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FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

February 2023



The Feed the Future Innovation Lab for Legume Systems Research fosters dynamic, profitable, and environmentally sustainable approaches that contribute to resilience, productivity, and better nutrition and economic opportunities. The lab is managed by Michigan State University.

From the Management Office

Highlights from the Legume Systems Innovation Lab Global Convening in Livingstone, Zambia



The Feed the Future Innovation Lab for Legume Systems Research hosted over 120 participants during *Global Convening 2023*, which was held February 20-24 in

Livingstone, Zambia.

The annual event provides global legume researchers and stakeholders an opportunity share project updates and engage in strategic conversations about the future of legume systems research.

During a gala awards dinner, several researchers were recognized by the Legume Systems Innovation Lab's Technical Management Advisory Committee (TMAC) for outstanding work in global legume systems research.

Recognized with the Meritorious Achievement Award was Dr. Bao-Lam Huynh of the University of California, Riverside.

The Early Career Grain Legume Scientist Award was presented to both Dr. Michael Olabisi from Michigan State University and Dr. Mamadou Sissoko from the Université des Sciences Sociales et de Gestion de Bamako in Mali.

The TMAC also presented the Meritorious Achievement Team Award to the project titled, "*Genetic Improvement of Dry Beans for Bruchid Resistance for Southern Africa*," led by Dr. Juan Osorno from North Dakota State University. The project also works with University of Zambia, Dept. of Agricultural Research and Technical Services (DARTS) in Malawi, the Instituto de Investigação Agrária de Mozambique (IIAM) in Mozambique, and the University of Nebraska.

Pictured below are the winners alongside TMAC members Robin Buruchara, Joyce Mulila-Mitti, Legume Lab Deputy Director John Medendorp, and Legume Lab Director Barry Pittendrigh.



Dr. Bao-Lam Huynh, University of California, Riverside receiving the Meritorious Achievement Researcher Award



Dr. Juan Osorno, North Dakota State University and team receiving the Meritorious Achievement Team Award



Dr. Michael Olabisi, Michigan State University receiving the Early Career Grain Legume Scientist Award



Dr. Mamadou Sissoko, Université des Sciences Sociales et de Gestion de Bamako - Mali receiving the Early Career Grain Legume Scientist Award

In the Field

New Project Designed to Transform the Nepal Lentil Sector

The Feed the Future Innovation Lab for Legume Systems Research recently launched a new project designed to transform the Nepal lentil sector. The project is supported through funding provided by USAID Nepal.

Lentil is an important crop in Nepal for nutrition, soil health, and as both a staple and export commodity. However, crop yields have become stagnant with the low productivity attributed mainly to stressed environmental conditions and agronomic practices. Lentil produces compete with imports as large legume processors prefer imported lentil due to cost and uniformity. Lentils occupy 60% of the total grain legume area and production in Nepal, making the country the sixth largest producer and fifth largest exporter of lentils. Given that lentil demand has expanded 6.2% over the past ten years, it is estimated that Nepal's revenue from lentil export could double or even triple if relevant actions are taken to boost cultivated area, productivity, and market integration.

Nepal lentil is among the most nutrient dense in the world however many of these nutritionally rich varieties do not possess the stress and disease tolerant traits for higher yield potentials. Research indicates that the average age of commercialized lentil varieties is 27 years and that 85% of small holder farmers use seed that is decades old. One goal of the project is to identify varieties that are stress resistant, nutritionally biofortified, high yielding, and consumer preferred and provide strategies for farmer variety adoption.

The project will also identify low-cost, low-barrier easily adjustable farming practice solutions and deployment strategies that are expected to lead to increased yields, decreased pest and disease damage, and reduction of post-harvest loss. The solutions will be delivered through a “curriculum” for lentil farming developed in conjunction with national agricultural extension agencies. These best practices will be deconstructed into easy-to-follow steps and visualized in animations created by Scientific Animations Without Borders (SAWBO). Scientific Animations Without Borders (SAWBO) is a Purdue university-based program that transforms extension information into 2D, 2.5D and 3D animations, which are then voice overlaid into a diversity of languages.

Approximately 10 videos will be created or adapted from the existing SAWBO library to address such topics as agronomy, integrated pest and disease management, processing, and post-harvest loss. The animations which will be available in multiple language variants will be disseminated through social media platforms and a network of all value chain actors and their networks. The videos are projected to reach approximately 670,000 farmers.

A closer look into the Nepal lentil seed and market systems will also identify bottlenecks and weak points from seed/variety availability from the producer level all the way through to legume market and export. A special focus will be made on the variety nutritional panels and potential advantage for nutrition fortified varieties, especially taking advantage of the increase presence of selenium in the lentil of Nepal. Multi-variety trials will be conducted to ensure selected varieties respond to localized trait and preference requirements.

To address these issues the project will organize two or three multi-stakeholder platforms (MSP). MSPs provide “spaces” for learning and knowledge exchange where various stakeholders come together to diagnose their challenges and identify opportunities to address them that are mutually benefiting. The project will build upon existing networks to organize the MSPs.

A focus of the project is to address the capacity development of women. Due to the feminization of agriculture in Nepal, since 2016 women have made up more than 50% of the agricultural workforce. The project will be gender responsive and engage with gender specialist to facilitate the inclusion across all activities with a special emphasis on women’s access to seed.

USAID/Nepal’s development goal is a more self-reliant, prosperous, and inclusive Nepal that delivers improved democratic governance and health and education outcomes. More specifically, this project addresses the four strategies USAID/Nepal has identified for obtaining this goal. The strategies are to engage the private sector in agricultural value chains, promote value chain growth and diversification, increase incomes, and enhance food security. This is being achieved by focusing on five value chains, namely, vegetables, rice, maize, lentils, and goats.



The project will focus on capacity development of women and be gender responsive across all project activities.

Featured Legume of the Month

COMMON BEAN



Common bean, as all legumes, are a nutritious and healthy diet addition. They have high protein content and generous amounts of fiber.

A single one cup serving provides at least half of the U.S. Department of Agriculture's recommended daily allowance for folic acid, which is particularly important for pregnant women. Common bean also supplies 25-30 percent of the recommended levels of iron and 25 percent of magnesium.

Common beans are grown worldwide and are important in global food security.

Cooking with Common Bean...

Vegan Green Bean Casserole with Creamy Chickpea Sauce

Common green beans are very versatile as side and main dishes. We love this vegan recipe from [Pulses.org](https://pulses.org) that combines green common bean and chickpeas.

The green beans and chickpeas are combined with onions, garlic, salt, pepper, rosemary, and balsamic vinegar. The casserole is baked and topped with hazelnuts. Give it a try for a meatless Monday!



[Get recipe here](#)

For More Information on the Feed the Future Innovation Lab for Legume Systems Research

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