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Sustained Diet Quality Improvement by Fortification with Climate-smart, Nutrition-smart Orange-fleshed Sweetpotato in Southern Nations, Nationalities and Peoples' Region (SNNPR), Ethiopia

2017 Annual Report

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Sustained Diet Quality Improvement by Fortification with Climate-smart, Nutrition-smart Orange-fleshed Sweetpotato in Southern Nations, Nationalities and Peoples' Region (SNNPR), Ethiopia

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Coordinator of the grant contract: Pierre-Luc Vanhaeverbeke

Contact: Roland Brouwer, project manager

Beneficiaries and affiliated entities: International Potato Center, People in Need, and Emory University

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ACRONYMS

ATVET	Agricultural Technical and Vocational Education and Training Institute
BANRD	Bureau of Agriculture and Natural Resource Development
CF	Community facilitator
CIP	International Potato Centre
DA	Development Agent
EU	European Union
FTC	Farmer Training Center
HARC	Hawassa Agricultural Research Centre
HDA	Health Development Army
HEWs	Health Extension Workers
HLCs	Healthy Living Clubs
HH	Households
MLE	Monitoring, learning and evaluation
OFSP	Orange-fleshed sweetpotato
PIN	People in Need
QDBH	Quality Diets for Better Health
SARI	Southern Agricultural Research Institute
SASHA	Sweetpotato Action for Food Security and Health in Africa
SBCC	Social behavior change communication
SNNPR	Southern Nations, Nationalities and Peoples' Region
SPHI	Sweetpotato for Profit and Health Initiative
ToT	Training of trainers

EXECUTIVE SUMMARY

The "Sustained Diet Quality Improvement by Fortification with Climate-smart, Nutrition-smart Orange-fleshed Sweetpotato in Southern Nations, Nationalities and Peoples' Region (SNNPR), Ethiopia" is a 4.5-year project (hereafter referred to as the Activity) funded by the European Union. The Activity is being implemented by the International Potato Center and partners People in Need and Emory University in three woredas in SNNPR in Southern Ethiopia, which are subdivided into 66 kebeles. Of these, 41 have been selected as having the right conditions for sweetpotato production. The Activity is structured around one intermediary outcome and four outputs.

During its first year (2017), the Activity has concentrated four primary activities in 13 kebeles. The remaining 28 kebeles will benefit from the intervention in 2018–2020. The four activities are:

- Formative research into gender, nutrition habits, and the sweetpotato value chain to ensure proper designed interventions
- Variety assessment through demonstration plots at 13 farmer training centers and with 13 private farmers and 1,104 "Baby" trials
- Capacity building through a training of trainers, step-down trainers to agricultural and health extension workers and volunteers, and establishing 26 healthy living clubs (HLCs)
- Establishment of ongoing monitoring and evaluation, including two baseline studies covering HLC-member households and the population with children aged 6–23 months

The Activity is aligned with the original logframe (see Annex A) and has met planned targets. The intervention logic of combining climate-smart, drought resistant, nutritious sweetpotato with dietary education and market development remains valid. The main modification to the logframe is that minimum dietary diversity has replaced minimum acceptable diet as the key outcome indicator, as it is more directly impacted by the Activity.

In addition to Annex A the report contains the following annexes:

- Annex B: An Updated Action Plan for Future Project Activities
- Annex C: Beneficiaries/Affiliated Entities and Other Cooperation
- Annex D: Visibility

1. RESULTS AND ACTIVITIES

The "Sustained Diet Quality Improvement by Fortification with Climate-smart, Nutrition-smart Orange-fleshed Sweetpotato in Southern Nations, Nationalities and Peoples' Region (SNNPR), Ethiopia" is a 4.5-year project (hereafter referred to as the Activity) funded by the European Union. The Activity is being implemented by the International Potato Center (CIP) and partners People in Need (PIN) and Emory University (Emory) in three woredas in SNNPR in Southern Ethiopia, which are subdivided into 66 kebeles. Of these, 41 have been selected as having the right conditions for sweetpotato production. The Activity is structured around one intermediary outcome and four outputs (discussed below).

1.1 RESULTS

The discussion in section 1.1 follows the logframe and presents the Action's achievements from its inception to 31 December 2017.

Intermediary outcome 1

Increased intake of vitamin A and improved food security among 15,000 children and 15,000 women of reproductive age and at least 61,000 urban consumers in three urban centers, achieved through an improved delivery of nutrition-sensitive agricultural and health extension services

Because Y1 activities are underway and still in their initial stages, it is too early for impacts to be reported. A baseline study was carried out in December 2017 and covers 26 kebeles. Of these 13 will be included in interventions during Y1–Y2. The other 13 will be targeted in Y4 only and serve as the control. The endline is foreseen for December 2019 (i.e., 1 year before the end of the planned activities to ensure that kebeles in the control group will benefit from the Action). Baseline data were collected on 1,451 households (HH) in December 2017. Preliminary values for the outcome indicators can be found in the updated logframe (Annex A) and may still be revised when data analysis is completed. Changes in the values of outcome indicators can only be expected from Y2 onward.

The baseline study collected data for frequency of intake of vitamin A-rich foods, the dietary diversity of mothers and their children aged under 2 years, and the minimum acceptable diet of children under 2 years for rural populations. Work among urban consumers will be undertaken when orange-fleshed sweetpotato (OFSP) has been established on the urban market, with the focus on Hawassa.

Output 1.1 (Op1.1)

A total of 53 decentralized OFSP vine multiplication sites, operated by trained development agents (DAs) of farmer training centers (FTCs) and selected private farmers, provide 15,000 local HH with the inputs and know-how required for homestead production of OFSP.

Twenty-six demonstration (demo) plots were set up on FTCs and private farms in 13 out of 41 kebeles in the three woredas. The FTCs were evaluated to identify appropriate irrigation technologies to ensure that planting material in the future will be available at the end of the dry season. The equipment is being installed. FTC staff and surrounding farmers participated in planting, maintenance of the fields, harvest, and variety assessments. Thirteen DAs participated in the "All you want to know about sweetpotato" training of trainers (ToTs) in Hawassa and Sodo, which also involved staff of the zonal Bureaus of Agricultural and Natural Resource Development (BANRD). A total of 30 people (7 females) participated. PIN organized a step-down training involving 39 DAs and health extension workers (HEWs) of whom 18 were women. A total of 1,104 HH—more than half were members of a healthy

living clubs (HLC)—received planting material for on-farm evaluation and posterior consumption and multiplication.

Output 1.2 (Op1.2)

At least 15,000 women and 10,000 men are aware of climate-smart OFSP's benefits, recipes for their everyday use, and essential child nutrition practices, gained through participating in 500 HLCs managed by trained community health workers.

Between August and December, 26 HLCs were established (2 per kebele) with HH with children aged under 4 months; total enrolment in these HLCs is 778. The first session was held in December and focused on the conservation of planting material obtained from harvests at the FTCs through the Triple S method (storage in sand for sprouting). Nutrition-related training will start in January 2018.

Output 1.3 (Op1.3)

Improved supply of and demand for OFSP products in the urban areas with the increased consumption of at least 61,000 beneficiaries.

Market monitoring started in September in Dilla, Chuko, and Hawassa and covers sweetpotato, major staple foods, and specific vitamin-rich foods. Data provide basic information about availability and price, and will allow for a comparison of the costs of calories and vitamin A from different sources. The data also confirm that there is supply of sweetpotato, although OFSP varieties are not available. Other activities contributing to Op1.3 will start in 2018.

Output 1.4 (Op1.4)

After evaluating the effectiveness of the intervention during the first 3 years, recommended value-for-money models for large-scale OFSP dissemination (based on R1 & R2 experience) begin to be integrated into the SNNP region's agricultural extension and health promotion systems, with a potential to reach at least 3m women and children at risk of vitamin A deficiency (VAD).

Op1.4 can only be achieved at the end of the Activity when evidence has been gathered to support the scaling-out of the intervention model into other woredas. The Action has already engaged in a partnership with Wolayta Sodo Agricultural and Technical Vocational Education and Training (ATVET) Institute to establish an institutional framework for reaching out to other woredas.

1.2 ACTIVITIES

A.1.0.1 Inception: Recruitment, staff training, office, set-up in Hawassa, and Activity launching workshop

An office was set up in kebele 05 in Hawassa. The team was hired between January and September and consists of a project manager, a monitoring, learning and evaluation (MLE) annex value chain specialist, an agronomist, two technicians/research assistants, one financial and administration staff, and two drivers.

PIN has recruited a project manager and a field coordinator (based in Dilla), three field extension officers at each woreda, and 13 community facilitators (one for each kebele). PIN staff is working from the regional office in Hawassa and the field office in Dilla.

Emory has recruited a PhD student who has been leading the formative research and the design of the nutrition component. An MSc student provided additional support for about 4 months.

A.1.0.2 Hold monthly project progress review and planning meetings with consortium staff

CIP, Emory, and PIN managers have biweekly meetings to ensure communication and coordination. Frequency is modified depending on availability and urgency.

A.1.0.3 Hold annual stakeholder meeting, presenting project progress and receiving feedback

In May 2017, a 2-day stakeholder workshop was organized to launch the project. The workshop was attended by 37 officials (1 female) from regional, zonal, and woreda Bureaus of Agriculture and Natural Resource Development (BARND), Health, and Markets and Cooperatives.

In September 2017, PIN also conducted a project-launching workshop at the zonal level with 85 participants from Sidama and Gedeo zonal and Aleto Chuko, Dila Zuria, and Wonago woreda sector offices and the 13 intervention kebeles.

A.1.1.1 Design and implement qualitative research on women's and men's roles along the OFSP value chain

The study on the role of women and men along the OFSP value chain was led by CIP's gender specialist from the Nairobi regional office and carried out with a local consultant. The design was done in May. Data collection occurred between May and July using focus group discussions and interviews with key informants. The report is being edited.

Key results are that women and men participate in all steps of the value chain, from vine production to root production, from wholesaling to retailing. Men, however, normally control larger volumes and cover longer distances and are perceived as more knowledgeable farmers. The alleged difference in knowledge is perpetuated by the FTCs, who typically invite men to trainings and not women.

The preliminary results were presented at the annual meeting of the Sweetpotato for Profit and Health Initiative (SPHI) in Dar es Salaam in September 2017.

A.1.1.2 Establish demo trials of OFSP in major sites and assess acceptability

Thirteen kebeles demo plots were set up at 13 FTCs and with 13 private farmers (see Table 1).

Table 1. FTCs by zones, woredas, planting dates (all in 2017), and location data

Zone	Woreda	FTC	Planting Date	Latitude	Longitude	Altitude (m)
Gedeo	Dilla Zuria	Chichu	20/07	N06.21.65,1	E038.18.49,6	1,517
Gedeo	Dilla Zuria	Andida	08/05	N06.24.21,6	E038.20.67,6	1,870
Gedeo	Dilla Zuria	Holena	20/06	N06.21.46,4	E038.21.01,5	2,137
Gedeo	Dilla Zuria	Sisota	18/07	N06.23.09,2	E038.19.36,6	1,673
Gedeo	Dilla Zuria	Amba	19/07	N06.20.31,1	E038.20.21,4	1,970
Gedeo	Wonago	Tokicha	21/06	N06.17.92,4	E038.17.04,8	1,722
Gedeo	Wonago	Bele Bukisa	18/07	N06.18.68,7	E038.15.25,1	1,747
Sidama	Aleta Chuko	Rufo Wayno	23/06	N06.33.91,5	E038.19.65,9	1,810
Sidama	Aleta Chuko	Miridicha	15/07	N06.34.67,2	E038.16.60,1	1,660
Sidama	Aleta Chuko	Dibicha	12/07	N06.30.09,8	E038.18.75,5	1,633
Sidama	Aleta Chuko	Dongoro Elilcho	24/06	N06.39.31,0	E038.20.35,4	1,794
Sidama	Aleta Chuko	D. Morocho	21/07	N06.39.37,3	E038.18.11,1	1,713
Sidama	Aleta Chuko	Loko Haytala	14/07	N06.37.06,7	E038.17.29,0	1,698

At each plot nine varieties were planted: three ('Alamura', 'Dilla', and 'Halaba') bred by the breeder at the Southern Agricultural Research Institute (SARI); four ('Kabode', 'Naspot-12', 'Naspot-13', and 'Vita') imported from Uganda; one orange-fleshed control ('Kulfo'), and one white-fleshed control ('Awassa-83'). The material was sourced from multiplication sites at Hawassa Agricultural Research Centre (HARC) and two private farmers (Jara and Loke). All cuttings were selected from net tunnels or treated with pesticide to ensure that they were free from contamination by virus, weevils, and other insects.

In December 2017 at each FTC, cooking demos were organized to respond to two important results from the formative research ("sweetpotato is boring because can only be eaten boiled" and "sweetpotato leaves are not appropriate for people but should be given to animals") and to prepare the people attending for their participation in the sensory evaluation of roots and leaves of the nine varieties. These demos showed the local participants that there is an array of attractive and culturally adapted ways to consume sweetpotato, and that sweetpotato leaves can be a tasty addition to the diet. The report of the results of these sessions is still being developed. The demos were carried out with support from HARC and the local nongovernmental organization Egna Le Egna (ELE).

Table 2. Participants by gender at cooking demos per kebele

FTC/Kebele	Female	Male	Total	FTC/Kebele	Female	Male	Total
Chichu	41	24	**65**	Rufo Wayno	36	31	**67**
Andida	17	56	**73**	Miridicha	30	43	**73**
Holena	24	37	**61**	Dibicha	39	52	**91**
Sisota	25	33	**58**	Dongoro Elilcho	39	45	**84**
Amba	46	46	**92**	D. Morocho	42	69	**111**
Tokicha	43	48	**91**	Loko Haytala	33	42	**75**
Bele Bukisa	33	35	**68**	**Total**	**448**	**561**	**1,009**

A total of 1,009 persons (448 females) participated in the cooking demos (Table 2). About 330 persons (165 females) participated in the sensory evaluation of roots and leaves.

The cooking demonstrations and taste tests ran in parallel with physical evaluations of the varieties. At each FTC groups of women and men were asked to assess varieties based on the speed of their establishment and growth, ground coverage, growth habit, susceptibility to pests and diseases, and skin and root color. The tests were followed by yield assessments at the FTCs and the private farmers. These assessments were participatory and involved about 330 (50% female) FTC and HLC members. The results of these tests and assessments, as well as of the Baby trials, will be integrated into the National Variety Trials and inform the decision of which varieties will officially be released. That decision is expected in the beginning of 2019.

A.1.1.3 Prepare and conduct ToT course for extension personnel concerning OFSP

The ToT training on "Everything you want to know about sweetpotato" uses a curriculum developed for trainings in several African countries over the past 5 years. It has an extensive manual which covers 14 different topics ranging from sweetpotato farming to marketing and processing to gender and adult education. The manual exists already in English, Kiswahili, French, and Portuguese. It was translated into Amharic for the training. The draft Amharic version is now undergoing a final review.

The ToT has a 10-day program. To ensure participation it was divided into two 5-day parts: the first part was in Hawassa and the second part in Sodo at the Wolayita Sodo ATVET Institute. Discussions with the Sodo ATVET leadership indicate that it might be willing to run the training as part of its regular program.

The ToT had 30 participants (8 females) from the BANRD departments and offices of the two zones and three woredas, PIN staff, and staff from the Sodo ATVET (Table 3). Trainers and facilitators were staff from Hawassa University, Sodo ATVET College, SARI, and CIP.

Table 3. ToT participants by origin and position

Origin	Position	Number
Sidama Zone Agriculture & NRD Department	Zonal agricultural expert	1
Gedeo Zone Agriculture & NRD Department	Zonal agricultural expert	1
Dilla Zuria Woreda Agriculture & NRD Office	Agricultural expert	2
Wonago Woreda Agriculture & NRD Office	Agricultural expert	2
Aleta Chuko Woreda Agriculture & NRD Office	Agricultural expert	2
Dilla Zuria Woreda Agriculture & NRD Office	DA	5
Wonago Woreda Agriculture & NRD Office	DA	2
Aleta Chuko Woreda Agriculture & NRD Office	DA	6
(PIN) Dilla Zuria Woreda	Agricultural expert	4
(PIN) Hawassa office	Agricultural expert	3
Wolayita Sodo ATVET college	Agricultural expert	2
Total		**30**

A.1.1.4 Training and material support to the target FTCs and farmers-entrepreneurs producing and multiplying OFSP vines

In each of the 13 kebeles targeted for Y1, an FTC was identified. These FTCs were assessed with regard to their water sources and needs as previous experience has shown that sustained vine supply requires a reliable source of water. On the basis of that assessment, an investment plan was drafted which covered the topic of rainwater harvesting installations. Table 4 shows which types of water sources and suggested technologies for water-lifting and irrigation have been selected. Table 5 provides an overview of the current status of the 13 FTCs with their respective water source and proposed technologies for water-lifting and irrigation. Procurement of the equipment has been slow, and the acquisition and construction of hand, treadle, and solar pumps and the construction of rainwater harvesting installations have been delayed. FTCs with access to ground- or surface-water will be able to maintain multiplication plots for the upcoming dry season. But those relying on rainwater harvesting will only be able to irrigate after the next rains.

Table 4. Water resources potential and selected irrigation technologies for the FTCs in the selected kebeles of intervention districts

Types of Water Sources	No. of FTCs	Suggested Water-Lifting and Irrigation Technologies
River or spring	3	Solar water pumps integrated with either drip irrigation or manual irrigation using a bucket or a hose (bunch irrigation)
Shallow wells	2	Rope and washer pump for water-lifting from the wells integrated with bunch irrigation
Water-harvesting from roof tops and ground catchments with irrigation equipment	6	Geomembrane-lined trapezoidal underground tanks (average storage capacity 50 m^3) and fiberglass surface tanks for rainwater storage and hand pumps or treadle pumps for water-lifting. One of the FTCs will use drip irrigation and the others will use either bunch or furrow irrigation techniques.

PIN and CIP have added rain gauges, soil moisture sensors, and Hobo weather stations to the packages, as it is very clear that the climate varies considerably between kebeles and woredas and influences the behavior of the sweetpotato varieties. Up to December 31, only 1 rain gauge out of 11 was installed. (FTC managers are trained in data collection.) Another potential addition is a device to measure the amount of water being pumped. The combination with rainfall data would produce an adequate picture of the amount of water used for growing sweetpotato at each FTC.

Table 5. FTCs with their water sources, proposed water-lifting and irrigation technologies, and status

FTC/Kebele	Water Source	Proposed Water-Lifting Technology	Proposed Irrigation Technology	Status (as of 31 Dec. 2017)
Chichu	Rainwater, shallow well	Repair damaged rope & washer pump, install second rope & washer pump	Drip and furrow	Repaired, second pump not yet purchased
Andida	River	Solar pump	Furrow	Purchased
Holena	Groundwater	Rope & washer pump	Bunch[1]	Not purchased
Sisota	Public water point	Plastic pipes	Bunch	Gutter installed, tank purchased
Amba	Spring	Hand pump	Bunch	Purchased
Tokicha	Rainwater	Tank + hand pump	Drip	Pond completed, roof harvest gutter installed, hand pump purchased
Bele Bukisa	River	Solar pump	Drip	Solar pump purchased
Rufo Wayno	Spring	Solar pump	Furrow	Solar pump purchased
Miridicha	Rainwater	Tank + hand pump	Bunch	Water harvest pond completed; roof harvest gutter installed; tank and hand pump purchased
Dibicha	Rainwater	Tank + treadle pump	Bunch	Treadle pump purchase
Dongoro Elilcho	Rainwater	Tank + hand pump	Drip	Water harvest pond completed; roof harvest gutter installed; tank & hand pump purchased
D. Morocho	Rainwater	Tank + hand pump	Bunch	Water harvest pond completed; roof harvest gutter installed; tank & hand pump purchased
Loko Haytala	Rainwater	Tank + hand pump	Furrow	Water harvest pond completed; roof harvest gutter installed; tanker & hand pump purchased

[1]Bucket and/or hose

PIN conducted the two step-down trainings of woreda staff on OFSP crop management, pest and disease control, postharvest handling, conservation of planting material (Triple S), nutrition, and recipe preparation (Table 6). The 5-day trainings targeted grassroots-level extension workers. They were led by PIN and by the woreda and zone experts and DAs, who had attended the ToT on "Everything you want to know about sweetpotato" organized by CIP under activity A.1.1.3.

The training course drew 39 participants from 13 project intervention kebeles from the three woredas and was organized to attain a gender balance, 54% men and 46% women.

Table 6. Participants of step-down training in OFSP farming and benefits

Woreda	Professional Background				Gender		
	DAs	HEWs	PIN-Community Facilitators (CFs)	Total	Male	Female	% Female
Aleta Chuko	6	6	6	**18**	11	7	39%
Dilla Zuria	5	5	5	**15**	7	8	53%
Wonago	2	2	2	**6**	3	3	50%
Total	**13**	**13**	**13**	**39**	**21**	**18**	**46%**

A.1.1.5 Form groups and train 15,000 female and 10,000 male farmers on OFSP production, storage, and vine conservation by trained agricultural DAs and health extension agents

The vehicle for training rural women and men in OFSP production, storage, and vine conservation is the HLC. In each kebele, two HLCs were formed. The composition of these HLCs has changed to respond to the needs of the longitudinal study (see A.1.4.3), with an age window for the reference child of up to 6 months. Table 7 provides an overview of the number of HLCs and HLC members per kebele. Note that the total number of members is two short of the target

Members of HLCs witnessed planting and maintenance of the demo plots between July and October 2017. About 50% participated in the Triple S demos in December 2017 (see A.1.1.6). All received vines and were visited by CIP and PIN staff to monitor the development of the crop and provide advice.

Table 7. Number of HLCs and their members per kebele

Kebele	HLCs	Members	FTC/Kebele	HLCs	Members
Chichu	2	60	Rufo Wayno	2	60
Andida	2	60	Miridicha	2	58
Holena	2	60	Dibicha	2	60
Sisota	2	60	Dongoro Elilcho	2	60
Amba	2	60	D. Morocho	2	60
Tokicha	2	60	Loko Haytala	2	60
Bele Bukisa	2	60	**Total**	**26**	**778**

A.1.1.6 Design and implement strategy for vine dissemination to HH, provide ongoing technical support, and consolidate lessons for region-wide replication

During 2017 the design and implementation of vine dissemination was determined by three factors: (1) project implementation activities only took off in March; (2) the vines are of varieties that are still being evaluated and not officially released; and (3) the HLCs that had been created in August were adjusted for the longitudinal study. These three factors had four important implications:

- Planting material became available relatively late (in September) and was not taken from the demo sites in the intervention kebeles but from the same institutional and commercial multipliers who had provided the material for these demo plots (HARC, Jara, Loke). Fortunately, rains continued until late October, so that establishment of the crop was still good.
- Dissemination was done as part of the assessment trials under a Mother–Baby trial model. In this model the Mother trials are the demo plots at the FTCs and with private farmers, and the Baby trials are the plots managed by the target HH, who received three varieties (two new ones and one control). Crop development is monitored by CIP and PIN staff and will be included in the overall varietal evaluation process.

- The number of cuttings per HH (140–150) available was less than the intended number of 600.
- The number of HH receiving planting material (1,104) was larger than foreseen, to accommodate people who had originally been included in the HLCs but were replaced by HH with younger infants.

Table 8 summarizes the number of HH per kebele receiving vines as part of the baby trials and the varieties that were allocated. For example, in Debicha kebele in the woreda Aleta Chuko 82 HH received vines; 24 received the variety 'Alamura', 30 'Dilla', and so forth; all received 'Kulfo' as a control. In total 1,104 HH received planting material, with each HH receiving about 150 cuttings which will occupy about 80 m^2 (0.6 x 0.9 planting scheme). Yield should be 80–240 kg and harvests can be expected about 5 months after planting (i.e., February–March).

Table 8. Dissemination of planting material by kebele and variety

Woreda	Kebele	Beneficiaries	Varieties						
			A	B	C	D	E	F	G
Aleta Chuko	Debicha	82	24	30	31	22	20	33	0
Aleta Chuko	Miridicha	88	28	26	31	31	32	28	0
Aleta Chuko	Loka Haytala	90	28	28	39	29	26	30	0
Aleta Chuko	Dong-Morocho	85	31	36	27	26	26	24	0
Aleta Chuko	Dong-Elelicho	77	22	26	24	22	20	19	21
Aleta Chuko	Rufo Wayeno	89	41	34	31	42	29	1	0
Wonago	Tokicha	88	40	36	36	10	22	20	12
Wonago	Bele Bukisa	95	43	38	38	13	24	23	11
Dilla Zuria	Chichu	80	29	40	33	14	19	25	0
Dilla Zuria	Holena	82	24	33	45	14	28	20	0
Dilla Zuria	Sisota	84	19	50	49	14	18	18	0
Dilla Zuria	Andida	76	23	34	35	13	19	28	0
Dilla Zuria	Amba	88	37	33	27	11	22	39	7
Total		**1,104**	**389**	**444**	**446**	**261**	**305**	**308**	**51**

NOTE: Varieties : A = 'Alamura', B = 'Dilla', C = 'Halaba', D = 'Vita', E = 'Kabode', F = 'Naspot 13', and G = 'Naspot 12'.

The number of HH receiving vines is higher than planned (1,104 instead of 780), but the number of cuttings is lower (163,060 instead of 468,000) due to the factors discussed earlier. It is expected that having multiplication at FTCs, private farmers, traditional vine multipliers, and the three locations used to supply the initial demo sites will ensure that in 2018 the number of cuttings per HH will be as originally planned.

To complement dissemination of vines and to disseminate techniques to ensure that people can carry over planting material across the dry season, CIP has been developing the Triple S technique. During this period 402 HLC members participated in the training. Trainings will continue in January. The distribution of participants per woreda and kebele is given in Table 9.

Table 9. Number of beneficiaries of Triple S training

Woreda	Kebele	Number of Participants		
		At farmer	At FTC	Grand Total
Dilla Zuria	Andida	15	13	**28**
Wonago	Bele Bukisa	-	38	**38**

Woreda	Kebele	Number of Participants		
		At farmer	At FTC	Grand Total
Dilla Zuria	Chichu	15	-	**15**
Aleta Chuko	Dibicha	30	-	**30**
Aleta Chuko	Dongoro Elelicho	29	31	**60**
Aleta Chuko	Dongoro Morocho	16	59	**75**
Aleta Chuko	Loko Haytela	29	30	**59**
Aleta Chuko	Miridicha	-	29	**29**
Aleta Chuko	Rufo Wayno	-	15	**15**
Dilla Zuria	Sisota	22	31	**31**
	Grand Total	**156**	**246**	**402**

A.1.1.7 Plan and implement events to promote dissemination to indirect beneficiaries

As the varieties have not yet been officially released and the number of farmers cultivating them is still very small, there is no significant supply to the market. Promotion of OFSP for indirect beneficiaries will only take place in 2018. The horizontal dissemination toward indirect beneficiaries will be aligned with the conclusions about the existing vine market and with the position of BANRD opposing free distribution of planting material.

A.1.1.8 Integrate OFSP production into the FTCs' annual production plans and budgets

Only from 2018 onward.

A.1.2.1 Conduct formative research on the key barriers and boosters to OFSP production and consumption, and develop behavior change communication and promotion strategy, including use of health baby toolkit (bowl/spoon)

Formative research conducted by Emory University included two components: a literature review and primary data collection and analysis. The literature review included peer-reviewed literature, national reports, and programmatic literature.

Four enumerators were hired and trained in qualitative research practices; three enumerators continued to collect data. Twenty-three focus group discussions with mothers, fathers, and grandmothers of infants and young children were conducted. An additional nine in-depth interviews with HEWs and community leaders were conducted in 5 of 13 kebeles designated for project activities in Y1. Results of the formative work are summarized in the Quality Diets for Better Health (QDBH) Formative Nutrition report, which is under final review.

Major findings of the formative research include:

- OFSP are neither cultivated nor known in the project areas; white-fleshed varieties are.
- Leaves are not consumed by people, but rather used for animal feed.
- Sweet foods including sweetpotatoes are believed to delay speech and therefore considered inappropriate for infants and young children.
- Sweetpotatoes are an important food security crop, but are considered an "inferior" food. They are similarly appreciated for their affordability, taste, and easy preparation, but many find them "boring."
- Awareness or knowledge of vitamin A is lacking, but vitamin A supplementation is well known.

- HEWs are perceived as trusted sources of information; their focus has been promoting exclusive breastfeeding and not on complementary feeding.
- The Healthy Baby Toolkit is generally accepted and seen as a good tool that all family members would be willing to adopt. However, the bowls should not be transparent due to a common belief that a child may get sick from "evil eye" if others can see his/her food.
- Food access and affordability are primary barriers to improved complementary feeding; knowledge gap is a secondary barrier.
- Women strongly prefer to participate in HLCs separately from men, to feel comfortable speaking and asking questions.
- Foods produced and consumed at home include haricot beans, some vegetables, and staples like maize and enset; fruit, coffee, and chat are produced but mainly for selling.
- Some vegetables, spices, and staples are purchased from the market when home production is insufficient and when there is money.

A poster was made that summarizes the formative research and was displayed at the annual SPHI meeting in Dar es Salaam in September 2017.[1]

Results of the formative research were used to develop a social behavior change communication (SBCC) strategy. The emphasis of the SBCC strategy is improving complementary feeding practices through the HLCs, but recommendations are included for broader market-based promotion of OFSP in and around the project area. The SBCC strategy identifies mothers and fathers of infants and young children as the primary audience, with grandmothers, HEWs, and Health Development Army members as secondary, or "influencing" audiences. The SBCC strategy has been shared among the three partners and is being revised based on ongoing feedback.

A.1.2.2 Design, plan, and train health extension personnel on nutrition and behavior change techniques

HEWs and PIN-CFs were trained on 27 November–1 December for Gedeo and on 1–15 December for Sidama. Between November 6 and 23, PIN and Emory University finalized the translation of the SBCC document in the curriculum for the training of HEW and PIN-CFs, providing a platform for planning and developing session plans and training materials for rehearsing the facilitation of the course modules.

The training was given in two rounds. In total there were 47 participants (27 females): 24 HEWs from the 13 project intervention kebeles, 16 PIN-CFs, 6 from woreda health offices, and 1 from Dilla Zone health office (Table 10).

[1] Faerber, E., E. Waugh, R. Brouwer, and A. Webb Girard. 2017. Formative Nutrition Work in Southern Ethiopia: Ensuring Success of Orange Fleshed Sweetpotato Promotion Amid a Broader Strategy to Improve Child Nutrition. Poster. SPHI Meeting, Dar-es-Salaam, September 2017.

Table 10. Participants of nutrition ToT by woreda, category, and gender

Woreda	Category				Gender		
	HEWs	PIN-CFs	Woreda Health Office	Zonal Health Office	M	F	Total
Aleta Chuko	12	7	2	0	8	13	**21**
Dilla Zuria	8	6	2	1	8	9	**17**
Wonago	4	3	2	0	4	5	**9**
Total	**24**	**16**	**6**	**1**	**20**	**27**	**47**

Training impact was measured by comparing pre- and post-training responses to a specially designed questionnaire. Table 11 shows the progress in nutrition knowledge for one of the training rounds.

Table 11. Pre- and post-training assessment score in percentage compared with number of participants

Score (in %)	Below 50	50–59	60–69	70–79	80–89	Above 90	Rounds
No. of participants	1	4	8	13	12	5	Pretest
No. of participants	0	0	2	11	8	22	Posttest

The trained HEWs and CFs will implement step-down trainings for members of the Health Development Army (HDA) assigned to facilitating the HLCs. The CFs will monitor the implementation of the HDAs and HLCs.

A.1.2.3 Plan and implement series of participatory learning events for 15,000 women and 10,000 men participating in HLCs

HLC members were exposed to sweetpotato planting and maintenance during the set-up of the demo plots (May–July) and Mother–Baby trials (September). The first formal learning experience was on Triple S in December 2017. Each HLC received three buckets with three varieties (see A.1.1.6). These varieties are expected to sprout just before the onset of the short rainy season (*belg*) and will provide additional planting material to HLC members. Seven nutrition trainings will start in January 2018. Thus, the HLC curriculum includes eight sessions:

- Triple S (agriculture focus)
- Maternal Nutrition for Exclusive Breastfeeding
- Complementary Feeding – Texture
- Complementary Feeding – Frequency and Volume
- Responsive Feeding and Feeding During Illness
- Vitamin A and Orange-Fleshed Sweetpotatoes for the Family
- Orange-Fleshed Sweetpotato Recipes for Complementary Feeding and Dietary Diversity
- Complementary Feeding as Children Age and Maternal Nutrition

A.1.3.1 Plan and implement rapid market assessment of sweetpotato value chain

The study on gender roles along the value chain was followed up by further work focusing on local vine multiplication practices. The study was made possible through a partnership with CIP's Sweetpotato Action for Food Security and Health in Africa (SASHA) project (funded by the Bill and Melinda Gates Foundation) and the wider CGIAR Research Program on Roots, Tubers and Bananas. The

output of this study will help to fine-tune the future vine disseminations strategy in such a way that it supports and incorporates existing experienced smallholder multipliers.

Monthly monitoring of markets in Chuko, Dilla, and Hawassa started in September. It allows for the establishment of relationships with traders and for obtaining regular data on traded volumes and prices.

Further assessment of market opportunities for fresh and processed roots and for leaves will be undertaken during the first trimester of 2018.

A.1.3.2 Plan and implement support to improve supply of OFSP to the target urban markets

As the varieties have not yet been officially released and the number of farmers cultivating them is still very small, there is no significant supply to the market. These activities will be developed from 2018 onward.

A.1.3.3 Design, develop, and test up to three OFSP-processed products in collaboration with the private sector

This activity will start in Y2 (2018).

A.1.3.4 Identify private sector partner and provide technical support for establishing one OFSP- processed product value chain

This activity will start in Y2 (2018).

A.1.3.5 Design and implement an OFSP promotion campaign in targeted urban areas

Work has been done on designing radio messages. Three service suppliers submitted proposals, but the conclusion of the radio messages was delayed due to the high number of activities taking place in December 2017. A draft was made for a brochure to be distributed to urban consumers through sweetpotato retailers at the beginning of 2018.

A.1.4.1 Design and implement monitoring system for R1 and R2 targets

The monitoring system was designed. Key MLE data collected include names and contacts of people receiving vines, names and contacts of HLC members, and facilitators.

A.1.4.2 Design system for collecting disaggregated cost data developed, drawing on Phase 1 experience and collect data

Expenditures are coded by budget line and by activity. This allows for an easy assessment of the cost effectiveness of activities. Staff-time costing will based on position/responsibility and time allocation on the basis of per diems where possible.

A.1.4.3 Plan and implement baseline study on community-level intervention

This activity comprises two different studies: a longitudinal study, primarily conducted by Emory University, and a cross-sectional study, primarily conducted by CIP.

Preparation for both baseline surveys began in May 2017, with identification of kebeles to receive project activities in Y1. Of the 41 kebeles designated for project activities, 26 were identified as being eligible for project activities in Y1 based on having moderate to high potential for OFSP production and on an absence of current nutrition projects by PIN. Thirteen kebeles were randomly assigned to receive project activities in Y1, including 7 kebeles where the Healthy Baby Toolkit will be distributed and included in nutrition education. The remaining kebeles were designated to receive project

activities at the end of the project's lifetime and are considered as "control" kebeles for the purposes of evaluating the project.

In each of the 26 kebeles, a list of all HH was compiled not only for recruiting the HLCs, but also to develop the sampling frames for each study (i.e., the longitudinal study and cross-sectional survey).

The longitudinal study follows a cluster-randomized controlled design with a 1-year follow-up of infants. The primary objective is to evaluate the effect of the Activity on vitamin A and energy intake by infants and young children, including any added benefit of the Healthy Baby Toolkit. The exposure groups include six partial intervention kebeles (OFSP promotion/support and HLCs), seven full intervention kebeles (OFSP promotion/support, HLCs, and Healthy Baby Toolkit), and seven control kebeles. The primary outcomes of the longitudinal study are vitamin A and energy intake by infants and young children, to be measured through multiple-pass 24-hour diet recall. The longitudinal study aims to enroll 600 caregiver-infant dyads. Because of lower-than-anticipated numbers of eligible HH, however, any HH meeting eligibility criteria will be invited to participate.

HH eligibility criteria include (1) infant aged birth to 5.9 months present; (2) primary caregiver(s) participate in HLCs (this criterion applies only to intervention kebeles, as there are no HLCs in control kebeles); and (3) caregiver and (if applicable) head of HH consent to participate. Enrollment and baseline data collection began in December 2017 and will conclude in January 2018. Data entry runs parallel with data collection. The longitudinal study was delayed by approximately 6 weeks due to time to obtain approval from Emory University's Institutional Review Board. Data cleaning and analyses will immediately proceed data collection and entry in January and February 2018.

Subsequent waves of data collection for the longitudinal study include midline and endline surveys (planned for June and December 2018).

The planning and implementation of the baseline of the cross-sectional study consisted of the following activities:

- Complete listing of the 28,930 HH in the 13 intervention and 13 control kebeles was carried out by kebele staff. The lists they produced were validated by the kebele governments.
- Determine the sample sizes for the full and partial intervention kebeles (351 each) and for the control kebeles (702) based on the desired precision for the main outcome variable (dietary diversity).
- Elaborate the questionnaire using various sources and ensure its alignment with the Action's logframe.
- Recruit 24 enumerators fluent in Sidaminha or Gedeinha, three field supervisors, and eight data entry staff.
- Train the 24 enumerators from 20 to 25 November 2017.
- Pre-test the questionnaire, make corrections based on the results of the pre-test, and translate the questionnaire into Amharic.
- Roll-out data collection and data entry (28 November–20 December 2017). Initial cleaning and recall were done during data entry. Final cleaning will take place in January.

Preliminary analysis of the results was carried out in late December–early January to provide the baseline information for the logframe.

A.1.4.4 Plan and implement a midline assessment

An appropriate evaluation requires the comparison between intervention and control HH (here, this is achieved by separating intervention and control kebeles). As the control kebeles are part of the total number of kebeles that will benefit from the Activity, the endline is delayed 1 year to December 2019. This will allow us to ensure that HH in these kebeles will be reached in 2020. With the endline in 2019 and the baseline in 2017, the only possibility for carrying out a midline evaluation is December 2018. This is only 1 year after the baseline study and 1 year before the endline study. The short time interval renders a midline ineffective; instead monitoring data will be used to assess progress against indicators.

A.1.4.5 Plan and implement endline study on community-level intervention

The endline study will be carried out in December 2019.

A.1.4.6 Negotiate agreement with the regional and woreda Bureaus of Agriculture and Health on the integration of OFSP into their official extension systems

These negotiations will be evidence-based and occur in 2020 (Y4 of the Activity).

A.1.4.7 Plan and implement training for 30 new woredas on OFSP sweetpotato production and proposal writing, and provide technical materials

This training will be evidence-based and occur in 2020.

A.1.4.8 Plan and implement assessment of urban consumer acceptance of OFSP roots and products and frequency of purchase/intake

This will be initiated in 2018, when OFSP supply to the market will start to take off.

A.1.4.9 Plan strategy for final write-up and dissemination of findings; implement the strategy

The strategy discussion will happen over 2019, and implementation over 2020.

ANNEX A. UPDATED LOGFRAME MATRIX

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2017			Y1	Y2	Y3	Y4		
Overall objective: Impact	Contribute to the reduction of vitamin A deficiency (VAD) and improved food security among children and women living in SNNP Region of Ethiopia.	1) Amounts of vitamin A and energy consumed by 13–15-months old rural children (disaggregated by sex) in participant compared to non-participant HH 2) Prevalence of reported diarrhea episodes and other morbidities during past 2 weeks of children aged < 5 years and principal women 3) Food insecurity score at HH level in rural areas	N.A.		1) At least a 50% improvement in vitamin A intake compared with control group and at least a 10% improvement in energy intake (rural only)					1) 24-hr recall consumption study conducted in a representative sub-sample of participant and control children 3) Baseline and endline surveys of principal women and reference children aged <5 years in all HH targeted for nutrition intervention (Questions between brackets)	1) No extreme drought severely deteriorating HH's food intake takes place. 2) At least 80% of the mother–child cohorts will not change residence during the intervention period 3) OFSP-processed products developed are culturally acceptable to urban consumers
			19% of reference children suffered of diarrhea past 2 weeks (M07_13)	19%	2) At least a 15% reduction in prevalence of morbidities compared with control group (rural only) **Eliminated: This indicator depends on factors outside the Activity's control**				16%		
			8.37 HFIAS score (M05_1B M05_9B)	8.37	3) At least 30% reduction in food insecurity score compared with control group (rural only)				5.86		
Specific objective(s): Outcome(s) (Oc)	Oc 1: Increased intake of vitamin A and improved food security among 15,000 children and 15,000 women of reproductive age and at least 61,000	1) Frequency of intake of vitamin A-rich foods during past 7 days by urban consumers and rural mothers and children aged <5 years 2) Rural woman's dietary diversity index for past 24 hr, including category for biofortified foods 3) % of rural children <2 minimal acceptable diet 4) For urban consumers: Awareness of vitamin A	N.A.		1) At least a 30% improvement in frequency compared with control group for rural HH; 10% higher index among urban consumers purchasing OFSP roots or products compared with those not purchasing	N.A.				Sources of information and methods used to collect and report (including who and when/how frequently). 1 & 2 & 3) RURAL: Baseline and endline surveys of principal women and reference children aged <5 years in all HH targeted for	Factors outside project management's control that may impact on the outcome-impact linkage. Drought raises prices of all foods, making affordable OFSP access difficult for urban consumers Costs of
			MDD-W=2.5 (M06_01) M06_20);	2.5	2) At least a 20% improvement in the woman's dietary diversity score				3.0		

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2017			Y1	Y2	Y3	Y4		
	urban consumers in 3 urban centers, achieved through an improved delivery of nutrition-sensitive agricultural and health extension services.	and its role in the body & awareness that OFSP is an excellent source of vitamin A	Bio-fortified food 2.5%		compared with control group (rural)					nutrition intervention; 1 & 4) URBAN consumers: Survey at local markets of adult consumers at end of intervention period: OFSP purchasers vs. non-purchasers	advertising skyrocket or rules restrict promotion campaigns
			YICF=2.6 (M06_01) (M06_20)	2.6	3) Increase of at least 30% of intervention compared with control children attaining minimal acceptable diet when using healthy baby tool kit; 15% when not using toolkit				3.1		
			% Bio-fortified food 3.3%	3.3%							
			% of children with minimum dietary diversity (4 food groups) 17%	17%					22%		
			MAD breastfed								
			MAD not breastfed								
			To be collected when OFSP is available on the market		4) At least 30% of urban consumers are aware of vitamin A and that OFSP is a good source of vitamin A; at least 20% of urban consumers know the role of vitamin A in the body				30%		
									20%		
Outputs	**Op1.1** 53 decentralized OFSP vine multiplication sites, operated by trained DAs of FTCs and	1) % of supported sites supplying local HH with vines at the end of the Activity 2) Vine multiplication sites provided vines to at	Planting materials for OFSP available only at national research	13 FTC & 13 private demo sites plus HARC and 2 farmers outside	1) 70% of 53 vine multiplication sites established operating at end of Activity	26	142	347	511	1) Multiplication site monitoring forms 2) Dissemination records from monitoring system	There is no devastating drought that severely affects water table Government

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2017			Y1	Y2	Y3	Y4		
	selected private farmers, provide 15,000 local HH with the inputs and knowhow required for a homestead production of OFSP	least 15,000 HH 3) % of trained HH are able to explain/demonstrate at least 3 correct OFSP production practices introduced by the extension workers	program	project area						3) Baseline and endline surveys among HH with children aged < 5 years	continues to support and operate FTCs Biofortification remains a priority in government strategies
			0 HH received vines	1,104 HH received vines	2) 15,000 HH are provided with vines	780	4,260	10,410	15,330		
			0 trained HH	0 trained HH	3) 75% of trained HH demonstrate adequate knowledge in homestead production of OFSP	0	3,195	7,810	11,500		
	Op1.2 At least 15,000 women and 10,000 men are aware of climate-smart OFSP's benefits, recipes for their everyday use, and essential child nutrition practices, gained through participating in 500 HLCs managed by trained community health workers.	1) % women and % men with improved nutritional knowledge score 2) % women who have shared their knowledge (2 recipes) with other mothers not in clubs (will randomly select their names for verification) 3) % of men and women reporting a change in the nutritious foods they grow or purchase			1) Average nutritional knowledge score among women at least 40% higher and among men at least 30% higher in intervention areas than in control areas					1 & 3) RURAL: Baseline and endline survey data in rural areas 2) Monitoring data concerning sharing recipes and follow up by HDAs	Men will agree to participate in HLCs Well- collected monitoring data permit attribution of knowledge gain to participation in HLCs
			0 (no recipes taught)	0	2) At least 30% of women in HLCs have shared OFSP-based recipes with other non-group members	0	1,420	3,470	5,110		
			0	0	3) At least 20% of women and men report that purchasing patterns have changed and there has been an increase in use of nutritious foods.	0	850	2,080	3,066		
			0	0		0	568	1,249	1,840		
	Op1.3 Improved supply of and demand for OFSP products in the urban	1) No. of months OFSP appears per year in 3 major urban markets & its price compared to white- & yellow-fleshed sweetpotatoes 3) No. of rural OFSP	No OFSP available	0	1) OFSP in market at least 6 months a year and sells at a price at least as high as white- & yellow-fleshed sweetpotatoes	0				1) Presence and prices of OFSP roots in at least 3 major urban markets collected monthly 2) Monitoring data from company	Agro-processor respects MOU requiring company to share sales figure data Market authorities & shopkeepers

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2017			Y1	Y2	Y3	Y4		
	areas with the increased consumption of at least 61,000 beneficiaries	producers supplying agro-processors 3) % of urban shoppers purchasing a baked or fried product during the past week that purchased an OFSP product	No processed products	0	2) At least 500 farmers (50% women) supply agro-processor(s)	0			500	receiving roots from farmers 3) Endline survey of urban consumers at 3 major markets	permit the collection of data Farmers are interested in commercialization opportunities & OFSP is competitive with alternative crops
			OFSP seasonally available in limited roadside selling points	0	3) 20% of shoppers in 3 target urban markets	0					
	Op1.4 After evaluating the effectiveness of the intervention during the first 3 years, recommended value for money models for large-scale OFSP dissemination (based on R1 & R2 experience) begin to be integrated into the SNNP Region's	1) No. of additional DAs/ HEWs or other government personnel trained about sweetpotato by those trained as ToTs 2) No. of woreda agriculture offices that have been exposed to the results of the intervention that have incorporated OFSP into their own programs. 3) No. of HH reached with OFSP vines in Y 4 & Y5 by extension personnel NOT backstopped by project	No trained staff	23 DA staff trained at first ToT, 13 DAs in step-down, and 13 HEWs in step-down	1) At least 50 additional trained staff members 2) At least 40% of those approached have included OFSP in their plans 3) At least 3,000 additional HH received OFSP vines not provided by the project	23 DA staff trained at first ToT, 13 DAs in step-down, and 13 HEWs in step-down	23	23	50	1) Monitoring data maintained by extension personnel; phone survey follow-up of ToT course participants 2) Monitoring data capturing visits to government officials to discussed sustained production at FTCs and other locations. 3) Monitoring system using dissemination forms developed by project and adopted/ adapted by public sector extension	MoA officials agree that extension personnel can use tools recommended by the project MoA officials permit FTCs to incorporate OFSP into their plans Extension personnel and others have sufficient financial resources to distribute vines in Y4 & Y5
			0	0		0	9	9	20		

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2017			Y1	Y2	Y3	Y4		
	agricultural extension and health promotion systems, with a potential to reach at least 3m women and children at risk of VAD		0	0		0	0	0	3000		
				Y1 (2017)	2018	2019	2020				Assumption
Activities	A.1.0.1. Inception: Recruitment, staff training, office, setup in Hawassa & Project launching workshop			*Completed*							*Funding, office space, candidates available*
	A.1.0.2. Hold monthly project progress review and planning meetings with consortium staff			*2 steering committee meetings*							*Frequency adequate for implementation*
	A.1.0.3. Hold annual stakeholder meeting, presenting project progress and receiving feedback			*1 meeting (May 2017)*							*Interest in the project*
	A.1.1.1. Design and implement qualitative research on women and men's roles along the OFSP value chain			*Completed*							*Genders have different role and/ or levels of control*
	A.1.1.2. Establish demonstration trials of OFSP in major sites & acceptability assessment			*26 demo plots is 13 kebeles*							*FTCs and private farmers interested, land and water available*
	A.1.1.3 Prepare and conduct ToT course for extension personnel concerning OFSP			*1 training course, 30 participants*							*Target group wants to be trained*
	A.1.1.4. Training and material support to the target FTCs and farmers-entrepreneurs producing and multiplying OFSP vines			*13 DAs trained, FTCs equipped with irrigation equipment*							*Equipment available in Ethiopia*

Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
		December 2017			Y1	Y2	Y3	Y4		
A.1.1.5. Form groups and train 15,000 female and 10,000 male farmers on OFSP production, storage, and vine conservation by trained agricultural DAs and health extension agents			*778 HH in HCLs*							*At least 15,000 HH interested in OFSP farming*
A.1.1.6. Design and implement strategy for vine dissemination to HH. Ongoing technical support. Consolidation of lessons for region-wide replication.			*1,1,04 HH received vines through Baby trials*							*OFSP varieties officially released*
A.1.1.7. Plan and implement events to promote dissemination to indirect beneficiaries			*Not yet*							*OFSP varieties released, multiplication on speed*
A.1.1.8. Integrate OFSP production into FTCs annual production plans and budgets			*Not yet*							*FTCs have market for OFSP*
A.1.2.1. Conduct formative research on the key barriers and boosters to OFSP production and consumption. Develop SBCC and promotion strategy, including use of health baby toolkit (bowl/spoon).			*Completed*							*Knowledge and awareness are barriers for adequate IYCF practices*
A.1.2.2. Design, plan, and train health extension personnel on nutrition and SBCC techniques			*24 HEWs trained*							*HEW require additional training on nutrition*
A.1.2.3. Plan and implement series of participatory learning events for 15,000 women and 10,000 men participating in HLCs			*Learning events planned*							*HH willing to participate*
A.1.3.1. Plan and implement rapid market assessment of sweetpotato value chain			*Seed system components completed*							*Planting stock, vines and roots are marketed*
A.1.3.2. Plan and implement support to improve supply of OFSP to the target urban markets.			*Not yet*							*Planting stock, vines and roots are marketed*
A.1.3.3. Design, develop, and test up to 3 OFSP processed products in collaboration with the private sector			*Not yet*							*Products economically attractive for private sector*

Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
		December 2017			Y1	Y2	Y3	Y4		
A.1.3.4. Identify private sector partner and provide technical support for establishing 1 OFSP-processed product value chain			*Not yet*							*Capable entrepreneurs exist*
A.1.3.5. Design and implement an OFSP promotion campaign in targeted urban areas			*Not yet*							*OFSP varieties officially released*
A.1.4.1. Design and implement monitoring system for R1 & R2 targets			*In place*							
A.1.4.2. Design system for collecting disaggregated cost data developed, drawing on Phase 1 experience and collect data			*In place, needs testing*							
A.1.4.3. Plan and implement baseline study on community-level intervention			*Data collection completed*							
A.1.4.4. Plan and implement midterm assessment			*To be skipped*							*Time span between baseline, midline, and endline is sufficient to allow for measurable changes*
A.1.4.5. Plan and implement endline study on community-level intervention			*To be moved to 2019*							
A.1.4.6. Negotiate agreement with the regional and woreda Bureaus of Agriculture and Health on the integration of OFSP into their official extension systems			*Not yet*							*Evidence confirms that approach is successful and cost-effective*
A.1.4.7. Plan and implement training for 30 new woredas on OFSP: sweetpotato production & proposal writing and provide technical materials			*Not yet*							*Evidence confirms that approach is successful and cost-effective*
A.1.4.8. Plan and implement assessment of urban consumer acceptance of OFSP roots and products & frequency of purchase/intake			*Not yet*							
A.1.4.9. Plan strategy for final write-up and dissemination of findings; implement the strategy			*Not yet*							

NOTE: MAD = Minimum acceptable diet

ANNEX B. AN UPDATED ACTION PLAN FOR FUTURE PROJECT ACTIVITIES[2]

Year													
	Half-year 1						Half-year 2						
Activity	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Implementing body (comment)
Example													*Example*
Preparation Activity 1(title)													Beneficiary or affiliated entity 1
Execution Activity 1(title)													Beneficiary of affiliated entity 1
Preparation Activity 2 (title)													Beneficiary or affiliated entity 2
Etc.													
Conclusion A.1.1.1. Design and implement qualitative research on women and men's roles along the OFSP value chain													CIP (editing and publishing report)
Conclusion A.1.1.2. Establish demo trials of OFSP in major sites & acceptability assessment													CIP (yield assessment, Mother–Baby trials)
A.1.1.3. Prepare and conduct ToT course for extension personnel concerning OFSP													CIP (2x5 days training)
A.1.1.4. Train and provide material support to the target FTCs and farmers-entrepreneurs producing and multiplying OFSP vines													CIP and PIN (ongoing, 16 new FTCs added)
A.1.1.5. Form groups and train 15,000 female and 10,000 male farmers on OFSP production, storage, and vine conservation by trained agricultural DAs and health extension agents													PIN (26 started n 2017 and 58 58/116 HLC added)
A.1.1.6. Design and implement strategy for vine dissemination to HH. Ongoing technical support. Consolidate lessons for region-wide replication.													CIP (and PIN)
A.1.1.7. Plan and implement events to promote dissemination to indirect beneficiaries													CIP (and PIN)
A.1.1.8. Integrate OFSP production into FTCs' annual production plans and budgets													CIP (only from 2018 onward)
A.1.2.1. Conduct formative research on the key barriers and boosters to OFSP production and consumption. Develop SBCC and promotion strategy, including use of health baby toolkit (bowl/spoon)													Emory (editing and publishing report and SBCC strategy)
A.1.2.2. Design, plan, and train health extension personnel on nutrition and SBCC techniques													PIN

[2] This plan will cover the financial period between the interim report and the next report.

Year													
	Half-year 1						Half-year 2						
Activity	1	2	3	4	5	6	7	8	9	10	11	12	Implementing body (comment)
A.1.2.3. Plan and implement series of participatory *A.1.4.1. Design and implement monitoring system for R1 & R2 targets* learning events for 15,000 women and 10,000 men participating in HLCs													PIN
A.1.3.1. Plan and implement rapid market assessment of sweetpotato value chain													CIP (reporting on seed system, assessment root market)
A.1.3.2. Plan and implement support to improve supply of OFSP to the target urban markets													CIP
A.1.3.3. Design, develop, and test up to 3 OFSP-processed products in collaboration with the private sector													CIP (first trials)
A.1.3.4. Identify private sector partner and provide technical support for establishing 1 OFSP-processed product value chain													CIP
A.1.3.5. Design and implement an OFSP promotion campaign in targeted urban areas													CIP, design and piloting; further roll-out to be decided later
A.1.4.1. Design and implement monitoring system for R1 & R2 targets													CIP, PIN, Emory
A.1.4.2. Design system for collecting disaggregated cost data developed, drawing on Phase 1 experience and collect data													CIP, PIN
A.1.4.3. Plan and implement baseline study on community-level intervention													CIP (data cleaning and reporting)
A.1.4.5. Plan and implement endline study on community-level intervention													Emory
A.1.4.5. Plan and implement endline study on community-level intervention													CIP
A.1.4.6. Negotiate agreement with the regional and woreda Bureaus of Agriculture and Health on the integration of OFSP into their official extension systems													CIP
A.1.4.7. Plan and implement training for 30 new woredas on OFSP sweetpotato production & proposal writing and provide technical materials													CIP
A.1.4.9. Plan strategy for final write-up and dissemination of findings; implement the strategy													CIP

ANNEX C. BENEFICIARIES/AFFILIATED ENTITIES AND OTHER COOPERATION

1.1 How do you assess the relationship between the beneficiaries/affiliated entities of this grant contract (i.e., those having signed the mandate for the Coordinator or the affiliated entity statement)? Please provide specific information for each beneficiary/affiliated entity.

The Activity is implemented by three entities: CIP, PIN and Emory, with CIP having the coordinator position. The operational relationship with PIN is ensured by two mechanisms: PIN is represented on the steering committee by four elements and there are biweekly meetings between PIN project manager and the CIP project manager to ensure coordination in daily operations, These meetings are supplemented by incidental meetings. There is also a direct collaboration for instance: (a) design and roll-out of irrigation equipment for FTCs, (b) selection of beneficiaries and implementation of vine dissemination, (c) contacts at kebele level for household listing and the study of the longitudinal and cross-sectional studies. The aim is to achieve full transparency in the communication.

Emory University is also represented on the steering committee, It has one staff member based in the Activity's office in Hawassa ensuring direct communication at the implementation level. Skype calls involving CIP's principal scientist, the project manager and Emory staff have been held to support more strategic decision making about the implementation of the baseline studies.

One key issue involving all three partners has been the setting up of HLCs. There have been tensions as the HLCs in year 1 have two objectives: the general nutrition education and training and dissemination of OFSP planting material to target group households and ensuring the collection of evidence with regard to the effectiveness of the HLCs and the Healthy Baby Toolkit through the longitudinal study (see A.1.4.3). These two objectives are to a certain level contradictory as the evidence collection requires a restriction of the age group of the children covered by these HLCs. These problems have been resolved but are still mirrored in the discrepancy between the number of households receiving vines (1,104) and the number enrolled in the HLCs (778). As the HLCs that will be established over the coming period will not longer be used for the longitudinal study there will be no age restriction and this problem will not affect future activities.

1.2 How would you assess the relationship between your and State authorities in the organisation Activity countries? How has this relationship affected the Activity?

Interaction with the government covers four levels: regional., zonal, *woreda* and *kebele*. At the regional level relations with the BANRD are cordial. The deputy director has participated in the stakeholder meeting and in the closure of the TOT. He has publicly supported the project and called on the zonal and *woreda* BANRD staff attending the training to support project implementation and incorporate OFSP in their routine activities.

The relation with the Ministry of Health is less intensive. A representative of the regional level participated in the stakeholder meeting; zonal and *woreda* and *kebele* staff participated in the TOTs in Chuko and Dilla organized by PIN. Staff of the BoH has participated in cooking demonstrations.

The relation will now intensify as HLCs are being rolled out and HEW and HDA-members will be engaged in the training of these groups.

There are signals that at the *woreda* and *kebele* level the coordination between CIP, PIN community facilitators, DAs and kebele leadership needs improvement. This is partially due to the huge amount of activities taking place during the last few months of 2018. Time for communication and coordination between all parties was extremely short and the demands on DAs and *kebele* leadership to support specific activities very high. Efforts have been made to improve communication. In March 1018 an additional stakeholder meeting will be held for *woreda* staff to inform them about progress and plans so that they feel more ownership over the project.

1.3 Where applicable, describe your relationship with any other organizations involved in implementing the Activity:

- The relation with SARI/HARC is intensive as it supplies trainers for the ToT, technical assistance for recipe development and cooking demonstrations. It is the main responsible for variety selection and participated actively in the discussions about vine dissemination and variety assessment and in part of the associated field activities. Finally, SARI/HARC is one of the three providers of planting material,
- The relation with the Nutrition and Food Science Department of Hawassa University is currently structured by the two nutrition studies that have dominated much of the activities in 2017. It is expected that in 2018 they will be involved in product development.
- Wolayta Sodo ATVET has become a key partner for the implementation of the TOT "Everything you want to know about sweetpotato". It has agreed to be the host for the additional 2018 edition as a step towards its institutionalisation within the ATVETs teaching activities.

1.4 Where applicable, outline any links and synergies you have developed with other actions.

- With CIP's BMGF financed SASHA project works is done with regard to the understanding of the seed system (traditional planting material production and sales by local multipliers) and the testing and dissemination of Triple S allowing interventions in two additional woredas (Wolayta Sodo and Hawassa Zuria).
- With CIP's capacity building project financed by Irish Aid the partnership with Wolayta Sodo ATVET is developed towards the institutionalisation of the TOT "All you want to know about sweetpotato".

1.5 If your organisation has received previous EU grants in view of strengthening the same target group, in how far has this Action been able to build upon/complement the previous one(s)? (List all previous relevant EU grants).

Not applicable.

ANNEX D. VISIBILITY

The Activity's first deliverable was a communication strategy that showed how the Activity would ensure the visibility of the EU-contribution. In line with this strategy during the Year 1 the following actions have been undertaken:

- The design of project logo reflecting EU support. The logo is present in emails, etc.
- The design of a letterhead and a template for PowerPoint presentations reflecting EU support. These templates are used in correspondence and presentations and posters
- Special stickers on the two project vehicles
- Banners for the stakeholder meeting and the ToT training "All you want to know about sweetpotato" exposed at the entrance of the venue (three in total)
- Signs at the 13 FTCs benefiting from investments through the project.

Visibility will increase when the formative research reports are published and the OFSP varieties currently under evaluation will be approved and officially released so that marketing can take off.

The European Commission may wish to publicise the results of Actions. Do you have any objection to this report being published on the EuropeAid website? If so, please state your objections here.

No objections

Name of the contact person for the Activity:

Roland Brouwer ……

Signature: ……

Location: …Hawassa, SNNPR, Ethiopia ……

Date report due: ……..……

Date report sent: …….

The International Potato Center (known by its Spanish acronym CIP) is a research-for-development organization with a focus on potato, sweetpotato, and Andean roots and tubers. CIP is dedicated to delivering sustainable science-based solutions to the pressing world issues of hunger, poverty, gender equity, climate change, and the preservation of our Earth's fragile biodiversity and natural resources.
www.cipotato.org

CIP is a member of CGIAR.

CGIAR is a global research partnership for a food-secure future. Its science is carried out by 15 research centers in close collaboration with hundreds of partners across the globe.

For more information, please contact CIP Headquarters:
Av. La Molina 1895, La Molina Apartado 1558, Lima, 12 Peru.
5-11-3496017 m.bellido@cgiar.org www.cipotato.org