FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

FEED THE FUTURE MALAWI IMPROVED SEED SYSTEMS AND TECHNOLOGIES—ORANGE-FLESHED SWEETPOTATO COMPONENT

YEAR 3 ANNUAL REPORT

1 October 2016 – 30 September 2017

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Project Name: Feed the Future Malawi Improved Seed Systems and Technologies, Orange-fleshed Sweetpotato Component–Malawi

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ACRONYMS

BCC	Behavior change communication
CADECOM	Catholic Development Commission
CIP	International Potato Center
CMO	Consortium Management Office
CVM	Commercial vine multiplier
DAES	Department of Agricultural Extension Services
DARS	Department of Agricultural Research Services
DNA	Disaggregates not available
DVM	Decentralized vine multiplier
EPA	Extension Planning Area
HH	Household(s)
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IEC	Information, education, and communication
IITA	International Institute for Tropical Agriculture
M&E	Monitoring and evaluation
MBC	Malawi Broadcasting Corporation
MBT	Mother–Baby Trial
MIS	Market information system
MISST	Malawi Improved Seed Systems and Technologies
MOAIWD	Ministry of Agriculture, Irrigation and Water Development
NGO	Nongovernmental organization
OFSPA	Orange Fleshed Sweet Potato Association
OFSP	Orange-fleshed sweetpotato
PCI	Project Concern International
RTCDT	Root and Tuber Crops Development Trust
SSU	Seed Services Unit
TWG	Technical working group
USAID	United States Agency for International Development
ZOI	Zones of Influence

PROJECT OVERVIEW

This report summarizes the progress of implementing Feed the Future Malawi Improved Seed Systems and Technologies—Orange-fleshed Sweetpotato (OFSP) Component (MISST–OFSP) project, from 1 October 2016 to 30 September 2017 (Year 3). MISST is a 4.5-year project (1 Dec. 2014–30 June 2019) being led by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). MISST consists of five project components implemented by four CGIAR centers through various partners in Malawi; the International Potato Center is executing the OFSP component. MISST–OFSP is funded by the United States Agency for International Development/Malawi mission through ICRISAT at US $4,729,866.

MISST–OFSP Project Component Objectives

- Increased productivity and production of OFSP among smallholders
- Improved nutrition knowledge, OFSP utilization, and OFSP consumption at household level, in particular, to improve the diets of women and children under 5 years
- Improved storage and marketing of fresh OFSP roots and vines
- Enhanced human and organizational capacity for scaling up OFSP.

Overall MISST Objectives

- **Objective 1.** To improve functionality of input and output of selected value chains: groundnuts, pigeon pea, sorghum, millet, soybeans, drought-tolerant maize, and OFSP.
- **Objective 2.** To strengthen capacity of stakeholders involved in the selected seed sector. This objective aims to improve the capability available to deploy and promote new crop varieties and their allied technologies.
- **Objective 3.** To enhance the adoption and uptake of improved technologies in the target districts of Malawi.
- **Objective 4**. To enhance resilience of vulnerable households in rural communities in the Feed the Future Zone of Influence.

1. OVERALL PROGRESS OF THE PROJECT FOR THE QUARTER

1.1 Feed the Future Performance Indicators

This section shows the Feed the Future indicators to which the International Potato Center's (CIP) project component is contributing, as well as the targets that were set and achieved. Table 1 summarizes progress against targets for each of the indicators for this quarter.

Table 1. Performance indicators and progress against targets

	LOP Target	Annual Target	Total Annual Achieved	Deviation Percent	Deviation Narrative
No. of farmers and others who have applied improved technologies or management practices with FTF-MISST assistance (EG.3.2-17)	**62,500**	**12,500**	**0**		This indicator is a survey indicator, and the results will only be included after October 20, when the annual beneficiary survey is concluded, and FTFMS system is populated.
No. of households benefiting directly from USG assistance under FTF-MISST interventions (EG.3-1)	**62,500**	**12,500**	**21,394**	**71%**	In September 2016, the Bureau for Food Security Washington (Dr. Anne Swindale) and USAID/Malawi Mission M&E (Abel Nyoni) recommended that the OFSP component count the 2016 winter beneficiaries in the forthcoming year. This is because production and harvesting straddle fiscal years. Normally, OFSP planted in winter (May–August) is only harvested in the following year (in Oct.–Dec.). Therefore, 5,977 FY16 winter beneficiaries who received planting material and trainings were not added to FY16 achievement but reserved for FY17. This has inflated the FY17 number of beneficiary households (HH) by 71%. The result has also affected the *"Number of Individuals receiving short-term agricultural sector productivity or food security training."* (E.G.3.2.1).
New/Continuing			**21,394**		
New			21,394		
Continuing			0		
Disaggregates Not Available (DNA)			0		
Location			**21,394**		
Rural			21,394		
Urban/Peri-urban			0		
DNA			0		
No. of individuals who have received FtF-MISST supported short-term agricultural sector productivity or food security training (EG.3.2-1)	**62,500**	**12,000**	**22,413**	**87%**	The target set for this year has been exceeded because 5,977 direct beneficiaries who started undergoing Mother–Baby Trial (MBT) training in FY16 winter have been included in FY17 (Refer to comment on Indicator E.G.3-1—No. of HH benefitting directly from USG-assistance). In addition, the OFSP component of MISST was leading nutrition and its trainings to direct beneficiaries and promoters in care groups and staff from government and civil society organizations (health surveillance assistants, extension officers, nutrition officers). Through this joint implementation with other MISST components (groundnut/
Type of Individual:			**22,413**		
Producers			21,024		
People in government			881		
People in private sector firms			0		
People in civil society			168		
DNA			340		
Sex:			**22,413**		
Male			8,994		
Female			13,398		
DNA			21		

	LOP Target	Annual Target	Total Annual Achieved	Deviation Percent	Deviation Narrative
					ICRISAT, soybean/IITA, proVitamin A maize/CIMMYT and aflatoxin reduction (aflasafe)/IITA), an additional 1,500 people received integrated agriculture and nutrition-related trainings in the project. Through integration, at the request of collaborative partner NJIRA, about 30 people were trained in vine multiplication in two districts, Balaka and Machinga.
No. of hectares under improved technologies or management practices with FTF-MISST (EG.3.2-18)	**3,970**	**650**			Awaiting Annual Beneficiary Survey for FY17
Yield of OFSP (MT)	**5**	**5**			Awaiting Annual Beneficiary Survey for FY17
Farmer's gross margin per hectare of OFSP obtained with FTF-MISST assistance (EG.3-6)	**530**	**530**			Awaiting Annual Beneficiary Survey for FY17
Value of smallholder incremental sales generated with FTF-MISST assistance (EG.3.2-19)	**2,000,000**	**400,000**			Awaiting Annual Beneficiary Survey for FY17
No. of people implementing risk-reducing practices/actions to improve resilience to climate change as a result of USG assistance (EG.3.2-x34)	**62,500**	**12,500**			Awaiting Annual Beneficiary Survey for FY17
Total quantity of targeted nutrition-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (EG.3.3-11)	**350,000**	**770**			Awaiting Annual Beneficiary Survey for FY17
No. of food security private enterprises, producers organizations, and community-based organizations (CBOs) receiving FtF-MISST assistance (EG.3.2-4).	**200**	**90**	**121**	**34%**	Some of the integration partners (these are other USAID-funded projects; PERFORM and NJIRA project) requested CIP to help establish and train new DVMs in the districts of Machinga and Balaka. As a result, 31 additional DVMs were established—PERFORM (8) and NJIRA (23), exceeding the annual target. Another subgranted partner, CADECOM, established three additional DVMs to meet the growing demand for quality planting material. This explains why there is an excess of 34% over the annual target set in FY16.
Type of organization			**146**		
Private enterprises (for profit)			25		
Producers organizations			120		
Cooperatives			0		
Trade and business associations			1		
CBOs			0		
DNA			0		
New/Continuing			**146**		
New			121		

	LOP Target	Annual Target	Total Annual Achieved	Deviation Percent	Deviation Narrative
Continuing			25		
DNA			0		
No. of private enterprises, producers organizations, trade and business associations and community-based organizations (CBOs) that applied improved technologies as a result of FtF-MISST assistance (E.G.3.2-20)	**200**	**90**			This is a survey indicator

Indicator Comments

The Feed the Future indicator table in this section only includes results for which the project has secured documented evidence from the partners in terms of correctly filled monitoring and evaluation (M&E) data tools. The description of the activities in the rest of the report is derived from qualitative and quantitative reports from partners and CIP district technicians' reports of actual achievements in the districts.

1.2 Description of Progress on Work Plan Activities

This section provides a narrative description of the OFSP component activities implemented in the quarter, organized by key MISST consortium objective. The activity numbers correspond with the work plan in Annex 1.

FY3 Activities		Achievements October 2016–September 2017
A	**Improved functionality of OFSP input and output markets (various generations of vine multiplication, root storage, marketing of roots and planting material)**	
1	Training of DVM hosts and other farmers on vine multiplication, vine, and voucher redemption	Trainings were conducted with DVM hosts, especially in preparation for the establishment of the new DVMs, but also as refresher trainings. Most of our project partners (DAES, We Effect, CADECOM Dedza, Concern Worldwide, Welthungerhilfe, PCI-NJIRA, EI-NJIRA, and PERFORM) have trained DVMs in rapid vine multiplication in nursery beds (Fig. 1), pest and disease management, and marketing of planting material. Partners did their best to link DVMs to nongovernmental organization (NGO) buyers to provide them with a market. Some partners procured vines directly from the DVMs for their own project activities. The total number of farmers trained was 304 (187 M, 117 F).

<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td></td><td></td><td> 
Figure 1. Farmers in Machinga receive a practical training in sweetpotato nursery establishment in Machinga District.</td></tr>
<tr><td>2</td><td>Establish new DVMs in irrigation sites in the seven districts and register with the Seed Services Unit (SSU)</td><td>This year the project established 120 new DVMs. Based on lessons learned in the previous year, mainly irrigation systems were targeted this year. Some DVMs were community initiatives that allowed for free sharing of vines among community members (Fig. 2), whereas others aimed at selling vines to NGOs or community members for income generation. Table 2 shows the number of DVMs that started this year in each district, supported by our different partners.

Table 2. Overview of new DVM's supported by the project partners.
<table>
<tr><th>Partner</th><th>Mchinji</th><th>Lilongwe</th><th>Dedza</th><th>Ntcheu</th><th>Balaka</th><th>Machinga</th><th>Mangochi</th></tr>
<tr><td>DAES</td><td>10</td><td>14</td><td>-</td><td>5</td><td>10</td><td>10</td><td>5</td></tr>
<tr><td>Welthungerhilfe</td><td>-</td><td>-</td><td>4</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>PERFORM</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>8</td><td>-</td></tr>
<tr><td>Emm. Int.</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>5</td><td>-</td></tr>
<tr><td>PCI</td><td>-</td><td>-</td><td>-</td><td>-</td><td>8</td><td>15</td><td>-</td></tr>
<tr><td>We Effect</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>18</td></tr>
<tr><td>CADECOM</td><td>-</td><td>-</td><td>3</td><td>5</td><td></td><td></td><td></td></tr>
<tr><td>Totals</td><td>10</td><td>14</td><td>7</td><td>10</td><td>18</td><td>38</td><td>23</td></tr>
</table>

Figure 2. Establishment of a DVM at Mtendere hospital in Dedza.</td></tr>
</table>

FY3 Activities		Achievements October 2016–September 2017
		To improve availability of planting material of the desired OFSP varieties, CIP had trained 20 new commercial vine multipliers (CVMs) in September 2016, and promised to provide basic start-up planting materials. Therefore, in Q1 we procured and distributed start-up clean planting materials amounting to 1,862 bundles to 20 new CVMs.
3	Develop and implement voucher system for the distribution of vines around DVMs	We engaged in discussions with 'Iwe Solutions' in Lilongwe to design an innovative relational database to monitor redemption and payments for planting material through vouchers and subsequently design the vouchers. The voucher system was piloted with 3,000 beneficiaries identified around 30 DVMs. RFID-enabled vouchers were produced by iWE Solutions and distributed to direct beneficiaries in 7 districts. The relational database system was completed in September, and it is functional and ready for deployment. The database will assist tracking beneficiaries around DVMs in the next project year.
4	Establish promising root storage demos for rural households across 7 districts	A total of 1,690 (767 M, 923 F) farmers have been trained during the participatory evaluation of root storage technologies during the year. The 47 root storage demonstrations (ladder pit, granary type, and ventilated pit) established in last reporting year were ongoing up to December and were assessed at 2 and 4 months after establishment. At each evaluation, an average of 25 farmers participated. Data were analyzed, and a final report was prepared and presented by the seed systems agronomist at the DARS annual review and planning meeting in Mzuzu on 26 September. The results showed that the ladder pit was the most promising storage method with the smallest percentage of rotten roots (18.0%), shriveled roots (9.1%), and highest percentage of consumable roots (89.0%). About 39.8% of roots stored in granary sprouted, compared with 57.5% and 68.2% in ladder pit and ventilated pit, respectively. Farmers preferred ladder pit because it is cheap to build and easy to access roots. Ventilated pit was the least preferred. Ease of accessibility to the roots during storage period, the cost of constructing structures, and the quality of roots were key factors that farmers based on to select a storage method. On the basis of the superior performance of the ladder pit, 14 new root storage demonstrations were established in June–July in the 7 districts (Fig. 3). This time each site had four ladder pits, each filled with a different variety: 'Chipika', 'Kadyaubwerere', 'Kaphulira', and 'Mathuthu'. These evaluations will continue into the next project year.  *Figure 3. Example of ladder pit preparation and roots to enter storage in Ntcheu (left) and Lilongwe (right) District.*
5	Conduct a participatory evaluation on the effect of bundle type and storage period on growth and yield of OFSP varieties	The protocol on the participatory evaluation on the effect of bundle type and storage period was completed, and sites for the trials were also identified in Machinga, Balaka, and Mchinji and verified with support from research technicians and DAES staff. The trials were managed by a group of farmers around the site under close supervision of technicians and DAES. The seed systems agronomist visited the sites monthly. The treatments included two varieties, four times periods between cutting and planting, and leaves of vine cuttings to be removed or not removed. The trial site in Machinga was waterlogged due to excessive rainfall during the season, and the site was therefore abandoned for data collection. Key findings of the trials that were conducted in Mchinji and Balaka are that: • Leaf removal from the cuttings prior to planting did not affect the establishment of the crop. • Storing bundles of planting material in a shed for 8 days prior to planting did not affect establishment compared with planting freshly cut bundles. These findings are important because they have implication on the logistics of vine distribution. Leaf removal allows for larger number of bundles to be distributed in one vehicle. It also shows that when

FY3 Activities		Achievements October 2016–September 2017
		scattering bundles in a shed without exposure to sunlight, bundles can be kept in good condition for a reasonable period.
6	Organize supervisory visits to all commercial multipliers of OFSP planting material	In December, the seed systems agronomist visited ***16 selected sweetpotato vine multipliers*** in the central and southern regions to assess vine availability in readiness for the growing season. The new multipliers managed to set up good nurseries by following recommended technical aspects. Additionally, some multipliers that were trained during 2015/16 season and now enter their second year managed to expand areas under vine multiplication. The visit revealed that there was limited planting materials on the market as only three multipliers (B&C Investments, Mabvuto Mndau, and Greenworld Nurseries) could supply at time of the visit. The common challenges to vine production as reported by majority of multipliers was scarcity of enough water for irrigation, even though CIP clearly stressed the importance of year-round water supply in commercial vine multiplication. In practice this importance was underestimated by the starting multipliers. In Q4, the seed systems agronomist conducted field visits to ***10 selected DVMs*** across the 7 districts and to Nankhwali Farm in Mulanje and Bvumbwe Research Station in Thyolo as sources of clean planting materials. The main objective was to assess the status of DVMs in readiness for coming season and to assess early generation seed quantities available from the two suppliers for new DVMs. All old DVMs visited are maintaining the varieties, but several sites were in a dormant state due to lack of marketing opportunity at the time of the year. There is need for frequent monitoring visits to DVMs since some sites are not well watered or maintained and should be encouraged to prepare for the upcoming rainy season. Both Bvumbwe Research Station and Nankhwali Farm lacked enough basic clean planting materials as they were only planning to continue rapid multiplication only in August. In addition, quality concerns (maintaining virus-free material) of planting material remains a challenge in both sites.
7	Conduct an evaluation on effect of type and rate of fertilizer on vine multiplication rates of OFSP planting material to advise CVMs	An opportunity arose for collaboration with Farmers World to test special blended fertilizer to improve sweetpotato productivity. This was considered more beneficial than a single fertilizer-vine trial. CIP facilitated Farmers World vine bundle procurement and developed and shared with it data collection forms for fertilizer trials. Forty-five fertilizer trials were established by Farmers World in 8 districts (4 MISST districts) and about 3,000 bundles distributed to farmers in the MISST districts around Farmers World fertilizer demos. A day of field visits to Farmers World demonstration sites took place, attended by CIP project managers and other staff, as well as Farmers World project manager and area managers. About 5 OFSP fertilizer trials were visited (Fig. 4). A fertilizer response was observed in most field, and data from 37 sites are now compiled for analysis.  *Figure 4. CIP and Farmers World evaluate a fertilizer trial.*
8	Conduct a cost-benefit analysis for commercial vine production of pre-basic, basic, and quality declared planting material and develop an investment brochure	A third-year agri-business B.Sc. student from the Netherlands (Mike Verkaik) developed a questionnaire that focused on screenhouse production and open-field multiplication; 8 commercial multipliers (of whom 2 owned a screenhouse) were interviewed in November. The work on a first draft of an investment brochure started based on these interviews, but data on profitability were still questionable since there no field measurements were done. As part of annual outcome surveys, a new tool was developed by the M&E specialist and project manager. A survey of selected CVMs (14) and DVMs (34) started in Q3; data collection was completed. Data analysis from this survey is in progress but delayed. Owing to a reduced budget, we could not engage consultants to do the data analysis and reporting. The completion of the brochure only awaits the final cost-benefit analysis that will be derived from the survey results.

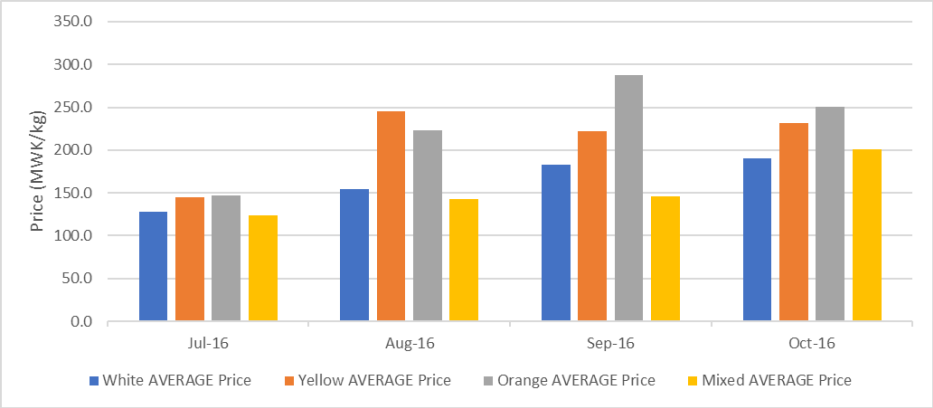
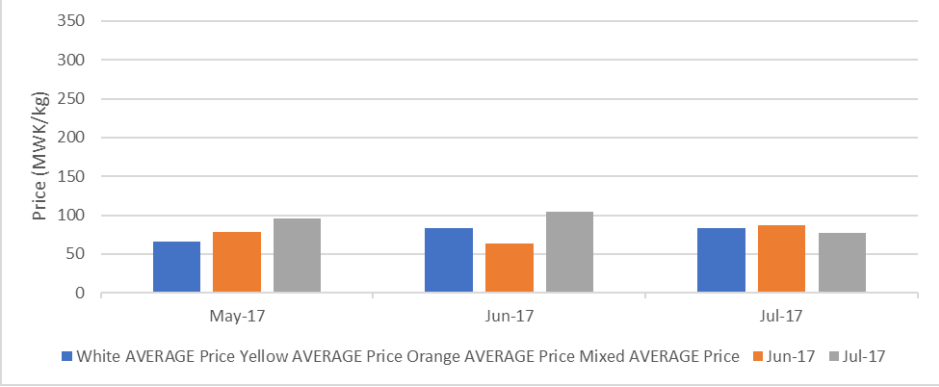
FY3 Activities		Achievements October 2016–September 2017
9	Conduct trainings in marketing for root producers in high-producing areas	In Q4, 2-day trainings took place in each of the 7 districts. The trainings targeted middlemen, mainly OFSP vendors, who are actively involved in selling OFSP from producers in the field to local markets within the districts (Fig. 5). The objectives of the training were to: • Train middlemen on the availability and benefits of OFSP • Increase local demand for OFSP and marketing in the 7 districts • Learn from the middlemen/vendors on their OFSP marketing strategies and ways to improve the project implementation in subsequent years.  *Figure 5. Training in OFSP marketing to vendors in Mchinji district* A total of 152 sweetpotato vendors (82 M, 70 F) were trained on the benefits of OFSP and on root sourcing and marketing. The trainings were very beneficial since there was a two-way exchange of knowledge and experience on OFSP marketing. Vendors could learn the benefits and the names of the OFSP varieties and how best they can incorporate them in their day-to-day marketing of OFSP. There was also an interaction with some of the key OFSP producers in the districts during the meetings. Thus, prior informal connections have started to develop between vendors and producers. There is now communication between CIP technicians and government extension workers with the vendors that (1) OFSP is also a valuable crop and (2) proper arrangements are being developed to ensure that players in the sweetpotato value chain are connected and empowered to spur the trading, marketing, and consumption of OFSP. In Q3 CADECOM had also conducted two trainings of farmers in cost-benefit analysis and marketing in Golomoti Extension Planning Area (EPA) in Dedza. The trainings tackled the areas of gross margin analysis, value addition, and collective marketing of OFSP. Some 113 people attended (49 M, 64 F).
10	Support DVMs with trainings in gross margin analyses, price determination and marketing of planting material	The DVMs were visited by partner staff and technicians. Partner staff were already trained on gross margin analysis and marketing of planting material in Y2, and were advised to pass on this knowledge when they visited their DVMs. CADECOM Dedza linked its DVMs in Mtakataka to SCIAF project in Ntcheu, where they sold 293 bundles of OFSP vines at MK700/bundle. Other partners also tried to link DVMs to markets. Results from our survey show that DVMs have managed to sell to a range of NGOs, including We Effect, FAO, CADECOM, CIP, Ministry of Agriculture, CARD, United Purpose, Feed the Children, and Save the Children. Stand-alone, district-based trainings of DVMs in Q4 did not take place as planned due to budget uncertainties.
11	Contribute to establishing a web-based sweetpotato root and vine market information system (MIS) (locations and contacts of main selling points of OFSP vines and roots) together with Root and	A consultant was engaged to develop an online MIS on the website of the RTCDT. GPS coordinates, hectarage, and production data were collected for DVMs and CVMs and provided to the consultant. Layers for geographic maps were developed to show the locations and contact details of producers of OFSP planting material. The assignment is completed, and the MIS can be accessed online via the RTCDT website. This will assist buyers of planting material to identify sources of clean material in their area without depending on CIP to recommend suppliers.

<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td></td><td>Tuber Crops Development Trust (RTCDT)</td><td></td></tr>
<tr><td>12</td><td>Data collection on quantities of OFSP vines produced by CIP-supported CVM and DVM in the 7 districts</td><td>A survey of CVMs and DVMs was conducted in May and June to look at area coverage by variety, quantities, and value of OFSP planting material by variety sold by both groups. The number of bundles that multipliers produced as well as proportions of number of bundles sold, shared, used for root production, or preserved for next season were estimated with respondents. About 14 CVMs and 34 DVMs were interviewed and their farms visited for area measurements. Preliminary analysis shows that DVMs produced on average 998 bundles and CVMs 3,772 bundles (Table 3). Price received by multipliers ranged from MWK300.00 to MWK1,000 for the CIP-standard bundle (100 cuttings of 30-cm length) and MWK650–MWK2000 for 50-kg bags. Since most of the multipliers reported that they had sold to NGO buyers, the prices that were charged were motivated by the institutional demand for OFSP as a nutritional and a recovery crop. Therefore, this may not reflect willingness to pay by rural farmers. Apparently, lower prices were charged for vines that were sold in the community.

Table 3. Average price, average number of bundles harvested, and average value of sales for OFSP planting material
<table><tr><th></th><th></th><th>DVM</th><th>CVM</th><th>Pooled</th></tr><tr><td>100 cutting bundle</td><td>Average Price Received (MWK)</td><td>615</td><td>664</td><td>630</td></tr><tr><td></td><td>Average Qty. of Bundles Harvested [1]</td><td>998</td><td>3,772</td><td>1,890</td></tr><tr><td></td><td>Average Sales (MWK)</td><td>708,400</td><td>2,637,470</td><td>1,321,500</td></tr><tr><td>50-kg bag</td><td>Average Price Received (MWK)</td><td>1,275</td><td>-</td><td>1,275</td></tr><tr><td></td><td>Average Qty. of Bags Harvested</td><td>70</td><td>-</td><td>70</td></tr><tr><td></td><td>Value Sold (MWK)</td><td>48,250</td><td>-</td><td>48,250</td></tr></table>[1] A good share of vines that was harvested was either shared among beneficiaries and their families or restored for conservation. OFSP vines are still considered a common good and is characterized by non-monetary transactions.

A total area of 67 ha is estimated to have been cultivated with vines during the year by the multipliers who participated in the survey (Table 4). Since the multipliers were only a sample of the total number of multipliers, these data will need to be extrapolated to estimate the total area under vine multiplication. The largest area was allocated to ‘Kadyaubwerere’, ‘Kaphulira’, and ‘Mathuthu’.

Table 4. Area under OFSP varieties
<table><tr><th>Variety</th><th>Hectarage</th></tr><tr><td>Anaakwanire</td><td>7.8</td></tr><tr><td>Kadyaubwerere</td><td>11.3</td></tr><tr><td>Kaphulira</td><td>10.5</td></tr><tr><td>Mathuthu</td><td>10.3</td></tr><tr><td>Zondeni</td><td>2.3</td></tr><tr><td>Chipika</td><td>6.2</td></tr><tr><td>DNA</td><td>18.7</td></tr><tr><td>Total area (ha)[2]</td><td>67.0</td></tr></table>[2]Note: The total area has not been extrapolated to estimate total area under OFSP planting material.</td></tr>
<tr><td>13</td><td>Conduct market monitoring exercises for OFSP and other sweetpotatoes. Collaborate with the Ministry of Agriculture, Irrigation and Water Development</td><td>Refresher trainings on OFSP market monitoring data collection was conducted in all the 7 districts in the Zones of Influence (ZOI) to build the capacity of 40 (29 M, 11 F) enumerators from the planning department who were responsible for collecting the data. A total of 35 markets in 7 districts were selected for monitoring data for OFSP. Data have been collected for 3 months, after which the activity was aborted due to the budget reduction. Preliminary results suggest that there is little flow of OFSP into most marketing centers compared with the white-fleshed varieties. Many buyers and sellers did not know most of the OFSP by varietal name. Despite this, OFSP is fetching higher prices than the white-fleshed sweetpotatoes.</td></tr>
</table>

FY3 Activities		Achievements October 2016–September 2017
	(MOAIWD) to collect market data (prices, OFSP market proportions/qty.)	
14	Develop an OFSP availability calendar from data collected from key markets in ZOI	Activities started at different times in the different districts and only took place for 3 months. Therefore, instead of a calendar, we prepared a basic analysis of prices and quantities. Preliminary results of the monitoring exercise show that OFSP fetched a relatively higher price for the months it was monitored on the market in 2016 and 2017:   Relative price (ratios) reveal that in 2016, with an average price of MWK226/kg, OFSP price was 38% higher than for white-fleshed sweetpotatoes, 7.5% higher than for yellow-fleshed, and 48% higher than for mixed sweetpotato types (Table 5). **Table 5. Relative prices for OFSP to other-fleshed sweetpotato types in 35 markets**

	Price Ratios		Average Price Ratio
	2016	2017	
Orange-fleshed to white-fleshed	1.38	1.15	1.27
Orange-fleshed to yellow-fleshed	1.07	1.08	1.08
Orange-fleshed to mixed-fleshed	1.48	1.16	1.32

B	**Enhanced capacity and strengthened seed partnerships to assure quality of seed from production to distribution of OFSP**	
1	Organize a multistakeholder vine demand estimation workshop to bring together	During joint planning meetings with Feed the Future Ag. Diversification (Ag Div.) project, it was agreed that this symposium will be conducted in October. The reason is that more NGOs will know their procurement requirements. Several planning meetings took place between CIP and the Ag Div. teams. The symposium will be themed "Sweetpotato for Profit and Health in Malawi" and will have the following objectives: • Share successes and achievements in OFSP technology scaling and value chain development to date.

FY3 Activities		Achievements October 2016–September 2017
	multipliers, NGOs, and other relevant stakeholders at national level	• Joint understanding among stakeholders about opportunities to further develop the sweetpotato market and strengthen the seed system in Malawi. • Bring buyers and producers/sellers of sweetpotato planting material together to create linkages and create understanding of factors affecting the business. • Identify key actions that each stakeholder in the value chain can take moving forward. • Understand the demand for planting material for the upcoming rainy season so that buyers can start a relationship with potential suppliers well in advance.
2	Support 2 private sector partners with clean planting material and technical knowledge and training on establishing screenhouse for pre-basic planting material plus open-field basic planting material production	Exagris Africa and Thanthwe Enterprises expressed strong interest in commercial production of screenhouse planting material. Therefore, CIP invited them to Bvumbwe Research Station in October, where they were exposed to the technical aspects of screenhouse material production. This raised their interest even more. Thanthwe Enterprises, a family-run company, already has 6 large screenhouses and was willing to try OFSP vine production in 1 of them. We provided 50 bundles as start-up clean planting materials for 'Anaakwanire', 'Chipika', 'Mathuthu', 'Kaphulira', and 'Kadyaubwerere' varieties from Bvumbwe Research Station screenhouses (Fig. 6).  *Figure 6. Vine delivery to Thanthwe Enterprises.* The vines have established well and are growing very fast in the screenhouse. There is need for demand creation of the pre-basic planting material that will come from the screenhouse so that other commercial multipliers can benefit from access to clean start-up material. Thanthwe Enterprises is now the only supplier of pre-basic planting material in the central region. There is still interest by the Exagris (now Horizon Farms) to revive some old screenhouses and allocate them to OFSP, but it does not seem to be a priority due to management changes.
3	Organize a 1-day refresher training for CVMs	A meeting was held on Thursday, 13 July, at Crown Hotel in Lilongwe and drew CVMs from Balaka, Dedza, Mangochi, Machinga, Lilongwe, Kasungu, and Salima. The main objective for organizing the meeting was to enable participants to share experiences in the vine multiplication business to improve the sweetpotato seed systems (Fig. 7). Denis Kathabwalika and Daniel van Vugt facilitated deliberations during the meeting, which included presentations and group discussions. The presentations included progress on vine multiplication in MISST project and a presentation of a business plan for vine multiplication. It was reported that CVMs made positive contributions to vine production of the six OFSP varieties in the districts, which assisted NGOs to access clean planting materials. During 2015/16 and 2016/17 growing season, MISST sourced about 40% and 100% planting materials, respectively, from the CVMs that were trained by the project.  *Figure 7. Group discussions in progress.*

<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td></td><td></td><td>MISST project manager made a presentation to offer CVMs an up-to-date information about opportunities and challenges facing the planting material business. The business plan presentation also served as a basis for discussion to improve the investment brochure. Group discussions by participants resulted in several achievements and challenges:
Achievements
• Increase of land under vine multiplication
• Good sales of vines for some farmers
• CVMs gained experiences in vine multiplication.

Challenges
• Prolonged dry spells during 2016/17 season
• Lack of proper irrigation facilities
• Management and pricing of bundles
• Vine vandalism by livestock
• Marketing of vines as business is dominated by vendors.

These meetings of vine multipliers have assisted the sharing of ideas and coming up with new and innovative solutions to problems. In the last meeting, CIP encouraged the multipliers to form an association to be in a better position to attract markets and large buyers and convince them to avoid vendors and middlemen. The multipliers took the advice and proudly presented a formally registered National Orange-fleshed Sweetpotato Association in Malawi (OFSPA); see success story for more details. This is an important development since such an association can be an excellent entry point for future interventions in the sweetpotato value chain.</td></tr>
<tr><td>4</td><td>Organize refresher training of seed inspectors from the SSU on sweetpotato planting material inspection together with RTCDT</td><td>In March CIP, in conjunction with DARS and the RTCDT, organized a 2-day training on certification standards and inspection of root and tuber crops that focused on sweetpotato and potato seed multiplication. The training drew over 70 participants from DARS (including the SSU), DAES, and CIP, and had both theoretical and practical sessions. The main topics covered were crop variety and disease identification. It was observed that only few para-inspectors from MISST districts attended the training; as such it was suggested to hold a similar activity if funds permit. There was heated debate on the isolation distances for sweetpotato where participants expressed different views. Some participants, particularly those from the SSU, felt that a 2-m isolation distance between different varieties was too close as vines would easily overwrap. Extension officers, however, believed the distance is enough as vines would not overwrap with 2-month intervals between cuttings.</td></tr>
<tr><td>5</td><td>Conduct 1-day district-level refresher training of trainers to partner staff on decentralized vine multiplication, including use of vouchers</td><td>The seed systems agronomist organized and facilitated refresher trainings on decentralized vine multiplication to partner staff in each of the 7 districts. The training focused both on theoretical and practical (Fig. 8) aspects of the vine multiplication approach. A total of 121 staff (86 M, 35 F) were trained. Most participants were from DAES, whereas others were from Concern Worldwide, We Effect, TLC, CADECOM, PEACE Corps, Emmanuel International-Njira, and PERFORM.

 
Figure 8. Practical session on vine multiplication in Dedza.</td></tr>
</table>

<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td>6</td><td>Support to DARS with a thermotherapy chamber to clean up planting material for sweetpotato.</td><td>We identified three suppliers of microscope and thermotherapy growth chamber, and selected Bio-clinical partners as the most competitive. This equipment will be provided to DARS root and tuber crop commodity team in Bvumbwe to clean up disease-infested planting material of sweetpotato so that it can be used in tissue culture. Following advice and discussions with DARS root and tuber crops team, this was a more important and beneficial investment to the seed system than the initial plan of constructing a screenhouse in Chitedze.</td></tr>
<tr><td>C</td><td colspan="2">Adoption and uptake of improved technologies enhanced; increased productivity and production of OFSP and access to varieties among smallholder farmers.</td></tr>
<tr><td>1</td><td>Conduct 1-day district-level refresher trainings to partner staff on MBTs</td><td>MBTs are the key avenue through which the six OFSP varieties (i.e., ‘Anaakwanire’, ‘Chipika’, ‘Kadyaubwelere’, ‘Kaphulira’, ‘Mathuthu’, and ‘Zondeni’) were disseminated. The MBT design consists of one central (host) farmer surrounded by 50 farmers. The host farmer has all the technologies (varieties), whereas the baby farmers have any one of the five varieties except ‘Zondeni’ (the control). In November, a district-level refresher training to partner staff on MBT was organized in each district; 120 were trained. The following topics were covered: 1. Overview of the MISST project and achievements to date. 2. The basic agronomy of sweetpotatoes 3. The MBT concept. 4. Data collection in MBT (the tool kits). 5. Sources of planting materials by district. 6. MBT targets by district by partner.</td></tr>
<tr><td>2</td><td>Vine establishment training and harvest of 2016 winter season MBTs</td><td>The project had established 116 MBTs in the 2016 dry season in 7districts in the 2016 winter season (Table 6), which according to USAID needs to be reported in this year (the year of harvest). The training and promotion officer conducted a monitoring tour, spending 2 days in each district except Lilongwe. Farmers can produce OFSP roots in their irrigation schemes. These roots are a source of food and income in their HH, and the vines also serve as a source of planting materials in the rainy season after harvesting. Notable challenges included inadequate water supply in some irrigation sites, destruction by animals, and poor establishment of some varieties. Vine establishment trainings and harvest took place in Q1. Our experience showed that successful winter production can only occur under continuous irrigation of the crop, protection from livestock by fencing as well as good general field management such as weeding, pest, and disease control.

Table 6. Overview of winter MBT sites and beneficiaries.
<table>
<tr><th>ID No.</th><th>District</th><th>Partner</th><th>Target</th><th>Planted</th><th>Male</th><th>Female</th><th>Total</th></tr>
<tr><td>1</td><td>Lilongwe</td><td>DAES</td><td>7</td><td>5</td><td>130</td><td>70</td><td>200</td></tr>
<tr><td></td><td></td><td>FUM</td><td>4</td><td>5</td><td>75</td><td>175</td><td>250</td></tr>
<tr><td></td><td></td><td>CWW</td><td>5</td><td>6</td><td>0</td><td>6</td><td>6</td></tr>
<tr><td></td><td></td><td>Interaide</td><td>0</td><td>0</td><td>0</td><td>200</td><td>200</td></tr>
<tr><td></td><td></td><td>NASFAM</td><td>12</td><td>11</td><td></td><td></td><td>550</td></tr>
<tr><td>2</td><td>Mchinji</td><td>DAES</td><td>7</td><td>7</td><td>225</td><td>133</td><td>358</td></tr>
<tr><td></td><td></td><td>FUM</td><td>5</td><td>4</td><td>109</td><td>95</td><td>204</td></tr>
<tr><td></td><td></td><td>CWW</td><td>6</td><td>6</td><td>0</td><td>306</td><td>306</td></tr>
<tr><td>3</td><td>Dedza</td><td>DAES</td><td>5</td><td>7</td><td>119</td><td>243</td><td>362</td></tr>
<tr><td></td><td></td><td>FUM</td><td>2</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td></td><td></td><td>CADECOM</td><td>15</td><td>15</td><td>338</td><td>447</td><td>785</td></tr>
<tr><td>4</td><td>Machinga</td><td>DAES</td><td>2</td><td>2</td><td></td><td></td><td>50</td></tr>
<tr><td></td><td></td><td>ZARDD</td><td>15</td><td>15</td><td></td><td></td><td>613</td></tr>
<tr><td>5</td><td>Mangochi</td><td>We Effect</td><td>10</td><td>10</td><td>162</td><td>325</td><td>487</td></tr>
<tr><td></td><td></td><td>NASFAM</td><td>2</td><td>1</td><td>21</td><td>14</td><td>35</td></tr>
<tr><td></td><td></td><td>DAES</td><td>4</td><td>5</td><td>67</td><td>143</td><td>210</td></tr>
<tr><td>6</td><td>Ntcheu</td><td>DAES</td><td>6</td><td>6</td><td>192</td><td>64</td><td>256</td></tr>
<tr><td></td><td></td><td>NASFAM</td><td>1</td><td>1</td><td>31</td><td>5</td><td>36</td></tr>
<tr><td>7</td><td>Balaka</td><td>DAES</td><td>7</td><td>7</td><td>125</td><td>332</td><td>457</td></tr>
<tr><td></td><td></td><td>NASFAM</td><td>3</td><td>3</td><td>69</td><td>84</td><td>153</td></tr>
<tr><td colspan="3">Total</td><td>118</td><td>116</td><td>1,440</td><td>2,573</td><td>5,518</td></tr>
</table></td></tr>
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FY3 Activities		Achievements October 2016–September 2017
		Field technicians harvested some of the sites, though only a few trials survived the long dry season due to chilly weather conditions in districts like Dedza and Ntcheu as well as livestock damage. Nevertheless, some yield was realized (Fig. 9).  *Figure 9. Boy carrying 'Chipika' and woman carrying 'Kadyubwerere' roots at a harvest field day in Ntcheu.*
3	Establish MBT variety demonstration in rainy season in 7 districts	The establishment of MBTs took place in December–February. Partners implementing the MBTs included DAES (all 7 districts), CWW (Mchinji), Welthungerhilfe (Dedza), CADECOM (Dedza and Ntcheu), Peace Corps (Dedza), PERFORM (Machinga), and WE EFFECT (Mangochi). Some 275 MBTs have been established (Table 7). We have procured and distributed smaller quantities of 'Anaakwanire' compared with the four mostly high yielding varieties of 'Chipika,' 'Kadyaubwelere,' 'Kaphulira,' and 'Mathuthu.' **Table 7. The project has planted about 275 MBTs (including at the MISST mega-demonstrations)**

District	Partner	No. of MBTs
Mchinji	DAES	15
	CWW	15
	MEGA	4
Lilongwe	DAES	32
	MEGA	4
Dedza	DAES	10
	Welthungerhilfe	20
	CADECOM	20
	MEGA	4
	Peace Corps	5
Ntcheu	DAES	15
	CADECOM	20
	MEGA	4
Balaka	DAES	20
	MEGA	4
Machinga	DAES	26
	PERFORM	26
	MEGA	4
Mangochi	DAES	18
	WE EFFECT	20
	MEGA	4
Total		275

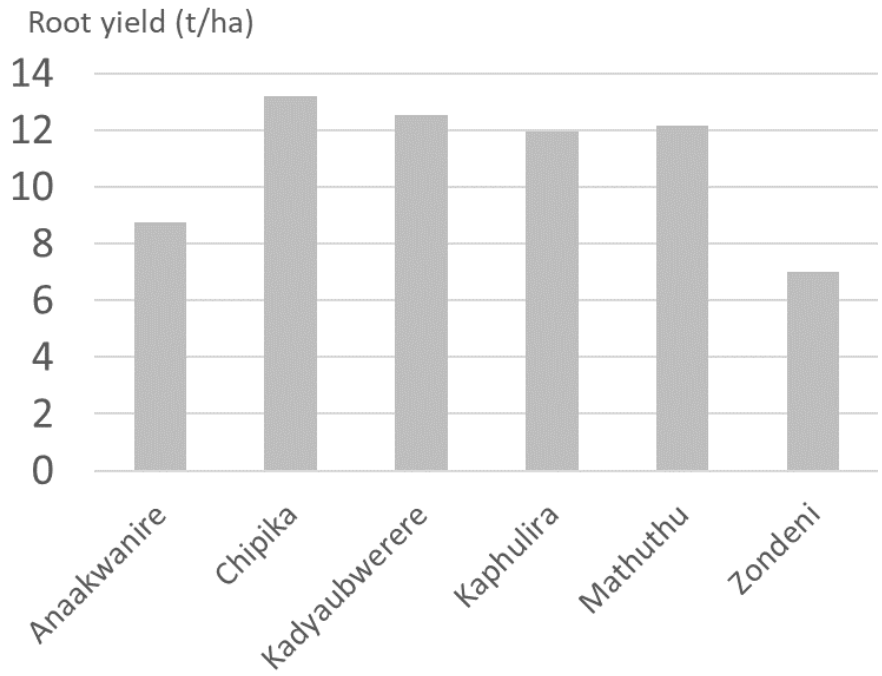
<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td></td><td></td><td>After harvest, data analysis was conducted on the 2016/17 Mother plot data. Analysis of 221 trials with data showed that the yields were generally better than the 2015/16 season due to more favorable rainfall. The varietal differences were the same, with ‘Anaakwanire’ and ‘Zondeni’ still yielding significantly less than the four other varieties (Fig. 10).
 

Figure 10. OFSP variety yields in the 2016/17 rainy season Mother plots.

Although in the 2015/16 season yields in Mangochi, Balaka, and Machinga were poor, there was not much difference this season (Table 8).

Table 8. Average root yields achieved in each district
<table>
<tr><th>District</th><th>Average yield (t/ha)</th></tr>
<tr><td>Balaka</td><td>10.2</td></tr>
<tr><td>Dedza</td><td>10.3</td></tr>
<tr><td>Lilongwe</td><td>14.3</td></tr>
<tr><td>Machinga</td><td>8.2</td></tr>
<tr><td>Mangochi</td><td>11.0</td></tr>
<tr><td>Mchinji</td><td>14.2</td></tr>
<tr><td>Ntcheu</td><td>9.2</td></tr>
<tr><td>Grand Total</td><td>11.1</td></tr>
</table></td></tr>
<tr><td>4</td><td>Conduct training of farmers around the MBTs on planting, agronomic practices, vine conservation, and harvest procedures</td><td>A total of 12,828 farmers received short-term training during planting, vine establishment, and/or harvesting at the Mother plots. This training started with planting of the 275 demos when farmers were trained on the nutritional benefits of OFSP and best practices for planting in terms of land preparation and plant spacing. One to two months after planting, all farmers were trained on vine establishment and conservation as well as vigor assessment and pest and disease identification. In the last training, farmers learned about harvesting and grading and conducted sensory evaluation (Figs. 11 and12).</td></tr>
</table>

FY3 Activities		Achievements October 2016–September 2017
		 *Figure 11. Harvesting and grading in progress by CADECOM in Dedza.*  *Figure 12. Sensory evaluation took place after harvesting at most MBT sites: Eliya Village in Gumba South Section – Mkanda EPA – Mchinji.*
5	Conduct training of AEDCs on MISST joint demo sites in Lilongwe and Ntcheu	MISST as a consortium embarked on setting up 4 mega-demos in each of the 7 districts, with the CIP OFSP component responsible for Lilongwe and Ntcheu districts. In November CIP contributed to the general training of all government staff involved in the mega-demo protocols. More localized follow-up training of the AEDCs and AEDOs in the 2 districts managed by CIP were done so that all government staff involved on the ground could have an in-depth understanding of the objectives and technologies in the mega-demos.
6	Site identification, establishment of MISST joint	The mega-demons have been established in 4 EPAs per district in Lilongwe and Ntcheu, with DAES as the key partner in hosting these demo sites. The overarching goal of these sites is to showcase all the MISST-wide technologies to be adopted by the farmers in all the 7 districts. A collaboration between the Strengthening Agriculture and Nutrition Extension/MSU project, in collaboration with

FY3 Activities		Achievements October 2016–September 2017
	demo sites and field days on joint demos in Lilongwe and Ntcheu Districts	MISST, resulted in farmer field days and farmer exchange visits in the MISST joint demos-selected EPAs in Balaka, Machinga, and Ntcheu districts. Six field days were conducted (2/district) in February; CIP participated in all of them. Under the same collaboration there were 3 field days in March that were conducted in Chileka, Nyanja, and Mitundu EPAs in Lilongwe District, attended by 1,574 persons (942 M, 632 F). CIP Lilongwe technician, together with DAES, also successfully conducted a joint field day at Chiwamba mega-demo (Fig. 13). Participants appreciated different technologies being showcased. More than 1000 farmers attended the field day, and the function was spiced up by traditional dances. The Traditional Authority encouraged farmers to adopt the technologies so that they improve their farming standards resulting in better yields. OFSP was rated highly as a display of foods made from sweetpotato was showcased. Farmers had the chance to ask for the recipes so that they could implement them at individual level. Several questions were asked on the availability of sweetpotato planting material, and the AEDC responded by advising the farmers to contact his office, as Chiwamba EPA has successful multipliers thanks to the MISST project.  *Figure 13. Field day in Chiwamba EPA, joint demo site, Lilongwe District.*
7	Write success stories for each quarterly report and share with partners and on social media	The four stories are presented in section 4, Success Stories.
8	Write and circulate monthly project highlights to project partners	Instead of OFSP-specific newsletters, CIP contributed by submitting stories to be included in the MISST monthly newsletter that was initiated by the Consortium Management Office (CMO).
9	Develop and print an annual project brief and disseminate among partners	A properly branded 2-page project brief was developed and circulated at the Sweetpotato for Profit and Health meeting in Tanzania in September (no MISST staff attended). Therefore, all stakeholders involved in sweetpotato in sub-Saharan Africa that attended the meeting received a copy. The digital version will be circulated to MISST project partners in Malawi in October, and be printed for the upcoming OFSP Symposium in October.
10	Develop 2 newspaper articles promoting the work CIP and partners do on OFSP and share with partners	The first article was published in "MY TURN" column in the national *Nation* newspaper (5 Jan. 2017). The article aimed to highlight the nutritional benefits of OFSP and options for cashing in on the crop by selling the vines and roots to a burgeoning market of NGOs and government as well as processors and fresh markets. The second article was published in both English and Chichewa section of the *Nation* on Saturday, 30 September. The article highlights the work of We Effect in Mangochi on promotion of OFSP through nutrition education and recipe demonstration sessions through care groups.
11	Air 2 programs on national television highlighting the benefits of OFSP	MISST has partnered with the Story Workshop, an organization engaged to develop programs that promote and create awareness on all the components that the MISST project is working on. In January, 4 CIP staff members attended a 1-day consortium meeting to develop key messages that Story Workshop can focus on. Several slots have been developed ready to be aired on MBC radios and TV. Project managers for all the MISST components were contacted to provide an overview of their'

FY3 Activities		Achievements October 2016–September 2017
	to rural communities	projects targets, objectives, and key activities as well as achievements to date. The Story Workshop team also visited farmers' fields and interviewed the project beneficiaries across all the 7 districts. CIP, through MBC, also developed programs that feature the training in recipe development of chefs at Capital Hotel and a TV program on field days organized in Dedza. These were aired on national TV.
12	Develop 2 jingles on the benefits of OFSP and air them on the national radio	Two jingles have been developed by PD Tech media consultants. The first was produced in January; the setting was in an OFSP field where two farmers discuss OFSP. Key take-away messages are that (1) there are new OFSP varieties—1 farmer is explaining to another farmer that there are 6 nutritious OFSP varieties for out-scaling; (2) farmers should engage in crop diversification; and (3) good agronomic practices such as early planting and weeding should be done in sweetpotato field just as it is done in maize. The promotional adverts (both audio and video) were aired on MBC-TV and MBC Radios (1 & 2). The broadcasting schedule started from 17 February 2017, and consisted of 14 slots on TV and 50 on radio. A short video jingle on OFSP marketing was also developed. Some members of the media from the local media houses (i.e., Mudziwathu Community radio, Malawi News Agency, Zodiak Radio, and Galaxy radio) attended the recipe demonstrations in Mchinji and featured some of the farmers that were trained in their local programs.
13	Conduct field days around MBT, irrigation schemes, DVMs, and CVMs	Several partners organized 52 field days throughout the year in addition to the MISST joint demo field days reported earlier (Fig. 14). With DAES, a field day at an OFSP MBT site at Manjawira EPA in Ntcheu in February attracted about 400 people. Supported by district field technicians, DAES conducted 38 field days in Q3, attended by 6,239 (2,343 M, 3,094 F) farmers. The theme of the field days was "Stay Healthy by Producing and Eating More Orange-Fleshed Sweet Potatoes."  *Figure 14. Lezita Masa explaining to the audience how she started OFSP production during a field day in Dedza.* We Effect organized a field day in Q2 with 199 (65 M, 134 F) participants, and one in April (Q3) in which 192 people attended (97 M, 95 F) to appreciate OFSP being cultivated at a larger scale. This farmer planted 'Kadyaubwere' on 1 acre along the Lake Malombe shore in Maiwa EPA. Farmers prepared some OFSP recipes to emphasize the need to upscale OFSP production as well as consumption. Six major field days were conducted by We Effect in Mangochi in Q3; 2,603 beneficiaries (945 M, 1,658 F) participated. The field days were conducted at Kadewere ground and Mase in Maiwa EPA (Fig. 15), Ngongomwa and Nkope in Mbwadzulu, and Ekala in Mnthilamanja EPA.

FY3 Activities		Achievements October 2016–September 2017
		 *Figure 15. Participants during a field day at Maiwa appreciating Innosi Chimwala's Mother plot.* CADECOM also conducted 6 larger field days in all the 5 EPAs where it is working. Njolomole had 2 field days and the rest of the EPAs had 1 field day each (Fig. 16). During the field days, the farmers were oriented on OFSP husbandry practices, DVM establishment, and management. They were shown what the varieties look like. A total of 858 people attended the field days (407 M, 549 F).   *Figure 16. Field day in Bilira (left) and Golomoti (right).*
14	Work with partners to engage local media and comedy/drama to promote OFSP	CADECOM organized 8 road shows (2 per EPA) to promote OFSP. Chindime and the Stars Theatre group was hired and performed in selected sites in Dedza (Mayani, Phathi, Magomero Trading Center, Biwi Jemusi Village, and Kasina Ground) and Ntcheu (Kachere, Tsangano Turn Off, Njolomole, Masasa, Lizulu, and Kambilonjo). The aim was to popularize and help market for OFSP. The total attendance of the roadshows was 1,049 M and 1,917 F. In collaboration with DAES, Madzanje Drama Group was engaged in Machinga and performed in Domasi, Mtubwi, Mbonechera, and Nyambi. In Mangochi, Ngwenya, and Bauleni performed in Chilipa, Mbwadzulu and Katuli, and Tikondane Drama Group in Masuku.
15	Identify sites for year-round commercial root production using staggered planting as a continuous source of OFSP roots for nutrition activities and processors	The project provided 'Kadyaubwerere' planting material to 18 farmers (3 per district in 6 districts). Each farmer planted 175 bundles on at least 0.4 ha. These farmers were selected based on merit, thus having the interest to grow OFSP, ability to commit 1 acre of land, high crop management skills, and ability to look for own markets. Furthermore, the farmers should sustain the OFSP vines beyond the rainy season. These farmers are expected to engage in irrigated farming soon after harvesting the current crop. The farmers were brought together and trained in root production and marketing. After harvest time, the training and promotion officer developed a brief questionnaire and interviewed the farmers. The objective was to learn lessons from the farmers on their experiences with OFSP root production and marketing and to collect input, labor, production, and sales data that could feed into a gross margin analysis. That analysis can be used as an investment brochure/flyer for commercial root production of OFSP. A selection of lessons learned so far includes:

FY3 Activities		Achievements October 2016–September 2017
		• Farmers are willing to organize themselves into OFSP clubs such as Tikondane and Mthetsanjala in Mchinji District. Advantages were easy diffusion of technologies (planting material was shared after harvesting), group ownership of the technologies, and ease of delivery of extension services when dealing with clubs instead of individuals. • 10 commercial root producers have made good profits through selling of the OFSP roots (i.e., at MK10,000/50-kg bag). • 12 commercial root producers were also able to sell the vines to NGOs such as Dedza CADECOM, United Purpose, Ministry of Agriculture, and fellow farmers. • OFSP provided a steady flow of food in the HH as it is preferred by children. The commercial root producers reported that at least 10% of the OFSP was utilized within the HH, thereby increasing vitamin A intake in the home. • Commercial production of OFSP is a profitable enterprise only if the farmer has marketing and entrepreneurial skills. Twelve farmers could sell all the OFSP roots they grow at a profit, yet 6 farmers did not sell the OFSP roots at all. • Almost all the farmers have engaged in OFSP vine multiplication in readiness for the 2017/2018 season and are willing to sell vines to other farmers. They have planned to increase land allocated to OFSP by 50–100%. • New entrants in OFSP production (about 6 farmers) struggled to find a market for roots or sell vines during the season.
16	Set up a "model site" for year-round vine and root production under irrigation in Lilongwe	Maria Phikani from Matamando Farm in Lilongwe (Fig. 17) is a very active multiplier trained by CIP who is also interested in root production. The site was visited with a team from the Feed the Future Ag Div. project, including the chief of party, to appreciate the work and explore the option of installing drip irrigation. This will be part of the integration efforts between the two USAID-funded projects. The site will also be used for some agronomic trials such as the effect of drip irrigation and nutrient inputs on vine multiplication rates and root production.  *Figure 17. Multiplication beds at the model site in Lilongwe.* The farm has done very well, since even during the last quarter when vines are normally in low demand, she has managed to sell all her materials (2,800 bundles). These were sold to farmers who want to multiply in preparation for the upcoming rainy season, Limbe Leaf, NGOs, and middlemen.
17	Engage a musician to compose a song and video promoting OFSP	Skeffa Chimoto was contracted to develop an OFSP song (audio) and video (Fig. 18). The song is raising awareness on the benefits of consuming OFSP in both rural and urban areas. Both song and video clip were shared with the USAID nutritionist and communication team. The song was then pre-tested to ensure that the audience understands the message, especially the difference between "batata ya orange" and "batata yofiira mkati." The audiences did understand both ways—so there was no confusion—and the song and video were cleared for dissemination.

FY3 Activities		Achievements October 2016–September 2017
		 *Figure 18. Skeffa Chimoto in his video clip on OFSP.* The song and video clip by Skeffa Chimoto have been shared with some partners, including Farm Radio Trust.
18	Design, print, and distribute signposts for vine multipliers, demos, and root production sites as well as other functional promotional material (T-shirts/ wrappers)	About 209 signposts were designed and printed, and have been successfully erected in the designated sites. Four types of signposts were designed: (1) DVM signposts where the name of the multiplier or group is written and that there is OFSP planting material available; (2) CVM signposts where the name of the farm and estimated distance to the site is also written; (3) EPA signposts where the name of the EPA is written and that it is involved in OFSP production; and (4) irrigation schemes where farmers can produce sweetpotato roots all year round. Some designs of wrappers and T-shirts were made but not printed, due to budget limitations.
19	Represent MISST and OFSP on national agriculture and nutrition-related events and fairs	CIP has taken part in many events and fairs to raise the visibility of the project, including: • Workshop on the awareness of implementation of SADC harmonized seed regulations in Malawi. • The World Food Day and Africa Day of Food and Nutrition Security. • The nutrition research dissemination conference, held at Bingu International Conference center, to promote the work CIP is doing on OFSP nutrition. • Micronutrient meetings and micronutrient technical working group (TWG) meetings to guide the implementation and monitoring of the micronutrient activities. • The National Nutrition Committee Meeting in February. • Nutrition-agriculture meetings at DAES to discuss the way forward on the harmonization of information, education, and communication (IEC) materials at national level. • Stakeholder meetings organized by CIAT and Harvest Plus on the "Delivery of biofortified crops in Malawi." • Meeting organized by the Malawi offices of Save the Children and the International Food Policy Research Institute for a technical and policy discussion on "Improving food security, diets, and nutrition through multi-sectoral action: New evidence, challenges, and opportunities." • The Lilongwe District Agriculture Fair, held from 12 to 14 July, at Civo Stadium. • The National Agriculture fair, conducted from 16 to 19 August 2017, at Trade fair grounds in Blantyre.
D	**Increased resilience of vulnerable families through improved nutrition knowledge, OFSP utilization, and OFSP consumption at household level**	
1	Conduct step-down trainings at district level on OFSP recipes and	In Q1, 222 staff have been trained in various step-down trainings at district level in Mangochi, Machinga, Lilongwe, Balaka, Dedza, and Ntcheu. Participants were deliberately drawn from governmental agriculture and health sectors to promote integration of nutrition, agriculture, and health. Other participants came from project implementing partners. Training methods were through

FY3 Activities		Achievements October 2016–September 2017
	nutrition counseling	PowerPoint and group discussions, exercises, and plenary and practical sessions. Topics covered included presentations on the importance of nutrition to human growth and development, malnutrition levels in Malawi, existing nutrition programs in Malawi, and review of key nutrition messages such as vitamin A. Twelve recipes were demonstrated and displayed whose main ingredients were OFSP, potatoes, soya beans, sugar beans, pigeon peas, yellow maize, and groundnuts (i.e., covering all commodities within the MISST project; Fig. 19). During display, participants were involved in analyzing the food groups and nutrients present in each dish. After the training, copies of recipes were given to participants to use during community training. These training sessions concluded the planned stepdown training session in all 7 districts.  *Figure 19. One-pot dish of Usipa vegetables and OFSP (left), porridge from orange maize and roasted pigeon peas flour blend (middle), and groundnut flour and green vegetable (right).*
2	OFSP acceptability study through survey in Lilongwe and Mangochi in collaboration with NUI Galway	The acceptability study implementation continued from year 2 into year 3. Activities consisted mainly of data entry and analysis of the sensory acceptability study and survey tool development and implementation of the cultural acceptability study. These studies were conducted by Ph.D. student Marijke Hummel through collaboration with Galway University in Ireland. The student has almost completed the final report based on several rounds of comments on drafts throughout the year. Results were presented in a seminar at CIP in which several MISST project managers and project partners participated. Key recommendations from the ***sensory acceptability study*** include: • Conduct an in-depth study on the sensory characteristics (sweetness, maltose concentration, dry matter content) of the four varieties that were used in the sensory evaluation study to be able to link the liking of the attributes to the actual attributes itself. With this information breeding for certain characteristics can be improved, and new varieties can be adjusted. • OFSP is mainly seen as a breakfast food; for lunch and dinner, only 10–15% of participants found it suitable. Showing the diversity of dishes that can be prepared using OFSP would be very important to be able to increase the intake. • Promote the OFSP more among mothers. If they like the crop better, they are more likely to feed it to their children. Alternatively, the message can also be framed toward the benefits for children. However, focusing only on children may create the image of OFSP as a crop for children, which can make the adults like it less. • All varieties are accepted from a sensory perspective, but different other criteria are important in deciding what is most important to promote among rural consumers, who are mostly farming as well. The three criteria that are important in these considerations are: 1. Root and vine yields per hectare 2. Beta-carotene yield per hectare (nutritional yield) 3. Taste preference. Key recommendations from the ***cultural acceptability study*** include: • There should be a focus on improving the knowledge of caregivers in Malawi on OFSP to make them realize the importance of vitamin A for them and their children and to learn about the vitamin A content of OFSP. • Include the most important influencers in the communication strategies of OFSP projects. These influencers are reported to be of major importance to the parents' decision-making process on which foods to prepare for their children. The most important identified here are the extension workers and the child growth centers. • Cues to action are important in further promoting the OFSP among caretakers. This can be done by activating beneficiaries to learn about OFSP and enhance access to planting material. In our survey, information sessions and provision of vines where valued highest by caretakers.

FY3 Activities		Achievements October 2016–September 2017
3	Design and develop nutrition-sensitive behavior change communications (BCC) and IEC materials (counseling cards, posters, leaflets, fliers, T-shirt, clothing, etc.) on various foods and its nutritional benefits for different target groups (school children, farmers, care groups, youth groups, mothers groups, etc.)	A meeting was held at Capital Hotel on 31 January 2017, with all OFSP project managers and another CIP staff to review existing IEC materials and agree on additional materials that could be developed. A 4-day workshop on IEC material development was organized from 27 to 30 March 2017, at Mapiri Lodge in Dedza (Fig. 20). Over 30 participants from government (Ministry of Local Government, Ministry of Gender, DNHA, Ministry of Agriculture crops and nutrition departments, Ministry of Education, and Ministry of Environmental Health), NGOs, partner organizations (Farmers Union of Malawi, Ag Div., Feed the Children), and MISST (IITA, ICRISAT, CMMYT, CIP) including other CIP projects attended the workshop. The objective of the workshop was to develop IEC materials that could link agriculture to nutrition, create awareness on effects of aflatoxin on nutrition and health, and visibility for the projects activities in the target districts.  *Figure 20. IEC materials development workshop in pictures.* Different IEC materials have been developed and are in final draft form. Materials developed so far include posters; billboard; IEC on crop diversity in the field, aflatoxin, soybean, OFSP, maize, sorghum, and groundnut production; and the nutritional benefits of these crops.
4	Translate IEC materials into local languages	Owing to budget constraints, the final review meeting and translations did not take place this year. They may be done in FY4 under the Nutrition Concept Note activity funds.
5	Identify partners in the ZOI that can be supported with training and IEC materials on nutrition related to the MISST commodities to use within their programs	Several meetings took place with partners, including Save the Children (SNIC project in Mangochi), Catholic Health Commission (SNIC project in Ntcheu), United Purpose (formerly Concern Universal) for collaboration in Dedza, and Feed the Children for collaboration under their USAID-funded Tiwalele 2 project. This year the collaborations consisted more in strategically locating MBTs and DVMs and coordination of nutrition activities at district level. There is potential to take these partnerships to the next level in the upcoming project year. The project also supported ExAgris to promote the production and consumption of OFSP through local farmers in Lilongwe District.
6	Review, develop, and incorporate nutrition counseling messages on OFSP into existing community counseling and BCC materials aligned with existing material approved by government	The nutritionist engaged with government and development partners in the review and development of materials that link agriculture and nutrition (nutrition-sensitive agriculture). Several meetings were held at DNHA. Soon there was a realization that there was need for a taskforce that could work together on harmonizing nutrition-agriculture IEC materials. After several meetings of the task force in which existing materials were reviewed and gaps identified, it was proposed to the director of nutrition to have a separate TWG for the nutrition-sensitive agriculture component; it was approved. This TWG will provide guidance and technical information and report on nutrition and agriculture links, programs, and projects working on agriculture and nutrition in Malawi to the National Nutrition Committee Meeting. The task force was expected to develop terms of reference that could guide the group. The nutritionist met at DNHA to consult on the recipes and IEC materials that we are about to develop. The chief nutritionist gave the go-ahead and suggested that our recipes be part of the national recipe book which was finalized but not yet published because of financial hiccups. DNHA shared a soft copy of the recipe book so that we could review and adopt some of the recipes that could be part of recipe book that we are planning to compile for the projects. Nutrition messages were collected, reviewed, adopted from different sources, and compiled, especially on vitamin A, iron, and dietary diversity. These messages will be in different IEC materials such as leaflets, billboards, posters, and others. Some messages will be on agriculture and nutrition, dietary diversity, food processing, and preparation covering all commodities of MISST project (soybean, groundnuts, millet, and pigeon peas) as well as on nutrition and aflatoxin.

<table>
<tr><th colspan="2">FY3 Activities</th><th>Achievements October 2016–September 2017</th></tr>
<tr><td>7</td><td>Review, adopt, and translate existing recipes and community training material on OFSP and legumes</td><td>The recipes that were adopted and developed have been compiled into a recipe booklet which the nutritionist designed, covering all MISST value chains and food safety and handling. Some recipes were tried and tested for acceptability during the community trainings, especially those for complementary feeding (Fig. 21). The recipe book has been circulated to all MISST managers for their final comments before it is translated into local language. Over 35 recipes were compiled covering all value chains for the MISST project.
 
Figure 21. Mothers feeding their children porridge from orange corn soya blend plus pounded green vegetables.</td></tr>
<tr><td>8</td><td>Print the final copies of all IEC, BCC, and counseling material developed and distribute to partners at district and community levels</td><td>Owing to budget constraints, the printing and distribution did not take place this year, but may be done in FY4 under the Nutrition Concept Note activity funds.</td></tr>
<tr><td>9</td><td>Distribute IEC material through other channels</td><td>Owing to budget constraints, the printing and distribution did not take place this year, but may be done in FY4 under the Nutrition Concept Note activity funds.</td></tr>
<tr><td>10</td><td>Organize and conduct nutrition demonstrations of OFSP and other foods utilization for infant feeding through existing structures (care groups or CBOs, food and nutrition fairs) at community level (To be done jointly with MOAIWD and partners)</td><td rowspan="2">Twenty-one community nutrition training sessions were conducted in 7 districts between May and September 2017. Each training session was for 2 days, with theory on the first and cooking demos on the second day (Figs. 22 and 23). A total of 1,192 participants were trained, including participants from care groups and farmers groups (Table 9). Each of the 18 training sessions was done at EPA level and targeted care groups and farmers groups. The training content included agronomic practices for all MISST value chains, making blended flour of cereals and legumes, and recipe demonstration. Foodstuffs which were used to make blended cereal-legume flours were contributed by participants as part of the community contribution to the training. Some of the food items that participants voluntarily brought from their homes included soy beans, groundnuts, pigeon peas, maize, millet, and sorghum.

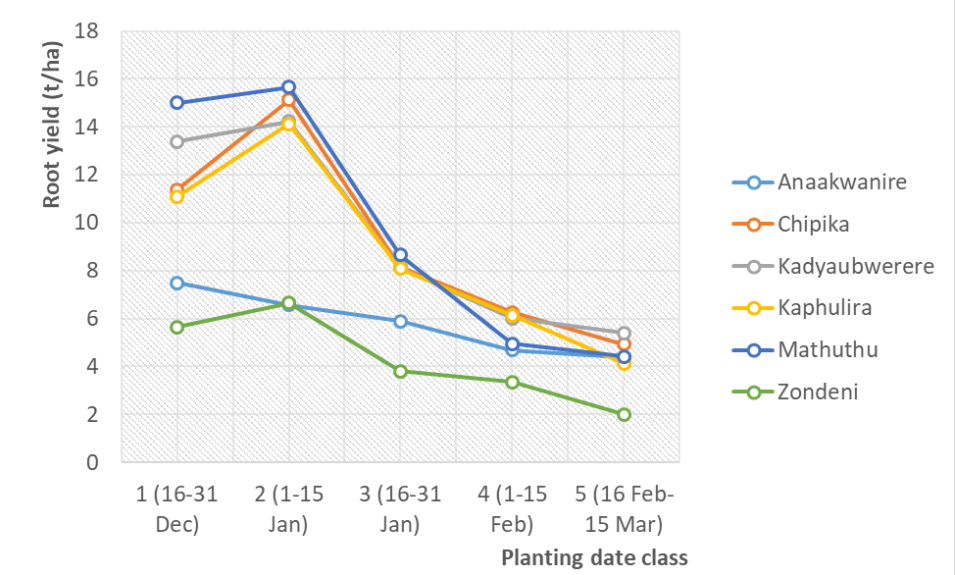
Table 9. Nutrition training participation
<table><tr><th>District</th><th>Male</th><th>Female</th><th>Total</th></tr><tr><td>Mchinji</td><td>102</td><td>128</td><td>230</td></tr><tr><td>Lilongwe</td><td>8</td><td>142</td><td>150</td></tr><tr><td>Mangochi</td><td>33</td><td>131</td><td>164</td></tr><tr><td>Balaka</td><td>58</td><td>111</td><td>169</td></tr><tr><td>Machinga</td><td>79</td><td>173</td><td>252</td></tr><tr><td>Dedza</td><td>26</td><td>94</td><td>120</td></tr><tr><td>Ntcheu</td><td>10</td><td>97</td><td>107</td></tr><tr><td>Grand Total</td><td>316</td><td>876</td><td>1.192</td></tr></table>There were more female (73%) than male participants during nutrition training. It is common in Malawi that nutrition activities are dominated by females due to cultural background. However, there is need to deliberately engage more men on nutrition intervention since men are the decisionmakers</td></tr>
<tr><td>11</td><td>Initiate and support recipe demonstration training, nutrition message dissemination, and counseling sessions at HH level in collaboration with</td></tr>
</table>

FY3 Activities		Achievements October 2016–September 2017
	partners and local government staff	on what food to produce and buy for consumption at HH level.  *Figure 22. Participants in Mangochi receive training and prepare nutritious recipes.*  *Figure 23. Making OFSP crisps during training in Mchinji.* We Effect has trained 32 (10 M, 22 F) promoters including 6 HSAs (2 M, 4 F) and 6 AEDOs (4 M, 2 F). We Effect also conducted cooking and recipes demonstrations in the EPAs of Namkumba, Mbwadzulu, Maiwa, Mthilamanja, and Nansenga in Mangochi. A total of 411 farmers (167 M, 244 F) were trained.
12	Conduct and demonstrate a cooking show and introduce OFSP recipes in the shows on national TV stations to raise awareness of its potential as baby food, snacks and as a meal.	TV reporters from MBC were invited during the trainings of chef cooks at Wamkulu Palace and Sunbird Capital Hotel on OFSP recipes. The programs were aired on national TV. The videos include feedback from hotel guests and demonstration of how to prepare the dishes. Four bags of the humble sweetpotatoes produced by farmers supported by MISST in Lilongwe District reached the highest levels when served to Lilongwe's diplomatic community during a culinary diplomacy event hosted by Her Excellency, the Ambassador of the United States Virginia Palmer, on 15 February. Throughout the day a wide range of dishes were prepared by U.S. celebrity chef Claudia Sansone, supported by four young chefs from the Malawi Institute of Tourism. When guests (including many guests from the hospitality industry) arrived in the evening, she demonstrated how to prepare delicious sweetpotato peanut soup, after which all invitees served themselves with a plate of a large variety of dishes containing OFSP (Fig. 24).

FY3 Activities		Achievements October 2016–September 2017
		 *Figure 24. OFSP features highly in the US Embassy culinary diplomacy event.*
13	Training of urban hotels and restaurants in OFSP dishes and recipes as a pilot to explore urban demand	The nutritionist and an international food and agri-business student, who was also a professional chef in the Netherlands, have worked together to develop OFSP recipes that may be suitable for urban restaurants and hotels. A 1-day training of cooks took place at Wamkulu Palace in area 12 in Lilongwe, where the cooks know how to prepare OFSP cake, chapatti, curry, and juice. On 29 November 2016, a second training was held, this time at SUNBIRD Capital Hotel, from 14:00 to 17:30. Nine OFSP recipes were demonstrated (Fig. 25). This event was attended by chefs of the Sunbird locations in Lilongwe (Capital and Lilongwe Hotels), Salima, and a catering company owned by Sunbird. The training was also attended by some representatives of the Ministry of Health. About 20 people attended the demonstration event.  *Figure 25. Some of the OFSP dishes and serving suggestions CIP trained chefs at Capital Hotel: Juice, sweetpotato curry, OFSP soup, and chapatti.*
14	Conduct a desk review to assess gaps in vitamin A intake across the year based on consumption of vitamin-A rich	The desk review was done from results of 2015–2016 DHS and Micronutrient Survey reports. The dissemination of results from the two surveys was done on 13 March 2017, which was attended by the nutritionist. Results showed that stunting has gone down to 37% from 47% in the DHS 2010. Vitamin A deficiency has dropped to 4% and <1% from 40% and 30% among pre-school children and school-aged children, respectively. However, there was high zinc (over 60%) and iron (over 20%) deficiency among the same age group. The results are an opportunity for the MISST project to put in place strategies that could improve the situation, especially on zinc and iron deficiencies, but at the

FY3 Activities		Achievements October 2016–September 2017
	foods at HH level in the target districts (DHS 2015 and SMART survey results 2015)	same time sustain the status quo on vitamin A deficiency by promoting production and consumption of micronutrient-rich foods among the population.
15	Organize and facilitate quarterly MISST nutrition TWG meetings	Instead of a group meetings, the nutritionist organized individual meetings with MISST project managers to accommodate everyone's busy schedules better. These meetings were around topics including: • Agreeing on nutrition activities and funds • Jointly developing IEC materials for the various commodities • Recipe development.
17	Contribute on demand to nutrition-related activities identified in other MISST component work plans from IITA, CIMMYT, and ICRISAT	
18	Conduct quarterly monitoring and supervision visits of nutrition and nutrition-related activities at district and community level	The nutritionist participated in the step-down trainings in Q1 and visited each district to conduct the first of three community nutrition trainings in Q3 and Q4. In Q4 she also participated in a high-level annual nutrition monitoring tour that is done annually by all key stakeholders working in nutrition in Malawi.
E.	**Activity Management and M, E & Learning**	
1	Conduct general Feed the Future M&E trainings for partner organizations	A 2-day M&E training for 25 partner staff (M&E officer and coordinators) and CIP technicians was held on 18–20 December, at Crossroads Hotel in Lilongwe. The presentations focused on the data collection tools, approaches that CIP uses in vine procurement and distribution, Feed the Future indicators, as well as highlighting the voucher system approach to be piloted during the 2016/17 growing season.
2	Conduct trainings (including refreshers) for CIP staff and selected partner staff for MBTs, root storage, and nutrition monitoring	M&E is normally integrated in those technical trainings and therefore not reported separately. However, the M&E specialist provided an orientation to Farmers World in the use of vine distribution forms (for non-MBT distributions) for their collaboration activities. The project manager for Farmers World then oriented other staff in Dedza and Lilongwe in data collection using the CIP tools.
3	Revise the activity monitoring and evaluation plan for MISST	The M&E specialist contributed to this whenever the M&E lead at ICRISAT required input in development of the AMEP.
4	Revise monitoring tools for agriculture, nutrition, and marketing thematic areas	The M&E specialist revised all the tools (short-term training forms, vine distribution forms) to follow Feed the Future revisions on agriculture and nutrition indicators. New tools (including short-term training form for direct beneficiary farmers/producers, for beneficiary groups, as well as for staff; vine distribution forms for HH beneficiaries; and for group/club/association beneficiaries, etc.) were introduced in November. CIP staff were oriented to the draft tools and discussed areas for improvement. Field staff for partners were then trained by the training and promotional officer and seed system agronomist during the pre-season training workshops that were organized at district level.
5	Develop and pre-test new tools for	A concept for implementing a DVM voucher-based distribution of planting material for the pilot phase was developed by the M&E specialist in consultation with the seed systems agronomist. The M&E specialist developed the voucher-based vine distribution form in line with the reporting

FY3 Activities		Achievements October 2016–September 2017
	voucher-based vine distribution	requirements for direct beneficiaries and shared it with the MISST staff, who discussed and provided feedback to it. The voucher system was implemented in January 2017, for 30 selected DVMs.
6	Develop an appropriate monitoring system for DVMs and beneficiaries reached through DVMs in the district level	
7	Carry out strategic data quality assessments and data verification and provide appropriate feedback for reporting year partners	Data that were received from partners were checked, and appropriate measures were taken to control quality. All valid forms with due signatures and complete data were admitted for data entry, whereas incomplete data were sent back to partners to recollect and ensure that only valid forms are filed. Some partners that submitted photocopies of data were requested to submit original forms (as is required by the donor). District technicians played a very critical role in making sure that good data were collected and submitted. Follow-ups with the partners were also done by the M&E specialist via phone and emails to make sure that valid data are collected and passed on to district technicians. The M&E specialist also followed up with lead farmers in different MBT sites to verify some of the names that were captured in the system. A mini-data quality analysis was sanctioned by the M&E working group in March to conduct data quality checks for the MISST centers.
8	Conduct outcome surveys (for selected indicators) for direct beneficiaries for FY16 winter season beneficiaries	In April, the M&E specialist (Arthur Chibwana) finalized all the instruments that were developed to collect data for HH and vine multiplier surveys. The questionnaires were then programmed for computer-assisted personal interviewing (CAP)/tablets using open data kit (ODK) but compatible across platforms. The CAPI programmer (Mr. Zephaniah Nyirenda), the CIP M&E specialist, and the ICT specialist (David Matiya) collaborated to come up with an appropriate software program for the survey. After completing all recruitments of all research staff, the M&E specialist organized a 1-week training and orientation workshop for 21 enumerators/research assistants, research supervisors, and the CAPI programmer. Three pre-testing sessions were organized in 3 EPAs in Lilongwe, where 1 DVM, 1 CVM, and 18 beneficiary HH were interviewed by the research staff to become familiar with the tool but also to assess if the instruments were well framed. Feedback sessions followed, and appropriate improvements were made to the instruments. In May, a 2.5-day training was conducted for research assistants and supervisors who participated in the Commercial and Decentralized Vine Multipliers Survey. Two pre-testing sessions were for 1 DVM and CVM in Lilongwe prior to deployment of teams. Survey implementation started in April, led by the M&E specialist, in 7 districts. Over 700 HH beneficiaries, 13 CVMs, and 34 DVMs participated in the surveys. CIP's ICT officer and agronomist, as well as district-based technicians, supported the M&E office with supervisory services during the outcome survey. Data collection was completed in June. Data management, analysis, and reporting by the M&E specialist are underway. Owing to time pressure, we are only focusing on the analysis for the key Feed the Future outcome indicators to enter the FTFMS system by 20 October. Additional analysis and full report writing will follow that. CIP intended to recruit consultants for analysis and reporting, but is now handling this task through the M&E specialist due to budget limitations.
9	Collect and manage routine activity monitoring data for all activities	During the year, we continuously collected data on participation in different trainings (including MBTs, root storage technologies, nutrition, and utilization of OFSP, root and vine marketing and promotion, as well as decentralized or commercial vine multiplication), vine distributions to direct beneficiaries as well as DVMs. The M&E specialist and the data entry assistants followed up on any incomplete or invalid data from partners, and made corrections using freshly provided data. Updating and cleaning of the database were continuous activities to prepare for quarterly and annual reporting.
10	Develop and update beneficiary database for CIP and contribute to consortium database development	
11	Conduct routine (quarterly) monitoring visits for partner	In Q1 the project accountant visited all five partners that were subgranted in FY2 to verify the financial reports. Each subsequent quarter, partners' financial reports were reviewed as well. The project manager and the M&E specialist also visited the project sites and met with partners to discuss progress throughout the year.

FY3 Activities		Achievements October 2016–September 2017
	organizations with the project manager and project accountant	
12	Conduct M&E technical check-ins with implementing partner staff (M&E officers and district coordinators)	The M&E specialist regularly contacted all partners M&E officers to keep them up to date on M&E requirements, tools, and data submission. This was mainly done by phone. There was generally good progress in the collection and supervision of data during the year.
13	Carry out data analyses for project and knowledge management as required	An analysis of OFSP yield by variety was done based on data collected in 221 of the 2015/16 rainy season MBTs. More in-depth data analysis will be conducted. Figure 26 provides an overview of yields by variety by planting date class. The results show that 'Zondeni' and 'Anaakwanire' performed poorly compared with the other four varieties, and that OFSP yields were better with timely planting.  *Figure 26. Average root yields for six varieties for different planting date classes.* A more in-depth data-analysis was done on the 2015/16 OFSP Mother plots. A manuscript entitled "Exploring the yield gap of orange-fleshed sweet potato varieties on smallholder farmers' fields in Malawi" was submitted for publication in *Field Crops Research Journal*. The manuscript contains findings from many on-farm trials in which we assessed the performance of six OFSP varieties and quantified the yield gap between actual and attainable root yields. We identified biophysical, management, and socioeconomic factors that contributed to the variability in crop establishment, root and vine yields, root marketability, and weevil infestation. We derived recommendations for enhancing productivity of OFSP on smallholder farmers' fields. Other knowledge management and data analysis activities that took place included: • Analysis of root storage data from the 2016 summer evaluations of ladder pit, granary type, and ventilated pit methods; a report has been completed. • Data analysis for quarterly and annual progress reports.
14	Contribute to the annual beneficiary surveys for the consortium	During the year the M&E specialist actively contributed to the FY2 and FY3 Annual Beneficiary Surveys and the completion of the MISST Baseline Surveys. More specifically, he contributed significantly to: • Selection of consultants • Development and pre-testing of tools including electronic tools

FY3 Activities		Achievements October 2016–September 2017
		• Trainings of enumerators • Supervision and support to consultants in field implementation • Supervision of data analysis • Commenting on reports submitted by consultants.
15	Conduct biannual half-day district-level project review and planning meetings	District meetings had been held just before the start of this fiscal year. Therefore, the first district review and planning meetings with all partners in each district were held on 3–7 April 2017. The training and promotions officer led the meetings in the central region districts whereas the seed systems agronomist led the meetings in the southern region districts. The meetings had the following objectives: • Progress report on the 2016 rain-fed season by partners • Plenaries on what went well in the season and what needs to be changed • Key lessons that have been learned • Areas of improvement • Collect information on field days that have been conducted and plan for more field days • Ways to create awareness and district-specific promotional activities for OFSP • Plan of action for April and May.
16/17	Participate in the MISST TWGs	The TWGs were not very active during the year. The M&E team, however, met very frequently to discuss survey implementations and reporting.
18	Participate in and contribute to MISST joint annual and mid-year review and planning meetings	CIP participated in the MISST: • Midterm project review meeting on 12–13 October, in Lilongwe. • Mid-year review meeting at Golden Peacock Hotel in the week of 24–28 April. No annual review and planning meeting was held at the end of the year due to the uncertainties in funding levels awaiting anticipated budget cuts from USAID.
19	Staff capacity building and trainings/ attendance of (international) meetings on OFSP	CIP staff attended several learning and capacity building events on OFSP: • The M&E specialist participated and presented in the 2017 OFSP Monitoring, Learning and Evaluation Community of Practice for sub-Saharan Africa region, from 29 January to 3 February 2017, in Maputo. • The training and promotions officer participated and presented in the Community of Practice Meeting on processing, marketing, and utilization of OFSP in Kisumu, Kenya, on 1–3 March. • The project manager and seed systems specialist participated and presented a poster in the SPHI Sweetpotato Seed Systems Community of Practice Meeting, on 13–14 June, at Colline Hotel, Mukono, Uganda.

2. CHALLENGES, SOLUTIONS, AND ACTIONS TAKEN

The OFSP component faced some operational (Table 10a) and management (Table 10b) challenges during the year. This section explains these challenges, their solutions, and actions taken.

Table 10a. Some operational challenges and potential solutions identified during the reporting period

Challenge	Solutions and Actions Taken
Several trained multipliers underestimated the requirements for year-round water availability, and the drought resulted in delays in expansion of area under multiplication.	The need for investment in irrigation should be stressed. It separates the "commercial" from the community-based multipliers. Investment brochure and sharing of information will help. Collaboration with the Feed the Future Ag Div. project will result in access to drip irrigation by interested

Challenge	Solutions and Actions Taken
	multipliers.
Since CIP has many projects distributing vines, there was a pressure on vehicles for distribution	We hired a truck and moved some of the responsibilities for vine procurement and distributions to subgranted partners.
The field days exposed the sweetpotato fields to thieves who admired the potato during field days.	As a protective measure, we had to harvest the sweetpotato soon after organizing each field day before going for the next field day.

Table 10b. Some management challenges and potential solutions identified during the reporting period

Challenge	Solutions and Actions Taken
There was uncertainty in reimbursement of Y2 funds pre-financed by CIP, which delayed Y3 subgrant. At the end of Q2, CIP pre-financed close to $1m.	CIP's country manager and project manager visited ICRISAT–MISST's chief of party and finance specialist to explain the issue in February. A CAC meeting was held in April to seek the clarifications needed to sign the agreement.
On 26 May CIP received notification from ICRISAT's HQ that the annual budget is reduced by 10% for the current year. Therefore, over $135,000 needed to be removed from the activity budget for the last 4 months of implementation.	The work plan (Annex 1) and budget were revised and submitted to the CMO. Several activities have been canceled to allow for the budget reduction.
Following budget reduction, CIP, IITA, and CIMMYT no longer have funds for the nutrition activities.	The ICRISAT component contributed to some of the community nutrition trainings, but no center could contribute to printing and distribution of IEC materials.
Owing to budget reductions, no consultants could be engaged for data analysis and reporting on winter HH beneficiary survey and CVM/DVM surveys. This results in delays in completing the reports and investment brochure, since the M&E specialist's time is already fully committed to other tasks (incl. contribution to MISST annual beneficiary survey and data-handling for annual reporting).	We decided to only focus on the key analysis that are required to respond to the Feed the Future indicators, to be entered in the system by 20 October. Additional analysis and report writing will be done in November and December.

3. LESSONS, BEST PRACTICES, AND RECOMMENDATIONS

Many lessons were learnt during the year of implementation. These included:

1. **Lessons on MBTs**

- MBTs in the dry season are very challenging and may have a low rate of success due to water scarcity and livestock damage. The best practice would be to do these only in irrigation systems with year-round water supply, not in wetlands that may dry out.

- A better approach to make use of the dry season would be targeted distributions to farmers in irrigation schemes, combined with training on rapid multiplication, so that farmers can produce their own planting material to plant on a larger area in the rainy season. This approach may help us to reach the targets for hectares.

- Theft of roots and vines is a challenge due to the popularity of the crop. Organizing field days in farmers' fields is crucial for transferring knowledge and creating awareness among farmers and other stakeholders, but also puts the host farmer at risk of becoming a target of thieves.

2. Lessons on the DVM approach

- Benefits of the DVMs are that planting material is available in the communities, less transportation results in fresh vines being planted in the demos; this results in better establishment.

- Farmers in the communities want to copy the vine multiplication methods they see in the DVMs since they see it as profitable and as a good way to have planting material available. This will result in diffusion of the OFSP varieties in the target communities beyond direct beneficiaries.

- The approach is successful because the project subsidizes a lot through direct vine procurement and distribution of vouchers. The long-term profitability of DVMs after project operations end need to be assessed, and farmers need to know they will be responsible for marketing the planting material in their communities. This requires monitoring of sales, demand for vines, and willingness to pay for them in the communities over time. There is also need for close communication with DVM host farmers for them to have realistic expectations on potential sales and profits of vines in the community. It will require more training to DVM hosts on gross margins and marketing of planting material.

3. Lessons on nutrition

- The nutrition-led agriculture activities fill a gap in the country and will result in suitable IEC materials to fill the gap in linkages between agriculture and nutrition. Many other partners implementing nutrition programs are involved in the development, and government is taking a key role. MISST will need to evaluate the impact of the use of these IEC materials on nutrition awareness and practices since we do not know whether (or under what circumstances) better IEC materials will lead to better nutrition outcomes.

4. Lessons on marketing

- Farmers tend to sell sweetpotato roots as individuals to local vendors. To attract better markets and prices, there is need for group collective production and marketing trainings.

- OFSP tends to attract better market prices than white- and yellow-fleshed varieties. There should be emphasis on nutrition and expansion of area under OFSP so that only surplus is sold and HH consumption needs are met. However, this is difficult to prescribe to farmers. It is important to combine marketing activities with nutrition education while being mindful of the gender dimension in decision-making.

- It was observed that there is little availability of OFSP in most marketing centers against the white-fleshed varieties. Many buyers and sellers do not know most of the OFSP by variety name. Therefore, we used the budget for marketing training for 150 farmers, to do training and awareness creation to 150 vendors and middlemen about benefits of OFSP and where to source them. Some lessons learned from interactions with the vendors are the importance of targeting project interventions to areas where vendors normally source their sweetpotatoes and empowering farmers to bargain for good prices when selling OFSP to vendors. Other interventions could include market promotions and supporting vendors to allow them to present their produce in better parts of the market, which could help to improve the crop's image.

5. Lessons on adoption and visibility of the project

- Engaging commercial-oriented farmers and businesses in vine multiplication has shown to be a good investment. These multipliers managed to organize themselves into an association that aims to make a

significant contribution to the development of the OFSP value chain and can be a good entry point for future interventions.

- The small adoption survey following vines from farmers over several years showed that farmers do not share much vines in the first year, but as time passes more vines are shared. Since our beneficiary surveys just target those who benefitted within the year, the passing on and sharing of planting material are not captured in our surveys. It would be interesting, based on this small pilot, to develop a better adoption study to assess better the effect of time on the number of farmers who benefit from a distribution and the total area increase over time following distribution of just a single bundle.
- The fall armyworm attack on maize in some areas (e.g., Dedza lakeshore) has made farmers decide to turn their attention to less affected crops such as OFSP. It has been observed that farmers will harvest less maize under irrigation because of the fall armyworm attack. Despite this disaster, it provides opportunities for wider adoption of OFSP.
- Lessons from Blantyre Agricultural Fair shows the importance of demonstrating the work MISST is doing to the wider public, including high-level visitors such as the U.S. ambassador and the president of Malawi. Attendance at the event by CIP's country manager was highly appreciated and resulted in USAID being convinced that the MISST project should continue, during a period where many USAID projects were affected by budget cuts or closed.

4. SUCCESS STORIES

Four success stories were written as follows:

Story 1: Orange-fleshed sweet potatoes are the next investment opportunity in Malawi

Mabvuto Mndau is a 41-year old entrepreneur from Malawi with a passion for agricultural production. He is a multiplier of planting material of orange-fleshed sweetpotato (OFSP) varieties along the shores of Lake Malawi in Chikoleza Village, Golomoti EPA in Dedza District (Picture 1), as well as on his farm in Mchinji District. Only 2 years ago Mabvuto, like most commercial farmers in Malawi, had never heard about sweetpotato vine multiplication as a viable business opportunity. But his interest was raised after reading an advert in the local newspaper that the International Potato Center (CIP) was sourcing expressions of interest from potential commercial multipliers. He is keen to exploit new ideas and opportunities: 'We tried maize production but experienced that this business was not profitable enough." The fact that he no longer produces maize but a wide variety of other crops, including cassava, potato, banana, mangoes, guava, sugar cane, among others on his farms, proves he likes exploring alternative business opportunities.

Picture 1. Mabvuto Mndau in his OFSP vine multiplication field, Dedza District, Malawi

Mabvuto surely does not regret venturing into the multiplication of sweetpotato planting material. He explains: "Thanks to the training received by CIP under the Feed the Future Malawi Improved Seed Systems and Technologies project, I learned all the skills needed to start the vine multiplication business. I learnt that it would not be easy but decided to give it my very best effort to succeed as a multiplier." CIP provided Mabvuto with only 30 bundles of planting material to plant in six beds of 1 x 20 m each before the 2015/16 growing season. With special care and hard work, he managed to expand his area under multiplication and sold his planting material at a good price. Encouraged by the market potential, he expanded his area under multiplication to 5 ha this 2016/17 season. According to Mabvuto, the key practices to ensuring good establishment in his multiplication beds are to use a layer of mulch and proper irrigation and water management to avoid drying out of the vine cuttings.

When asked what it takes to be a commercial vine multiplier in Malawi, Mabvuto says, "First of all you need a strong passion and commitment to multiply quality material. Second, you need to be willing to invest in irrigation infrastructure and ensure you have committed staff that will maintain the high-quality standards. Last but not least it is important to set yourself a goal of what you want to achieve and identify all the steps you need to take to reach that goal." Part of his planning involves expanding the area under irrigation in the dry season in order to supply in the months of December and January. This requires a lot of resources to keep his diesel pumps going, but it is an investment that pays off.

As a result of his entrepreneurial spirit and investments, Mabvuto is now preparing orders of planting material in response to the large demand for clean planting material by NGOs (Picture 2). One of his marketing strategies is to advertise on the radio. As a result, he even receives phone calls from other commercial farmers who want to procure his planting material for root production. Mabvuto also considers the production of roots as a profitable enterprise and is planning to allocate OFSP varieties. "There is high demand for these varieties because there is growing awareness that consuming OFSP is an important source of vitamin A." In Malawi vitamin A deficiency is a serious problem in women and children under five,

especially in rural areas. "I am glad that I can develop a viable business that provides employment and profit, while at the same time selling a high-quality product that will largely benefit my fellow Malawians."

Picture 2. Workers on Mabvuto's field are preparing an order of high-quality OFSP planting material.

The MISST project so far trained 40 potential multipliers who submitted a proposal, but successes are variable. MISST provides technical support, training, and advice, but the project does not guarantee any market or provide funds or equipment to these budding entrepreneurs. This ensures that only those willing to invest in irrigation infrastructure and have a marketing strategy will develop independent and sustainable businesses. WhatsApp groups and facilitating regular meetings to share successes and challenges are helping the multipliers learn from each other and identify markets. What the project has learned from these interactions is that limited market assurance hinders expansion of area under multiplication. Owing to internal procurement requirements, NGOs often place tenders in newspapers to the benefit of middlemen instead of directly sourcing quotations from eligible multipliers. This poses a risk on multipliers like Mabvuto, but we learn that taking high risk can also result in high benefits in years when OFSP planting material is in high demand.

Story 2: From 6 to 1,000 bundles in a year

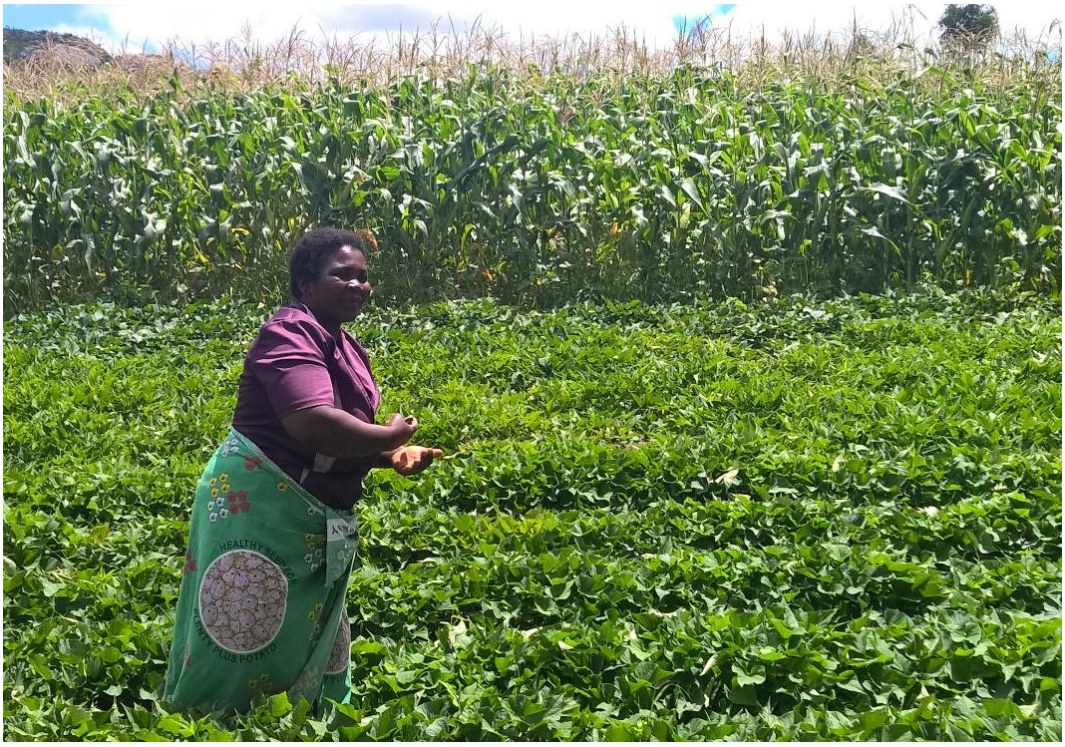
A story of a woman who started with only 6 bundles of OFSP planting material and is now a committed seed multiplier and root producer.

"Small is beautiful," so the saying goes. This is true for Lezita Masa, a 33-year-old woman who now doubles as an OFSP seed multiplier and a root producer. She hails from Chikanda village in Bembeke EPA in Dedza District. Lezita, like many farmers in Malawi, used to grow mainly maize, legumes, and vegetables for food and income generation. She also owns some livestock. Dedza District is known for its favorable climate that accommodates the production of myriad crops throughout the year. Despite this, most farmers like Lezita are struggling to break out of the cycle of poverty due to lack of vibrant markets and low prices for their produce.

Lezita, a mother of five school-going children, kept wondering how to feed her children and pay for their school fees. She tried several farming enterprises, but these could not generate sufficient income to meet her needs. In December 2015, she was enlisted as a host farmer in the Feed the Future Malawi Improved Seed

Systems and Technologies (MISST) project, which is funded by USAID and implemented in seven districts of Mchinji, Lilongwe, Dedza, Ntcheu, Balaka, Machinga, and Mangochi. She received one bundle of OFSP planting material of the six varieties ('Anaakwanire,' 'Chipika,' 'Kadyaubwerere,' 'Kaphulira,' 'Mathuthu,' and 'Zondeni') and planted them as a variety demonstration plot in her field. She realized very good root yields and was admired by the entire community of Chikanda village.

This was the turning point in her farming. After harvesting the roots in the demonstration plots, she conserved the vines from all six varieties in her dambo during the long dry season for about 8 months. She took the advice of CIP's district technician and used rapid vine multiplication techniques to ensure availability of adequate quantities of OFSP planting materials at the onset of the next rainy season. Being convinced of the potential benefits of producing nutritious OFSP roots, Lezita planted about 200 bundles on 1 acre for root production in December (Picture 1).



Picture 1. Lezita Masa in her OFSP root production field.

But that was not all: "I knew that there would be a big demand for OFSP vines in my community following the good performance of the demonstration field that was planted in 2015. That is why I decided to engage in vine multiplication as a businesses," says Lezita with a smile. "Now the whole community knows that OFSP varieties are nutritious and high yielding."

Within the same year, Lezita's dream to sell planting material came true. She was approached by Dedza CADECOM to supply over 500 bundles of OFSP planting material under its relief program, which targeted vulnerable households in Dedza and Ntcheu districts. In addition, she also sold more than 300 bundles to other farmers in the community. She sold each bundle at K500 ($0.67), making a total of K500,000.00 ($676.00) this season alone. The proceeds helped her to pay school fees for her children and purchase some more livestock even before her root production field is ready for harvest. Her plan for the future is to expand the number of hectares under both root production and vine multiplication by purchasing additional land in the community. Lezita's experience demonstrates that, with hard work and determination, only 6 bundles of

planting material can result in thousands of bundles that not only benefit her own farming business but also ensures access to the nutritious OFSP varieties to many other farmers in her community and beyond. She hopes more farmers will adopt the technologies that the project is promoting.

Story 3: From a child's dream to a model farm

A case of Matamando Farm; an OFSP vine multiplication site

When Matamando (Praises) was only four years old, his kindergarten teacher asked him what he would like to be when he grows up. Unlike other children who chose to be a pilot, accountant, or some fancy career, his teacher was amazed when he said he would like to be a farmer. When the teacher informed the parents about their child's choice of career, they were excited and started buying farm tools and implements such as watering cans, hoes, and rakes for him. It was until early 2016 after noticing the harsh effects of the El Niño phenomenon that Matamando's father thought of going into serious irrigation farming. The farm sits on a 1.5-ha piece of land in Msipu village, Traditional Authority Malili in Chitsime Extension Planning Area (EPA) in Lilongwe District, and was named Matamando Farm to keep their child's dream alive. Today he is 9 years old, and the dream has not yet faded.

The farm initially started with legume production as the main enterprise until one day the family watched a TV program on orange-fleshed sweetpotato (OFSP) activities in the Feed the Future Malawi Improved Seed Systems and Technologies project. The family was referred by an agriculture officer to the International Potato Center (CIP) in Lilongwe. The visit coincided with the introduction of the decentralized vine multiplication by the project. After expressing interest, they were shortlisted for training and eventually trained in vine multiplication skills. This was followed with the distribution of initial starter vines of all the six OFSP varieties ('Zondeni', 'Kaphulira', 'Kadyaubwelere', 'Anaakwanire', 'Chipika', and 'Mathuthu'). A nursery was promptly established, and seed multiplication started immediately. In 3 months, there was vine cover of about 0.5 an acre. Today, it is a 1.5-ha farm.

Picture 1. Maria Phikani, owner of Matamando farm in her OFSP field.

Impressed with the high level of management at the farm and its strategic location, the OFSP project requested the owners that the farm be used as a model site. It serves as a learning ground for people who are interested in sweetpotato vine multiplication, admirers, and visitors. So far, a sizeable number of visitors have been at Matamando farm and are impressed with what they see. The farm's vision for the future is increasing its size and improving its irrigation capacity by acquiring renewable energy irrigation techniques in 2 years' time. This will spur it into ***full commercialization*** drive specializing in ***vine multiplication and distribution countrywide***. Starting from the next growing season, the farm intends to start training some farmers in vine multiplication and supplying them with start-up vines while ensuring that they follow all recommended procedures. They plan to explore and increase the market coverage. Thereafter, they intend to diversify into complementary pig and dairy farming and sweetpotato root production throughout the year.

Story 4: Behold an OFSP association is formed!

Written by Brian Kachisa, CIP Training and Promotion Officer

Marketing linkages is the key issue that inhibits the development of agriculture among both smallholder and commercial farmers in Malawi. This limitation is especially pronounced in relatively new crops such as orange-fleshed sweetpotatoes (OFSP) for which the market is seasonal in nature. George Mhango, president of the newly formed National Orange-Fleshed Sweetpotato Association (OFSPA), could not agree more and seeks to transform this constraint. OFSPA members consisting of 75 registered commercially oriented OFSP producers now boast of about 100 ha of land committed to OFSP vine and root production scattered across the country. The association was formed with the aim of contributing to the development of the OFSP root and vine market for both local and export market.

The association was born out of the innovative approach of the OFSP component of the Feed the Future Malawi Improved Seed Systems and Technologies project, which trained over 40 commercially oriented OFSP producers in vine multiplication to enhance the sustainable supply of clean planting material in Mchinji, Lilongwe, Dedza, Ntcheu, Balaka, Machinga, and Mangochi districts.

In the column titled "My Turn," featured in Malawi's *Nation* newspaper on 25 January 2017, Brian Kachisa of the International Potato Center (CIP) brought to light that the increasing demand for OFSP vines is exceeding supply at the onset of the rainy season. This calls for bold and enterprising farmers to invest in large areas of irrigable land for multiplication of planting material that should supply adequate quantities when needed by the growing market. The formation of OFSPA is a big leap in the right direction.

"OFSPA is here to transform the OFSP supply chain in Malawi that has so far been heavily infested by middlemen who are distorting the market," declared George during the launch of the association on 1 May 2017, at Coconut Lodge, in Balaka District.

OFSPA has seven specific objectives, to: (1) commercially produce high-quality and certified OFSP planting material; (2) commercially produce high-quality OFSP roots; (3) secure sustainable markets for certified planting material and high-quality roots; (4) promote value addition to OFSP roots; (5) secure local and international markets for both fresh and processed roots; (6) build capacity in the production, marketing, and processing planting material and roots; and (7) lobby and advocate for a conducive business environment for members of the association to invest in OFSP.

George and the members of OFSPA see many opportunities and advantages of forming the association. The OFSP sector is a minor component of the agriculture industry, specifically the horticulture subsector, and

therefore there is not much coordination in the OFSP value chain. Yet as sweetpotato plays an increasing role in diets and farming, the association can serve an important link between the farmers and all key stakeholders, including government, donors, NGOs, and public and private companies that have a stake in the sweetpotato value chain.

OFSPA is formally registered as a company by limited liability with the vision to become a commercial hub for OFSP farmers in Malawi. Currently, it is working with CIP under the MISST project to identify and address key challenges in the value chain. These challenges include the domination of middlemen, which prevents the "actual" OFSP farmers accessing viable and sustainable markets for both planting material and roots and that can lead to the demotivation of the farmers. OFSPA also sees the need to transform the OFSP value chain where middlemen have an upper-hand when it comes to striking good deals and contracts with buyers of both roots and planting material. The MISST project has played a pivotal role in the success of the association's formation, with initial training and provision of clean start-up material for the association members. George and OFSPA are now eager to take the next steps and enter a new role in the OFSP market and value chain of Malawi.

Pictures. Participants discussing during the launch of OFSPA; a group photo after the launch.

ANNEX A: WORK PLAN

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
A	**Improved functionality of OFSP input and output markets (various generations of vine multiplication, root storage, marketing of roots and planting material)**																		
1	Train DVM hosts and other farmers on vine multiplication, vine marketing, and voucher redemption													300 farmers trained	CIP, Partners	7,000	SIR1, SIR3	Y	B,M
2	Establish *new* DVMs in irrigation sites in the 7 districts and register with SSU													70 DVMs	CIP, Partners	7,000	SIR2	Y	B,M
3	Develop and implement voucher system for the distribution of vines around DVMs													3,000 vouchers	CIP	5,000	SIR2	Y	B,M
4	Establish promising root storage demos for rural households across 7 districts													14 demos, 350 people trained	CIP	12,500	SIR2	N	
5	Conduct a participatory evaluation on the effect of bundle type and storage period on growth and yield of OFSP varieties													3 locations	CIP	2,000	SIR2	N	
6	Organize supervisory visits to all CVMs of OFSP planting material													30 visits	CIP	2,000	SIR4	N	
7	Conduct an evaluation on effect of type and rate of fertilizer on vine multiplication rates of OFSP planting material to advise CVMs													3 locations	CIP	1,000	SIR2	N	
8	Conduct a cost-benefit analysis for commercial vine production of pre-basic, basic, and quality declared planting material and develop an investment brochure													1	CIP	1,000	SIR2	N	
9	Conduct trainings in marketing for root producers in high-producing areas													150 farmers trained	CIP and Partners	4,000	SIR1, SIR2	N	
10	Support DVMs with trainings in gross margin analyses, price determination, and marketing of planting material													100 DVMs	CIP and Partners	6,000	SIR1, SIR2	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
11	Contribute to establishing a web-based sweet potato root and vine MIS (locations and contacts of main selling points of OFSP vines and roots) together with RTCDT													1	CIP	3,000	SIR1, SIR2	N	
12	Data collection on quantities of OFSP vines produced by CIP-supported CVMs and DVMs in the 7 districts														CIP	7,000	SIR1, SIR2	N	
13	Conduct market monitoring exercises for OFSP and other sweetpotatoes. Collaborate with MOAIWD to collect market data (prices, OFSP market proportions/qty.)													35 markets	CIP and DAES	5,300	SIR1, SIR2	N	
14	Develop an OFSP availability calendar from data collected from key markets in ZOI													1	CIP	0	SIR1, SIR2	N	
B	**Enhanced capacity and strengthened seed partnerships to assure quality of seed from production to distribution of OFSP**																		
1	Organize a multistakeholder vine demand estimation workshop to bring together multipliers, NGOs, and other relevant stakeholders at national level													40 participants	CIP, RTCDT	4,000	SIR1, SIR2	N	
2	Support 2 private sector partners with clean planting material and technical knowledge and training on establishing screenhouse for pre-basic planting material plus open-field basic planting material production													2 trainings	CIP	2,000	SIR1, SIR2	N	
3	Organize a 1-day refresher training for CVMs													30 people	CIP	5,000	SIR1, SIR2	N	
4	Organize refresher training of seed inspectors from SSU on sweetpotato planting material inspection together with RTCDT													15 people	CIP and DARS	4,000	SIR1, SIR2	N	
5	Conduct 1-day district-level refresher training of trainers to													105 staff trained	CIP	7,000	SIR1, SIR2	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
	partner staff on DVM, including use of vouchers																		
6	Support DARS with a thermotherapy chamber to clean up planting material for sweetpotato (alternatively rehabilitate infrastructure at DARS Bvumbwe to strengthen the production of early generations of clean planting material)													Infrastructure developed / rehabilitated	CIP and DARS	17,000	SIR1, SIR2	N	
C	**Adoption & uptake of improved technologies enhanced; increased productivity and production of OFSP and access to varieties among smallholder farmers.**																		
1	Conduct 1-day district-level refresher trainings to partner staff on MBTs													105 staff trained	CIP	7,000	SIR1, SIR3	N	
2	Vine establishment training and harvest of 2016 winter season MBTs													130 MBT (nr. farmers trained already captured at planting in FY16)	CIP and Partners	15,000	SIR1, SIR3	Y	B,M
3	Establish MBT variety demonstration in rainy season in 7 districts													250 Mother trials, 12,500 beneficiaries	CIP and Partners	25,000	SIR1, SIR3	Y	B,M
4	Train farmers around the MBTs on planting, agronomic practices, vine conservation, and harvest procedures													10,000 farmers trained	CIP and Partners	25,000	SIR1, SIR3	Y	B,M
5	Train AEDCs on MISST joint demo sites in Lilongwe and Ntcheu													8 AEDECS	CIP	1,000	SIR1, SIR3	N	
6	Site identification, establishment of MISST joint demo sites, and field days on joint demos in Lilongwe and Ntcheu districts													4 per district	CIP, CMO	2,500	SIR1, SIR3	N	
7	Write success stories for each quarterly report and share with partners and on social media													4	CIP	500	SIR1, SIR3	N	
8	Write and circulate monthly project highlights to project partners													8	CIP	0	SIR1, SIR3	N	
9	Develop and print an annual project brief and disseminate													1	CIP	500	SIR1, SIR3	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
	among partners																		
10	Develop 2 newspaper articles promoting the work CIP and partners do on OFSP and share with partners													2	CIP	500	SIR1, SIR3	N	
11	Air 2 programs on national TV, highlighting the benefits of OFSP to rural communities													2	CIP	1,000	SIR1, SIR3	N	
12	Develop 2 jingles on the benefits of OFSP and air them on the national radio													2	CIP	3,000	SIR1, SIR3	N	
13	Conduct field days around MBT, irrigation schemes, DVMs, & CVMs													56 field days	CIP	15,000	SIR1, SIR3	Y	B,M
14	Work with partners to engage local media and comedy/drama to promote OFSP													At least 5 events	CIP	1,000	SIR1, SIR3	Y	B,M
15	Identify sites for year-round commercial root production using staggered planting as a continuous source of OFSP roots for nutrition activities and processors													3 farmers per district at least 1 acre	CIP	4,000	SIR1, SIR3	N	
16	Set up a "model site" for year-round vine and root production under irrigation in Lilongwe													1	CIP	500	SIR1, SIR3	N	
17	Engage a musician to compose a song and video promoting OFSP													1	CIP	4,000	SIR1, SIR3	N	
18	Design, print, and distribute signposts for vine multipliers, demos and root production sites as well as other functional promotional material (T-shirts/wrappers)													1	CIP	10,000	SIR1, SIR3	N	
19	Represent MISST and OFSP on national agriculture and nutrition-related events and fairs													> 4 events	CIP	1,000		N	
D	**Increased resilience of vulnerable families through improved nutrition knowledge, OFSP utilization, and OFSP consumption at household level**																		
1	Conduct step-down trainings at district level on OFSP recipes and nutrition counseling													4 trainings, 120 staff trained	CIP	21,000	SIR1	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
2	OFSP acceptability study through survey in Lilongwe and Mangochi in collaboration with NUI Galway													1	CIP	12,000	SIR4	N	
3	Design and develop nutrition-sensitive BCC and IEC materials (counseling cards, posters, leaflets, fliers, T-shirt, clothing, etc.) on various foods and its nutritional benefits for different target groups (schoolchildren, farmers, care groups, youth groups, mothers groups, etc.)													>3 designs	CIP and Partners	3,500	SIR4	N	
4	Translate IEC materials into local languages													>3 materials	CIP	1,000	SIR4	N	
5	Identify partners in the Feed the Future ZOI that can be supported with training and IEC materials on nutrition related to the MISST commodities to use within their programs													1 meeting in each district, at least 2 partners	CIP and Partners	500	SIR4	Y	B,M,L
6	Review, develop, and incorporate nutrition counseling messages on OFSP into existing community counseling and BCC materials aligned with existing material approved by government													1 meeting with nutrition partners	CIP	0	SIR4	N	
7	Review, adopt, and translate existing recipes and community training material on OFSP and legumes													>10 recipes	CIP	2,000	SIR4	N	
8	Print the final copies of all IEC, BCC, and counseling material developed and distribute to partners at district and community levels													To reach 5,000 HH	CIP	10,000 (contribution from other centers)	SIR4	Y	B,M
9	Distribute IEC material through other channels													140 schools and 70 health facilities	Partners (MOH, MOE, etc.)	3,500 (contribution from other centers)	SIR4	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
10	Organize and conduct nutrition demonstrations of OFSP and other foods utilization for infant feeding through existing structures (care groups or CBOs, food and nutrition fairs) at community level (To be done jointly with MOAIWD and partners)													3 demos in 3 districts	CIP	0	SIR4	N	
11	Initiate and support recipe demonstration training, nutrition message dissemination, and counseling sessions at HH level in collaboration with partners and local government staff													5,000 HH (through 35 care groups)	CIP	24,400 (contribution from other centers)	SIR4	Y	B,M
12	Conduct and demonstrate a cooking show/introduce OFSP recipes in cooking shows on national TV stations to raise awareness of its potential as baby food, snacks, and as a meal													3 cooking shows	CIP	2,500	SIR4	N	
13	Training of urban hotels and restaurants in OFSP dishes and recipes as a pilot to explore urban demand													3 hotels/restaurants	CIP	1,000	SIR4	N	
14	Conduct a desk review to assess gaps in vitamin A intake across the year based on consumption of vitamin-A rich foods at HH level in the target districts (DHS 2015 and SMART survey results 2015)													1	CIP	0	SIR4	N	
15	Organize and facilitate quarterly MISST nutrition TWG meetings													4	CIP	1,000	SIR4	N	
16	Provide on-demand training to other (non-MISST) project partners on OFSP and other MISST commodities nutrition													To be determined	CIP		SIR4	Y	B,M,L
17	Contribute on-demand to nutrition-related activities identified in other MISST component work plans from IITA, CIMMYT, and ICRISAT													To be determined	CIP		SIR4	N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
18	Conduct quarterly monitoring and supervision visits of nutrition and nutrition-related activities at district and community level													4	CIP	2,000	SIR1	N	
E.	**Activity Management and M, E & Learning**																		
1	Conduct general Feed the Future M&E trainings for partner organizations													1 regional training, total 25 staff trained	CIP	4,000	SIR1, SIR3, SIR4	N	
2	Conduct trainings (including refreshers) for CIP staff and selected partner staff for MBTs, root storage, and nutrition monitoring													Part of technical trainings	CIP	0	SIR1, SIR3, SIR5	N	
3	Revise the activity monitoring and evaluation plan for MISST													1	CIP	0	SIR3	N	
4	Revise monitoring tools for agriculture, nutrition, and marketing thematic areas														CIP	0		N	
5	Develop and pre-test new tools for voucher-based vine distribution														CIP	3,000		N	
6	Develop an appropriate monitoring system for DVMs and beneficiaries reached through DVMs at the district level														CIP	1,000		N	
7	Carry out strategic data quality assessments and data verification and provide appropriate feedback for reporting year partners													1,200 farmers checked	CIP	1,000	SIR1	N	
8	Conduct outcome surveys (for selected indicators) for direct beneficiaries for FY16 winter season beneficiaries														CIP	34,000		N	
9	Collect and manage routine activity monitoring data for all activities														CIP	1,000		N	
10	Develop and update beneficiary database for CIP and contribute to consortium database development														CIP	700		N	
11	Conduct routine (quarterly) monitoring visits for partner														CIP	1,500		N	

	KEY Actions	O	N	D	J	F	M	A	M	J	J	A	S	KEY Outputs/Target	Partner Responsible	Action Amount (USD)	Identify link to CDCS Cross Cutting SIRs	Integrated Action?	Action in Balaka (B), Machinga (M), or Lilongwe Rural (L)
	organizations with the project manager and project accountant																		
12	Conduct M&E technical check-ins with implementing partner staff (M&E officers and district coordinators)														CIP	1,500	SIR1	N	
13	Carry out data analyses for project and knowledge management as required														CIP	0		N	
14	Contribute to the annual beneficiary surveys for the consortium														CIP	17,000		N	
15	Conduct biannual half-day district level project review and planning meetings													2/year per district, 20 participants per meeting	CIP	7,000		N	
16	Participate in the MISST TWGs on seed systems, M&E, value chains, seed systems, gender, and communication (reserve some funds for unforeseen activities)														CIP	1,000	SIR1	N	
17	Unforeseen MISST consortium and nutrition TWG activities														CIP	1,000		N	
18	Participate and contribute in MISST joint annual and mid-year review and planning meetings														CIP	6,000		N	
19	Staff capacity building and trainings/ attendance at (international) meetings on OFSP														CIP	5,494	SIR1	N	

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