InsuResilience GlobalPartnership

case study 10 // 2022

Applying Seasonal Climate Forecasting and Innovative Insurance Solutions to Climate Risk Management in the Agriculture Sector in Southeast Asia

DeRisking coffee in the Central Highlands: Piloting a Coffee Climate Protection Insurance scheme to enhance the capacity of smallholders and agribusinesses in coping with climate variability and change

Angelica Barlis, Cornelis Swaans (Alliance of Bioversity International and CIAT, ABC)

Jarrod Kath, Shahbaz Mushtaq (University of Southern Queensland, USQ)

Aline Deniau (ECOM Sustainable Management Services)

This project aims to enable farmers to manage risks through a co-contribution model for coffee index insurance premiums. Climate is a significant driver for yield and quality of coffee beans, directly impacting farmers' income. If farmers generate good yield and are well prepared to deal with climate risks, this creates inherent benefits across supply-chain actors and bears testimony to the value of shared responsibility throughout the chain. Farmers are protected from adverse weather conditions and insurance encourages good farm management practices, leading to sustainable coffee production.

Country context

The Central Highlands, the top coffee-producing region faces agricultural and economic losses brought about by severe droughts experienced over the years. Reductions of up to 25 % of total production of green coffee beans were recorded during the 1997–1998 or 2010–2011 droughts. Adverse climatic events result in big financial losses to farmers and there is consequently a need to develop financial risk-management strategies to ensure farmers still earn a decent income.

In 2015–2016, the provinces of Dak Lak, Dak Nong, Gia Lai, Kon Tum, and Lam Dong were severely affected by drought. This resulted in 152,000 ha of agricultural land sustaining direct economic losses of about USD 269 million.[1] The communities in the region received support such as provision of rice and food supply, water tanks, access to low-interest credit and cash support, and seed and agricultural inputs to restore crop production.[2] However, no crop insurance was made available.

The Coffee Climate Protection Insurance (CCPI) aims to protect smallholder Robusta coffee farmers in the Central Highlands by insuring them against the financial impact of adverse weather conditions. In 2021, ECOM Sustainable Management Services (SMS) led a private-sector partnership in piloting drought and excess rainfall insurance products for Dak Lak and Lam Dong provinces. The project implemented a risk management measure by transferring climate risks from farmers to insurance markets. Given the potential benefits of adequately layered risk-transfer solutions as part of a comprehensive climate-risk management approach, the project responds to a need for insurance to protect smallholder farmers against the potential economic shocks caused by extreme weather conditions.

1 Byrareddy, et al, 2021. Coping with drought: Lesson learned from Robusta coffee growers in Vietnam. Climate Services Volume 22.

2 FAO, 2016. El Niño event in Vietnam: Agriculture, food security and livelihood needs assessment in response to drought and salt water intrusion

Project description

Co-designing products to ensure ownership is a precondition for successful implementation of an insurance pilot. This guarantees that index insurance products are tailored to the needs of beneficiaries. Working closely with ECOM and smallholder coffee producers, the project investigated the climate risks and their impact on coffee production and the supply chain. Based on an analysis of the most impactful risks, the project co-developed and tested the index insurance products to generate wider awareness complemented with willingness-to-pay (WTP) evaluation workshops and farmer surveys.

The project introduced an inclusive process by engaging farmers in insurance product design, while ensuring alignment with related policies and the overall direction of the coffee industry, as well as collaboration with research institutions for greater uptake of index insurance. The business model emphasizes the importance of incremental steps towards scaling. The CCPI scheme is being tested in three phases which are being implemented between 2021 and 2025, and cover coffee farmers against drought and extreme rainfall perils. Farmers' insurance premium for Phase 1 (2021) is fully supported by ECOM (about 100 hectares). The project is processing the experience from 2021, supplemented with WTP surveys and information on change in farmers' behaviour after taking out the insurance. Phase 2 (2022–2023) will cover about 750 hectares and will explore a co-contribution model for insurance premiums supported by the findings from WTP studies. Planned bilateral meetings with industry players like coffee roasters are taking place in 2022. Phase 3 will involve farmers, roasters and coffee traders co-financing the insurance premiums. This scheme incrementally builds farmers' capacity to pay for insurance premiums with continuous training support.

Challenges and lessons learned

One key challenge is to develop indices that will perform well and explain the coffee yield variations. Using field observation data and working closely with the coffee industry and growers, climate impacts were assessed, and indices were developed to reflect yield losses. The team has co-written several scientific papers to gain trust and credibility among the coffee industry/producers. It is also important to develop affordable and targeted insurance solutions and ground-truth with a range of stakeholders (producers, industry partners, and insurance providers).

Operationalizing a small pilot insurance scheme (worth approx. USD 150,000) and finding global reinsurance and a local insurance company was not easy. Experience revealed that many small insurance schemes failed in the past because reinsurance companies refused to provide cover. However, the presence of well-renowned project partners (Willis Towers Watson and USQ) helped to secure a global reinsurer and local insurance provider to participate in the pilot scheme.

> Farmers in Lam Dong have identified drought as an issue. However, they are aware that they have the capacity to manage drought risk by applying appropriate irrigation techniques. Farmers stated that having an insurance product for excess rainfall between July and August was more beneficial to them.

Hazards covered
Drought, Extreme Cold, Extreme Heat, Other

Product/Solution
Corporate/Institutional Risk Transfer

Topic / Theme the project addresses
Agriculture, Capacitiy Building, Climate Change & Climate Policy, Private Sector, Risk Data & Information, Climate & Disaster Risk Management

Objective of the project
Provision of index insurance solutions to assist smallholder farmers and agribusinesses across agricultural value chains linked to an enhanced understanding of extreme climate risks.

Beneficiaries
The CCPI is being implemented between 2021 and 2025 to cover about 100,000 coffee producers, upscaling to coffee regions in Vietnam (20–25 %) to protect them from drought and extreme rainfall perils.

Involved organizations/parties in the project
- Alliance of Bioversity International and International Center for Tropical Agriculture (CIAT)
- World Meteorological Organization (WMO)
- University of Southern Queensland
- ECOM Sustainable Management Services
- Willis Towers Watson
- Bao Minh Insurance Corporation

Project duration
2021–2023

■ Anticipation	□ Relief	□ Recovery	□ Reconstruction

Published by the InsuResilience Secretariat

Registered office
InsuResilience Secretariat
c/o Deutsche Gesellschaft
für Internationale Zusammenarbeit (GIZ) GmbH
Friedrich-Ebert-Allee 32+36
53113 Bonn, Germany

secretariat@insuresilience.org
www.insuresilience.org

October 2022

Project implemented by: Alliance of Bioversity International and International Center for Tropical Agriculture (CIAT), World Meteorological Organization (WMO), University of Southern Queensland, ECOM Sustainable Management Services, Willis Towers Watson, Bao Minh Insurance Corporation

Authors: Angelica Barlis, Cornelis Swaans (Alliance of Bioversity International and CIAT, ABC), Jarrod Kath, Shahbaz Mushtaq (University of Southern Queensland, USQ), Aline Deniau (ECOM Sustainable Management Services)

Design and layout: kippconcept GmbH, Bonn

Photo credit: Flickr/Alliance of Bioversity International and CIAT (Coffee and Pepper)