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STRENGTHENING FOOD SECURITY FOR A RESILIENT AND SUSTAINABLE COFFEE SUPPLY

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CONTEXT: WHY COFFEE FARMERS' FOOD INSECURITY MATTER FOR THE COFFEE INDUSTRY

The challenge

Coffee is one of the most widely consumed beverages in the world and supports the livelihoods of approximately 25 million of people in tropical regions. Projections suggest that climate change could reduce 50% of the area suitable for coffee, without effective adaption strategies. But, climate not only affects coffee production, in Central America for example, increasing climate variability like **droughts and irregular rains impacts on food security of millions of people every year, including in coffee growing regions**. This, combined with coffee price instability, is **deepening the vulnerability of coffee farmers and putting the stability of supply chains at risk**.

Food insecurity undermines sustainability and supply stability

Over half of **coffee households in Central America face recurring food insecurity every year**, even among certified producers. When farmers experience hunger or income loss, they may reduce investment in coffee production, migrate, or leave the sector entirely, creating hidden risks for the global supply chain.

A gap between sustainability efforts and farmer realities

While sustainability programs and certifications schemes increasingly promote approaches such as **agroecology**, **regenerative agriculture**, and **climate-smart agriculture (CSA)** practices, they often focus primarily on environmental performance or productivity improvements **with limited attention to farmers' food security**. As a result, the social foundations of sustainability remain weak, and the long-term viability of sourcing regions is uncertain.

A strategic opportunity for the industry

Investing in **food security** is neither an externality nor an additional cost: it is a **core strategy for managing climate, social, and supply risks.** Aligning sustainability agendas with the everyday realities of coffee-producing households is essential to ensure the long-term viability of producing regions and the global coffee industry.

EVIDENCE FROM RESEARCH

Climate events and economic shocks increasingly threaten the stability of coffee supply chains in Central America. **Evidence from Honduras shows that smallholder coffee households face serious food security risks that undermine both farmer well-being and supply reliability.** Research identified three major insights for industry stakeholders:

1. Coffee dependence drives household vulnerability and supply instability

- Households highly dependent on coffee income are more food insecure compared to those who are less dependent on coffee: around two of three coffee households compromise on food quality, reduce food quantity or skip meals and are more likely to experience poverty (see figure 1).
- One of two households has no strategy to address food insecurity. Others rely only on short-term coping mechanisms such as reducing food consumption or taking on debt, measures that could ultimately push farmers out of coffee production altogether, in search of better livelihoods.
- Food insecurity is not confined to "marginal producers"; it affects certified and non-certified farmers alike, posing hidden risks to long-term supply stability.

2. Current sustainability approaches have a critical gap

- Certification schemes (e.g., Fairtrade, Rainforest Alliance) and industry sustainability programs have improved environmental and labor standards but have largely overlooked food security.

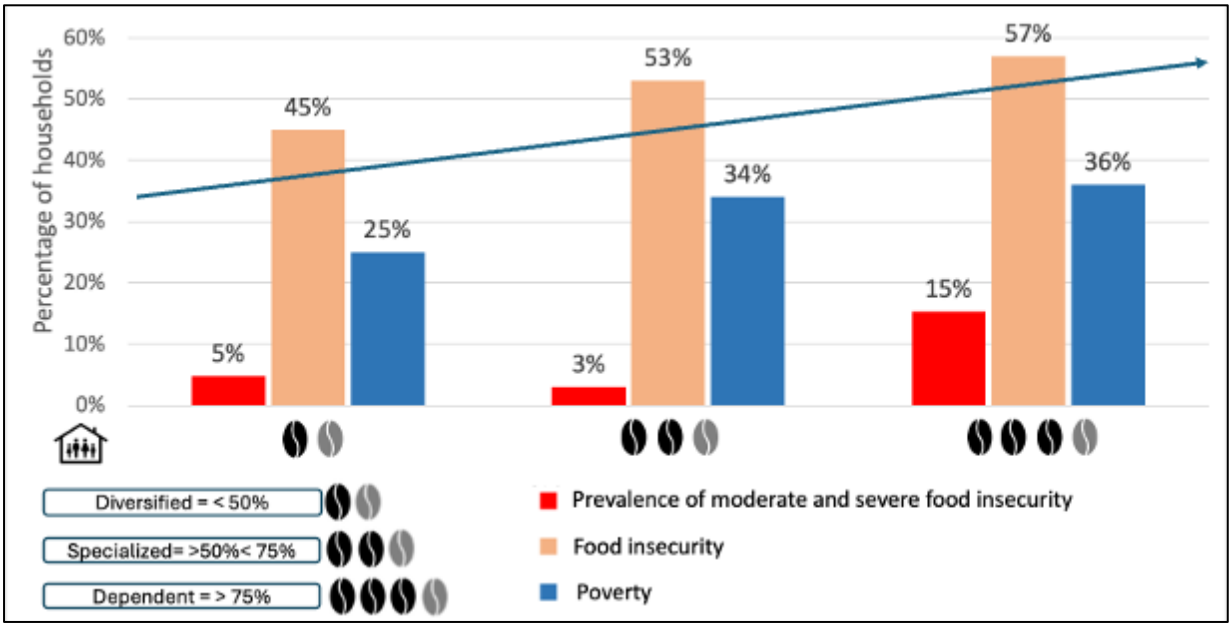

Figure 1. *Food insecurity[1] and poverty by coffee income group, Case Honduras.*

- Where programs promote "climate-smart" or regenerative practices, they often target productivity and yield, rather than diversified, food-secure farming systems.
- Evidence from coffee systems across Latin America and the Caribbean shows that many of these same practices, when designed to include household needs, can improve food availability and increase incomes (see figure 2).
- Without addressing household resilience and food access, sustainability gains remain fragile and inequitable.

3. Strengthening local food systems enhances supply chain resilience

- Local food systems are weak in many coffee regions: most food consumed in rural communities comes from outside the territory. After or during external shocks, local food production is often insufficient to supply the local consumption.
- Supporting local food production through climate-smart agriculture approaches, agroecology and/or regenerative agriculture and market linkages strengthens community resilience, reducing risk exposure for both farmers and buyers who depend on consistent supply.

IMPLICATIONS AND POLICY RECOMMENDATIONS FOR THE COFFEE INDUSTRY

Recommendation 1: Integrate food security into climate-smart agriculture, agroecology and regenerative agriculture strategies.

Implication: Roaster, traders, and certification bodies should explicitly integrate food security of coffee growing households as a central pillar

[1] ***Food insecurity*** refers to a situation where a household's access to sufficient, safe, and nutritious food is limited, leading to reductions in the quality or quantity of food consumed.
The prevalence of moderate or severe food insecurity indicates the proportion of households that report reducing meal size, skipping meals, or going without food for one or more days due to lack of resources.

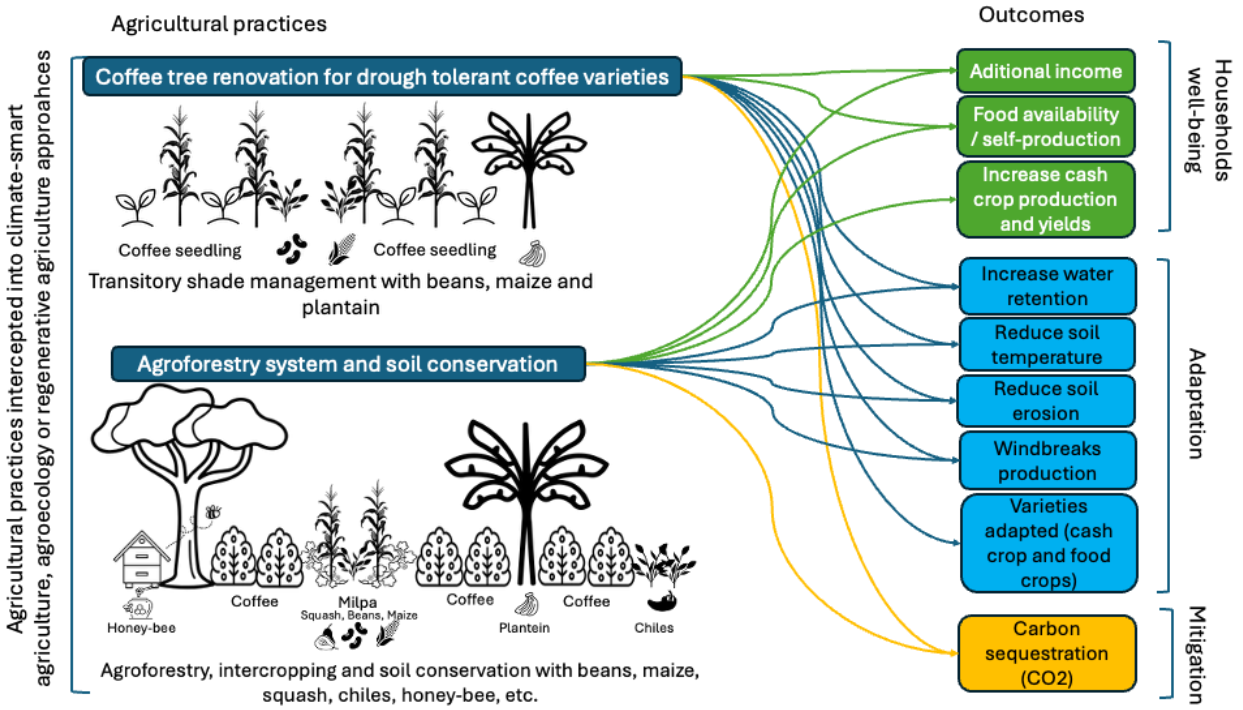

Figure 2. *Summary of the most promoted agricultural practices in coffee systems in Latin America and the Caribbean, with benefits for both coffee resilience and household well-being*

of their sustainability strategies like climate adaptation and productivity.

Key actions:

- Promote agroecological and regenerative systems that **combine coffee with food production as a dual strategy**: climate adaptation + food security, in alignment with traditional knowledge such as *milpa* [2]systems, for example by using temporary shade and ground cover with staple crops (e.g., maize, beans), vegetables (e.g., chili peppers, squash, etc.), and fruit trees according to local food preferences and agroecological contexts (see figure 3).
- Recognize **food diversification** as a **risk-reduction strategy** for the supply chain by strengthening the economic and productive stability of households.
- Adjust standards, corporate guidelines, and ESG[3] frameworks to include **food security and nutrition indicators**, beyond exclusively environmental metrics.

Rationale for the industry: Households facing chronic food insecurity have less capacity to invest in their coffee farms, are more likely to abandon production, and are less resilient to climate and price shocks. Integrating food production strengthens supply continuity and quality.

Recommendation 2: Mobilize financial incentives, inclusive business models, and technical assistance through cooperatives.

Implication: Coffee cooperatives should be strengthened as key platforms to integrate

[2] **Milpa** is an ancestral Mesoamerican polyculture farming system (maize, beans, and squash) that promotes biodiversity, improves soil fertility, and contributes to local food security.

[3] **ESG** are three pillars of corporate sustainability: a) **Environmental** refers to how the company manages natural resources and its impact on climate change and the environmental, b) **Social** covers human rights, labor conditions, diversity, inclusion, and relationships with local communities, a c) **Governance** relates to the company's structure and management, business ethics, transparency, and decision-making.

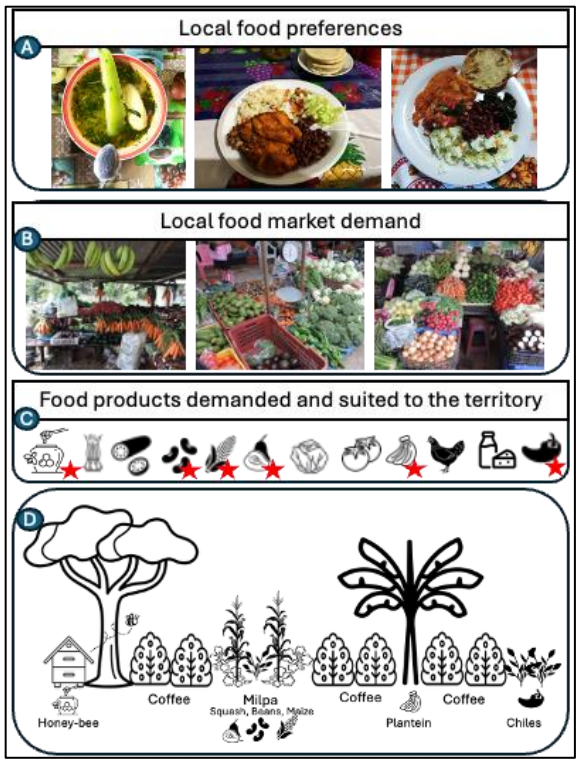

Figure 3. *Illustration of the selection of multi-purpose crops for food consumption, sale, and use as climate-resilient practices such as agroforestry, soil conservation, or temporary shade for coffee renovation: a) Identify local food preferences; b) Assess local food market needs; c) Select crops best suited to the territory (red star); and d) Agroforestry, soil management, and/or temporary shade for coffee renovation.*

coffee, food, and resilience, through financial incentives, technical assistance, and inclusive agribusiness models.

Key actions:

- Expand cooperative services beyond coffee by incorporating technical assistance in food production, staple food storage, and processing, and access to local markets.
- Support business models that generate **more stable income throughout the year**, reducing exclusive dependence on seasonal coffee income.
- Facilitate partnerships between cooperatives, local governments, NGOs, and development programs to strengthen **local food systems** in coffee-producing regions.

Rationale for the industry: Cooperatives with diversified economic bases and members with greater food security are more stable business partners, with lower risk of default, lower producer turnover, and greater capacity to meet sustainability commitments.

Recommendation 3: Implement participatory innovation systems centered on win-win between coffee household cooperatives and buyers.

Implication: Coffee sector representatives should adopt participatory innovation approaches that co-design solutions with coffee growing communities, aligning sustainability, climate adaptation and households' well-being.

Key actions:

- Move from standardized technical package delivery toward **co-designed innovation processes** with producers, incorporating local knowledge and household priorities.
- Actively involve **women and youth**, recognizing their central role in food security, farm management, and intergenerational sustainability.
- Establish continuous learning and feedback mechanisms to adjust interventions based on actual outcomes in household well-being.

Rationale for the industry: Participatory approaches increase adoption of practices, reduce implementation failures, and strengthen the legitimacy and credibility of sustainability commitments among consumers, investors, and regulators.

EVIDENCE BASE AND STAKEHOLDER VALIDATION

This policy brief is based on the author's doctoral research, funded by the Alliance of Bioversity International and CIAT and the University of Bonn.

The results were discussed and examined during 2024 and 2025 with various actors across the global coffee value chain, including exporters/importers, roasting companies (both large-scale and specialty), representatives of three certification schemes, development organizations, experts, and industry representatives in North America, Europe, and Latin America.

This dialogue process helped validate the practical relevance of the findings and ensured that the recommendations presented here respond both to scientific evidence and to current dynamics in the global coffee market.

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