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FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

January 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

Legume Lab to Host Researchers at Global Convening in Zambia



The Feed the Future Innovation Lab for Legume Systems Research is preparing to host over 100 participants during *Global Convening 2023*, which will be held as an in-person event in Livingstone, Zambia February 21-24.



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. After two years of holding the event virtually, the Legume Systems Innovation Lab is looking forward to in-person interaction.

Look for highlights of the event next month in the February newsletter.

GLOBAL VIRTUAL CONVENING 2022

Over 100 global legume researchers and stakeholders attended the two-day public forum virtual event in March of 2022 which featured Legume Systems Innovation Lab project research updates.

Each month in this newsletter we have been highlighting the video recording from one of our projects.

This month, as we prepare for Global Convening 2023, we feature presentations from the remaining three projects not yet highlighted.

"Improving Incomes and Nutrition Security Development and Commercialization of Consumer Preferred Processed Legume-Based Products in Malawi and Zambia" is led by Dr. Robert Fungo, Alliance of Bioversity International and CIAT. The project works in Malawi and Zambia.

"Transforming Seed Systems to Respond to Bean Variety Demand Through Multi-Stakeholder Platforms in Malawi" is led by Dr. Jean Claude Rubyogo, Alliance of Bioversity International and CIAT. The project works in Malawi.

"Cowpea Atlas: Mapping Cowpea Data Sources and Gaps in West Africa" is led by Dr. Ousmane Coulibaly, CERAAS/ISRA. The project works in Benin, Nigeria, Niger, and Senegal.

Click on the images below to view the presentations on YouTube.

Next month we will share highlights from our 2023 Global Convening to be held in Livingstone, Zambia. Read more about the 2023 event in the article above.

Improving incomes and nutrition security through development and commercialization of consumer preferred processed legume-based products in Malawi and Zambia

Global Convening March 2022



Multi-stakeholder Platforms Project: Transforming seed systems to respond to bean variety demand through multi-stakeholder platforms in Malawi

Global Convening March 2022



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Innovation Lab for Legume Systems Research

Cowpea Atlas Project

Phase I. Mapping Cowpea Data Sources and Gaps in West Africa (Benin, Niger, Nigeria, Senegal)

Progress report

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In the Field

Empowering Sustainable Solutions: Changing the Narrative Through Capacity Development

Kelvin Kamfwa grew up in a small-scale farming family in rural Zambia. As a youth he would often go into his family's cassava field and be discouraged by pests and diseases ravishing the field.

“It used to bother me, because that had serious repercussions, that you are not self-sufficient in terms of food for the rest of the year,” shares Kelvin. “I thought there must be a way to change this narrative.”

And change the narrative, Kelvin did. Determined to be a changemaker, Kamfwa earned his Bachelor of Science in Agricultural Sciences from the University of Zambia (UNZA). He continued his studies at Makerere University in Uganda where he earned a master's degree. He then returned to UNZA where he lectured on crop science, his first step in making a difference in the lives of his fellow Zambians.

Knowing he had more to give, Kelvin once again left Zambia to pursue his Ph.D. in Plant Breeding, Genetics and Biotechnology at Michigan State University (MSU). His program was supported through the Feed the Future Innovation Lab for Collaborative Research on Grain Legumes, which also managed legume research in Zambia.

“My goal at MSU was to receive my Ph.D. in plant breeding and genetics so I could take those skills back to the people in Zambia,” says Kamfwa. “I wanted to make a career as a bean breeder. There is a need to increase the food production in my country.”

Today, Dr. Kelvin Kamfwa is a faculty plant breeder at UNZA. Through the Feed the Future Innovation Lab for Legume Systems Research project, *Genetic Improvement of Dry Beans for Bruchid Resistance for Southern Africa*, Kelvin collaborates with researchers from North Dakota State University (NDSU) to develop and introduce weevil resistant common bean varieties for Zambian farmers.

He also continues to support his community not only through his bean breeding research, but also through his commitment to develop the next generation of bean breeders. Kelvin currently mentors four students that are supported by the Legume Systems Innovation Lab project. Three students are working towards their master’s degree at UNZA and one student from UNZA is working towards her Ph.D. at NDSU.



Kelvin Kamfwa pictured in the field on the campus of Michigan State University.



Bean bruchids bore holes into the beans, while the bruchid resistant beans pictured center are free of bruchid damage.

Bean weevils are a post-harvest pest responsible for over 48% losses in quality and quantity of common bean in storage. The UNZA Bean Breeding Program has developed multiple breeding populations for resistance to common bean weevil. Additionally, some of these breeding populations also have shown resistance to other economically-important pests and diseases, such as aphids, and are low soil fertility tolerant.

Kamfwa understands that breeders can not only develop a new or enhanced product, but they must develop one that is desirable and meets the needs of the community. In response, he and his colleagues have introduced gender-responsive tools into bean breeding. He shares this innovative approach as he works with early career researchers and students.

These activities will have direct economic impacts in the region not only by offering a new product that can be stored for longer periods of time without losing quality, but also by allowing households to store beans they can eat safely.

While Kelvin's ambition to seek solutions to the crop pests and diseases that plagued his childhood family farm has larger been realized, his continuing dedication to training future Zambian breeders will likely cast an even wider net for food security in Zambia.

In the News

Senegalese Researcher Visits Legume Lab Office



Aliou Diagne, pictured second from right, poses with MSU Ph.D. candidate and Legume Lab researcher Hanna Carlson (R), David DeYoung, Legume Lab Program Manager (L back), and MSU AFRE and Legume Lab researcher Veronique Theriault (L front).

The Legume Systems Innovation Lab management team at Michigan State University (MSU) recently welcomed researcher Aliou Diagne, visiting from Senegal. Dr. Diagne currently works on the Legume Lab project, **"Quantifying the Scope and Scale of Nutritious Cowpea Products in Local Markets"** led

by Veronique Theriault from MSU. The project, which works in Senegal and Mali aims to identify incentives for expanding the array of nutritious cowpea-based products sold in local markets, especially by small-scale women enterprises. Value-added cowpea-based products can provide more market opportunity for farmers while providing nutritious food options.

Aliou Diagne, Senegalese researcher with over 25 years of experience across sub-Saharan Africa. His research concentrates on agricultural development issues in sub-Saharan Africa including agricultural policies, value chains development, impact evaluation, technology adoption, microfinance and poverty analysis. Aliou graduated in 1994 from Michigan State University with a dual Ph.D. in Agricultural Economics and in Economics. Aliou has won numerous awards including AfricaRice Distinguished Service Award for Outstanding Service and Contribution to the Africa Rice Center (2014). He has served as associate editor for the journals: Food Security (2009 – 2015) and The African Journal of Agricultural and Resource Economics (2005 – 2012). He was also a member of the Scientific Committee of the National Fund for Agricultural Research and Innovation for Development (FONRID) of Burkina Faso (2012 to 2018).

Diagne is also committed to training the next generation of researchers. He currently mentors MSU Ph.D. student, Hanna Carlson who is a part of the Legume Lab supported project team. Hanna was awarded the Glenn & Sandy Johnson Fellowship from the MSU Department of Agricultural, Food, and Resource Economics (AFRE), which supports the visit of Dr. Diagne to mentor her on the research for one of her dissertation essays. While at MSU, Aliou will also lead a research seminar for AFRE.

Featured Legume of the Month

COWPEA



Cowpea, also commonly known as black-eyed pea is an important source of affordable protein worldwide.

One cup of cooked cowpea is 198 calories and provides 13 grams of protein. The legume is also high in dietary fiber, iron, and magnesium.

Cowpea is resilient to drought prone climates and can be grown in marginal environments making it an important food and fodder crop in sub-saharan Africa.

Cooking with Cowpea...

Tapalapa Bread

Cowpea flour is a featured ingredient in tapalapa, a popular West African bread.

We found this recipe for tapalapa at www.196flavors.com. The recipe notes that, *tapalapa is made from a mixture of wheat and millet flour, to which is added maize flour, as well as cowpea flour. It resembles the French baguette from the outside but is somewhat different. It is heavy and dense with a crust and a taste that is reminiscent of the inside of soft pretzels.*



We look forward to giving it a try and hope you will too!

[Get recipe here](#)

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

[Visit our website](#)



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