Food and Agriculture Organization of the United Nations

FAO | COP30

Climate change

GREENHOUSE GAS EMISSIONS FROM AGRIFOOD SYSTEMS 2001-2023

Takeaways

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS ROME, ITALY

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The takeaways are based on the FAO report Greenhouse gas emissions from agrifood systems - Global, regional and country trends, 2001–2023.

01 THERE ARE SIGNS OF COUNTRIES BEGINNING TO DECOUPLE AGRICULTURAL GROWTH FROM EMISSIONS

Agrifood system emissions have grown only at about one percent annually over the last 20 years, much less than emissions from the overall economy. As a result, their share in the world's total emissions has decreased from 40 percent to 30 percent.

FIGURE 1: GLOBAL AGRIFOOD SYSTEMS EMISSIONS BY COMPONENTS AND SHARE OF AGRIFOOD SYSTEMS EMISSIONS IN TOTAL EMISSIONS, 2001-2023

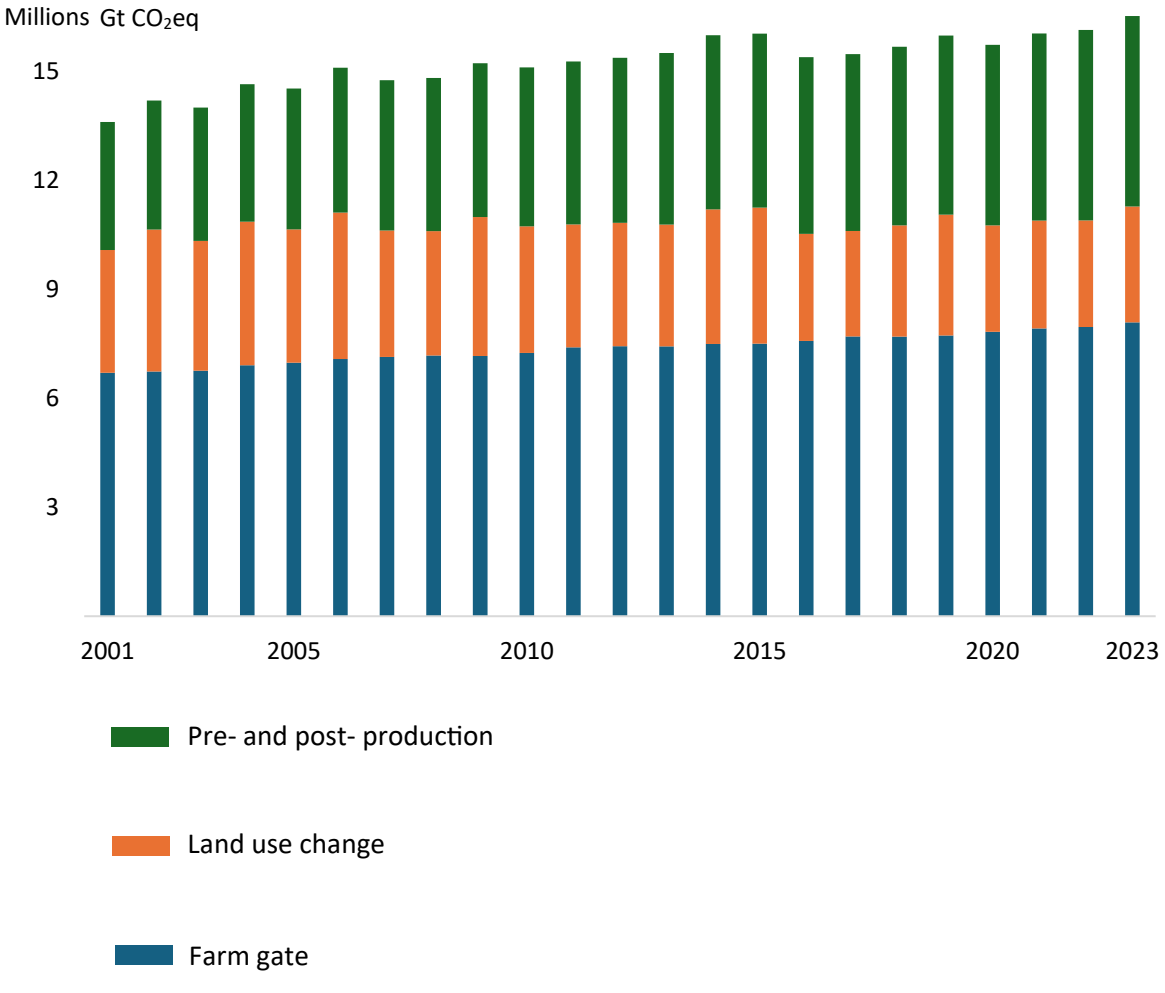
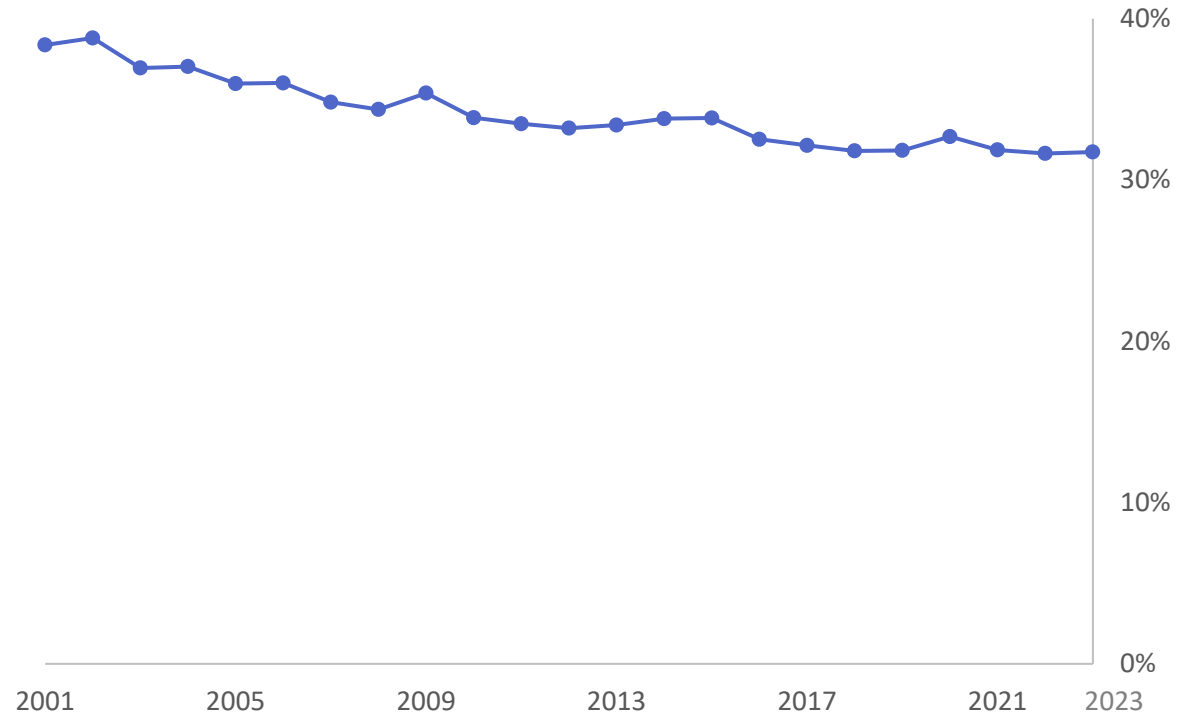


FIGURE 2: SHARE OF AGRIFOOD SYSTEMS EMISSIONS IN TOTAL EMISSIONS, 2001-2023

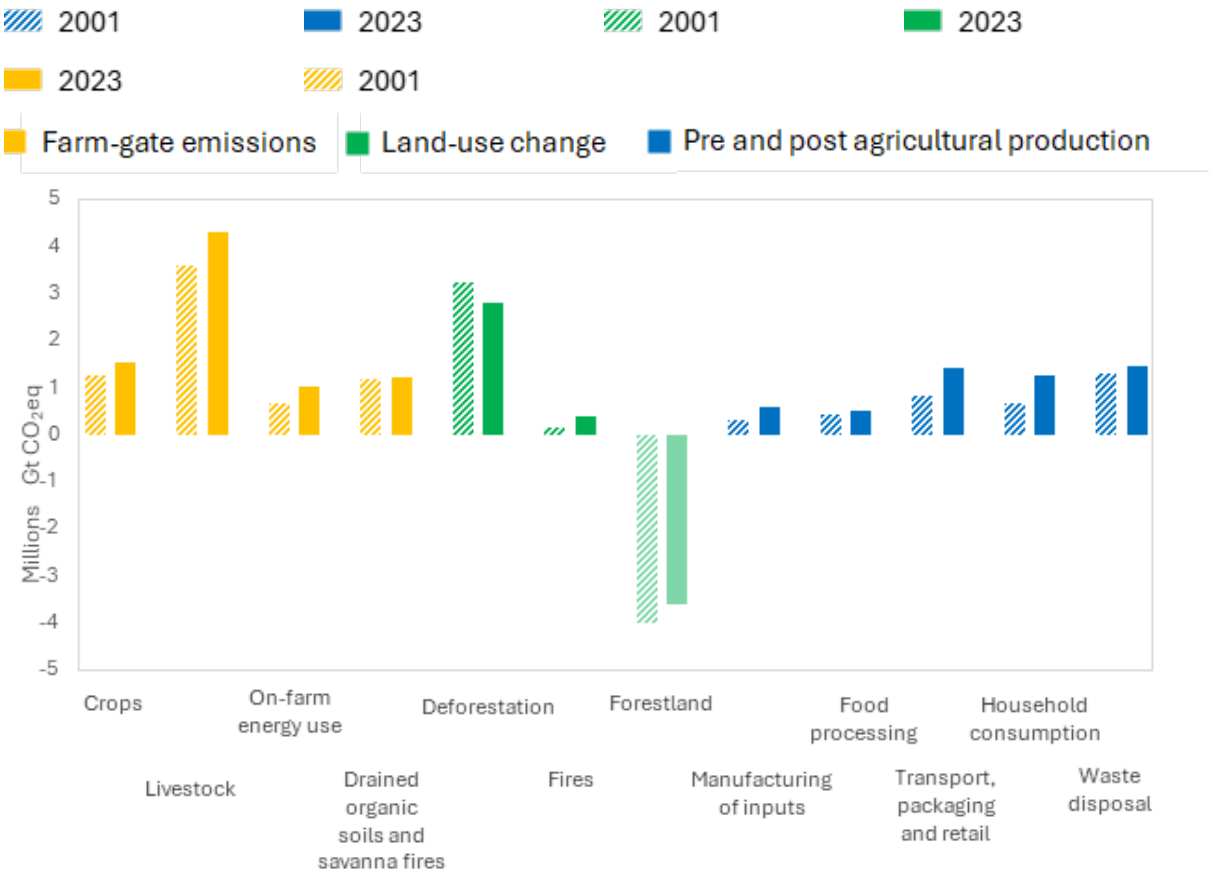


Smarter, more efficient food systems are making a difference. Emissions per value of agricultural production have declined by 25 percent within farm gates and 13 percent per area of agricultural land. All the top ten agricultural producers reduced their emissions intensity in a similar fashion. Improved efficiency offers a sign of progress, but it must be matched by deep cuts in absolute emissions.

02 THERE ARE SIGNS THAT FOOD PRODUCTION IS BECOMING LESS DEPENDENT ON LAND USE CHANGE

Since 2001, livestock and crop emissions have increased by 22 and 20 percent respectively, while emissions from deforestation have fallen by 13 percent. This points to a gradual delink between agricultural production expansion and forest conversion.

FIGURE 3: AGRIFOOD SYSTEMS EMISSIONS BY COMPONENT

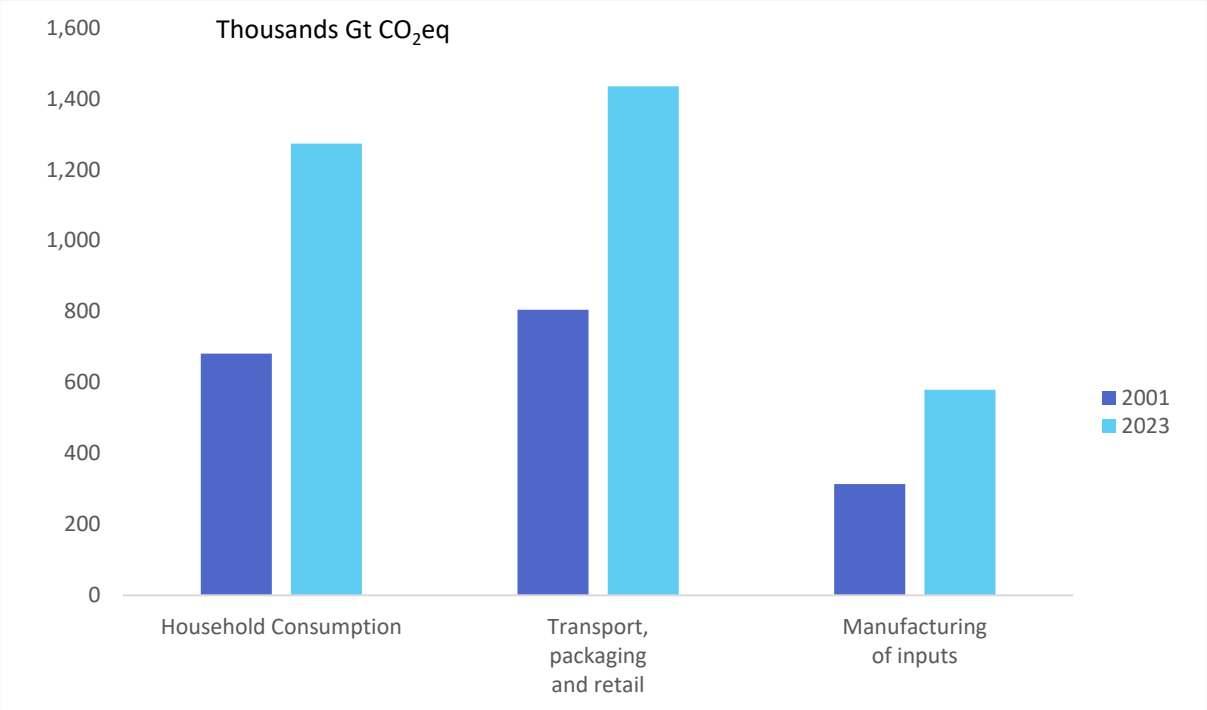


FAO's Forest Resource Assessment 2025 shows encouraging progress. Both deforestation and net forest loss have slowed during this decade compared with the previous two. However, the current rate of forest loss remains unsustainable.

03 GROWING EMISSIONS FROM PRE- AND POST- AGRICULTURAL PRODUCTION ACTIVITIES ARE CAUSE FOR CONCERN

Emissions from input manufacturing, transport, packaging and retail, and household consumption grew by about 80 percent. In 40 percent of countries and territories, supply chains accounted for half or more of total agrifood systems emissions in 2023. These trends highlight the need for policies that target decarbonization across supply chains, retail infrastructure, and consumption.

FIGURE 4: AGRIFOOD SYSTEMS EMISSIONS BY SELECTED COMPONENTS 2001 AND 2023



04 AGRIFOOD SYSTEMS ARE DELIVERING, BUT INVESTMENTS HAVE YET TO MATCH POTENTIAL

Agrifood receives ten times less climate finance than the energy sector and seven times less than transport. In 2023, only four percent[1] of climate-related development finance was directed to crop production, livestock, fisheries, and forestry. If global goals to cut emissions and protect people from hunger and poverty are to be met, this imbalance must change.

[1] Galbiati, G.M., Caputo, I., Brierly, I., Ducastel, A. & Bernoux, M. 2025. *Climate-Related Development Finance for Agrifood Systems: Global and Regional Trends – 2025 Report*. Rome, FAO (forthcoming).

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