Feed the Future Innovation Lab for Collaborative Research on Horticulture

Elizabeth Mitcham, Director
We build international partnerships for fruit and vegetable research to improve livelihoods

1. Horticultural value chain research
2. Innovation and scaling
3. Capacity building
4. Nutrition driven horticulture
5. Empowering women and the most vulnerable
6. Sharing information
Why Horticulture?

High value crops – income generation and diversification

Intensive farming on small plots possible

Nutritional benefits of diet diversification

Potential source of micronutrients (Vitamin C, Vitamin A, Vitamin E, K+, phytonutrients, etc.)

Women are heavily engaged in horticulture crop production and marketing
Horticulture Innovation Lab
Current Project Countries

Africa: Kenya, Tanzania, Uganda, and Zambia
Central America and the Caribbean: Guatemala and Honduras
Asia: Bangladesh, Cambodia, Nepal
Strengthening the value chain for African indigenous vegetables

Improving the African indigenous vegetable value chain

- Varieties
- Production practices
- Marketing
- Nutritional value
Gender Research
Empowering Women through Horticulture

Honduras
Penn State University and Zamorano University
Scaling Technologies

Ceramic Drying Beads – Rhino Research Group, Thailand

Insect Barrier Nets – A to Z, Tanzania
Seed drying beads

High humidity reduces seed viability

Drying beads

- Made of special type of zeolite
- Can be reused indefinitely
- Can be used for both drying and storing

Farmers can dry seeds to very low moisture contents

Farmers plant healthier seeds with increased yield and germination
Keeping seed dry improves germination

Most vegetable seeds dried with the beads germinated better than those dried in the sun
Pest exclusion nets

Insects reduce crop yield

Pest exclusion nets

- Create a barrier that protects vegetables against pests
- Improve ambient conditions
- Can be locally made and reused

Farmers are able to implement nets into an Integrated Pest Management program that relies less on pesticides
Other New Projects

Conservation agriculture for vegetables
- Cambodia and Nepal
- Buy in from Guatemala Mission under development

Vegetable Grafting in Central America

Small-scale irrigation for vegetables in Uganda
Key to Adoption of All Improved Horticulture Practices is a Viable Market

Likely return on investments made is key
Reliable market for crop
Incentive for improving practices
Linking farmers to markets

Linking new woman farmers to buyers at local hotels and supermarkets

Strengthening production practices and the postharvest value chain
Postharvest handling is a key technology for horticulture

Reduce losses
Maintain quality
  ◦ Nutrition
  ◦ Safety
  ◦ Taste
  ◦ Appearance
Horticulture Innovation Lab

chimney dryer

Inexpensive
Efficient
High air speed
CoolBot and Cold Rooms
Store it Cold, Inc.
Related Projects

Role of Aquaculture and Horticulture for Nutrition in Bangladesh

- Introduction of technologies on availability of nutritious foods

Collaboration with CIP on CoolBot cool storage for potato and orange-fleshed sweet potato
Regional Centers

Establish in recognized regional institutions

Regional foci for Horticulture Innovation Lab activities

◦ Training
◦ Research
◦ Outreach
◦ Information
Trellis Fund – Capacity Building

Links US Graduate Students with Developing Country NGOs and graduate students

Malawi Project

- Promoting soil science education to combat erosion and improve agricultural yields
  
  Kusamala Institute of Agriculture and Ecology
  
  Deirdre Griffin, UC Davis Graduate Student
New Portfolio – East and Southern Africa

Scaling of pest exclusion nets (Kenya)
- Michigan State University, CIRAD, A to Z textiles

Developing small-scale irrigation solutions (Uganda)
- UC Davis, NaSARRI, TEWDI, AMARI, Busitema University, BugiZARDI, Nabuin ZARDI, and CSIRO

Improving nutrition with African indigenous vegetables (Kenya and Zambia)
- Rutgers University, Purdue University, ASNAPP, AMPATH

Supporting coolrooms and cooling (Tanzania)
Questions?