



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Ag Climatise – A roadmap to Climate Neutrality for Irish Agriculture

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Teagasc Webinar Series
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Increasing Climate Obligations



The Programme for Government and the recent **Climate Action Amendment Bill 2020** – objective to achieve ‘**climate neutral economy**’ by 2050

Paris Agreement – limit temperature rise to less than 2 degrees above pre-industrial levels, pursue efforts to limit to less than 1.5 degrees

European Green Deal including a **Farm to Fork strategy** and **Biodiversity strategy**

It is clear that at a whole of economy level, environmental ambition must be stepped up to meet the recently increased **EU target of 55% reduction in emissions by 2030**



Agriculture will have to play its part



Farm to Fork Strategy: overall goals



climate footprint

Reduce the environmental and climate footprint of the food system



food security

Ensuring food security and public health



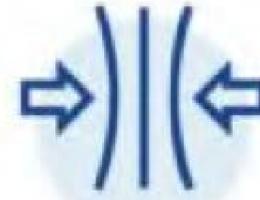
global transition

Lead a global transition towards competitive sustainability from farm to fork



new opportunities

Tap into new opportunities



resilience

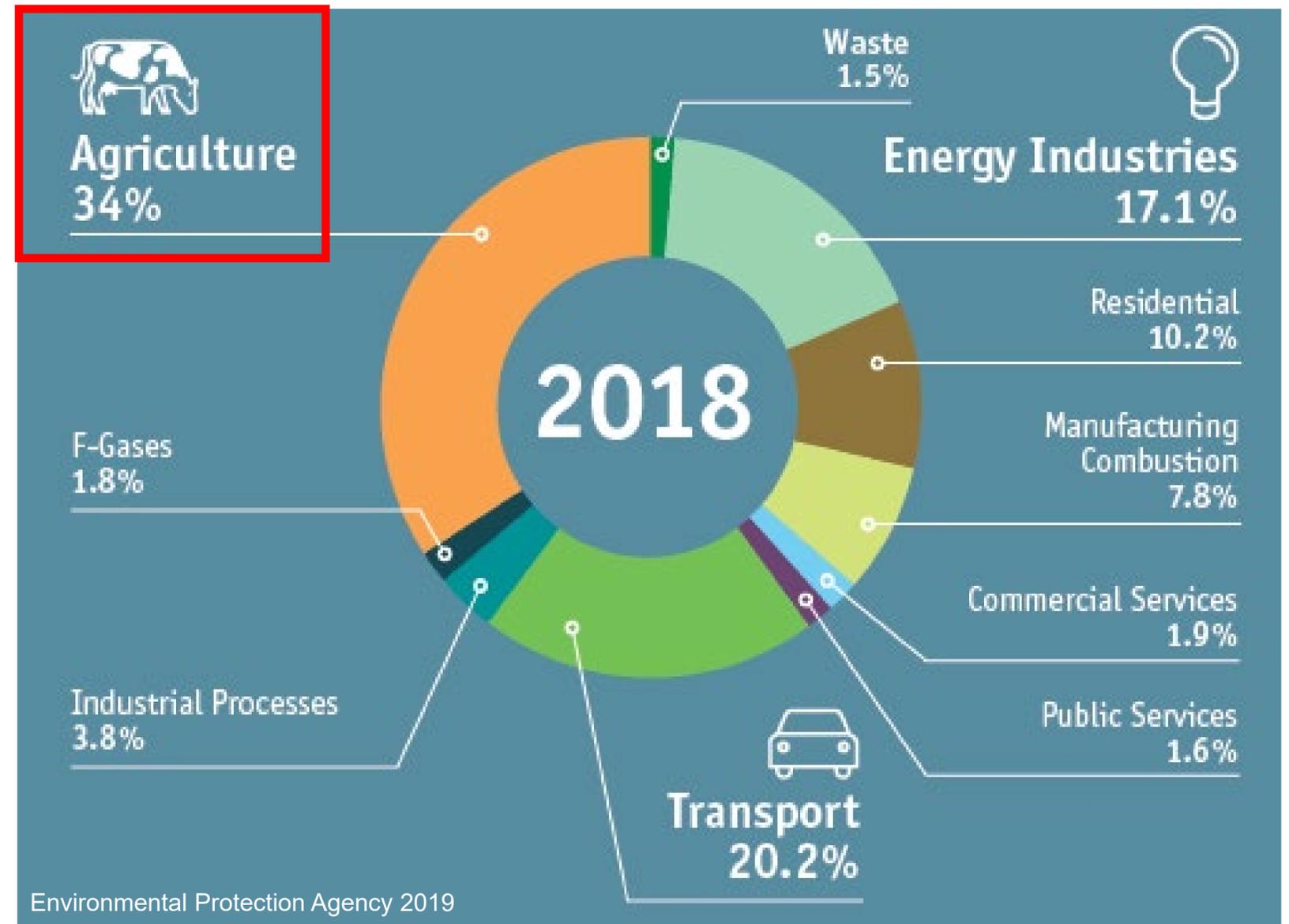
Create a robust and resilient food system



Role of Agriculture in Irish Emissions



- ***Ireland is the Second Country to Declare a National CLIMATE Emergency***
- Agriculture largest contributor to GHG emissions in Ireland
- Main source of Ireland's agricultural GHG's is methane from ruminant digestion (enteric fermentation).
- Nitrous oxide also plays a big role.
- Emissions have been increasing, especially with the removal of Milk Quotas in 2015.



Environmental Challenges in Ireland



Drivers

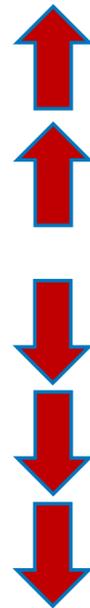
- Animal numbers
- Fertiliser sales and trends



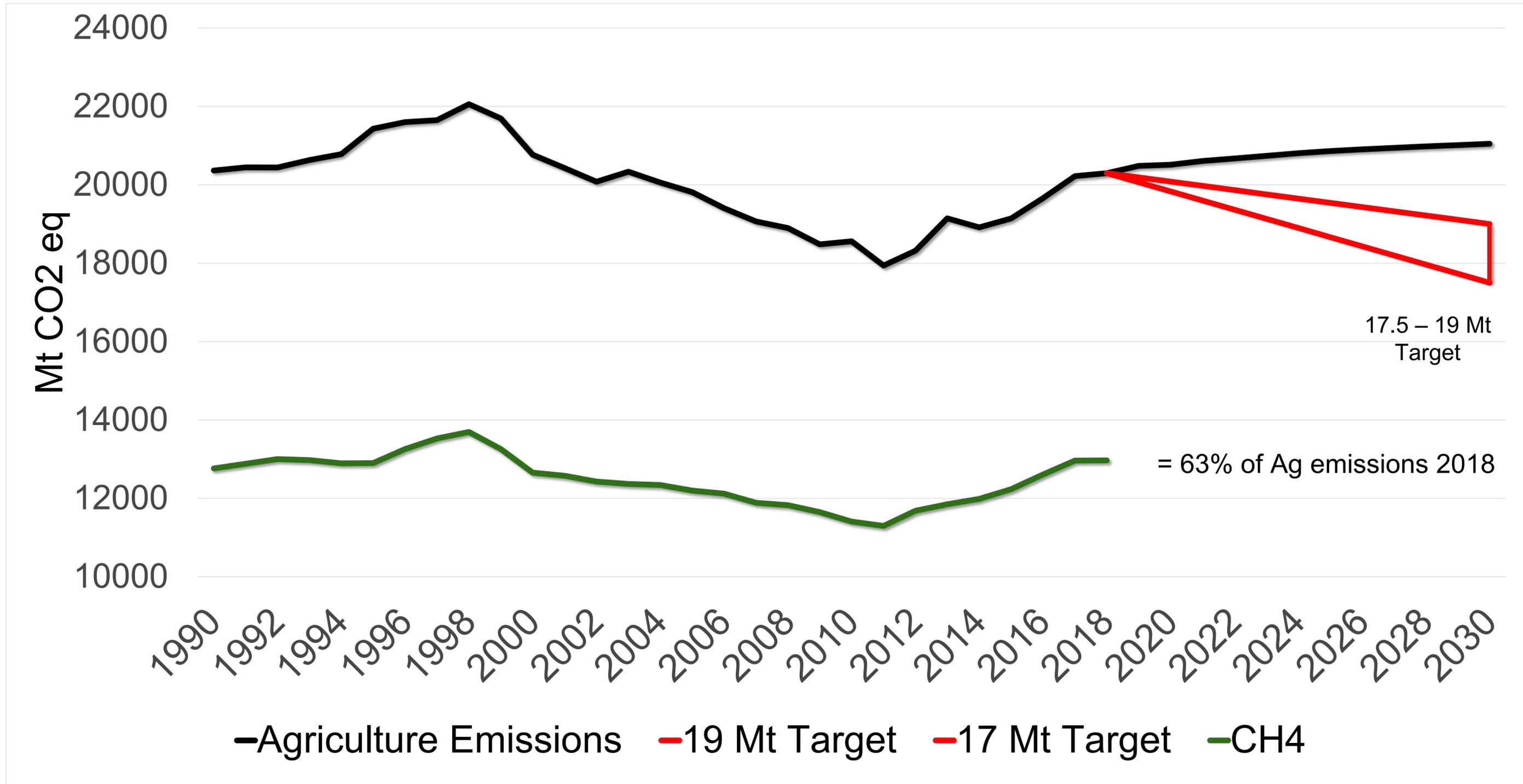
Impacts

- Greenhouse gas emissions
- Ammonia emissions

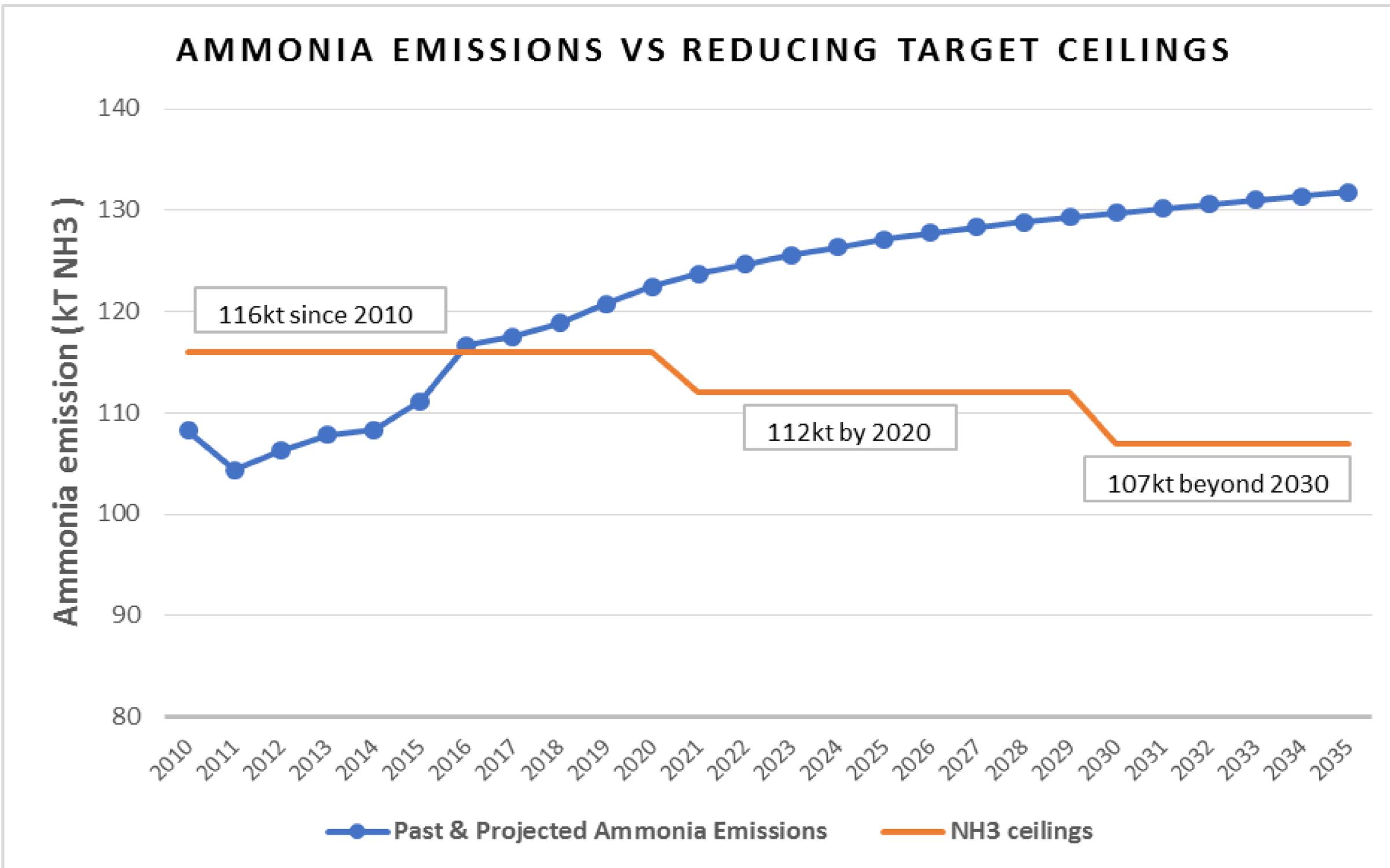
- Biodiversity
- Water quality
- Soil fertility



Emissions Projections VS Targets



Ammonia Projections with no measures



National Emissions Ceiling Directive (NECD) Targets:

1% below 2005 levels by 2020

5% below 2005 levels by 2030

Ag Climatise Fundamentals



Public consultation – extensive engagement with stakeholders from industry, research, policy and also farmers and environmental stakeholders

- *400 surveys*
- *104 written submissions*
- *170 participant workshop*

Collaboration – Key component. Designed to help all stakeholders work together to tackle climate change and air pollution

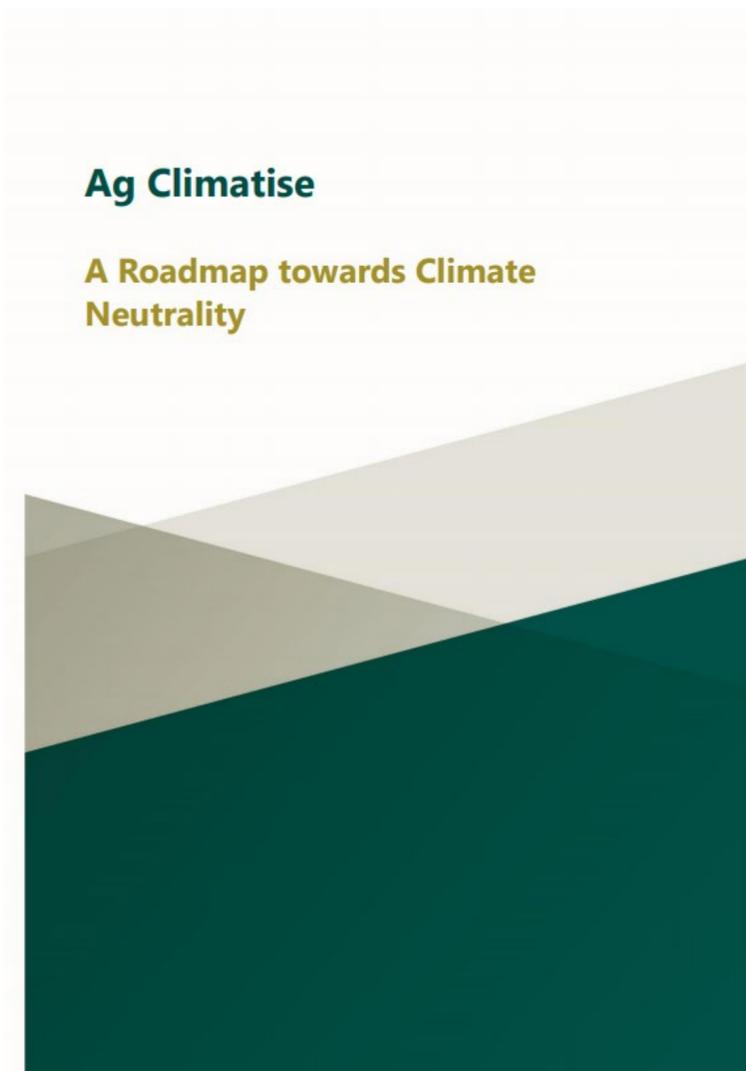


Sustainability – ensures we remain at the front of globally sustainable food production systems, and safeguarding the future of the Irish family farm for generations to come

Vision – climate neutral food system compatible with Paris temperature goals whereby **the climate impact of methane is reduced to zero and remaining emissions are balanced by removals**



Ag Climatise – A Roadmap towards Climate Neutrality



- Roadmap for delivering climate and air targets for 2030 and sets us on the path for climate neutrality by 2050
- Ambitious vision
 - *29 actions*
 - *specific and challenging targets aimed at reducing the environmental footprint*
 - *Building on the strong credentials of Irish Agriculture*
- Extensive engagement with all stakeholders
 - *100 written submissions, 400 survey responses, stakeholder workshop*
 - *Delivery will require engagement and collaboration amongst all stakeholders*
- *“Living Document”*
- *Mobilising the Teagasc GHG and Ammonia MACCS*

A Climate Neutral Agri-Food Sector by 2050...

What does this mean?

Climate

- Reducing methane by 24-47% by 2050 (role of feed additives in the post 2030 period)
- Reducing nitrous oxide emissions from fertiliser use, and balancing residuals by carbon offsets through forestry, grassland and hedgerows.
- Concept of climate neutral farm.

Air

- reducing ammonia (NH_3)



Measures related to Livestock



Reduce Chemical Nitrogen Use

- 40% Nitrous Oxide emissions
- Target 325,000 tonnes in 2030
- In line with EU Farm to Fork Strategy
- Benefits to water and air (ammonia)
- 50% of N use in dairy sector

Methods

- Optimise NMP
- Enhance Liming
- LESS – 60% 2023, 80% 2025, 90% 2027
- Covering external slurry stores (1st Jan 2021 new builds, 31st Dec 2027 existing builds)
- Clover in all grass reseeds by 2022
- Leguminous crops



Measures related to Livestock



Protected Urea

- Replace urea with a urease inhibitor treated urea product by end of 2023
- Aim for 65% CAN as protected urea 2030
- Closely working with fertiliser industry
- Establish an information portal on such products



Measures related to Livestock



Genotyping the national herd

- Will reduce GHG output at a national level
- Enhances traceability and efficiency
- Targeted improvements in key metrics (age at first calving, slaughter dates)
- Commence with all calves in priority categories of herds 2021
- Move away from stock bulls for replacements – accelerate EBI
- Integrate dairy and beef sectors better
- Increase milk recording 50% to 90%



Measures related to Livestock



Improved Grassland Management

- *Improve feed digestibility and quality = productivity gains = less methane*
- *Extended grazing reduces housing time*
- *Better management reduces need for imported feed and additional N*
- *National training programs for grassland/pasture management*
- *Grass10 training to more farmers*
- *Grass recording on all farms >100 LU or 130kg OrgN per ha*



Measures related to Livestock



Animal health strategies to support climate ambitions and environmental sustainability

- Bovine Viral Diarrhoea (BVD) eradication by 2023.
- Reduce the prevalence of Bovine Tuberculosis.
- Increase the level of participation in the Irish Johne's Control Programme (IJCP) by expanding this beyond dairy herds.
- Develop a programme to reduce prevalence levels of Infectious Bovine Rhinotracheitis (IBR).
- Targeted improvements in national somatic cell count.
- Improve the welfare of the Irish herd, particular emphasis on lameness
- Develop breeding programmes to take account of liver fluke, antimicrobial resistance, anthelmintic resistance, Johne's disease, and IBR heritability.



Measures related to Livestock



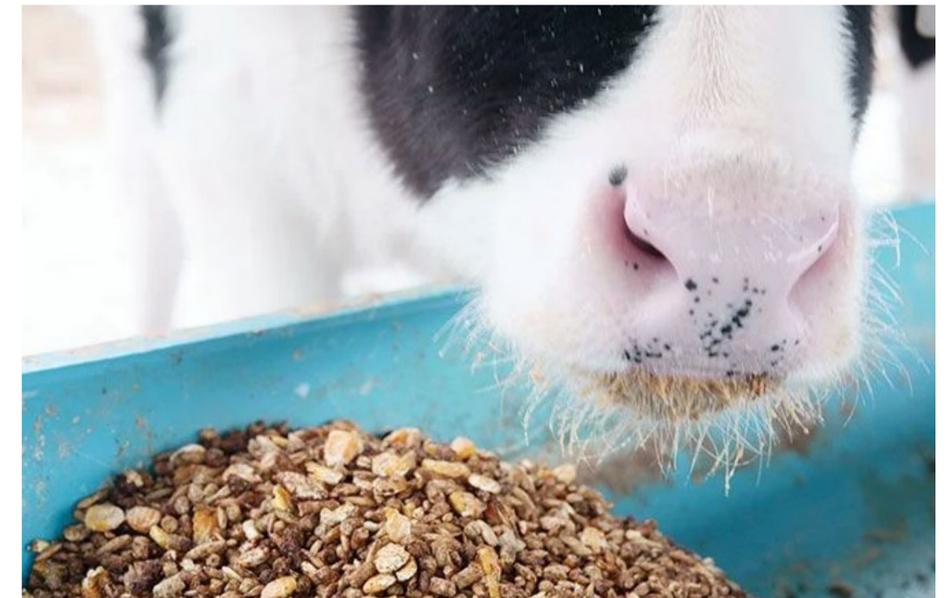
Reduce crude protein in livestock feeding stuffs

- *Reduces ammonia losses*
- *Reduce levels in feed to limit of 15% in grazing ruminants*

Invest in novel feed additives = methane reduction

- *Support research in pasture based systems*
- *Need to commercialise use*

Increase proportions of home-grown proteins



Measures related to Organic Farming



Increase organic area by 350,000 ha by 2030

- January 2019 – "Strategy for the Development of the Organic Sector for the period 2019 to 2025 launched
- Market demands and climate change and biodiversity protection
- In line with the direction of the EU Farm to Fork Strategy
- Develop organic sector through enhanced market support and increase target supports to facilitate conversion and maintenance of organic production



Measures related to Tillage Farming



Increase the area under tillage above current 300,000 ha by 2030

- Encourage winter grown cereals.
- Encourage spring cereals to use cover crops – increased NUE
- Leguminous crops as break crops – reduce chemical N, national proteins
- Buffer strips to minimise soil erosion – improve SOC, improve biodiversity
- Adopt reduced tillage techniques
- Straw incorporation requirement being considered
- Develop markets for higher value food and drinks sector (malting barley, rye, wheat for milling, hemp oil etc.)
- Source organic manures and incorporate within 4 hours – reduce ammonia and increase NUE



Measures related to land use



- Reduce the management intensity of at least 40,000 ha of peat based agricultural soils
- Protect, enhance and increase the number of hedgerows on farms
- Pilot scheme in relation to on-farm carbon trading to reward farmers for the public goods they provide

Measures related to Forestry



Increase afforestation levels and maximise existing forest contributions

- Increase to 8,000 ha per year
- Encourage planting of a range of species to ensure forests are resilient
- Facilitate mobilisation of harvested wood products - 125km roads/yr
- Expand broadleaf and native woodland areas through initiatives such as Agroforestry, Native Woodland Scheme etc.
- Continue to fund through forestry programme planting of woodlands 0.1 ha upwards. All landowners should have some sort of capacity to plant trees
- Funding KT groups to promote sustainable forest management
- Examine potential for planting 1,500 ha of native woodland on industrial cut away bogs to complement Bord na Mona's rehabilitation strategy



Measures related to Energy



20% reduction in ag energy use by 2030 across all farms. Generate 20% deployment of renewable energy technologies focusing on energy intensive farm systems

- *Increase awareness of energy efficient benefits*
- *Collaboration with Teagasc, SEAI, DECC and other key stakeholders*

Double sustainable production of biomass from forests by 2030

- *Displace approx 2 MtCO₂eq in GHGs from fossil fuels*
- *Enable increased access to forests*
- *Explore opportunities to replace unsustainable raw materials in construction and packaging*

Engage with stakeholders to max potential opportunities from Anaerobic Digestion for agriculture. Work closely with DECC and other stakeholders to:

- *set a target for levels of biomethane injection and funding mechanisms*
- *develop necessary research, policies and measures to provide policy certainty of AD industry development*



Cross-cutting enabling actions into the future



Agricultural Knowledge and Innovation Systems (AKIS)

- Teagasc will be crucial
- Continued professional development of farm advisors (public and private)
- Establishing a network of sign-post farms – behavioural change, on-farm experience
- Establish Centre of Excellence – world class expertise ruminant methane, grassland soil carbon fluxes, carbon neutral resilient farms etc.

AKIS focus:

1. Enhancing knowledge flows and strengthening links between research and practice
2. Strengthening farm advisory services
3. Enhancing cross-thematic and cross-border interactive innovation
4. Supporting digital transition in agriculture



Cross-cutting enabling actions into the future



Origin Green and Quality Assurance Schemes - Strengthening our reputation to credible, measurable actions to drive competitive advantage and sustained growth for Irish produce

- *Bord Bia to develop a roadmap of initiatives in partnership with industry to support farmers in achieving market demands – advancing the Carbon Navigator tool etc.*



Expert Consultative Groups - some actions will require groups to develop clear pathways for delivery. Plan is to establish all groups by summer 2021.



Funding – New CAP has increased environmental focus but start before 2023. RDP will support delivery of targets and pilot measures will be trialled with a view to scaling these in 2023.

- *Broader agri-food industry will need to support farmers via incentives and collaboration*



Just transition – new policies may have social implications that need to be addressed

- Establish a 'Future of Farming in Ireland Dialogue' – including farmers, scientists, environmentalists and social groups to find practical solutions for sustainable agriculture



The new CAP's role?



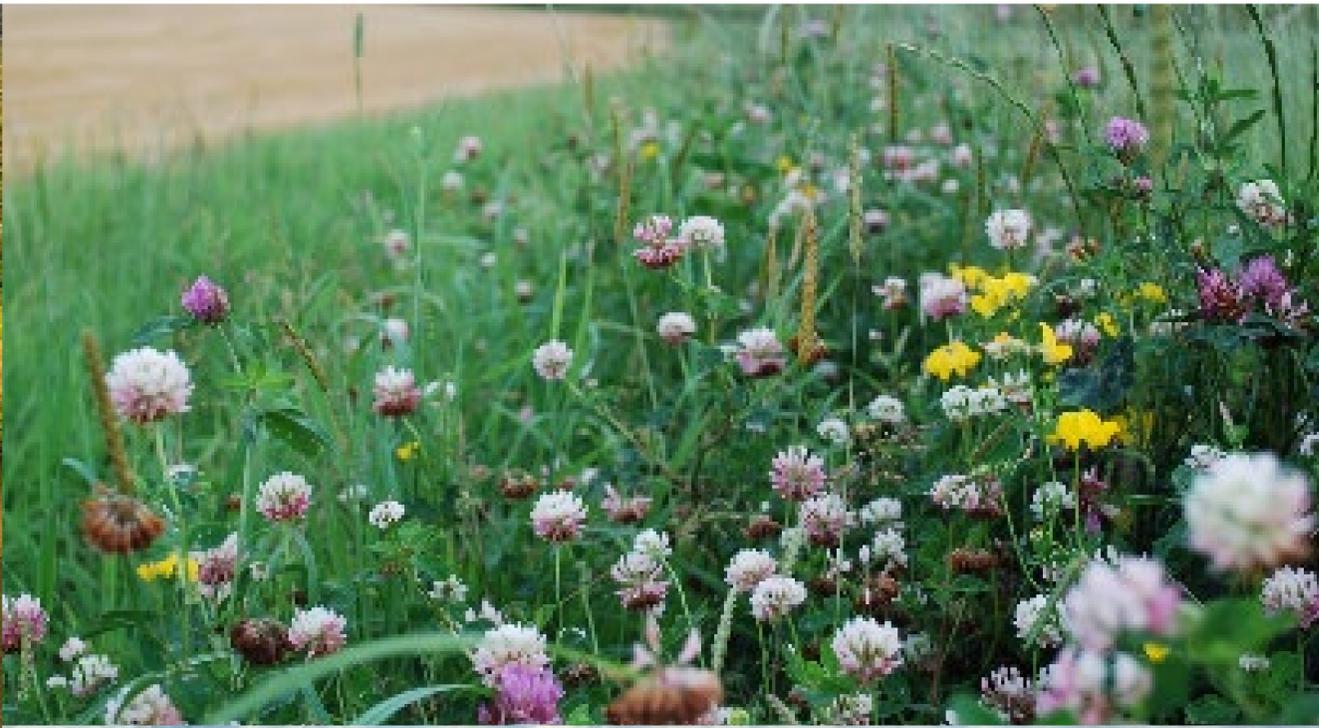
- Not yet finalised, but clearly increased environmental ambition for the next CAP period.
- Each Member State will have to prepare a CAP Strategic Plan:
 - ✓ Include all interventions proposed for CAP programme period
 - ✓ Reflect Farm to Fork
 - ✓ Address Commission's specific recommendations that will issue to Member States
- Eco-scheme and long-term Agri-Environment and Climate Measures along with changes in Conditionality.

What can industry do to help producers at farm level?



- **CAP** and public bodies can't do it all
- The entire sector is “**in this together**” - “**our roadmap**” - all actors must play their part, Industry, Dairy Sustainability Ireland, Advisory Services
- Many Co-ops offer a fertiliser spreading service, can they do the same for **lime**? Lime status of Irish grasslands is not where it needs to be
- Do **pricing models** need to change? Bonus payments that enhance environmental initiatives on farm? Already seen some biodiversity initiatives last year.
- Bonus payments for farmers involved in milk recording or finishing **animals earlier?**

Ireland has a good story to tell... BUT TIME TO ACT



Conclusions



- Negate the **climate impact of biogenic methane**- two focus areas, animal breeding and new technologies such as feed additives.
- Ireland has a competitive advantage in grass production, need to **reduce losses of nitrogen from production system**. Focus on protected forms of chemical nitrogen fertiliser.
- Focus on **land use management** to generate carbon offsets, forestry, re-wetting of carbon rich soils, management and enhancement of hedgerow resource.
- Positive **co-benefits** in terms of water quality and biodiversity

Thank for your attention!

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