The challenge: Safeguarding Nicaragua's coffee and cocoa producers against escalating climate challenges

Nicaragua is among the ten countries with the highest exposure and vulnerability to extreme weather events globally. Climate projections for 2050 and 2100, under optimistic and pessimistic scenarios, foresee an increase in the average annual temperature, a reduction in the average annual precipitation during El Niño events, and more intense extreme weather events during La Niña events.

This predicted rise in temperature threatens the production of coffee and cocoa, which account for a large part of employment in rural areas. Small-scale producers will face disproportionate impacts, affecting their income and food security. Higher temperatures accelerate the ripening of coffee cherries, which decreases the quality of the product, while lower temperatures are required for growing high-value arabica coffee. Meanwhile, variability in rainfall patterns is expected to affect the sustainability of cocoa crops by accelerating the evolution and reducing the incubation periods of harmful organisms and modifying the geographical distribution of pathogens and pests.
The innovation:
A strategy encompassing climate change adaptation, production and market access

Through innovative strategies addressing climate change adaptation, production, and market access, coffee and cocoa cooperatives in Nicaragua have been connected with private sector actors to achieve a common goal: reducing climate change vulnerability by facilitating access to markets for coffee and cocoa producers.

Certification of farms and products enabled access to coffee and cocoa markets, with a significant portion earmarked for export - only 10 per cent of the dry cocoa produced went to the local market, while 90 per cent went to Ritter Sport for export. Producer organizations played a pivotal role in translating various services into action, including financing, technical assistance, and market information, fostering a new methodology that enhances public investment and service provision.

The inclusion of ASAP's funds for climate change adaptation introduced a comprehensive strategy, focusing on water resources and territorial management, adopting agroecological practices and prioritizing agroforestry. Notably, planting shade trees – fruit, timber, musaceous, bananas and plantains – and implementing agroforestry practices improved soil health and groundwater retention and increased carbon sequestration, benefiting local biodiversity. Nicaragua's agroforestry and cropland restoration activities showed substantial impact potential. With high uptake by farmers, cropland restoration activities have the potential to reduce 118.3 thousand tonnes of greenhouse gases over a 20-year period while also enhancing productivity.

The cropland restoration activities generate one of the highest-density impact potentials in the ASAP portfolio, at 2.7 tons of CO2 equivalent sequestered per hectare per year.

Story from the field

Merling Joines (on the left) - from the local community of Manhattan - is one of NICADAPTA's project participants.

The project trained families on sustainable coffee cultivation and environment-friendly practices designed to increase family farmers’ resistance to climate change.

They also gave farmers the tools to address social issues such as gender inequality and food and nutritional insecurity.

"The training had great results," Merling says.
The facilitated collaboration among various stakeholders, including government institutions, public services were provided to coffee and cocoa producer organizations, fostering new and lasting working relationships. The project yielded positive outcomes, showcasing increased assets, better access to post-harvest and water infrastructure, heightened participation in agricultural training, and enhanced resilience to climate shocks, resulting in improved food security.

Despite facing a strong hurricane during the project, beneficiaries showcased greater resilience and food security compared to the comparison group, although infrastructure and assets alone didn't guarantee higher incomes or production. The impact assessment also highlighted benefits for women's empowerment and the inclusion of indigenous and Afro-descendant communities, underlining the project's positive social impact.

While beneficiaries perceived the intervention's duration as too short for ideal crop management, the project successfully influenced national policy for early warning and climate information for coffee and cocoa. To fully realize its potential, NICADAPTA will require further targeted capacity building and support to ensure producers achieve favorable commercial outcomes at the end of the production cycle.

The project's success lies in forging partnerships and generating transformative results beyond the communities, shaping policies and promoting sustainability in the face of climate challenges. As this initiative continues to flourish, its profound impact on communities and agricultural practices will solidify Nicaragua's path towards a resilient and prosperous future.

**Results and impacts**

- 45,155 households benefited from the project
- 36,940 families improved their asset base by at least 20%
- 25% increase in income from coffee and cocoa production in families belonging to cooperatives/associations attended by the project
- Increased the asset ownership of participating farmers by 28 per cent
- Recovery from climatic shocks increased by 26 per cent
- 27% improvement in food security

**NICADAPTA Footprint**