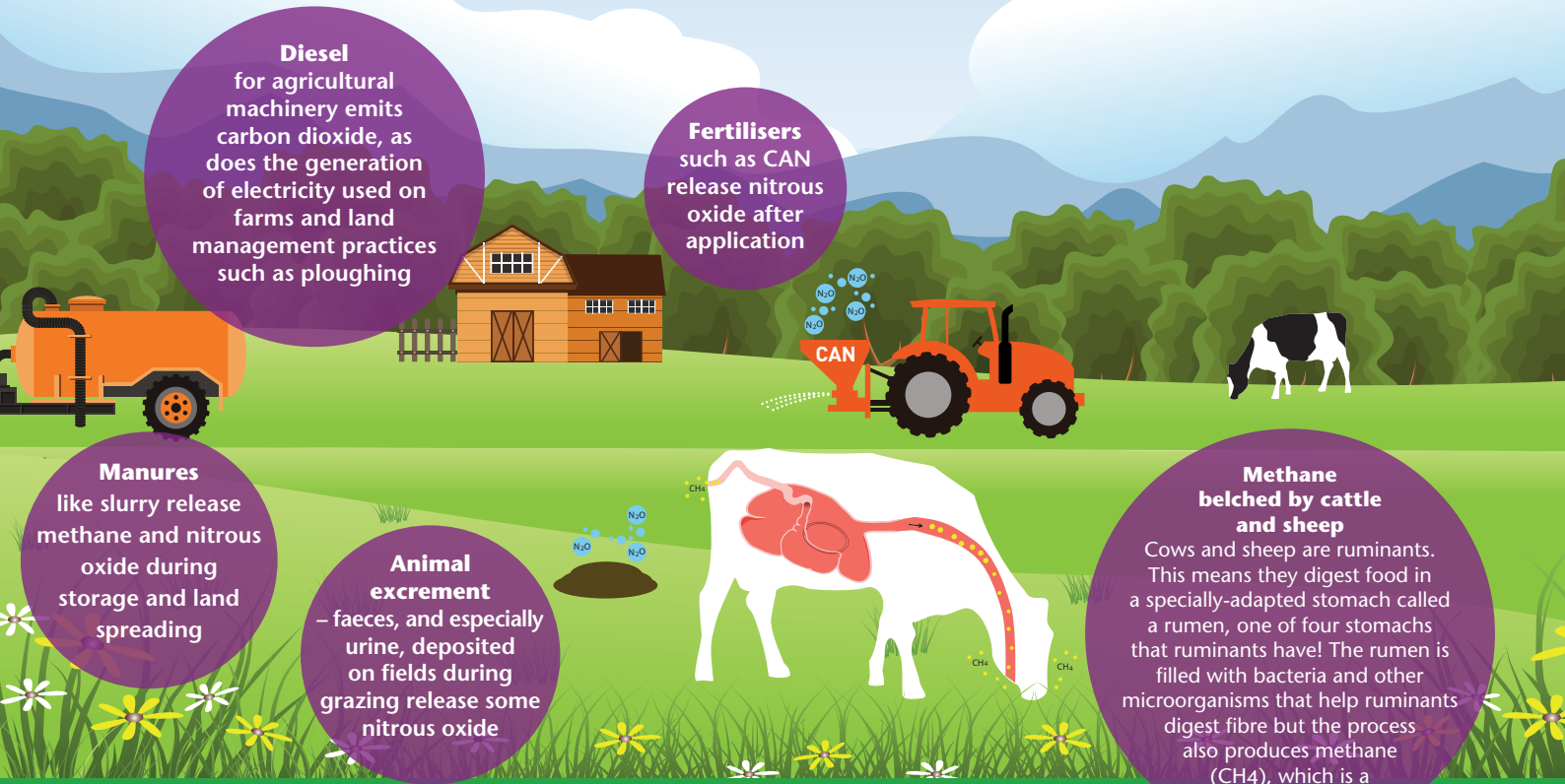


# Time for climate action



Sources of greenhouse gases from agriculture in Ireland.

## Frank O'Mara outlines how agriculture can help tackle the climate crisis.

Following on from the report of the Oireachtas Joint Committee on Climate Action, the Government has published a new Climate Action Plan to tackle Ireland's rising greenhouse gas (GHG) emissions and to comply with our international obligations. The new plan includes target emission cuts for all sectors, including agriculture. Ireland is currently not on track to meet its national targets: the target for the period up to 2020 (20 % below 2005 levels) will not be met without buying emission credits at significant cost to the taxpayer. The target for the following decade is to reduce emissions further (30 % below 2005 by 2030) and as our emissions are rising rather than falling, there is potential for further large bills post 2030. In addition to complying with international agreements, consumers and food retailers are demanding cuts in carbon emissions from food production.

### Agriculture emission targets

So what are the targets for agriculture in the new Plan? Emissions of GHGs were 18.7 million tonnes (mt) of CO<sub>2</sub>-equivalents in 2005, which is the base year. More recent figures for 2017 show emissions at 20.2 mt and Teagasc projections for 2030 suggest a figure of 21 mt, with a range around this figure depending on how the national bovine herd changes. One could ask why agricultural emissions are rising, given that our

farming systems are very sustainable, and mainly based on grazed grass, allowing us to produce milk and meat with a low carbon footprint. For instance, in one important EU study (Leip *et al.*, 2010), we had the joint lowest carbon footprint for our milk (joint with Austria). The reason for the rise in total emissions is that emissions are very closely related to the size of the national herd, and we have a larger cattle herd since the end of milk quotas. The target for agriculture in the new plan is to get emissions back to a range of 17.5-19 mt by 2030, which is a cut of 10-15 % on the projected levels in 2030 relative to 2017. The agri sector will also deliver 2.68 mt per year through land use (forestry and soil management).

### Actions for agriculture

So will we have to cut the national herd to reach our emission reduction targets? The answer is no, as long as we take action to reduce emissions. The target set for agriculture is very challenging, but Teagasc has been researching methods to reduce emissions and collaborating with the best scientists in our universities and internationally, and there are now several practical solutions available. These have all been published in a technical paper by Lanigan *et al.* (2018) called the Teagasc Marginal Abatement Cost Curve (MACC), which sets out 26 actions that farmers can take

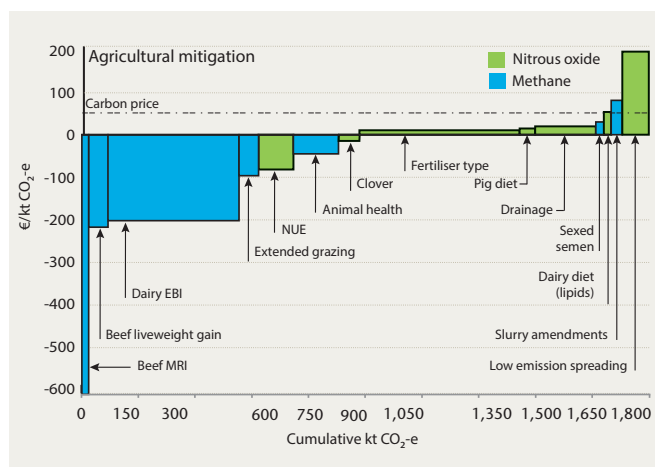


FIGURE 1: The Teagasc Marginal Abatement Cost Curve (MACC). Actions on the left of the MACC graph reduce emissions and save money at the same time (win-win); items on the right also reduce emissions but there is a cost involved.

across agricultural production, carbon abatement from land use such as forestry and soil management, and providing renewable alternatives to fossil fuels (Figure 1). The main agricultural production measures can be seen in Figure 2 and these include:

- continued good, efficient farming (improving Economic Breeding Index [EBI] and beef genetic merit, better grassland utilisation and incorporation of clover into grassland, getting soil pH right, etc.);
- switching to a form of urea fertiliser, known as protected urea, which significantly cuts emissions of nitrous oxide compared to calcium ammonium nitrate (CAN); and,
- spreading as much slurry as possible in the spring, and using a low-emissions way of spreading it, such as the trailing shoe or trailing hose.

### Improving farm sustainability

In the case of both protected urea and low emissions slurry spreading, greater value is achieved from the fertiliser or manure as less of the nitrogen is lost to the atmosphere and, therefore, fertiliser usage and bills can be cut. Importantly, forestry and the way we manage our peat soils can make a major contribution by sequestering carbon, with up to 2.68 mt per year allowed to be included in carbon offset to 2030. Both can be sensitive issues, which need to be handled correctly, but undoubtedly they are important in this debate. All farmers can also make a contribution through the planting of hedgerows and native woodlands. Another area where farmers can make a contribution is through provision of bio or renewable energy, though this has been a slow starter to date.

### Time for climate action

So can we reach the target? It is ambitious and change is often slow and difficult to achieve, but the targets will have to be achieved. In agriculture, a whole of sector response will be necessary and policy will need to support change. The new Common Agricultural Policy (CAP) will have greater targeting of resources (40 %) to climate-friendly practices. Teagasc will initiate a major intensive advisory campaign around



FIGURE 2: 7 Steps to Improving Farm Sustainability.

implementation of the measures in the MACC and will work closely with farmers and all sections of the industry, Bord Bia and the Department of Agriculture, Food and the Marine in this endeavour. The sooner the changes are made, the better, as the emissions reduction is in place for a longer period and the savings have longer to add up. In addition, we will continue our research effort to find new practical solutions that are compatible with good farming. Given that we are part of a global food system supplying food to a growing population, it is vital that we find ways to grow food production and reduce emissions.

### References

Leip, A., *et al.* (2010). 'Evaluation of the Livestock Sector's contribution to the EU Greenhouse Gas Emissions (GGELS) – Final Report'. European Commission, Joint Research Centre, 323 pages.  
 Lanigan, G.J. and Donnellan, T. (eds.). (2018). 'An Analysis of Abatement Potential of Greenhouse Gas Emissions in Irish Agriculture 2021-2030'. Teagasc Greenhouse Gas Working Group. Available from: [www.teagasc.ie](http://www.teagasc.ie).

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