

Horticulture Innovation Lab



Together, we build
international partnerships for
fruit and vegetable research that
improves livelihoods in developing countries.

Dr. Elizabeth Mitcham, Director



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Roles for Horticulture



Horticulture as an agricultural tool to produce healthful, nutrient-rich foods



African nightshade is among the common leafy African indigenous vegetables that are rich in vitamins and minerals.

Horticulture as a “next step” or “step up” for home gardeners, subsistence farmers, or staple crop farmers to earn more income from high-value crops, even on small plots.



Linking farmers to markets in Zambia.





Farmers earn more growing horticultural crops

Country	Difference in Farm Income (%)*
Bangladesh	29
Cambodia	117
Lao PDR	380
South Vietnam	189
North Vietnam	20

*Between Horticulture and Non-Horticulture Crops

Horticulture as an entry point for entrepreneurs.



Grafted disease-resistant
tomato seedlings



Horticulture as a potential win-win for women who can garden for their household nutrient needs and sell their successful surplus, if they have access to resources.



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Horticulture as a tool applicable to “double burden of malnutrition” (under- and over-nutrition)





Challenges Facing Horticulture

- ▶ By definition, one size does not fit all—in terms of diversity of crops, local adaptation, etc.
- ▶ Need for ongoing local, applied science and science-based extension/advisory services
- ▶ Perishable nature of horticultural crops
- ▶ Additional knowledge/skills needed to be successful.

Horticulture Assessments

▶ Central America

- Access to credit and insurance
- Poor access to high-value markets
- Climate resiliency– irrigation
- Pests, diseases, weeds
- Lack of local research
- Postharvest losses and food safety

▶ Guinea

- As above, plus...
- Sustainable farming techniques
- Nutrition support – home gardens and BCC
- Entrepreneurship



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Mas Riego – Guatemala



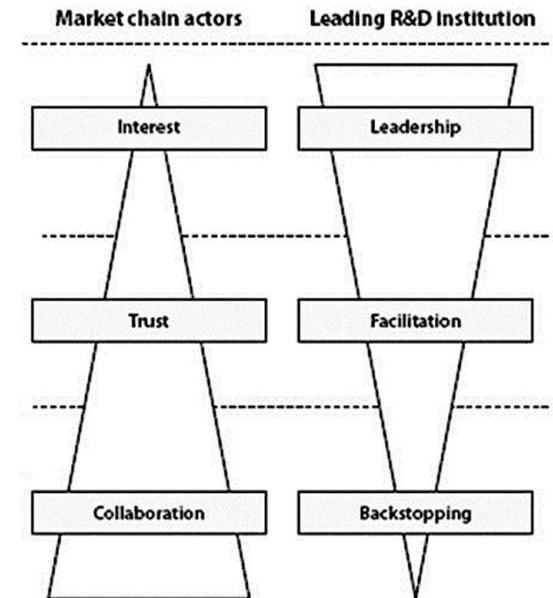


Innovation and Leap-Frog Technologies

- ▶ Technology-driven approach to solve challenges of horticulture
 - Hard and soft technologies
- ▶ Scaling of successful technologies
 - Public-private partnerships

Soft Technologies

- ▶ Soft Technologies
 - Participatory Action Research (Trexler and Young)
 - Participatory Market Chain Assessment (Scow)



Hard Technologies

- ▶ Hard Technologies
 - CoolBot™ cool room
 - Chimney Dryer
 - Drying beads
 - AgroNets
 - DriCheck

Introducing the DriCheck™ Card

Michael Reid & Jim Thompson
Horticulture Innovation Lab
UC Davis





FEED THE FUTURE

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

Horticulture Innovation Lab Regional Centers



Kasetsart University, Thailand



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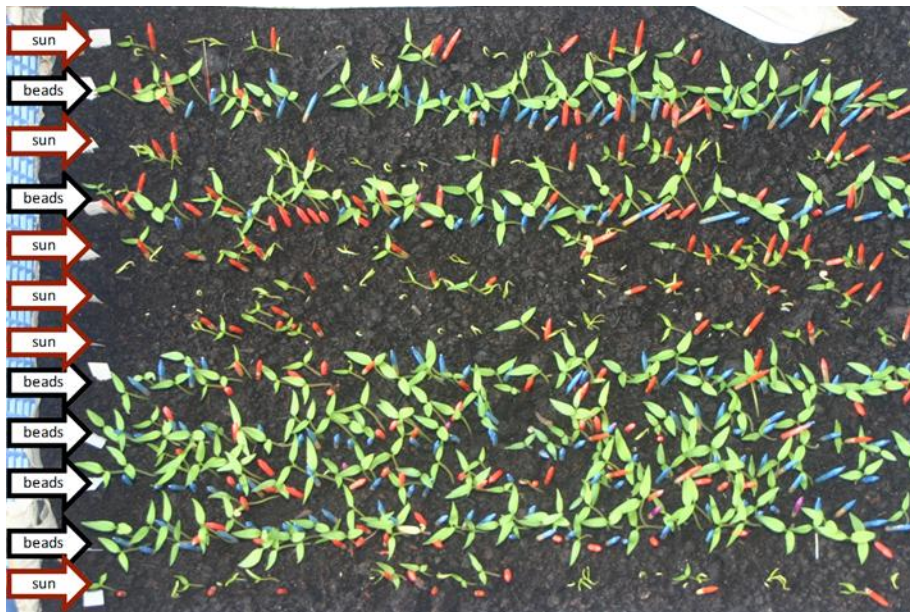
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Scaling Successful Technologies

- ▶ Selecting technologies for scaling
 - Vetting with a scaling expert
 - Meeting with stakeholders
 - Considering paths to successful scaling

Scaling Successful Technologies



**Drying Beads
Rhino Research Inc.**



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Scaling Successful Technologies

- ▶ AgroNets – pest exclusion nets
- ▶ A to Z Inc.



Collaboration is key!



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Collaboration with Nutrition Innovation Lab

Aquaculture and Horticulture for Nutrition in Bangladesh



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Collaboration with World Vegetable Center

Postharvest Training and Services Center in Tanzania



Postharvest trainers from Kenya, Tanzania and Ghana with Diane Barrett, of UC Davis, prepare amaranth leaves for a drying demonstration.

Collaboration with CIP and WORLDVEG Potato Storage in Bangladesh



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Collaboration with Sustainable Intensification Lab



Improving Soil &
Saving Labor in Cambodia



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Collaboration with IPM Innovation Lab

Expanding production and marketing of safe vegetables in Cambodia



Mission Service Projects

Tajikistan



Burkina Faso



Thank you!

For more information:

<http://horticulture.ucdavis.edu>

- ▶ Subscribe to our newsletter: blog.horticulture.ucdavis.edu
- ▶ Twitter: [@HortInnovLab](https://twitter.com/HortInnovLab)
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