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



VIABLE SWEETPOTATO TECHNOLOGIES IN AFRICA (VISTA–Mozambique)

YEAR 4, QUARTER 4 CONSOLIDATED PROGRESS REPORT

1 July–30 September 2018



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VIABLE SWEETPOTATO TECHNOLOGIES IN AFRICA (VISTA)

Year 4, Quarter 4 Consolidated Progress Report

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Cover Photo: Alfredo Selemene, a decentralized vine multiplier in Nampula Province, District of Meconta, administrative post of Nacavala, village of “duas montanhas,” in front of his vine conservation net tunnel.

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ACRONYMS

APE	<i>Agente polivalente elementar</i>
CBOs	Community-based organizations
CHW	Community health worker
CIP	International Potato Center
DVM	Decentralized vine multiplier
GVM	Group vine multiplier
HH	Household
IIAM	<i>Instituto de Investigação Agrária de Moçambique</i>
MBT	Mother–Baby trials
MIYCN	Maternal, infant, and young child nutrition
NGOs	Nongovernmental organizations
OFSP	Orange-fleshed sweetpotatoes
SDAE	District Services of Economics Activities
Triple S	Storage roots in sand and sprouting
USAID	United States Agency for International Development
USG	United States Government
VAD	Vitamin A deficiency
VISTA	Viable Sweetpotato Technologies in Africa

EXECUTIVE SUMMARY OF ANNUAL ACHIEVEMENTS

This progress report presents consolidated achievements of the Feed the Future Viable Sweetpotato Technologies in Africa (VISTA) project in year 4 (Y4) (1 Oct. 2017–30 Sept. 2018) and summarizes the achievements specific to quarter 4 (Q4) (1 July–30 Sept. 2018) against the targets and milestones set for each period. The VISTA project is a \$12,250,000, 7-year project (1 Oct. 2014–30 Sept. 2021) funded by the United States Agency for International Development. The project is led by the International Potato Center and is implemented in partnership with Mozambique government partners. The project aims to benefit 102,500 households (HH) in 16 districts of Nampula and Zambezia provinces by 2021 through improved production, utilization, and marketing of orange-fleshed sweetpotato (OFSP).

During the reporting year, the project distributed OFSP planting material to **22,818** (45% female) direct beneficiaries, exceeding the annual target by 18%. Each beneficiary HH received 8 kg of at least two varieties of OFSP vines. The OFSP varieties distributed to beneficiary HH were planted on a total of **2,771** ha of land (26%, 16%, and 58% owned by men, women, and jointly by women and men, respectively). To strengthen the capacity for OFSP production, several agronomy trainings were conducted for different groups during the reporting period. In total, **26,016** (46% female) individuals received training on sweetpotato agronomy during the year. Recipients comprised farmers, government extension agents, agronomists, field assistants, and decentralized vine multipliers (DVMs). The agronomy trainings covered aspects on sweetpotato vine conservation technologies such as Triple S, net tunnels, and rapid multiplication technologies. Some **474** farmers who received training on Triple S adopted the technology. Besides the trainings, several agronomy activities were conducted by the project during the reporting period to increase farmers' access to OFSP planting material. For instance, the project established **88** DVMs across the 16 intervention districts. **Thirty-three** leaders of community-based organizations were trained in sweetpotato agronomy and would pass on their knowledge to their associations for sustainability. Additionally, the project constructed **36** on-farm net tunnels to multiply disease-free OFSP planting materials under controlled farmer-managed nets; **105** plots were planted for rapid multiplication to conserve vines during the drought season. Local adaptability of OFSP varieties and farmer-trait preferences are key for sustainable adoption and retention of these varieties. Accordingly, during the reporting period, the project established participatory varietal selection trials to evaluate **22 OFSP varieties** for local adaptability and farmer-trait preferences using the “Mother-Baby trial” approach (one Mother trial and seven Baby trials in each of the 16 districts).

With regards to the project's nutrition component, the project expanded its nutrition education campaign activities based at community level in coordination with public health centers, health promoters, and community health workers. Community nutrition training events were accompanied by cooking demos that mainly focused on integrating OFSP into locally produced and consumed foods. During the project year, **128** health professionals were trained and **347** community-based broad nutrition education campaigning events were conducted. During the reporting period, about **30,088** (approximately 100% of the annual target) children under 5 years of which **12,010** were under 2 years were reached with nutrition education activities aimed at improving child feeding and health care practices. In six intervention districts, **12** mother–baby healthy living clubs were established for promoting health center-based nutrition and health care practices trainings.

On the marketing component, the project successfully accomplished two main activities during the reporting year. Weekly market monitoring data were collected from **98** sellers in **52** markets in 10 districts with the objective of understanding the market supply volume and price trends, of OFSP and other alternative crops that compete with OFSP, and gender composition of the traders. Additionally, the project commissioned an OFSP processing study to assess the status of processing in Nampula and Zambezia provinces and identify potential opportunities and feasibility of processing OFSP into value-added products that can create a market for farmers and increase incomes from OFSP. This study will be followed up by a study on the OFSP fresh root market which will map the different fresh root chain actors and link them to ensure that farmers have access to markets. This should act as an incentive for sustained OFSP adoption.

During the reporting period, the project conducted DVM mapping exercise and crop-cut-based sweetpotato yield estimation. In these two exercises, information was collected from 128 DVMs in 16 districts, and plot-level yield data were captured from 297 plots owned by DVMs. The market assessment, DVM mapping, and crop-cut yield estimation activities showed that the total sale value from OFSP marketing was about **\$53,000** (52% of annual target).

1. PROJECT OVERVIEW

Feed the Future Viable Sweetpotato Technologies in Africa (VISTA) is a 7-year project (1 Oct. 2014–30 Sept. 2021) funded by United States Agency for International Development (USAID). The project is being led by the International Potato Center (CIP), working in collaboration with government partners including the Mozambican Agrarian Research Institute (*Instituto de Investigação Agrária de Moçambique* [IIAM]), the District Services of Economics Activities (SDAE), and the District Services of Health and Women and Social Action, nongovernmental organizations (NGOs), community-based organizations (CBOs), and education and research institutions. Although the project was initially conceived as a 3-year activity covering 6 districts, after 2 years of implementation the project transitioned into a 5-year expansion phase (Oct. 2016–Sept. 2021) by expanding to 10 more districts.

The project is designed to expand the production and utilization of nutritious, biofortified orange-fleshed sweetpotato (OFSP) in 11 districts of Nampula Province¹ and 5 districts of Zambézia Province.² VISTA is implemented under the Feed the Future initiative in Mozambique. As such it contributes to key objectives of the initiative on agriculture and nutrition, including increased and equitable growth in the agriculture sector, and improved consumption of vitamin A-rich foods by young children and pregnant and lactating women. Accordingly, the VISTA project monitors Feed the Future indicators on agricultural production, nutrition, incomes, and gender.

By the end of the 2-year initial phase of the project (Oct. 2014–Sept. 2016), VISTA had already reached 22,500 households (HH). The target for the expansion phase was to reach an additional 80,000 HH, bringing the total number of direct beneficiary HH to at least 102,500 in 16 target districts of Nampula and Zambezia provinces by 2021. In addition, 375,000 indirect beneficiary HH will have access to OFSP planting material, knowledge, and skills through farmer-to-farmer diffusion. Thus, project benefits will accrue to almost half a million HH through direct and spill-over effects.

The VISTA project has the following goals:

- **Increased production of OFSP** among at least 102,500 direct and 375,000 indirect beneficiary HH through use of productive, locally adapted varieties, quality planting material, and sustainable agricultural practices. This will be achieved through (1) multiplication of planting materials of five improved OFSP varieties; (2) farmer-led varietal demonstrations (demos); (3) marketing and distribution of quality planting materials of preferred varieties; (4) farmer training in sweetpotato agronomy and vine conservation technologies; and (5) operational studies to determine factors affecting production of OFSP among resource-poor HH.
- **Increased consumption of OFSP by children under 5 years of age and women** in at least 102,500 beneficiary HH vulnerable to malnutrition. This will be achieved through (1) nutrition training of staff from government and NGOs, with a focus on micronutrient-rich foods; (2) nutrition education in at least 400 communities in target districts; (3) development and promotion of recipes for HH-level OFSP utilization as a healthy food for all; and (4) broad education campaigns on nutrient-rich foods, including OFSP, through government health sector.

¹ Angoche, Larde, Malema, Meconta, Mecuburi, Mogovolas, Moma, Monapo, Murrupula, Nampula city, and Rapale.

² Gilé, Alto-Molócue, Gurué, Mocuba, and Nicoadala.

- **Increased agricultural incomes** among at least 10,000 HH from sales of OFSP roots, vines, leaves, and processed products in local and urban markets. This will be achieved through (1) training farmers and traders for improved handling, packaging, and transport of fresh roots and leaves; (2) facilitation of OFSP market days (two per target districts) to increase visibility of OFSP and other nutritious foods grown locally; (3) production and promotion of OFSP puree for use in school and community demos and educational activities; (4) technical and management support for use of OFSP puree in commercial food processing, specifically in local bakery products; and (5) demand creation and consumer awareness campaigns for increased consumption of OFSP as part of healthier diets.

The rest of the report is structured as follows. Sections 2–4 present project progress toward achieving the targets and milestones set out for Y4Q4 (1 July–30 Sept. 2018) on the three components of the project (i.e., agriculture, nutrition, and marketing). Section 5 presents consolidated project progress toward achieving targets and milestones for Y4 (1 Oct. 2017–30 Sept. 2018) for the agriculture, nutrition, and marketing components. The annual achievements are an aggregation of all four quarters of Y4. Section 6 presents challenges faced by the project during the reporting year and mitigation strategies employed to address them. Finally, Section 7 presents selected success stories drawn from beneficiaries demonstrating the impact of the project on beneficiaries. The report concludes with the Y5 work plan and detailed timelines for October 2018–March 2019 (Table A1, p. 22).

2. AGRICULTURE COMPONENT

Objective 1: Reaching 102,500 direct and 375,000 indirect beneficiary HH through use of productive, locally adapted varieties, quality planting material, and sustainable agricultural practices

2.1 Number of HH Who Received OFSP Planting Materials

Outputs relative to indicator EG: 3.2-17: Number of farmers and others who have applied improved technologies and EG.3-1: Number of households benefiting directly from USG assistance under Feed the Future Program

Table 1 compares the progress of the VISTA project against its annual targets on key agriculture-related indicators during Y4. One of the direct benefits that the project provides to beneficiary HH is dissemination (distribution) of OFSP quality planting materials. Planting materials (vine) distribution activities started in Y4Q2 (Jan.–Mar.) and ended in Y4Q3 (Apr.–June). During the reporting year, the project reached approximately 70,000 farmers with OFSP planting material (Table 1), of which 22,818 (30% more than the annual target) were direct beneficiaries; the remaining were reached through farmer-to-farmer diffusion of the planting material. Each family received 8 kg of at least two OFSP varieties (Table 2). The project exceeded its annual target (60,000) by 18% regarding the total number of HH (direct and indirect) reached with OFSP planting material. The deviation between the target and the actual figures is primarily due to increased demand for planting materials and high attendance at training events by farmers who were interested in getting OFSP vines. Since the inception of the project in October 2014, to date the project has reached about 63,000 direct beneficiary HH using locally adopted, high-yielding, and nutritious OFSP planting materials. This number is about 60% of the global target, the entire project life target (102,500) (Table 1).

Table 1. VISTA Y4 achievements against Feed the Future agriculture indicators: Number of farmers reached

Indicator	Target Y4	Y4Q1	Y4Q2	Y4Q3	Y4Q4	Total Y4	Project Total to Date (by end of Y4)
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	60,000	0	30,911	39,592	0	70,503	128,188
Male	24,000	0	21,638	27,714	0	49,352	85,742
Female	36,000	0	9,273	11,878	0	21,151	42,446
EG.3-1: Number of households benefiting directly from USG assistance under Feed the Future	17,600	0	10,005	12,813	0	22,818	62,855
Rural	16,720	0	9,501	12,115	0	21,616	61,288
Urban/Peri-urban	880	0	504	698	0	1,202	1,567
EG.3.2-1: Number of individuals who have received short-term agricultural sector productivity or food security training	15,000	0	12,368	13,648	0	26,016	64,431
Male	600	0	6,195	7,950	0	14,145	36,639
Female	9,000	0	6,173	5,698	0	11,871	27,671

Table 2. Distribution of HH who received sweetpotato planting materials by district Y4 (Oct. 2017–Sept. 2018)

Province	District	Target	Achieved	Against 2018
Nampula	Cidade Nampula	1,600	1,202	75%
	Angoche	900	1,531	170%
	Malema	1,600	1,308	82%
	Meconta	900	2,141	238%
	Mecuburi	900	1,198	133%
	Mogovolas	1,600	1,311	82%
	Moma	900	1,847	205%
	Monapo	900	2,047	227%
	Murrupula	900	916	102%
	Rapale	900	779	87%
	Larde	900	738	82%
	<i>Subtotal Nampula</i>	<i>12,000</i>	<i>15,018</i>	<i>125%</i>
Zambezia	Alto-Molócue	900	1,356	151%
	Gile	1,000	2,768	277%
	Gurué	900	1,093	121%
	Mocuba	1,600	1,611	101%
	Nicoadala	1,200	972	81%
	<i>Subtotal Zambezia</i>	<i>5,600</i>	<i>7,800</i>	<i>139%</i>
	Total	17,600	22,818	130%

Source: VISTA regular activity progress monitoring data.

2.2 Number of People Who Received Short-term Trainings

Outputs relative to indicator EG: 3.2-1: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training

The second direct intervention through which the project reached the beneficiary HH was training on sweetpotato agronomy and good agricultural management practices and skills, contributing to indicator

“Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training.”

Table 3 presents the number of beneficiaries who were trained in sweetpotato agronomy. In Y4, **26,016 (46% female)** beneficiaries (64% Nampula and 36% Zambezia provinces) were trained on sweetpotato agronomy. Among these beneficiaries were 723 farmers, government extension agents, agronomists, field assistants, and DVMs who received additional training on sweetpotato vine conservation technologies such as Triple S (storage roots in sand and sprouting), net tunnels, and rapid vine multiplication technologies. Regarding the number of individuals who received short-term training, the project exceeded its annual target by 74%. This can be attributed to the increased demand for OFSP planting material by farmers, as receiving training was a prerequisite for getting planting material. In terms of gender, about 46% of the individuals who received agronomy training were women, which is an improvement from Y3 when 30% of the trained beneficiaries were women. The agronomy training includes general good agricultural practices and management besides sweetpotato-specific training (e.g., land and ridge preparation, crop husbandry, planting and harvesting) and OFSP vine conservation technologies such as Triple S and net tunnel. In the same period (Oct. 2017–Sept. 2018), the project has established **88** DVMs at the beginning of agricultural season. This brought the total number of DVMs established by the project from October 2014 to date to **153**. These DVMs were trained in sweetpotato agronomy and good agricultural management practices, and were provided with other technical support by CIP. The project has distributed irrigation equipment (10 water pumps) to selected DVM to support the vine multiplication effort to reach beneficiary HH when the rain starts.

Table 3. Distribution of families trained in sweetpotato agronomy in Y4 (Oct. 2017–Sept. 2018)

Province	District	Males	Females	Total
Nampula	Cidade de Nampula	752	430	1,182
	Angoche	1,021	621	1,642
	Malema	936	1,344	2,280
	Meconta	1,083	951	2,034
	Mecubúri	579	595	1,174
	Mogovolas	953	819	1,772
	Moma	1,007	900	1,907
	Monapo	1,151	800	1,951
	Murupula	660	651	1,311
	Rapale	211	210	421
	Larde	518	379	897
	Subtotal Nampula	8,871	7,700	16,571
Zambezia	Alto-Molócue	912	866	1,778
	Gile	1,580	1,297	2,877
	Gurué	776	955	1,731
	Mocuba	1,631	456	2,087
	Nicoadala	375	597	972
	Subtotal Zambezia	5,274	4,171	9,445
Grand Total		14,145	11,871	26,016

Source: VISTA regular activity progress monitoring data.

2.3 Number of Mother-Baby Trials Established

CIP developed and validated various techniques to identify farmer-preferred, locally adapted OFSP varieties using participatory approaches. One such technology involves having farmers test and identify varieties that are most preferred by the local communities and adapted to diverse agro-ecological conditions. Farmers have different OFSP varietal trait preferences, including high yield, disease resistant, drought tolerant, early

maturing, sweetness, high dry matter content, and easy cooking. It is important to evaluate the performance of promising varieties together with farmers and in farmers' field condition. To determine the adaptability and acceptability of new OFSP varieties, CIP established "Mother-Baby trials" (MBT) in each of the 16 districts to evaluate the performance of these varieties under farmer conditions. The MBT is a participatory approach used to evaluate and select varieties that perform well under farmer conditions and are preferred by farmers. Participatory variety selection increases the chances of variety adoption and retention.

During Y4Q4, the VISTA team developed a protocol for MBT and implemented it in all 16 intervention districts. The Mother trial is an on-farm trial composed of all the varieties under evaluation in each district and compared with a local check that farmers are currently planting. The trial had at least three replications to ensure that the data can be analyzed statistically. This Mother trial is managed by the researcher (CIP agronomists, CIP field assistants, or public extension workers). In each district, one Mother trial was established on SDAE fields or at a selected farmer's field but managed by researchers, CIP agronomist, or SDAE technicians. On the Mother trial 22 OFSP varieties and 1 white-fleshed sweetpotato variety (local check) were planted. Field days will be conducted to allow farmers to observe and evaluate varietal performance during the vegetative phase, yield measurements, and evaluate other sensory attributes (taste, color, dry matter content, etc.).

Baby trials are small trials of up to five OFSP varieties (and one local check) that were established by farmers in the communities around each Mother trial (Plate 1). In each district, seven Baby trials were set up. These trials are managed by farmers under farmer conditions so as to evaluate the performance of the introduced OFSP varieties under farmer management. Yield estimation and leaves-tasting will be conducted by researchers together with the farmers. Farmers' ratings and other feedback will be considered in the varietal evaluation process.



Plate 1. Established Baby trial in Meconta on Alfredo Selemene's field.

In addition to establishing MBT, during the reporting period, the project redesigned the greenhouse managed by the national agricultural research center (IIAM–Nampula) to establish a reliable source for basic sweetpotato planting material (Plate 2). VISTA sourced clean planting material from the greenhouses from IIAM/CIP–Maputo research station and established clean planting material plots in the greenhouse at IIAM–Nampula. In this greenhouse all 22 varieties of OFSP released by CIP were planted. The basic sweetpotato planting material from the greenhouse will be used for primary multiplication in the open field in all the intervention districts. This ensures the sustainability of the OFSP seed system by building the institutional capacity of the national system for production and distribution of clean basic OFSP planting material. The facility is equipped with a drip-irrigation system using fuel pumps to supply vines with irrigation water.



Plate 2. On-station greenhouse established at IIAM–Nampula to support production of OFSP foundation material.

In addition, VISTA invested in irrigation infrastructure to support vine multiplication activities by DVMs. Ten community-based vine multipliers were supplied with irrigation equipment, each with the capacity of irrigating 0.5 ha of land. The DVMs will use the irrigation equipment to multiply OFSP vines during the dry season to supply planting material to neighboring communities. Moreover, the same irrigation equipment will be used in MBT experiments to support the production of roots using irrigation. With regard to area under OFSP, Figure 1 shows that with 11% area planted under OFSP MBT under variety ‘Irene’, the variety is most preferred by farmers and hence the project is interested in comparing this variety with others.

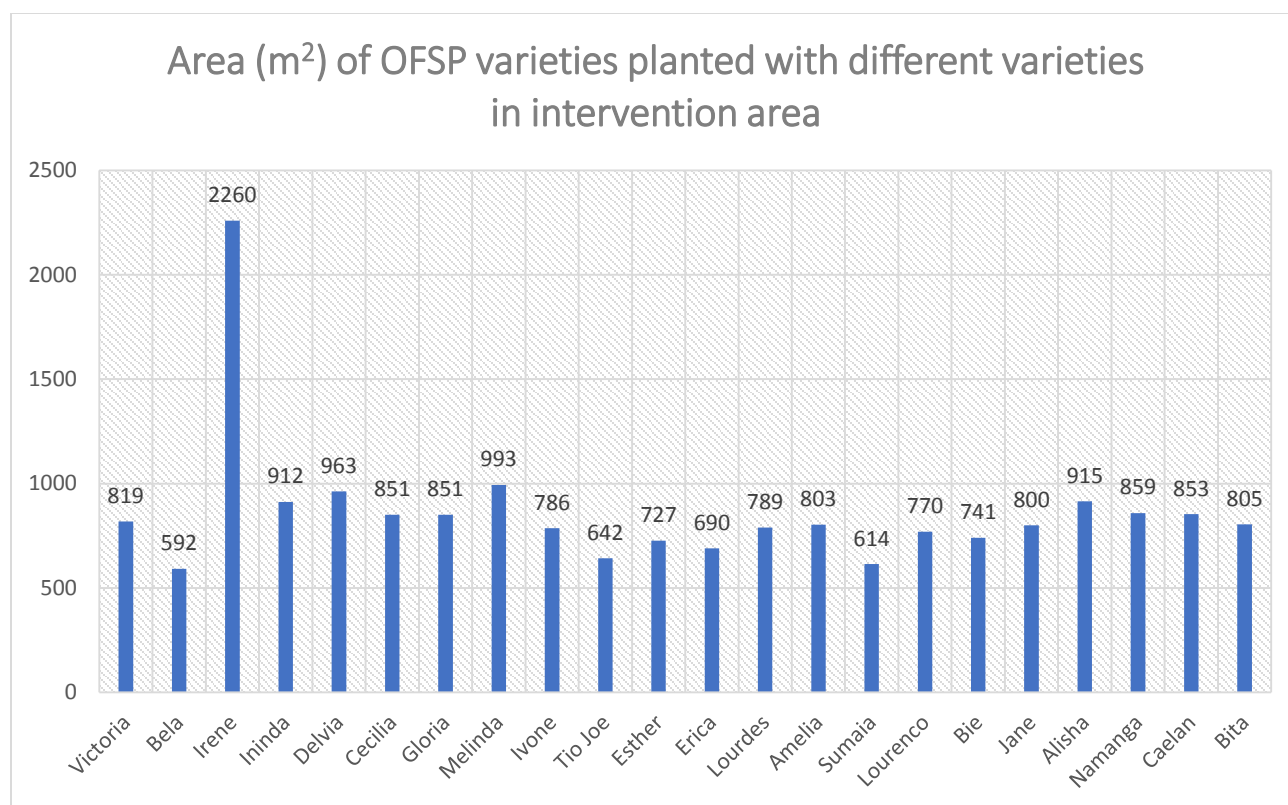


Figure 1. Area (m²) planted to different OFSP varieties in all districts.

2.4 Number of HH Trained on Triple S and Net Tunnel Vine Conservation Technology

Triple S is a proven technology for conserving sweetpotato vines during prolonged dry spells before the main rain season begins. The technology is important to address one of the main challenges to OFSP production: access to planting material at the beginning of the agriculture season. The Triple S technology consists of storing sweetpotato roots in dry sand and the roots sprout, and cutting the vines and planting in seedbeds 6–8 weeks before the rainy season. VISTA–Mozambique is promoting Triple S technology among other vine conservation technologies in the intervention districts to ensure availability of OFSP planting materials. In Y4Q4, 474 (of which 43% were females, 89% of the quarterly target) DVMs and farmers implemented Triple S technology to conserve OFSP planting materials on their farms. Gurué District had the largest proportion of female farmers (70%) who implemented the Triple S technology (Fig. 2). In the same period 36 (17 in Nampula, 19 in Zambezia) net tunnels were established, with only 3 (8%) of them built on female farmer-managed plots. The project aimed to establish 80 net tunnels in this quarter, but only achieved 45% of the target. About 100 plots (16% owned by females) were established for rapid multiplication scheme to store planting materials to be used for the vine multiplication when the rainy season started (Table 4).

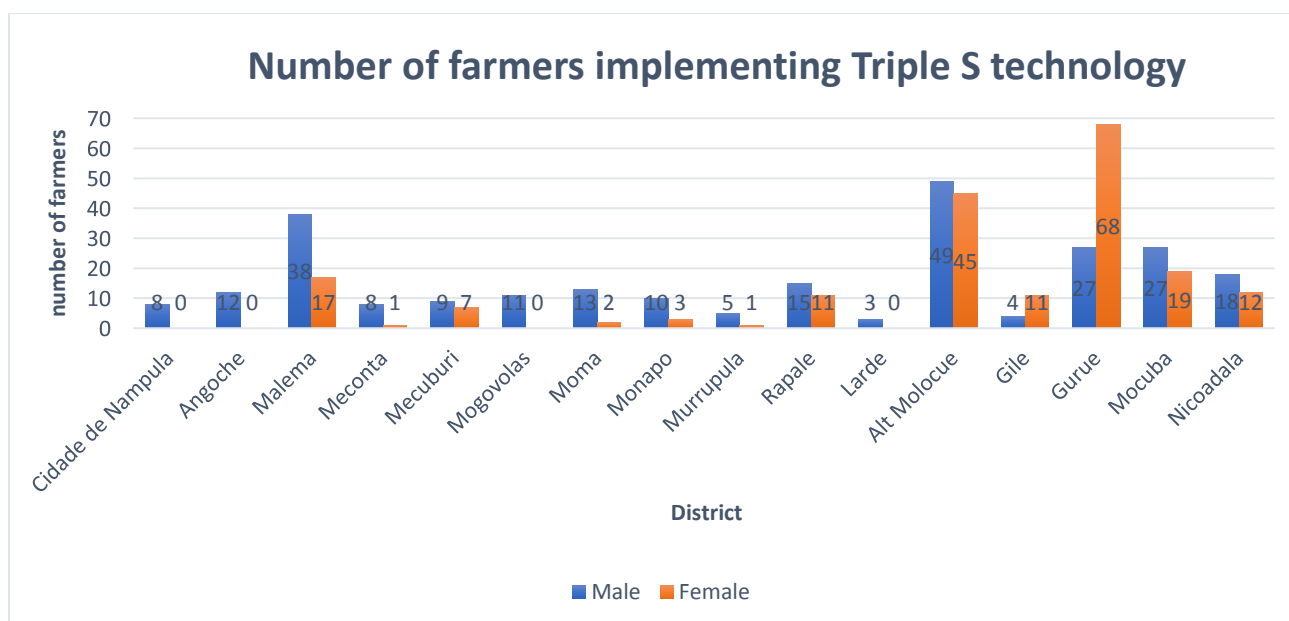


Figure 2. Number of farmers implementing Triple S technology by district.

Although the project works in fewer districts in Zambezia (5 out of 16), the province has had relatively better performance in terms of technology dissemination than Nampula Province (Table 4). This is mainly attributed to the presence of CIP in the province for longer period with other projects. Moreover, CIP has a research station at Gurué which has facilitated technology dissemination. A total of 105 (15% female) farmers were trained on rapid sweetpotato multiplication technology (Plate 3), and 36 net tunnels were established to multiply vine under virus-free conditions (Table 4).

Table 4. Number of net tunnels and rapid multiplication technology dissemination by district in Y4Q4

Technology	Net Tunnel			Rapid Multiplication		
Gender	Male	Female	Total	Male	Female	Total
Nampula	17	0	17	49	7	56
Zambezia	16	3	19	40	9	49
Total	33	3	36	89	16	105



Plate 3. Participants at the Triple S and net tunnel training in Rapale.

2.5 Area under OFSP

Outputs relative to indicator EG.3.2-18: Number of hectares of land under improved technologies

In Y4, 2,771 ha of land (26%, 16%, and 58% owned by males, females, and jointly) was planted under OFSP varieties distributed by the project (Table 5). The project provided each beneficiary HH with 8 kg of high-yielding and drought-tolerant varieties enough to plant on approximately 120 m² of land in the first season and were expected to expand to 430 m² in the second season. The area under OFSP is about 20% higher than the annual target primarily because the number of beneficiary HH who received planting materials is above the annual target. Farmer-to-farmer diffusion is expected to increase due to the community-based training on sweetpotato agronomy and nutritional value of OFSP.

Table 5. VISTA project Y4 achievements against Feed the Future agriculture indicators: area under improved technologies and CBOs

Indicator	Target Y4	Y4Q1	Y4Q2	Y4Q3	Y4Q4	Total Y4	Project Total to Date (by end of Y4)
EG.3.2-18: Number of hectares of land under improved technologies	2,358	0	1,215	1,556	0	2,771	4,539
Male	236	0	316	401	0	717	1,729
Female	707	0	194	247	0	441	441
Jointly	1,391	0	705	893	0	1,598	1,598
Associations	24	0	0	15	0	15	15
EG.3.2-20: Number of for-profit private enterprises, producer organizations, water user associations, women's groups, trade and business associations and CBOs that applied improved organization-level technologies	15	0	0	33	0	33	127

2.6 Number of CBOs Trained and Applying Technologies

Output relative to indicator: EG.3.2-20: Number of for-profit private enterprises, producer organizations, and CBOs that applied improved organization-level technologies

The group leaders trained on sweetpotato established their own OFSP vine plots and distributed vines to families in the community. CBOs play a crucial role in scaling out improved agricultural technologies and enhancing the sustainability of these technologies. In addition to multiplying and distributing sweetpotato planting materials through DVMs, the project supports multiplication and distribution of quality planting materials of OFSP by groups, associations, schools, churches and other religious institutions, and for-profit large-scale farmers. Complementing the seed system through such community-based activities is considered as an alternative path for effective establishment OFSP seed system. Therefore, VISTA set a target of having at least one CBO in each district trained on sweetpotato agronomy and receiving and planting vines by the end of the current year. The project trained leaders of **33 farmer producer associations** from among representatives from for-profit organizations, producer associations, private sector partners, and community-based groups. The rationale behind training such actors was to build capacity on OFSP technology for groups that will in turn pass this on to their group members, thereby ensuring sustainability of the OFSP intervention. The topics covered in the agronomy trainings include rapid multiplication techniques, simple disease detection, positive/negative selection, and pest management. The training focused on strengthening the technology diffusion through the rural communities. After receiving the trainings and starter sweetpotato planting materials, groups/associations will establish their own vine multiplication sites and expand

production and distribution of OFSP vines to HH in their respective villages. More than 930 families were reached through the training of CBOs.

The project continues to replenish the old materials with new materials and to provide technical support until the groups gain sufficient knowledge. Women's participation is encouraging: about 50% of the group participants in Nampula and 40% in Zambezia provinces were women. A total of 937 individuals were trained through the community-based training approach (Table 6). More groups and individuals per groups were trained in the district where the project has full-time field coordinators.

Table 6. Number of CBOs and people trained on sweetpotato agronomy in each CBO by district in Y4 (Oct. 2017–Sept. 2018)

Province	Districts	No. of CBOs	No. of Males	No. of Females	Total
Nampula	Cidade de Nampula	1	7	10	17
	Rapale	1	6	6	12
	Mecuburi	2	83	47	130
	Murupula	4	88	47	135
	Malema	3	141	40	181
	Meconta	2	11	9	20
	Monapo	2	20	62	82
	Mogovolas	0	0	0	0
	Angoche	2	9	21	30
	Larde	0	0	0	0
	Moma	6	40	41	81
	<i>Subtotal Nampula</i>	<i>23</i>	<i>405</i>	<i>283</i>	<i>688</i>
Zambezia	Alto-Molócue	2	9	28	37
	Gile	2	48	34	82
	Mocuba	0	0	0	0
	Gurué	5	44	65	109
	Nicoadala	1	0	21	21
	<i>Subtotal Zambezia</i>	<i>10</i>	<i>101</i>	<i>148</i>	<i>249</i>
	Grand Total	33	506	431	937
	Female-Male		54%	46%	

Source: VISTA regular activity progress monitoring data on the marketing of OFSP in the districts, April–June 2018.

3. NUTRITION ACTIVITIES

Objective 2: Increased consumption of OFSP by children under 5 years of age and women in at least 102,500 beneficiary HH vulnerable to vitamin A deficiency (VAD) and other forms of malnutrition.

Outputs relative to indicator HL.9-1 & HL9-2: Number of children under 5 (0–59 months) and under 2 (0–23 months) reached by nutrition-specific interventions through USG-supported programs, and lactating and pregnant women

3.1 Number of Children under 5 and under 2 Reached by the Project

Children aged under 5 years are the primary target beneficiaries of the project, with the objective of improving nutritional status through increased consumption of nutritious OFSP as part of healthier diets. During the reporting period, the project reached 30,088 (53% female; approximately 100% of the annual target) children under 5 years of age (indicator HL.9-1), of which 12,010 were under 2 years (indicator HL.9-2). The children were reached through nutrition addressed to about **39,000** families who were trained on agronomy and nutrition and received OFSP planting materials (Table 7). The number of children was estimated using the average number of male and female children under 5 of the HH in each district using the baseline survey data. For instance, in Y4Q4 nearly 350 (17% above the quarterly target) community-based nutrition campaigning events were conducted, including cooking demos of OFSP recipes in 15 districts (Table 7 and Table 8). Though the primary target for the nutrition education activities were women, a significant number (42%) of participants were males (Table 8). There were integrated agriculture-nutrition trainings in the communities on the same day, or one after the other, to ensure the full penetration into project intervention areas. It is thus possible to see that the same number of families may have participated in both agriculture and nutrition trainings. For instance, in Y4Q4, **15,189** (60% female participants) families were trained on nutrition benefits of OFSP and healthy feeding practices. All the nutrition training events were organized in coordination with government health centers, community health workers (CHWs) (animators), health promoters, VISTA field coordinators, and CIP nutritionists (Plate 4).

30,000 and 12,000 number of children under 5 and under 2 reached with nutrition intervention, respectively.

Table 7. VISTA project Y4 achievements against Feed the Future nutrition indicators: Children under 5 and individuals received nutrition trainings

Indicators	Target Y4	Y4Q1	Y4Q2	Y4Q3	Y3Q4	Total Y4	Project Total to Date
HL.9-1: Number of children under 5 (0–59 months) reached by USG-supported nutrition programs	30,000	4,070	14,887	10,947	0	29,904	83,630
Male	12,000	1,933	7,360	4,874	0	14,167	36,512
Female	18,000	2,137	7,527	6,073	0	15,737	47,118
HL.9-2: Number of children under 2 (0–23 months) reached with community-level nutrition interventions through USG-supported programs	6,400	667	6,020	5,139	184	12,010	21,542
Male	2,560	295	2,917	2,239	70	5,521	9,848
Female	3,840	372	3,103	2,900	114	6,489	11,694
HL.9-4 Number of individuals receiving nutrition-related professional training (RAA) through USG-supported programs	88	92	0	0	36	128	503
Male	16,720	0	9,501	12,115	0	21,616	61,288
Female	880	0	504	698	0	1,202	1,567

Table 8. Distribution of families trained on OFSP-based nutrition by district in Y4 (Oct. 2017–Sept. 2018)

Province	District	Males	Females	Total
Nampula	Cidade de Nampula	484	214	698
	Angoche	1064	1681	2745
	Malema	1171	1636	2807
	Meconta	725	1675	2400
	Mecubúri	861	893	1754
	Mogovolas	1969	1908	3877
	Moma	947	1222	2169
	Monapo	504	1435	1939
	Murupula	1644	2121	3765
	Rapale	457	1281	1738
	Larde	749	1163	1912
	Subtotal Nampula	10575	15,229	25804
Zambezia	Alto-Molócue	1474	2551	4025
	Gile	758	1269	2027
	Gurué	1187	1771	2958
	Mocuba	1,559	388	1947
	Nicoadala	775	1333	2108
	Subtotal Zambezia	5,753	7,312	13065
Grand Total		16,328	22,541	38,869

Source: VISTA regular activity progress monitoring data on nutrition activities.



Plate 4. Nutrition education through counseling cards.

3.2 Number of Individuals Reached with Nutrition-related Trainings

Outputs relative to indicator HL.9-4: Number of individuals receiving nutrition-related professional training (RAA) through USG-supported programs

Reaching women of reproductive age through community-based nutrition education is a key to improving the health and nutrition outcomes of the rural HH. The community-based nutrition education approach is deemed effective as it ensures access to nutrition education for people of different genders and ages. During the reporting period, 128 (63% female) health professionals (nurses, nutritionist, and community health promoters) were trained in general health and nutrition topics and the importance of integrating biofortified crops into local recipes (Table 9). General health-nutrition topics covered include (1) pre- and post-natal consultation and supplementation, (2) balanced diet during pregnancy, (3) importance of pregnant women controlling their weight, (4) sleeping under mosquito nets, (5) giving birth at health centers, (6) songs on a child's first 1,000 days, and (7) importance of healthy diets and OFSP for a child's growth and health (Plates 5 and 6). About 350 community-based nutrition education campaign events were organized to reach a wider population in remote areas (Table 9). As a result of such broad community-based nutrition messaging, about 39,000 individuals were reached.

Table 9. Number of health professionals trained and broad nutrition campaigning events organized by VISTA nutrition activities by district in Y4

Province	District	Health Professional Training			No. of Training Events
		Female	Male	Total	
Nampula	Angoche	11	4	15	21
	Cidade de Nampula	1	5	6	0
	Malema	1	2	3	23
	Meconta	1	2	3	23
	Mecubúri	15	8	23	20
	Mogovolas	2	1	3	24
	Moma	12	4	16	17
	Monapo	0	3	3	21
	Murupula	1	2	3	25
	Rapale	1	2	3	20
	Larde	12	6	18	18
	<i>Subtotal Nampula</i>	<i>57</i>	<i>39</i>	<i>96</i>	<i>212</i>
Zambezia	Alto-Molócue	1	2	3	36
	Gile	6	3	9	22
	Gurué	8	2	10	25
	Mocuba	7	0	7	15
	Nicoadala	1	2	3	37
	<i>Subtotal Zambezia</i>	<i>23</i>	<i>9</i>	<i>32</i>	<i>135</i>
	Grand Total	80	48	128	347

3.3 Formation of Mother–Baby Healthy Living Club at Health Centers

Mother–baby healthy living clubs were established at the health centers by recruiting pregnant mothers from the communities under the project's intervention. The objective of the health clubs is to increase the practice of healthy diets for the whole community, intervening through the clubs and, for pregnant and lactating women, to attend their regular pre- and post-natal health status checkup.

During the reporting period, 12 (100% of the target) healthy living clubs were established, with 184 lactating and 58 pregnant mothers recruited. Topics covered during mother–child health living clubs at the health centers include (1) recruiting mothers to the clubs, (2) prenatal consultation and supplementation, (3) balanced diet during pregnancy, (4) importance of pregnant women controlling their weight, (5) sleeping under mosquito nets, (6) giving birth at health centers, (7) songs on a child’s first 1,000 days, and (8) importance of a healthy diet and OFSP for a child’s growth and health. Mothers of children under 5 years and pregnant women from the community were invited to join the clubs. The selection criteria for inclusion in the club are having a child aged under 1 year, proximity to the selected health center, linked and assisted by animators, and receiving OFSP vines. Nurses in the health centers, in coordination with promotor, register pregnant women at a health facility during pre- and post-natal visits. Each club on average consists of 30 women. These clubs require women to attend the nutrition–health trainings organized at each health center and coordination by the center’s nurses and community health promotor.



Plate 5. Men, women and children attend a community nutrition event.



Plate 6. Cooking demo in Nanbupo Rio Administrative post, Mogovolas District.

4. MARKETING COMPONENT

Objective 3: Increased agricultural incomes among at least 10,000 HH from sales of OFSP roots in local and urban markets, including fresh root and leaf markets, institutional markets, and commercial processing

4.1 Income Generated due to the VISTA Intervention Using OFSP

Output relative to indicator EG.3.2-19: Value of smallholder incremental sales generated with USG assistance (thousands of USD)

Increasing the income of smallholder farmers by increasing production and promoting marketing of OFSP and its derivatives is one of the core objectives of the project to increase HH food security. The project set a target of 10,000 HH in the intervention area with increased income through marketing of OFSP. The project has trained traders and selected farmers on OFSP packaging and facilitation of bulking of harvests at an appropriate aggregated level. OFSP marketing has become an important source of HH income in the intervention districts where farmers have started selling their OFSP produce (roots and vines) at local markets. The project carried out periodic monitoring of market supply volume and price trends of sweetpotatoes with special focus on OFSP, alternative crops to OFSP, gender composition of the traders engaged in sweetpotato value chains, and price dispersion across selling outlets on farm (roadside) or open markets (Plate 7). Women's participation in OFSP marketing system is quite low, with only 15% women involved in the marketing system (Table 10).

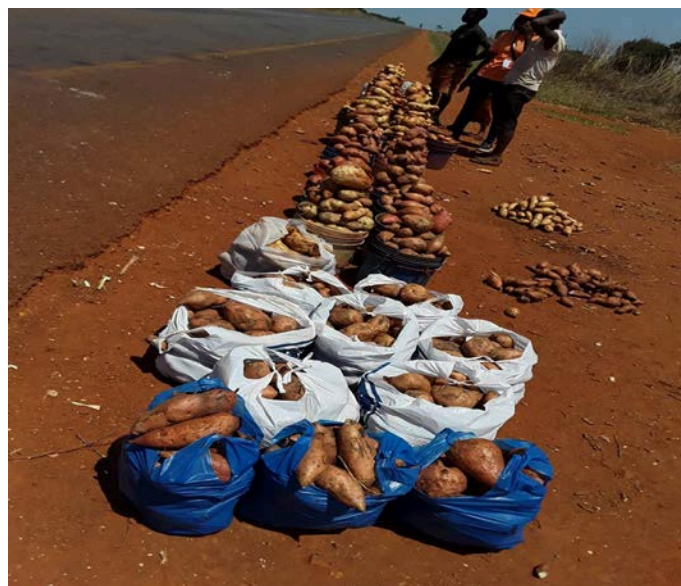


Plate 7. Sweetpotato for sale at a roadside market.

Nampula city, Meconta, and Murrupula are the three districts with the most sweetpotato selling outlets and sellers. These are the districts with high population density (larger consumer)—especially Nampula city, which has larger market potential for fresh roots—and Meconta and Murrupula on production or supply side (Table 10). In Murrupula it is common to see sweetpotato sellers on the roadside throughout the week. Inter-district price variation for fresh roots is observed, ranging from 3 to 5 meticaís in Gurué and Murrupula districts,

respectively, to 25 meticaís in Gile, mainly driven by differences in supply of fresh roots (Fig. 3). Murrupula and Gurué were higher potential areas for sweetpotato production, where the crop is commonly produced. Almost every HH has its own sweetpotato field, and they are surplus producers. These days it is common to see farmers and traders selling sweetpotato roots and vines on the roadside and at local markets in the districts where the VISTA project has been working. In most markets, OFSP roots sold at higher price (per kg) than for the local, white-, or cream-fleshed varieties. In April–June, when farmers have just begun to harvest their roots, promising results were observed from the assessment of roadside markets and DVMs (Table 11). In Y4Q3 for instance, a total revenue of \$6,961 was realized—\$2,500 and \$4,400 from the sales of 26 t of roots and 58 t of vines, respectively. Most of the marketing occurred in the districts of Nampula Province. The market assessment, DVM mapping, and crop-cut yield estimation activities showed that the total sale value from OFSP marketing is about \$53,000 (52% of annual target).

- 7.6 and 11.5 meticaís is price/kg of OFSP fresh root in roadside and formal markets.
- 5–25 meticaís/kg price of sweetpotato in Murrupula and Gile districts.
- 98 sweetpotato sellers included in the market survey.

Table 10. Number of OFSP markets visited and number of male and female OFSP sellers interviewed by district OFSP market assessment in Y4Q4

Districts	No. of Markets	No. of Male	No. of Female	No. of Sellers
Cidade de Nampula	12	25	4	29
Angoche	2	3	0	3
Meconta	11	18	1	19
Mogovolas	6	7	1	8
Monapo	1	4	0	4
Murrupula	11	20	2	22
Alto-Molócue	3	3	2	5
Gilé	3	1	3	4
Gurué	2	2	1	3
Nicoadala	1	0	1	1
Total	52	83	15	98

Table 11. Market transactions, quantity of OFSP roots and vines sold, and sales values in Y4Q3

District	Roots Sales		Vines Sales		Total Value (\$)
	Qty. sold (kg)	Value (\$)	Qty. sold (kg)	Value (\$)	
Cidered de Nampula	840	94	5,584	465	559
Rapale	2,320	193	1,568	131	324
Mecuburi	2,850	276	-	-	276
Murrupula	7,000	339	6,850	621	960
Malema	2,350	294	800	67	360
Mogovolas	916	153	15,272	1,273	1,425
Angoche	260	32	460	38	70
Moma	1,830	180	1,400	117	297
Gile	1,500	58	15,200	1,267	1,325
Gurué	6,139	939	10,903	425	1,365
Total	26,005	2,558	58,037	4,403	6,961

Source: VISTA regular activity progress monitoring data on the marketing of OFSP in the districts, April–June 2018.

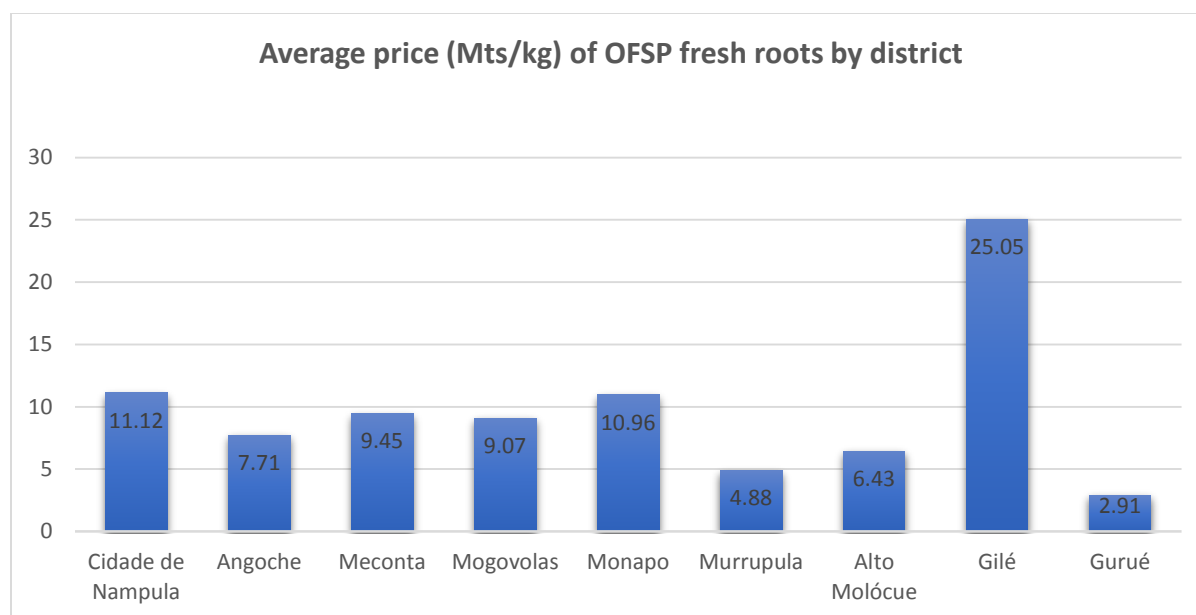


Figure 3. Price of 1 kg of OFSP by district (source: VISTA market assessment in Y4Q4).

The market monitoring survey showed that 61% of the sweetpotatoes are marketed through formal market channels and the remaining 39% on roadside markets located near to farm gate. The roadside markets offer lower selling prices than formal markets (Fig. 4).

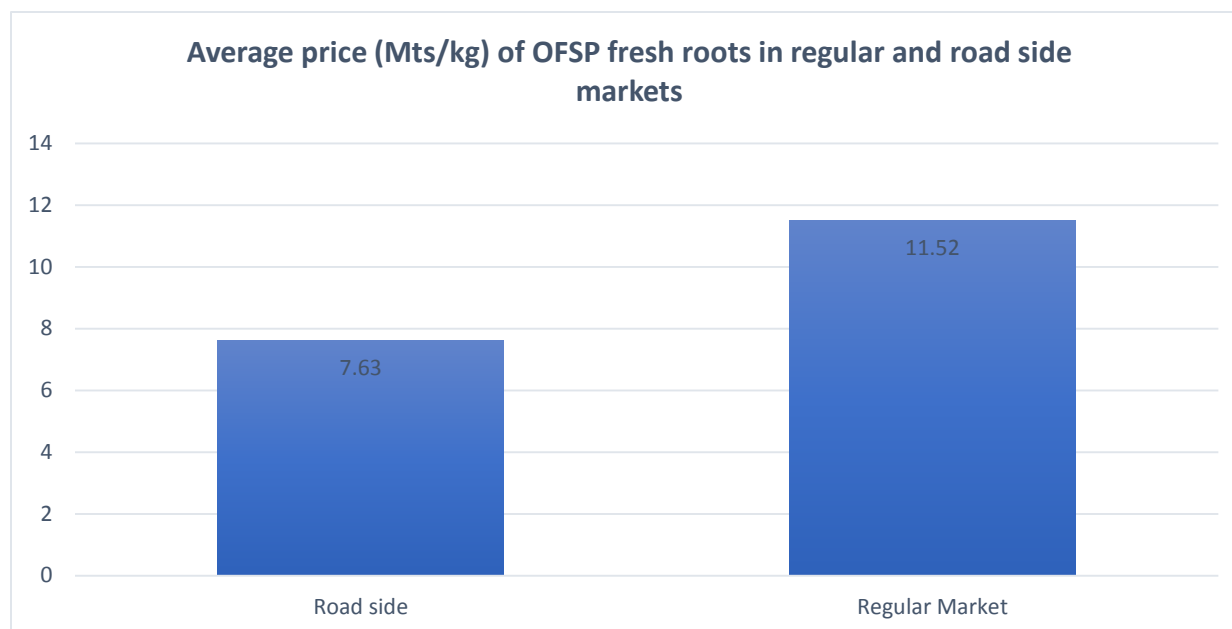


Figure 4. Average price of OFSP (per kg) at roadside and regular markets in the VISTA intervention area in Y4Q4.

4.2 Executive Summary of Processing Study Report

Processing OFSP into value-added products is one of the key activities that the project undertakes to enhance incomes from OFSP sales and drive sustained OFSP adoption by farmers. To explore the feasibility of OFSP processing, the project engaged a consultancy firm, WinResources, to commission a processing study. In 2014

VISTA started working with selected bakeries in Zambezia Province to explore opportunities for using OFSP as an ingredient (wheat substitute) in bakery products, building on similar experiences from other CIP projects. One of the main constraints for the growth of the processing sector is the reliable supply of OFSP fresh roots in required quantities and qualities. Under the marketing component, VISTA is therefore facilitating farmer training to supply quality fresh roots at required quantity and initiate contractual linkages between OFSP producer associations and emerging OFSP processors.

In this section we describes the activities carried out during the market study on OFSP in Nampula and Zambézia provinces in the north and central regions of Mozambique. The market study aimed to analyze the supply and demand for OFSP-based processed products with a primary focus on OFSP bread. Surveys were carried out in Nampula and Quelimane cities and Alto-Molócue District, where about 200 key players in the processing sector of OFSP (75 bakeries, eight supermarkets, 24 grocery stores, eight gymnasiums, and 80 consumers) were interviewed. The market study sought to collect information on the level of supply and demand for OFSP-based products, the existence of processors (bakeries) and the level of knowledge on the forms of processing of OFSP, and the availability of market opportunities for OFSP products for retailers.

Analysis of the data collected in the field allowed us to understand the status of OFSP processing in the project target regions. In general, processing is practically nonexistent, with some isolated cases of bakeries producing and marketing OFSP bread. At the processor level it was found that most processors (bakeries) do not process products derived from OFSP. Of the few that are involved in processing, they source the fresh roots directly from producers and, in some cases, from stores and/or intermediaries, which process OFSP into value-added products such as cakes, breads, and cookies. Most of the consumers know about OFSP-derived products and their nutritional properties, and generally like to consume such products. According to the interviewees, poor supply of fresh root to processors, lack of knowledge about processing methods of OFSP, and lack of promotion are some of the main reasons that lead to the poor existence of OFSP processors in the market.

On the basis of the results obtained from this study, the following actions are recommended to enhance processing and consumption of OFSP based products: (1) encourage processors in the region to focus on processing OFSP, increase the number of processors in the study areas, enhance the capacity of processors already in business, improve the supply of fresh roots in the local markets, stimulate the holding of fairs to promote their products, train processors on how to prepare products derived from OFSP, and disseminate information on products derived from OFSP; (2) encourage the marketing of OFSP-derived products, establish supply contracts with processors, and create market opportunities for OFSP products through participation in sector fairs; and (3) make products known as derivatives of OFSP, increase the availability of products derived from OFSP in markets, develop further actions to promote products derived from OFSP, and disseminate information on the nutrition value of OFSP products to create demand for them.

5. PROJECT MONITORING AND EVALUATION ACTIVITIES

During the reporting period, the project completed a DVM mapping and crop-cut yield estimation survey. This survey was aimed at capturing the geo-referenced data of each of the DVMs to both facilitate access to vines by linking farmers with DVMs and other potential buyers of roots and vines and to improve technology dissemination. Sample data on sweetpotato production are collected using a crop-cut technique, which

enables one to measure both root and above-ground biomass yield for each variety. The yield estimation provides district-specific yield for each variety, supporting targeted intervention by soliciting OFSP varieties most adapted to a particular agro-ecology.

A total of 128 DVMs were included in the DVM mapping and crop-cut yield estimation survey; the crop cut was conducted in all DVM fields except for two. Number of plots (varieties) was selected from the DVM field, depending on the number of the varieties a DVM has planted and plot size. Number of varieties (plots) to be included in the crop-cut was selected following a simple procedure: If the DVM has planted three or four varieties, a crop cut is conducted in all plots. If the DVM has planted six or seven varieties, the crop cut will be conducted on three to four varieties, depending on plot size.

Following this procedure, the crop-cut yield estimation was conducted on 297 plots, with average of two crop cuts per DVM. Crop-cut yield estimation involves the selection of the area of 6 m² to be harvested. The area can be selected by walking half-way down on the longest side of the plot and walk one-third of the way in to start the measurement toward the center of the plot, then measure an area 3 x 2 m and stake it with four large sticks. After demarcating this size of area, start the crop cut first by counting the number of plants and then cutting and weighing them. The second step is to harvest the roots and sort them into commercial (healthy) and noncommercial roots; count the number of roots in each category and weigh them on a digital scale balance. Crop cuts were completed on the 297 fields (48% from Zambezia Province) with the total area of 17.25 ha. Larger areas were covered in the old districts: Murrupula (1.68 ha), Alto-Molócue (1.48), and Gurué (2.60 ha). These were districts where the project has been operating since 2014; hence, the DVMs planted plots with larger area, which contributed to high area in the districts.

- 128 DVMs involved in mapping and crop-cut yield estimation survey.
- 297 plots included for the crop-cut yield estimation.

6. CHALLENGES AND MITIGATION STRATEGIES FOR Y4

One of the major challenges that the project faced was that during the dry season, it was difficult to establish the MBT for participatory evaluation of OFSP varieties under these dry conditions. Thus, the project invested in an irrigation system by installing boreholes in some areas to ensure that farmers can easily access water for irrigation, and provide irrigation equipment with water pumps. While this investment was meant for irrigating the trials, it also has a long-term benefit to the farmers who can use the same boreholes to irrigate other horticultural crops. Some farmers freely offered their fields for the establishment of MBT, but after the trials were established, they changed their mind and started demanding that their land be rented to the project at a cost to be borne by the project until the trials are harvested. The agronomist responsible for the affected area is talking to the farmers to find an amicable solution to this impasse.

The second challenge arose from the implementation of nutrition activities. The CHWs and promoters lacked sufficient skills and courage to successfully cascade the nutrition messaging to HH under their supervision. The weak supervision of cascading training by the CHWs might have limited the quality of the messages reaching families; this in turn negatively affected the potential impact of nutrition training on nutrition behavior change by target HH. Some of the CHWs were reluctant to train and supervise HH and lacked commitment and motivation. They were more interested in getting financial incentives. Mother–baby healthy

living clubs were not getting established as planned due to lack of commitment and supervision by health professionals, both at health center and community levels. The project team is closely working with the health centers and nurses responsible for the pre- and post-natal programs, since the purpose of establishing these types of clubs was to monitor the impact of nutrition-sensitive agricultural intervention on mother-and-child nutritional and health outcomes by linking the nutrition, agriculture, and health trainings.

7. SUCCESS STORIES

What beneficiaries tell us about the impact of the project

Orange-fleshed sweetpotato worth investment: changing the livelihood of smallholder

A 27-year-old, a father of 4 kids, farmer **Deolino Carlos**, was one of the first persons to start adopting OFSP vine multiplication technologies in the village of Namiaro C, Iulute administrative post, of Mogovolas District. Like other farmers in his village he was so hesitant about the sweetpotato business that he never dreams that he can make significant benefit from sweetpotato, which is new crop in his area. He was bold enough to try the technology, attending a 2-day training organized by the USAID–VISTA project as seed multiplier in Nampula. Going back to his village, he prepared about 1 ha of an 8-ha plot of land to plant with improved high-yielding, drought-tolerant varieties of OFSP provided by the project. He managed to plant 0.6 ha as recommended by the supervisor for the first year.

OFSP a crop with low-input requirements with high profit margin

“OFSP is a labor intensive crop, but you need merely other inputs such as fertilizer or pesticides, which I like most, as we don’t have enough money to buy such modern inputs. I am also surprised that OFSP gives me a lot of roots on my small plots, which helped me to feed my family for many days. The supervisor told me to keep all my expenses related to the sweetpotato production, showing a piece of old paper where he keeps the expenses. My expenses were mainly labor: I paid 6,000 meticas (\$100) for land preparation, 5,000 meticas (\$83) for ridge preparation, and for one-time weeding 4,000 meticas (\$67). After spending all that money, I was very curious about the return. After selling 325 kg of vines and making 28,000 meticais (\$470) by selling to 700 families around my village, I made 1,800 meticais (\$30) from the sale of fresh root surplus for my family to consume. I made profit of \$230 only from OFSP business.

“I appreciate the effort by the project agronomist and consistent support with training, technical support, and provision of quality planting materials that farmers in my villages like. The field coordinator visited me at least twice a month; therefore I made a good business from sweetpotato. The money I got from OFSP helped me to buy HH necessities like furniture, kitchen utensils, and a good mattress for my bed, as well as a goat for breeding. I have started a bakery at my home village and am generating additional money. With the rest of the money I bought six sacks of cement to build a house. I am encouraged by the money I received and certainly will expand the area under OFSP to 1 ha next year and will distribute vines for 1,000 families.



Photo: Noris Victorino (CIP field coordinator, Mogovolas District).

Plate 11. Mr. Deolino Carlos, on his 0.6 ha of OFSP plot, ready to harvest.

ANNEX 1

VISTA Mozambique Y5 work plan and detailed timelines for fiscal year July 2018–March 2019

Annual Work Plan—Year 5			Timeline (Oct. 2018–Mar. 2019)						Detailed Targets	Global Targets
Indicator/ Issue	Activity	Location	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.		
Project management	Partner 3: Thesis local university								1	NA
	Conducting operational study on factors affecting utilization of OFSP at HH level/mapping DVM/Crop-cut yield estimation/market survey	All districts							1	

Table A1. VISTA–Mozambique Y5 work plan and detailed timelines for October 2018–March 2019

Annual Work Plan—Year 5		Timeline (Oct. 2018–Mar. 2019)							Detailed Target	Global Targets
Indicator/Issue	Activity	Location	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.		
Objective 1: Increased production of OFSP among at least 102,500 direct and 375,000 indirect beneficiary HH through use of productive, locally adapted varieties, quality planting material, and sustainable agricultural practices										
EG.3-1: Number of HH benefiting directly from USG intervention	Training, and establishment planting materials using DVMs	Intensification districts							80	10,133
	Identifying, registering, and disseminating vines to direct beneficiary farmers							10,000		
	Strengthen the capacity of tissue culture laboratory of IIAM–Nampula	Nampula city								
	DVM seed(vine) inspection and certification	Intensification districts						53		
EG.3.2-1: Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	Short-term training for beneficiary farmers on OFSP production by DVMs and group vine multipliers (GVMs), field coordinators, and CIP agronomist	Intensification districts							10,000	10,128
	Field day to evaluate varieties at MBT								128	
EG.3.2-17: Number of farmers and others who have applied improved technologies or practices with USG assistance	DVMs implementing improved agricultural practices (Triple S and net tunnel)	All districts ³							88	10,216
	Monitoring MBT	All districts							128	
	Beneficiary farmers planting OFSP distributed by DVMs and CIP-supported vine multipliers	Intensification districts							10,000	
	Conduct operational research on varietal preference and adaptability	Intensification districts							1	
EG.3.2-18: Number of hectares of land under improved technologies or management practices with USG assistance	Through monitoring and evaluation assessment	All districts							485	485
EG.3.2-20: Number of for-profit private enterprises, producer organizations, water users associations, women’s groups, trade	Establish and capacitate 8 GVMs	Intensification districts ⁴							8	

³ Murrupula, Monapo, Meconta, Gurué, Alto-Molócue, Mocuba, Mecuburi, Nampula city, Rapale, Malema, Nicoadala, Gile, Moma, Larde, Angoche, Mogovolas.

⁴ Murrupula, Monapo, Meconta, Gurué, Alto-Molócue, Mocuba, Mecuburi, Nampula city

Annual Work Plan—Year 5		Timeline (Oct. 2018–Mar. 2019)							Detailed Target	Global Targets
Indicator/Issue	Activity	Location	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.		
and business associations and community-based organizations (CBOs) that applied improved organization-level technologies or management practices with USG assistance										
<i>Objective 2: Increased consumption of OFSP by children under five years of age and women in at least 102,500 beneficiary HH vulnerable to VAD and other forms of malnutrition</i>										
HL.9-4: Number of individuals receiving nutrition-related professional training through USG-supported programs	Nutrition training of health workers (animators, promoters, and nurses)	Intensification districts							480	480
	Conducting cooking demo events	Intensification districts							80	NA
HL.9-1: Number of children under 5 (0–59 months) reached by nutrition-specific interventions through USG-supported programs	Conduct home visits by APEs and ACS Promote key evidence and messages (MIYCN), cooking demo, dietary diversification, and WASH) at community level on collaboration by APEs and ACS Intensify broad nutrition education campaigns Disseminate communication material through district health offices, community health centers	Intensification districts							15,000	15,000
	Establish Mother–Baby healthy living clubs								6	
HL.9-2: Number of children under 2 (0–23 months) reached with community-level nutrition interventions through USG-supported programs	Conduct home visits by the APEs and ACS Promote key evidence and messages (MIYCN, cooking demo, dietary diversification, and WASH) at community level on collaboration by APEs and ACS. Establish Mother–Baby healthy living clubs Disseminate communication material through district health offices, community health centers	Intensification districts ⁵							3,200	3,200
	Conduct operational study on the impacts of the VISTA intervention on OFSP adoption, dietary quality and on nutrition (knowledge, attitudes, practices) using HH survey, key informant interviews, and qualitative assessments (case studies, success stories, focus group discussions)								1	1

⁵ Murrupula, Monapo, Meconta, Gurue, Alto-Molócue, Mocuba, Mecuburi, Nampula city

Annual Work Plan—Year 5		Timeline (Oct. 2018–Mar. 2019)							Detailed Target	Global Targets
Indicator/Issue	Activity	Location	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.		
Objective 3: Increased agricultural incomes among at least 10,000 HH from sales of OFSP roots in local and urban markets, including fresh root and leaf markets, institutional markets, and commercial processing										
EG.3.2-19: Value of smallholder incremental sales generated with USG assistance (in USD dollar)	Train sweetpotato traders and other potential sellers on OFSP marketing	Market intervention districts ⁶							32	\$132,251
	Facilitation of OFSP market days in selected fresh markets	Market intervention districts							25	
	Establish roadside OFSP selling outlets/kiosks								5	
EG.3.2-20: Number of for-profit private enterprises, producer organizations, water user associations, women’s groups, trade and business associations CBOs that applied improved organization-level technologies or management practices with USG assistance	Training CBOs (GVMs) on OFSP, marketing, bulking	Intensification districts ⁷							8	8
EG.3-6: Farmer’s gross margin/ha, per animal per cage obtained with USG assistance	Conduct a rapid market survey								1	\$460/ha

⁶ Meconta, Monapo, Gurúé, Alto Molocue, and Murrupula.

⁷ Murrupula, Monapo, Meconta, Gurúé, Alto-Molócue, Mocuba, Mecuburi, Nampula city