Value Chain Analysis for Orange-fleshed Sweetpotato in Malawi

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Introduction

• Sweet-potato remains a very important calorific and economic value chain commodity for the majority of Malawian farmers.

• While there have been efforts to improve productivity through the introduction of improved varieties, a big gap exists in knowledge of the value chain characteristics and linkages.
Supporting the OFSP value chain

In Malawi, CIP is supporting:

• Farmers access to new varieties
• Strengthen planting material supply chain
• Sustainable production
• On-farm root storage
• OFSP nutrition
• Root preparation and processing
• Partnering for scale
• Capacity strengthening
Objectives of the study

To analyze

• The planting material supply system
• The value chain and functions of actors
• Distribution channels
• Constraints and opportunities
## Methods

<table>
<thead>
<tr>
<th>District</th>
<th>EPAs</th>
<th>Villages</th>
<th>Markets</th>
<th>Farm Households</th>
<th>Traders</th>
<th>Consumers</th>
<th>Vine Multipliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mchinji</td>
<td>4</td>
<td>23</td>
<td>7</td>
<td>62</td>
<td>28</td>
<td>52</td>
<td>2</td>
</tr>
<tr>
<td>Lilongwe</td>
<td>4</td>
<td>23</td>
<td>8</td>
<td>76</td>
<td>38</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Dedza</td>
<td>4</td>
<td>18</td>
<td>8</td>
<td>48</td>
<td>40</td>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td>Ntcheu</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>49</td>
<td>33</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>Balaka</td>
<td>4</td>
<td>13</td>
<td>4</td>
<td>48</td>
<td>25</td>
<td>44</td>
<td>3</td>
</tr>
<tr>
<td>Machinga</td>
<td>4</td>
<td>19</td>
<td>8</td>
<td>60</td>
<td>20</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Mangochi</td>
<td>4</td>
<td>18</td>
<td>14</td>
<td>47</td>
<td>16</td>
<td>35</td>
<td>1</td>
</tr>
<tr>
<td>Blantyre</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>28</td>
<td>122</td>
<td>58</td>
<td>390</td>
<td>203</td>
<td>268</td>
<td>16</td>
</tr>
</tbody>
</table>

Complemented with focus group discussions and key informant interviews
Seed System in Malawi

**Screen House (Foundation)**

- DARS at Bvumbwe Research produces germplasm
- Produces basic seed at field multiplication sites

**Basic Seed**

- Commercial Multipliers multiply material from DARS
- Interested multipliers buy from DARS sites for multiplication

**Quality Planting Material**

- Vine Multipliers produce and multiply planting material for NGOs, farmers, etc
- DARS inspects

**End-users**

- NGO mass procurement for community distribution (relief or livelihood programs)
- Farmers or local vine multipliers
Farmers' sources of planting material

- Fellow farmers for free: 35.6%
- Recycle from own garden: 17.2%
- Buy from fellow farmers: 17.2%
- Government: 8.9%
- NGOs: 7.1%
- Certified commercial multipliers: 5.6%
- Others: 1.9%
Challenges to vine multiplication

• Supply response for commercial vine multipliers depends largely on the ad hoc demand by NGOs for relief programs.
  – > explore crop-livestock systems?

• Existing multipliers have limited access to clean planting material for multiplication and need training on producing disease free planting material.

• Multipliers don’t keep records on costs-benefits.

• NGOs place tenders and buy cheap uncertified material.

• No official quality control system for sweet potato planting material.
Sweet potato root value chain
<table>
<thead>
<tr>
<th></th>
<th>Value Chain Actors</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Input Suppliers</strong> e.g. agro-dealers and multipliers</td>
<td>• Access to credit facilities for bulk purchases which would eventually reduce the price paid by farmers.</td>
</tr>
</tbody>
</table>
| 2. | **Producers** e.g. Smallholder farmers | • Access to clean SP/OFSP vines.  
• Access to guaranteed market or market information.  
• Lack of collective marketing among farmers as such local traders take advantage and dictate low farm gate prices.  
• Seasonality and perishability of the crop.  
• Lack of good storage technology for SP/OFSP. |
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<tr>
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<th>Value Chain Actors</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| 3.| Local Traders/i.e. stockists/Aggregators | • Lack of access to credit facility to purchase large quantities.  
• Lack of access to good transportation.  
• Low or no supplies from farmers in lean months of September, October, November, January which pushes up prices to consumers. |
| 4.| Wholesalers and bulk distributors | Same as local traders, plus:  
• Lack of storage facilities to enhance regular supply to processors.  
• Lack of promotion for OFSP to improve production to ensure adequate and sustainable supply of sweet potato throughout the year. |
<table>
<thead>
<tr>
<th>It</th>
<th>Value Chain Actors</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| 5. | Retailers          | • Lack of capital to buy in bulk.  
    |                    | • Lack of good product handling techniques. |
| 6. | Local Processors e.g. cooking/boiling/roasting at local and urban markets. | • Lack of or poor quality product packaging.  
    |                       | • Poor capacity to develop new forms of acceptable OFSP products.  
    |                       | • Inadequate knowledge of the diverse products they can make from OFSP roots |
| 7. | Industrial Processors E.g. adding value through changing the states of SP/OFSP tubers. | • Lack of access to credit for procurement of processing facilities.  
    |                       | • Lack of storage technology for preservation of roots.  
    |                       | • Lack of good marketing strategies.  
    |                       | • Inadequate supplies. |
Producers yields and gross margins
Root marketing

• 74% to informal fresh root markets (homesteads, community markets, roadside).
• Less than 1% to commercial or industrial processors (Universal Industries Ltd and CN&F Ltd)
• Main road side markets and urban outlets provide premium prices for fresh roots for middle traders, retailers and hawkers.
• Sweet potato is usually bought and sold on the basis of volume, rather than weights.

Selling of cooked sweet potato is usually done by women who sell in markets, by the road side and in schools. Selling of roasted sweet potato is usually done by men especially in markets.
### Root prices received by different actors

<table>
<thead>
<tr>
<th>Role</th>
<th>Price (USD/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary producers</td>
<td>0.23</td>
</tr>
<tr>
<td>Collecting traders or aggregators</td>
<td>0.28</td>
</tr>
<tr>
<td>Wholesalers</td>
<td>0.32</td>
</tr>
<tr>
<td>Retailers</td>
<td>0.45</td>
</tr>
</tbody>
</table>

#### Value added share by Actor (%)

- Smallholder Farmer: 52.4%
- Local Wholesale Trader (Aggregator): 27.9%
- Distance Wholesale Trader (Distributor): 8.4%
- Retailer: 11.3%

#### Sweet potato flesh colors in the markets (%)

- Orange: 35%
- Yellow: 37%
- White: 28%
Consumers consumption preferences

1. boiled with skin
2. roasted in sand, soil or ash
3. Futali (Peeled, boiled with groundnut flour)
4. Fried chips
5. Raw roots
6. Makaka (Peeled and dried)
7. Thobwa (sweet beer) from sweet potato flour
8. Pulp from sweet potato flour blended with maize flour

Consumers at the markets (n=278) %

<table>
<thead>
<tr>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are aware of OFSP existence</td>
<td>93.2</td>
</tr>
<tr>
<td>Buy SP as fresh roots (unprocessed)</td>
<td>76.1</td>
</tr>
<tr>
<td>Prefer OFSP over other varieties</td>
<td>72.8</td>
</tr>
<tr>
<td>-&gt; because of better taste</td>
<td>75.6</td>
</tr>
<tr>
<td>Are aware of the nutrition value of OFSP</td>
<td>44.6</td>
</tr>
</tbody>
</table>
An approach to strengthen the value chain should combine...

1) dissemination of OFSP information and extension services to men and women farmers
2) investments in vine multiplication and dissemination of OFSP
3) enhancing nutrition knowledge on the benefits of OFSP
4) providing business development support for scalable processed products (flour, juice, body cleaner, dried chips, biscuits, crisps and sweet-beer)
5) train traders, wholesalers and retailers on the segregation of orange-fleshed roots in the markets
6) Promotion of OFSP irrigated winter production in ‘hotspot’ areas (Balaka, Machinga, Mangochi) to ensure year-round supply to processors