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FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

April 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 Systems Innovation Lab Brings Together Nepal's Lentil Value Chain to Explore How Multi-Stakeholder Platforms Can Transform the Sector

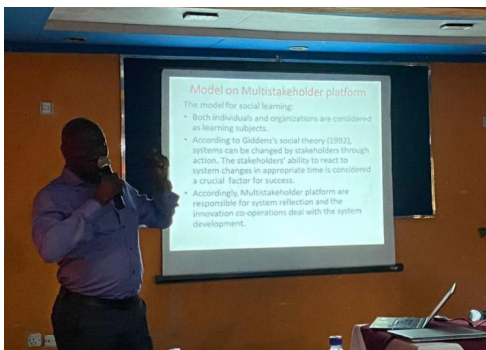
The Feed the Future Innovation Lab for Legume Systems Research recently held three regional lentil value chain stakeholder workshops in Nepal. The purpose of these workshops was for attendees to understand what multi-stakeholder platforms (MSPs) are and to decide if they are needed for Lentil in Nepal, and if so, to begin developing plans to form a MSP in their province.

"By connecting value chain actors, farmers should receive better prices and processors should obtain the quantity and quality of grain demanded. Also, the

diverse actors will collectively explain to policy makers why current policies impacting the lentil value chain should be changed and previous reactionary policies should not be repeated," explains David DeYoung, Legume Systems Innovation Lab Program Manager. "The diverse stakeholders represented at the meeting all agreed on the need for establishing a MSP and an interim committee was formed to convene the next meeting, identify priorities, and plan next steps for MSPs."

Lentils occupy 60% of the total grain legume area and production in Nepal, making Nepal the sixth largest producer and the 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.

Workshops were held in the Nepalese cities of Dhangadi, Nepalgunj, and Bardibas which represent the main growing regions of the country. The project is supported by the USAID Nepal Mission.



Eliud Barachi researcher with Alliance Bioversity and CIAT explains how multi-stakeholder platforms work and impact the bean sector in Malawi.



Participants ask questions during the two-day event held in Dhangadi. The workshops were funded by USAID Nepal mission and will help identify weaknesses in the lentil value chain and potential solutions.



Attendees of the multi-stakeholder platform workshop in engage in interactive discussions on the Nepal lentil sector.

In the Field

Exploring the Potential of Bean-Based Products through Public-Private Partnerships and Multi-Stakeholder Platforms in Malawi and Zambia

by Justice Munthali, Robert Fungo, Smith Nkhata, Vincent Nyau, Mwiinga Muluube, Kennedy Muimui, Virginia Chisale, Patricia Onyango, Janet Fierro, Mark Thompson, Fannie Gondwe, Mesther Juwa, Mwai Kukada, Winani Chiwowo and Jean Claude Rubyogo

Malawi and Zambia have shared history and culture, including diet patterns. In terms of common beans consumption, people in both countries consume the beans, mostly as relish, by boiling the beans (fresh or dry) and eating it alongside a starchy paste known as nsima, usually made from maize. Beyond mere boiling and at times seasoning, minimal value-addition exists locally resulting in fewer varieties of bean-based products on the markets.

Recent findings from a study about improving quality and safety of bean-based products through market-led and multi-stakeholder models in Malawi and Zambia, found that adding value to beans through processing has potential to improve consumption and utilization. Further, from the same study, comparatively, Zambia was observed to have a wider variety of bean-based processed foods, including dried precooked, frozen precooked and blended

flours. In addition, Zambia was found to have more traded volumes of bean-based food products in regular markets than Malawi.

The study is part of the Feed the Future Innovation Lab for Legume Systems Research project titled **“Improving incomes and nutrition security through development and commercialization of consumer preferred processed legume-based products in Malawi and Zambia.”**

Enhancing consumption of beans in the diet is beneficial in the two countries as they are affordable, easy to grow, locally acceptable and highly nutritious. Despite the numerous benefits of bean-based foods, they have not yet reached their full potential. A few selected processors have managed to get their bean-processed products, majorly precooked beans, on the shelves of supermarkets in Malawi and Zambia.

In Malawi, Sun Fresh Africa is a female and youth owned start-up which has managed to expand her products into the South African supermarket chain Shoprite. In Zambia, Don Products and Trinity Super Foods have also mainstreamed their precooked bean products in Shoprite and Games supermarkets.

However, the supermarkets in the two countries are still generally flooded with imported processed products like canned beans. In addition, many challenges have crippled the bean-based products industry, including lack of infrastructure and support for the production and commercialization of these products; inadequate investment in product development resulting in limited diversity; lack of market intelligence information in terms of demand, willingness to pay and preferences; and inadequate awareness about the processed bean-based products.



Supa Beans are from Don Products based in Lusaka, Malawi based Lusaka-based company Zambia offers both precooked red Trinity Super Foods and white beans in shelf stable frozen precooked beans who offers beans pouches that can be quickly that are fully cooked and packaged in sealed reheated. These offer consumers a can be easily reheated by pouches. This product quick and convenient way to busy consumers looking reduces the cooking

time of beans to just 10 minutes. incorporate high protein beans into busy family schedules. for a quick and nutritious meal option.

The Legume Lab project is geared to address most bottlenecks pinpointed above. The research-based project takes the market-oriented approach to provide market information on the demand of value-added legume-based products, strengthen linkages amongst stakeholders, test promising products and processing technologies, and catalyze commercialization.

The project lays the groundwork for commercialization of legume-based processed products in Malawi and Zambia by improving understanding of demand for these products. Further, the multi-stakeholder nature of the project enables engagement with critical stakeholders, such as the national bureau of standards, who play a key role in enhancing the capacity building of processors in food safety, processing, and certification.

In addition, the safety and health benefits of bean-based foods and their demand and acceptability are being tested and improved through the project. Thirteen bean-based prototypes were developed and tested, all of which received above average sensory scores in panelist tasting evaluations. The positive results indicate that these products have potential for market acceptability. Two processors, one in Malawi and one Zambia, were selected for further optimization of the prototypes. The processors, along with project supported university students are optimizing the processing procedures necessary to develop shelf-stable legume-based products of these prototypes. These procedures include: optimal ingredient formulation; process flow; process conditions; consumer acceptability; cost of production; food safety; volume of production; nutrient content; shelf stability and regulatory conformation following the product development ladder.

As a result of this project we will have a diverse range of bean-based products giving consumers a variety of safe and nutritious products to choose from. The development and commercialization of bean-based products also has the potential to create income for micro, small and medium enterprises, as well as smallholder farmers in these countries. In addition, the increased demand for bean-based products will stimulate the growth of local processing industries, thereby, creating more jobs and further contributing to economic growth. Furthermore, most products are gender and environmental friendly with their linkages to saving time and energy.

In conclusion, with the right support and investment, the market for these products could expand even further, leading to a brighter future for these countries and their people.

Featured Legume of the Month

CHICKPEAS



April 22 is National Chickpea Day in the U.S. Here at the Legume Lab we think chickpeas should be celebrated more than just once a year!

Chickpeas, also known as garbanzo beans, are a great protein source providing 39 grams of protein per cup! A one cup serving also provides needed fiber and 50% of potassium of the USDA's recommended daily allowance of this nutrient.

Given their high protein content, chickpeas provide a great choice for vegetarian and vegan diets. They are versatile and easy to incorporate into a variety of recipes from snacks to main courses.

Cooking with Chickpeas...

Chickpea Museli Matcha Squares

Traditional muesli, or *museli* as it is called in this recipe, combines oats with a variety of seeds, dried fruits, and spices then bakes them til crunchy. It is often enjoyed for breakfast or as a healthy snack.



Chickpea Museli Matcha Squares

incorporate pumpkin, sunflower, and chia seeds with coconut, dried fruit, matcha powder, salt, and cinnamon into rolled oats.

The mixture is then baked after which, combined with canned chickpeas, almond butter, brown rice syrup, honey, and coconut oil. The mixture is then frozen til firm.

The final result is a crunchy and satisfying protein packed snack great after a workout or sports.

[Get recipe here](#)

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Feed the Future Innovation Lab for Legume Systems Research**

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