



clean air farming

Reducing Ammonia and Methane
Emissions from Agriculture

Report of the expert talk

Methane Mitigation in Agriculture – How can EU Policy contribute?

1st December 2021 | online

Climate protection urges for addressing methane emissions. The global methane assessment and the IPCC AR6 report have emphasised the relevance of the greenhouse gas for climate change - already 0.5°C of current human made temperature increase has been caused by it. At the same time, a drastic mitigation of methane emissions has the power to save us from reaching irreversible tipping points.

In Europe, 54% of methane emissions come from the agricultural sector. Livestock systems for beef and dairy production are the main issuers as enteric fermentation accounts for about 81% and manure management for about 17% of agricultural methane emissions. A variety of methane mitigation measures are available such as breeding for better animal health and productivity, feed additives or treating manure with biogas plants. Also policy measures to shape consumption and production are possible. Although these are more difficult to implement, they are more effective in mitigating methane.

The Global Methane Pledge, which was signed by the EU Commission, Germany and more than 100 other countries, sets the course towards reducing methane emissions by 30% across all sectors by 2030. However, the EU lacks an appropriate legislative framework to address agricultural methane emissions.

In our expert talk we discussed how EU policy can and must contribute to address methane mitigation in the agricultural sector.

Guiding questions were:

1. How can and must methane be mitigated within the EU agricultural sector?
2. How can and must EU policy address agricultural methane?

A project by:



The project "Clean Air Farming" (LIFE17 GIE/DE/610) is funded by the EU Commission within the framework of the LIFE programme.



Methane Mitigation in Agriculture – How can EU Policy contribute?

During the event, experts from science, NGOs and politics presented their opinion on measures of agricultural methane mitigation and policy option to address the emissions.

Presentations

Agricultural Methane - Mitigation potential and measures

Dr. Lena Höglund-Isaksson (IIASA)

- Dr. Höglund-Isaksson showed that CO₂ and methane both must be reduced to stay under 1,5 °C of temperature increase
- It is expected that remaining GHG emissions in 2050 will almost only come from the agricultural sector
- Total methane emissions have dropped by 20% by now and are expected to decline by another 32% with current policies in place
- Reductions in agricultural sector have been very limited and are expected to be very limited in future: slight improvements in dairy cows, bigger improvements in pigs
- 15% is the maximum technical abatement potential of methane emissions until 2030
- Technical mitigation measures
 - About 60% of livestock CH₄ emissions are from large farms with >100 Livestock Units (LSU) which have a great mitigation potential
 - Enteric fermentation: Breeding for traits to enhance e.g. productivity, animal health and Feed additives, Constraints: Breeding takes at least 10 years, feed supplements can have negative side-effects on e.g. animal health (like nitrate)
 - Even with all technical potential exhausted, the livestock sector is likely to still emit more than half of Baseline emissions in 2050.
- Further mitigation measures
 - Emissions must also be addressed through cuts in animal stocks and production/consumption of milk and meat
 - Supply-side measures: Actively supporting transition to more extensive systems with stricter standards for biodiversity and animal health protection. More such regulations are called for by farmers currently operating smaller organic farms, but often opposed by lobbying groups for agro-industry.
 - Demand-side measures: curb demand for milk and meat through economic instruments e.g., taxes, increasing prices relative plant-based protein sources.
 - Consumer prices of milk and meat products would increase and import/export would need to be regulated to avoid “emissions leakage” to other world regions.

EU Policy - Options for addressing methane from agriculture

Jutta Paulus (MEP Greens/GFA)

- Livestock numbers must be addressed as well
 - Technical measures like feed additives and co. are not enough
 - Livestock numbers is main issuer
 - Regrets that EU Commission has only included energy in the methane regulation
 - Agricultural methane emissions are not even monitored, which must be changed
 - EU Commission needs to ensure that food is produced sustainably

Methane Mitigation in Agriculture – How can EU Policy contribute?

- Decreasing our share of meat and dairy in our diet is crucial for the environment and our health - recommended amount by German Nutrition Society of meat in diet is half of the actual intake -> reduction of 50% would benefit emissions
- This discussion is difficult, because they think that we want to take their business from farmers, but it is about making them produce more sustainably and economically
- EU policy must support sustainable production
 - EU can exchange best practices
 - Farmers should not be left alone
 - They are driven to produce how they do because of policies
 - Politics need to ensure a system that is supportive
 - We will not achieve the green deal goals if we don't use policy measures that ensure that producer can produce sustainably
 - We need to conserve our natural resources to conserve our economy (it is based on it)
- Action by EU Commission
 - First methane strategy was actually from the 1990's
 - It is remarkable that no action has been done so far.
 - How high is the impact of the measures that the EU Commission is envisaging?
 - How large will be the methane emission reduction and will it bring us to climate neutrality in 2050 at the latest?

'Super emitters' - How countries and companies fail to address methane in EU agriculture

Nusa Urbancic (Changing Markets)

- Changing markets published their [report "Blindspot" in October 2021 analysing reduction efforts of agricultural methane of countries and companies.](#)
- Global Methane Pledge will not cover the full potential of the emissions in livestock
- Climate emergency is a methane emergency
- Overconsumption of meat especially in the US, Western Europe and Australia, Meat consumption has more than doubled in 10 years (esp. developing in countries)
- Industrial animal farming has made the supply possible and low prices drive the rise of consumption
- 60% of biodiversity loss is due to farming, 65% of land conservation is due to animal farming, climate emissions and water consumption are further issues
- Methane emissions have increased significantly since the 2000s
- Livestock is the single biggest source of methane emissions: 32% worldwide
- EU: 54% of methane emissions come from the agricultural sector and mostly livestock but most methane reduction effort is on other sectors like oil and gas
- If we keep the current focus we will miss the goals for the global methane pledge
- Methane reduction in EU countries
 - EU countries have headquarters of big meat and dairy companies.
 - The countries report their methane emissions but don't have methane reduction targets
 - Countries livestock methane emissions have decreased very little
 - Some even have increased like UK and the Netherlands

Methane Mitigation in Agriculture – How can EU Policy contribute?

- Germany has decreased only after unification because of reducing cattle herds
- None of the countries have a methane reduction target or a methane specific livestock reduction target
- Methane reduction in EU companies
 - Eight of the biggest meat and dairy companies analysed are in Europe
 - Companies have large GHG emissions and also very high revenues and therefore the responsibility and possibility to act (in contrast to individual farmers)
 - All companies score very low, the highest scoring company (Nestlé) does not even report methane emissions separately
 - The other companies do very little on methane reduction, only seven companies have science based targets, five don't even have any climate targets
 - Complete lack of methane monitoring as well
- Policy recommendations:
 - We need to increase the ambition of the Pledge to 45% methane cuts by 2030
 - EU should lead by including ambitious reductions from livestock methane –not just technical measures, also reduction in animal numbers
 - Policy instruments: methane targets, regulate companies to report and address methane emissions, fiscal measures
 - Wider policies to support the transition to healthier diets with less and better meat and dairy
 - Repurposing of farming subsidies to support better farming systems (agroecology, regenerative practices, etc.)

EU Policy - Options for addressing methane from agriculture

Andreas Pilzecker, DG AGRI, EU Commission

- All four categories of EU methane emissions have been reduced, within the energy and waste sector mainly
- Emission trading system (ETS) is major instrument for reducing
- Effort sharing regulation (ESR)
 - Sets national emission targets for Member States for each year between 2013 and 2030 in the sectors, including methane from agriculture
 - Reported emission numbers are reviewed and compliance is checked annually
- LULUCF (Land Use, Land-Use Change and Forestry) of Fit for 55 package
 - Commission has proposed to have specific action in agriculture
 - From 2031 onwards, land sector and agriculture shall be bundled together
 - Proposal of individual member state targets and EU-wide measures by Commission by the end of 2025
 - Remaining emissions due to limits of technical measures shall be addressed by including the carbon sink
 - From 2036 onwards, carbon removals based on a robust carbon removal certification system are envisaged to balance remaining emissions in other sectors
- CAP (Common Agricultural Policy)
 - Supports methane mitigation actions in the livestock sector
 - Key instrument is the Pillar II Rural Development Programmes:
 - Investments for modernization of animal housing,
 - Farm biodigestors

Methane Mitigation in Agriculture – How can EU Policy contribute?

- Creation of local innovation groups with farmers
 - Emphasize on best practices and financial incentives to improve
 - More flexibility to member states to design specific combination of interventions
 - The new eco scheme gives the possibility to use Pillar I support to design specific actions for methane reduction
 - Rural development programmes remain main tool for supporting investment, innovation, knowledge transfer, advisory services.
 - The Commission is encouraging member states to include methane reduction schemes in their strategic plans for the CAP.
 - Strategic plans for the CAP can also support investments in biogas plants, as well as cooperation among farmers and local communities.
- Emissions in the agricultural sector stay stable but production increases
 - Improve efficiency is important: e.g. feed efficiency, productive animals, manure management
 - First step is to support worst performing farmers to do better

Discussion

In the discussion, the point was raised that the LULUCF will only come into effect from 2030, which is too late for what science says and it was asked whether the commission is planning an impact assessment, to implement the global methane pledge, or a cross sectoral reporting of big methane emitters. It was replied that the sink function of nature is considered yet externally of LULUCF. Regarding the reporting of emissions there is already a detailed analysis of from which sector emissions are coming from and a further step is to identify which the specific sources within the agricultural sector are. A reporting of methane from companies is done in the energy but not yet in the agricultural sector. The current approach is based on activity data and emission factors and will not be raised per company in the near future.

A further remark concerning the Commission's plan to combine the land use and the agricultural sector within the LULUCF was that relying on the sink function of e.g. forests to compensate the agricultural emissions inheres the risk that the sink function, due to pressures like climate change, in the end will not be as high as we expect and also, that the sink function is taken to justify continuing the business as usual instead of reducing the emissions at their source at agricultural level. It was explained that carbon sequestration is becoming more and more important and a focus will be put on enhancing carbon sinks not only in forests but also in agriculture. Since an important factor is what is rewarded in terms of income to farmers, carbon farming will be a central approach. With a system in place, in which farmers can earn their income with carbon sequestration, will incentivise them to elect carbon farming over unsustainable agriculture. A next step is to create a market for carbon removals. At some point of time there will be a balance of further mitigation that also may come at some cost and carbon sequestration. It important to create the right framework to get to the neutrality by 2055.

Another discussed point was that in the Netherlands historically, intensive farming started from the 1960s because of really cheap natural gas and cattle feed. The letter was induced by the free trade agreement. As a result, the country nowadays needs five times more land outside its borders than inside to feed the cattle's. This raises the question whether development can be made up again by regulating these two inputs. It was responded that policies are concentrated on components which are heavily impacted by the energy prices, such as the fertiliser industry, but including agricultural products like feed and food is not discussed because of the calculation

Methane Mitigation in Agriculture – How can EU Policy contribute?

between environmental benefits on the one and administrative burdens on the other side. However, it will be increasingly looked at lifecycle assessments of products and steering the consumption within the EU.

A participant stated that regarding the current CAP and that member states have the option to include climate targets, and especially methane reduction into their eco schemes and similar programs, the Commission is supposed to monitor these and give advice. However, a recent assessment of the national strategic plans has shown that there is very little on climate targets and even less on methane targets which is mainly to maintain current production systems. To counteract this the commission issues recommendations to the member states for drafting their plans as well as the plans will be checked against those.

Also concerning the CAP, one person informed about his concern that coupled payments for suckler cows and sheep are not really targeted and will be in conflict with emission reduction targets in future which is why it might be wiser to consequently decouple them and to support side specific measures like grazing.

Conclusions

The participants agreed that methane urgently needs to be reduced, also from the agricultural sector. One conclusion from the discussion was that increasing productivity is an approach to reduce methane emissions but this must not happen in expense of animal welfare and other environmental problems. In addition to technical measures, we must address consumption patterns and reduce the consumption of animal foodstuffs, which has variety of side benefits e.g. on human health. For this goal, we need to think about how this system transformation must look like and how changes can be accepted by consumers and producers. In this context, ways must be found to enable agriculture to operate sustainably, which includes economically, in an emission-reducing manner and in harmony with animal welfare. The approaches of the [DUH study on economic instruments for a sustainable transformation of the livestock sector](#) are suitable to push the sector into this direction.

However, binding reduction targets for methane are needed to lay the foundation for this and increase the need to adapt our production system. Since the instrument of the EU methane regulation has not been used to define methane reduction targets for the agricultural sector by the EU, other legislative instruments must be taken for this objective. Various policy options are suitable and need to be discussed, including:

- IED → Within its revision, cattle rearing must be included and similarly treated to pigs and chicken coops (farm manure management emits methane as well as ammonia)
- NEC → Methane must be taken up by the NEC (The revision of the Gothenburg Protocol can be used for this purpose, among others)
- Fitfor55/LULUCF → Develop an effective model of emission reduction at source within agriculture instead of offsetting the already overvalued sink function of natural systems against agricultural emissions and continuing with “business as usual”.
- CAP
 - Encourage member states to include methane targets in their national strategic plans.
 - This will be a bottom up approach initiated by the member states.
 - In some regions there is a possibility for extensification, for example through a switch to organic farming, which of course would require a reduction in the number of livestock in relation to the available area.

Methane Mitigation in Agriculture – How can EU Policy contribute?

- EU Methane Pledge → Policy makers must implement the international agreement and establish a legal framework for binding methane reductions in the agricultural sector.
- Farm to Fork (Green Deal)
 - Foster healthier diets and change of consumption patterns
 - Reduce meat and milk consumption
 - Increase plant-based consumption
 - Increase consumers support through transparency on reasons for rising prices.

Increasing efficiency is an approach but the overall efficiency credo should not be used to support large industrial farms. 60% of methane emissions come from super polluters with more than 100 livestock units, which shows us that in particular these companies should not be further promoted while increasing obstacles for small and medium-sized farmers.

We should rather identify which agriculture we want in the future. This vision can include the aspect of binding animal numbers to available land in livestock systems and thus support small and medium-sized farmers so that they can farm sustainably, in a climate-friendly manner and in line with animal welfare. The emission levy proposed by DUH is an example that can induce this transition. As the producer based levy is imposed from a certain threshold of animal numbers according to available land and the money generated by it is to be channelled back to the farmers, it burdens bigger farms and supports smaller ones with extra money. This instrument would also serve to solve a variety of other problems such as nitrate pollution or animal welfare issues.

A high degree of acceptance for possibly rising prices for animal products can be achieved through the greatest possible transparency as to why prices are being raised. If consumers are informed about the reason of why a regulatory levy is implemented (such as for the implementation of climate protection measures, or increasing of animal welfare standards) and if it is comprehensible what the funds raised are used for, it increases the acceptance and the success of the measure.

An Event by

Deutsche Umwelthilfe e.V.
Bundesgeschäftsstelle Berlin
Hackescher Markt 4
10178 Berlin

Contact

Jana Fremming
Project Manager
Air Quality and Transport
Tel: +49 30 2400867-731
E-Mail: fremming@duh.de

Jens Hürdler
Project Manager
Air Quality and Transport
Tel: +49 30 2400867 - 738
E-Mail: huerdler@duh.de