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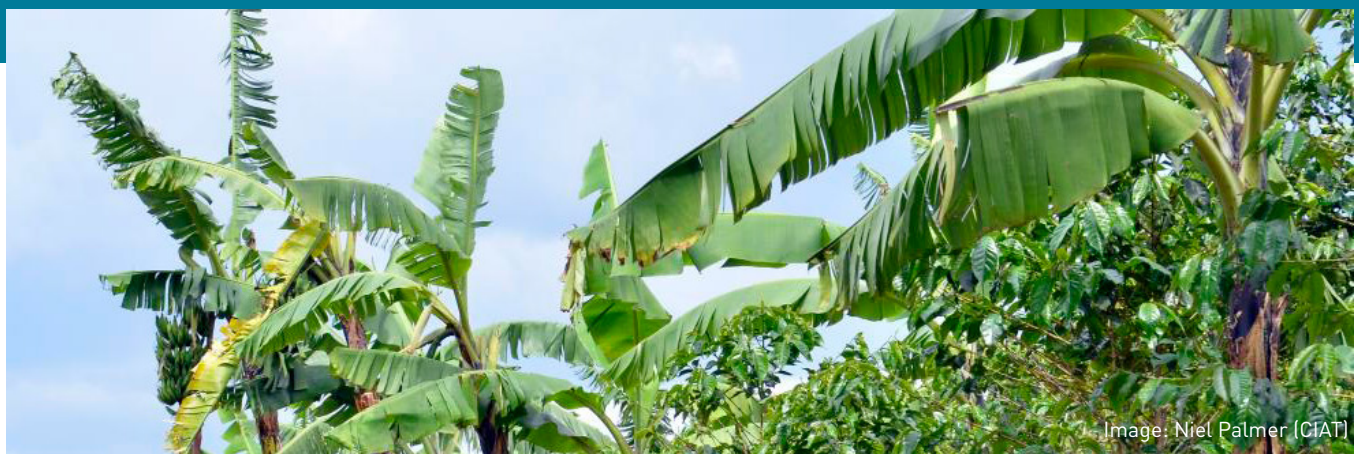
Image: Niel Palmer (CIAT)

Mercator Research Program | Call 6

Assessing the role of organic value chains in enhancing food system resilience

Background
The ability of the global food system to meet the demands of a growing population is increasingly threatened by biophysical, social, and economic shocks and stressors, including extreme weather events such as heat waves, droughts, and floods. Such shocks negatively impact all actors in food value chains from producers to processors to retailers. Organic systems perhaps offer a strategy to resist damage and quicken recovery from shocks; however, a robust evaluation and comparison of such resilience in organic versus conventional systems from a value chain perspective is currently lacking.

Objective
The main aim of this project is to assess and compare the resilience to such weather shocks of organic value chains versus their conventional counterparts. To do so, an end-to-end value chain assessment of the resilience to specific weather shocks, such as drought and heavy rain of two international value chains (cocoa in Ghana and bananas in the Dominican Republic) will be completed.

Research Approach
A transdisciplinary approach will be adopted to assess the two model systems; stakeholders will be able to participate in knowledge generation and solution design. A quantitative approach to the resilience assessment will be used, with historical and future shock scenarios defined, using remote sensing satellite data and climate projections coupled with on-farm data to calibrate process driven crop models. The socio-economic impacts on stakeholders will also be assessed and linked to recovery decisions in the aftermath of a shock using dynamic surveying techniques.

Relevance and Expected Outcomes
Using the knowledge generated from the assessments, strategies to enhance resilience will be designed in partnership with key stakeholders. Such strategies will be created through a design thinking process at process scales (e.g. producer or retailer) and also at value chain scales. The final product is then resilience mapping as well as co-designed and tested resilience enhancement measures for these two vulnerable tropical smallholder systems.

Food System Challenges Addressed
Enhancing resilience in food systems, Food security, Mitigating effects of climate change.

www.worldfoodsystem.ethz.ch/research/research-programs/MRP

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