Scaling Agricultural Technologies
Global Learning and Evidence Exchange

Presentation by:
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Scaling Agricultural Technologies
LAC and ASIA Similarities
<table>
<thead>
<tr>
<th>Commercial Horticulture</th>
<th>El Salvador</th>
<th>Cambodia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence on Agriculture (rural)</td>
<td>50%</td>
<td>&gt;80%</td>
</tr>
<tr>
<td>Land size (vegetable farming/farmer)</td>
<td>&gt; 1 hectare</td>
<td>1,200 m²</td>
</tr>
<tr>
<td>Access to water (no or lack of)</td>
<td>localized</td>
<td>limited/localized</td>
</tr>
<tr>
<td>Climatic risks (floods, drought, etc)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Farming as a business</td>
<td>1/100</td>
<td>1/2,000</td>
</tr>
<tr>
<td>Extension services (technology)</td>
<td>poor</td>
<td>poor</td>
</tr>
<tr>
<td>Input availability (seeds, fertilizer, etc.)</td>
<td>limited</td>
<td>limited</td>
</tr>
<tr>
<td>Finance lending (MFI’s and Banks)</td>
<td>out-dated</td>
<td>out-dated</td>
</tr>
<tr>
<td>Percent annual fresh imports</td>
<td>&gt;85%</td>
<td>60 to 80%</td>
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Developing a Commercial Horticulture Sector
What was Scaled-Up

• More technical staff = more area coverage (locations) = more farmers assisted

• More area under vegetable production = more volume and farmers involved

• Productivity/given area = higher yields, more volume = impact

• Selected crops based on consumer demand = market reliability and stability = $$

• Develop/support needed service providers = sector sustainability, cost competitiveness
Scaling-Up Through Technology Transfer

Attaining high **productivity**
- Introducing new farming technology
- Implementing Good Agriculture Practices
- Market driven crops
- Continuous technical assistance
- Field training events

Maintaining product **quality**
- Attention to detail (farm supervision)
- Good post-harvest practices

Controlling **costs**
- Effective farm management
- Accurate record keeping
Developing the Service Provider Sector  
(Expansion of Services)

Sustainable **Markets**
- Link farmers to informal and formal buyers
- Advantages of farmer buyer relationships

Access to **Finance**
- Educate MFI’s and banks (field tours)
- Adjust lending options based on new technology

Progressive **Input Suppliers**
- Training modules for retail suppliers
- Work with whole sale MESS distributors > retailers
- Train suppliers in basic rural extension services
Developing Commercial Greenhouses in El Salvador
Innovation and Scale

- Introduced low cost green houses for commercial tomato farming > UV plastic, anti-virus netting, and structural design

- Introduced new agricultural technology > drip irrigation, raised planting beds, hybrid seed, trellising, GAP and post-harvest practices

- Co-invest in demonstration houses with 30 farmers > 60 houses by the end of the project > reinvest.

- Establish 6 central packing sites

- Work with input suppliers, banks and identified markets

- SME training and capacity building

- Future: Reduce imports of salad tomato by 50%
Developing Commercial Greenhouses in El Salvador
Drivers of Scaling-Up

- Co-invested with 30 demo farmers in 30 houses
- Farmers constructed their own houses with project supervision
- Training = 2.5 years of weekly extension visits/farmer
- Farmer field day events
- Business management
- Formal market linkages
- Input supplier training and MESS availability
- Educating credit lenders on greenhouse cost structure and business plan
Developing Commercial Greenhouses in El Salvador

Results

• Green houses at project end > 3 to 87 at 575 m2 > 4.6 hectares

• Production = 3.8 tons/ house/year > 27.6 tons/ month to formal markets

• Attracted WalMart C.A. as a primary buyer plus 2 other local supermarket chains

• Reduced imports of salad tomato close to 70%

• Farmers had net earnings of $8,200/year/house

• Input suppliers developed > 11
Developing Commercial Horticulture in Cambodia
Innovation and Scale

- Introduce new technology for commercial horticulture farming > drip irrigation, raised beds, plastic mulch, GAP > 300 ha > 2,340 tons (eggplant, bitter gourd, cucumber), > 310% increase in yield over baseline.

- Co-invest in 926 demo sites by end of 2013 reaching 2,000 LOP 2015

- Organize 760 farmers into 40 production groups > markets

- Horizontal replication of 500 new farmers by end 2015

- Input provider expansion > 400

- By LOP reduce seasonal imports of the 3 crops by 20%/province
Developing Commercial Horticulture in Cambodia
Drivers for Scaling-Up

• Intensive farmer training in all agriculture practices through demonstration farms
• Additional staff through partner NGO’s (logistics)
• Irrigation companies trained farmers in system operating procedures and maintenance.
• Different fertilizer formulations imported (wholesalers)
• Imported seed varieties based on market demand
• Post-harvest practices > assurance of quality
• Grouped neighboring producers to form producer groups > more volume to attract more reliable buyers.
• Invite all interested farmers to field day events, and service providers > horizontal replication
• Input provider training > 9 modules
Scaling-Up Challenges

1. Technical capacity building - training and managing more technicians through partner NGO staff.

2. Horizontal replication (demonstration farmers)
   - Intense farmer training and technology transfer > productivity
   - Knowledge and continued extension (private sector and government)

3. Market security
   - Establishing and maintaining reliable buyers
   - Do not sacrifice quality for quantity

4. Service provider development > affordable credit and input suppliers

5. Farmers have to attain acceptable profit margins > individual farmer results, which builds farmer confidence.
THANK YOU!