How fruit and vegetable research can impact poverty around the world

Collaborating across borders to strengthen horticultural value chains

The Horticulture Innovation Lab has supported research collaborations with more than 200 organizations on projects that improve the horticultural value chain for smallholder farmers around the world — including parts of Africa.

Our project teams include partners from a U.S. university and from an organization in a developing country that is prioritized by Feed the Future, the U.S. government’s global hunger and food security initiative.

In the program’s first five years, these global projects improved more than 14,000 farmers’ lives, increase post-harvest crop profitability, and added new job opportunities.

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Managed by UC Davis

The Horticulture Innovation Lab is managed by a team at UC Davis and directed by Elizabeth Mitcham, UC Cooperative Extension specialist in the Department of Plant Sciences.

The program is funded by USAID as a Feed the Future Innovation Lab, one of 26 such programs in the nation (five are led by UC Davis teams).

Do you work with one of our partners?

The Horticulture Innovation Lab partners with U.S. universities, national agricultural research institutions, private enterprises, nongovernmental organizations, and foreign universities in Africa, Asia, and Latin America. We continue to further strengthen the capacity of our research network with new collaborators.

So far the Horticulture Innovation Lab has collaborated with exceptional researchers from 28 U.S. universities whose expertise lies not only in horticulture, but also in plant pathology, soil science, sociology, biotechnology, agricultural education, tropical plants, resource economics, engineering and more.

Highlighted on this page are some of the Horticulture Innovation Lab projects and principal investigators working in Africa.

Why growing fruits, vegetables and flowers matters

Reducing poverty and improving nutrition—through higher profits for farmers and diversified, nutrient-rich diets—are top objectives for the Horticulture Innovation Lab research efforts around the world.

- Enriching diets: High-value horticultural crops, such as fruits, vegetables, flowers or herbs, can be an engine for agricultural and economic diversification.

- Increasing incomes: Diversifying household consumption and dietary diversity.

- Gender equity: Women, who are often involved in post-harvest activities, can increase productivity and expand markets.

- Access to information and research capacity: Growing diversity in high-value crops requires access to reliable information, a well-trained workforce, and local capacity to conduct both original and adaptive research.

- Innovation: The Horticulture Innovation Lab is focused on developing new technologies that can reduce constraints that limit the ability of smallholder farmers to achieve maximum profitability in horticulture.

Advancing the science of postharvest loss reduction

Agribusiness Associates is working with university specialists and partners in Kenya to quantify crop losses after harvest for chili, tomato, sweet potato and banana crops. They will evaluate postharvest interventions and support entrepreneurial activities across the value chains.

Innovating with farmers to improve irrigation in Uganda

Kate Sivio leads a team of partners from UC Davis and Uganda who are increasing the capacity of farmers to identify, evaluate promising irrigation technologies, and adapt them to local conditions across the value chains.

Identifying horticultural opportunities in Guinea

In the wake of the Ebola outbreak, the Horticulture Innovation Lab evaluated fruit and vegetable production in Guinea, as part of USAID’s ongoing response to the region. The Rapid Assessment of Horticulture in Guinea identifies constraints to production in household and commercial levels, with specific recommendations for improvements.

Training new postharvest experts in Tanzania

An international team led by Vance Baird of Michigan State University in partnership with A to Z Textile Mills, is assessing the feasibility of adapting mosquito nets for agricultural use. The team is currently focusing on research on innovation for growers and barriers to adoption.

Scaling up nets for pest-exclusion in Kenya

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Improving nutrition with African vegetables

Led by James Simons of Rutgers University, this project has strengthened the value chain of leafy indigenous vegetables in Tanzania and Zambia. The team is currently focused on how growing these vegetables can improve nutrition, via increased household consumption and dietary diversity.

What horticulture needs:

- Information and capacity building: Technological innovation and gender equity are themes in all Horticulture Innovation Lab projects.

- Gender equity: For example, women are often involved in post-harvest activities, which can increase productivity and expand markets.

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The Horticulture Innovation Lab builds international partnerships for fruit and vegetable research to improve livelihoods in developing countries.

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