

Fact Sheet 2

Farming and Greenhouse Gas Emissions



Greenhouse Gases

Most greenhouse gases produced by farming come from natural biological processes, such as the methane produced by a cow as it digests its food. The three main greenhouse gases produced on a farm are carbon dioxide, methane and nitrous oxide.

Greenhouse gas	Sources on the farm
Carbon dioxide (CO ₂)	Diesel, electricity, feed transport, fertiliser production
Methane (CH ₄)	Livestock. Animals that chew the cud (ruminants), such as cows and sheep, produce methane as they digest their food. Methane is 21 times more potent than CO ₂ as a greenhouse gas.
Nitrous oxide (N ₂ O)	Cultivating soil, use of nitrogen fertilisers and manures. Nitrous oxide is 310 times more potent than CO ₂ as a greenhouse gas.

(Data based on global warming potential (GWP) over 100 year period, adapted from the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report).

Reducing carbon dioxide

Carbon dioxide is produced when energy is used on the farm. This includes using diesel fuel in tractors or electricity to cool milk. There are some simple ways to reduce emissions of carbon dioxide, like driving more carefully, proper maintenance or checking thermostat settings.

Reducing methane

Cows and sheep make methane when they digest their food. We can try to ensure what they eat does not make extra methane. We can also try to ensure we get as much milk and meat as possible for the amount of methane produced. That means keeping the animals happy and healthy.



Reducing nitrous oxide

We use nitrogen fertilisers on crops to encourage their growth, but any unused or wasted fertiliser can increase the amount of nitrous oxide in the environment and contribute to climate change. Farmers can avoid this by following a nutrient management plan. They work out how much fertiliser each crop needs and the best time to apply it to benefit plant growth.

Want to find out more?

Visit www.farmingforabetterclimate.org

Get in touch

We would love to know what you think. You can email the Farming for a Better Climate initiative at climatechange@sac.co.uk



Farming covers approximately 75% of land in Scotland. Scottish Government estimate agriculture and related land use could contribute around 20% to Scotland's greenhouse gas emissions.