Achievements and Lessons Learned from PHASE I of Rooting out Hunger in Malawi (1st Oct 2009 – April 2014)

Prepared by
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Sweetpotato Seed System Scientist & Project Leader
for Phase 1: Oct 2009 to Apr 2014

5th ANNUAL TECHNICAL MEETING SPHI – SASHA, NAIROBI
The conceptual framework for Rooting out Hunger project was based on OFSP-led food-based approach, which has 3 linked pillars: linking agriculture, nutrition and marketing. This was developed and tested by Low et al (2007) in Mozambique.

At the project level: linking the 1-2-3 seed systems, Food based Nutritional programs at the national level through Agriculture Sector Wide Approach (ASWAp) and Scaling Up Nutrition (SUN) movement, and Marketing, i.e. generated income at household level, processed products, and sustained the OFSP cultivation over time.
The overall objective of this 4.5-year project is to improve vitamin A and energy intake for at least 70,000 rural households with women and young children using OFSP-based approaches and to ensure that at least 20% of households growing OFSP earn at least US $100 per year from OFSP sales and increase their average sweetpotato yields by 50%.
What strategy did we take at the project level? Who were our partners?

CIP and its multi-partners:
- DARS
- DAES
- DNHA-OPC
- MVP
- CU
- CADECOM
- WALA-CRS
- Kachele Club (CBO)
- Farmers Union of Malawi
- FICA-FAO
- Tuesday Trust & Palliative Health Care

Breeding → Seed Systems

Rooting out Hunger in Malawi with Nutritious Orange-Fleshed Sweetpotato

Primary and DVMs → Food based Nutritional Programs & The ‘SUN 1000 Special Days’ Movement

Increased incomes through market development and diversified use

Farmers-Private Sector-Consumers-Users for sustainability
CIP’s roles related to scale of impact towards its Strategic Leadership and Research

<table>
<thead>
<tr>
<th>Scale of impact</th>
<th>Project Period: 1&lt;sup&gt;st&lt;/sup&gt; Oct 2009 - 30&lt;sup&gt;th&lt;/sup&gt; April 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 – 2 (Oct 09 – Oct 2011)</td>
<td>Year 3 – End of Phase I (Nov 2011 – Apr 2014)</td>
</tr>
<tr>
<td>More than 10,000 HHs reached</td>
<td>More than 70,000 HHs reached</td>
</tr>
</tbody>
</table>

### CIP’s roles

#### Strategic Leadership
- Identified demand; use of a subsidized voucher scheme; lessons learnt to design the next strategic objectives; project design to be aligned with agriculture’s policies, i.e. ASWAp, focusing on food and nutrition security; and multi-partnership.
- Coordinated new programs from the lessons learnt out of previous years and SSA and Global sweetpotato programs; promoted OFSP integration into national programs, investment plans and government policies both in agriculture through ASWAp and nutrition intervention through SUN 1000 Special days initiative.

#### Research
- Food and nutrition diversification; on-farm demonstration trials; building up 3 tiers of seed systems based on sweetpotato growing calendar, awareness demand creation campaign on OFSP; and fresh root market opportunities and value chains
- Building strong evidence result base; strengthen national research programs and partnership, and diversified value chains and market opportunities as a smallholding level.
**Partnership roles across the CIP’s roles**

<table>
<thead>
<tr>
<th>Project Period</th>
<th>CIP’s roles</th>
<th>Partners’ roles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1 and 2</strong></td>
<td>-Elaboration</td>
<td>Participation in technology development and implementing the research results at the community level; pilot interventions; organizing policy and stakeholder fora</td>
</tr>
<tr>
<td>(<strong>1st Oct ’09 – 31st Oct ’11</strong>)</td>
<td>-Formative research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Collecting local knowledge to be brought forward into research conceptual approach</td>
<td></td>
</tr>
<tr>
<td><strong>Year 3 to End of Phase I</strong></td>
<td>-Coordination</td>
<td>Dissemination and adaptation of technologies and delivery approaches; evidence building through operational research; training; advocacy</td>
</tr>
<tr>
<td>(<strong>1st Nov ’11 – 30th Apr’14</strong>)</td>
<td>-Supportive research based on local knowledge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Promoting OFSP in national and international fora</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Produced scientific reports and journal reviewed articles</td>
<td></td>
</tr>
</tbody>
</table>
Integrated Components Strengthening the OFSP Seed Systems for Sustainability

Donor(s)

Funds

Value chains & Market opportunities

Dissemination

Strong partnership/multi-partners, Commitment, Ownership

1-2-3 Seed Systems

Training

- Multiplication, CPPDM
- Postharvest handling
- OFSP Processing
- Bookkeeping

Farmers

Awareness/demand creation campaign, Sensitization, meetings

Voucher system
Schematic Presentation of the 1-2-3 Vine Multiplication System Implementation in Malawi

Vine Flow

PRIMARY

- Bvumbwe Research Station – 6 ha plus tissue culture, screen house, and breeding activities for new varieties.
- Clean planting materials; managed by Researchers (DARS and CIP).

SECONDARY

- Decentralized vine multipliers (DVMs) based on Group Village Head, supervised by Government and NGO extension staff; act as demos; clean vine producers.
- Using a standard bed of 1 m x 20 m with rapid multiplication technique.
- Access to irrigation scheme.

TERTIARY

- DVM based on Group Village Head, and trained by the trainers.
- Using adjusted conventional multiplication and access to irrigation.
- Producing vines and storage roots.

TO PRODUCERS
### The 1-2-3 Seed System fits the Sweetpotato Growing calendar

<table>
<thead>
<tr>
<th>Current Rainy Season</th>
<th>Winter/dry</th>
<th>Dry/hot Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Year</td>
<td>Present Year</td>
<td></td>
</tr>
<tr>
<td>Nov Dec Jan Feb March</td>
<td>Apr May Jun Jul Aug Sep Oct Nov</td>
<td></td>
</tr>
</tbody>
</table>

**Primary Multiplication at Research Station:** 3 nodes, 10 x 20 cm

**Dambo (Lowland) – sweetpotato production**

**Upland - planting distance 30 x 75 cm, Vine cutting ‘s length 30 cm**

**Sweetpotato production**

<table>
<thead>
<tr>
<th>3 nodes, 10 x 20 cm</th>
<th>30 cm, 15 x 75 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary DVM</td>
<td>Tertiary DVM</td>
</tr>
</tbody>
</table>
Supporting: 2 PhD and 1 MSc candidates

Sweetpotato Project

3 types of training modules written to support →

- NGOs: CU-Dedza & Phalombe, CADECOM-Chikwawa, MVPs-Zomba
- Extension-DAES: Dedza, Phalombe & Chikwawa
- DARS

4,131 change-agents trained
45% women

Training of Trainers: 4075 were trained*
“Multiplication (1), Production (2), pest and disease management (3), postharvest handling (4), processing (5) & drip irrigation installment (6)”

Training

24,815 farmers
52% women

Farmers/groups (secondary multipliers)

Training

Farmers/groups (Tertiary multipliers or Beneficiaries)

More Malawians have skills and knowledge on OFSP and its importance as a source of Vitamin A

Supporting: 1 PhD and 1 MSc candidates
A voucher scheme

DVMs earned USD 128,732 through March 2014, 40% coming from NGOs, USAID, local government (Agriculture Development Division) and a few individual farmers; The average income/DVM: USD 158 (Mk 66,360) through the subsidized voucher.
Awareness Campaign/Sensitization on Food diversification from OFSP
Potential market and product development options
VALUE CHAINS AND MARKET OPPORTUNITIES
Total beneficiaries reached by April 2014: **191,092 HHs** (15 districts)

**Indication of Adoption of OFSP:**
- Expansion of the areas
- Having more IPs

1. Chikhwawa under Cadecom
2. Phalombe under CU
3. Zomba under MVP
4. Dedza under CU
5. Mulanje under CU
6. Salima under Kachele Club (farmers club)
7. Balaka under WALA
8. Machinga under WALA
9. Zomba under WALA
10. Chiradzulu under WALA
11. Thyolo under WALA
12. Chikhwawa under WALA
13. Nsanje under WALA
14. Dedza under FUM
15. Lilongwe under FUM
16. Dowa under FUM
17. Kasungu under FICA-FAO, CRS-Mzuzu CADECOM
18. Mzimba under FICA-FAO, CRS-Mzuzu CADECOM
HH Beneficiaries receiving OFSP planting materials through subsidized vouchers during the 2010/11, 2011/12, 2012/13 and 2013/14 rainy seasons through the 3 core IPs

<table>
<thead>
<tr>
<th>IP</th>
<th>District</th>
<th>Target 2010</th>
<th>2010/11 Rainy Season (Y1)</th>
<th>2011/12 Rainy Season (Y2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Target of HH</td>
<td>No. of HH</td>
<td>Area (ha)</td>
</tr>
<tr>
<td>CU</td>
<td>Dedza</td>
<td>2,000</td>
<td>4,733</td>
<td>32.0</td>
</tr>
<tr>
<td>CU</td>
<td>Phalombe</td>
<td>620</td>
<td>859</td>
<td>5.8</td>
</tr>
<tr>
<td>CU</td>
<td>Mulanje</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>CU</td>
<td>Balaka</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MVP</td>
<td>Zomba</td>
<td>2,450</td>
<td>3,250</td>
<td>21.9</td>
</tr>
<tr>
<td>CADECOM</td>
<td>Chikhwawa</td>
<td>2,027</td>
<td>2,126</td>
<td>13.7</td>
</tr>
<tr>
<td>Total</td>
<td>6 districts</td>
<td>7,097</td>
<td>10,968¹</td>
<td>73.4</td>
</tr>
</tbody>
</table>

¹In 2010/11 rainy season: women 51% and men 49%; ²In 2011/12 rainy season: women 63% and men 37%.
## HH Beneficiaries receiving OFSP planting materials Continued

<table>
<thead>
<tr>
<th>IP</th>
<th>District</th>
<th>2012/13 Rainy Season (Y3)</th>
<th>2013/14 Rainy Season (Y4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Target of HH</td>
<td>No. of HH</td>
</tr>
<tr>
<td>CU</td>
<td>Dedza</td>
<td>3000</td>
<td>3,693</td>
</tr>
<tr>
<td>CU</td>
<td>Phalombe</td>
<td>3000</td>
<td>7,053</td>
</tr>
<tr>
<td>CU</td>
<td>Mulanje</td>
<td>3000</td>
<td>22</td>
</tr>
<tr>
<td>CU</td>
<td>Balaka</td>
<td>NA</td>
<td>1,000</td>
</tr>
<tr>
<td>MVP</td>
<td>Zomba</td>
<td>3000</td>
<td>8,058</td>
</tr>
<tr>
<td>CADECOM</td>
<td>Chikhwawa</td>
<td>3000</td>
<td>7,500</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15,000</td>
<td>27,304³</td>
</tr>
</tbody>
</table>

³In 2012/13 rainy season: women 46% and men 54%. ⁴In 2013/14 rainy season: women 49% and men 51%.

*during winter production, meanwhile the summer production was 2.5 MT/ha.
Baseline survey (published) and Endline Survey (report in preparation)

<table>
<thead>
<tr>
<th>District</th>
<th>Baseline Sweetpotato</th>
<th>Endline Sweetpotato</th>
<th>Baseline OFSP</th>
<th>Endline OFSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedza</td>
<td>10.2</td>
<td>19.6</td>
<td>3.5</td>
<td>13.3</td>
</tr>
<tr>
<td>Zomba</td>
<td>9.8</td>
<td>17.4</td>
<td>4.9</td>
<td>13.4</td>
</tr>
<tr>
<td>Chikwawa</td>
<td>8.3</td>
<td>18.3</td>
<td>2.1</td>
<td>15.6</td>
</tr>
<tr>
<td>Phalombe</td>
<td>8</td>
<td>15.7</td>
<td>1.2</td>
<td>13.6</td>
</tr>
<tr>
<td>Mulanje</td>
<td>-</td>
<td>21.4</td>
<td>-</td>
<td>18.4</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>9.1</strong></td>
<td><strong>18.4</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proportion of total landholding size allocated to sweet potato production (%)

Percent Households trained on Sweet Potato Production
Promotion of Intercropping OFSP + maize & OFSP + soybeans

- It strongly supports crop diversification as the core of Malawi’s agriculture policy.
- It uses the land in an effective way where cultivated land is scarce due to the dense population in Malawi. For instance, LER OFSP+Maize = 1.79 and LER OFSP+Soybean = 1.22.
- It potentially gives opportunities to farmers for food security, nutrition and household income generation.

MODIFIED “TRIPLE S” ➔ “DOUBLE S”
– STORAGE IN SAND (BUT DRY SAND)
1. Reaching more 190,000 direct hh beneficiaries or 950,000 indirect beneficiaries received clean and improved OFSP
2. Gender was consciously considered: training and beneficiaries
3. Strong partnership with relevant government agencies and NGO IPs
4. Capacity building: training of lead farmers, the poor rural areas, and extension staff; produced 3 training syllabi.
5. Action Research on intercropping contributed to efficiency of using the land, increase of income, food and nutrition security and mitigating to the effect of climate change (indirectly).
   → OFSP + maize in-press and OFSP + onion MSc thesis in July 2014
6. Advocacy at international and national level in Malawi (high level conference in Dublin in April 2013 and food policy conference, IFPRI in Lilongwe in Sep 2011 - key-note presentations); policy-makers, UN-FAO, farmers’ Union/organizations.

Evidence:
1). High demand on OFSP, many NGOs wanted to join the programs, it means increase of number of donors
2). Bio-fortified OFSP in the draft of National Nutrition of Malawi
3). Bio-fortified OFSP is among the 6 food groups in Malawi → SUN movement.
4). Bio-fortified OFSP is in the Counseling Cards, the material supporting the Nutrition Education and Communication Strategy in Malawi
5). Bio-fortified OFSP is in the draft of FAO as of important crops
Acknowledgement

- IRISH AID,
- Government of Malawi,
- NGO Implementing Partners,
- Farmers

Fig: “visit of Irish Aid team from Dublin, Paris, Ethiopia and Malawi on 13-14 May’14 to learn from the experiences in Malawi – photo taken in Zomba”

www.sweetpotatoknowledge.org