



clean air farming

Reducing Ammonia and Methane
Emissions from Agriculture

Briefing on air pollution from the Agricultural sector and advocacy opportunities for NGOs

Brussels, 19th October

Introduction

When it came to ambitions to decrease emissions from the agricultural sector, the revision of the Common Agricultural Policy (CAP) proved to be a disappointment. However, it is now more important than ever to address this sector. This briefing offers comprehensive advice to NGOs on how best to tackle agricultural air pollution, via main relevant policies: the **National CAP Strategic Plans** and the **Industrial Emissions Directive (IED)** but also with a link to the **Zero Pollution Action Plan**.

By the end of 2021, Member States must present their national CAP strategic plans. It is therefore of the utmost importance that NGOs push for ambitious developments within these plans now. Meanwhile, large pig and poultry farms that do not receive CAP funding and do not have to follow CAP regulations are covered elsewhere by the IED. In the first quarter of 2022, the European Commission will present its proposal for an IED revision, marking another key moment for NGOs to push for a stricter IED¹.

Addressing air pollution from the agricultural sector is vital

In the EU, agriculture is responsible for 93% of ammonia (NH₃), which is a precursor of particulate matter, (PM_{2.5}) and 54% of methane (CH₄), a precursor of ozone (O₃). Both particulate matter and ozone damage our health and methane also damages the environment. This generates a high societal cost that is not often considered when addressing policy making connected to agriculture.

A small number of sources are responsible for a lot of pollution: when it comes to ammonia, 80% is generated by 4% of farms in Europe. In addition, over 70% of livestock methane emissions is generated by farms with more than 50 livestock units. This means that 39% of EU anthropogenic methane emissions are from large livestock farms. Thus, these intensive farms have a huge impact on both air, water and soil.

¹ See EEBs submission to the IED Targeted Stakeholder Survey https://eeb.org/wp-content/uploads/2021/02/EEB-methane-strategy_CAF.pdf

Ammonia, once emitted, reacts with other substances in the air, such as sulphuric and nitric acid, to form ammonium sulphate and nitrate salts (fine particulate matter). Ammonia is emitted during the application of urea-based mineral fertilisers and is also produced during the storage and application of manure from pig, cattle and poultry farming. Ammonia pollution also incurs acidification and eutrophication of near-natural ecosystems, contributing to biodiversity loss. Many measures to reduce ammonia emissions are also economically beneficial for farmers as they lead to greater efficiency. Nitrate salts travel for long distances, affecting air quality in cities, as well as the rural areas from where they originate.

Ammonia emissions react in the atmosphere to form secondary particulate matter (PM_{2.5}) which causes the greatest health burden in the EU. In September 2021, WHO, after a systematic review of the science, published its [new Global Air Quality Guidelines](#), the first update since 2005. These new recommendations now suggest lower values for the main pollutants, most notably for PM_{2.5}, for which a new limit of an annual concentration of 5 µg/m³ is now recommended (previously 10 µg/m³).

Methane is both a greenhouse gas, responsible for around 30% of global warming, and a precursor of air pollution. Once released, it forms ground-level ozone which causes several health and environmental issues. In 2016 (the latest available data), it was responsible for 14,000 premature deaths in the EU, equal to 149,000 Years of Life Lost. Ozone also damages vegetation, crops and forests. The most significant sources of methane are emissions from fermentation during the digestion processes of ruminants and emissions from the storage of solid manure, slurry and fermentation residues.

A new [IPCC report](#) highlights the importance of decreasing methane, as it is responsible for almost one-third (0.5C of the 1.1C) of the overall global heating as well as harms people's health, crops, and ecosystems. No serious action so far has been taken to limit methane emissions. Now the reduction of human-caused methane emissions in the energy sector is presented as the most rapid and cost-effective approach, implying simple solutions such as stopping the venting of gas and properly sealing equipment. The [EU methane strategy](#) proposes the very same approach. It is vital to advocate for stronger measures

The Common Agricultural Policy

The Common Agricultural Policy (CAP) is by far the largest subsidy scheme of the EU, distributing €54-58 bn per year to farmers, which amounts to nearly a third of the EU's budget. It has a history of failing to address the negative impacts of agriculture on the climate, biodiversity, air, soil, and water, and in some cases even exacerbating problems.

The European Green Deal includes a commitment to move to [sustainable food systems](#) but when it comes to changing agriculture it leaves the job primarily to the CAP. Thus, a [new CAP reform](#) had prompted high expectations of essential changes. On 25th June 2021, European negotiators came to an agreement on the reform of the 2023-2027 CAP. The reform is very much business-as-usual, disregarding scientific advice, political commitments to the Green Deal, and the calls for change from thousands of citizens. The assessment of NGOs shows that the result of the reform is overwhelmingly negative when it comes to creating an

EU farm policy that is compatible with the Green Deal².

Links between the new CAP and air pollution

Although the new CAP rules will only be officially concluded at the EU level in late 2021, Member States have been working on their own national plans in dialogue with the European Commission, with some already being finalised.

In 2022, the European Commission will be reviewing the draft national plans and will have the option to address observations to Member States in order to highlight gaps or areas of concern. Member States will then have to answer the Commission, before the plans are officially approved in mid-/late 2022. The new CAP, through the national strategic plans, will then come into force on the 1st of January 2023.

The plans should identify the social, economic, and environmental needs linked to the agricultural sector, which could include the limiting of certain air pollutants and relevant trends. There are many reasons to push for the inclusion of air quality measures as mentioned; the newly updated [WHO Air Quality Guidelines](#) highlight the urgency of decreasing key air pollutants, while [the new IPCC report](#) targets specifically the need to reduce methane emissions. Finally, the [Second Clean Air Outlook](#) demonstrates the socio-economic benefits of decreasing air pollution.

Conditionality (previously 'cross-compliance') is a set of mandatory basic rules that apply to all who receive direct payments or area-based funding under the CAP. It sets the baseline for environmental practices, so farmers can only get extra funding if they do more than what is required under conditionality. There is nothing directly addressing air pollution, except for the banning of burning arable stubble. However, there are rules - so-called GAECs (Good Agricultural and Environmental Conditions) - requiring the keeping of soils covered in winter and the rotation of crops, which can reduce the need for fertilizers that also has the indirect result of reducing air pollution.

The most relevant voluntary measures available to promote the uptake of certain practices or to support certain types of farms are the following:

- **Eco-schemes** (pillar 1): a new measure, intended to reward farmers for applying practices that benefits the climate, air, water, soil, biodiversity, or animal welfare through yearly payments. **Eco-schemes are designed by Member States**, so different practices will be promoted from country to country; some might use eco-schemes to pay for minor improvements, others for extensive, high nature value farming. The only criteria it has is that it must go beyond Conditionality and legal requirements. Eco-schemes for animal welfare need to be carefully monitored as some countries might try to use them to give hidden subsidies to intensive farms. This measure is of high importance to look to for in each Member State.
- The **Agri Environment Climate Measure (AECM)** (pillar 2): an old measure which includes contracts for long-term environmental land management commitments (5-7 years). It can be received by farmers, but also by other land managers.
- The **Payments for compensating for constraints linked to the Water Framework Directive or Natura 2000 areas** (pillar 2): where specific restrictions or practices are required by River Basin Management Plans and Prioritized Action Frameworks, countries can use pillar 2 funds to compensate farmers or land managers.

² See EEBs report *Does the new CAP measure up? – NGOs assessment against 10 tests for a Green Deal-compatible EU Farming Policy* accessible at <https://eeb.org/library/does-the-new-cap-measure-up-ngos-assessment-against-10-tests-for-a-green-deal-compatible-eu-farming-policy/>

- **Coupled Support** (pillar 1): an income-support measure “coupled” to production levels and paid yearly per animal or per hectare. This is not meant as an environmental instrument but can still be used as such. This is an important measure, as up to 13% of the pillar 1 budget goes to coupled support. This has been criticised, due to it being used by many Member States to subsidise the production of ruminant meat (sheep, goat, beef, and veal) and dairy. In 2016, 49.5% of all beef and veal cows and 36.5% of dairy cattle were supported through coupled support.
- **Investment support** (pillar 2): a measure that Member States can use to support investments made by farmers with a certain percentage being reimbursed. This is an important instrument as 15-20% of the subsidies in pillar 2 goes to this instrument. This has been criticised for supporting environmentally harmful production models, e.g. support for investments in livestock stables can lead to an increase in animal numbers, or support for investments in heavy machinery that can lead to soil degradation.

Opportunities for NGOs

Ensure air quality authorities are involved in the design of strategic plans

The strategic plans are being made and NGOs have an opportunity to highlight the importance of reducing air pollution. The first step of strategic plans is an assessment of the situation, identifying environmental “needs”. In doing so, they have to consider any evaluation of the situation that have been made under the National Emissions Ceiling (NEC) Directive and other environmental laws.

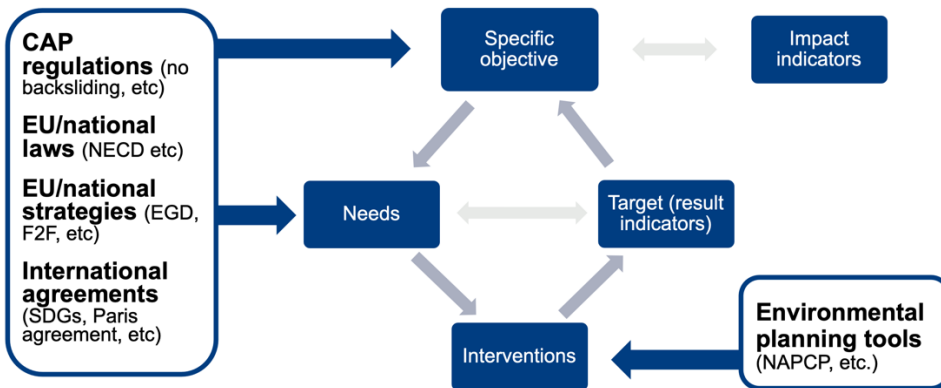
Then, they need to establish a prioritisation of needs, which must be coherent with existing laws and targets, including the NEC Directive. Finally, they must design measures to address the needs, and in doing so should consider measures identified in environmental planning tools such as National Air Pollution Control Plans.

In practice, we see agricultural ministries in charge of these developments with limited involvement of other ministries. And yet, the CAP is one of the main financing measures for environmental action in agriculture which affects many sectors such as air, biodiversity, climate, health, water policies and associated ministries. It is, of course, crucial for environmental stakeholders with expertise in air pollution (and other impact areas) to be involved, but we also need to ensure that air quality experts within the public administration, and environmental and public health ministers within governments are also vocally pushing for the CAP to tackle air pollution.

Push for real “strategic planning” to challenge the status quo

When Member States construct their national strategic plans, they are required to follow a new “intervention logic”, as illustrated in **Figure 1**.

Figure 1. The Intervention logic of the National CAP Strategic Plans



For each specific objective of the CAP, they must identify the concrete “needs” (or challenges) on national/sub-national levels (e.g. high ammonia emissions), then set targets against result indicators (e.g. agricultural area under commitments to reduce ammonia emissions) and then design measures (so-called interventions) which will contribute to achieving those targets and addressing the identified needs.

In doing so, they must consider EU and national laws (Nitrates Directive, NECD etc.) and planning tools (National Air Pollution Control Programmes, NAPCP), and show coherence with relevant EU and national strategies and international agreements. For example, within the NAPCP it is mandatory for a national advisory code of good agricultural practices to control ammonia emissions. This can be used to push for stricter measures as it is from the United Nations Economic Commission for Europe (UNECE) convention, which the nations have already agreed on. An example how this “intervention logic” can be used is illustrated in **Figure 2.**

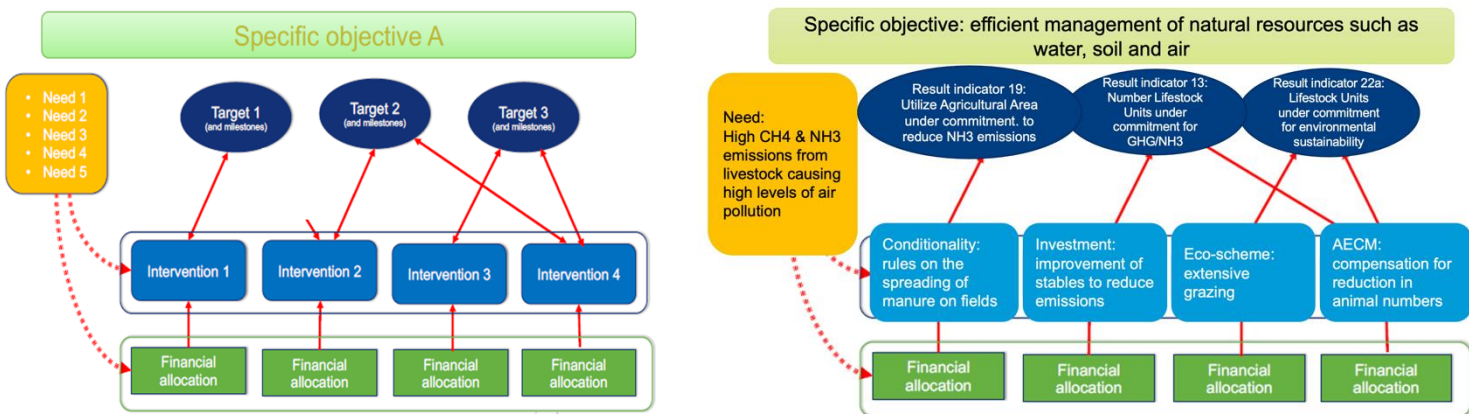


Figure 2. National CAP Strategic Plans “Intervention logic” with an example.

If Member States do not follow this intervention logic appropriately or if they clearly disregard national air quality, the Commission could force them to review their plan. This is a crucial lever to push for action in the CAP. When assessing the draft plan of Member States, it is important to challenge them on the measure that they are designing if you think that it will be insufficient to address the “needs”.

The Industrial Emission Directive

There are emissions from the agricultural sector, such as from large pigs and poultry farms, that do not receive funding from the CAP and thus do not have to follow CAP regulation. The EU only regulates emissions of large pigs and poultry farms through the Industrial Emissions Directive (IED).

In the first quarter of 2022, the European Commission will present their proposal for a revised Industrial Emissions directive (IED). The IED is the main EU instrument regulating the environmental impact of big industrial installations, including installations for the intensive rearing of poultry and pigs. Under the IED, around 50, 000 installations are required to operate in accordance with a permit (granted by the Member States' competent authorities) outlining measures to prevent or reduce their environmental impact, including emission limit values for air pollutants. The aims of the revision are to progress towards the EU's zero pollution ambition for a toxic free environment and to support climate, energy and circular economy policies.

Opportunities for NGOs

Proposals for change

For the review of the IED the most important development to push for is the redesign of the scope of the Directive, which dates back to 1996. The scope (Annex I of the IED) currently features a long list of industrial activities of high environmental impact. The aim is to shift our focus from merely preventing or reducing the impacts of such activities, to considering how to best deliver products and services.

An important example is the unsustainable model of intensive rearing of poultry and pigs (defined as installations with more than 40,000 places for poultry and more than 2000 places for pig production (over 30 kg) or more than 750 places for sows). What should instead be advocated for is a shift to sustainable, more diversified systems. The IED scope, and related provisions for the permitting of activities, should contribute to the much-needed transition from e.g., intensive livestock rearing to more sustainable meat/protein production. This is especially important for the granting of new permits, but also for permits updates concerning major upgrades.

Another important change is the extension of the scope, both in the sense of including more activities, as well as in the sense of considering the full impacts of an activity (upstream and downstream impacts), going beyond the installation boundaries. More specifically:

- Cattle, the largest methane emission source in the EU, are currently excluded from the scope of the IED. Thus, the extension of the scope of the Directive to include cattle rearing, as well as other production areas like aquaculture, is also an important change to push for during the revision.
- Regarding the extension of the scope of application/boundaries of the installation permit, methane and ammonia emissions from IED installations are only addressed if occurring on-site. The problem is that such emissions often occur off-site, e.g. in the case of manure spreading. The manure originates from an activity covered by the IED and the operator should be bound through an extended producer liability scheme to also deal with the waste phase impacts of its activity.

Finally, the IED minimum requirements (so-called ‘safety net’) should include:

- the use of air pollution abatement techniques aligned to the strict so-called BAT-AEL range (Best Available Techniques-Associated Emission Levels, or BAT-AELs, are the pollutant emission levels associated with the use the most effective techniques in terms of environmental performance. The pollutant emission limit values included in the permits have to be based on the BAT-AELs).
- the introduction of a mandatory density factor aligned to the carrying capacity of the soils and water quality.
- the introduction of safeguard clauses that would prevent intensification of production for export and ensure strong animal welfare safeguards.

Forward these demands for the IED review

It is important that decision-makers at the national level are aware of these demands. The European Commission is currently assessing the views of different stakeholders on the review, including environmental ministries and agencies in the EU member states. A first avenue for NGOs would be to communicate these demands to the relevant people in the ministries and agencies. At a later stage, after the Commission proposal is available (Q1 2022), both the European Parliament and the Council will assess the proposal and further advocacy opportunities will be presented.

Advocate for Zero Pollution Ambition in the Strategic Plans and IED.

The recently launched Zero Pollution Action Plan (ZPAP) provides a useful tool with which NGOs can push for greater ambition in the CAP strategic plans and the IED review, while the plan itself also represents something NGOs can engage with and help strengthen. The European Green Deal’s commitment to create a toxic-free environment and achieve Zero Pollution is an essential and long-awaited commitment to put people’s health and the protection of environment at centre of policy making, while giving a clear direction to business as to the common future that we seek.

The ZPAP, launched by the Commission on 12 May 2021, embraces a “Zero Pollution Ambition” (ZPA) which it defines as: *“the zero pollution vision for 2050: a Healthy Planet for All: Air, water and soil pollution is reduced to levels no longer considered harmful to health and natural ecosystems and that respect the boundaries our planet can cope with, thus creating a toxic-free environment”* (see [Article 2.1](#)).

The definition of pollution linked to harmful levels is, however, not strong enough – as it creates a potentially endless debate on what constitutes harmful. A better ambition is that zero pollution should be zero – both for practical reasons (the objective is clear) and for precautionary principle reasons (evidence grows on negative impacts of pollution ever year with for some pollutants showing there are no levels of pollution with no risk of harm). Note that there are already elements of zero pollution under EU law for certain pollutants (e.g. the obligation to phase out priority hazardous substances under the Water Framework Directive or Substances of Very High Concern (SVHC) under REACH Regulation) – so there is a precedent for phasing out pollutants. All member states are bound by these, as they are bound by the principles defined in EU Treaties that they all signed up to.

Furthermore, the definition of pollution should be based on a broader definition of pollution, as, for example, set in the Art. 3 (2) of the IED, which defines ‘pollution’ as *‘pollution’ means the direct or indirect introduction, as a result of human activity, of substances, vibrations, heat or noise into air, water or land which may be harmful to*

human health or the quality of the environment, result in damage to material property, or impair or interfere with amenities and other legitimate uses of the environment.

Opportunities for NGOs

NGOs can strengthen the ambition of the ZPAP via pushing for stronger commitments and bolstering of its elements as they are delivered and by holding the Commission to its promises, including those on ZPA, prevention over clean up and policy coherence. Furthermore, NGOs can effectively promote the ZPA to become normalised in discourse, much in the same way that “decarbonisation” and “carbon neutrality” have been. It will then become the norm to state that there should be no more money for pollution, with zero tolerance for pollution and non-compliance with laws and zero delays in action.

The ZPAP then offers a prime reference for NGOs to use in their advocacy for more ambitious measures in the CAP strategic plans and the IED review. In these efforts, call upon the arguments and commitments of the ZPAP to remind decision-makers in both settings that each respective policy should work to meet the ZPAP goals and thus be strengthened accordingly.

In conclusion

This briefing offers advice for NGOs on targeting their efforts around the CAP Strategic Plans, the Industrial Emissions Directive review, and wider ZPAP in order to tackle agricultural air pollution. Set against a backdrop of the growing crises of climate change and biodiversity loss, it has never been more urgent than it is now to reduce emissions from the agricultural sector and deliver on the commitments made in the European Green Deal. With regard to the CAP Strategic Plans, now is the time to advocate for emission-reducing measures, ahead of the Member States presenting their plans at the end of this year. Then, the Commission’s proposal for an IED revision is expected to be published the first quarter of 2022, providing another opportune moment for NGOs to push for stricter measures – through engagement with the Commission before the IED revision is out, and then by engagement with the Council and Parliament as they prepare their positions on the IED, and subsequently in the trilogues. Similarly, engagement with the Commission, Council and Parliament will be useful to strengthen the ZPAP.

Further reading

- [Letter to the European Commission – Ensuring ETS and IED consistency within upcoming “Fit for 55” Package](#)
- [Beyond net-zero emission in agriculture: Creating an enabling climate governance for agriculture](#)
- [Airy promises: how EU governments are failing to cut air pollution and what to do about it](#)
- [Civil Society Vision for a Zero Pollution Future](#)
- [‘Fit for 55’: EEB assessment](#)
- META article - [10 tests for a Green Deal-compatible EU farming policy](#)
- META article - [EU’s new industrial strategy fails to square the circle of sustainability](#)
- META article – [Methane: Short-term Gains vs Long-term pains](#)

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