

Climate resilience starts with seeds:
Advancing our sustainable vision at COP30

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Introduction

Sustainability has always been at the heart of the seed sectorⁱ. From smallholder farmers to multinational companies, seed underpins every step of the agricultural value chain, making it a natural driver of more sustainable agrifood systems. Seed forms the foundation of productivity, resilience, and resource efficiency within agriculture, which are key pillars of sustainability. The upcoming UN climate summit (COP30), taking place in Brazil from 10-21 November 2025, offers a timely opportunity to showcase the seed industry's long-standing commitment and essential contributions to climate change and farmer livelihoods. Building on the COP28 Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action—which recognizes the potential of agrifood systems to respond to climate change and bring economic prosperity—the International Seed Federation (ISF) and its global network of members are working across the value chain to advance a shared vision for a more sustainable future.

The contribution of seed innovation to sustainable agriculture

Seed innovation leads to resilient and more resource-efficient crops. To safeguard global food security amid climate change, population growth, and an uncertain macroeconomic outlook, agrifood systems must embrace seed innovation. An expected rise in global food demand, requiring farmers to increase production by up to 54% according to the Food and Agriculture Organization (FAO)ⁱⁱ, will coincide with escalating climate risks, threatening food security and causing commercial losses throughout the value chain. A widely cited study from 2024, projects damages to food systems, infrastructure, and ecosystems to reach \$38 trillion by 2050ⁱⁱⁱ. Strengthening markets and policy environments to increase seed availability and encouraging continued seed innovation are modern-day imperatives that will yield four clear benefits:

1. **Improved climate adaptation capabilities** including disease resistance and water tolerance in an increasingly water stressed world, while maintaining or growing yields
2. **Greater and direct contributions to climate change mitigation**, resulting from efficient use of land and inputs
3. **Improved financial security for farmers**, notably women and youth whose livelihoods are at stake, looking to adapt to changing climates and minimize yield shocks
4. **Stronger food security and food affordability**, via improved drought, disease and heat-resistant, high yielding plant varieties/ seed

The COP30 opportunity

Global climate action, historically concentrated on carbon emissions and energy, has expanded to include new priorities such as sustainable agriculture. Milestones from previous summits—including the COP28 Declaration on Sustainable Agriculture—have helped elevate agriculture's profile on the global stage. **COP30 arrives at a unique time and place for the seed industry** to communicate its view of sustainable agriculture:

- **Time:** The COP28 Declaration on Sustainable Agriculture was the first of its kind focused specifically on agrifood systems. While symbolic, its endorsement by more than 150 signatories signaled a strong global commitment to advancing sustainable agriculture. ISF's efforts at COP30 aim to build on this momentum and drive further progress.
- **Place:** With Brazil serving as host for COP30, the conference will place increasing attention on issues related to land use, deforestation, and agrifood systems.

The importance of collaboration and partnerships

Leveraging COP30 means building collaborative partnerships that connect economic opportunities in agriculture with innovative financial and policy measures to drive sustainability—from seed to market. The ISF will explore three key avenues for partnership and focus on two critical seed policy needs:

- **Policy engagement:** ISF takes a cohesive approach to stakeholder engagement and will do so at COP30, promoting positive actions from jurisdictions that are leveraging and expanding on seed innovation initiatives while seeking dialogue with others that are less advanced, demonstrating the role of seed in providing solutions for farmers, consumers, and the planet alike. ISF will advocate for policy design that facilitates public private partnerships to advance research and funding for climate-smart agriculture.
- **Engagement as an increasingly aligned supply chain:** A unified voice will be presented at COP30, demonstrating growing alignment among stakeholders across the agrifood value chain—from seed and food companies to farmers and policymakers—on the central role of seed in sustainable agriculture. Strengthening connections across the value chain will help articulate clearer policy priorities, address product needs, support innovation-friendly regulatory environments, and foster supply chain partnerships.
- **Finance and public-private collaboration:** Only 4.3% of global climate finance goes to the agrifood system^{iv}. Deploying public, private, and blended capital is necessary to further strengthen global food systems. This is particularly important in areas more vulnerable to extreme weather conditions such as extended drought and desertification. Improving access to innovation will have a positive impact on rural livelihoods, mitigating potential negative consequences to extreme weather events such as drought and flood.
- **Communicating the importance of Plant Breeding Innovation as a critical driver for developing solutions to meet global agricultural challenges and highlighting intellectual property (IP) as an essential enabler of these innovations.** The International Seed Federation (ISF) emphasizes the need for strong policies that support both innovation and protection. Such policies are essential to ensure a sustainable, long-term business environment that enables stakeholders to continue investing in research and development (R&D).
- **Advocacy for standardized measures to facilitate global trade:** Encouraging international trade measures (including phytosanitary & market access and trade) that protect plant health and seed quality while enabling efficient global seed trade, will create a reinforcing

cycle of seed innovation and environmental protection. The lack of uniform, science-based measures across regions is currently restricting seed trade flows and delaying the deployment of seed-based climate solutions to farmers worldwide.

Our call to action for COP30

In the face of shifting climate patterns, evolving consumer demands, and volatile trade dynamics, we must catalyze action through the following approaches:

1. **Actionable policy frameworks:** Building resilient and sustainable agrifood systems requires a policy environment that actively supports seed innovation. A functioning seed system involves the infrastructure and capacity to efficiently develop, produce, and distribute seeds. An efficient seed system relies on the free movement of seeds across borders; therefore, global policies affecting seeds must aim for greater harmonization – particularly by aligning with internationally recognized phytosanitary standards, such as those developed by the IPPC, to reduce trade barriers and foster international cooperation.
2. **Awareness on the global stage:** Global developments over the previous three years underscore agriculture's rise to the forefront of the climate agenda, presenting an opportunity to harness momentum and deliver impact: the 2022 Global Biodiversity Framework includes a target to reduce pesticide and fertilizer use by 2030; the 2023 COP28 Declaration on Sustainable Agriculture calls for stronger adaptation and mitigation strategies across the global agrifood system; a 2024 Food and Agriculture Organization analysis reports that 94% of countries' Nationally Determined Contributions (NDCs) now include climate action in agrifood systems;^{iv} and lastly, in 2025, the Science Based Targets Initiative reported that the pace of Forest, Land and Agriculture (FLAG) target-setting among corporates has doubled from 2024 to 2025.
3. **Local and international strategies:** Promoting the adoption of innovative resource-efficient varieties and resilient farming practices tailored to local contexts for optimal impact while remaining aligned with global frameworks. This dual focus guarantees practical relevance for local communities and ensures accountability at the global level. ISF members work hand in hand with farmers helping to connect the dots between local realities at the farm level and international frameworks discussed at COP30^{vi}.

ⁱ See [ISF Sustainability webpage](#)

ⁱⁱ FAO. 2018. The future of food and agriculture – Alternative pathways to 2050. Supplementary material. Rome. 64 pp. Licence: CC BY-NC-SA 3.0 IGO.

ⁱⁱⁱ Kotz, M., Levermann, A. & Wenz, L. The economic commitment of climate change. Nature 628, 551–557 (2024). <https://doi.org/10.1038/s41586-024-07219-0>

^{iv} CPI [Daniela Chiriack, Harsha Vishnumolakala, Paul Rosane], 2023. Landscape of Climate Finance for Agrifood Systems. Climate Policy Initiative

^v FAO. 2024. How FAO supports developing countries on their nationally determined contributions. Rome.

^{vi} See ISF Concept paper "[Contributions of the Seed Sector to improve the environmental sustainability of agriculture and food systems](#)"