



Livestock & climate change



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Smallholder livestock keepers, fisherfolks and pastoralists are among the most vulnerable to climate change. Moreover, 14.5% of all human-caused greenhouse gas (GHG) emissions come from livestock supply chains. It amounts to a staggering 7.1 gigatonnes (GT) of carbon dioxide equivalent (CO₂-eq) per year. The main sources of emissions are: feed production and processing and methane from ruminants' digestion. The good news is that wider adoption of existing best practices and technologies in animal feeding, health and husbandry, and manure management could help the global livestock sector be more resilient and cut its emissions of greenhouse gases as much as 30%.

What we do

The Food and Agriculture Organization of the United Nations (FAO) provides support to countries to address with the impacts of climate change on livestock production and to reduce the contribution of domestic animals to greenhouse gas emissions.

FAO supports the generation, application and dissemination of knowledge in order to strengthen the capacity of its Member Countries in addressing issues related to livestock and climate change. For instance, FAO develops tools to guide decision-making on adaptation and mitigation. The Global Livestock Environmental Assessment Model (GLEAM) provides a

valuable evidence base to define priorities and design technical and policy responses. Tools, such as the guidelines of the Livestock Environmental Assessment and Performance (LEAP) Partnership, also help generate consensus on data and methods among a wide range of stakeholders.

FAO implements on-the-ground projects and programmes to support countries respond to climate change through practice and policy change.

FAO helps countries to identify and conserve livestock breed diversity, which allows for evolution in step with environmental changes. Regional and global gene banks provide for the maintenance of backup collections of genetic material that can be drawn upon to support climate change adaptation measures.



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Understanding the context

Direct impacts of climate on livestock production range from extreme climatic events (such as droughts and floods) to thermal stress and reduced yields or water availability. Climate change also affects the sector indirectly through impacts on forage productivity and quality and on animal diseases, modifying the patterns of affected areas and livestock vulnerability simultaneously.

Current livestock production systems operate at very diverse levels of efficiency. Emissions per unit of product can vary a lot within systems. FAO estimates that the mitigation potential of feasible interventions could reduce emissions by 14 to 41% and that significant improvements can be achieved in production as well (3% to 40%). In addition, restoring degraded grazing land to a healthy state could remove gigatonnes of carbon from the atmosphere and improve resilience to climate change.



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In practice

The Methodology for Sustainable Grassland Management, developed by FAO in partnership with the Chinese Academy of Agriculture Science, the World Agroforestry Center and the Northwest Institute of Plateau Biology, benefits herders worldwide and provides a strong incentive for better grassland management by leveraging carbon finance and unlocking low-carbon private sector investments.

In the drylands of Sub-Saharan Africa, FAO in collaboration with the World Bank, CIRAD, IFPRI and Action contre la Faim assessed livestock production under climatic constraint and proposed interventions to increase productivity and reduce the impact of climate variability on livestock outputs, providing evidence that livestock are a tool for adaptation to climate change.

FAO and the Global Research Alliance on Agricultural GHGs are collaborating on a project funded by the Climate and Clean Air Coalition focusing on reducing enteric methane emissions in Argentina, Bangladesh, Benin, Burkina Faso, Ethiopia, Kenya, Mali, Niger, Senegal, Sri Lanka, Tanzania, Uganda and Uruguay. FAO coordinates efforts and provides tools for the assessment of production systems in these countries, identifying options looking at feed, animal health or manure management, and quantifying the potential to increase productivity and reduce emission intensity. Based on these findings, FAO will work with countries to identify investment opportunities for implementation at scale.

Partners

FAO partners with research institutions, governments, private sector, NGOs, civil society and other international organizations to address the question of livestock and climate change in multistakeholder initiatives, such as the Global Agenda for Sustainable Livestock.

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MORE INFORMATION

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