FEED THE FUTURE ALL-IN PROJECT IN BRIEF

DIGITAL INNOVATIONS TO IMPROVE MARKET ACCESS FOR HORTICULTURAL PRODUCE IN MALAWI

Horticulture is a major source of income and nutrition for many households in Malawi. However, horticultural markets are fragmented and uncoordinated, and many small-scale farmers also have limited know-how to produce high-quality crops. This ALL-IN project addresses these challenges with information and communications technology (ICT) interventions that create a virtual marketplace to connect horticultural sellers to buyers and a platform that provides agricultural extension services to farmers remotely. These innovations could resolve key barriers restraining small-scale horticultural producers, particularly women, from accessing markets and sustaining resilient livelihoods.

Lead Principal Investigator
Robertson Khataza, Lilongwe University of Agriculture and Natural Resources

Project Partners
Indian School of Business; University of California, Santa Cruz; World Bank

Development Innovation
Digital innovations to match demand and supply in horticultural trade

Commodity
Horticultural produce

Targeted Population
Smallholder farmers and market vendors

Country/Location
Malawi

Timeline
2021-2023

Funding
$350,858 (USAID)

The Challenge

Horticultural crops, which consist of vegetables and other agricultural produce that are not considered staples like maize or rice, can provide an important source of income for small-scale farmers as well as local traders. However, selling horticultural products can be challenging because of requirements for quality and the high risk of spoilage.

In Malawi, small-scale horticulture producers often incur high costs of transporting their products to local markets but also face a risk of not selling all the produce. At the same time, vendors struggle to establish a consistent supply, sometimes having too much to sell, which leads to lower prices or spoilage, and sometimes having too little, which leads to losing potential sales.

Another factor that limits the sale of horticultural products is quality. Most small-scale farmers do not have the know-how on good cultivation and post-harvest practices required to produce products that will readily sell on the open market. Agricultural extension services could help farmers to build this knowledge, but in Malawi those services are limited. According to a 2017 report by IFPRI and USAID,[1] Malawi has about 2,500 farmers assigned to each extension officer,

RESEARCH INNOVATION

Markets in developing countries are characterized by poor spatial integration, and are further hampered by limited information on both sides of the market.[1] The household loss in revenue from stockouts and spoilage taken together ranges between $14 and $23 a month, a substantial sum given that poor households' average incomes of below $1.50 a day.[2]

This ALL-IN project's ICT-based innovations may alleviate these information frictions. In the app, farmers with produce to sell can advertise by sending a series of simple text messages, reducing their transaction and search costs. Similarly, vendors can advertise demand. On this digital marketing platform, buyers and sellers can share market information that includes location, commodity quality, volume and price exclusively through the app. The virtual market trading app is similar to an app developed by one of the PIs in prior work, which was used to match employers and workers for casual farm work in rural Tanzania.[3]

[1] Aker, J. 2010. "Information from markets near and far: Mobile phones and agricultural markets in Niger." *American Economic Journal: Applied Economics.*
[2] Aggarwal, S., et al. 2020. "Did COVID-19 Market Disruptions Disrupt Food Security? Evidence from Households in Rural Liberia and Malawi." NBER.
[3] Jeong, D. 2020. "Creating (Digital) Labor Markets in Rural Tanzania." Working Paper.

a number that is far higher than other countries in the region.

Research Design

An ALL-IN research team led by Lilongwe University of Agriculture and Natural Resources is implementing information communications technology (ICT) interventions in Malawi that coordinate local horticulture markets and support small-scale farmers in producing high-quality products for sale. The first is a virtual marketplace in the form of a cell phone-based app to connect buyers and sellers. The second is an interactive voice response (IVR)-based agricultural extension hotline that farmers can call from their cell phones to access advisory services and improve the quality of their produce.

The research team is implementing these two interventions as a randomized controlled trial (RCT) in order to measure their true impacts by comparing outcomes for farmers and vendors in markets that receive the virtual market app and extension hotline to similar farmers and vendors in markets that don't.

The project takes place in 150 market centers throughout Malawi. The team is measuring outcomes in a number of different areas for both farmers and vendors, including agricultural yields, revenues and profits, use of mobile money, rates of spoilage and other measures that indicate better-integrated markets. The project includes a total of 1,200 vendors and farmers.

The intervention is designed to impact all crops with a particular focus on vegetables, since barriers to trading vegetables are more severe due to their perishability. There are two main vegetable seasons in Malawi, one occurring from December to April and a second during the dry months from May to November. Prior to the beginning of the vegetable season, the research teams are conducting meetings with groups of vendors as well as village meetings with farmers. In these meetings, the virtual marketplace app is introduced, and people will be given a chance to experiment with its functionality.

Development Impact

These paired ICT interventions could show potential to provide wide benefits across local horticulture markets in Malawi. For farmers, they could reduce transaction costs and facilitate sales, increasing profits and reducing spoilage. For vendors, these interventions could increase access to high-quality produce while improving inventory management, both of which can increase sales and profits.

This project aligns with The Feed the Future Multi-Year Strategy for Malawi and Malawi Government plans that focus on reducing poverty and under-nutrition. Supporting entrepreneurship and sustainably achieving food and nutrition security are among the Malawi Government's policy goals pursued through the Malawi Growth and Development Strategy (MGDS). The project also aligns with the USAID Country Development Cooperation Strategy for Malawi by supporting resilient households, communities and systems to manage and reduce vulnerabilities (IR 3.1) as well as an enabling environment for wealth creation (IR 3.3).

The project also explicitly focuses on the inclusive and transformative gender approach, which seeks to promote economic empowerment among women by improving their entrepreneurial knowledge through the use of smart technologies. Women farmers in Malawi are actively involved in food-commodity trade, especially in the selling of vegetables and fruits in local markets.

[1] Cai, T., et al. 2017. "Malawi: Desk Study of Extension and Advisory Services - Developing Local Extension Capacity (DLEC) Project." USAID/IFPRI.

FEED THE FUTURE ADVANCING LOCAL LEADERSHIP & INNOVATION NETWORKS (ALL-IN)

This research is funded by the Feed the Future Advancing Local Leadership & Innovation Networks (ALL-IN) initiative, an innovative collaboration between the Kenya-based think tank International Centre for Evaluation and Development (ICED) and the U.S.-based Feed the Future Innovation Lab for Markets, Risk & Resilience at the University of California at Davis.

Launched in 2020, ALL-IN advances host-country leadership in defining and implementing research projects and to deepen host-country networks. The initiative funds research to develop and test financial and market innovations that take the most promising agricultural tools for rural families in developing economies from the lab to the field.

Historically, Feed the Future Innovation Labs have built their research programs on partnerships between researchers at U.S. universities and researchers at host-country universities and institutions. Historically, these partnerships have been led, in both program administration and the ideas that drive the research, from the U.S. ALL-IN shifts this leadership role to researchers and institutions in Africa.

ALL-IN builds on research capacity in African countries by inverting the traditional model of research collaborations led from U.S. universities. With funding through ALL-IN, researchers at African institutions lead these collaborations, defining research priorities and leveraging their local knowledge, skills and ideas to build actionable evidence for effective policy with U.S. university research partners to supplement their own skills, talents and ideas. ALL IN also addresses capacity gaps among many research institutions in managing large and complex awards.

Learn more at www.iced-eval.org/all-in/

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID) cooperative agreement 7200AA19LE00004. The contents are the responsibility of the Feed the Future Innovation Lab for Markets, Risk and Resilience and do not necessarily reflect the views of USAID or the United States Government.

ABOUT FEED THE FUTURE

As the U.S. Government's global hunger and food security initiative, Feed the Future works to give families and communities in some of the world's poorest countries the freedom and opportunity to lift themselves out of food insecurity and malnutrition. By equipping people with the knowledge and tools they need to feed themselves, Feed the Future addresses the root causes of poverty and hunger, helping people end their reliance on aid and creating important opportunities for a new generation of young people—all while building a more stable world.