

Horticulture CRSP

a Collaborative Research Support Program



Building international partnerships for
fruit and vegetable research that
improves livelihoods in
developing countries



Horticulture in the world

Why growing fruits, vegetables and flowers matters

Enriching diets:

Horticulture—growing fruits and vegetables—provides critical nutrients for a balanced diet. Not eating enough fruits and vegetables is a major factor in some of the world's most widespread and debilitating nutrient-related disorders.

Increasing 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.

Improving livelihoods—through higher profits and diversified, nutrient-rich diets—is a major goal for Horticulture CRSP's research efforts around the world.



What horticulture needs

Access to information and research capacity:

Commercial success in horticulture depends on improved cultivars, 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.

Technological innovation:

Given the complexity of horticulture, innovative “leapfrog” technologies can reduce constraints and input costs that limit the ability of smallholder farmers to achieve

maximum profitability in the production and marketing of high-value horticultural products.

Gender equity:

Women are the traditional cultivators and marketers of horticultural crops—up to 75 percent of the labor force in many countries where vegetables, fruits and cut flowers are considered “women's crops.”

When provided equitable training, women growers are well poised to increase productivity and expand horticultural markets.

Gender equity, information access and technological innovation are themes in all Horticulture CRSP projects.





Our work

Partnerships that cross borders to strengthen horticultural value chains

Horticulture CRSP has supported collaborations with more than 18 universities and 200 organizations on projects for smallholder growers around the world. Each of our projects includes partners from a U.S. university and from an organization in a developing country, particularly from those countries in Africa, Latin America and Asia prioritized by USAID.

These partnerships resulted in projects that have improved how more than 5,900 practitioners grow, process or sell horticultural crops—through adoption of new practices or technologies. Our projects span the horticultural value chain:

Seeds and germplasm

- Introducing new technologies for seed drying and storage
- Strengthening indigenous seed systems
- Producing local seeds of disease-resistant vegetables
- Evaluating vegetable varieties for disease resistance

Sustainable production

- Developing protocols for use of nets and floating row covers for pest exclusion
- Improving production and marketing of indigenous African leafy vegetables
- Increasing smallholder use of grafting and tunnels for tomatoes and peppers
- Supporting urban and peri-urban gardeners in commercial production
- Training diagnosticians in identifying plant diseases
- Engineering alternative energy solutions for horticulture





Postharvest practices

- Establishing a postharvest training and services center in Tanzania
- Training numerous postharvest trainers from seven African countries
- Developing an alternative to fungicides to combat postharvest decay in tropical fruit
- Demonstrating and adapting low-cost cooling technology
- Strengthening local capacity in postharvest practices in Cambodia and Vietnam

Food safety

- Assessing food safety needs in developing countries
- Developing locally adapted good agricultural practices for tomato production
- Improving education in food safety through social networks
- Creating a market niche for “food-safe” vegetables

Regional Centers of Innovation

Building local capacity, supporting innovation, creating

Horticulture CRSP has three Regional Centers of Innovation—one in Thailand, one in Honduras and one in Kenya—which act as hubs for horticultural development activities around the world.

The centers bring together key regional players to improve livelihoods of smallholder farmers in nearby developing countries. This network enables sharing information and activities focused on the region’s horticulture.



Marketing

- Using a market-first approach to vegetable production
- Improving marketing capacity for high-value medicinal crops
- Expanding market opportunities for women flower growers by addressing barriers to trade
- Incorporating nutrient-rich sweet potatoes into local foods



ating horticultural hubs

Goals for each center are:

- Researching, developing and disseminating innovative technologies
- Training farmers, horticultural stakeholders, extension educators and researchers
- Building capacity among host institutions

The centers integrate into Horticulture CRSP programs by connecting partners, stakeholders and institutions in the region.

Improving extension

- Strengthening farmer groups for fruit and vegetable production
- Testing the feasibility of cell phone-based extension services
- Establishing GIS data for horticulture development
- Developing a participatory extension model to enhance smallholder production and marketing
- Investigating gendered extension approaches to horticulture

Trellis Fund grows new relationships

Engaging graduate students in development

In addition to major projects, Horticulture CRSP has funded dozens of smaller Trellis Fund projects, which pair a U.S. graduate student with an organization in the developing world, providing benefit to both the students and the in-country institutions.

In the first round of Trellis projects, Horticulture CRSP spent a total of \$35,000 for projects that included 124 training and extension meetings, 1,935 farmer participants (including 1,492 female farmers) and 10 demonstration plots.

Though smallholders are the beneficiaries of Trellis Fund activities, the primary focus of the Trellis Fund is providing development experience to tomorrow's agricultural researchers and building new relationships with in-country institutions.





The Horticulture Collaborative Research Support Program (Horticulture CRSP) 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 with support from the International Programs Office.

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Dr. Elizabeth Mitcham is the director of Horticulture CRSP, as well as a postharvest specialist and pomologist in the Department of Plant Sciences at UC Davis. She also directs the UC Postharvest Technology Center.

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Background

Intent on helping the world's poorest people break out of a persistent cycle of poverty by producing and marketing high-value crops, USAID selected UC Davis to lead a \$15 million, five-year global Horticulture Collaborative Research Support Program in October 2009.

About CRSPs

A unique partnership between U.S. universities, developing country institutions, and USAID, Collaborative Research Support Programs (CRSPs) address issues of hunger and poverty through science and technology. For more information, visit <http://crsps.net>.