

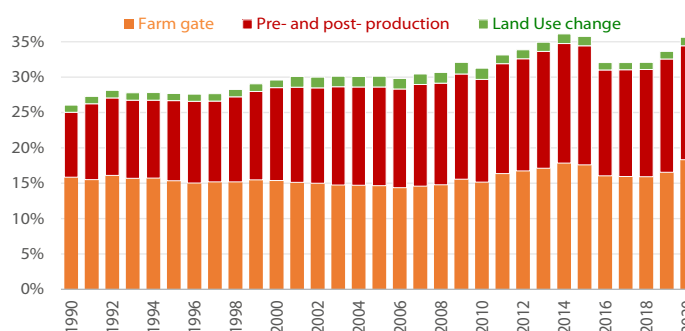
Climate impact of the EU agrifood system

Agrifood systems encompass the production and distribution of food and non-food products of agricultural origin. Unlike others, this sector has not seen a significant reduction in greenhouse gas (GHG) emissions in recent decades. While some of the sector's emissions are hard to abate, for others there may be off-the-shelf options. Certain EU policies and instruments could also help reduce the agrifood system's GHG emissions.

EU agrifood system emissions

The EU supports the transition towards sustainable [agrifood systems](#). While total EU GHG emissions have dropped by [a third](#) since 1990, emissions from agrifood systems have fallen [more slowly](#). In its latest analytical [brief](#), FAOSTAT presents the results of its first database on agrifood systems, going beyond the farm gate. FAOSTAT reports that the agrifood system is responsible for a third of global GHG emissions. They are generated by farm production activities (crop and livestock); land use change (such as deforestation and peatland drainage); and pre-/post-production processes (for instance, retail, consumption and disposal). In 2020, the contribution of agrifood systems to total EU emissions was 31 %, within which the shares of emissions from 'farm gate' and 'pre- and post-production' activities accounted for circa 48 % and 48 % respectively, while 4 % was due to land use change.

Figure 1 – EU-27 agrifood system's life-cycle distribution of GHG emissions and share of total EU GHG emissions (1990-2020)



Data source: FAOSTAT, [Emissions Totals](#), agrifood systems, accessed January 2023.

Obstacles and trends

Agriculture plays a major role within the agrifood system. In 2020, the agricultural sector accounted for [11 %](#) of the EU's total domestic GHG emissions. Emissions from the agriculture sector fell by 15 % between 1990 and 2000 in the EU. From 2000 onwards, emissions kept falling but at a slower pace and, since 2005, the sector's GHG emissions have been relatively constant, dropping by only 2 %. Even though, in the 2000-2018 period, carbon intensity (tonnes of carbon dioxide equivalent (tCO₂e) released per million US dollars of value added from the farm gate in fixed 2015 prices) decreased on average by 6 % across 25 EU Member States (data unavailable for Estonia and Hungary), the major reduction occurred during the first 5 years. The most significant reductions in emission intensity within the farm gate were seen in Slovakia (-82 %), the Netherlands (-30 %) and Greece (-27 %), with only a few countries experiencing an opposite trend (in particular Luxembourg (+73 %), Finland (+40 %) and Cyprus (+35 %)). Overall, cuts in emissions were likely [offset](#) by a general increase in production. In 2020, methane emissions accounted for close to half ([43 %](#)) of the agricultural sector's (farm gate) total emissions. Methane is a short-lived GHG, but has a much [more potent](#) global warming potential than CO₂.

Since natural processes, such as livestock manure, gastro-enteric releases and land use, are key sources of methane emissions, agriculture is considered a [hard-to-abate sector](#). In addition, fertilisers have an [adverse impact](#) on climate through the release of [nitrous oxide](#). There are however off-the-shelf solutions to reduce emissions from agrifood systems, including [fuel switching](#) and efficiency gains through automation. Thanks to efficiency gains, it has been possible to reduce the emission intensity (the level of GHGs released per kg of product) of specific food commodities (see Figure 2). EU production of pork and chicken meat, as well as cow milk and cereals (rice excluded), have decreased in emission intensity in recent decades. According to



calculations by the European Topic Centre on Climate Change Mitigation, policies and measures currently in place are expected to prompt only a [1.5%](#) reduction in the agricultural sector's emissions between now and 2040.

Impact of current tools and instruments

For agriculture, the [common agricultural policy's](#) (CAP) goal is to supply affordable food to European citizens and guarantee a fair standard of living for farmers, while preserving the environment and its natural resources. To help achieve the CAP [goals](#), as of January 2023 Member States are implementing national

[strategic plans](#) including [stricter](#) environmental conditions, and a new tool to reward farmers who act in an environmentally friendly way ([eco-schemes](#)), which has received some [criticism](#). Moreover, a special [report](#) by the European Court of Auditors, to which the European Commission [replied](#), noted that, although half of all climate spending from the 2014-2020 EU budget related to agriculture, farm emissions had not decreased. Providing funds for innovation within the agrifood system, for instance optimisation of [livestock diets](#) and [fertiliser management](#), can help to cut methane and nitrous oxide emissions respectively.

The EU is a frontrunner in terms of climate action and its [climate and energy acquis](#) covers aspects from energy production and efficiency to GHG emissions more broadly across all sectors. Reaching climate neutrality by 2050 will require agricultural practices and technological solutions to reduce CO₂ emissions and increase carbon sequestration in carbon sinks.

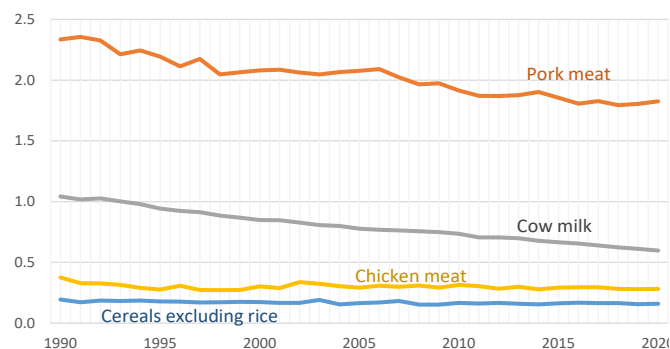
Relevant Commission proposals and European Parliament position

To address challenges relating to agrifood chains, in 2020 the Commission adopted a [communication](#) on a 'farm to fork strategy'. A [report on regenerative agriculture](#) from the European science academies makes policy recommendations for successful implementation of the strategy. In 2021, the Parliament passed a [resolution](#) on the strategy encouraging the Commission to translate the strategy into concrete action and stressing the importance of building sustainable food policy, boosting sustainability transitions and producing healthier food. There are a number of ongoing and planned [initiatives](#) beyond food production.

To align the acquis with the EU Climate Law's 2030 target of at least a 55% net emissions reduction, the Commission put forward the 'Fit for 55' package on 14 July 2021. The proposals influencing the agrifood system are primarily the regulation on the inclusion of GHG from [land use, land-use change and forestry](#) (LULUCF), the [Effort Sharing Regulation](#) (ESR), which also covers agriculture, and the EU [emission trading system](#) (ETS), which impacts the entire food supply chain as it will cover not only emissions related to energy use and fertilisers but also fuels used for buildings and transportation. Moreover, in 2020 the Commission put forward a [strategy](#) to reduce methane emissions in the energy, agricultural, waste and wastewater sectors. In addition, the November 2022 legislative proposal ([COM\(2022\) 672](#)) on a Union framework for the certification of carbon removals has a strong focus on [carbon farming](#).

In February 2021, a Parliament [resolution](#) underlined the role of a circular economy in decarbonisation and called on the Commission to set up a regulatory framework for certification of all nature-based and technological carbon removal solutions. [Methane emissions](#), as well as [sustainable carbon cycles](#), have been the focus of own initiative procedures within the Committee on Environment, Public Health and Food Safety (ENVI). For [sustainable carbon cycles](#), the [draft report](#) stresses the importance of the agricultural and forestry sectors in contributing towards achieving climate neutrality. For methane, in October 2021 Parliament passed a [resolution](#) calling for a legislative framework with reduction targets and stressing the importance of emissions monitoring. To date, only a proposal to cover energy-related methane emissions has been put forward by the Commission.

Figure 2 – EU-27 Emission intensity evolution per kg of product (in kg of CO₂e)



Data source: FAOSTAT, [Emissions intensities](#), by agricultural commodities, accessed January 2023.