Issue 25
April 30, 2025

NEWSLETTER

Smart & Net-Zero Project

The Smart Net-Zero (SNZ) project team under the Food and Fertilizer Technology Center (FFTC) for the Asian and Pacific Region regularly collects and shares information related to sustainable agrifood systems and climate-smart agriculture, including research, news, policy, data and event updates around the world on the project website.

Overview

Toward Climate-Smart Livestock: Strategies for a Sustainable System

Livestock sustains the livelihoods of 1.3 billion people and plays a vital role in global food security, land use, and economic development. However, it also faces increasing risks from climate change. At the same time, livestock is responsible for 14.5% of global GHG emissions — making it the single largest contributor within the agrifood systems. This underscores the urgent need for sustainable, climate-smart management practices.

In this issue, **Research** explores pathways to reduce emissions across livestock systems, beginning with a comprehensive review of climate impacts, adaptation and mitigation strategies, and key knowledge gaps around regional data and system-specific solutions. A national inventory and scenario analysis from China provides spatial insights for policy, while a study from Ireland models integrated mitigation strategies in pasture-based dairy-beef systems. Research from Spain's organic Dehesa farms connects emissions and carbon sequestration with farm typologies, and a study from Germany presents a simplified carbon footprint model to support Scope 3 emissions tracking in dairy supply chains.

News features Taiwan's first pig farm certified with Renewable Energy Certificates, a Climate-Resilient Animal Fund for climate-smart livestock in Africa, and Colombia's land-use shift risks. **Policy** presents CGIAR's net-zero roadmap, IGAD's resilience strategy for pastoral systems, and Ireland's GHG mitigation plan for beef. **Open Data** includes FAO's livestock GHG dashboard and ILRI's Climate Solutions Hub for low-emission livestock transitions.

Content

RESEARCH

01 THEME: GHG Emission Reduction; Others

Climate change and livestock production: a literature review

January 15, 2022 | Atmosphere | Source |

Introduction: Livestock both drives and suffers from climate change, contributing 14.5% of global GHG emissions while facing growing climate-induced stress. Researchers from Texas A&M University reviewed 157 studies to examine climate impacts, emission sources, and feasible adaptation and mitigation strategies for more resilient and sustainable livestock systems.

Key findings:

- **Climate Impacts on Livestock Production:** Climate change affects livestock through direct and indirect pathways, driven by rising temperatures, variable precipitation, and more frequent extreme events. Direct impacts include reduced feed intake, lower milk, meat, and egg production, impaired fertility, weakened immunity, and increased mortality—primarily due to heat stress. Indirectly, climate change degrades forage quality, limits water availability, and increases exposure to pests and diseases, reducing overall productivity and system resilience.
- **Impact of Livestock Production on Emissions:** Emissions arise directly from animal processes and indirectly from feed production and land-use change. CH_4 from enteric fermentation and N_2O from manure dominate direct emissions. Indirect emissions stem from feed production, processing, transport, land-use change for pasture and feed crops, and energy use across the supply chain. Cattle are the largest contributors, accounting for about 62% of sectoral emissions, with variation by species, systems, and regions.
- **Adaptation:** Adaptation includes both animal responses and human interventions. Livestock adapt through behavioral, physiological, biochemical, immunological, and anatomical changes, though high-yielding breeds are particularly vulnerable to heat stress. Human strategies include breeding heat-tolerant species, enhancing housing and ventilation, adjusting feed and water practices, and adopting integrated crop–livestock systems suited to local contexts.
- **Mitigation:** Emissions can be reduced through strategies targeting specific gases. Feed additives and dietary changes reduce CH_4; anaerobic digestion and improved manure management lower CH_4 and N_2O; and precision fertilizer use and land management mitigate N_2O and CO_2. These measures could cut sectoral emissions by up to 30%. Yet, locally tailored solutions are essential, especially in developing regions where resources are limited.

The review identifies key research gaps, including limited focus on non-ruminant species, underexplored mixed crop–livestock systems, and a lack of context-specific strategies. It calls for expanded research and policy support to scale effective solutions, particularly in vulnerable regions.

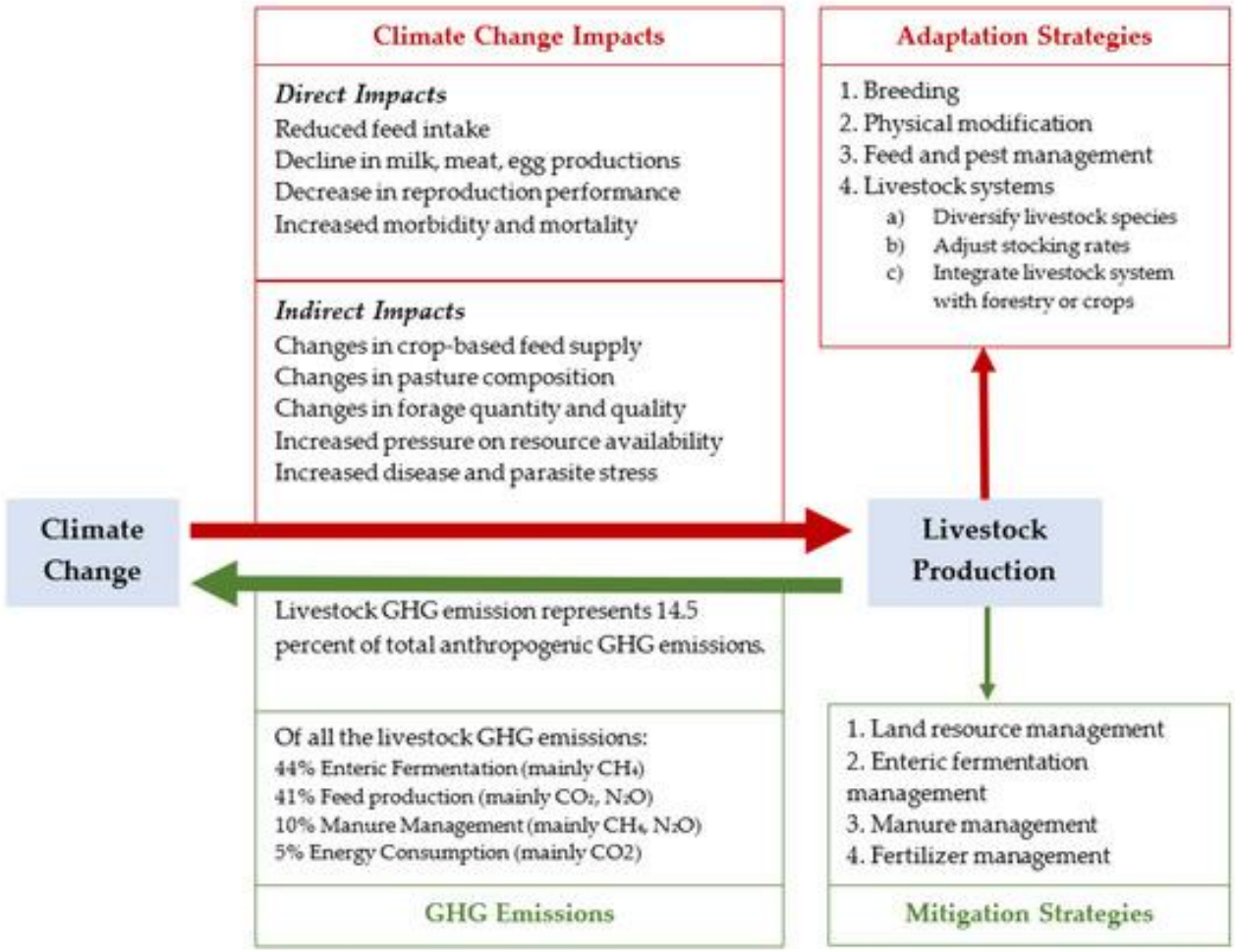


Figure | An overview of the relationship between climate change and livestock production.

02 THEME: GHG Emission Reduction; MRV (Measurement, Reporting, Verification)

Livestock greenhouse gas emission and mitigation potential in China

December 15, 2023 | Journal of Environmental Management | Source |

Introduction: Livestock production is a significant source of greenhouse gas emissions (GHGE) in China, challenging the country's 2030 carbon peaking and 2060 neutrality goals. Researchers from Hubei University and the Chinese Academy of Sciences used life cycle assessment (LCA), logarithmic mean Divisia index (LMDI) to analyze the influence of efficiency, structure, economy, and population size on GHGE, and STIRPAT modeling to analyze historical GHGE trends from 2000 to 2020 across 31 provinces and forecast emissions under 5 Shared Socioeconomic Pathways (SSPs) through 2060.

Key findings: Using LCA, the study found that from 2000 to 2020, livestock-related GHGE in China remained relatively stable, decreasing slightly from 535.5 to 532.2 Mt CO_2e. However, the emission profile shifted: methane (CH_4) from enteric fermentation, though still the largest source, dropped from 50% to 38% of total emissions, while CO_2 emissions from feed production and processing rose by over 70%. Emission intensity (GHGE per unit of GDP) declined across all provinces, with the steepest reductions in South China. Applying the LMDI, the study revealed that economic growth was the primary driver of emission increases, especially in provinces like Shandong and Henan, where economic factors added over 40 Mt CO_2e. In contrast, gains in production efficiency—through improved feed, livestock breeds, and mechanization—helped reduce emissions, particularly in the south. Structural and labor factors had smaller and more variable effects.

Projections using the STIRPAT model with SSPs suggest that under SSP1 (sustainability) and SSP2 (middle of the road), emissions will peak by 2030 and fall to 282.0 and 352.1 Mt CO_2e, respectively, by 2060. Under SSP5 (fossil-fueled development), emissions could rise to 667.8 Mt CO_2e. Northeast and Southwest China are likely to become future emission hotspots due to livestock expansion policies.To meet the country's climate goals, the study recommends: (1) improving feed and digestibility to cut CH_4, (2) optimizing the spatial layout of livestock systems, (3) promoting crop-livestock integration to enhance resource efficiency by reusing waste, and (4) encouraging dietary shifts toward plant-based foods. Further research is needed on system-level differences and consumer-driven emissions.

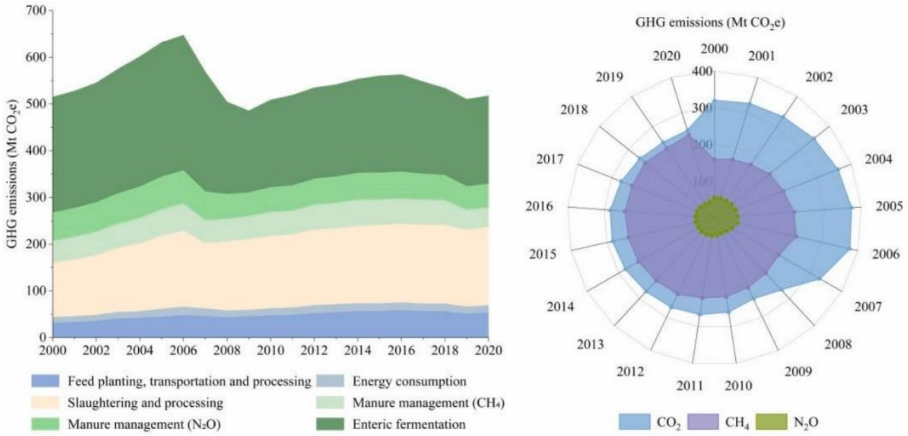


Figure | Structure of greenhouse gas emissions (GHGE) in the life cycle of livestock from 2000 to 2020.

03 THEME: GHG Emission Reduction; Carbon Sequestration

Greenhouse gas emissions and carbon sequestration in organic dehesa livestock farms. Does technical-economic management matters?

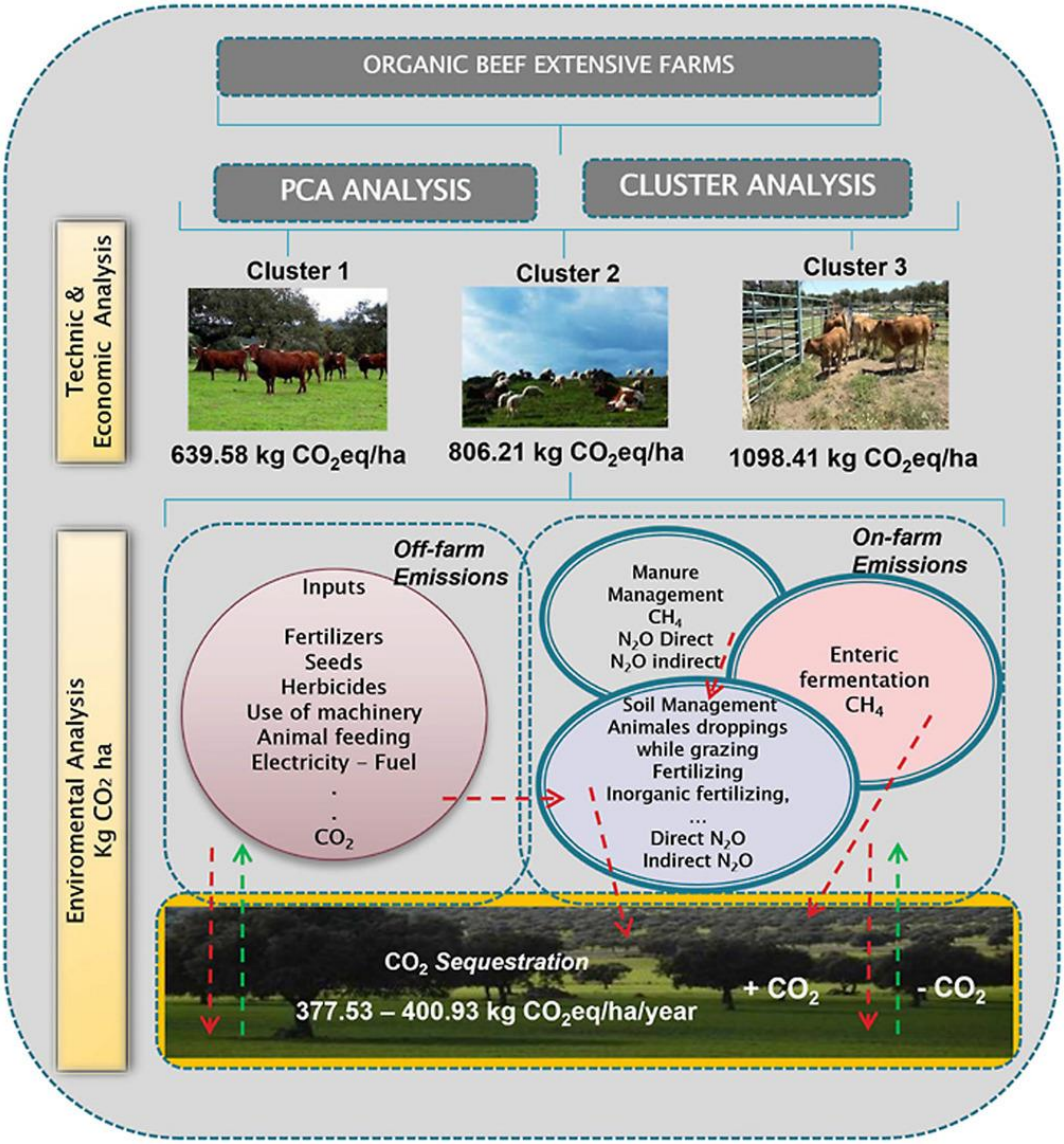
October 20, 2022 | Journal of Cleaner Production | Source |

Introduction: While organic livestock systems are often hailed as environmentally friendly, their greenhouse gas (GHG) emissions and carbon sequestration potential vary considerably depending on management practices. This study, led by researchers from Universidad de Extremadura in Spain, investigates how technical-economic factors influence the environmental performance of 34 organic beef cattle farms in the dehesa agroforestry system of southwest Spain.

Key findings: Using principal component and cluster analysis, the study categorizes farms into management types based on factors such as subsidy dependence, production intensity, and feeding practices. Life Cycle Assessment (LCA) is then used to evaluate farm-level GHG emissions and carbon sequestration. Farms were grouped into three clusters: (1) large, extensive cattle-only farms with low inputs and low subsidy reliance; (2) mixed livestock farms with moderate intensification and crop integration; and (3) small, highly intensive operations with high production costs and diverse species.

Net GHG emissions varied significantly: cluster 1 farms had the lowest net emissions (262.05 kg CO_2e/ha or 6.02 kg CO_2e/kg of live weight sold), while cluster 3 recorded the highest (697.49 kg CO_2e/ha or 11.18 kg CO_2e/kg). The study highlights the significant carbon sequestration capacity of dehesa systems—averaging 386.1 kg CO_2e/ha/year—due to permanent grasslands, manure deposition, and crop residues. Less intensive farms benefited most from this sequestration, offsetting a larger portion of their emissions. These findings underscore the importance of tailored farm management strategies—such as controlled stocking rates and improved grazing practices—to enhance carbon efficiency. The study calls for standardizing how carbon sequestration is integrated into environmental assessments and advocates for policies that support extensive systems as climate-resilient, multifunctional land uses.

Graphical Abstract



04 THEME: GHG Emission Reduction; MRV (Measurement, Reporting, Verification)

Addressing dairy industry's scope 3 greenhouse gas emissions by efficiently managing farm carbon footprints

April, 2023 | Environmental Challenges | Source |

Introduction: Upstream greenhouse gas (GHG) emissions (i.e. scope 3)—accounting for 70–90% of the dairy industry's total emissions—pose a persistent challenge due to data gaps and methodological complexity, often excluding them from corporate inventories. To address this, researchers from FiBL Austria and the Institute of Agroecology (Switzerland) developed a streamlined GHG calculation model using data from 26 Bavarian organic dairy farms, enabling efficient carbon accounting and targeted mitigation at the farm level.

Key findings: The median corporate carbon footprint (CCF) across the study farms was 441.7 ton CO_2e/year, while the product carbon footprint (PCF) averaged 0.90 kg CO_2e/kg fat- and protein-corrected milk (FPCM). Enteric fermentation and manure management accounted for the majority of emissions (67.7% of CCF), followed by upstream emissions from energy, feed, and machinery. Mitigation potential varied widely, with individual farms capable of reducing emissions by 6.5 to 112.3 ton CO_2e/year. Key mitigation measures included extending the productive life of dairy cows (up to 4.1% GHG reduction), reducing purchased concentrate feed (2.98%), and implementing undersown crops (2.75%). A simplified model reduced data inputs from 470 to 57 parameters without sacrificing accuracy—achieving a 99.7% correlation (R^2) with the detailed model and a standard error of just 2.3% for total CCF. This tool could enable companies to monitor scope 3 emissions more effectively, evaluate mitigation outcomes, and scale climate action across their supplier base at lower cost and effort. Future work should focus on refining uncertainty estimates and broadening applicability to conventional systems.

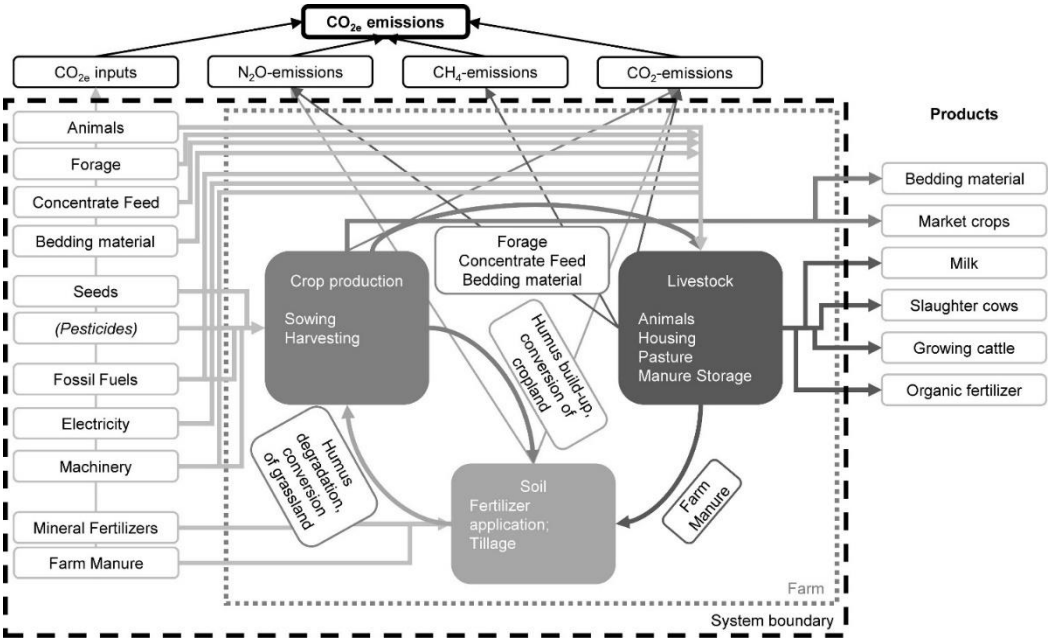


Figure | System boundary for the detailed calculation model for the dairy farm corporate carbon footprint.

05 THEME: GHG Emission Reduction; MRV (Measurement, Reporting, Verification)

Mitigation of greenhouse gas emissions in pasture-based dairy-beef production systems

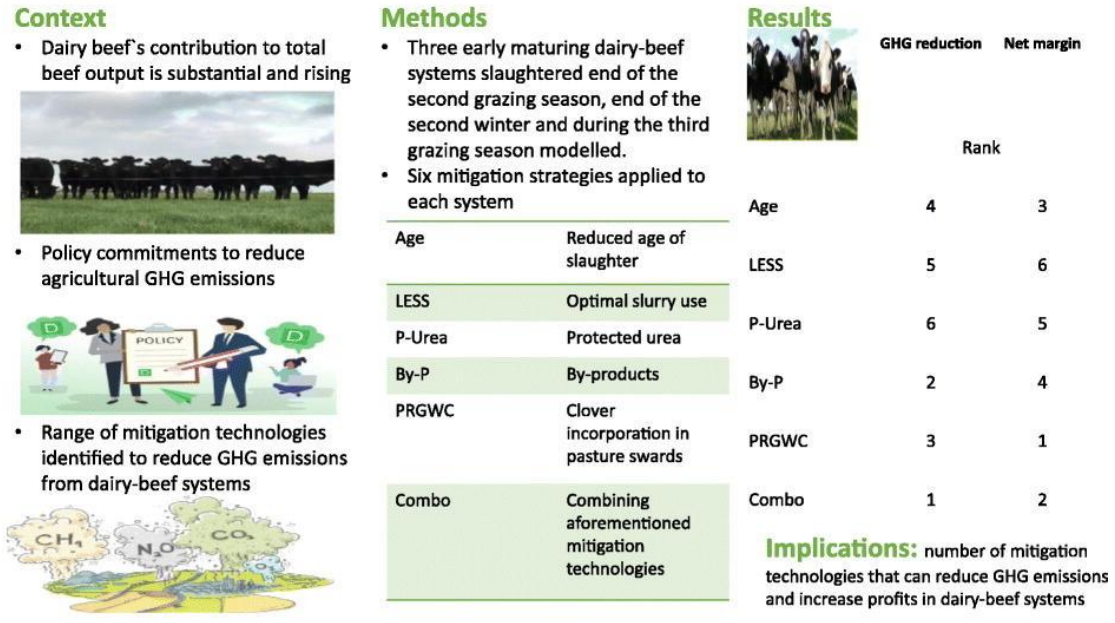
October, 2023 | Agricultural Systems | Source |

Introduction: Ireland's beef sector, responsible for 37% of national greenhouse gas (GHG) emissions, presents key opportunities for climate mitigation through dairy-beef systems. Researchers from Teagasc and University College Dublin used the Grange Dairy Beef Systems Model (GDBSM)—a whole-farm bioeconomic model employing cradle-to-farm gate life cycle assessment (LCA)—to simulate emissions, economics, and protein efficiency in typical Irish systems. The study assessed 6 mitigation strategies, including earlier slaughter, slurry management, urease inhibitors, by-product feeds, clover pastures, and their combination, across Angus × Holstein–Friesian steers. It also examined trade-offs among GHG reduction, farm profitability, land use, and food security.

Key findings: Combining all 6 strategies reduced GHG intensity by 21% and increased net margins per hectare by the same margin, demonstrating strong synergy between climate and economic benefits. Clover incorporation emerged as the most profitable stand-alone measure, boosting net margin by up to 25% and reducing GHG emissions per kg of carcass by 4–8%. By-product substitution in cattle feed led all systems to become net producers of human-edible protein, with efficiencies exceeding 4.0. Earlier slaughter age also reduced GHG intensity per kg of beef by 3–7%, though benefits varied with pasture use. Slurry management and urease inhibitors achieved modest emissions reductions (~3–4%) but lowered profitability due to added costs.

The study highlights that no single strategy optimizes all sustainability metrics. However, integrated approaches—especially those leveraging clover and feed by-products—offer significant promise for low-emissions, profitable dairy-beef systems. Future work should explore region-specific soil carbon sequestration potential to further reduce system-level emissions.

Graphical Abstract



NEWS

01 **THEME:** Policy Incentives, Financing, Pricing

New IDRC initiative aims to strengthen food security through climate-smart livestock solutions

February 26, 2025 | International Development Research Centre (IDRC) |

The International Development Research Centre (IDRC) and the Gates Foundation have launched a six-year, CAD11.45-million Climate-Resilient Animal Fund (RECAF) to support smallholder livestock farmers in sub-Saharan Africa. Targeting eight countries in the region, RECAF focuses on developing climate-smart technologies and scalable business models—covering animal health, water and feed management, renewable energy, and indigenous knowledge systems—to reduce emissions intensity, boost animal productivity, and strengthen climate resilience through locally led research.

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02 **THEME:** Policy Incentives, Financing, Pricing

Replacing one polluting sector with another? The perils of shifting from coal to livestock in Cesar, Colombia

February 12, 2025 | Stockholm Environment Institute (SEI) |

Cesar, Colombia's shift from coal to livestock as an economic strategy raises concerns about replacing one high-emissions industry with another. While reducing dependence on fossil fuels is essential, livestock is already the top source of greenhouse gas emissions in the region and a key driver of deforestation. Though the sector supports jobs and food security, its expansion risks worsening land grabbing, social inequality, and environmental degradation. Climate-smart solutions like silvopastoral systems show promise but face cost barriers. The analysis also points to the untapped potential of sustainable, plant-based food systems as a longer-term, more resilient alternative.

03 **THEME:** Policy Incentives, Financing, Pricing

Commission presents its roadmap for a thriving EU farming and agri-food sector

February 19, 2025 | European Commission |

The European Commission has launched its Vision for Agriculture and Food, a strategic roadmap to ensure a competitive, resilient, and sustainable EU agri-food sector. Key priorities include attracting young farmers through fair incomes and innovation, aligning trade and food safety standards, supporting climate action via nature-friendly practices, and revitalizing rural areas. A simplification package and a digital agriculture strategy will be introduced in 2025. The plan also proposes a Generational Renewal Strategy and an updated Rural Action Plan to enhance long-term food security and ensure fair working and living conditions in rural communities.

04 **THEME:** ICT in Agrifood Sustainability; Policy Incentives, Financing, Pricing

Supply chain optimization could boost vertical farming. Here's how

February 26, 2025 | World Economic Forum (WEF) |

Vertical farming offers a climate-resilient, space-efficient alternative to traditional agriculture, but many ventures have struggled due to economic—not technical—challenges. A recent study by UMSL highlights the need for data-driven supply chain optimization to improve profitability and scalability. Key barriers include high energy costs, inefficient siting, limited crop diversity, and weak market demand. The research recommends strategic resource planning, smarter pricing, and integrated market and production analyses to enhance economic sustainability. With better supply chain design and policy support, vertical farming could evolve from a high-cost novelty to a viable solution for urban food systems.

05 **THEME:** GHG Emission Reduction; MRV (Measurement, Reporting, Verification)

Kaohsiung's first Renewable Energy Certificate (REC) awarded to a pig farm: turning manure into green gold

March 3, 2025 | UDN (In Chinese) |

Zhixian Pig Farm (志賢畜牧場) in Kaohsiung has become Taiwan's first privately owned pig farm to receive Renewable Energy Certificates (RECs) for biogas power generation. With support from the city's Agriculture Bureau and the Industrial Technology Research Institute (ITRI), the farm installed a 30kW biogas system that generates up to 60,000 kWh annually—saving over NT$200,000 in electricity costs and could earn up to NT$270,000 through REC trading. This model turns livestock waste into green energy and additional income, supporting Taiwan's net-zero transition. By the end of 2024, Kaohsiung's Agriculture Bureau had assisted nine farms in adopting biogas systems and issued over 5,900 RECs to promote circular, low-carbon agriculture.

06 **THEME:** Carbon Sequestration; MRV (Measurement, Reporting, Verification)

Approval of the 'Improving Agricultural Soil Management' methodology to enhance carbon sequestration and agricultural resilience

March 20, 2025 | Agri-harvest (In Chinese) |

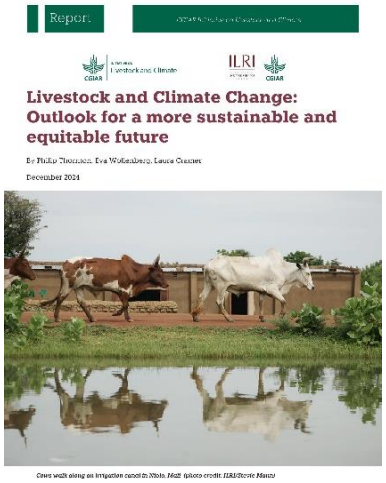
Taiwan's Ministry of Environment has approved a new voluntary carbon reduction methodology—"Improved Agricultural Soil Management"—proposed by the Ministry of Agriculture to enhance soil carbon sequestration. By increasing soil organic matter and reducing soil disturbance, this method strengthens farmlands' ability to capture carbon while improving resilience to extreme weather. Based on international practices and adapted to Taiwan's agricultural context, the methodology includes measures such as applying organic materials, reducing tillage, returning crop residues to fields, cover cropping, and converting fallow land to green manure. This initiative supports both climate goals and food security.

POLICY

01 THEME: Climate-Smart Agriculture; Net-Zero Strategy

Livestock and Climate Change: Outlook for a More Sustainable and Equitable Future

CGIAR | Source | Report |



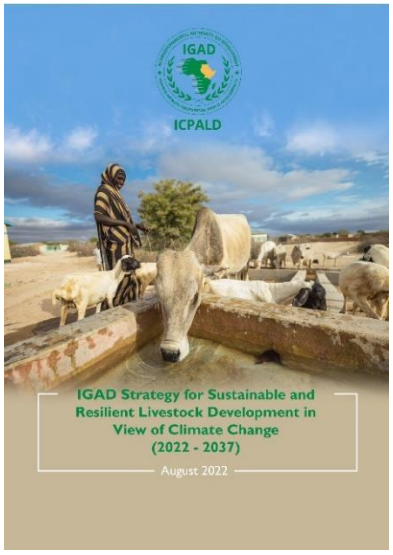
This outlook report emphasizes that climate change necessitates transformative shifts within the global livestock sector to meet growing consumer demands while achieving net-zero targets by 2050. This shift requires a multifaceted approach encompassing productivity, environmental sustainability, economic transition, and social resilience. Industrialized livestock systems are better positioned to adopt climate adaptation and mitigation strategies; however, targeted interventions are crucial for smallholders who rely heavily on livestock for food security and livelihoods. Adaptive strategies highlighted in the report include diversification of species and breeds, integrated farming systems, improved diets, and enhanced animal health practices. Mitigation options comprise intensified production, silvopastoral practices, grassland restoration, and renewable energy in supply chains. Effective implementation depends heavily on local contexts, which often face resource constraints and knowledge gaps.

The report suggests that policymakers should incentivize adoption through consumer awareness, market premiums, financial instruments, carbon markets, and regulatory frameworks. Enhanced investment in research, improved livestock statistics, and emissions monitoring (Tier 2) is essential. Additionally, cross-sectoral responses and inclusion of marginalized groups, such as women and youth, are critical for equitable transitions. Overall, future livestock sector strategies should integrate environmental, nutritional, and social dimensions through participatory governance and data-driven monitoring frameworks aligned with global climate commitments.

02 THEME: Climate-Smart Agriculture

IGAD Strategy for Sustainable and Resilient Livestock Development in View of Climate Change (2022 - 2037)

The Intergovernmental Authority on Development (IGAD) | Source | Report |

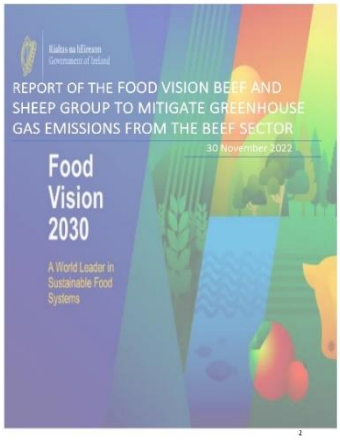


This report presents a comprehensive framework for enhancing the resilience and sustainability of pastoral and agro-pastoral systems in arid and semi-arid lands (ASALs), which are notably vulnerable to climate impacts. The Strategy aims to bolster the livestock sector's ability to absorb, adapt, and transform in response to climate challenges, promoting adaptation alongside climate change mitigation. It emphasizes five priority intervention areas: climate risk management; sustainable management of natural resources; livestock productivity and income diversification; research, innovation, and knowledge management; and policy alignment and coordination on transboundary issues. Regional collaboration under the Strategy is intended to amplify effectiveness, facilitate knowledge exchange, and address inherent cross-border dynamics of livestock movements. Periodic evaluations will ensure its relevance and effectiveness, adapting interventions based on evolving conditions and priorities.

03 THEME: Climate-Smart Agriculture; Net-Zero Strategy

Report of the Food Vision Beef and Sheep Group to Mitigate GHG emissions from the Beef Sector

Agriland, Ireland | Source | Report |



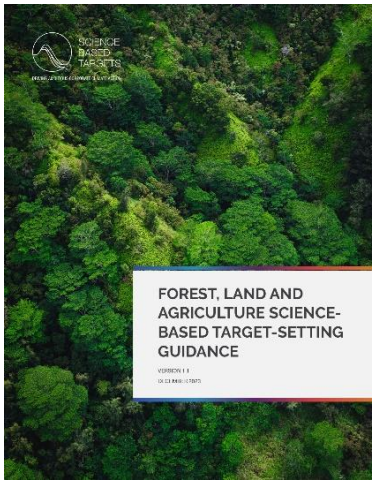
The Food Vision Beef and Sheep Group has released a comprehensive report outlining measures to significantly reduce greenhouse gas (GHG) emissions from Ireland's beef sector. Key proposals include reducing slaughter age by approximately 3 months, reducing age at first calving, adopting methane-reducing feed technologies, and significantly decreasing chemical nitrogen use by 27%-30% by 2030. Additionally, the report recommends expanding organic beef production to 180,000 hectares by 2027. Two controversial voluntary schemes proposed aim at diversification or extensification by reducing or removing suckler cow numbers, potentially achieving substantial emissions reductions but at notable financial and social costs, raising significant stakeholder concerns. Financial support mechanisms, estimated at over €100 million, are highlighted as crucial for effective implementation, given the potential economic impacts on farm viability and industry

competitiveness. The proposed measures collectively aim to approach the agricultural sector's emission reduction target of 5.75Mt CO_2e by 2030 without reducing total animal numbers.

04 THEME: Net-Zero Strategy

Forest, Land and Agriculture (FLAG)

Science Based Targets initiative (SBTi) | Source | Brief |



The SBTi FLAG Guidance provides a framework for companies in the forest, land, and agriculture (FLAG) sectors to set scientifically-aligned emissions reduction targets aimed at limiting global warming to 1.5°C. Recognizing the unique vulnerability and substantial mitigation potential of this sector, the guidance outlines distinct approaches for supply-side (commodity producers) and demand-side (commodity purchasers) actors. Demand-side actors utilize the FLAG Sector Pathway, targeting a 3.03% annual absolute emissions reduction. Supply-side actors apply specific Commodity Pathways based on intensity convergence. Critical measures include eliminating deforestation—which represents 80% of land-use change mitigation potential—and prioritizing emissions reductions alongside carbon removals like reforestation and soil carbon sequestration. Companies are required to publicly report no-deforestation commitments by December 2025, adhering to standards like the Accountability Framework initiative (AFi). The guidance emphasizes separate accounting for emissions and removals, advocating high data quality and detailed reporting across FLAG supply chains.

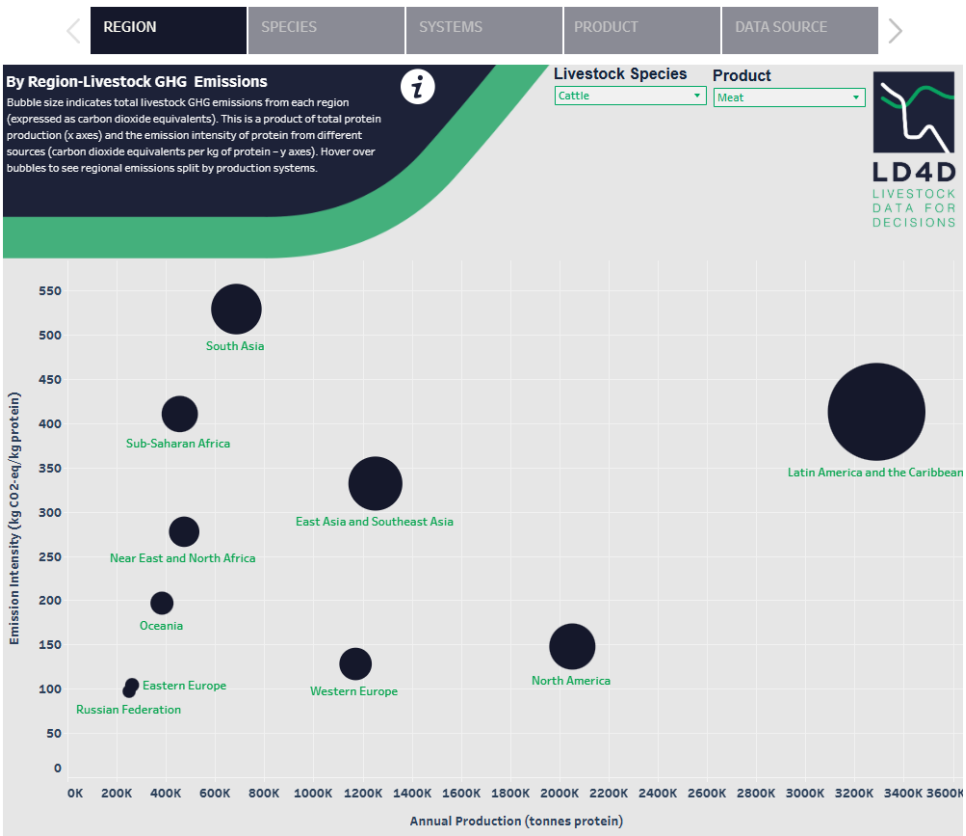
OPEN DATA

01 THEME: GHG Emission Inventory

Livestock and Greenhouse Gas Emissions

Livestock Data for Decisions (LD4D); Food and Agriculture Organization (FAO); SEBI-Livestock Evidence Synthesis | Source |

The Livestock and Greenhouse Gas Emissions visualization, developed by Livestock Data for Decisions (LD4D), presents GHG emissions from livestock using data from the Global Livestock Environmental Assessment Model (GLEAM). It displays both total emissions and emissions intensity (GHG per unit of protein) across regions, species, production systems, and products. Based on a life cycle assessment (LCA) framework, the tool reveals significant variations in emissions intensity, highlighting the potential for reducing GHG emissions through improved production efficiency. The underlying data, aligned with IPCC (2006) Tier methodologies, is available for download to support evidence-based decisions for more sustainable livestock systems.



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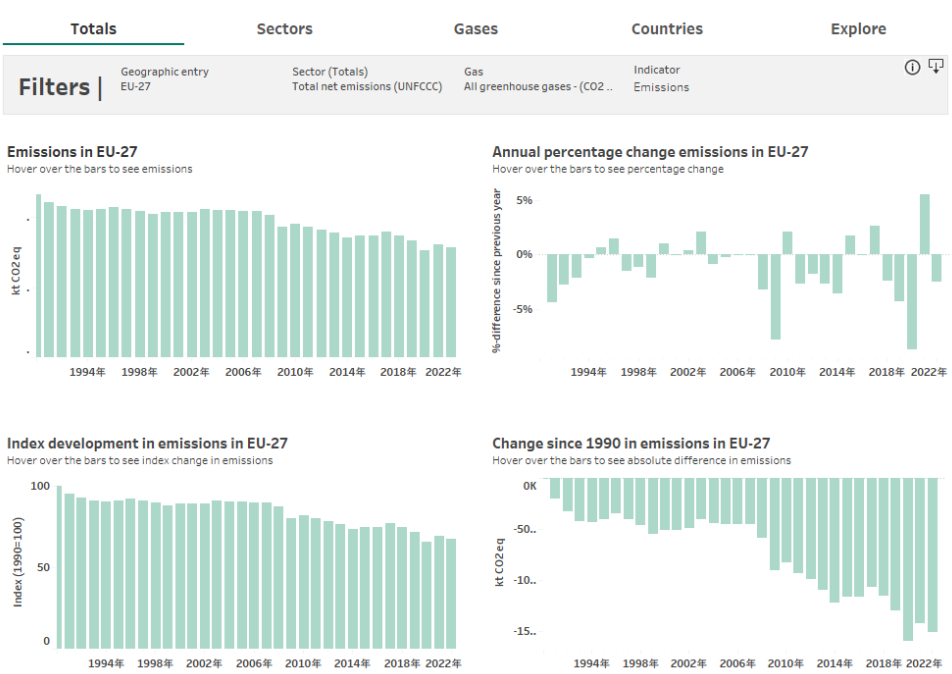
02 THEME: GHG Emission Inventory

EEA Greenhouse Gases — Data Viewer

European Environment Agency (EEA) | Source |

The EEA Greenhouse Gases Data Viewer is an interactive platform that provides annual data on GHG emissions and removals reported by EU Member States under the EU Governance Regulation. Maintained by the European Environment Agency (EEA), it supports policy assessment by displaying sectoral and national totals aligned with UNFCCC reporting requirements. Emissions are estimated

using the 2006 IPCC Guidelines, with optional refinements from 2019, and global warming potentials from the IPCC AR5. The viewer includes data from EU-27, plus EEA countries like Iceland and Norway, and covers international transport. It draws from multiple sources, including the EU GHG inventory, the EU Emissions Trading System (ETS), GDP from AMECO, and population statistics from Eurostat. Updated annually, the dataset informs the EU's international reporting under the Paris Agreement and facilitates public access to key indicators like emissions per capita and emissions per GDP.



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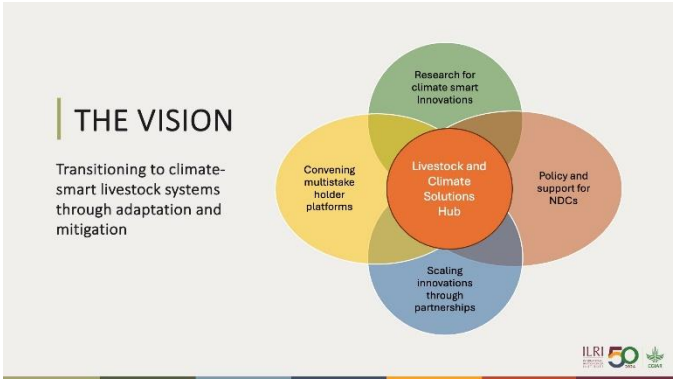
03 THEME: Climate Smart and Net Zero Toolkit; Climate Action Plans and Programs

The Livestock and Climate Solutions Hub

International Livestock Research Institute (ILRI) | Source |

The Livestock and Climate Solutions Hub is a collaborative platform led by ILRI and CGIAR to support low- and middle-income countries (LMICs) in transitioning to sustainable, low-emission livestock systems. It integrates research, innovation, policy, and partnerships to scale climate-smart solutions—such as methane-reducing feeds, heat-tolerant breeds, and early warning systems—that reduce emissions, enhance resilience and productivity, and improve smallholder livelihoods while advancing national climate goals. The Hub provides a unified approach tailored to LMICs, combining cutting-edge innovations in animal nutrition, health, genetics, and environment with climate-smart technologies adapted to smallholder and pastoral systems. It strengthens multi-stakeholder collaboration, policy support for NDCs, and institutional capacity to deliver both adaptation and mitigation outcomes.



EVENT

01

The 9th International Greenhouse Gas & Animal Agriculture Conference (GGAA)

October 5-9, 2025 | In-person | Nairobi, Kenya | Source |

The 9th International Greenhouse Gas and Animal Agriculture Conference (GGAA2025) will be held from October 5–9, 2025, in Nairobi, Kenya, hosted by the International Livestock Research Institute (ILRI) and the Norwegian Institute of Bioeconomy Research (NIBIO). The conference will convene over 400 participants to explore cutting-edge research and policy developments on GHG emissions from animal agriculture. Core themes include animal feed strategies, microbial genomics, manure management, soil-based emissions, carbon finance mechanisms, and measurement methodologies. Featuring technical sessions, field tours, and training programs, GGAA2025 offers a critical platform to advance climate-smart livestock systems and sustainable resource management. Registration opens in May 2025.

02

Innovative Agricultural Technologies Congress (IAT 2025)

October 15-19, 2025 | In-person | Antalya, Türkiye | Source |

The Innovative Agricultural Technologies Congress (IAT 2025) will be held on October 15–19, 2025, in Antalya, Türkiye, co-organized by Ankara University and Harper Adams University. This international forum will gather academics, researchers, and industry professionals to present innovations in smart and digital farming systems, autonomous and robotic machinery, sensor-based monitoring and precision technologies, AI-driven data solutions, and sustainable production practices. Accepted papers will be published in a Scopus-indexed Springer volume. Abstract submissions are due by May 1, 2025, and early registration closes on June 15, 2025.

03

The 3rd International Online Conference on Agriculture (IOCAG2025)

October 22-24, 2025 | Online | Source |

The 3rd International Online Conference on Agriculture (IOCAG2025) will be held virtually from October 22–24, 2025 (Central European Summer Time), organized by *Agriculture* (MDPI). This free event invites abstracts on climate-smart agriculture, smart farming technologies, sustainable crop and livestock production, efficient water and soil management, and advances in genetics and breeding. Accepted abstracts will be published on Sciforum.net and in the *Biology and Life Sciences Forum* journal. Participants may also submit extended proceedings free of charge or full papers to a Special Issue of *Agriculture* with a publication discount. Awards for Best Oral and Poster Presentations will be given, including certificates and prizes. Abstract submissions are due by June 24; registration closes October 15, 2025.

04

The 4th International Conference on Agroecology and Organic Farming

October 23-24, 2025 | Hybrid | Montreal, Canada | Source |

The 4th International Conference on Agroecology and Organic Farming will be held on October 23–24, 2025, in Montreal, Canada, under the theme "Eco-Friendly Agriculture: Reducing Environmental Impact through Organic Methods." The event will feature keynote lectures, workshops, poster sessions, and B2B meetings, offering a global platform for researchers, practitioners, and students. Major topics include soil health, organic farming technologies, agroforestry, water conservation, pest management, seed sovereignty, and climate-smart practices. Special sessions such as the Young Researchers Forum and Best Poster Awards aim to foster academic exchange and professional development. The event promotes holistic, sustainable agricultural systems that enhance biodiversity, ecosystem resilience, and food security. Participants can engage both onsite and remotely, with multiple presentation formats available. Abstract submission and early registration are now open.

05

6th World Conference on Climate Change and Global Warming (CCGCONF 2025)

November 21-23, 2025 | Hybrid | Copenhagen, Denmark | Source |

The 6th World Conference on Climate Change and Global Warming (CCGCONF 2025) will be held from November 21–23, 2025, in Copenhagen, Denmark. This global forum gathers researchers, policymakers, and stakeholders to address urgent climate challenges through high-level academic exchange and action-driven dialogue. Topics include climate policy, carbon management, sustainable energy, biodiversity, climate adaptation, and agricultural resilience. The conference features oral, poster, and virtual presentations, with opportunities for publication in indexed international journals. Abstract submissions are due by October 31, 2025; late registration ends November 11. Join to connect, collaborate, and contribute to climate solutions.

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2025 Conference of the Ecological Society of Australia (ESA2025)

November 23-28, 2025 | In-person | Adelaide, Australia | Source |

ESA2025
Adelaide, 23-28 November 2025
Bold actions for a resilient future

The Ecological Society of Australia Conference (ESA2025) will take place on November 23–28, 2025, at the Adelaide Convention Centre, on the traditional lands of the Kaurna people. Under the theme of bold action for biodiversity, ESA2025 will spotlight ecological science across Australia, promoting collaboration between research, policy, and practice. The event will focus on innovative ideas, effective conservation, and environmental storytelling to inspire public engagement and drive sustainable solutions. Abstract submissions and event registration open in May. Join to connect, innovate, and act for a resilient ecological future.