



# FEED THE FUTURE RWANDA: ORANGE- FLESHED SWEETPOTATO FOR INCOME AND NUTRITION ACTIVITY

FISCAL YEAR 2017–2018 TECHNICAL REPORT

October 2017–September 2018



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5 June 2019

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### **DISCLAIMER**

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## Activity Description

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# ACRONYMS

AEE	African Evangelistic Enterprise
CHAIN	Community Health and Improved Nutrition
CHWs	Community health workers
CIP	International Potato Center
CRS	Catholic Relief Services
DERN	<i>Programme de Développement Rural du Nord</i>
DVMs	Decentralized vine multipliers
FFS	Farmers field school
FXB	François-Xavier Bagnoud
HH	Household(s)
HIB	High-iron beans
IMBARAGA	A farmer syndicate NGO (not an acronym)
IP	Implementing partner
MCH	Maternal and child health
MIYCN	Maternal, infant and young, child nutrition
OFSP	Orange-fleshed sweetpotato
OSPECCA	Organization for Support to the Environment Protection and Climate Change Adaptation
PHHT	Postharvest and Handling Techniques
RAB	Rwanda Agriculture Board
UNICOOPAGI	<i>Union des Coopératives Agricoles Intégrées</i>
USAID	United States Agency for International Development
YWCA	Young Women's Christian Association

# 1. OVERVIEW

## 1.1 Summary of Major Achievements in FY 2017–2018

The Feed the Future Rwanda Orange-Fleshed Sweetpotato (OFSP) for Income and Nutrition Activity is a 3-year project funded by the United States Agency for International Development (USAID). It is being led by the International Potato Center (CIP) in collaboration with five local NGOs (i.e., implementing partners); one public institution, Rwanda Agricultural Board (RAB); and in partnership with the Community Health and Improved Nutrition (CHAIN) Rwanda project, community health workers (CHWs), agri-promoters, and district local governments officers. The activity contributes to the Feed the Future objectives of inclusive agricultural sector growth and improved nutritional status, especially for women and children.

This report covers a 1-year period (FY 2017–2018). The major achievements of the project were the following:

- A total of 78,730 new households (HH) with children under 5 years or with pregnant women received planting materials.
- These same HH received agronomic and nutrition training at the time they received planting materials.
- A total of 33,389 continuing beneficiaries were assisted by providing nutrition training and counseling during in-home visits.
- A total of 25,403 continuing farmers were trained on good agronomic practices in addition to home visits.
- Refresher trainings were delivered to agricultural promoters who worked with the project.
- Through trained agricultural promoters, the activity continued to train the farmers who had received vines this year (new beneficiaries), through follow-up training sessions conducted in groups and during home visits. A total of 37,062 farmers attended group trainings and 9,201 HH were visited by agricultural promoters in their fields for technical support.
- Forty demo plots were established in 10 districts. The results from those plots show that in general OFSP varieties achieved an average yield of 17 t/ha, whereas the local varieties that were used as checks had an average yield of 13.3 t/ha. Of all the varieties distributed to the beneficiaries, ‘Gihingumukungu’ had an average yield of 21.8 t/ha, followed by ‘Terimbere’ with an average yield of 19.6 t/ha.
- During the harvesting of the demo plots, the surrounding farmers were invited to participate in sensory consumer testing of the roots. The farmers evaluated most of the OFSP varieties available in the country. At the same events consumer ranked their preferences of different roots attributes (e.g., skin and flesh color, texture, flavor/sweetness, fibrousness, aroma, and general acceptability). The results from all the evaluations of general acceptability of tested varieties shows that ‘Kabode’ had the highest score of 7.06 on a 9-point hedonic scale. Hence, it is now the most preferred variety of OFSP in Rwanda.
- At the same time the project also conducted crop cuts to get a better yield estimation. This covered more area under farmers’ production system on what they received. This was a better estimate of the possible yields under farmers’ management condition. Using this approach, the results show that OFSP varieties clearly outperformed the local varieties with an average yield of 15.1 t/ha for OFSP varieties compared with the average yield of 7.7 t/ha for the local varieties.
- CHAIN partners were linked with the established CIP/partner decentralized vine multipliers (DVMs), for the acquisition of vines for distribution to their beneficiaries. From this linkage 1,019 farmer field schools covering an estimated 56.12 ha were established.

- The activity also trained 31 CHAIN agronomists.
- Twenty participants were trained from CHAIN partners on OFSP-processing techniques.
- The value of OFSP products (vines, roots, and processed products) sold from October 2017 to September 2018 was \$136,247, corresponding to the incremental sales of \$104,616.67.
- For the reporting period, 103,432 children under 5 were reached.
- The activity trained an additional 191 CHWs who worked with other trained CHWs to deliver the nutrition messaging, education, and counseling to beneficiaries.
- Through trained CHWs, the activity provided nutrition training to new farmers who had received vines (from the start of FY 2018) besides the startup training they normally get on the distribution day. The activity implementers put the beneficiaries into groups of 25–30 people who then receive follow-up trainings. A subsample of the beneficiaries are also visited by the CHWs in their homes for further counseling. These follow-up trainings were provided to 49,478 new farmers in groups, and 16,535 HH received nutrition counseling through home visits by CHWs.

## 1.2 Summary of Major Challenges

During the implementation of the activities in this reporting period (2017–2018), we encountered some challenges mainly in the seed system and agronomy (Table 1).

**Table 1: Challenges and proposed solutions in FY 2017–2018**

Problem	Solution Proposed	Quarter
Overproduction of vines under DVMs	A strong networking and several contacts have been made for potential clients of vines	Q3
Flooding that damaged vine multiplication sites in Nyaruguru	Whenever there are vines multiplication in flood-prone sites, better drainage and canals are dug where possible. Replace plants destroyed by flooding.	Q2-Q3
Some DVMs needed assistance to get quality declared planting materials multipliers certificate from the seeds inspection unit.	Working with partners to identify who needs the certificate and make sure they meet multipliers' certification requirements.	Q2
	Working with RAB to help DVMs who need multiplication certificates to get them as quickly as possible.	
In some quarters vine production (supply) was higher than the demand. This was due to some DVMs expanding their area of vine multiplication without informing the project, which resulted in improper forecasting of needed seed.	DVMs were advised to use some of the planting materials for establishing roots production sites and maintain the rest of season 2018 B.	Q1
Demand from traditional institutional NGOs buyers and government was lower than the DVMs expected. Since they did not consult CIP for proper seed multiplication planning, it was not possible to plan effectively on their part.	Work with DVMs and institutional buyers to plan for production needs based on more accurate forecasting as has been the practice to ensure that vine demand and supply are equalized.	Q1
Fall armyworm attack was observed at RAB–Karama OFSP vine multiplication site in December 2017.	Chemical pesticides (Rocket) was sprayed as soon as the attack was identified, and vines recovered quickly.	Q1
	Early warning system by DVMs scouting for pests regularly and reporting any incidence for immediate action.	
Erinose/hairiness caused by Eriophyid mites. A slight infestation was observed in some vine multiplication sites.	Farmers and field supervisors were advised to conduct regular field inspection and addressing any identified cases by simply removing and destroying the hairy vine tips.	Q1
	Use of clean planting materials and regular field checkup.	



## 2. DETAILS OF MAIN ACCOMPLISHMENTS DURING Q4 AND Y3 PER OBJECTIVE

### 2.1 Introduction

The Feed the Future Rwanda Orange-fleshed Sweetpotato (OFSP) for Income and Nutrition Activity has continued to promote the production and consumption of OFSP in 10 districts in Feed the Future zones of influence in Rwanda. These are Burera, Musanze, Rubavu, Bugesera, Gatsibo, Nyamagabe, Nyaruguru, Karongi, Rutsiro, and Ngororero.

The overall project goal is to increase the production and consumption of OFSP, enhance incomes of smallholder farmers, and improve the nutritional status of women and children under 5 years. Below we look at each objective and present Q4 and the cumulative Y3 of the project key achievements.

#### **Objective 1: Increased production of OFSP among smallholder farmers**

##### 2.1.1 OFSP vines delivery

The activity did not distribute the OFSP planting material in Q4 because it falls during the dry season. We had also achieved the targeted households (HH) for the whole fiscal year as planned in the first three quarters. The annual target was 75,000 new HH and the total achieved for the project year was 78,730 HH with pregnant women or children under 5.

In the same reporting year, the activity continued collaborating with the Community Health and Improved Nutrition (CHAIN) Rwanda project partners. From that collaboration, 2,466,833 OFSP cuttings were used to establish 1,019 established farmer field schools (FFS).

##### 2.1.2 Agronomic training

At the time of vine distribution, farmers were trained on agronomic and nutrition good practices that include land preparation, recommended planting practices, crop management practices, and infant and young-child feeding practices. They are then given communication material that has the same information on agronomic and nutrition as that received verbally during the initial contact. For the activity year 2017–2018, all of the 78,730 farmers (58,425 females, 20,305 males) who came to pick vines got the same training. The activity then used agro-promoters for follow-up trainings in all aspects of sweetpotato agronomics practices. During these follow-up trainings in Q4, 11,939 new beneficiaries were trained on agronomic practices through organized groups. A total of 2,379 received home-to-home field visits for agronomic practices trainings. In addition, 9,598 continuing beneficiaries got agriculture training and 2,456 were visited in their fields by agro-promoters. Therefore, the cumulative number of beneficiaries who were trained in groups during the whole year is 37,062 for new beneficiaries after the first training they got on the day they received vines and 18,767 continuing beneficiaries trained in groups. A total of 9,201 new beneficiaries and 6,636 continuing beneficiaries were visited by agri-promoters in their fields. In FY 2018 the activity also trained 31 people (25 males, six females) from CHAIN partners and agronomists from local NGOs on good agriculture practices, vines management, and conservation. After the training, they then trained 26,585 farmers who participated in FFS established under CHAIN.

## **Objective 2: Improved incomes from OFSP along the value chain**

Under this objective, the activity continued to follow up and assist the decentralized vine multipliers (DVMs) in vine production and linking them to potential buyers. In Q4 the DVMs produced and sold 290,675 cuttings of OFSP planting material to the activity partners, other NGOs working with OFSP, and individual farmers. Those cuttings sold are valued at \$1,718. At the same time, new root production sites totaling 11.7 ha were established to increase the supply of roots in the market. These figures are low because the quarter falls in the long dry season when few farmers plant sweetpotato. From the root production sites established before, 32.9 t of OFSP roots were sold for \$6,964. The activity also continued to follow up with trained processors who are using OFSP in their bakery products. The total value of the processed products sold by trained processors recorded was \$6,742.34. The cumulative value under this objective for Y3 is discussed further in the report.

## **Objective 3: Improved nutrition outcomes for women and children under 5**

### **2.1.3 Nutrition education and counseling**

In each year the activity expands the area covered to new cells in the same sector or entirely new sector as per the agreement with the local government authorities. Hence, it is always necessary to train community health workers (CHWs) in the new areas with the necessary skills. In Y3, 191 CHWs in these new sectors were trained on maternal, infant and young child nutrition (MIYCN). This is to ensure that all beneficiaries receive the same level of knowledge in all project areas. With these trainings we can state confidently that we standardized the training protocol for maximum impact on the beneficiaries.

During Q4 the activity through CHWs provided nutrition training to mothers and caregivers through follow-up training. The training delivered was based on maternal, infant and young, child nutrition (MIYCN) using nutrition counseling cards developed under this OFSP activity. For new beneficiaries, 11,641 persons (2,719 males, 8,922 females) were reached through these group trainings. In addition, 5,045 HH (2,962 male-headed, 2,083 female-headed) received nutrition counseling through home visits. In the same period, 8,193 continuing beneficiaries (who got vines in Y2) also received general nutrition training in groups; 3,413 continuing beneficiaries received nutrition counseling by trained CHWs. Therefore, the cumulative numbers for the people who attended the follow-up trainings on nutrition are 49,478 new beneficiaries trained in groups and 16,535 HH visited for counseling. For the continuing beneficiaries, 23,907 farmers were trained in groups and 9,482 HH were visited for counseling.

## **2.2 Project Indicators**

This section identifies each indicator and gives more details on the target for the quarter per indicator and what was achieved during Q4 operations. It also shows the cumulative results for the whole year 2017–2018.

Looking at the indicator, the *number of households benefiting directly from USG assistance under Feed the Future* (as reported above), the activity reached 78,730 new HH with clean OFSP planting materials and brochure containing agronomic and nutrition message. At the same time, 33,389 beneficiaries got nutrition training and home visits for counseling. (This latter number had received planting materials in the previous years but still benefited from the activity through further trainings.) Hence, 112,119 HH, both new and continuing, benefited directly from the project in the reporting period. The target for the year was 80,000 for both new and continuing beneficiaries.

All the new beneficiaries received agricultural training on OFSP management before receiving OFSP planting materials. The training was conducted at the designated distribution point where HH members received their vines.

In FY 2017–2018 under the indicator of the *number of individuals who have received USG supported short-term agriculture training*, out of the target of 75,065 individuals, 104,164 farmers (78,730 new, 25,403 continuing and 31 CHAIN agronomists) were trained directly by the activity. For new beneficiaries, 78,730 farmers received agronomic training on the day they came to pick vines. In addition, they also received follow-up training from agri-promoters in groups or at home. During home visits all members of the HH were invited to participate. The group follow-up training was attended by 37,062 farmers (28,620 females, 8,442 males). The home visits reached 9,201 (4,654 females, 4,547 males) HH, where technical support was provided to these farmers. For the continuing beneficiaries, 18,767 farmers (14,775 females, 3,992 males) received training in groups, and 6,636 HH (3,044 female-headed, 3,592 male-headed) received technical support through home visits. The activity also trained 31 CHAIN agronomists (25 males, six females) on good agriculture practices, OFSP field management, harvesting, and postharvest management.

Under the indicator of the *number of hectares under improved technologies*, in Q4 467.5 ha of new land was put under OFSP. The breakdown of the area under OFSP is 14.65 ha (DVMs and OFSP root production) established in Q4; an additional 452.85 ha came from the survey results. Therefore, for 2017–2018 the accumulated new area under OFSP established is 987 ha against an annual target of 390 ha.

The indicator *number of farmers and others who have applied improved technology*, in Q4 48,266 farmers applied improved technologies. This figure is derived from the partners' records of groups of people involved in roots production and survey results. The results show that 99.7% of 31,912 HH who got planting materials in season B planted OFSP. The results further show that only 3.3% of the HH had men only involved in growing OFSP, 46.2% only women were involved, and 50.5% of the HH had both men and women involved in growing OFSP. The accumulated number for the year is 113,485 individuals, which includes farmers and DVMs applying improved technology.

Under the indicator *value of smallholder incremental sales*, in Q4 the value of the vines sold by the DVMs to different partners was \$1,718 and the total roots sales value was \$6,964. The sales recorded from trained processors using OFSP as an ingredient was \$6,742.34. These processors made doughnuts, cakes, bread, and biscuits. During the bi-annual survey we found that 82% of the HH who received vines in season B and previous seasons are still growing them. The survey shows that the average harvest was 98.3 kg/HH. The survey also shows that 22% of HH who harvested OFSP roots sold some of them. On average the HH sold 21.2 kg (22% of the total harvest) at an average price of 162.69 RwF (\$0.19/kg). From these findings we estimate that 126.2 t were sold by farmers for \$24,263.73. The total value of sales made in Q4 is estimated to be \$39,688. The cumulative value of sales made during the whole year is estimated at \$136,247. This corresponds to the incremental sale of \$104,616.67 against the annual target of \$53,690.83. In the indicator of the sales value, the activity achieved 195% of its target.

Under the indicator the *total quantity of targeted nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption*, we report the results from the latest survey that covered all the areas of the project. The survey conducted at the end of the year showed that 99.7% of the HH consumed OFSP roots at home; the average quantity used was 64.7 kg/HH. A total of 31,721 HH received the vines in season 2018 season B. On the basis of the 99.7% HH consuming OFSP, we can estimate that 31,912 HH consumed OFSP from season B production. Therefore, the total estimate of OFSP roots consumed was 2,056.17 t by the project beneficiaries HH. The other partners estimate that 6.62 t was consumed by farmers in groups after harvesting their collective roots production plots. All these quantities used for home consumption total 2,062.79 t of OFSP roots used for home consumption in Q4. This quantity was consumed by 171,931 beneficiaries (average of five members per HH). The annual quantity saved for home consumption is 5,133 t of OFSP, slightly above the target of 5,000 t.

For the indicator the *number of children under five reached by nutrition programs*, the activity identified and worked with new HH with children under 5 or with pregnant or lactating women. The number of children reached in new HH who worked with the activity in the reporting year was 103,432 (53,150 boys, 50,282 girls). From the survey result, on average each HH reached had an average of 1.3 children under 5.

For the indicator the *number of people receiving nutrition-related professional training* target, out of the yearly target of 100, the activity trained new 191 CHWs and nutritionist to give them the required knowledge to then train caregivers.

With regards to the *number of for-private-profit enterprises, producers' organizations, water user's associations, women's groups, traders, and business associations and community-based organizations (CBOs) that applied improved organization-level technologies or management practices with USG assistance*, the activity worked with 15 new organizations in OFSP production, processing, and other OFSP promotion activities. The annual target was 14 new organizations.

Tables 2 and 3 show the achievements by indicator and explanations on the deviations from the planned targets both for Q4 and Y3.

**Table 2: Summary of Q4 progress toward indicator targets and associated deviation narratives**

Indicators		FY 2018 Targets	Q4 Targets	Q4 Achievements	Comments on Deviation
<b>EG.3-1 Number of households benefiting directly from USG assistance under Feed the Future</b>		80,000	1,000	11,606	The activity finished distributing OFSP vines to new beneficiaries by Q3 of 2018. However, the nutrition training of beneficiaries who got vines in the previous quarters continued during Q4. Through these trainings about 11,000 people were trained or visited at home for counseling by CHWs.
Status	New	75,000	0	-	
	Continuing	5,000	1,000	11,606	
Location	Rural	80,000	1,000	11,606	
<b>EG.3.2-1 Number of individuals who have received USG supported short-term agricultural training</b>		75,065	0	12,054	The activity usually gives initial agronomic training to beneficiaries on the day vines are distributed. Afterwards there are group trainings of 20–30 groups of farmers. Some farmers are also visited a home for further trainings. Through these trainings, the activity trained an additional 12,054 beneficiaries from the previous year's cohort who required additional interventions.
Farmers	Farmers	75,000	0	12,054	
	Males	26,000	0	3,071	
	Females	49,000	0	8,983	
People in government	People in government	0	0	0	
	Males	0	0	0	
	Females	0	0	0	
People in private sector	People in private sector	10	0	0	
	Male private	6	0	0	
	Female private	4	0	0	
People in civil society	People in civil society	55	0	0	
	Males	40	0	0	
	Females	15	0	0	
<b>EG.3.3-11 Total quantity of targeted nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption</b>		5,000	2,000	2,061.78	From the recent survey we found that each HH saved an average of 64.7 kg of OFSP roots for home consumption.
Commodity	Sweetpotato	5,000	2,000	2,061.78	
	Tons consumed	5,000	2,000	2,061.78	
	Beneficiaries	67,500	22,500	171,931	
<b>EG.3.2-17 Number of farmers and others</b>		<b>67,500</b>	<b>22,500</b>	<b>48,266</b>	The results from the survey showed

Indicators		FY 2018 Targets	Q4 Targets	Q4 Achievements	Comments on Deviation
<b>who have applied improved technologies</b>					that 99.7% of HH who got vines planted them. On who is involved in the OFSP activities we found that 3.3% were men only, 46.2% were women only, and 50.5% were both men. These HH not only planted OFSP, they also were following the trainings given.
<b>Commodity</b>	Sweetpotato	67,500	22,500	48,266	
<b>Actor type</b>	Producers	67,500	22,500	48,266	
	Others	0	0	0	
<b>Technology Type</b>	Crop genetics	67,500	22,500	48,266	
	Cultural practices	35,625	8,625	29,101	
	Disease management	40	10	17	
	Postharvest management	1500	1,000	17,966	
	Value added processing	150	50	1,051	
<b>Sex</b>	Male-only farmer	16,875	5,625	17,287	
	Female-only farmer	50,625	16,875	30,979	
<b>EG.3.2-18 Number of hectares under improved technologies or management practices with USG assistance</b>		<b>390</b>	<b>137</b>	<b>467.5</b>	From the survey we found that farmers are conserving the OFSP vines after the first harvest and expanding the area under OFSP in the subsequent seasons. This is as expected in the theory of change. This explains the increased area under OFSP at HH level reported hence the big overachievement reported.
<b>Commodity</b>	Sweetpotato	390	137	467.5	
<b>Actor type</b>	Producers	390	137	467.5	
	Others	0	0	0	
<b>Technology Type</b>	Crop genetics	390	137	467.5	
	Cultural practices	324.6	116.5	424.03	
	Disease management	15	2	2.95	
<b>Sex</b>	Males	18	2.5	37.09	
	Females	226	76	77.19	
	Joint	131	50.5	327.86	
	Association–Applied	15	8	25.36	
<b>EG.3.2-19 Value of small-holder incremental sales generated with USG assistance (in \$)</b>		<b>53,690.83</b>	<b>4,324.52</b>	<b>18,210.57</b>	The increased production leads to higher number of roots harvested. The value of incremental sales target was greatly overachieved. According to the survey results, on average each HH and averaged 98.3 kg and sold an average of 21.2 kg of OFSP roots.
Value of incremental sales		53,690.83	4,324.52	18,210.57	
Tons OFSP sold		40	16	159.08	
<b>EG.3.2-20 Number of for-profit private enterprises, producer's organizations, water user's associations, women's groups, trade and business associations and CBOs that applied improved organization-level technologies or management practices with USG assistance</b>		<b>14</b>	<b>0</b>	<b>0</b>	
<b>Organization type</b>	Private enterprises	3	0	0	
	Farmer organizations	7	0	0	
	Women groups	2	0	0	
	CBOs	2	0	0	
<b>HL.9-1 Number of children under five reached by nutrition programs</b>		<b>100,000</b>	<b>0</b>	<b>20,756</b>	Based on the HH survey results, we found that each HH has an average of 1.3 children under 5. We therefore use this figure to estimate the number of children reached. This adjusts the numbers reported in other quarters from our record books.
<b>Sex</b>	Male	49,000	0	11,332	
	Female	51,000	0	9,424	



Indicators		FY 2018 Targets	Q4 Targets	Q4 Achievements	Comments on Deviation
HL.9-4 Number of people receiving nutrition-related professional training		100	0	0	
Sex	Male	60	0	0	
	Female	40	0	0	

Table 3: Summary of Y3 achievements toward indicator targets and associated deviation narratives

Indicators		FY 2018 Targets	FY 2018 Achievements	Comments on deviation
EG.3-1 Number of households benefiting directly from USG assistance under Feed the Future		80,000	112,119	<ul style="list-style-type: none"> <li>From our qualitative surveys we have found that HH require extended contacts trainings. Therefore, the overachievement was mainly due to the focus we have put on continuing beneficiaries where CHWs continued to train and support them in nutrition education.</li> </ul>
Status	New	75,000	78,730	
	Continuing	5,000	33,389	
Location	Rural	80,000	112,119	<ul style="list-style-type: none"> <li>The overachievement was mainly due to the big number of continuing beneficiaries who were still interested in attending the organized agronomic trainings.</li> <li>The activity also trained 31 agronomists who work with collaborating CHAIN partners</li> </ul>
EG.3.2-1 Number of individuals who have received USG supported short-term agricultural training		75,065	104,164	
Farmers	Farmers	75,000	104,164	
	Males	26,000	27,889	
	Females	49,000	76,244	
People in government	People in government	0	0	
	Males	0	0	
	Females	0	0	
People in private sector	People in private sector	10	0	
	Males	6	0	
	Females	4	0	
People in civil society	People in civil society	55	31	
	Males	40	25	
	Females	15	6	
EG.3.3-11 Total quantity of targeted nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption		5,000	5,133	The number here is from several sources. Beneficiaries who got 200 vines and the beneficiaries who produce under groups. Hence, the quantity consumed therefore increased more than expected.
Commodity	Sweetpotato	5,000	5,133	
	Tons consumed	5,000	5,133	
	Beneficiaries	67,500	367,799	The overachievement was due to the high number of farmers involved in OFSP production at HH level than expected.
EG.3.2-17 Number of farmers and others who have applied improved technologies		67,500	113,485	
Commodity	Sweetpotato	67,500	113,485	
	Producers	67,500	113,485	
Actor type	Others	0	16	
Technology Type	Crop genetics	67,500	113,485	
	Cultural practices	35,625	76,061	
	Disease management	40	1,075	
	Postharvest management	1,500	34,727	
	Value-added processing	150	1,433	
Sex	Male-only farmer	16,875	37,377	
	Female-only farmer	50,625	76,108	
EG.3.2-18 Number of hectares under improved technologies or management practices with USG assistance		390	987.23	The activity overachieved on this indicator because of a deliberate effort to encourage more farmers to set up roots production plots to meet the demand of the

Indicators		FY 2018 Targets	FY 2018 Achievements	Comments on deviation
Commodity	Sweetpotato	390	987.23	market. The activity is working with bigger OFSP producers who will ensure that there are more roots in the market. In addition, FFS established under CHAIN partners increased area under OFSP than anticipated. In general farmers conserve the vines after harvesting and increase the area under OFSP in subsequent seasons.
Actor type	Producers	390	985.58	
	Others	0	1.65	
Technology Type	Crop genetics	390	987.23	
	Cultural practices	324.6	934.48	
	Disease management	15	55.35	
Sex	Male	18	77.04	
	Female	226	154.36	
	Joint	131	653.85	
	Association-Applied	15	101.99	
<b>EG.3.2-19 Value of smallholder incremental sales generated with USG assistance (in \$)</b>		<b>53,690.83</b>	<b>104,616.67</b>	We exceeded the value of incremental sales target due to higher number of vines sold during the planting periods. In addition, some roots production plots established were harvested and the roots sold. Also, the survey results showed that farmers are selling about 22% of the production to the market.
Value of incremental sales		53,690.83	104,616.67	
Tons OFSP sold		40	228	
<b>EG.3.2-20 Number of for-profit private enterprises, producer's organizations, water user's associations, women's groups, trade and business associations and CBOs that applied improved organization-level technologies or management practices with USG assistance</b>		<b>14</b>	<b>15</b>	
Organization type	Private enterprises	3	2	
	Farmer organizations	7	6	
	Women groups	2	1	
	CBOs	2	6	
<b>HL.9-1 Number of children under five reached by nutrition programs</b>		<b>100,000</b>	<b>103,432</b>	This indicator aligns with the number of new HH reached. We normally use the beneficiaries registration books to get the number of children in identified HH. We then verify using the beneficiary survey results (the results showed that in average each HH has 1.3 children under 5 years).
Sex	Male	49,000	53,150	
	Female	51,000	50,282	
<b>HL.9-4 Number of people receiving nutrition-related professional training</b>		<b>100</b>	<b>191</b>	This indicator is overachieved by almost double (191%). This is because we had to increase the CHWs trained to cover all the areas beneficiaries received the vines
Sex	Male	60	120	
	Female	40	71	
<b>E.G.3.3-a Prevalence of women of reproductive age consuming targeted nutrient-rich value chain crops or products</b>		35%	59.4%	The overachievement was due to the intensive training through groups, where the CHWs continued to train farmers on the importance of OFSP in the diet.
<b>E.G.3.3-b Prevalence of children 6–23 months who consume targeted nutrient-rich value chain commodities</b>		35%	54.4%	The overachievement was due to the intensive training through groups, where the CHWs continued to train farmers on the importance of OFSP in the diet.

## 2.3 Objective 1: Increased Production of OFSP among Smallholder Farmers

### 2.3.1 Accomplishments related to increasing production

To achieve the goal of increasing production, CIP worked with the activity IPs' agronomy teams to ensure that beneficiaries got enough agronomic skills to increase crop productivity per unit area. Agri-promoters continued to train beneficiaries through group training and field visits. Beside the agronomic trainings the activity also continued to help farmers increase the area under roots production through groups.

**Vine and commercial roots production.** For Q4 the activity continued to increase the area under root production and follow up with DVMs to ensure good vine production (Table 4). In total 14.65 new ha were established. Of these, 11.7 ha were for roots production and 2.95 were for vines multiplication under DVMs.

**Table 4: Area covered by vines and roots production during Q4**

Multiplication Type	New/Continuing	RAB	YWCA	IMBARAGA	UNICOOPAGI	OSEPCCA	DERN	Total ha
DVMs	New in Q4	0	0.00	2.55	0	0	0.4	2.95
	Continuing from Q3	0	0.84	2.15	0.00	0.7	1.5	5.19
Partner multiplication	New in Q4	0	0	0	0	0	0	0
	Continuing from Q3	0	0	0	0	0	0	0
CIP	New in Q4	0	0	0	0	0	0	0
	Continuing from Q3	1	0	0	1.5	0	0	2.5
Commercial roots	New in Q4	0	0.00	4.6	0	0	7.1	11.70
	Continuing from Q3		0.14	7.49	0	1.23	0	8.86
<b>Total Area New/Continuing</b>								<b>31.20</b>
<b>Total New Area Established in Q4</b>								<b>14.65</b>

RAB = Rwanda Agriculture Board; YWCA = Young Women's Christian Association; UNICOOPAGI = *Union des Coopératives Agricoles Intégrées*; OSEPCCA = Organization for Support to the Environment Protection and Climate Change Adaptation; DERN = *Programme de Développement Rural du Nord*

**Agronomic trainings.** Normally after receiving planting materials, beneficiaries are trained by promoters on best practices to improve production. The strategy is to train farmers through groups or through home-to-home visits. In Q4 no vines were distributed to beneficiaries; however, the promoters continued the follow-up trainings and visits to farmers who received vines in previous quarters. During field visits, farmers are advised depending on their sweetpotato crop growth period and how it was planted and is being managed.

The farmers who were trained are in two different categories, new and continuing beneficiaries:

- 1. New beneficiaries:** This category is for farmers who received planting materials in the current year (Y3 in different quarters). Tables 5 and 6 show the number of new beneficiaries who were trained and visited at home by the activity's implementing partners (IPs) in Q4. Tables 7 and 8 show the cumulative number for Y3.

**Table 5: Individuals trained in groups by IPs in Q4**

Organization	Males	Females	Total Farmers Trained
DERN	600	2,077	2,677
YWCA	626	2,585	3,211
IMBARAGA	168	237	405
UNICOOPAGI	465	1,329	1,794
OSEPCCA	963	2,889	3,852
<b>Total</b>	<b>2,822</b>	<b>9,117</b>	<b>11,939</b>

**Table 6: Households that received individual field visits per IP in Q4**

Organization	Males	Females	Total Farmers Trained
DERN	91	156	247
YWCA	866	244	1,110
IMBARAGA	44	46	90
UNICOOPAGI	117	327	444
OSEPCCA	184	304	488
<b>Total</b>	<b>1,302</b>	<b>1,077</b>	<b>2,379</b>

**Table 7: Individuals trained in groups by IPs in Y3**

Organization	Males	Females	Total Farmers Trained
DERN	2,254	6,731	8,985
YWCA	1,294	6,877	8,171
IMBARAGA	763	899	1,662
UNICOOPAGI	1,525	4,868	6,393
OSEPCCA	2,606	9,245	11,851
<b>Total</b>	<b>8,442</b>	<b>28,620</b>	<b>37,062</b>

**Table 8: Households that received individual field visits per IP in Y3**

Organization	Males	Females	Total Farmers Trained
DERN	1,091	1,118	2,209
YWCA	2,106	1,100	3,206
IMBARAGA	342	497	839
UNICOOPAGI	276	608	884
OSEPCCA	732	1,331	2,063
<b>Total</b>	<b>4,547</b>	<b>4,654</b>	<b>9,201</b>

2. **Continuing beneficiaries:** This category is for farmers who got vines in other years (Y1 and Y2) but still benefit from the project by getting the trainings and home visits in the reporting year (Y3). Tables 9 and 10 show the number of continuing beneficiaries who got the trainings and home visits in Q4. Tables 11 and 12 show the cumulative number of continuing beneficiaries who got agronomic training in Y3.

**Table 9: Individuals trained in groups by IPs in Q4 (continuing category)**

Organization	Males	Females	Total Farmers Trained
DERN	957	3,373	4,330
YWCA	411	2,457	2,868
IMBARAGA	443	562	1,005
UNICOOPAGI	86	240	326
OSEPCCA	231	838	1,069
<b>Total</b>	<b>2,128</b>	<b>7,470</b>	<b>9,598</b>

**Table 10: Households that received individual field visits per IP in Q4 (continuing category)**

Organization	Males	Females	Total Farmers Trained
DERN	469	337	806
YWCA	390	1,059	1,449
IMBARAGA	64	93	157
UNICOOPAGI	-	-	-
OSEPCCA	20	24	44
<b>Total</b>	<b>943</b>	<b>1,513</b>	<b>2,456</b>

**Table 11: Individuals trained in groups by IPs in Y3 (continuing category)**

Organization	Males	Females	Total Farmers Trained
DERN	1,891	5,405	7,296
YWCA	1,018	6,436	7,454
IMBARAGA	592	791	1,383
UNICOOPAGI	88	316	404
OSEPCCA	403	1,827	2,230
<b>Total</b>	<b>3,992</b>	<b>14,775</b>	<b>18,767</b>

**Table 12: Households that received individual field visits per IP in Y3 (continuing category)**

Organization	Males	Females	Total Farmers Trained
DERN	607	520	1,127
YWCA	2,784	2,179	4,963
IMBARAGA	149	208	357
UNICOOPAGI	7	42	49
OSEPCCA	45	95	140
<b>Total</b>	<b>3,592</b>	<b>3,044</b>	<b>6,636</b>

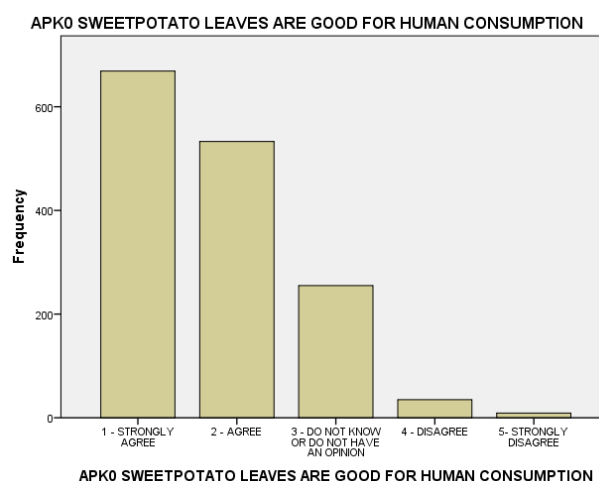
In Q4, 21,537 farmers (11,939 new, 9,598 continuing) received follow-up training on vines conservation during the dry period, importance of weeding in sweetpotato root production, and disease control management. In the same period, farmer-promotors visited 4,835 farmers (2,379 new, 2,456 continuing) in their fields to assess the conditions of their vines and assist them where needed.

Annually, 55,829 farmers (37,062 new, 18,767 continuing) were trained through groups. Agro-promotors visited 15,837 farmers (9,201 new, 6,636 continuing) for technical support in their OFSP fields.

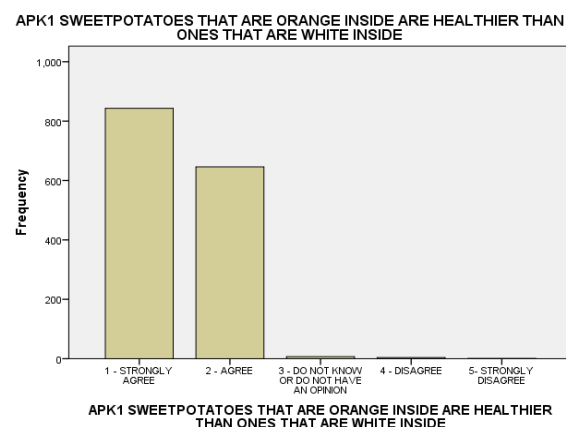
### 2.3.2 Results of indicators monitoring survey

During the survey conducted in August 2018, as reported earlier we found that 99.7% of HH who received OFSP planting materials through our activity planted them. Hence, we wanted to find out their attitudes, perceptions, and knowledge about OFSP; how these shifted during the activity are illustrated in Figures 1–6.

Figure 1 shows that 80% agree strongly that OFSP leaves are good for human consumption.



*Figure 1. Are sweetpotato leaves good for human consumption?*



HH were asked to what extent they agreed that OFSP roots are healthier than non-OFSP roots. Figure 2 shows that over 99% agreed that OFSP roots are healthier than non-OFSP roots.

*Figure 2. OFSP roots are healthier than non-OFSP roots.*



Figure 3 shows that HH say that 95% view sweetpotato as the most reliable crop for food security

*Figure 3. Sweetpotato is the most reliable crop.*

Figure 4 shows that over 89% of HH surveyed still value sweetpotato irrespective of their food situation.

*Figure 4. Sweetpotato is a staple food crop.*

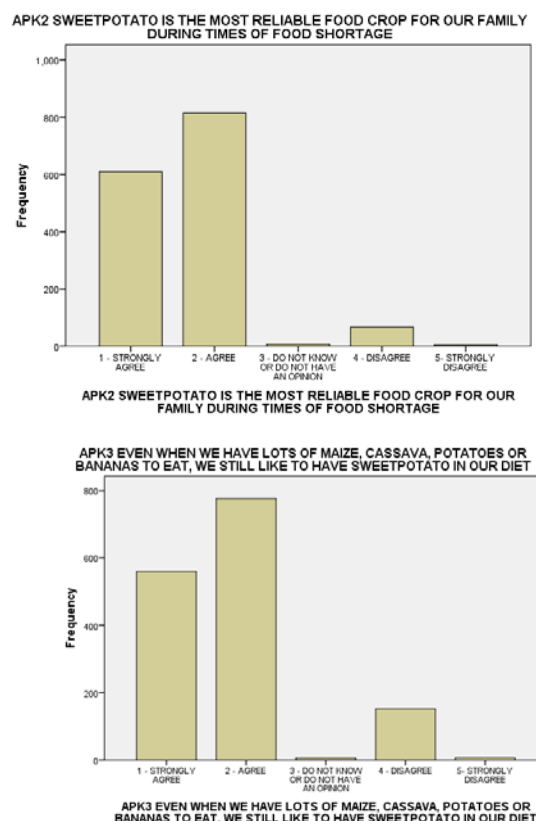
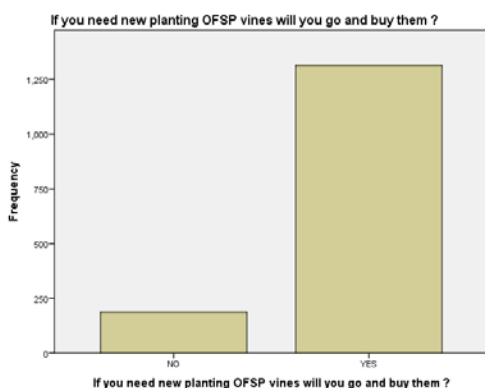
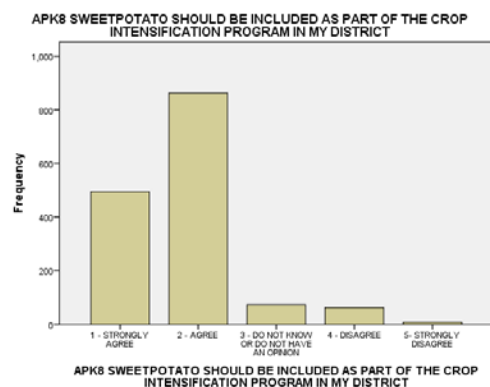


Figure 5 shows that over 91% of the HH would like to see sweetpotato included as a priority crop in the crop intensification program.

*Figure 5. Households would like sweetpotato to be included as a priority crop in the intensification program.*

We wanted to find out whether HH are willing to buy new, clean OFSP vines after the first experience with the activity giving them out. Figure 6 indicates that over 88% are willing to buy clean OFSP vines from a DVM.

*Figure 6. Households are willing to pay for sweetpotato vines.*

## 2.4 Objective 2: Improved Incomes from OFSP along the Value Chain

### 2.4.1 Accomplishments related to increasing income

The activity is carrying out marketing activities in collaboration with IPs. Root production and marketing are one of the activities that generate income. In Q4 new 11.7-ha plots were set up (Table 13).

**Table 13. Established OFSP root production sites in Q4**

Partner	RAB	YWCA	IMBARAGA	UNICOOPAGI	OSEPCCA	DERN
OFSP roots established (ha)	-	-	4.6	-	-	7.1
<b>Total area under roots established (ha)</b>	<b>11.7</b>					

For marketing activities in Q4, CIP continued working with SIMBA (a supermarket) and Villa Portofino hotel, by supplying them with OFSP roots as a way to increase OFSP availability to different consumers. In the reporting period more than 310 kg were supplied to the supermarket and the hotel. We expect that these businesses and others will continue buying roots from the beneficiaries.

Some of the trained processors continued to produce assorted products (e.g., doughnuts, bread, cakes, and biscuits) incorporating OFSP as an ingredient. These are new processors, except for Sina Gerard, our main processor in Rwanda. The total sales value in Q4 of these processed products from the new processors was \$6,742.34 (Table 14).

**Table 14. Processed products and their value per processors under IP**

Organization	Processed Product	Total Quantity Sold (number)	Total Value (RwF)	Total Value (\$)
IMBARAGA	Doughnuts	2,879	287,900	340.30
	Breads	3,596	359,600	425.06
	Biscuits	3,330	333,000	393.62
OSEPCCA	Doughnuts	10,444	985,520	1,164.92
	Cakes/biscuits	19,140	2,532,000	2,992.91
	Breads	1,100	110,000	130.02
DERN	Doughnuts	4,408	440,800	521.03
	Cakes/biscuits	1,460	132,000	156.03
	Breads	4,472	236,200	279.20
Easter's Aid	Breads(big/small)	1,270	38,100	45.04
	Doughnuts	524	52,400	61.94
	Cookies	1,179	196,500	232.27
<b>Total</b>		<b>53,802</b>	<b>5,704,020</b>	<b>6,742.34</b>

During Q4 fewer vines were sold because it was during the dry period. A few cuttings were sold to farmers who wanted to plant in marshland in Musanze district; the price per cutting was 5 RwF.

During Q4 DVMs under DERN sold 290,675 OFSP cuttings for a total value of 1,453,375 RwF (\$1,717.94) at a unit price of 5 per cutting. OFSP root production sites continued to produce roots for consumption. Some 32.9 t were sold for 5,891,840 RwF, or \$6,964 (Table 15).

**Table 15: Roots sold by IPs via commercial roots plots**

Organization	No. of OFSP Roots (kg)	Unit Price (/kg)	Total Value (RwF)	Total Value (\$)
IMBARAGA	16,578.5	100–250	3,110,890	3,677.17
OSEPCCA	3,600	180–250	657,000	776.60
DERN	6,631	200	1,121,150	1,325
UNICOOPAGI	740	80–150	83,800	99.05
YWCA	5,355	120–200	919,000	1,086.29
<b>Total</b>	<b>32,905</b>	<b>-</b>	<b>5,891,840</b>	<b>6,964</b>

The survey results showed that on average a HH sold 21.2 kg of OFSP roots. Using this average we estimate that 126.2 t of OFSP were sold at an average price of 162.69 RwF per kilogram. Hence, the total value of the roots sold by farmers was \$24,263.73. The total reported value of the roots sold in Q4 is \$39,688 from vines, roots, and processed products, which corresponds to the incremental sale of \$18,210.57. Table 16 shows annual details of sales made during the reporting year.

**Table 16: Details of annual sales**

Details	Q1	Q2	Q3	Q4	Annual
Value of vines sold (\$)	41,602	12,262	25,464	1,718	81,046
Value of roots sold (\$)	4,174	4,675.49	5,417	31,228.08	45,494
Value of processed products sold (\$)	1,468,085	898.70	59,787.23	6,742.34	9,707
<b>Total Sales</b>	<b>47,244</b>	<b>17,836</b>	<b>31,479</b>	<b>39,688</b>	<b>136,247</b>
Tons of roots sold	18.909	23.06	27.164	159.08	228.2
Number of farmers involved in sales	273	2,378	222	6,077	8,950

## 2.5 Objective 3: Improved Nutrition Outcomes for Women and Children under 5

### 2.5.1 Accomplishments related to improved nutrition among women and children

During Q4 all the partners' CHWs and the field workers of the CHAIN partners were trained as planned. Like other previous quarters, the trained CHWs continued to train beneficiaries through group training and visited selected HH at home for more intensive nutrition counseling. A total of 19,834 (11,641 new, 8,193 continuing) were trained. Through intensive home-to-home visits, 8,458 new and continuing beneficiaries were trained: see Tables 17 and 18 for new beneficiaries and Tables 19 and 20 for continuing beneficiaries.

**Table 17: Individuals trained through nutrition group per IP**

Organization	Males	Females	Total Farmers Trained
DERN	600	2,077	<b>2,677</b>
YWCA	273	1,628	<b>1,901</b>
IMBARAGA	103	150	<b>253</b>
UNICOOPAGI	1,211	3,168	<b>4,379</b>
OSEPCCA	532	1,899	<b>2,431</b>
<b>Total</b>	<b>2,719</b>	<b>8,922</b>	<b>11,641</b>

**Table 18: Households that received individual visits for counseling per IP**

Organization	Males	Females	Total Farmers Trained
DERN	737	347	1,084
YWCA	1,169	358	1,527
IMBARAGA	92	76	168
UNICOOPAGI	903	1,216	2,119
OSEPCCA	61	86	147
<b>Total</b>	<b>2,962</b>	<b>2,083</b>	<b>5,045</b>

**Table 19: Individuals trained through nutrition group per IP (continuing)**

Organization	Males	Females	Total Farmers Trained
DERN	957	3,373	4,330
YWCA	376	1,526	1,902
IMBARAGA	572	916	1,488
UNICOOPAGI	108	365	473
OSEPCCA	-	-	-
<b>Total</b>	<b>2,013</b>	<b>6,180</b>	<b>8,193</b>

**Table 20: Households that received individual visits for counseling per IP (continuing)**

Organization	Males	Females	Total Farmers Trained
DERN	380	515	895
YWCA	1,615	518	2,133
IMBARAGA	127	168	295
UNICOOPAGI	53	37	90
OSEPCCA	-	-	-
<b>Total</b>	<b>2,175</b>	<b>1,238</b>	<b>3,413</b>

The topics covered during the nutrition training were balanced diet composition and preparation, practices necessary during pregnancy, breastfeeding practices, benefit of biofortified crops, role of food rich in vitamin A and iron, and recommended practices during the first 1,000 days of life. In these trainings, women and men caregivers were all invited to attend. Annually, 73,385 (49,478 new, 23,907 continuing) beneficiaries were trained through groups. CHWs visited 26,017 (16,535 new, 9,482 continuing) for counseling.

From the survey, in the last 6 months 90.8% of the respondent HH had consumed OFSP, 96.2% of the women had consumed OFSP, and 47.4% of the reference children (6–23 months old) had consumed OFSP (Table 21).

**Table 21: Respondents who had consumed OFSP in the last 6 months**

Consumer	No (%)	Yes (%)
Household	9.2	90.8
Woman	3.8	96.2
Child	52.6	47.4

On the consumption of OFSP for the past 7 days, we find that 59.8% of HH consumed OFSP at least once, 59.4% of women consumed OFSP, and 55.4% of the reference children consumed OFSP (Table 22). This analysis is dependent on chance that the HH have had enough OFSP roots all the time. Hence, timing of the survey is usually very important to capture the consumption during the harvest period.

**Table 22: Number of respondents who had consumed OFSP in the last 7 days**

Consumer	Did Not Consume OFSP in 7 days (%)	Consumed OFSP at Least Once in 7 days (%)
HH members	40.2	59.8
Women	40.6	59.4
Children	44.6	55.4

We also asked whether the HH had eaten OFSP in the last 24 hours. Table 23 shows that 32% of the HH had eaten OFSP in the last 24 hours, as did 37% of the reference children and 31% of caregiver women.

**Table 23: Respondents who had consumed OFSP in the last 24 hours**

Consumer	No (%)	Yes (%)
HH members	67.9	32.1
Women	68.9	31.1
Children	66.3	33.7

## 2.6 Main Accomplishments during the FY 2017–2018 on CHAIN Collaboration

### 2.6.1 Facilitating access to vines for CHAIN partners

For Y3 of the activity implementation, we continued to facilitate the access to vines by CHAIN partners through linkages to DVMs who had vines to meet their project requirements. In the reporting year, 1,019 FFS were established under CHAIN partners in different districts; those FFS covered 56.12 ha under OFSP. About 26,585 farmers learned good agronomic practices in OFSP production (see Tables 24 and 25).

**Table 24: Beneficiaries who received OFSP vines through FFS under CHAIN partners in FY 2017–2018**

Partner	District	Season/ 2018	No. of FFS	No. of Males Leading FFS	No. of Females Leading FFS	Participants		
						Females	Males	Total
AEE	Rwamagana	A	134	2	132	3,714	32	3,746
FXB	Nyanza	A	51	31	20	1,252	63	1,315
CRS	Nyarugenge	A	104	48	56	558	33	591
	Kicukiro	A	89	37	52	1,305	50	1,355
	Ngoma	A	318	257	61	4,948	3,835	8,783
	Kayanza	A	191	160	31	6,310	265	6,575
CARITAS	Ruhango, Nyamagabe, Gatsibo, Kamonyi, Muhanga	A	119	17	102	3,309	261	3,570
	Karongi, Nyaruguru	B	13	3	10	640	10	650
<b>Total</b>			<b>1,019</b>	<b>555</b>	<b>464</b>	<b>22,036</b>	<b>4,549</b>	<b>26,585</b>

AEE = African Evangelistic Enterprise; FXB = François-Xavier Bagnoud; CRS = Catholic Relief Services



**Table 25: OFSP planted in FFS under CHAIN partnership in collaboration with CIP in FY 2017–2018**

Partner	District	Season/2018	No. of FFS	Total Cuttings	Total Area under OFSP (ha)
AEE	Rwamagana	A	134	558,333	13.4
FXB	Nyanza	A	51	142,000	0.5
CRS	Nyarugenge	A	104	104,000	2.496
	Kicukiro	A	89	90,000	2.16
	Ngoma	A	318	318,000	7.632
	Kayonza	A	191	247,000	5.928
CARITAS	Ruhango, Nyamagabe, Gatsibo, Kamonyi, Muhanga	A	119	912,500	21.8
	Karongi, Nyaruguru	B	13	95,000	2.2
<b>Total</b>			<b>1,019</b>	<b>2,466,833</b>	<b>56.12</b>

NOTE: All plants were spaced 30 x 80 cm<sup>2</sup> apart.

### 2.6.2 Participation in MCH week and 1,000 days campaign

CIP participated in the “1,000 days” campaign, which was merged with the Maternal and Child Health week (MCH week) organized by the Ministry of Health. CIP was the leading partner in Burera District, but it also participated in Nyamagabe and Musanze districts. The main activities carried out during the MCH week were distribution of vitamin A supplements and deworming tablets to children. There were messages on family planning; 1,000 days window of opportunity; and water, safety and hygiene. There were also cooking demos and distribution of biofortified crops, such as high-iron beans (HIB), and vines. Tables 26 and 27 show different achievements in Burera District during the MCH week.

**Table 26: Nutrition-specific activities in Burera District**

Acute Malnutrition Screening		Stunting Screening		People Receiving Message on the “1,000 Days” Campaign		Children Receiving Vitamin A Supplements	
Target	Covered	Target	Covered	Target	Covered	Target	Covered
45,087	43,734	45,087	43,734	47,212	47,212	47,066	45,654

**Table 27: Nutrition-sensitive activities in Burera District**

Children Dewormed		Women Receiving Family Planning Methods (any)		HH Receiving Biofortified Crops/Vines	
Target	Covered	Target	Covered	Target	Covered
168,413	154,514		25,878	OFSP vines: 300 HIB: 200	338 200

### 2.6.3 Delivering technical training to CHAIN partners

As planned in the CHAIN FY 2018 integrated work plan, CIP organized two trainings:

- 1. Training on nutrient-rich value chain commodities and postharvest and handling techniques (PHHT).** CIP collaborated with HarvestPlus to train CHAIN agronomists and fields officers to boost their technical knowledge on OFSP and HIB production. Thirty-one persons from eight CHAIN organizations (CRS, FXB, Global Communities, AEE, CARITAS, CNFA, H+, and CIP) participated.
- 2. Training on PHHT and processing techniques using OFSP puree.** Twenty participants from six CHAIN organizations (CRS, FXB, AEE, CARITAS, CNFA, and CIP) attended the training. They learned good PHHT and how to process different products using OFSP puree (e.g., doughnuts, cakes, breads, and biscuits).

### 3. CROSSCUTTING OBJECTIVES

#### 3.1 Gender

Gender is a key aspect of this Feed the Future activity. All activities implemented have gender considerations; in Q4 women and men were involved in the activities carried out. For nutrition training, as it was observed in the reporting year, more women than men attended because mothers or women are more involved in childcare and hence naturally attend the sessions. Women are the primary caregivers for children in Rwanda and are responsible in general for preparing meals for the family, including children. Hence we expected that more women would attend the trainings. The activity continued to work with partners to encourage more men to participate because of the key role they can play in ensuring that their HH are nutrition and food secure. In our project areas, men own most of the resources and land and are instrumental in making HH decisions on issues related to resource allocation.

In Y3 women were more present during vine distribution than were men. Out of the 78,730 farmers who picked vines, 58,425 were women and 20,305 were men (25.7% of those who came to pick OFSP vines were men). However, during the follow-up training on agriculture and nutrition, the number of participating men increased compared with vine-picking day as a result of having the IPs encourage both sexes to participate in trainings. For the agronomic activities, out of 71,666 farmers trained through groups and field visits for both new and continuing beneficiaries, 51,093 were women and 20,573 were men—an increase of 28.7% of HH male representatives.

In nutrition trainings and home visits for counseling for both new and continuing beneficiaries, 99,402 (65,108 women, 34,294 men) beneficiaries were trained. That is 35% of those who received the follow-up trainings were men compared with 29% who received agronomic training and 26% who were trained during the picking of OFSP vines.

#### 3.2 Summary of Women Empowerment-related Activities done in Y3

Table 28 summarizes the project's activities related to women's empowerment in Y3.

**Table 28: Summary of women empowerment-related activities achieved in Y3**

Problem/Constraint to Address	Explanation of Activities Done to Address the Constraint	Indicators																
(Wo) men do not have equal or adequate power or input into HH or community decision-making processes related to agriculture/at any stage of agricultural value chains, are excluded for decision-making processes, or make decisions based on external pressures.	CIP, in partnership with its IPs, worked to sensitize both men and women to exploit opportunities for OFSP vine and root production and to see this as an agriculture-related business. From this sensitization, and from the other years' experience, men and women have started or increased land under OFSP production. Each owner of the plot has full control over his/her product at any stage of the production. For this reporting period we observed that many hectares under OFSP were jointly owned by men and women. The decisions were jointly taken by men and women together at different stages.	<b>EG.3.2-18 Number of hectares under improved technologies or management practices with USG assistance: Sex-disaggregated</b> <table> <tr> <th>Sex Disaggregate</th><th>Y3 Achievement</th><th>%</th></tr> <tr> <td>Male</td><td>77.04</td><td>7.8</td></tr> <tr> <td>Female</td><td>154.36</td><td>15.7</td></tr> <tr> <td>Joint</td><td>653.85</td><td>66.2</td></tr> <tr> <td>Association–Applied</td><td>101.99</td><td>10.3</td></tr> </table>	Sex Disaggregate	Y3 Achievement	%	Male	77.04	7.8	Female	154.36	15.7	Joint	653.85	66.2	Association–Applied	101.99	10.3	
Sex Disaggregate	Y3 Achievement	%																
Male	77.04	7.8																
Female	154.36	15.7																
Joint	653.85	66.2																
Association–Applied	101.99	10.3																
Wo (men) have low or inadequate skill/knowledge levels in activities that are economically profitable or socially beneficial.	<p>CIP emphasizes the importance of both agronomic and nutrition training as a way of increasing human capital to the beneficiaries. Through agronomic training, both male and female trainees acquire the knowledge which helps them to boost their production. This provides profitable opportunities for farmers through participation in the OFSP value chain. In addition, the nutrition training gives the trainees the chance to use what they have learned in their homes on issues related to good nutrition, dietary diversification and MIYCN. This gives the HH information and the tools to attain adequate nutrition status.</p> <p>As proposed, the activity targets mainly women as the first line of nutrition decision-making in the HH; however, to achieve this goal we tried to train both male and female HH members. Sweetpotato in Rwanda is well engendered as it is a very important food security crop to most rural HH and grown by women and men equally. Hence, the labor activities are divided depending on the effort exacted. However, women are the ones who take care of the children, hence targeting women is very important because they mainly feed the children.</p>	<b>EG.3.2-1 Number of individuals who have received USG supported short-term agricultural training: Agronomy follow up group trainings and field visit for technical support</b> <table> <tr> <th>Disaggregates</th><th>Y3 Achievement</th><th>%</th></tr> <tr> <td rowspan="2">Farmers</td><td>Males</td><td>20,305</td></tr> <tr> <td>Females</td><td>58,425</td></tr> </table> <p>Nutrition follow-up group trainings and home visits for counseling:</p> <table> <tr> <th>Disaggregates</th><th>Y3 Achievement</th><th>%</th></tr> <tr> <td rowspan="2">Farmers</td><td>Males</td><td>34,294</td></tr> <tr> <td>Females</td><td>65,108</td></tr> </table>	Disaggregates	Y3 Achievement	%	Farmers	Males	20,305	Females	58,425	Disaggregates	Y3 Achievement	%	Farmers	Males	34,294	Females	65,108
Disaggregates	Y3 Achievement	%																
Farmers	Males	20,305																
	Females	58,425																
Disaggregates	Y3 Achievement	%																
Farmers	Males	34,294																
	Females	65,108																

Problem/Constraint to Address	Explanation of Activities Done to Address the Constraint	Indicators									
(Wo) men do not have adequate access to important technologies that can improve their economic productivity or wo(men) do not use or apply beneficial technologies or practices for some reason.	OFSP is an improved technology. CIP, through partners, has encouraged both men and women to pick OFSP vines from the distribution points. However, more women are recorded picking the vines at these sites than men. If all members of the families have access to that new technology, they are likely to adopt it.  We expected that when women pick vines they go and inform other family members and together they can adopt the new technology. This was verified from the survey results which showed that only 3.3% of HH were men-only involved in OFSP production, 46.2% of HH, women-only were involved, and in 50.5% of HH both men and women were involves in OFSP production.	HH that received the vines disaggregated by the gender of the HH head									
		<table><tr><th>Sex Disaggregates</th><th>Y3 Achievement</th><th>%</th></tr><tr><td>Male-headed HH</td><td>51,491</td><td>65.4</td></tr><tr><td>Female-headed HH</td><td>27,239</td><td>34.6</td></tr></table>	Sex Disaggregates	Y3 Achievement	%	Male-headed HH	51,491	65.4	Female-headed HH	27,239	34.6
		Sex Disaggregates	Y3 Achievement	%							
		Male-headed HH	51,491	65.4							
		Female-headed HH	27,239	34.6							
		The number of people who went the vines distributions point to pick vines gender disaggregated:									
		<table><tr><th>Sex Disaggregates</th><th>Y3 Achievement</th><th>%</th></tr><tr><td>No. of males</td><td>20,305</td><td>25.8</td></tr><tr><td>No. of females</td><td>58,425</td><td>74.2</td></tr></table>	Sex Disaggregates	Y3 Achievement	%	No. of males	20,305	25.8	No. of females	58,425	74.2
Sex Disaggregates	Y3 Achievement	%									
No. of males	20,305	25.8									
No. of females	58,425	74.2									
The number of farmers and other who have applied improved technology—Sex disaggregated:											
<table><tr><th>Sex Disaggregates</th><th>Y3 Achievement</th><th>%</th></tr><tr><td>No. of males</td><td>37,377</td><td>32.9</td></tr><tr><td>No. of females</td><td>76,108</td><td>67.1</td></tr></table>	Sex Disaggregates	Y3 Achievement	%	No. of males	37,377	32.9	No. of females	76,108	67.1		
Sex Disaggregates	Y3 Achievement	%									
No. of males	37,377	32.9									
No. of females	76,108	67.1									

## 4. COLLABORATION, LEARNING, AND ADOPTION

During Q4 CIP continued the partnership with SIMBA and Villa Portofino hotel to provide them with greater access to OFSP roots. Through this collaboration, CIP linked them with OFSP roots producers who supplied OFSP roots for selling in Simba and for serving to hotel guests.

In general, during FY 2017–2018 CIP has continued to strengthen its collaboration with the IPs of six projects through partner meetings and implementation reviews. These are DERN (an agriculture-focused NGO), IMBARAGA (a farmer’s organization), OSEPCCA, RAB, UNICOOPAGI, and the YWCA.

As part of collaboration with local government and the city of Kigali, CIP was invited to participate in “TTORERO” (Civic Education Camp) of the youth in Kigali. In the camp students were trained on urban farming and the role of OFSP in nutrition and a balanced diet. CIP collaborated with Ste. Anne congregation and trained 53 technicians on processing techniques. CIP also collaborated with HarvestPlus to train CHAIN agronomists in agronomy.

The OFSP activity also ensured that strong cooperative partnerships were established with the district local government offices/officials, health centers, and schools. Health centers and schools offer avenues for communicating the role of OFSP in fighting against vitamin A deficiency and the importance of good nutrition and its impacts on health and wellbeing. Health centers and schools have also hosted some of the cooking demo events as part of nutrition education training.

## 5. PUBLIC EVENTS PARTICIPATION, COMMUNICATION, AND NEXT QUARTER PLANS

During Q4 CIP participated in the CHAIN exit event held in Rubavu District, as some of the projects were closing in September 2018. The meeting was organized with local authorities and a team from the United States Agency for International Development (USAID). Each partner presented its achievements and shared its successes and lessons learned from the project’s implementation.

During FY 2017–2018 CIP, in collaboration with Kigali and Musanze cities, organized the “Musanze Nutrition Week” and “Kigali Nutrition Week.” The objective of this event was to increase the awareness of the need to have better nutrition for the citizens of Kigali; media campaigns aimed to reach the wider Rwandan society. The event also started the promotion of the concept of vertical gardening to encourage HH constrained by land space to grow vegetables in the city space. During the nutrition week, a range of nutrition-related messages was delivered through different media outlets (see Table 29). The vertical garden concept was also highlighted as part of the Kigali city sports and car-free day.

OFSP activity participated in a national agricultural show organized by the Ministry of Agriculture. The theme was “invest in innovations and agribusiness to transform agriculture.” CIP received an award as best exhibitor in value addition because of different innovative products made from OFSP puree.



**Table 29: Communication activities carried out in Q4**

Activity Name	Details		
Coms materials Printing	<b>Name of communication material</b>	<b>Quantity</b>	<b>Comment</b>
	The Feed the Future OFSP for Income and Nutrition activity pull-up banner	1	This was printed to be used during the activity's district close-out meetings.
	The Feed the Future OFSP for Income and Nutrition activity sticker that was used during AGRF conference	1	For the AGRF conference in the USAID booth. It indicated the three objectives of the activity in Rwanda: increasing productivity and incomes, and improving nutrition of smallholder farmers.
	Evolution of youth in agriculture in Rwanda: sweetpotato seed and root production as a business flyers	200	These flyers indicate the evolution of the youths engaging in agriculture, especially in sweetpotato seed and roots production. Was displayed and given away during the national agri-show & AGRF conference.
	T-shirts for the national agri-show 2018	26	These were used as a branding material/wear for identification of CIP on sweetpotato activities in Rwanda.
Stories published	<b>Title of the story</b>	<b>Where published?</b>	<b>Publisher</b>
	CIP wins Best Exhibitor in Value Addition with OFSP products in Rwanda. Hundreds of people visited CIP stand at the expo. <a href="https://www.sweetpotatoknowledge.org/the-13th-national-agriculture-show-2018-in-rwanda/">https://www.sweetpotatoknowledge.org/the-13th-national-agriculture-show-2018-in-rwanda/</a>	CIP Sweetpotato Knowledge Portal	Donata Kiiza <a href="https://www.youtube.com/watch?v=exGsXo_ouVk">https://www.youtube.com/watch?v=exGsXo_ouVk</a>
	Rwanda's Farming Revolution, <a href="https://www.nation.co.ke/business/seeds/gold/Rwanda-s-farming-revolution/2301238-4758828-c1dpptz/index.html">https://www.nation.co.ke/business/seeds/gold/Rwanda-s-farming-revolution/2301238-4758828-c1dpptz/index.html</a>	<i>Daily Nation</i> , Kenya	LEOPOLD OBI
	<a href="https://www.igihe.com/amakuru/urwanda/article/minisitiri-w-intebe-yasabye-ko-ibikorerwa-mu-nzu-z-ubushakashatsi-bigezwa-ku">https://www.igihe.com/amakuru/urwanda/article/minisitiri-w-intebe-yasabye-ko-ibikorerwa-mu-nzu-z-ubushakashatsi-bigezwa-ku</a>	Igihe.com	Prudence Kwizera
	Promoting Nutrition for Women's and Children's Health in Rwanda, <a href="https://www.youtube.com/watch?v=srmfCGi1Aeo&amp;t=22s">https://www.youtube.com/watch?v=srmfCGi1Aeo&amp;t=22s</a>	YouTube	CIP

The activity has a no-cost extension that runs up to December 31, 2018. The main activities to be undertaken are trainings on both agronomic and nutrition to beneficiaries and marketing activities. The marketing aspect will be emphasized in the last quarter of the activity. Also, a close-out report will be produced that will document the lessons learned for future programming.

## 6. MANAGEMENT AND ADMINISTRATION OF THE ACTIVITY

No significant issues were faced in project administration and management during Q4 and in the whole year in general. The project team remained the same. But as the project was supposed to end in September 2018, with the remaining funds, management requested a no-cost extension in order to finalize some activities on the ground before the project closes. Hence the end of the project was shifted to December 2018.

# ANNEX 1: INDICATORS

Indicators		FY 2018 Targets	Q1 Achievement	Q2 Achievement	Q3 Achievement	Q4 Achievement	FY2018 Achievement	Comments on deviation
EG.3-1 Number of households benefiting directly from USG assistance under Feed the Future		80,000	54,361	14,167	31,985	11,606	112,119	<ul style="list-style-type: none"> <li>The overachievement was mainly due to the focus we have put on continuing beneficiaries where CHWs continued to train and support them on nutrition trainings through home visits.</li> </ul>
Status	New	75,000	46,818	6,235	25,677	0	78,730	
	Continuing	5,000	7,543	7,932	6,308	11,606	33,389	
Location	Rural	80,000	54,361	14,167	31,985	11,606	112,119	
EG.3.2-1 Number of individuals who have received USG supported short-term agricultural training		75,065	51,394	8,728	31,988	12,054	104,164	<ul style="list-style-type: none"> <li>The activity usually gives initial agronomic training to beneficiaries on the day of vines distribution then the same beneficiaries continue to get interventions through follow-up training in groups.</li> <li>The overachievement was mainly due to the big number of continuing beneficiaries who were still interested to attend the organized agronomic training.</li> <li>The activity also trained 31 agronomists from CHAIN partners.</li> </ul>
Farmers	Farmers	75,000	51,394	8,728	31,957	12,054	104,133	
	Males	26,000	13,671	1,353	9,794	3,071	27,889	
	Females	49,000	37,723	7,375	22,163	8,983	76,244	
People in government	People in government	0	0	0	0	0	0	
	Males	0	0	0	0	0	0	
	Females	0	0	0	0	0	0	
People in private sector	People in private sector	10	0	0	0	0	0	
	Males	6	0	0	0	0	0	
	Females	4	0	0	0	0	0	
People in civil society	People in civil society	55	0	0	31	0	31	
	Males	40	0	0	25	0	25	
	Females	15	0	0	6	0	6	
EG.3.3-11 Total quantity of targeted nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption		5,000	***	3,060.91	9.281	2,062.78	5,133	<ul style="list-style-type: none"> <li>The number here is from several sources. Beneficiaries who got 200 vines and the beneficiaries who produce under groups. Hence, the quantity consumed increased more than expected. The production also increased because HH are conserving vines to plant in subsequent seasons.</li> </ul>
Commodity	Sweetpotato	5,000	***	3,060.91	9.281	2,062.78	5,133	
	Tons	5,000	***	3,060.91	9.281	2,062.78	5,133	

	consumed							
	Beneficiaries	67,500	***	195,676	192	171,931	367,799	
<b>EG.3.2-17 Number of farmers and others who have applied improved technologies</b>		<b>67,500</b>	<b>887</b>	<b>64,200</b>	<b>132</b>	<b>48,266</b>	113,485	<ul style="list-style-type: none"> <li>The overachievement was due to the high number of farmers involved in OFSP production at household level than expected. We find more than 50% of HH both men and women were involved in OFSP production.</li> </ul>
<b>Commodity</b>	Sweetpotato	67,500	887	64,200	132	48,266	113,485	
<b>Actor type</b>	Producers	67,500	887	64,184	132	48,266	113,469	
	Others	0	***	16	0	0	16	
<b>Technology</b>	Crop genetics	67,500	887	64,200	132	48,266	113,485	
<b>Type</b>	Cultural practices	35,625	887	45,941	132	29,101	76,061	
	Disease management	40	887	39	132	17	1,075	
	Postharvest management	1500	***	16,761	0	17,966	34,727	
	Value-added processing	150	***	382	0	1,051	1,433	
<b>Sex</b>	Males-only farmer	16,875	535	19,535	20	17,287	37,377	
	Females-only farmer	50,625	352	44,665	112	30,979	76,108	
<b>EG.3.2-18 Number of hectares under improved technologies or management practices with USG assistance</b>		<b>390</b>	<b>58.356</b>	<b>419.45</b>	<b>41.92</b>	<b>467.5</b>	<b>987.23</b>	<ul style="list-style-type: none"> <li>The activity overachieved on this indicator because of a deliberate effort to encourage more farmers to set up roots production plots to meet the demand of the market as well as the FFS established under CHAIN partners. Also farmers after harvesting they either immediately established new plots or conserved the vines for planning in the subsequent seasons.</li> </ul>
<b>Commodity</b>	Sweetpotato	390	58.356	419.45	41.92	467.5	987.23	
<b>Actor type</b>	Producers	390	58.356	417.95	41.77	467.5	985.58	
	Others	0	0	1.5	0.15	0	1.65	
<b>Technology Type</b>	Crop genetics	390	58.356	419.45	41.92	467.5	987.23	
	Cultural practices	324,6	58.356	410.17	41.92	424.03	934.48	
	Disease management	15	36.186	16.01	0.2	2.95	55.35	
<b>Sex</b>	Male	18	6.88	27.46	5.61	37.09	77.04	
	Female	226	4.49	67.95	4.73	77.19	154.36	
	Joint	131	8.94	309.66	7.39	327.86	653.85	
	Association-Applied	15	38.046	14.39	24.19	25.36	101.99	

<b>EG.3.2-19 Value of small-holder incremental sales generated with USG assistance (in \$)</b>		<b>53,690.83</b>	<b>46,279.20</b>	<b>9,432.85</b>	<b>30,694.04</b>	<b>18,210.57</b>	<b>104,616.67</b>	<ul style="list-style-type: none"> <li>The value of incremental sales target was overachieved due to high number of vines sold by vines multipliers during the planting periods. In addition, roots production plots established were harvested and some roots sold. Also the estimated roots sales through the survey is very significant.</li> </ul>
<b>Type of sale</b>	Value of incremental sales	53,690.83	46,279.20	9,432.85	30,694.04	18,210.570	104,616.67	
Tons OFSP sold		40	18.9	23	27.2	159.08	228	
<b>EG.3.2-20 Number of for-profit private enterprises, producers' organizations, water user's associations, women's groups, trade and business associations and CBOs that applied improved organization-level technologies or management practices with USG assistance</b>		<b>14</b>	<b>7</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>15</b>	
<b>Organization type</b>	Private enterprises	3	1	1	0	0	2	
	Farmer organization	7	3	1	2	0	6	
	Women groups	2	0	1	0	0	1	
	CBO	2	3	1	2	0	6	
<b>HL.9-1 Number of children under five reached by nutrition programs</b>		<b>100,000</b>	<b>48,752</b>	<b>6,774</b>	<b>27,150</b>	<b>20,756</b>	<b>103,432</b>	<ul style="list-style-type: none"> <li>This indicator aligns with the number of new HH reached. We normally use the beneficiaries registration books to get the number of children in the beneficiaries HH. We then verify using the beneficiary survey results. The results showed that on average each HH has 1.3 children under 5.</li> </ul>
<b>Sex</b>	Male	49,000	24,765	3,459	13,594	11,332	53,150	
	Female	51,000	23,987	3,315	13,556	9,424	50,282	
<b>HL.9-4 Number of people receiving nutrition-related professional training</b>		<b>100</b>	<b>78</b>	<b>59</b>	<b>54</b>	<b>0</b>	<b>191</b>	<ul style="list-style-type: none"> <li>The annual target was reached but because of the high number of beneficiaries in different locations, it was necessary to train other CHWs to help in follow-up of the activity's beneficiaries.</li> </ul>
<b>Sex</b>	Male	60	49	39	32	0	120	
	Female	40	29	20	22	0	71	

E.G.3.3-a Prevalence of women of reproductive age consuming targeted nutrient-rich value chain crops or products	35%	***	***	***	***	59.4%	<ul style="list-style-type: none"> <li>The overachievement was due to the intensive training through groups. Where CHWs continued to train farmers on the importance of OFSP in the diet.</li> </ul>
E.G.3.3-b Prevalence of children 6-23 months who consume targeted nutrient-rich value chain commodities	35%	***	***	***	***	55.4%	<ul style="list-style-type: none"> <li>The overachievement was due to the intensive training through groups. Where the CHWs continued to train farmers on the importance of OFSP in the diet.</li> </ul>

## ANNEX 2: SUCCESS STORIES AND PHOTOS

### EARNING AND LIVING HAPPILY AS A MODEL ORANGE-FLESHED SWEETPOTATO FARMER



(PHOTO: DONATA. K X 3)

*Photo 1. Mr. Dominique in one of his plots in Gatare village, Ngororero District.*

Mr. Harerimana Dominique is a successful DVM in Ngororero District in the western province of Rwanda.

In 2016 he started his OFSP seed multiplication journey. He started with less than 1 ha; however, after seeing the profits possible being a seed multiplier, he saved up to buy more land. He now has 4 ha on which 2 of them he multiplies OFSP vines and roots production. Mr. Dominique believes in this new venture and is now the largest DVM and OFSP model farmer in the district.

To produce clean planting material, he has built four aphid-proof net vines conservation tunnels on one of his plots, where he conserves ‘Kabode’, ‘Vita’, ‘Gihingamukungu’, and ‘Terimbere’ varieties from pests and diseases. Mr. Dominique says that this has also enabled him to always have clean vines to plant every season and meet his market demands.





***Photo 2. The aphid-proof net tunnels help Mr. Dominique produce clean planting material free from pests and diseases.***

He sells the vines to local NGOs, local farmers, and nutrition-oriented cooperatives. The OFSP roots are being purchased by schools in his area.

Within 2 years of vine multiplication and root production, Mr. Dominique has sold vine cuttings worth more than 3.70m RwF and about 2.5m RwF from roots. Today, he testifies that four of his children have no problems with school fees for their education because the proceeds from selling OFSP vines and roots meet all their needs.

The proud father of five says that, “I am always with some money on my account to run my family’s needs and other errands. Hence, I am grateful to the Feed the Future OFSP for Incomes and Nutrition project that enabled me to acquire the first batch of vines two years ago.”

Mr. Dominique, being a successful DVM in the district, has contributed to the development of the people in Ngororero. The cooperatives that buy vines from him started growing the sweetpotato. From the teachings by CHWs, they have learned about the nutrition value within this particular crop as vitamin A, which is good for their health.

During the district exhibitions, Mr. Dominique also takes time to teach people how sweetpotato is grown as well as talk about its nutritional value. Whenever he is selling vines to the local farmers, he demonstrates to the buyers the recommended land preparations and planting methods and spacing.

With all his efforts to promote OFSP, Mr. Dominique has seen many people attest to the impact of eating OFSP is having on their health. For instance, there is a woman who says that her legs used to be swollen; but after starting to eat OFSP her health status has improved and her legs are no longer swollen.

He has also gone further to teach people, especially in his village, how to prepare the nutritious sweetpotato leaves from the famous varieties of ‘Kabode’ and ‘Vita’.

The schools that Mr. Dominique has been supplying with roots twice every week have become consistent buyers because the students like the sweetness of the sweetpotato. The school administration also believes that OFSP is good for the children's health and hence are willing to keep them eating OFSP regularly.



*Photo 3. Children eating a balanced diet in one of the cooking demos in Ngororero.*

Mr. Leonidas Dusabimana, a Ngororero District agronomist, also applauds Mr. Dominique for his great contribution to the district's fight against malnutrition and encouraged him to keep up the good work. He said, "In Ngororero we have been facing a big challenge of high malnutrition cases. But at the end of last year, some sectors registered reduction in malnutrition with about 11,000 households with children going back to the normal green color (hence they are no longer malnourished)."

He attributes this success to the farmers working with the support of Feed the Future OFSP for Incomes and Nutrition activity. It has made a major contribution since most mothers adopted feeding their children on a balanced diet, including the vitamin A-rich OFSP.

In Gatare village, where Mr. Dominique does the multiplication activity, it is evident that most people want to grow OFSP. (This, despite there being limited land because most of the land is devoted to rice production.) However, they still produce OFSP because they love the crop. The hope is that most HH will adopt OFSP production. This will continue to have a positive impact on the food security of the communities. OFSP increases crop productivity, increased incomes, and improved nutrition among children under 5 years and for pregnant and lactating mothers.

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