منظمة الأغذية والزراعة للأمم المتحدة
联合国粮食及农业组织
Food and Agriculture Organization of the United Nations
Organisation des Nations Unies pour l'alimentation et l'agriculture
Продовольственная и сельскохозяйственная организация Объединенных Наций
Organización de las Naciones Unidas para la Alimentación y la Agricultura

Viale d Terme di Caracalla, 00153 Rome, IT www.fao.org

25 March 2026

Submission by the Food and Agriculture Organization of the United Nations (FAO) to the United Nations Framework Convention on Climate Change (UNFCCC) in relation to the Sharm el-Sheikh mitigation ambition and implementation work programme

The Food and Agriculture Organization of the United Nations (FAO) welcomes the opportunity to share views on opportunities, best practices, actionable solutions, challenges and barriers relevant to the topic of the seventh global dialogue[1], including information on experts, potential financiers and investors to be invited, in accordance with Decision 4/CMA. 4, para. 14, Decision 4/CMA. 5, para. 9, Decision 2/CMA. 6, para. 10, Decision -/CMA.7, para 19.

Agrifood system emissions have increased at an average annual rate of approximately 1 percent over the past two decades, significantly lower than the growth rate of emissions from the overall economy. As a result, their share of global anthropogenic greenhouse gas (GHG) emissions declined from around 40 percent to 32 percent in 2023. However, rising emissions from pre- and post-production activities are a growing concern. Emissions from input manufacturing, transport, packaging and retail, as well as household consumption, have increased by approximately 80 percent since 2001. In 2023, supply chain activities accounted for half or more of total agrifood system emissions in around 40 percent of countries and territories. [i] These trends indicate that to reduce emission, mitigation efforts should focus on both primary production and supply chains. They need to ensure emission from food production continues to fall while the growing source of emissions from manufacturing, processing, distribution, consumption and disposal stages of agrifood systems are tackled at the same time.

FAO is dedicated to climate action in agrifood systems, aiming to support adaptation and reduce emissions while addressing rural poverty, eliminate hunger, and achieve food security for all, as outlined in FAO Strategic Framework[ii] and FAO Strategy on Climate Change[iii] This commitment also focuses on enhancing the productivity, resilience, and sustainability of agrifood systems to make them less vulnerable to climate change.

This submission presents FAO's perspectives on the topics, format and structure of the global dialogue, with a focus on advancing mitigation solutions across the industry of agrifood systems, particularly in food manufacturing, processing, distribution and disposal stages. The submission also outlines potential speakers and emphasizes FAO's expertise in these areas. It aims to support the design of a dialogue that fosters practical exchange, strengthens cooperation, and promotes the integration of value chain mitigation solutions into national climate policies and plans.

1. Views on the workshop subject

Agrifood systems offer significant potential for delivering both mitigation and adaptation benefits. As highlighted by the Intergovernmental Panel on Climate Change (IPCC)[iv], the sector can contribute to "win-win" outcomes by enhancing food security, strengthening resilience to climate impacts, and reducing GHG

[1] The seventh global dialogue will focus on enabling mitigation ambition and implementation in industries, drawing on national and regional experience.

emissions simultaneously. This is reflected in the high prioritization of agriculture in Nationally Determined Contributions (NDCs)[v] and National Adaptation Plans (NAPs)[vi].

To strengthen mitigation in agriculture and food production industry, including food manufacturing, processing, distribution and disposal, several key issues need to be addressed while recognizing the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change.

First, targeting high-emission segments of agrifood value chains beyond the farm gate, particularly in rapidly growing segments such as manufacturing, processing, distribution and disposal. Priority measures improvements in energy efficiency, increased adoption of renewable energy, optimization of cold chains to reduce losses and energy use, application of sustainable bioeconomy approaches, and strengthening solid and organic waste management across agrifood value chains.

Second, strengthening data and reporting systems, to support GHG inventories, Biennial Transparency Reports, NDC tracking, and continuous capacity-building under the Enhanced Transparency Framework (ETF), including better integration of emissions from agrifood value chains.

Third, aligning investments with mitigation opportunities, ensuring that finance supports both continued reductions in food production emissions and accelerated action in growing post-production emission sources, particularly manufacturing, processing, distribution, consumption and disposal stages of agrifood systems.

Finally, strengthening inclusion and just transition considerations, ensuring that mitigation efforts support livelihoods and recognize the role of hose working along the agrifood value chains.

Key objectives of the dialogue should be:

1. **Identify priority mitigation opportunities,** including across agrifood value chains, particularly in manufacturing, processing, distribution and disposal, and discuss practical solutions such as energy efficiency, renewable energy, sustainable bioeconomy practices, and controlled disposal.
2. **Clarify key barriers to implementation,** including policy, regulatory, data, finance and institutional constrains that limit scaling-up known mitigation solutions.
3. **Highlight effective enabling conditions,** focusing on what is currently missing for implementation (e.g. standards, incentives, coordination, and measurement systems), rather than broad systemic debates.
4. **Generate practical, context-relevant recommendations,** to support countries in accelerating implementation of mitigation actions across agrifood systems.

2. Views on the format and recommended speakers

The two and a half-day dialogue could combine short expert input with structured, facilitated discussions to ensure concrete outcomes.

Part I of the dialogue could be structured as a series of expert presentations, followed by an interactive discussion with participants. This segment would aim to enhance understanding of mitigation opportunities and implementation pathways across high-emitting industries, including agriculture and food systems. The session could open with a framing presentation by a lead author of the IPCC Sixth Assessment Report, highlighting mitigation opportunities across industries and situating them within broader economy-wide transitions. This could be followed by technical presentations from key industries, including a contribution from FAO on emissions trends and mitigation opportunities across agrifood value chains, with a focus on post-production stages such as in manufacturing, processing, distribution and disposal where significant mitigation potential remains underutilized. The presentation would build on outcomes of the sixth global dialogue showcase the following:

- Decarbonizing food processing and cold chains through energy efficiency measures and renewable energy integration.
- Sustainable bioeconomy approaches in food processing, such as converting crop residues and agro-industrial by-products into bioenergy, biochar or sustainable packaging materials, thereby reducing waste and fossil fuel use.
- Improving the measurement and reporting of emissions from waste streams across agrifood value chains and strengthening the institutional arrangements required to enhance transparency and reporting.

Together, these examples would illustrate how targeted interventions in agrifood systems can deliver substantial emission reductions while also improving efficiency, resilience and economic value.

Part II of the dialogue could focus on mapping approaches to implementing mitigation actions across key industries, including agriculture and food value chains, at regional and national levels. A World Café-style format is recommended for this session, as it fosters open dialogue, cross-pollination of ideas, and collaborative learning in an informal setting. Each discussion group could be dedicated to a specific sector or industry. Participants would rotate among thematic tables, sharing insights, challenges and best practices from their respective countries. This approach encourages diverse perspectives and helps identify common priorities, scalable solutions and enabling conditions for implementation.

The overarching question for the World Café could be: "What are the missing system conditions that currently prevent known mitigation solutions from being implemented at scale across industries, beyond finance, partnerships and capacity building?"

The discussion table focusing on agrifood value chains would aim to deepen participants' understanding of how value chain-wide strategies can drive transformational change and unlock mitigation potential beyond the farm gate, particularly in processing, manufacturing, distribution and disposal stages, including the following thematic areas:

- **Mitigation gains** in agrifood value chains.
  Trigger questions:
  - When you consider mitigation opportunities along the agrifood value chains, which interventions offer the greatest potential for GHG reduction (post-harvest, transport including cold chains, processing, packaging, retail, disposal)?
- **Incentives and finance** for low emission agrifood industries.
  Trigger questions:
  - From the mitigation opportunities identified along the agrifood value chain, which ones are "bankable"?
  - What financial instruments (e.g. subsidies, carbon markets, blended finance) can incentivize mitigation action in these opportunities?
  - What is needed to de-risk private sector investments in agrifood systems?
- **Governance, policy and enabling environments** are key to scaling mitigation solutions across agrifood value chains.
  Trigger questions:
  - Where are the most critical regulatory or policy bottlenecks that are actively preventing low-emission transformation in food manufacturing, processing, distribution and disposal?
  - In practice, where does cross-sectoral governance (agriculture-energy-industry-waste) fail to function, and what specific coordination failures most limit mitigation action?
  - Which concrete policy instruments (e.g. mandates, fiscal measures, procurement rules) have the highest potential to unlock implementation in the near term, and what is currently blocking their adoption?

- **Inclusion, fairness and local participation** is critical for effectiveness and sustainability for mitigation efforts across agrifood value chains.
  Trigger questions:
  - At what points are those working along agrifood value chains excluded from both decision-making and benefit-sharing in mitigation initiatives?
  - Where do current mitigation interventions create trade-offs between emissions reduction and livelihoods, and what design changes are needed to avoid these trade-offs?

Part III can begin with reporting from the World Café discussions highlighting presentations from regions and countries that have successfully translated mitigation potential into concrete action, including agriculture and food value chains, post-production stages such as manufacturing, processing, distribution and disposal. The presentations would be followed by an interactive discussion, allowing participants to reflect on lessons learned, compare experiences across sectors and regions, and identify common success factors as well as context-specific differences. Tentative speakers could include government representatives leading mitigation efforts in agrifood value chains, alongside private sector actors driving innovation in food manufacturing and processing.

Part IV of the dialogue could focus on designing actionable strategies to advance mitigation across key industries, including agrifood value chains, with a particular emphasis on strengthening ambition and implementation of NDCs. Building on the insights from Parts II and III, participants would be divided into breakout groups, each tasked with developing concrete, implementable strategies to accelerate low-emission transitions for the respective industry.

Groups would be supported by neutral facilitators with relevant expertise, drawn from the UNFCCC, UN agencies, Parties or observer organizations. The objective would be to generate practical recommendations, policy entry points and partnership opportunities that can inform national climate strategies and implementation pathways.

Part V of the dialogue would conclude with reflections from the breakout groups, synthesizing key messages and proposed actions. Stakeholders could outline next steps, highlight opportunities for continued collaboration, and emphasize the importance of institutional innovation, cross-sectoral coordination and multi-stakeholder engagement in advancing mitigation across industries. This final session could be facilitated by the co-chairs.

Conclusion

FAO remains committed to collaborating with the UNFCCC and partners at all levels to accelerate mitigation solutions in agrifood systems. As the lead UN technical agency, FAO supports countries in strengthening policies, building institutional and community capacity, and delivering context-specific solutions.

We express our full commitment to supporting the upcoming dialogue on enabling mitigation solutions in agriculture and food production industry, drawing on national and regional experience. We are dedicated to working with all stakeholders to create an inclusive platform that translates evidence into actionable strategies, fostering interdisciplinary dialogue to address challenges and unlock opportunities to advance solutions for climate action, while safeguarding adaptive capacity and ensuring the resilience of agrifood systems to climate shocks.

[i] FAO. 2025. Greenhouse gas emissions from agrifood systems – Global, regional and country trends, 2001–2023. FAOSTAT Analytical Brief Series, No. 115. Rome. https://doi.org/10.4060/cd7300en

[ii] FAO. 2021. FAO Strategic Framework 2022-31. Rome. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/29404c26-c71d-4982-a899-77bdb2937eef/content

[iii] FAO. 2022. FAO Strategy on Climate Change 2022–2031. Rome.

[iv] IPCC, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

[v] Crumpler, K., Wybieralska, A., Roffredi, L., Tanganelli, E., Angioni, C., Prosperi, P., Umulisa, V., Dahlet, G., Nelson, S., Nuutinen, M., Duchelle, A., Schiettecatte, L.-S., Rai, N., Salvatore, M., Some, S., Ayimasse, F., Totin, E., Wolf, J. & Bernoux, M. 2025. Agrifood systems in nationally determined contributions – Global analysis. Rome, FAO. https://doi.org/10.4060/cd6284en

[vi] Crumpler, K., Wybieralska, A., Nelson, S., Hammett, L., Margiotta, G., Haensel, M., Raison, M., Roffredi, L., Angioni, C., Gialletti, A., Galbiati, G., Caputo, I., Alvar-Beltrán, J., Kanamaru, H., Wang, X., Bernoux, M., Kohli, R., Teng, J., & Wolf, J. 2025. Agrifood Systems in National Adaptation Plans – An analysis. Rome, FAO, and New York, NY, USA, UNDP. https://doi.org/10.4060/cd7579en