

## Factfile:

### Committee on Environment, Public Health and Food Safety

#### The question of dealing with greenhouse gas emissions from livestock:

Livestock production: a leading contributor to greenhouse gas emissions and a leading cause of deforestation and water pollution. Should European countries like the recent example of the Netherlands take steps to reduce the environmental impact of the livestock industry, and if so, how can the potential economic implications for farmers be offset?

#### Key terms:

- **Greenhouse Gas Emissions (GHG):** A greenhouse gas (GHG for short) is any gas in the atmosphere which absorbs and re-emits heat, and thereby keeps the planet's atmosphere warmer than it otherwise would be. The main GHGs in the Earth's atmosphere are water vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and ozone.
- **Net Emissions:** Gross emissions (including all industrial activities, mostly fossil fuel combustion) minus carbon sinks from forestry activities and agricultural soils.
- **Methane:** is a chemical compound that is the main component of natural gas, a common fossil fuel source. Just like carbon dioxide, methane is a greenhouse gas that traps heat in the atmosphere. While it does not stay in the atmosphere as long as carbon dioxide, it absorbs 84 times more heat, making it very harmful to the climate.
- **Ammonia emissions (NH<sub>3</sub>):** is a highly reactive and soluble alkaline gas, that originates from both natural and anthropogenic sources, with the main source being agriculture, e.g. manures, slurries and fertiliser application.
- **Carbon dioxide equivalent (CO<sub>2</sub>eq):** stands for a unit based on the global warming potential (GWP) of different greenhouse gases. The CO<sub>2</sub>eq unit measures the environmental impact of one tonne of these greenhouse gases in comparison to the impact of one tonne of CO<sub>2</sub>.

## Topic related:

- **Water use:** A study of 2010 of the water footprints for meat estimated that while vegetables had a footprint of about 322 litres per kg, and fruits drank up 962, meat was far more thirsty: chicken came in at 4,325l/kg, pork at 5,988l/kg, sheep/goat meat at 8,763l/kg, and beef at a stupendous 15,415l/kg.
- **Water pollution:** Farms contribute to water pollution in a range of ways such as:
  - nutrient (nitrogen and phosphorus from fertilisers and animal excreta);
  - pesticides;
  - sediment;
  - organic matter (oxygen demanding substances such as plant matter and livestock excreta);
  - pathogens (*E coli* etc);
  - metals (selenium etc) and emerging pollutants (drug residues, hormones and feed additives).
- **Land use and deforestation:** Livestock is the world's largest user of land resources, with grazing land and cropland dedicated to the production of feed representing almost 80% of all agricultural land. Feed crops are grown in one-third of total cropland, while the total land area occupied by pasture is equivalent to 26% of the ice-free terrestrial surface".
- **Climate change:** a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the excessive burning of fossil fuels.

## Overview of the current situation:

- EU agriculture, including land use and land use change (LULUC) of grassland and cropland, represented 12 % of all EU greenhouse gas (GHG) emissions in 2016.
- Following the recent agreement of the 2030 Climate and Energy framework, Member States agreed to reduce GHG emissions in the non-Emissions Trading System (ETS) sector (including agriculture) by 30%.

- EU agriculture is more vulnerable than most other sectors of the economy to climate change. Food production systems respond sensitively to the present changes in temperature, precipitation and the periodicity and severity of extreme events etc.
- Despite the importance of food production, farmers' income is around 40% lower compared to non-agricultural income, still they play a crucial role in the preservation of landscape and biodiversity which is cost-intensive.

### **Measures already in place:**

- **Green Direct Payment:** Was introduced under the reform of CAP in 2013; The Green Direct Payment represents 30% of the direct payment budget and is granted to farmers who implement crop diversification, ecological focus areas and permanent grassland, whose environmental benefits on biodiversity, water and soil quality, carbon sequestration and landscapes have been proven.
- **GGELS Project (European Greenhouse Gas Emissions from Livestock Production Systems):** A project of the Joint Research Centre collecting data in order to provide a more precise quantification of the greenhouse gases emission (GHG) from livestock production in Europe by considering Greenhouse Gases Emission (GHG) all along the production chains.
- **Climate-KIC (Knowledge and Innovation Community):** A public-private innovation partnership with the aims to accelerate the transition to a zero-carbon EU economy. One of the core themes is substantial land use, which includes adaptation activities within the agricultural sector. A so-called CSA (Climate Smart Agriculture) Booster network operates in five test regions and brings together researchers, practitioners and experts to accelerate technologies and approaches that reduce greenhouse gas (GHG) emissions and support adaptation while enhancing yields.
- **LIFE AGRI ADAPT:** A project funded by LIFE Climate Action (which is a EU programme dedicated to developing innovative responses to the challenges of climate change across the EU) with the aim to increase the resilience of EU agriculture to climate change with an ecosystem-based approach at farm level. Sustainable measures and management approaches for climate change adaptation are being tested at 120 pilot farms, covering the three main farming systems (arable land, livestock, permanent crops) in the four EU climate risk areas.

## HOW PROJECT 'CLEAN COW' AIMS TO REDUCE METHANE EMISSION BY **25%**

▶ A cow emits **500 litres** of methane per day, equivalent to **10%** of the energy she would otherwise use for performance and milk production.



Source: Royal DSM | MICHELLE HOULDEN GRAPHIC