Organic Vegetable Production Research

A neglected component of international agricultural research

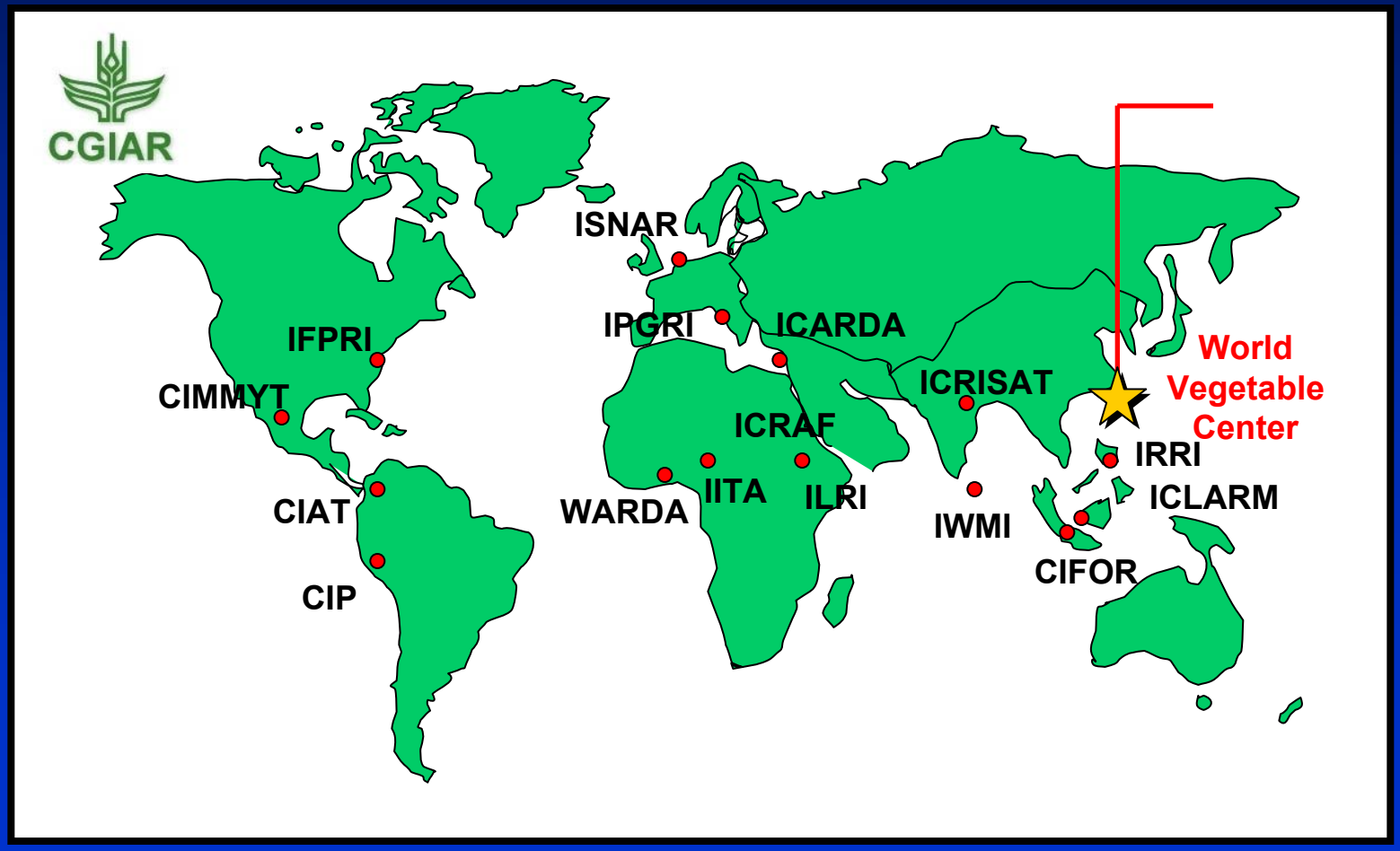
Thomas A. Lumpkin
World Vegetable Center

Presentation Outline

- Introduction to the World Vegetable Center
- Rationale for organic initiative
- Current organic-friendly programs
- Our plan for future activities

CGIAR: 16 International Centers

Consultative Group on International Agricultural Research



Outreach Centers

Asian Regional Center

Kasetsart University
Bangkok, Thailand

Regional Center for Africa

Arusha, Tanzania

The World Vegetable Center

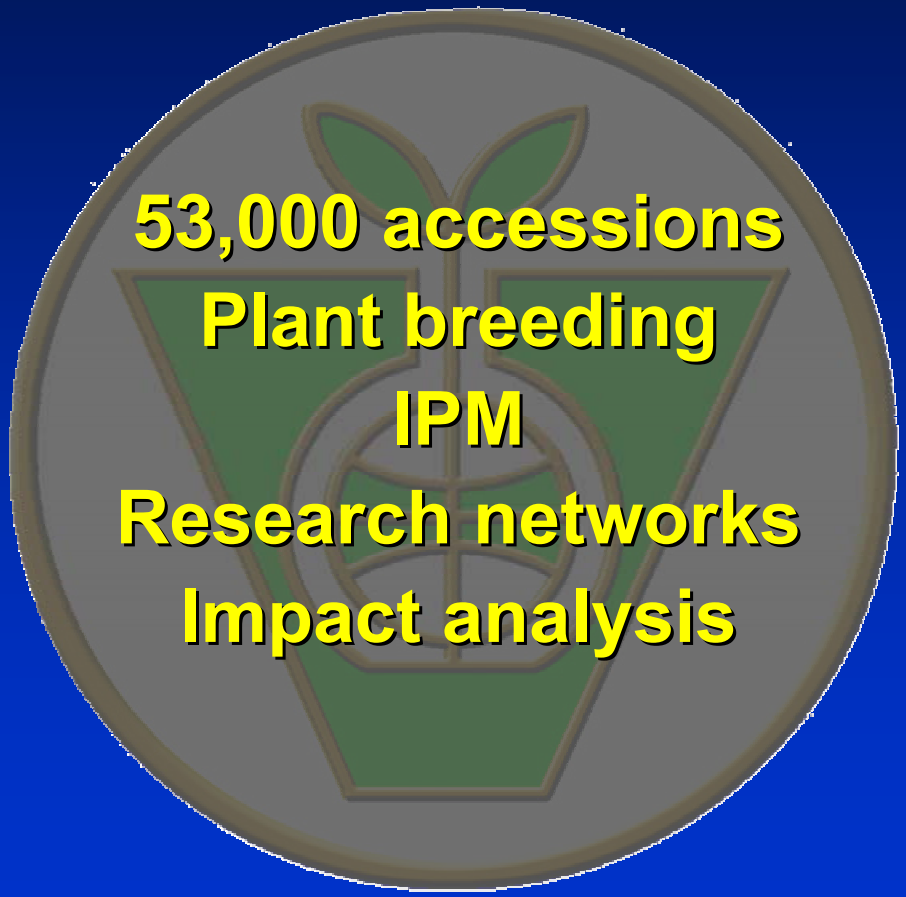
Our Mission

Alleviate malnutrition and poverty through increased production and consumption of vegetables

Our Focus

Rural and urban poor in developing countries

Our Core Expertise



Organic Vegetable Program: *Goals*

- Farmers will have safe, effective choices for growing vegetables and generating income
- Poor families will have increased supplies of safe, nutritious vegetables

Organic Vegetable Program: *Activities*

- Develop vegetable cultivars for disease and pest resistance
- Identify promising organic and indigenous practices
- Train researchers and extension specialists
- Analyze economic impacts
- Disseminate science-based information

Organic Vegetable Program: *Approach*

- Identify key problems
- Collaborate to maximize efficiency and effectiveness
- Initiate organic research experiments
- Disseminate results to researchers and extension specialists

Organic Vegetable Program: *Constraints*

- Lack of funds and formal research institutions
- Lack of qualified researchers and extension specialists
- Lack of communication among researchers, extension specialists, and farmers

Vegetable Research Networks

New Network in Central Asia

Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

Problem: *Diamondback Moth*

- DBM causes over US$1 billion of damage per year
- Resistant to chemical pesticides

Answer: *International Teamwork*

- Over 200 scientists from 30 countries met to discuss research findings
- Safe, biological control practices were developed
- Reduced costs, allowed organic production

Problem: *Eggplant Fruit and Shoot Borer*

- Most severe pest in Asia and East Africa today
- Farmers spray nearly every day in rainy season
- Extreme health threat to farmers and consumers

Answer: *International Teamwork*

- The World Vegetable Center, Bangladesh, India, Sri Lanka, and Thailand scientists work together to understand the pest problem
- Alternative, pesticide-free strategy developed

Problem: *Tomato Leaf Curl Virus*

- Severe threat to tomato production now rapidly spreading throughout the tropics and subtropics
- Transmitted by white fly
- Geographically distinct races
- Leaves curl, plants become stunted, and sometimes entire crops are lost

Answer: *International Teamwork*

- The World Vegetable Center, India and USA scientists identified wild tomato with broad resistance
- Wild tomato being cross with cultivated types
- Disease-resistant, productive lines selected through marker-assisted backcross breeding

On-going: *Nethouse Technology*

- Leafy vegetables are heavily sprayed with pesticides
- Nethouses have eliminated pesticide use entirely

On-going: *Nethouse Technology*

On-going: *Indigenous Vegetables*

- Easy-to-grow, nutritious, resist pests, and marketable
- Collect both germplasm and knowledge
- Identify superior types and multiplying their seeds

Future Organic Activities

1. Select varieties for organic production systems
2. Develop and evaluate biopesticides
3. Introduce underutilized vegetable legumes

Future Organic Activities

4. Identify superior green manures
5. Composting formulations for local feedstocks
6. Enhance knowledge of soil microbial activity
7. Design protocols for site specific cropping systems

Future Organic Activities

8. Organic demonstration garden for on-site research
9. Compare organic with conventional practices

Future Organic Activities

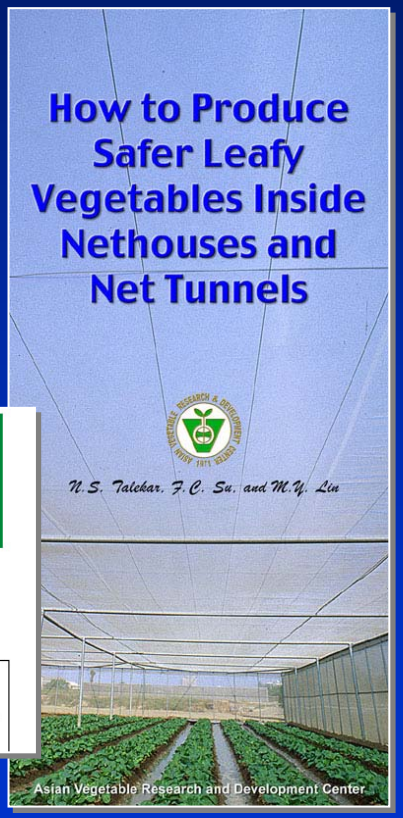
10. Document market supply, demand, and consumption trends for organic products
11. Evaluate quality differences between organic and non-organic products

Future Organic Activities

12. Training workshops on organic farming techniques
13. Post-docs, graduate, and undergraduate student research opportunities

Future Organic Activities

14. Bulletins on organic production practices, in multiple languages
15. On-line publications for downloading
16. Computer tutorials



www.avrdc.org

Partnerships

Our Center welcomes partnerships to support organic agriculture and its role in fighting poverty

unicef

DFID Department For International Development

IPGRI

CIRAD

gtz

FAO FIAT PANIS

SDC