



**Submission by the Food and Agriculture Organization of the United Nations (FAO)
to the United Nations Framework Convention on Climate Change (UNFCCC)
regarding the call for Inputs for the Belém Mission to 1.5**

The Food and Agriculture Organization of the United Nations (FAO) welcomes the opportunity to share views on the Belém Mission to 1.5 stewarded by COP31, COP30 and COP29 Presidencies.

Agrifood systems are central to achieving the objectives of the Paris Agreement, including its goal of limiting global warming to 1.5°C above pre-industrial levels, while advancing food security, resilience, poverty reduction, and both climate change adaptation and mitigation. Science-based agrifood systems solutions simultaneously reduce greenhouse gas emissions, enhance carbon sequestration, restore ecosystems, strengthen resilience, and improve food security and nutrition while supporting the livelihoods of approximately 1.2 billion people who depend directly on agrifood systems. Strengthening climate action across agrifood systems therefore represents one of the greatest opportunities to advance adaptation, mitigation and sustainable development in an integrated manner.

FAO's analysis shows that countries increasingly recognize agrifood systems as among the sectors most vulnerable to climate change. Ninety-four percent of NDCs include at least one agrifood systems component, all countries identify agriculture and food security as adaptation priorities, and 92 percent include agrifood-related mitigation measures.¹ Similarly, more than 90 percent of NAPs identify agriculture as a priority sector, recognizing the importance of building resilience across crops, livestock, fisheries, forestry and broader food systems.² At the same time, important implementation gaps remain. While countries increasingly recognize the mitigation potential of agrifood systems, only a small share of the emission reductions pledged for agrifood systems are supported by quantified mitigation measures, highlighting the need to strengthen implementation pathways across the entire agrifood system, including production, value chains and food loss and waste.

Despite this strong political commitment, implementation remains constrained by major financing and capacity gaps. Agrifood systems account for around 54 percent of the adaptation finance needs identified in developing country NAPs but receive only around one-fifth of global adaptation finance and approximately one percent of total climate finance. Recent analyses show that international public climate finance for agrifood systems has largely stagnated, increasing by only 1% between 2009 and 2023 despite substantial overall growth in climate-related development finance. Over the same period, agrifood systems' share of total climate-related development finance nearly halved, while current investment levels remain far below what is required to support the transition towards resilient, sustainable and inclusive agrifood systems.³ This submission draws on FAO's

¹ Crumpler, K., Wybieralska, A., Roffredi, L., Tanganelli, E., Angioni, C., Prosperi, P., Umulisa, V., Dahlet, G., Nelson, S., Rai, N., Schiettecatte, L.S., Salvatore, M., Wolf, J. & Bernoux, M. 2024. Agrifood systems in nationally determined contributions: Global analysis – Key findings. Rome, FAO. <https://doi.org/10.4060/cd3210en>

² 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>

³ Galbiati, G.M., Caputo, I., Brierley, I., Ducastel, A. & Bernoux, M. 2025. Climate-related development finance to agrifood systems – Global and regional trends. Report 2025. Rome, FAO. <https://doi.org/10.4060/cd7500en>

analysis of NDCs and NAPs, as well as FAO's experience in supporting countries to achieve their climate commitments through agrifood systems transformation and sustainable land use.

1. What action areas and solutions have the highest impact potential to support the submission, ambition and implementation of NDCs and NAPs.

- **Strengthen climate risk-informed adaptation planning.** While agrifood systems are increasingly reflected in NDCs and NAPs, many countries still do not assess or report the impacts of climate change on agrifood systems, highlighting important gaps in climate risk assessment and the evidence base needed for effective decision-making. Although many countries recognize importance of agrifood systems, only 40 percent of NDCs reference climate risk and vulnerability assessments, around one-third include context-specific adaptation measures, and just 6 percent establish monitoring, evaluation and learning systems. Preparedness also varies significantly across subsectors. The strongest gaps are found in livestock and aquaculture, where NDCs and NAPs often lack detailed adaptation pathways, targets and implementation measures. Aquaculture remains particularly underrepresented due to limited data availability and the absence of well-established IPCC methodologies. The highest-impact opportunity is therefore to strengthen adaptation planning by systematically integrating climate risk and vulnerability assessments into NDCs and NAPs, designing adaptation measures that respond to local climate risks and the needs of vulnerable groups, strengthening climate information services, and establishing monitoring, evaluation and learning systems to track progress and improve implementation over time.
- **Translate agrifood mitigation commitments into action.** Although countries increasingly recognize the mitigation potential of agrifood systems in their NDCs, proposed actions remain insufficient. Among the top 15 agrifood system emitters, only 8% of the emission reductions pledged for agrifood systems are supported by concrete mitigation measures. The largest gaps remain in pre- and post-production activities, where 99 percent of emissions are unaddressed, and in key on-farm emission sources, including rice cultivation, fertilizers, manure, crop residues and land-use change. At the same time, countries are increasingly identifying mitigation actions such as soil organic carbon management, improved fertilizer use and sustainable land management practices. Scaling up these proven solutions, while expanding mitigation efforts across value chains, represents a major opportunity to translate national climate ambitions into measurable emission reductions.
- **Strengthen finance planning, private-sector engagement and investment mobilization for agrifood systems.** A high-impact priority is to strengthen the assessment of finance needs for agrifood systems within NDCs and NAPs and to scale up the mobilization of both public and private climate finance. Current national climate plans significantly underestimate the investment required to transform agrifood systems, limiting their ability to guide resource allocation and attract finance. More comprehensive quantification of sectoral finance needs, supported by financing strategies, bankable investment pipelines and stronger institutional readiness would improve access to climate finance and help substantially unlock greater investment. The vast majority of countries recognize the private sector as a key implementation partner for climate-resilient and low-emission agrifood systems, identifying investment opportunities in climate-resilient irrigation, improved seeds, sustainable livestock systems, feed innovations and aquaculture technologies. Stronger enabling policy frameworks, clearer investment signals and measures to reduce investment risks are needed to mobilize private capital and accelerate implementation. Scaling up grant, concessional and private finance is essential to translate NDC and NAP commitments into action while delivering adaptation, mitigation, food security and livelihood benefits.
- **Strengthen readiness for Article 6 carbon markets in agrifood systems.** A large majority of countries (74%) see the global carbon markets established under Article 6 of the Paris Agreement as a key mechanism for mobilizing finance for agrifood system transformation. A high-impact priority is to strengthen countries' readiness to participate effectively in Article 6 carbon markets by establishing robust monitoring, reporting

and verification systems, strengthening national greenhouse gas inventories, and developing the legal and institutional frameworks needed to generate high-integrity carbon market activities. Building these foundational capacities can unlock new sources of investment, scale mitigation action across agrifood systems and translate NDC and NAP commitments into implementation while ensuring environmental integrity and sustainable development benefits.

- **Strengthen governance, policy coherence and institutional capacity.** Governance remains a critical bottleneck for implementation. Effective delivery of NDCs and NAPs will require stronger institutional engagement from agrifood actors and improved coordination across sectors. For example, among GEF-8 Food Systems Integrated Program countries, only 34 percent include ministries of agriculture in NDC planning and coordination processes, creating a disconnect between climate ambition and sectoral implementation. Strengthening governance therefore requires integrated policy, legal and institutional frameworks, enhanced coordination across agriculture, forestry, fisheries, water, environment and rural development sectors, and stronger alignment between NDCs, NAPs and other multilateral environmental agreements. In particular, greater coherence across the Rio Conventions, including NDCs, NAPs, National Biodiversity Strategies and Action Plans (NBSAPs) and land restoration commitments, can generate multiple benefits for food security, resilience, biodiversity conservation and climate action.
- **Strengthen just and inclusive transitions in agrifood systems.** A high-impact priority is to integrate just transition principles into the agrifood components of NDCs and NAPs to ensure that climate action is equitable, inclusive and leaves no one behind. Agrifood systems sustain the livelihoods of billions of people, and women, youth, farmers and rural communities are consistently identified among the groups most vulnerable to climate change. Climate action should therefore address the specific needs of smallholder farmers, pastoralists, fisherfolk, forest-dependent communities and Indigenous Peoples while promoting decent work, social protection, secure livelihoods and equitable access to finance, technologies and decision-making. Targeted actions that reduce inequalities, strengthen capacities and ensure that climate solutions reach those most exposed to climate risks will improve the effectiveness, social acceptance and long-term sustainability of agrifood systems transformation.

2. What is required to further strengthen international cooperation to enhance ambition and enable the effective implementation of NDCs and NAPs?

Strengthened international cooperation should support countries in moving from planning to implementation by enabling evidence-based, investment-ready and inclusive NDCs and NAPs that accelerate agrifood systems transformation. To achieve this, international cooperation should prioritize:

- **Strengthen the evidence base for climate action** by supporting countries to undertake climate risk and vulnerability assessments, loss and damage assessments, greenhouse gas inventories and climate information services that inform context-specific adaptation and mitigation planning. Particular attention should be given to strengthening climate risk assessments across underrepresented agrifood subsectors, including livestock and aquaculture, while enhancing monitoring, reporting, evaluation and learning systems that enable countries to track progress, improve implementation and progressively raise ambition over time
- **Broadening the scope and investment readiness of agrifood systems solutions** within NDCs and NAPs by promoting integrated approaches that simultaneously address adaptation, mitigation, food security, biodiversity and resilient livelihoods. International cooperation should support countries in preparing bankable investment pipelines and financing strategies, improving the assessment of climate finance needs, strengthening institutional readiness to access public and private finance, facilitating responsible private-sector investment, and enhancing readiness to access Article 6 carbon market opportunities where appropriate.

- **Strengthen governance and policy coherence** by supporting integrated policy, legal and institutional frameworks, increasing the engagement of agrifood ministries and institutions in climate planning and implementation, enhancing coordination across agriculture, forestry, fisheries, water, environment and rural development sectors, and strengthening alignment between NDCs, NAPs, NBSAPs and land restoration commitments under the Rio Conventions. South-South, triangular and regional cooperation should also be promoted to facilitate the exchange of knowledge, technologies and good practices.
- **Ensuring that agrifood systems transformation is inclusive and equitable** by supporting locally led and gender-responsive approaches, strengthening the participation of women, youth, Indigenous Peoples, smallholder farmers, pastoralists, fisherfolk and other vulnerable groups, and promoting just transition pathways that protect livelihoods, strengthen social protection and ensure that climate solutions reach those most exposed to climate risks while maximizing adaptation, mitigation and sustainable development outcomes.

Conclusion

The Belém Mission to 1.5 provides a unique opportunity to accelerate the implementation of ambitious and inclusive NDCs and NAPs by strengthening international cooperation around evidence-based planning, investment-ready agrifood systems solutions, finance, technology, capacity development and policy coherence. Recognizing agrifood systems as a strategic driver of climate action can help countries translate climate commitments into measurable outcomes while simultaneously advancing adaptation, mitigation, food security, biodiversity conservation, resilient livelihoods and sustainable development, thereby contributing to the achievement of the Paris Agreement. FAO remains committed to supporting Members through technical assistance, policy support, capacity development and partnerships to realize the full potential of agrifood systems in delivering ambitious and implementable climate action.