



FEED ^{THE} FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

ADVANCING THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
GLOBAL HUNGER AND FOOD SECURITY INITIATIVE

Feed the Future Innovation Lab for Horticulture



Our global research network works with and promotes local leadership to advance horticulture and social innovations, empowering small-scale producers to earn more income while better nourishing their communities.



USAID
FROM THE AMERICAN PEOPLE

**HORTICULTURE
INNOVATION LAB**

UC DAVIS
UNIVERSITY OF CALIFORNIA



OUR WORK ALONG THE HORTICULTURE VALUE CHAIN

Collaborating across borders for research

Feed the Future Innovation Lab for Horticulture, also known as the Horticulture Innovation Lab, is one of over 20 Feed the Future Innovation Labs that leverage U.S. university research to advance agricultural science and reduce poverty. The University of California, Davis currently leads two of the nation's Feed the Future Innovation Labs, each funded by the U.S. Agency for International Development.

Since 2009

The Horticulture Innovation Lab has supported collaborations involving more than 200 organizations and universities on projects for small-scale producers around the world.

We have invested \$55 million in agricultural research; training more than 38,000 individuals in 30 countries, including over 14,000 farmers who improved their farming practices, and ultimately, enhanced their livelihoods and the resilience of their community.

All research projects span the horticultural value chain, with the majority being locally led by organizations within four focus-regions in Africa, Asia and Central America, aligning with the U.S. Government's Feed the Future global hunger and food security initiative.

Our Priorities

- Local leadership
- Increasing access to and consumption of nutritious foods

- Equity and inclusion in research, including women, youth, and other marginalized groups
- Holistic systems work across regional value chains
- Supporting fruit and vegetable food systems with potential to improve livelihoods
- Engagement with Minority Serving Institutions

Our Projects

Critical Engagement

These focused research projects are of value to all four regions we work in. The lessons learned in these two targeted projects will be distributed and shared for incorporation into all of the regional projects and include:

- Engaging and understanding informal mid-stream actors in the horticulture sector in Nigeria and Rwanda
- Determining the financial, nutritional, and social trade-offs between short and long horticulture value chains in Kenya

Regional Priorities

In partnership with local stakeholders, we collaboratively set research priorities across four regions. There are 12 regional priority projects — all being led by locally based organizations. These projects focus on:

- Improving pre-/post-harvest management to reduce harvest losses and enhancing marketing and market access of vegetables in East Africa



David Ameyaw



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Naalamle Amissah, Annesofie Misiani, Freda Asem



Krishna Sapkota

LOCALLY LED, GLOBALLY SUPPORTED

Four Regional Hubs

Over 90 percent of our projects are led by local non-profit organizations and researchers. These regional initiatives are supported by our global consortium, and guided by Regional

Hubs in the focus-regions, East and West Africa, Central America and South Asia. Regional Hub Management includes Dr. Penina M. Yumbya and Dr. David S. Ameyaw at the International Centre for Evaluation and Development in Kenya, Dr. Naalamle Amissah and Dr. Freda E. Assem at the University of Ghana in Accra, Julio López and Patricia Arce at Zamorano University in Honduras, and Krishna Sapkota at FORWARD Nepal in Chitwan.

CENTRAL AMERICA

Regional Hub
based at Zamorano University
in Honduras

WEST AFRICA

Regional Hub
based at University of Ghana

SOUTH ASIA

Regional Hub
based at FORWARD Nepal

EAST AFRICA

Regional Hub
based at International Centre for Evaluation
and Development (ICED) in Kenya

REGIONAL PARTNERS

East Africa

GROOTS Kenya, Jomo Kenyatta University of Agriculture and Technology, Kenya Agriculture Livestock and Research Organization, Muni University, University of Nairobi, North Carolina State University, Wageningen Economic Research Institute (WUR)

West Africa

Association of Women in Economic Activity (AMAE), Council for Scientific and Industrial Research, Forum for Agricultural Research in Africa, Global Predict, Obafemi Awolowo University, People-to-People Development Assistance (ADPP), University of Sciences, of Techniques and Technologies of Bamako, Utah State University, WUR, World Vegetable Center, Young Professionals for Agricultural Development

Central America

Acceso Organization, Rafael Landivar University, Universidad del Valle de Guatemala

South Asia

Agricultural Forestry University Nepal, Bangladesh Agriculture University, Nepal Agricultural Research Council, Welthungerhilfe

- Improving the affordability and availability of healthy diets through African indigenous fruits and vegetables and school gardens in West Africa
- Developing appropriate technologies for climate smart agriculture for small-scale producers in Honduras and Guatemala
- Increasing urban and peri-urban production, reducing soil-borne pathogen impact, and engaging youth in production systems in Nepal and Bangladesh

USAID Mission Buy-In Initiatives

We are collaborating with the USAID Missions in Senegal — West Africa Regional Mission and Niger — on the two following buy-in initiatives:

- Strengthening the horticulture sector in Guinea Bissau
- Enhancing the horticulture value chain in Niger



A SUSTAINABLE FUTURE

Engaging graduate students in development

The Horticulture Innovation Lab Trellis Fellowship Fund connects U.S.-based graduate students with in-country organizations to conduct collaborative research.

Florida Agricultural and Mechanical University (FAMU) leads the implementation of the Trellis Fellowship program, annually selecting graduate students from 1890 Land Grant Universities in the U.S.

These students contribute approximately 100 hours a year to research activities both remotely, and on-the-ground in-country, spending two-weeks time in research locations.

Through this program, new connections and collaborative partnerships are formed between in-country graduate students, local stakeholders, and community members.



SOCIAL TRANSFORMATION

Creating inclusive and empowering systems

GenderUp is a tool developed in partnership with the Alliance of Biodiversity International & CIAT and Wageningen University of Research, to support project and research teams in scaling agricultural innovations in a gender responsible way.

The tool methodically and intentionally guides teams in a series of workshops to:

- Identify gender and other relevant diversity among innovation users for more successful and inclusive scaling of agricultural innovations
- Improve their scaling strategy by anticipating unintended negative consequences for different groups in society

This method facilitates technologies to scale in a manner that enables adoption by women, without reinforcing marginalizing social forces.



Why growing fruits and vegetables matters

What horticulture can do

Improving livelihoods — through higher profits and diversified, nutrient-rich diets — is a major goal of the Horticulture Innovation Lab research efforts around the world.

The Global Horticulture Assessment, an in-depth, collaborative, global analysis identified these major opportunities and challenges for horticulture development.

Diversify diets

Horticulture — growing fruits and vegetables — provides critical nutrients for a balanced diet. Diets low in fruits and vegetables contribute significantly to some of the world's most widespread and debilitating nutrient-related disorders.

Increase incomes

Farmers growing high-value crops, such as fruits, vegetables, flowers or herbs, consistently earn more than those growing other commodities. Horticulture can be an engine for agricultural and economic diversification.

What the horticulture sector needs

Gender equity, technological and social innovation, and information access are critical themes in all projects of the Horticulture Innovation Lab.

Gender equity

Vegetables, fruits and cut flowers are often grown and marketed by women, but women often have less access to markets, land, inputs and education. Addressing these constraints places women growers on the path to increasing productivity and expanding horticultural markets.

Technological and social innovation

Investment in innovation is necessary to harness opportunities in small-scale horticulture systems. From production to postharvest, to social empowerment, novel ideas will support more efficient food systems.

Access to information and research capacity

Commercial success in horticulture depends on locally adapted research and innovation, such as improved cultivars and seeds, management tools, market knowledge and effective postharvest practices. Sustained horticultural growth requires access to reliable information, a well trained workforce and local capacity to conduct both original and adaptive research.



ABOUT US

The Feed the Future Innovation Lab for Horticulture, also known as the Horticulture Innovation Lab, is managed by a team at the University of California, Davis, in the College of Agricultural and Environmental Sciences, under the Department of Plant Sciences.

Funding for the Horticulture Innovation Lab is provided by the U.S. Agency for International Development, as part of the Feed the Future global hunger and food security initiative.

Dr. Erin J. McGuire is the Director of the Horticulture Innovation Lab.



Erin J. McGuire, PhD
Director



(left to right) Graduate Student Researchers Siobhan Rubsum, Katheryn Gregerson; Program Officer Lydiah Maranga; and Associate Director Archie Jarman



International Advisory Board members, Annual Meeting in Nairobi, Kenya, 2023



Our global network

The Horticulture Innovation Lab Consortium consists of global leaders in horticulture, agronomics, agri-sociology, agribusiness and agri-policy. Consortium partners include Florida Agricultural and Mechanical University, World Vegetable Center, Texas A&M Borlaug Institute, and Michigan State University.

Consortium Specialists include Dr. Christine Stewart at the Institute of Global Nutrition at UC Davis (Nutrition and Food Safety), Hilary Proctor at Making Cents International (Youth Opportunities), and Dr. Janelle Larson at Penn State University (Gender Equality, Equity, and Participation).

Consortium Scaling Partners include Cultivating New Frontiers in Agriculture and International Fertilizer Development Center.

Contact us

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