

Horticulture Collaborative Research Support Program – Eastern Africa

Reducing poverty, improving nutrition and health, and improving sustainability and profitability through horticulture.

What is the Horticulture CRSP?

Three billion people live on less than two U.S. dollars per day. Funded by the U.S. Agency for International Development (USAID) in 2009, the UC Davis based Horticulture Collaborative Research Support Program (CRSP) is a joint effort among universities and their international partners to improve incomes and health of the rural poor through fruits, vegetables, herbs, spices, and ornamentals.



Goal: Use high value horticultural crops to reduce poverty.

How does Horticulture reduce poverty?

- Horticultural crops are higher in value than grains and other staple crops; with proper postharvest handling and marketing, these crops can increase farmer incomes.
- Horticultural crops contribute to year-round cropping systems, more diverse crops, and improved food security.
- Diets rich in fruits and vegetables are healthier and more nutritious.
- The horticulture value chain creates demand for labor.



Goal: Build local scientific and technical capacity to improve crops and markets.

Horticulture CRSP Objectives

- Realize the opportunities of *horticultural development*
- Improve *food security*
- Improve *nutrition and human health*
- Provide opportunities for *diversification of income*
- Advance *economic and social condition of the rural poor, particularly women*

Management Team

- Ron Voss, Director
- Beth Mitcham, Associate Director
- Michael Reid, Leader-Innovative Technology and Special Projects
- Mark Bell, Leader-Communication and Information Transfer
- Heather Kawakami, Budget Analyst
- Sabrina Morgan, Budget Analyst
- Amanda Crump, Program Evaluation and Gender Equity
- Diana Pucetti, Office and Event Planning Assistant
- Peter Shapland & Elana Peach-Fine, Graduate Assistants

Uganda and Rwanda

Extension of Appropriate Postharvest Technology in Sub-Saharan Africa: A Regional Postharvest Training and Services Center in Rwanda

Goals: Train postharvest specialists and open postharvest training centers throughout Sub-Saharan Africa where research and demonstration would be conducted. Reduce postharvest losses and improve incomes.

Partners

- Diane M. Barrett, University of California, Davis
- Lisa Kitiñoja, World Food Logistics Organization
- Dan MacLean, University of Georgia
- Hilda Vasanthakalam, Kigali Institute of Science and Technology, Rwanda

Increasing the Capacity of Smallholder Farmers to Produce and Market Vegetable Crops in Uganda and Democratic Republic of Congo



Goals: Develop a participatory extension model to rapidly improve smallholder linkages to horticultural markets, which is achieved by merging and supplementing two agricultural development models - Farmer Field Schools (FFS) with the Participatory Market Chain Approach (PMCA). Strengthen farmer groups' capacity to produce indigenous leafy green vegetables and tomatoes for the market and improve farmers' ability to use their farm as an income generating asset.

Partners

- Kate Scow, Johan Six, Mark Van Horn, Heidi Ballard, and Stephen Boucher, University of California, Davis
- Edith Naggenda and Ignitius Bwoogi, Rural Agency for Sustainable Development, Uganda
- Michael Masanza, Uganda Christian University, Uganda
- Beatrice Akello and Peter Lusemba, National Agricultural Research Organization, Uganda
- Harriet Nsubuga Mpanga, Agribusiness Initiative Trust, Uganda
- Prossy Isubikalu, Makerere University, Uganda
- Dennis Yiga, Mukono District Local Government, Uganda
- Karel Van Laer, Scheut Tshilomba, Democratic Republic of Congo

Coolrooms and Cool Transport for Small-Scale Farmers

Partners

- Michael Reid, Jim Thompson, and Cecilia Chi-Ham, University of California, Davis
- Royce Gloria Androa, Reach Your Destiny Consult, Ltd., Uganda
- Neeru Dubey, Amity University, India
- Dinie Espinal-Rueda, Zamorano University, Honduras
- Ron Khosla, Store-it-cool, LLC

Goal: Testing an innovative system, the Cool-bot™, which uses an intelligent thermostat system controlling a standard room air conditioner to create a small-scale cooler out of a well-insulated room with a variety of insulating materials.



HortCRSP Goal: Apply research findings and technical knowledge to increase small producers' participation in markets through technology like cool storage.

Kenya and Tanzania

Low Cost Pest Exclusion and Microclimate Modification Technologies for Small-Scale Vegetable Growers in East and West Africa

Goals: Demonstrate efficacy of Eco-Friendly Nets; insect barrier nettings (either treated or not with insecticides) at protecting vegetables against pests and associated viral diseases and of floating row covers at improving crop micro-climate and enhancing yield and produce quality.



Partners

- Mathieu Nguajio, Michigan State University
- Thibaud Martin, Serge Simon, & Laurent Parrot, CIRAD
- Françoise Komlan, INRAB, Benin
- Lusike A. Wasilwa, KARI, Kenya
- Anselme Adégbidi, Abomey Calavi University, Benin
- Damien Ahouangassi, APRETECTRA, Benin
- Mwanarusi Saidi, Egerton University, Kenya
- Pierre Guillet, AtoZ Textile Mills International, Tanzania

Indigenous African Leafy Vegetables for Enhancing Livelihood Security of Smallholder Farmers in Kenya

Goal: Establish long-term improved nutrition and economic security by increasing production and use of indigenous vegetables in Kenya. Enhance the potential for production, utilization and marketing of African Leafy Vegetables in Eastern Africa.

Partners

- Stephen Weller and Maria Marshall, Purdue University
- Dharma Pitchay, Tennessee State University
- Mathieu Nguajio, Michigan State University
- Pamela Obura, Grace Cheserek, Elizabeth Omami, and Julius Ochuodho, Moi University, Kenya
- Christine Ndinya, Kenya Agricultural Research Institute
- Chris Ojiewo, AVRDC-The World Vegetable Centre, Tanzania



Agricultural Technology Transfer in Kenya: A New Approach to Training and Engagement

Partners

- Steve Fennimore and Jeff Mitchell, University of California, Davis
- Peter Mutua, South Eastern University College, Kenya

Goal: Use leadership training to improve agricultural production.

Toward increasing Smallholder-Vegetable Farmer Utilization of Grafting and Low and High Tunnel Microclimate Management Tools

Goal: Educate small-holder vegetable farmers in grafting and micro-climate management techniques in Kenya.

Partners

- Matthew Kleinhenz, Mark Erbaugh, and Sally Miller, Ohio State University
- Monica Waiganjo, KARI
- Peter Kanyuuro, Kangai Tisa Hort Farmers
- Jeremiah Njuguna, Agro Farm Services

Concentrated Solar Drying of Mango and Tomato

Goal: Developing a concentrated solar drying unit for mango and tomato in Tanzania to improve off-season food security.

Partners

- Diane Barrett, Pieter Stroeve, Kurt Kombluth and Jim Thompson, University of California, Davis
- Bertha J. Mjawa, Ministry of Agriculture Food Security and Cooperatives, United Republic of Tanzania