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EXECUTIVE SUMMARY

ADVANCING HORTICULTURE

ASSESSMENT OF CONSTRAINTS TO HORTICULTURAL SECTOR GROWTH IN CENTRAL AMERICA

Horticultural crops, particularly vegetables and fruits, are key to increasing food security in the Feed the Future focus countries of the Central American region. Rural farm and business incomes can be increased by assisting small-scale producers to participate more fully in horticultural value chains, focusing on increased production, improved postharvest handling, value-addition through processing, and facilitated marketing. With funding provided by an associate award from the USAID Bureau for Latin America and the Caribbean, the Feed the Future Innovation Lab for Collaborative Research on Horticulture (also known as the Horticulture Innovation Lab or Horticulture CRSP) conducted an assessment of major constraints to continued growth and increased involvement of smallholder growers in the horticulture sector in Central America, based on looking at two of the region's countries (Honduras and Guatemala). This report identifies constraints to further sector growth in Honduras and Guatemala and recommends research, training, and policy initiatives to address those constraints that have potential relevance to other Central American countries' horticultural sector growth.

ALONSO GONZÁLEZ/HORTICULTURE INNOVATION LAB

Above: Increasing access to irrigation and water storage systems can help smallholder horticulture farmers better respond to climate volatility.

BRENDA DAWSON/HORTICULTURE INNOVATION LAB

At right: Smallholder farmers often have little power in dealing with essential market intermediaries.

Focused on Honduras and Guatemala, the evaluation included consultation workshops in Comayagua, Honduras and Antigua City, Guatemala, a series of in-person interviews with representatives from all sectors of the horticultural value chain (60 in Honduras and 73 in Guatemala), a web-based survey, and dissemination workshops at La Lima, Honduras and Antigua City, Guatemala. More than 190 people participated in person for interviews and workshops, including representatives of grower associations, trading organizations, financial institutions, input providers, universities, non-governmental organizations, and government. Constraints to the horticulture sector were discussed among the participants at each workshop and opinions were captured for this report. Our findings and recommendations were based on the totality of information collected from small group interviews, workshops, and survey respondents, representing broad coverage of the horticulture industry and associated sectors. Therefore, although the results were similar between the two countries, the prioritization of constraints and recommendations may require adjustment to account for specific local conditions within each country.

WHOLE REPORT

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The evaluation was designed to serve as a springboard for new initiatives to address the constraints that limit the success of small-scale farmers in the horticultural industries in the Central American region. The workshops, interviews, and survey provided strong feedback on constraints to improving smallholder profitability in the horticulture value chains and on potential research, training, and policy initiatives to address those constraints.

The evaluation team was comprised of Dr. Alonso González M. of Colombia, Dr. Tito Livio Zúniga of Honduras, and Dr. L. George Wilson of North Carolina State University, who also served as liaison with the Horticulture Innovation Lab management team. Alonso González has more than 22 years of experience in horticultural research for development, as well as experience in assessments and value chain approaches, most recently with the International Center for Tropical Agriculture (CIAT). Tito Livio Zúniga holds a Ph.D. from Cornell University in Agriculture and Rural Development and has 13 years of experience in the field, most recently for the Honduras Ministry of Agriculture as national manager of the horticulture value chain. L. George Wilson has been a Professor of Horticulture at North Carolina State University since 1975. Prior to 1975, he worked as a researcher for Chiquita International in La Lima, Honduras.

CONSTRAINTS TO GROWTH OF THE HORTICULTURE SECTOR AND INCREASED PARTICIPATION OF SMALLHOLDER FARMERS:

LACK OF ACCESS TO ADEQUATE AND AFFORDABLE CREDIT AND CROP INSURANCE

Without access to credit, smallholder farmers—especially women and indigenous peoples—are limited in their ability to invest in inputs and infrastructure to enhance their crops. Needed inputs include quality seeds and plants, fertilizers, crop production and protection supplies, postharvest equipment and supplies, and infrastructure. Farmers do not invest in inputs for horticultural production due to insecure markets and a lack of funds to invest.

LACK OF AN ADEQUATE EXTENSION SYSTEM

There are few formal systems for communication of research needs and research findings between smallholder growers and horticultural researchers and research institutions. In fact, there is little transfer of well-established best practices to farmers.

POOR ACCESS TO HIGH-VALUE MARKETS

Most smallholder farmers, especially women and indigenous peoples, sell their produce through low-value venues, including direct sales in local markets or selling to intermediaries. Markets are difficult to reach due to distance and poor roads. Prices are volatile and smallholder farmers have little power in dealing with essential intermediaries.

WEATHER, CLIMATE VOLATILITY AND CLIMATE CHANGE

The Central American region is particularly vulnerable to weather-related events (drought, flooding, freezing, strong winds), which impact horticultural production, alter flowering/fruiting cycles and planting dates, increase vulnerability to pests and diseases and often result in severe economic losses. Temperatures in the region are expected to increase. Soil water holding capacity and fertility are reduced with poor soil conditions, and thus crop yield could also be reduced. Irrigation, water harvesting and water storage strategies will become even more important.

ALONSO GONZÁLEZ/HORTICULTURE INNOVATION LAB

High-value markets can be difficult to access for smallholder farmers, due to distance and poor roads.

PESTS, DISEASES, AND WEEDS

Horticultural crops in the Central American region are subject to attack by an array of pests and diseases, frequently resulting in major losses or intensive use of pesticides. Implementation of the Food Safety Modernization Act in the U.S. may push some smallholder farmers out of the export market due to its strict requirements.

LACK OF RESEARCH ADDRESSING REGIONAL, NATIONAL, AND LOCAL ISSUES OF THE HORTICULTURE SECTOR

Although a number of quality institutions conduct research and teaching on agricultural production and pest management for the region, targeted research on horticultural crops is limited by lack of financial and human resources. Capacity for research on postharvest and marketing issues is especially low. There is a lack of training at the Master's and Ph.D. levels.

POSTHARVEST LOSSES AND FOOD SAFETY

More than 30 percent of the yield of many horticultural crops is lost after harvest as the result of mishandling or the lack of adequate postharvest infrastructure. Moreover, access to international markets requires rigorous attention to food safety during production and postharvest, particularly under the new U.S. Food Safety Modernization Act.

KEY RECOMMENDATIONS FOR RESEARCH, TRAINING, AND POLICY INITIATIVES:

REGIONAL APPROACHES

1. Promote initiatives to **adapt horticulture to climate volatility** through better adapted varieties, protected culture, increased access to irrigation systems, and better weather forecasting.

2. Establish **regional research programs to address cross-cutting constraints** affecting the region, particularly new pests and diseases and sustainable production systems.

3. Promote regional and national **training and education programs on appropriate technologies to reduce postharvest losses** and comply with the Food Safety Modernization Act (FSMA).

4. Promote regional initiatives to conserve, characterize, and facilitate access to diverse and **improved germplasm of horticultural species**.

NATIONAL APPROACHES

1. Reduce the economic risks to horticulture farmers through availability of **effective crop insurance** programs.

2. Design and test an **interlinked microcredit-index insurance** product.

3. **Improve national extension systems** to ensure research information, best practices, knowledge and technologies are delivered to smallholder farmers.

4. Develop trusts or other microfinance means for **financing smallholder farmers**, particularly women.

5. Develop national policies to support **well-funded, long-term national agricultural research systems** (NARS), including training of graduate students.

6. Develop mechanisms to **coordinate and enhance the marketing of horticultural products** from smallholder growers.

7. Create incentives and an enabling environment to **develop horticulture-oriented business services**.

8. Develop policies to **facilitate the participation of indigenous peoples, smallholders and women** in value chains.

ABOUT THIS REPORT

The publication "Advancing Horticulture: Assessments of Constraints to Horticultural Sector Growth in Central America," was produced for review by the United States Agency for International Development. It was prepared by the Feed the Future Innovation Lab for Collaborative Research on Horticulture at the University of California, Davis.

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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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