watering down the effectiveness of the Agri-ETS, and limiting the risk of adding flexibilities and loopholes, an Agri-ETS should be upheld as a separate scheme without weaving it into other policies, such as the Emissions Trading System covering the electricity and heat generation, industrial manufacturing and aviation sectors (ETS1), the Emissions Trading System for road transport and buildings (ETS2), the Effort Sharing Regulation (ESR) or the Land Use Land Use Change and Forestry Regulation (LULUCF).

Above all, an Agri-ETS must be considered as a part of a holistic, coherent policy scheme; alone, it will not contribute enough to bring about the much-needed green transition in the sector, particularly if harmful policies, such as support for intensive livestock farming, continue. In this sense, the Agri-ETS must not operate in a policymaking vacuum, but cohesively support other, separated and targeted land policies.

[1] Note that emission inventories attribute other agricultural activities to the LULUCF sector in the land-use categories of cropland and grassland e.g. emissions from draining peatlands.

Background

Over the years, the environmental footprint of agriculture has had little regulatory action, evidenced by the scant 5% drop in emissions between 2005 and 2022. To this day, the sector has no gross emission reduction target, ploughs ahead with unsustainable production and consumption patterns, and fails to prioritise biodiversity and ecosystem services. An inadequate Common Agricultural Policy (CAP), with a current budget (2021-2027 period) of €387 billion is largely to blame, particularly given its ongoing dismantlement of environmental provisions and continued funding of harmful practices.

The sector has the potential to play a far more active role in delivering a climate transition than it is currently doing. The European Commission's 2040 climate target impact assessment envisaged up to 44% of emission reductions by 2040 for agriculture, while in its most ambitious scenarios, the EU's Scientific Advisory Board on Climate Change floated the possibility a 63% reduction, and a study published by Agora in late 2024 positioned this figure at 60%.

To turn calculations and projections into reality an enabling regulatory environment must be set, composed of an ambitious, coherent policy framework. Without it, agriculture risks becoming the highest emitting sector in the EU by 2040.

In 2023, the European Commission launched an initial exploratory study, carried out by Trinomics, to investigate the potential application of the polluter pays principle to agricultural emissions via an Agri-ETS. At the time of writing, the Commission has outsourced a second exploratory study, due for publication in early 2026.

Proposed is the potential application of an Agri-ETS on-farm, or to either meat or dairy processors, obliging these actors to purchase and surrender allowances for their pollution. The second study also contemplates other policy options for reducing emissions in the sector, including: the public procurement of carbon farming credits (to be issued under the CRCF) and mandatory climate standards for companies to reduce scope 3 emissions on farm.

Is an Agri-ETS even suitable?

Before delving into the design features an effective Agri-ETS must include, it is appropriate to assess whether such an instrument is even suitable to meaningfully reduce emissions in the sector. Notable challenges relate to the inherent complexity of the sector, the numerous emission sources involved, the difficulty in quantifying these, and the risk of further intensifying farming practices.

Agriculture is a globalised sector, with a variety of actors upstream, downstream, and on farm (in 2020, the EU had nine million holdings, of which around two-thirds are smaller than five hectares). Farms also have unique characteristics, considering regional differences, climate conditions, soil types, crop and herd variation, land management practices, and emission sources. It might therefore be rather complex to set homogeneous rules for such a heterogeneous sector.

Moreover, the sector has several key emission sources: methane (from enteric fermentation and manure management), nitrous oxide (from manure and fertiliser application), and carbon dioxide (from drained organic soils). While it is essential to bring all major sources into scope, it is unlikely that this can be adequately achieved, particularly since emissions can be challenging to quantify, and a robust measurement, reporting and verification (MRV) tool may take years to develop (proxies or standardised baselines used in the meantime could underestimate emissions or weaken incentives). Yet, were a significant emission source like methane excluded from the Agri-ETS, this would certainly question the utility of such an instrument.

More generally, an Agri-ETS would only apply the polluter pays principle to greenhouse gas (GHG) emissions, leaving other externalities, such as biodiversity, water and air quality - all of which play a function in increasing the system's resilience - unaddressed. A GHG tunnel vision risks further intensifying farming practices, rather than encouraging an integral transformation of how farmers produce food. In this vein, actors might simply introduce technofixes, a typical example being the use of anaerobic digestors that can present positive data without actually reducing livestock numbers or aligning stocking densities with environmental capacity (extensive rearing). This is because sufficient amounts of manure is needed to make the investment in anaerobic digesters worth it.

Together, these considerations indicate that an Agri-ETS is not a silver bullet. There are many challenges to its design and implementation, particularly in a multi-sector landscape with a vast, interwoven value chain. This underlines the importance for an Agri-ETS to be both ambitious and part of a cohesive legislative package.

Ambitious cap design

For an Agri-ETS to be successful, the maximum amount of emissions allowances available on the market, known as the "cap", must decrease over time to prevent an oversupply of allowances. Under the existing ETS, this is regulated through an annual reduction in the cap, called the linear reduction factor (LRF). The LRF imposes fixed, yearly reductions on the amount of allowances for auction, to ensure that pollution becomes increasingly expensive; the higher the LRF, the higher the overall climate ambition.

A second tool that supports cutting market oversupply is the Market Stability Reserve (MSR). The MSR addresses supply by filtering out excess allowances from the market and placing them in the reserve once the total number of allowances in circulation exceeds the predefined threshold. Similarly, the MSR reintroduces allowances to the market when insufficient allowances are in circulation. So far under ETS1, the MSR has removed around 2.9 billion excess allowances, preventing polluters from buying these, and consequently avoiding the generation of 2.9 gigatonnes of CO_2 (each EU Allowance is equivalent to one tonne of CO_2 equivalent).

An Agri-ETS must therefore incorporate a well-set cap that limits oversupply, a dependable LRF that brings the system in line with wider EU climate objectives, and an MSR to address oversupply.

Focus on big polluters

As explained previously, current proposals consider placing the point of obligation either at farmgate or downstream, namely on meat and/or dairy processors.

However, different unfair outcomes can arise from each selected option. For instance, an on-farm ETS could prove too burdensome for smaller farmers, particularly due to the difficulty of satisfying MRV demands, while a downstream ETS on food processors could further entrench power imbalances, to the detriment of farmer agency. In addition,

since obligated entities are likely to pass the cost down the value chain, this risks impacting consumers by, for instance, increasing the cost of food. A usual response to this is that ETS revenues can be funnelled towards vulnerable households, yet revenues are limited and as will be explored later, may be earmarked for other purposes, such as supporting farmers or investing in carbon farming projects.

Ultimately, an Agri-ETS must be able to reduce emissions and incentivise further emission reductions. It should therefore encourage change by, for instance, motivating downstream actors to switch providers and/or prompt farmers to adopt sustainable practices. Crucially, however, it should cover big polluters, such as those representing large-scale (livestock) farming industries. In this case, an Agri-ETS would apply a *de minimis* rule to exclude farms below a certain size. This measure would require additional safeguards to prevent larger farms from dividing into smaller holdings. Still, they would ultimately ensure that those who have caused the most damage (and are in close proximity to emissions sources) pay.

No free allowances

An Agri-ETS must exclude free allowances - emission rights that are given to covered entities for free, rather than forcing them to buy them at auction. Free allocation has been proven to slow down decarbonisation and weaken the price incentive to reduce emissions in the ETS1.

Free allocation is frequently defended as a means to secure industry buy-in into a carbon pricing system. While this may be true, during the 2013-2020 trading period under ETS1, this policy resulted in a net overallocation of 200 million allowances, resulting in windfall profits for industry. Free allocation also means foregone revenue, which amounted to €40 billion in 2023.

Critics will argue that free allowances can eventually be phased out. Yet today, and despite efforts to reduce their number, almost half of ETS1 allowances are granted for free, revealing how challenging it is to eliminate such a mechanism once it is introduced and backed by powerful vested interests.

Considering the urgency in reducing emissions in agriculture and the need for extensive funding, introducing a policy that would delay emission reductions and undermine the accumulation of revenues to support farmers makes little sense. An Agri-ETS should, therefore, ban free allocation, but could allow for an adaptation period subject to strict

time limits, or stagger the applicability of the mechanism, starting with the largest industrial (livestock) farming industry.

No offsetting or carbon farming credits

The ETS is an emission reduction tool and should be kept as such. Unfortunately, current options proposed by the European Commission envisage allowing entities covered by the Agri-ETS to buy CRCF units directly from farmers. It may also be possible for an intermediary to purchase credits and place them in a carbon pool, allowing obligated entities to purchase credits from the pool for compliance.

A study carried out by Ecologic and Öko-Institut concluded that integrating temporary CRCF carbon farming units into an Agri-ETS would seriously risk mitigation deterrence in the sector and undermine the EU's overall efforts to meet its climate objectives. Moreover, given the poor quality of the envisioned CRCF units, it would incentivise illusory temporary sequestration instead of much-needed emission reductions, potentially resulting in higher overall atmospheric GHG levels.

From a scientific perspective, integration of carbon farming units falsely assumes equivalence between permanent emission reductions and temporary sequestration methods. Yet the latter are extremely difficult to quantify and are prone to reversals from land management practices or natural disturbances, especially as the climate crisis worsens.

From a practical perspective, integration risks crashing the carbon price, inflating the oversupply of emission allowances, and lowering the incentive for industry to decarbonise. This was precisely what happened under the original EU ETS after international carbon credits generated under the Clean Development Mechanism were integrated into the system. Ultimately, market-based tools favour price, not quality. Offsetting opportunities that are cheaper than the cost of reducing emissions would prompt polluters to offset rather than tackle their emissions. This distracts from deep and effective reductions, going against the entire purpose of setting up an Agri-ETS.

Crucially, offsetting strictly undermines the separation of targets between emission reductions, permanent removals, and temporary sequestration, a vital policy for successful climate action that has been supported by the European Scientific Advisory Board on Climate Change.

Separation was also a key takeaway from this year's edition of the Corporate Climate Responsibility Monitor, which warned that aggregating land-based removals with emission reductions can obscure the lack of decarbonisation. In addition, the report confirmed that key decarbonisation drivers for agrifood companies should not involve reliance on land-based removals. Instead, the focus should be on halting deforestation, shifting production away from animal protein (especially ruminants), slashing emissions from fertiliser use, and cutting food loss and waste.

No flexibilities with existing policies

If an Agri-ETS is implemented, it must remain separate from ETS1 and the upcoming ETS2, which will cover fossil fuel emissions from buildings and road transport. Separation is needed as each ETS addresses different sectors and holds varying abatement capacities and costs; a common price signal would leave entire sectors off the hook in the short-term and delay more expensive abatement options. Separation is crucial to guarantee the individual success of each policy.

Unfortunately, there are already calls for merging ETS1 and ETS2 into a single policy, mainly as a money-saving measure. Against this backdrop, it is plausible that similar calls would be made should an Agri-ETS materialise.

The need for separation does not mean that the scope of ETS1 and ETS2 couldn't be enlarged to cover specific agricultural emissions. For instance, industries producing ammonia and nitric acid already fall under ETS1. Thus, the sectoral scope and thresholds could be altered to include more fertiliser producers and any GHG emissions resulting from the use of fertilisers. Similarly, under ETS2, certain member states have already preemptively expanded the scope of ETS2 to include fossil fuel emissions from vehicles and heating on farms.

An even larger risk for flexibility lies between an Agri-ETS and the Effort Sharing Regulation (ESR) or the Land Use Land Use Change and Forestry (LULUCF) Regulation. The ESR sets binding national targets for non-ETS1 sectors, including agricultural, methane and nitrous oxide emissions. Meanwhile, the LULUCF Regulation covers carbon dioxide emissions from and carbon sequestration in the land use sector. EU policy already includes flexibilities between the ESR and LULUCF, something which can be detrimental to their climate results. Therefore, additional flexibilities with a potential Agri-ETS should not be allowed.

Since certain member states can already use a limited amount of allowances from ETS1 to meet their ESR obligations, a similar policy could be applied with an Agri-ETS. Likewise, those covered by an Agri-ETS may be allowed to use carbon sequestration credits from LULUCF to offset their emissions obligations, mixing temporary removals under the ETS with on-going permanent emissions. Either of these flexibilities would have severe consequences for the effectiveness of an Agri-ETS. They would inflate the cap, undermine price signals under the Agri-ETS, disregard accounting issues, and encourage mitigation deterrence, whilst feeding into the offsetting dangers mentioned earlier.

Ultimately, the ESR and LULUCF Regulation are essential policies that must be preserved. A new ETS for agriculture must not replace, but complement, ESR and LULUCF targets. The EU should fix its post-2030 targets under both policies, regardless of a potential Agri-ETS.

Fair use of revenue

It is important to recognise the invaluable role farmers play in our lives, not only as custodians of nature, but also for putting food on our plates.

Farmers have been facing increasing pressure from large-scale agri businesses. According to Eurostat, between 2005 and 2020, the EU lost around 4.6 million small farms, while holdings larger than 100 hectares increased by 20% and presently account for over half of the EU's utilised agricultural area, . Consequently, it is important for regulation not to come at the expense of farmer livelihoods; pollution must be driven out of farming, but farmers must not be driven out of business.

An Agri-ETS can contribute to this mission by ensuring the resulting revenue is used fairly. The EU-backed Strategic Dialogue called for a Just Transition Fund for Agriculture that would offer "financial assistance for farm transformation, access to new equipment, support for new businesses in rural areas, voluntary buy-out schemes, and up- and reskilling programmes to transition to alternative production systems".

The European and Economic Social Committee also voiced support for an Agri-Food Just Transition Fund "oriented towards small-scale players active in agri-food systems, public-private partnerships, competences and working conditions, with young people, women, human rights and sustainable practices at the centre of the eligibility criteria,

and with an approach that involves financing the whole chain". Civil society has echoed these calls, and the Institute for European Environmental Policy has looked into what such a fund could be like, including critical design elements to consider.

Emissions trading systems have the advantage of raising revenue from the auctioning of allowances. Under ETS1, revenue is mainly disbursed among member states and must be used to fund climate action. A few EU-level funding tools also use ETS revenue, including the Innovation Fund, which currently holds €12 billion. For ETS2, some funds will be directed towards the Social Climate Fund, which, between 2026 and 2032, is expected to provide up to €65 billion in targeted support for lower-income groups and micro enterprises. Similarly, an Agri-ETS could present an opportunity to recycle revenue back into the agricultural sector into a potential "Just Transition Fund for Agri-food".

Ultimately, accumulated revenue could serve many potential uses. Accelerating the transition will necessarily involve a shift in production and management practices, requiring new skills, methods, training, machinery and infrastructure. Money could also be directed towards carbon sequestration projects on agricultural land, including research and development for land-based sequestration activities. In this sense, funds would serve to bring about innovation and modernisation to the sector, essentially supporting farmers in the green transition. Alternatively, funds might also be necessary to support lower-income households, should food prices rise following a potential increase in operation costs for farmers, or should processors and retailers also face higher costs and pass these on to consumers.

Holistic policy

An Agri-ETS cannot green the agricultural sector alone, but must come in addition to a robust policy package. Ensuring the sustainable use of pesticides or reforming the Industrial Emissions Directive (IED) to include cattle are key examples of how emissions could be reduced in the sector. This section will focus on three other policies, namely the ambitious reform of the Common Agricultural Policy (CAP), public procurement to incentivise sustainable food systems, and reducing food waste.

• Common Agricultural Policy (CAP)

As stated by the ESABCC, the CAP is "misaligned with net-zero, supporting high-emission agricultural practices and lacking strong incentives for land sink enhancement." Civil society demands have been clear. The new CAP needs to be reformed in a way that ends area-based payments and harmful subsidies, better targets payments, and actually facilitates agroecological practices.

Unfortunately, the CAP has been subject to deregulation since 2022, when "food security" mantras first triggered an exemption for the green measures under that CAP regime. In 2024, one year into the new CAP regime, a major "simplification" drive took place which made most of the environmental conditionality requirements known as the Good Agricultural and Environmental Conditions (GAECs) voluntary instead of binding. A further proposal was published in May 2025, also in the name of "reducing the administrative burden". Alongside the proposal, the Commission published a roadmap, indicating that further revisions can be expected.

Policymakers continue to push the CAP in the opposite direction to what is needed to make European agriculture more sustainable and to future-proof it against a warming climate. The proposal for the next phase of the CAP (post-2027) seeks to eradicate the conditionality scheme and fails to earmark concrete funds for climate, environmental and biodiversity actions. It also grants member states significant autonomy in deciding where to allocate funding and consequently which measures to prioritise, ultimately risking a race to the bottom, particularly in a context where many national governments

are driven by conservative forces keen to hollow out environmental safeguards. Overall, the proposal has been labelled as the first to "actually go backwards on green goals".

With this in mind, it makes little sense to push for an Agri-ETS to price emissions the CAP would continue to subsidise. Public money is for public goods. Thus, farmers must be rewarded for positive land stewardship, preserving ecosystems and safeguarding natural resources; this begins with linking payments to measurable climate and biodiversity outcomes, something the current CAP has watered down and the future CAP has eliminated.

● Sustainable public food procurement

To reduce emissions in the sector, a comprehensive approach to the food system is necessary. This involves changing diets and shifting towards sustainable consumption patterns. It also involves changing the structural factors that influence food choice, for instance, by driving demand towards socially just supply chains and production models that align with climate and nature goals.

The Vision for Agriculture and Food proposes to strengthen the role of public procurement by pursuing a "best value" approach, which provides "the right incentives to promote the consumption of local, seasonal products, and food produced with high environmental and social standards, including organic products and food originating from shorter supply chains". This approach is also expected to provide opportunities for small and medium-sized enterprises (SMEs).

Nevertheless, the vision remains unclear on how these goals will be implemented, particularly since the Sustainable Food Systems Law - promised under the previous mandate - has been shelved, and the draft post-2027 CAP framework proposes to abolish the dedicated funding stream for rural development, known for recognising short food supply chains.

The EU could pursue other options, such as amending the Public Procurement Directive to oblige national governments to award public tenders based on high-value food, i.e. food that complies with ambitious environmental and social standards, such as organic production and local sourcing.

On another note, an EU action plan for plant-based food could be launched, as demanded by 130 organisations. The details of such a plan would include measures to

drive stable, long-term demand for plant-based foods, stimulate regional supply and strengthen the plant-based value chains. Unfortunately, none of this is currently on the policy table.

● Reducing food waste

Lastly, reducing food waste remains a crucial component of a holistic policy package. Food waste accounts for around 16% of the total GHG emissions from the EU food system, with 60 million tonnes of food waste generated every year. The Farm to Fork Strategy set a target to reduce food waste by 50% by 2030 - aligning the Union with the United Nations' Sustainable Development Goal 12.3.

Yet the revised Waste Framework Directive has fallen short of much-needed ambition. In processing and manufacturing, member states are only required to reduce food waste by 10% - in comparison to the amount of food waste generated as an annual average between 2021 and 2023 - by the end of 2030. Meanwhile, for retail and consumption (restaurants, food services and households), the target is 30%. Civil society has criticised these targets, asking for alignment with the European Parliament's position, namely, at least a 20% reduction in processing and manufacturing and 40% at retail and consumption, as well as the inclusion of primary production in food waste reduction targets.

Naturally, public procurement could also contribute to food waste reduction by setting criteria for public food purchases. Existing proposals from civil society suggest introducing waste prevention measures, such as accurate stock inventory, efficient storage, adapting portion size, allowing the use of leftover food, or even requiring a donation agreement with food banks or food aid associations. To date, no action has been taken on this matter.

Conclusion

As argued in this paper, any hypothetical future Agri-ETS must meet several criteria before it can be considered an appropriate emission reduction tool. First and foremost, it must come after and not precede the proper reform of existing instruments, such as the Common Agricultural Policy, to make them fit for purpose.

One that is achieved, an Agri-ETS must tackle big polluters, such as the large-scale (livestock) farming industry, to address the most significant emission sources and avoid the situation where small-holder farmers bear the cost of pollution. It must also set an ambitious cap with a regulated supply, no free allowances, and ban offsetting with future CRCF carbon farming credits.

Crucially, bringing about social justice and a just transition must lie at the heart of an Agri-ETS. First and foremost, this means a fair use of revenue that must be channelled towards those most vulnerable in the sector.

However, an Agri-ETS is just one of many instruments required to facilitate the transition in the agricultural sector and the existing policy framework is both lacking and flawed. In essence, the agri sector faces a political vacuum, with existing policies continuing to fund damaging actions for the environment, climate and biodiversity. This ultimately questions the usefulness of a new instrument, particularly in our current political landscape, where designing and negotiating an ambitious policy from scratch might prove close to impossible.

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