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“Can agroecological farming feed the world?
Farmers’ and academia’s views”

Can coffee cultivation lead to food security under a changing climate? Evidence from western Honduras

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Abstract

Central America is one of the most vulnerable areas to climatic variation. In recent years, national and international organisations are working together on climate smart agricultural practices to support coffee farmers in adapting to climate change. The understanding of coffee households’ vulnerability to climate change is limited. Unsurprisingly, there is little scientific evidence to support the suitability of adaptation strategies for coffee households.

The objective of this research is to understand stakeholders of the value chain address the food insecurity of coffee farmers under climatic stress.

We integrated quantitative and qualitative methods to identify the main climate and non-climate stressors affecting coffee farmers, and the responses of both farmers and other value chain stakeholders to these stressors. Using a household survey with 348 coffee farmers, we quantified the relationships between poverty (Poverty Probability Index - PPI) and food security (measured through Food Insecurity Experience Scales - FIES) of farmers with climate and non-climate stressors, and household characteristics through a regression and classification analysis using gradient boosting models (GBM).

We found that the poverty index increases when households depend more on coffee income. Diversified households whose income depends less in coffee have a greater chance of being food secure. The coffee households were not confident how to ensure their food security under climate variation. While most of the climate-resilience practices provided by the coffee sector are focused on improving coffee tree resilience and soil against climate variability, these strategies unattended the food insecurity situation of the coffee farmers.

Focusing efforts only on the production of a commodity such as coffee as a strategy for climate resilience not only does it undermine coffee sustainability in the medium term, but it also menaces the well-being of coffee-growing households.

Keywords: Climate resilience, coffee farmers, food security, poverty, resilience capacity