

FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

The Feed the Future Innovation Lab for Legume Systems Research is a five-year research capacity building development program managed by Michigan State University that focuses on grain legumes in West and Southern Africa. Legumes are a nutrient-dense staple crop that have multifunctional roles in smallholder farm systems in developing countries including food and nutrition security, generating income, providing livestock feed and fodder, and contributing to the sustainability of soil systems through their nitrogen-fixing capabilities. Cowpea and common bean are the focal crops of the Legume Systems Innovation Lab.



The Legume Systems Innovation Lab goals include:



Inclusive and sustainable agriculture-led economic growth



Strengthened resilience among people and systems



A well-nourished population, especially among women & young children

The strength of the Legume Systems Innovation Lab's design lies in its innovative and vibrant research to scaling strategy using a systems approach. Supported projects are diverse in research focus and address both the development and placement of innovative technologies with a thorough understanding of the systems they will impact thus leading to successful adoption. Projects are focused in three areas of inquiry:

- Integration of legumes into sustainable smallholder farming systems and agricultural landscapes
- Integration of legumes within local and regional market systems, including trade
- Analysis of sociocultural and/or economic motivators or barriers to legume utilization at various stages and scales within production and market systems

In addition, the Legume Systems Innovation Lab will focus on opportunities that address nutrition; the unique needs of women and youth; ensure greater resilience of people and systems under stress and shocks; and contribute to the development of human and institutional capacity for a resilient agricultural innovation system. Project activities are focused in the Feed the Future target and aligned countries of Benin, Burkina Faso, Ghana, Mali, Malawi, Mozambique, Niger, Nigeria, Senegal, and Zambia.

The Legume Systems Innovation Lab is funded by USAID under the Feed the Future Initiative.

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PROJECT OVERVIEW:

Science-Driven and Farmer-Oriented Insect Pest Management for Cowpea Agro-Ecosystems in West Africa



Principal investigator/Lead institution
Dr. Manuele Tamò, International Institute of Tropical
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Collaborating institutions

- Michigan State University, U.S.
- Institut de l'Environnement et de Recherches Agricoles (INERA), Burkina Faso
- Institut National de la Recherche Agronomique du Niger (INRAN), Niger
- University of Maradi (UM), Niger
- Kwara State University (KWASU), Ilorin, Nigeria

Project Overview

Cowpea is one of the most important grain legumes in West Africa, but its production remains threatened by insect pest which can severely reduce grain yields.

To minimize their impact in cowpea cropping systems in Burkina Faso, Niger and Nigeria and redress yields, in this project we propose to develop and deploy climate-resilient, environmentally friendly, and economically profitable integrated pest management approaches and tools - easily implementable by women and men farmers. Among them, biological control agents and neem-based bio-pesticides are currently being scaled out for impact at pilot farms.

The community-based production of bio-pesticides will mostly rely on women and youth groups thereby improving their livelihoods through additional income.

Our pest control approach without chemical insecticides using both parasitic wasps as biocontrol agents and the seeds from the Neem tree will benefit women cowpea farmers who have much less access to conventional pesticides and be particularly attractive to the youth as a sustainable approach.

Additionally, the reduction of pesticides has a significant potential to improve the health of women in areas where women are the ones that tend the cowpea fields – due to reduced exposure to pesticides.

In our farmer capacity building and educational approaches, we will make every effort to develop effective deployment strategies for women and youth, such that they have increased access to improved strategies for safe and sustainable cowpeas pest management.

This project works in Burkina Faso, Niger, and Nigeria.