



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

**MARCH
2021**



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

2020 Annual Report

March 2021

Submitted to:

The European Union

Submitted by:

International Potato Center (CIP)

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Contract: No. FOOD/2016/ 380-038

Reporting period: 1 January–31 December 2020

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of the International Potato Center and partners, and does not necessarily reflect the views of the European Union.



Table of contents

Acronyms.....	iii
Executive summary.....	iv
1. Results and Activities.....	1
1.1 Introduction and modifications to the original plan of intervention	1
1.2 Results	6
1.3 Activities.....	14
Annexes.....	40
Annex A. Updated logframe matrix	40
Annex B. Updated action plan for future project activities	46
Annex C. Beneficiaries/affiliated entities and other cooperation.....	48
Annex D. Visibility	50
 Tables	
Table 1. Annual progress against key milestones (woredas, kebeles, FTCs, DVMs, HLCs, direct beneficiary HH, and amount of cuttings disseminated)	vi
Table 2. Kebeles covered by the Activity by year of the start of the intervention, by treatment (colour), and woreda (between parentheses)	2
Table 3. Participants of scaling out trainings by gender per region/zone and woreda (2020)	3
Table 4. Beneficiary HH who received planting material of the new OFSP varieties in woredas outside the original project area (2019 and 2020)	3
Table 5. Summary of feedback from woredas and kebeles about the project	5
Table 6. DAs, HEWs, and HDAs trained since the start of the Activity	6
Table 7. Comparison between baseline and endline scores and between beneficiaries and controls for selected outcome variables	7
Table 8. Estimated number of urban consumers per month reached via the Activity	7
Table 9. Water resources and selected irrigation technologies for the FTCs in the selected kebeles of intervention districts	8
Table 10. Kebeles covered by the Activity and HLCs established by woreda and year of intervention	10
Table 11. Current status of investments in FTCs with work pending from 2019 with their water sources, water-lifting/ irrigation technologies, and status by woreda and kebele	16
Table 12. HLCs per kebele between 2017 and 2020 per kebele and per woreda	18
Table 13. DAs trained in agricultural step-down ToT by woreda and gender (2020).....	19
Table 14. HLC members and member HH participating in two rounds of Triple S ToT by woreda and gender (2020)	19
Table 15. Cuttings produced per variety and destination	20
Table 16. Amounts received for planting material per multiplier type per year over 2018–2020	21
Table 17. Dissemination of planting material to HLC members by woreda and cultivar (2020)	21
Table 18. HLC curriculum training participants by woreda, organisation, and gender (2020).....	23
Table 19. Root market (kg) by kind of market channel per month	29
Table 20. Summary of the assessment of HLC training sessions (%) in 2019–2020	34
Table 21. Summary of the results of HH visits to 3 members of each HLC after each session in 2019–2020.....	34

Table 22. Project impact by showing key indicator values for baseline and endline, intervention kebeles, sampled HLC members, and respondents who confirmed being HLC members, showing gain as the quotient of the beneficiary and control scores	36
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Figures

Figure 1. Attendance by HLC session for Batch 3 (December 2019–October 2020) and Batch 4 (November–December 2020).	10
Figure 2. Numbers and percentages of HLC member HH by the number of sessions they attended for the second, third, and fourth batches.	11
Figure 3. Number of harvested cuttings per variety per month.	20
Figure 4. Adoption rates of tested varieties at endline (November–December 2019).	22
Figure 5. Attendance rates as percentage of enlisted HH (right axes) and mean numbers of women and men attending (left axes) per HLC session for Batch 3 (December 2019–October 2020) and Batch 4 (November and December 2020).	25
Figure 6. Screen capture of dashboard’s home page.	26
Figure 7. Evolution of sweetpotato marketing in 2020 (cumulative kg).	27
Figure 8. Evolution of root supply between April and December 2020 by location and type of market.	28
Figure 9. Frequency of OFSP consumption of mother and child in HLC Batch 4 reported during follow-up house visits by session number.	35
Figure 10. Summary of key indicators for full, partial, and control HH at midline and endline.	37
Figure 11. Map of Ethiopia with the original intervention woredas (red) and the zones reached via scaling-out (coloured).	38

Photos

Photo 1. Plots at DVM Anteneh (left) and commercial farmer Eshetu (right) in Aleta Chuko, 31 January 2020. .	15
Photo 2. The wife of Mr Eyoel’s in their sweetpotato field in Mekelle, Aleta Chuko (15 December 2020). Mr Eyoel received vines from the Mekelle kebele FTC, as his family does not belong to an HLC. According to his wife, they ate the roots for three months during last harvest season. They also sold roots at home at 10 birr/heap. She also sold one big sack for 400 birr.	22
Photo 3. HDA volunteers at Shakua kebele (Dilla Zuria) receive their recognition certificates.	24
Photo 4. Roots brought by donkey carts to the CIP office in Hawassa.	28
Photo 5. Donkey drivers showing the quality of the roots (‘Alamura’ variety).	28
Photo 6. OFSP-enriched biscuits (left) and injera (right) at CIP’s office in Hawassa.	30
Photo 7. Sweetpotato promotion in Hawassa City (9 March 2020).	32
Photo 8. Mobile root promotion and sales in Hawassa city (1 October 2020).	33

Acronyms

BoANRD	Bureau of Agriculture and Natural Resource Development
CF	Community facilitator
CIP	International Potato Center
DA	Development agent
DVM	Decentralised vine multiplier
EU	European Union
FTC	Farmer training centre
HBT	Healthy baby toolkit
HDA	Health development army
HEWs	Health extension workers
HFIAS	Household Food Insecurity Score
HLCs	Healthy living clubs
HH	Household(s)
IYCF	Infant and young child feeding
MAD	Minimum acceptable diet
MLE	Monitoring, learning, and evaluation
MDDS	Minimum dietary diversity score
MMF	Minimum meal frequency
OFSP	Orange-fleshed sweetpotato
PIN	People in Need
QDBH	Quality Diets for Better Health
SBCC	Social behaviour change communication
SKP	Sweetpotato Knowledge Portal
SNNPR	Southern Nations, Nationalities and Peoples' Region
SSA	Sub-Saharan Africa
ToT	Training of trainers
VAD	Vitamin A deficiency

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) launched in 2017 and funded by the European Union. As its formal name is long, the implementers have developed a short moniker: Quality Diets for Better Health, which in a few words covers the Activity’s ambitions. The Activity is being implemented by the International Potato Center and partners People in Need and the Rollins School of Public Health at Emory University in three woredas in SNNPR in Southern Ethiopia, which are subdivided into 66 kebeles.¹ Of these, 42 were selected as having the right conditions for sweetpotato production. The Activity is structured around one intermediary outcome and four outputs.

During its fourth year (2020), the Activity has consolidated its activities in the 42 kebeles covered since the beginning of 2019. In addition, scaling-out and market development activities were developed in 37 woredas across nine zones and the urban centres of Hawassa, Shashemene, and Addis Ababa. The Activity was severely affected by the COVID-19 pandemic, but has been able to adapt in such a way that all its original direct beneficiary targets were met.

In its fourth year the Activity operated in five fields of action: research, extension, capacity building, value chain development, and monitoring and evaluation. Key achievements are summarised below:

- Research
 - research into a harvesting system for sweetpotato leaves
 - research into the adoption of good agricultural practices in Aketa Chuko (with Hawassa University)
- Extension
 - training of development agents (DAs) in 30 additional scaling-out woredas
 - training of 4,980 households (HH) in the four target woredas in sweetpotato farming, Triple S² (storage in sand and sprouting) for planting material conservation and healthy diets and nutrition practices
 - vine multiplication at 31 farmer training centres (FTCs) and 53 private farmers, including one group of female multipliers
 - disseminating quality vines of the three released orange-fleshed sweetpotato (OFSP) varieties (‘Alamura’, ‘Dilla’, and ‘Kabode’) to 4,980 HH
 - disseminating vines to 30 FTCs and at least 5,500 farmers in 33 additional woredas to support the scaling-out of OFSP and development of a reliable root supply to selected markets
- Capacity building in agriculture and nutrition
 - providing trainings and step-down trainings to agricultural and health extension workers (HEWs) and health development army volunteers, and establishing and completing the training of 166 healthy living clubs (HLCs)
 - revising (ie, shortening) of the HLC training programme in response to COVID restrictions
 - providing rainwater harvesting and irrigation equipment to FTCs

1. Woreda is an administrative division in Ethiopia (managed by a local government), equivalent to a district with an average population of 100,000. Woredas are composed of a number of kebeles, or wards, which are the smallest unit of local government in Ethiopia. Woredas are grouped into zones that are grouped into regions. The SNNPR is divided into 13 administrative zones, 133 woredas, and 3,512 kebeles, with over 80 ethnic groups.

2. For details about Triple S, see Section A.1.1.5.

- Value chain development
 - adding 197 farmers in five woredas with an estimated total acreage of about 20 ha designated for market-oriented OFSP production
 - identifying one possible commercial OFSP puree (steamed and mashed roots) maker and importing the necessary equipment
 - production and sales to consumers in Hawassa City and Dilla town of injera, yeast bread (dabo), and cookies prepared with OFSP by four small local businesses (all are female-managed)
 - facilitating the supply of over 26 tonnes of fresh roots to consumers and processors in Hawassa, Shashemene, and Addis Ababa
 - Holding five market promotion events in Hawassa and Shashemene
 - Producing three TV cooking shows to promote OFSP recipes for national audience
- Monitoring and evaluation
 - continued implementation and improvement of the HLC quality monitoring system
 - analysing endline data and writing up the results
- Gender inclusiveness and responsiveness
 - making a conscious effort to maintain, as much as possible, gender equity in trainings
 - supporting a women's group of vine multipliers
 - engaging female food-processing businesses in the value chain development

The Activity is aligned with the original logframe (see Annex A) and achieved or exceeded its key targets with respect to vine multiplication capacity and number of HLCs and direct beneficiary HH (Table 1). There is no final number of urban beneficiaries, but calculations on the basis of monthly market supply indicate that the Activity reached its original target of 61,000 urban beneficiaries.

Unlike other sub-Saharan African countries, there is not a widespread tradition of sharing to build on. Farmers have largely preferred to retain all of the vines for their own farms or buy it from local farmers ("traditional vine multipliers"). Baseline data already indicated that only about a quarter of sweetpotato farmers received planting material from other farmers.

As a result of this culture of not sharing, the number of indirect beneficiaries through the sharing of vines among neighbours in the intervention kebeles estimated on endline data is around 3,400 HH. While this is below the adjusted target of 40,000, compared with the total number of residents registered by the governments of these kebeles (ie, 22,300 HH), around 57% of the population in these kebeles has access to the nutritious sweetpotato varieties.

The targets regarding the number of DAs trained, the number of beneficiary HH that received vines via extension workers who are not backstopped by the Activity, and the number of woredas reached via scaling-out activities were all exceeded.

A detailed summary of the Activity's progress against outcome, output, and activity indicators can be found in the updated logframe in Annex A.

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

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

Table 1. Annual progress against key milestones (woredas, kebeles, FTCs, DVMs, HLCs, direct beneficiary HH, and amount of cuttings disseminated)

		Y1 (2017)		Y2 (2018)		Y3 (2019)		Y4 (2020)		Total		Remark
		Planned	Done	Planned	Done	Planned	Done	Planned	Done	Planned	Done	
No. of woredas	Cumulative	3	3	3	4	3	4	3	4	3	4	One woreda added
No. of kebeles		13	13	29	24	41	42	41	42	41	42	One kebele added
No. of FTCs established as vine multiplication sites		10	13	20	24	32	42	32	41	32	41	1 FTC without land; 31 actually multiplied
No. of DVMs established as vine multiplication sites		3	13	9	24	9	42	9	53	9	53	Decision to pair one DVM with each FTC
No. of HLCs served per multiplier (FTC or DVM)	Annual	2	2	4	4.5	5	5.0	4	2.0	10.0	6.1	More multipliers than planned
No. of HLCs established and trained		26*	26	116	109	205	210	164	166	511	511	Over 15,000 target
No. of HH targeted (30/club)		780	778	3,480	3270	6,150	6,300	4,920	4980	15,330	15,328	
No. of cuttings to be provided for each HH		600	150	600	600	600	600	600	600	600	.577	Per HH to cover 100 m ²
Total no. of cuttings (1,000)		468	165.6*	2,088	1,962	3,690	3,780	2,952	7,582	9,198	13,490	Supply to scaling out
No. of cuttings/multiplier required		36,000	-	72,000	-	90,000	92,200	72,000	90,262	173,547	160,590	First year used external multipliers

Note: DVM = decentralised vine multiplier.

*1,104 HH received vines

1. Results and activities

1.1 Introduction and modifications to the original plan of intervention

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 (EU). The Activity, also known under its short moniker “Quality Diets for Better Health” (QDBH), is implemented by the International Potato Center (CIP) and partners People in Need (PIN) and the Rollins School of Public Health at Emory University (Emory) in the Sidama and Gedeo zones in SNNPR in Southern Ethiopia. The Activity is structured around one intermediary outcome and four outputs (discussed below). The intermediary outcome is an increased intake of vitamin A and improved food security by 15,000 rural households (HH) and 61,000 urban consumers. The four output targets are (summarised) below:

- Fifty-three vine multiplication sites provide 15,000 local HH with inputs and know-how for production of orange-fleshed sweetpotato (OFSP).
- At least 15,000 women and 10,000 men are aware of the nutrition benefits of OFSP and of essential child nutrition practices.
- At least 61,000 urban consumers benefit from improved supply of fresh and processed OFSP.
- The Activity’s successful intervention models are beginning to be integrated in SNNPR’s agricultural and health extension systems.

At inception, the Activity was expected to operate in 41 kebeles in three woredas (Aleta Chuko, Dilla Zuria, and Wonago). In early 2018 it became clear that some of these kebeles were not suitable for sweetpotato farming or were benefitting from other, overlapping actions. For that reason, and at the request of the local governments, several kebeles were substituted and a new woreda (Kochere) was added to accommodate the government’s requests. In this way it was possible to maintain the total numbers of kebeles in both zones. **Error! Reference source not found.** contains a full list of the kebeles and woredas with the year of the start of the Activity’s intervention there. The colouring refers to the treatment groups defined in the longitudinal study carried out by Emory and the cross-sectional study carried out by CIP.³

Along its implementation period, the Activity has faced various external factors that affected its capacity to execute actions in the field. Unfortunately, 2020 was no exception. One of these factors is the COVID-19 pandemic. In early April 2020 the government declared a state of emergency, closing schools and forbidding meetings and gatherings in an attempt to curtail the spread of COVID-19. As a result, planned trainings and promotion events had to be cancelled, suspended, or modified. Working-from-home and travel restrictions implied dramatic modifications of the staff’s working routine for most of the year.

COVID has also had financial implications. The Activity provided personal protection equipment such as masks, sanitiser, and soap and water to agricultural workers engaged in the harvesting of vines and to participants in the sessions with the healthy living clubs (HLCs). Moreover, at the request of the SNNPR regional Bureau of Agriculture and Natural Resource Development (BoANRD), the Activity helped acquire personal protection equipment for government agricultural extension workers. Finally, it donated 4.1 tonnes (t) of OFSP roots to support disadvantaged and vulnerable people in

3. Full treatment (green) refers to HLCs where beneficiaries receive OFSP, nutrition training, and a bowl and slotted spoon in a so-called healthy baby toolkit. Partial treatment (orange) implies that the HLC members receive OFSP and nutrition training. Control (yellow) means that they do not receive any benefit until the study ends. The remaining kebeles are not covered by the longitudinal and cross-sectional studies. For more details see the description under A.1.4.5.1.

Hawassa via initiatives of Hawassa University and an umbrella of NGOs defending the interests of people with handicaps.

In June Sidama was officially separated from SNNPR to become Ethiopia's tenth regional state. The event was celebrated without significant violence or disruptions. The result has been an upgrade of the Sidama zonal government to regional status and a loss of authority for the SNNPR agencies. The institutional implications for the Southern Agricultural Research Institute and the Hawassa Agricultural Research Center are still not clear. Both are partners in the Activity and key agents in the sweetpotato seed system. In the short term, however, this major change did not affect our collaborations with these partners.

Table 2. Kebeles covered by the Activity by year of the start of the intervention, by treatment (colour), and woreda (between parentheses)

Y1 (2017)	Y2 (2018)	Y3 (2019)
Andida (DZ)	Anchebi (K)	Shakiwa (DZ)
Holena (DZ)	Biloya (K)	Gola (DZ)
Amba (DZ)	Buno (K)	Bula (DZ)
Tokicha (W)	Chichu Woyama (AC)	Akesho (DZ)
Dangora Eleicho (AC)	Chiko Woyama (AC)	Deko (W)
Dibicha (AC)	Gure (AC)	Dangora Kebado (AC)
Miridicha (AC)	Halo (AC)	Gunde (AC)
Chichu (DZ)	Hase Haro (W)	Shigedo (DZ)
Sisota (DZ)	Jeldo (K)	Tumticha (DZ)
Bele Bukisa (W)	Kara Soditti (W)	Gambela (AC)
Rufo Waema (AC)	Lela Honcho (AC)	Tesso (AC)
Dangora Morocho (AC)	Mekela (AC)	Loka Dama (AC)
Loko Haytala (AC)	Mekonisa (W)	Debeka (AC)
	Otilcho (DZ)	
	Sigiga (K)	
	Tumata Chirecha (W)	

Green: Full intervention; Orange: Partial intervention; Yellow: Control
Woredas: AC = Aleta Chuko; DZ = Dilla Zuria; K = Kochere; W = Wonago

Also in June ethnic violence erupted in Oromia upon the murder of a popular singer. One of the most hit cities was Shashemene, about 25km to the north of Hawassa on the road to Addis Ababa. While this affected the Activity's attempt to develop the OFSP market in Ethiopia's most populous city, the capital, it did not significantly disrupt actions in Sidama and SNNPR.

In November the federal government launched an armed intervention in Tigray, which had no direct impact on the Activity besides the tightening of safety protocols for field work. However, the ability to communicate using internet with those outside of SNNPR was affected for a number of weeks during the past year, understandably causing stress among staff and stakeholders.

According to the work plan, the Activity should achieve the uptake of OFSP by 30 additional woredas as part of the scaling strategy for exposure to OFSP beyond the rural HH in the target woredas. To accomplish this, four different actions were developed. One was the training of 271 development agents (DAs) and zonal experts (Table 3). The second was the dissemination of planting material to farmer training centres (FTCs) and farmers in these woredas (Table 4). The third action was the development of OFSP supply to urban markets. As part of this third action, 130 farmers in three woredas (Boreda, Sodo Zuriya, and Damot Sora) who were already engaged in sweetpotato

production for the national market received 6,000 cuttings each. In this way, the Activity hopes to integrate OFSP roots into the already existing sweetpotato supply chains. The fourth and last action concerns policy and governance.

Table 3. Participants of scaling out trainings by gender per region/zone and woreda (2020)

Zone/ Region	Woreda	Participants			Zone/ Region	Woreda	Participants			
		Male	Female	All			Male	Female	All	
Sidama	Bilate Zuriya	7	1	8	Kembata Tembaro	Kacha Bira	8	1	9	
	Dara	8	0	8		Kedida Gamela	6	3	9	
	Aleta Wondo	7	1	8		Hadero Tunto	7	2	9	
	Dale	7	1	8		Zone ANRD	2	0	2	
	Lokabaya	8	0	8		Gedeo	Chorso	8	0	8
	Dara Otilicho	7	1	8	Gedeb		8	0	8	
	Bona	8	1	9	Yirga Cheffe		7	1	8	
	Bursa	8	1	9	Wolayita		Dugna Fango	7	2	9
	Shebedino	8	1	9			Damot Woydie	8	2	10
	Wondo Genet	8	2	10		Damot Pulasa	9	0	9	
Gamo	Gerese	8	1	9		Kindo Koyisha	9	1	10	
	Arbaminch Zuriya	9	1	10		Offa	9	0	9	
	Boreda	8	1	9	Boloso Sore	9	0	9		
	Zone ARD*	3	0	3	Sodo Zuriya	8	0	8		
	Hadiya	Siraro Badawacho	9	0	9	Zone ANRD	1	0	1	
Mirab Badawacho		7	1	8	Konso	Kena	8	1	9	
						Karat Zuriya	9	0	9	
						Zone ANRD	1	1	2	
Total (4 zonal and 30 woreda-level bureaus of agriculture staff)							244	27	271	

*ARD = Agricultural and rural development

Table 4. Beneficiary HH who received planting material of the new OFSP varieties in woredas outside the original project area (2019 and 2020)

Zone/Region	Woreda	Year	Male-headed HH	Female-headed HH	Total	Female (%)
Gamo	Arba Minch Zuriya ¹	2020	148	11	159	7
	Boreda	2020	160	20	180	11
	Geresse	2020	178	2	180	1
	Mirab Abaya	2019	104	4	108	4
Gedeo	Chorso	2020	163	17	180	9
	Gedeb	2019	-	-	-	-
	Gedeb	2020	144	36	180	20
	Yirgacheffe	2019	-	-	-	-
	Yirgacheffe	2020	165	15	180	8
Hadiya	Mirab Badiwacho	2020	169	11	180	6
	Misrak Badiwacho	2019	100	8	108	7
	Siraro Badawacho	2020	161	19	180	11
Kembata	Hadero Tunto	2020	154	26	180	14
	Kacha Birra	2020	170	10	180	6
	Kedida Gamela	2020	165	15	180	8
Konso	Karat Zuriya	2020	174	6	180	3
	Kena	2020	168	12	180	7
Oromia	Abaya	2019	306	32	340	9

Zone/Region	Woreda	Year	Male-headed HH	Female-headed HH	Total	Female (%)
Sidama	Aleta Wondo	2020	174	6	180	3
	Bilate Zuriya	2020	168	12	180	7
	Bona	2019	-	-	-	-
	Bona	2020	161	19	180	11
	Boricha	2019	-	-	-	-
	Bursa	2019	-	-	-	-
	Bursa	2020	167	13	180	7
	Dale	2020	172	8	180	4
	Dara	2020	170	10	180	6
	Dara Otilicho	2020	154	26	180	14
	Hawassa Zuria	2019	748	52	800	7
	Loko Abaya	2019	-	-	-	-
	Loka Abaya	2020	150	30	180	17
	Shebedino ²	2020	88	12	100	12
	Wondo Genet	2019	-	-	-	-
	Wondogenet	2020	164	16	180	9
Wolayita	Boloso Sore	2020	132	48	180	27
	Damot Gale	2019	-	-	-	-
	Damot Pulasa	2020	159	21	180	12
	Damot Sore	2020	167	13	180	7
	Damot Woyde	2020	162	18	180	10
	Dugna Fango	2020	162	18	180	10
	Humbo	2019	-	-	-	-
	Kindo Koyisha	2020	176	4	180	2
	Offa	2020	156	24	180	13
	Sodo Zuryia	2019				
2019	14 woredas		1,828	128	1,956	7
2020	30 woredas		4,801	498	5,299	9
Total			6,629	626	7,255	9

1. Twenty-one farmers have withdrawn because they were not prepared to take the vines. Their quota has been distributed among the prepared farmers.

2. The woreda recruited 100 HH and the number of cuttings was adapted to the number (63,600).

To muster support the Activity has organised annual stakeholder meetings at zonal and regional levels; however, owing to the pandemic, these meetings had to be cancelled. Instead, a written brief with a summary of activities and outcomes was shared with the kebele and woreda partners with the request to provide feedback (Table 5). Activity staff met individually with zonal and regional-level authorities to discuss the inclusion of OFSP in their strategies and annual planning process. Out of the 41 woredas with which the Activity has been interacting, so far eight have added OFSP to their annual plans. Discussions with regions and zones are still ongoing and will be a major focus during the first half of 2021.

Table 5. Summary of feedback from woredas and kebeles about the project

Is the project relevant?	What are the most important improvements achieved?	What suggestions do you have to increase the effectiveness of the project?	What recommendations would you make to others who would want to work with a similar project?
Yes, food insecurity and vitamin A deficiency (VAD) are common	Awareness and means to improve nutrition and vitamin A status	Cover all HH irrespective of their composition/age group	Follow a similar approach as QDBH
Yes, it increased knowledge/skill nutrition	Capacity to improve diets of HH, mothers and children, and capacity health agents	Provide ongoing support to members of HLCs and improve monitoring of their members	Engage with CIP and PIN to obtain the lessons learned
Yes, it increased knowledge/skill sweetpotato farming	Improved planting material, (irrigation) capacity at FTCs, sweetpotato-farming knowledge, income from vine multiplication and sales, awareness about vine conservation	Train and establish more multipliers; support market linkage development; add new varieties; set up award system for innovative farmers; include additional crops	Try to increase the coverage in the woreda instead of remaining limited to a selected number of kebeles
Yes, it increased awareness about the nutritional value of OFSP	Farmers are capable of using OFSP to improve nutrition status of their HH		Carry out good formative assessment of problems and bottlenecks and possible solutions at the start of a project
	HLC sessions empowered women		
	Motorbikes increased the capacity of local extension services		
	Exemplary participatory training approach	Develop video-assisted HLC trainings	
	Improved knowledge about COVID-19		

A final observation concerns the design of the trans-sectional endline study. During baseline a full list of residents of the 26 kebeles that are part of this study was collected. From this list, HH with children under 24 months old were selected proportionally to the number of the residents in each kebele. During endline, the HH-listing exercise was repeated and three different samples were extracted: one from membership lists of the HLCs that initiated their training in 2017 and completed it in 2018; one from membership lists of the HLCs that initiated their training in 2018 and completed it in 2019; and one from the HH on the full HH list that were not an HLC member but had a child within the eligible age window. In the intervention kebeles, these HH are so-called neighbours: their responses provide information about the possible spin-over from project beneficiaries (HLC members) to other community members. In the control kebeles (where HH recruitment and vine dissemination had been done prior to endline data collection in order to allow for a full year of intervention in these communities), these HH are the controls. The big advantage of this sample frame is that it allows for a good comparison between beneficiaries and non-beneficiaries. The main disadvantages, besides the increase in sample size and hence effort and costs, are that there is no direct comparison between baseline and endline results and that the main tool to assess the impact of the project is comparison between the subsamples at endline.

1.2 Results

The discussion in Section 1.2 follows the logframe and presents in greater detail the Activity's achievements from its inception through 31 December 2020.

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 centres, achieved through an improved delivery of nutrition-sensitive agricultural and health extension services

The Activity provides integrated nutrition-sensitive and health extension training through HLCs, with each HLC comprising around 30 HH. Training sessions are facilitated by members of the health development army (HDA), volunteers who received a specialised three-day training to become acquainted with the HLC curriculum. Each month, before a session, a more in-depth training was given to ensure that HDA members are fully versatile with that session's topic. HDAs were supervised by health extension workers (HEWs) and received support from community facilitators (CFs). The latter were recruited by PIN to support the implementation of the Activity at grassroots level.

The Activity has clearly contributed to increased capacity of the agriculture and health extension services to deliver the messages supporting nutrition-sensitive agriculture, successful farming of sweetpotato, and the adoption of healthy diets. Table 6 summarises the number of DAs, HEWs, and HDAs from the four intervention woredas who since the start of the Activity have participated in the Activity's four main trainings: (1) "Everything You Ever Wanted to Know about Sweetpotato" for training of trainers (ToT); (2) step-down training for DAs; (3) behaviour change communication strategy (BCCS) training for HEWs; and (4) HLC facilitation/curriculum training for HEWs and HDAs. Table 6 clearly shows that, over the Activity's implementation period, it successfully built capacity among these three groups of grassroots extension workers to reach 1,189 in total.

Table 6. DAs, HEWs, and HDAs trained since the start of the Activity

Category	Type of Training	2017	2018	2019	2020	Cumulative
DAs	"Everything You Ever Wanted to Know about Sweetpotato"	13	11	27	271*	322
	Step-down	13	25	44	31	113
HEWs	BCCS training	24	25	86	0	135
	Curriculum training	-	23	43	42	108
HDAs	Curriculum training	26	109	210	166	511
Total		76	193	410	510	1,189

Note: DAs and HEWs were government employees.

*One-day trainings in 30 scaling-out woredas, which focused on seed and production management and health advantages of OFSP, replaced the planned ToT (see Table 3 for details).

The combined effort of Activity staff and the agricultural extension workers and HEWs has allowed 511 HLCs to be trained with 15,328 member HH in 42 kebeles in four woredas (Aleta Chuko, Dilla Zuria, Wonago, and Kochere). This means that the Activity achieved its target of 15,000 trained HH with a 330 contingency.

The Activity's targets specified that approximately 15,000 women and 10,000 men should be reached—that is, male participation should be at least two-thirds (0.67) of female participation. While in previous years the ratio of males to females was around 0.85, in 2020 this figure was around 0.63. This might be because, owing to COVID-19, the number of attendants had to be restricted and preference was given to women. It is clear, however, that the overall targets for women and men was met, with about 11,700 men participating.

Impact on nutrition among beneficiary HH was measured via a longitudinal study of the members of the HLCs that were established in 2017 in the first 13 intervention kebeles (**Error! Reference source not found.**) and of a group of HH in seven control kebeles. Results of the longitudinal study covering the 2017 HLC members showed that during the food-insecure season (July–August), food security and nutrition knowledge of the Activity’s beneficiary HH was significantly better than those of non-beneficiaries. Results also showed significantly greater dietary diversity for HH and children, with results for children’s dietary diversity being significantly greater for those in the full intervention than those in the partial intervention or control groups.

The results of the cross-sectional endline study confirm these results: Mean dietary diversity scores and numbers of days of intake of vitamin A-rich foods were significantly higher during the seven days prior to the interview for women and children of beneficiary HH in the treatment and control kebeles (**Kebele**), among HH listed as an HLC member (**Assigned**), and among HH who declared that they were HLC member even though some were not on the assigned list (**Self-declared**) and their respective controls (Table 7).

Table 7. Comparison between baseline and endline scores and between beneficiaries and controls for selected outcome variables

	Baseline	Endline						
		Kebele		Assigned		Self-declared		
	All	All	Benef.	Contr.	Benef.	Contr.	Benef.	Contr.
No. of HH	1,445	2,605	996	1,609	953	1,112	631	893
% received OFSP to plant	3.5	40.4	57.4	13.1	70.1	30.0	85.6	8.5
% of OFSP in harvest	1.5	23.7	30.8	2.6	33.8	2.9	36.8	1.7
Mean HFIAS	8.38	7.66	7.40	8.06	7.49	8.14	6.70	8.28
Mean days OFSP – child	0.05	0.20	0.29	0.06	0.33	0.06	0.46	0.04
Mean vitamin A total days (child)	2.11	1.73	2.73	1.84	2.39	1.75	2.85	1.67
Mean dietary diversity score (mother)	2.94	2.76	2.85	2.63	2.83	2.63	3.05	2.56
Mean child dietary diversity score	2.93	2.91	2.98	2.80	3.00	2.78	3.25	2.73

Note: Benef. = beneficiaries; Contr. = controls; HFIAS = Household Food Insecurity Score.

At baseline (ie, at the start of the Activity), OFSP was virtually unknown among urban consumers in Hawassa. In 2019 an estimated 17,700 consumers were reached during a marketing pilot study and promotion events. In 2020 the Activity marketed over 26 t of roots, with a peak in September, when about 53,000 consumers were reached (Table 8).

In summary, we conclude that the Activity achieved its objectives with regard to dietary change and OFSP consumption among the rural households in its intervention communities and urban consumers despite a general deterioration of the dietary condition, most likely due to macro-factors such as political instability and economic crises.

Table 8. Estimated number of urban consumers per month reached via the Activity

	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sweetpotato on the market (kg)	578	1,171	900	360	1,110	1,542	8,862	6,015	6,087
Estimated consumers	3,500	7,000	5,400	2,200	6,700	9,300	53,200	36,100	36,500

Output 1.1 (Op 1.1)

A total of 53 decentralised OFSP vine multiplication sites, operated by trained DAs from FTCs and selected private farmers, provide 15,000 local HH with the inputs and know-how required for homestead production of OFSP.

A total of 83 demo plots were set up on FTCs and private farms in all 42 kebeles in the four Activity woredas. As the Activity was rolled out, FTCs were evaluated and equipped with appropriate water-harvesting and irrigation technologies to ensure that planting material in future will be available at the end of the dry season (Table 9). FTC staff were trained in sweetpotato multiplication, farming, and nutrition and in financial management. Individual farmers—decentralised vine multipliers (DVMs)—were provided with planting material and trained in vine multiplication to produce quality planting material.

Table 9. Water resources and selected irrigation technologies for the FTCs in the selected kebeles of intervention districts

Water Sources	No. of FTCs	Suggested Water-Lifting and Irrigation Technologies
River or spring	14	Solar water pumps integrated with either drip irrigation or manual irrigation using a bucket or a hose (bunch irrigation)
Shallow wells	5	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	23	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. All the FTCs will use bunch or furrow irrigation techniques.

During implementation, several farmers (including one group of women) showed interest in multiplying planting material for the Activity. In 2020, 31 FTCs and 53 DVMs produced 7.5m cuttings for HLC members and for farmers in 30 woredas deemed to have potential for the development of OFSP farming in the future.

The Activity team is concerned about the sustainability of this multiplication capacity. Therefore, it has begun to work with the relevant government agencies at woreda, zonal, and regional levels to support the establishment of cooperatives that meet the legal requirements for quality declared seed production and supplying markets outside the Activity's current intervention area.

The Activity has also been promoting Triple S, a root-based innovative and cheap technology that allows farmers to preserve planting material across the dry season without exposing it to risks such as drying out, grazing, and contamination by viruses (discussed in Section A.1.1.5, page 18).

Output 1.2 (Op 1.2)

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

Residents of the Activity's intervention area with children under two years of age are mobilised to participate in HLCs, one of which has around 30 member HH. Both parents (mothers and fathers) and grandmothers are encouraged to participate. HLC members receive free OFSP planting material and are trained in OFSP and essential infant and young child feeding (IYCF) techniques during nine monthly sessions. During HLC sessions, participants are informed about sweetpotato farming, the importance of vitamin A and diversified diets, meal frequency, portion size, and consistency of food. There are also cooking demos with five recipes for leaf and root preparation, emphasising their

integration with other ingredients to produce safe and nutrient adequate complementary foods for young children.

Table 10 shows the roll-out of the project across the selected kebeles in its target woredas since 2017. In 2020 no new kebeles were added. In the kebeles that had been enlisted during the previous years, the Activity established 166 new HLCs with 4,980 member HH. As a result, the total number of HLCs established is 511 with 15,328 HH—well above the target of 15,000.

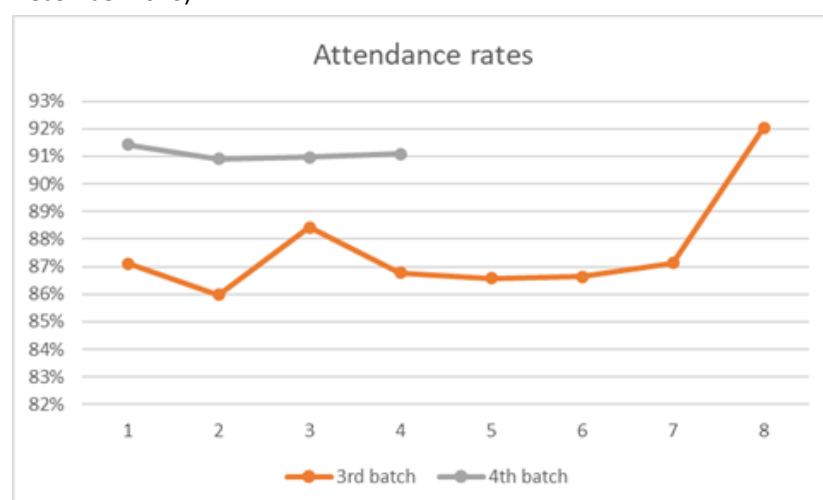
Table 10. Kebeles covered by the Activity and HLCs established by woreda and year of intervention

Woreda		2017	2018	2019	2020	Cumulative
Aleta Chuko	Kebele	6	12	18	18	18
	HLC	12	54	90	66	216
Dilla Zuria	Kebele	5	6	12	12	12
	HLC	10	29	60	45	105
Wonago	Kebele	2	6	7	7	7
	HLC	4	26	35	23	75
Kochere	Kebele	0	0	5	5	5
	HLC	0	0	25	30	55
All	Kebele	13	24	42	42	42
	HLC	26	109	210	166	511

The COVID-19 pandemic required us to change the training programme. From the end of March onwards, the government banned meetings of more than four persons; the ongoing HLC training programme had to be suspended. And though the programme resumed in August, meetings could have no more than 20 people, so HLC sessions had to be split in two. The final batch received its planting material around May–June, but the start of their training had to be postponed until November so that the training programme of the previous batch could be completed. To allow the training to be completed by December 2020, in line with the Activity’s budget and work plan, we restructured the curriculum: The original eight nutrition sessions were rescheduled as four, and items which according to previous evaluations were deemed the most relevant to the participants were prioritised.

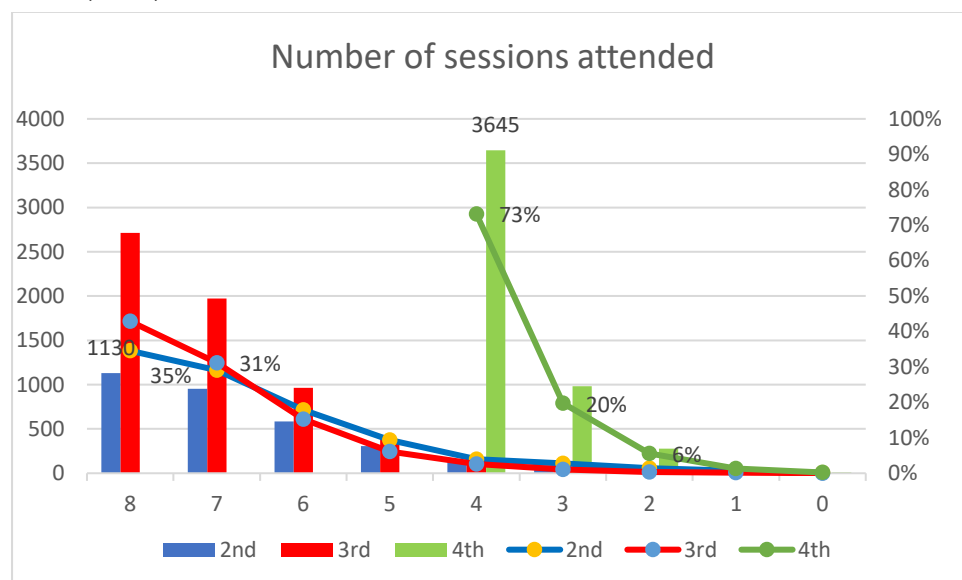
Overall content covered did not change; however, to accommodate this restructuring, we minimised or removed some reinforcing activities. Yet audio stories, cooking demos, and taste testings were retained as priority activities to support behaviour change, as participants identified these in our earlier process evaluation as critical and relevant activities (for details, see page 22).

Figure 1 shows the attendance rates for the two batches implemented in 2020. On average, about 88% of the registered HH participated in Batch 3, with a peak of 92% at session 8. For HH in Batch 4, the average rate was slightly higher (91%), with a peak at session 1. Session 8 of Batch 3 happened in October 2020 and session 1 of Batch 4 in the following month (November 2020).

Figure 1. Attendance by HLC session for Batch 3 (December 2019–October 2020) and Batch 4 (November–December 2020).

Error! Reference source not found. summarises the number of sessions that HH of the final three batches of HLC HH attended. Of Batch 2 and Batch 3, 35% and 43%, respectively, attended all eight sessions; 90% attended five sessions or more. Batch 4 outperforms the previous batches, with 73% attending all four sessions.

Figure 2. Numbers and percentages of HLC member HH by the number of sessions they attended for the second, third, and fourth batches.



HLC sessions are facilitated by DAs and HDAs who are trained via a step-down model. On the basis of the HLC monitoring data, one may conclude that the Activity has successfully increased the target population's awareness of OFSP roots and leaves as an option to improve diets. Data from follow-up visits to HLC member HH showed that of the third batch of HLC members, on average 75% (up from 46% in Batch 2) of the mothers and 70% (up from 43% in Batch 2) of the children had eaten OFSP roots in the month prior to the visit. The adoption of sweetpotato leaves was similar (74% for both).

Output 1.3 (Op1.3)

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

Since September 2017 the Activity monitored availability and prices on a monthly basis in the markets Dilla, Chuko, Wonago, and Hawassa City. Monitoring covered sweetpotato, major staple foods, and other specific vitamin-rich foods. These data allowed for comparison of the costs of calories and vitamin A from different sources.

Until late 2019, the data showed that there was no OFSP on the monitored markets, suggesting that most OFSP produced was consumed at home. Until November 2019, the alternative OFSP varieties that were tested under this Activity had not been released. For that reason, in that year only small-scale marketing activities were undertaken to pilot the four pipeline varieties. In 2020, with the official release of three new and improved OFSP varieties, this changed and the Activity developed a more aggressive and larger scale approach to the marketing of OFSP.

The Activity's design assumed that promoting OFSP farming under HLC beneficiaries and their neighbours would automatically increase supply to urban markets. But market monitoring showed that the target woredas were not traditional supply hubs for the urban markets of Dilla and Hawassa City. For that reason, additional actions needed to be undertaken to ensure market supply.

In 2019 the Activity recruited 800 farmers in Hawassa Zuria and supplied them with 600 cuttings each. It was assumed that Hawassa Zuria, due to both its maize-dominated farming system and proximity to Hawassa town, could be transformed easily in a sweetpotato market supply area. But it appeared that only a small number of around 20 of these 800 farmers actually sold to the Hawassa market. The rest sold their harvests locally or used them for home consumption.

In light of that experience, the team recruited 49 new farmers in Hawassa Zuria, who received 6,000 cuttings each to cover around 5 ha. In Abaya (Oromia) 340 farmers were enlisted who were expected to produce for the Dilla market. On the basis of the same experience from Hawassa Zuria, 17 larger scale, more commercially oriented farmers were added. They each received on average 6,500 cuttings, enough to cover 2 ha in total. Finally, 130 commercial farmers in Boreda, Damot Sore, and Sodo Zuriya woredas received 6,000 cuttings each. These farmers were selected because they already produced white-fleshed varieties for sale. They were convinced to try orange-fleshed cultivars, in an attempt to integrate OFSP into the existing sweetpotato commodity chain.

The second intervention in Hawassa Zuria has been successful. Between April and December 2020, 42 farmers provided 33,000kg to supply processors and retailers in Hawassa, Shashemene, and Addis Ababa.

In 2019 DAs of 14 woredas were trained during the 2019 ToT. As a follow-up, all these woredas received planting material. However, in several cases the woreda government never provided clear data about the beneficiaries reached, or the material never reached the farmers, partially due to civil unrest at that time in the Sidama area. In these cases, recruitment and distribution were repeated in 2020 with confirmed commitment to improve reporting and follow-up monitoring visits. Table 4 (page 3) summarises the beneficiary HH per woreda and per year.

As Table 4 shows, in 2020 the Activity scaled out OFSP farming to 30 woredas in six zones in SNNPR and in Sidama. The total number of beneficiary HH was 5,299, of which 9% were headed by women. Each HH received 600 cuttings except for those in Abaya, who received 355 cuttings on average. The amount for each HH depended on the individual sizes of their plots.

Combined with the scaling-out efforts implemented in 2019, a total of 37 woredas have benefitted from training and vine dissemination, with at least 7,255 beneficiary HH; 9% of the vine recipients were female-headed HH. Given that per-average HH size in SNNPR is 4.4 residents, we estimate that an additional 32,000 people outside QDBH's main intervention areas were exposed to OFSP in 2020.

The Activity has also acted to improve demand. A consumer study carried out in Hawassa City in 2018 revealed that sweetpotato was widely known, but only about one-fifth of the population recognized OFSP. Per capita consumption of (white-fleshed) sweetpotato was determined to be around 2 kg/year. The outcomes of this study also suggested that increasing OFSP demand would require a campaign that highlighted the nutritional value of OFSP relative to the white-fleshed variety, cereals, and potato and demonstrated that it can be eaten in different ways than just boiled.

To test the role of nutrition information and knowledge about recipes in increasing consumer demand, the Activity implemented a follow-up study in 2019. As part of this study, 30 retailers were enlisted in a pilot to test OFSP promotion strategies. Exposing retailers to cooking demos and dissemination of pre-tested and validated leaflets via retailers to their customers increased the customers' appreciation and consumption of OFSP. The amount that was supplied to the vendors increased from 300 to 800kg/week. The promotion effort lasted eight weeks in total. One ambition was to get both vendors and customers 'hooked' on the product; however, most of these retailers refused to sell OFSP when it was no longer supplied for free.

The main results of the pilot are that providing consumers with written information increases knowledge, awareness, and consumption of OFSP; and providing retailers with that information and exposing them to cooking demos increases their sales volumes.

The Activity applied the lessons of this pilot in the design of the demand creation campaign in 2020. The team invited retailers for cooking demos and used the validated leaflet at market promotion events.

Another obstacle has been the monopoly of the dominant assembler at the Hawassa market. The Activity failed to convince her of OFSP's potential. For that reason, another trader was contacted who has acted as an assembler for the Hawassa and Addis markets but occupies a less strategic position in the supply chain.

Finally, to strengthen the brokering services for farmers, the Activity team mediated an agreement between the selected assembler and the national horticulture marketing company Efruit (Fruit & Vegetable Marketing SC). Unfortunately, this was only signed at the end of the year, so its impact will only be reflected in 2021 supply and consumption figures. In summary, in 2020 over eight months, 42 farmers supplied 32 t to the market. Almost 27 t was sold directly and via an assembler to retailers and processors in Hawassa and other urban centres, where it reached 2,200–53,200 consumers per month with fresh roots and processed products. It is most likely that the 61,000 consumer target has been met; but this will be confirmed by the consumption assessment study to be conducted during the first quarter of 2021, COVID-19 permitting.

Output 1.4 (Op1.4)

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

The Activity has made progress with the collection and documentation of evidence regarding the impact of the interventions on key outcome indicators. PIN has been implementing a monitoring system of the HLC sessions. Emory has made progress with the analysis of the endline data collected at the beginning of 2019. Results are mixed, with significant improvement in nutrition practices and status at midline during the hunger season but less so at endline during the harvest season.⁴ Notably, however, children in the full intervention group had greater odds of increased vitamin A intake at endline, and children in both intervention groups had reduced odds of morbidity. The final longitudinal endline report is expected to be finalised by February 2021.

In 2019 data for the cross-sectional endline were collected. Data analysis was almost finished and the report will be published soon. As already shown in Table 7 (page 7), results of the cross-sectional data indicate that the Activity achieves significant dietary improvements (see section A.1.4.5 for more details).

Stakeholder meetings and other contacts with local government have generated positive interest among woreda authorities outside the Activity's initial intervention area. During 2020 the project team capitalised on the goodwill created by providing trainings and planting material to extension workers and farmers in 30 additional woredas.

4. For the full baseline report see: <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-longitudinal-baseline-report/>

In 2020 a detailed costing study of the intervention components was carried out. The data have been analysed but the report will only be ready by March 2021. Combined with the outcome of other research activities, it will help to assess which components of the Activity (vine dissemination, nutrition education, root supply to the market, root processing, and social marketing) are ready for scaling out so that in future, 3m women and children at risk of VAD can be reached.

1.3 Activities

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

In 2020 there were no changes in staff and, fortunately, no cases of staff suffering from COVID-19.

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

CIP and PIN managers have continued their biweekly meetings to ensure communication and coordination. Frequency is modified depending on availability and urgency. Owing to COVID, these meetings in 2020 were mostly virtual.

A.1.0.3 Hold annual stakeholder meeting to present project progress and receive feedback

In 2017, 2018, and 2019, the Activity team held stakeholder meetings in Dilla and Chuko and Hawassa. In 2020 physical meetings were impossible. Instead, a short report with the key activities and achievements over 2019 was prepared and shared with the kebele and woreda governments. The document also contained feedback questions that were later collected and analysed. Below we summarise the answers from four woredas and 42 kebeles.

The information in Table 5 (page 5) shows a high level of satisfaction with the project's activities. All answers highlighted the Activity's relevance, specifying that it addresses agricultural, nutrition, and health issues. The answers also express the satisfaction at kebele and woreda level with the training approach, training content, and the opportunities for selected farmers to engage in vine multiplication. They also highlight the investments in the physical and organisational capacity of FTCs and the importance of motorcycles provided by the Activity to enable effective transport for government staff. Finally, two kebeles referred to the opportunity created by the Activity for women to express themselves in HLC meetings.

Satisfaction level is also reflected in the recommendations made, namely that (1) the Activity covers all kebeles and all HH, irrespective of the age of the children, in the region, and (2) other projects adopt the approach used by QDBH and/or try to build on its lessons learnt. Important suggestions call for increasing the scope by incorporating nutritious crops other than OFSP and working further on market linkages.

A comprehensive suggestion came from the Wonago woreda BoANRD:

The project shall consider addressing additional farmers in the kebele, introducing post-harvest technologies, strengthening the market linkage activities, organizing kebele to kebele and farmers to farmers experience sharing events, creating awareness at urban consumers, lobbying the government to get OFSP activities included in the annual plan, organizing additional trainings to experts as the turnover of staff is high in the woreda, sharing of the project outputs with the relevant government sectors in a defined time frame, increasing the number of vine multipliers and linking them with market, addressing additional kebeles and households, organizing forum for the HLC members to give testimony to other families in the same kebele or other kebeles in the presence of the woreda cabinet.

The approach used in 2020 was adapted in response to the COVID-19 health emergency, an ad hoc solution to the prohibition of social gatherings. It is also clear, however, that the approach has been

useful as it allows the documentation of feedback of all kebeles and woredas. In meetings, some of the ideas may not be presented because of time constraints or the social dynamics among the meeting participants. At the same time, later in the year when COVID restrictions were relaxed, counterparts increased pressure on the Activity team to meet in person. For that reason, in December PIN held meetings in the four woredas to discuss opportunities for the development of the sweetpotato value chain. Unfortunately, holding virtual meetings is a challenge as many of the kebeles lack adequate internet services.

People contributing to the feedback were representative of the multisector scope engaged in by the Activity: kebele administrators, kebele managers, agriculture office heads and health extension heads, crop experts, and a representative of kebele women and children affairs.

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

The report on the study on the role of women and men along the OFSP value chain was finalised and published as a CIP working paper in December 2019. It is available via the CGIAR website.

The Activity's main achievement specific to gender is the engagement of women in the agricultural trainings and of men in the health/nutrition trainings. It has tried to engage women in the value chain development (eg, engaging female-managed bakeries and injera makers). In Dilla Zuria, the Activity supports a group of women who have started vine multiplication.

The Activity has directed most of its energy to address its prime objectives in terms of reaching beneficiaries with improved varieties and promoting behavioural change in IYCF practices. Its capacity to address the wider social issue of gender inequality is limited, but male integration into the HLCs has been a truly positive achievement. Moreover, the joint decision-making concerning dietary practice using the goal cards has been a major achievement in promoting greater dialogue between men and women on this critical issue. Ethiopia has a low score on gender equality (173 on the gender development index).⁵

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

All 42 kebeles have demo plots at FTCs and private farms (Photo 1). The sites have been used to support the training in sweetpotato farming. The cooking demos were discontinued in March 2020 due to COVID-19.

Photo 1. Plots at DVM Anteneh (left) and commercial farmer Eshetu (right) in Aleta Chuko, 31 January 2020.

(PHOTO: ASRAT WOLDEGIORGIS)



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

The key training tool used by the Activity is a course developed by CIP for sub-Saharan Africa (SSA). The training, "Everything You Ever Wanted to Know about Sweetpotato", has an extensive manual

⁵ <http://hdr.undp.org/en/countries/profiles/ETH>

that covers 13 different topics, from sweetpotato farming to marketing and processing to gender and adult education. The manual exists in English, Kiswahili, French, and Portuguese, and was translated into Amharic for the training. In 2019 the final review of the draft of the Amharic version was completed, and was then finalised and published on CGIAR space and the Sweetpotato Knowledge Portal (SKP).⁶

In 2020 the usual ToT was cancelled due to the COVID-19 pandemic. Instead, in 30 scaling-out woredas in the Sidama region and six zones of SNNPR, one-day training sessions focusing on sweetpotato agronomy were given. In total, 271 (27 women) BoANRD staff from the woredas and zones participated in these trainings (Table 3, page 3). The trainings in Wolayita were held with support from BoARD staff from Sodo Zuriya, and the trainings in Sidama were supported by zonal agricultural experts. For the training, a 17-page summary of the full manual in Amharic focusing on the key topics was extracted and distributed.

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

FTCs were assessed regarding their water sources and needs as previous experience has shown that sustained vine supply requires a reliable source of water. **Error! Reference source not found.** shows which types of water sources and suggested technologies for water-lifting and irrigation were selected for all 41 beneficiary FTCs. In some FTCs added in 2019 the Activity was unable to finalize all investments before the end of the year. Table 9 (page 8) provides an overview of the status at the end of 2020 of the 18 FTCs added in 2019, with their respective water source and proposed technologies for water-lifting and irrigation.

Procurement was slow for 2017, and the rainwater harvesting installations were only completed after the rains had stopped. In 2018 procurement was still slow, but it was possible to complete the building and equipment during the rainy season. As a result, they could be used for irrigation during the dry months at the start of 2019. In 2019 the Activity again had procurement problems, which were partially associated with the departure of the irrigation specialist from the CIP team. As there was a discrepancy between the requirements and the availability of certain types of pumps, not all water-lifting equipment was acquired before the end of 2019. These investments were completed in early 2020. During 2020 minor investments were carried out to support strategic multiplication capacity in Gedeo, such as the women’s multiplier group in Chichu in Dilla Zuria. These investments only concerned pumps and accessories (Table 11). **All of these investments were completed as of the end of 2020.**

In Ethiopia the production of seed is regulated by law. This regulation also applies to the production of vegetative seed such as sweetpotato cuttings. Multipliers are required to adhere to certain standards, and compliance is verified by government inspectors. Only those who pass inspection can produce quality declared seed. To increase the chances that many DVMs will continue multiplying after the end of the Activity, QDBH hired a consultant to draft a manual for private multipliers and trained them. During 2020 efforts were made to support the creation of two multiplier cooperatives; until now, however, these efforts have been fruitless, partially because the relevant government agencies were unable to provide clear guidelines. The process will be continued in 2021.

Table 11. Current status of investments in FTCs with work pending from 2019 with their water sources, water-lifting/irrigation technologies, and status by woreda and kebele

Woreda	FTC/Kebele	Water Source/Storage Equipment	Capacity (m ³)	Water-lifting/Irrigation Equipment
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6. <https://www.sweetpotatoknowledge.org/everything-you-ever-wanted-to-know-about-sweetpotato-amharic/>

Woreda	FTC/Kebele	Water Source/Storage Equipment	Capacity (m³)	Water-lifting/Irrigation Equipment
Aleta Chuko ¹	Kebado FTC	-	-	Solar irrigation pump with accessories
Dilla Zuria	Bula	Roof-water harvesting with above-ground water tank	25	Delivery hose (50m)
Dilla Zuria	Gola	Shallow well excavation	NA	Rope & washer pump
Dilla Zuria ¹	Chichu women's vine multipliers'	-	-	Irrigation generator pump with accessories
Kochere	Biloya	Diverting channel cancelled due to community disagreement	NA	Diesel generator and delivery hose (100m)
Kochere	Buno	Shallow well excavation replaced by open hand-dug well due to soil instability	NA	Solar pump with 50m hose
Kochere	Jeldo	Shallow well excavation	NA	Rope & washer pump
Kochere ¹	Sigiga DVM (2)	-	-	Irrigation generator pump with accessories (2)
Kochere ¹	Sigiga FTC	-	-	Hand pump with accessories
Wonago ¹	Kara Sodity DVM	-	-	Solar irrigation pump with accessories
Wonago ¹	Tokicha DVM	-	-	Irrigation generator pump with accessories

1. Added in 2020.

In 2019 the Activity provided additional material and technical support to initiate and manage revolving funds. From January to December 2020, 156,300 Birr was injected into 41 FTCs to support the payment of day labourers and purchase fertilizer for demo sites and vine multiplication.

In 2021 the Activity will assess to what extent these injections, together with the revenues from vine multiplication, investments in irrigation equipment, and agronomic and financial management skills, have strengthened the sustainability of the FTCs' vine multiplication efforts in the Activity kebeles.

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

HLCs

The vehicle for training rural women and men in OFSP production, storage, and vine conservation is the HLC. Table 12 provides an overview of the evolution of the number of HLCs per kebele.

Despite the COVID pandemic, the number of HLCs established in 2020 has allowed us to reach 15,328 beneficiary HH. (The total number of HLCs established is 511, which was the Activity's original target.) This agrees with the original work plan, which had established a margin of 330 HH on top of the 15,000 target.

In 2017 vines were disseminated in August and September, and HLC training sessions started in December. In 2018 vines were disseminated in June–July, and trainings started in August. In 2019 vines were disseminated in April–May and August–September; trainings started in October. In 2020 vines were disseminated in May–June for members of the final batch of HLCs. Owing to COVID, it was impossible to organise multiple training sessions, so during vine dissemination beneficiaries were informed about good agricultural practices and Triple S. In addition, demo plots were open for individual visits. Vine multiplication capacity was sufficient to enable dissemination in just one round.

Table 12. HLCs per kebele between 2017 and 2020 per kebele and per woreda

Kebele	2017	2018	2019	2020	Cum.	Kebele	2017	2018	2019	2020	Cum.
Chichu Wayama		4	5	4	13	Akesho			5	6	11
Chuko Wayama		4	5	4	13	Amba	2	5	5	1	13
Dangora Kaebado			5	6	11	Andida	2	5	5	1	13
Dibaka			5	6	11	Bula			5	6	11
Dibicha	2	5	5	1	13	Chichu	2	5	5	1	13
Dongoro Elalcho	2	5	5	1	13	Gola			5	6	11
Dongoro Morocho	2	5	5	1	13	Holena	2	5	5	1	13
Gambela			5	6	11	Hotelicho		4	5	4	13
Gore		4	5	4	13	Shakiwa			5	6	11
Gunde			5	6	11	Shigado			5	6	11
Halo		4	5	4	13	Sisota	2	5	5	1	13
Lela Honch		4	5	4	13	Tunticha			5	6	11
Lokaka haytala	2	5	5	1	13	Total Dilla Zuria	10	29	60	45	144
Loko Dama			5	6	11	Bele Bekosa	2	5	5	1	13
Makala		4	5	4	13	Deko			5	7	12
Miridicha	2	5	5	1	13	Hase Haro		4	5	4	13
Rufo Waeano	2	5	5	1	13	Karasoditi		4	5	4	13
Tesso			5	6	11	Mokonisa		4	5	4	13
Total Aleta Chuko	12	54	90	66	216	Tokicha	2	5	5	1	13
Anchebi			5	6	11	Tumata Chirechaa		4	5	4	13
Biloya			5	6	11	Total Wonago	4	26	35	25	90
Buno			5	6	11						
Jeldo			5	6	11						
Sigiga			5	6	11						
Total Kochere	0	0	25	30	55	All	26	109	210	166	511

Facilitator training

Within the four original intervention woredas, the usual step-down agricultural ToT was carried out. To reduce the number of participants as required by the government, sessions were organised at woreda level rather than at zonal level. The trainings were held separately for each woreda to avoid cross-woreda COVID-19 transmission. This year, only DAs participated in facilitator trainings as the HEWs were fully engaged with social mobilisation for COVID-19 prevention (Table 13).

Table 13. DAs trained in agricultural step-down ToT by woreda and gender (2020)

Woreda	Gender		Total Participants
	Male	Female	
Aleta Chuko	11	3	14
Dilla Zuria	1	3	4
Wonago	5	1	6
Kochere	4	3	7
Total	21	10	31

Triple S (sand-storage-sprout) is a three-step technique that makes it possible to carry planting material across the dry season without relying on irrigation and with a reduced risk of contamination by viruses. People basically store healthy roots typically obtained at harvest time in layers with cool, dry sand in a local container. To promote sprouting after being planted in protected gardens six to eight weeks before the rains, the roots are watered. The vines generated in this area then provide the cuttings to plant the fields, on average 40 cuttings per root.

Triple S trainings were conducted for members of the 2019–2020 HLC batch (Batch 3) in March and April 2020. These trainings served 8,888 participants (4,877 men, 4,011 women). Out of the 6,300 targeted HH, 5,570 (88%) were represented by husband, wife, or both. The trainings were done in collaboration with the trained agricultural DAs and HEWs. The training for HH of the 2020 batch (Batch 4) was adapted due to COVID-19 and reached 2,870 women and 3,852 men. It was held during vine dissemination for the HH member collecting the planting material, addressing only one member of each HH. (Ideally, there would have been three in-person trainings for Triple S across the entire cycle of the technology.) Thus, in 2020, more than 15,000 people representing 94% of all HLC member HH participated in Triple S training (Table 14).

Table 14. HLC members and member HH participating in two rounds of Triple S ToT by woreda and gender (2020)

Woreda	HLC Batch	Participants			Households		
		Women	Men	Total	Reached	Expected	Reached (%)
Aleta Chuko	Round 3 (2019 batch)	1,809	2,221	4,030	2,407	2,700	89
Dilla Zuria		1,205	1,350	2,555	1,618	1,800	90
Wonago		678	804	1,482	963	1,050	92
Kochere		319	502	821	582	750	78
Total		4,011	4,877	8,888	5,570	6,300	88
Aleta Chuko	Round 4 (2020 batch)	1,862	1,586	3,448	1,980	1,980	100
Dilla Zuria		928	475	1,403	1,350	1,350	100
Wonago		548	394	942	749	750	99
Kochere		514	415	929	900	900	100
Total		3,852	2,870	6,722	4,979	4,980	100
Grand total		7,863	7,747	15,610	10,549	11,280	94

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

In 2020 the Activity expanded vine production further to cater for its planned scale-out to additional woredas. In total, almost 7.6m cuttings were produced and disseminated. Of this total harvest, 39.3% was distributed to HLC members and 54.4% to farmers and FTCs in scaling-out woredas. A small portion (Table 15).

Vine harvesting was always supervised by CIP field staff to ensure the quality of the material. They also provided ongoing advice to FTC managers and DVMs as to the protection of their stock and, for example, the rogueing of plants with symptoms of viral diseases. Monitoring visits to the fields of DVMs and farmers in the scale out woredas have confirmed low levels of virus-contaminated plants among the material provided by the Activity.

Table 15. Cuttings produced per variety and destination

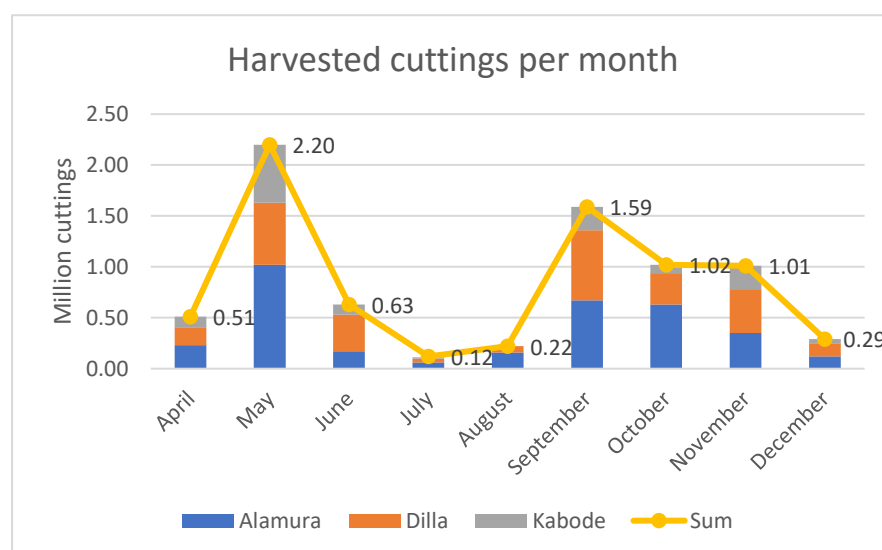
Destination	Alamura	Dilla	Kabode	Total	%
Demo plots	6,300	1,300	4,075	11,675	0.2
Root production	214,180	178,380	72,180	464,740	6.1
Scaling out woredas	1,921,100	1,620,500	580,700	4,122,300	54.4
HLC members	1,264,600	999,000	719,400	2,983,000*	39.3
Total (number)	3,406,180	2,799,180	1,376,355	7,581,715	100
Total (%)	44.9	36.9	18.2	100	

*This figure is 5,000 short of the total amount that was distributed to HLC members (2,988,000), probably because some vines were erroneously earmarked.

Compared with 2019, production increased by 3.7m (49%). The most disseminated varieties are 'Alamura' (44.9%) and 'Dilla' (36.9%). This is mainly due to the higher multiplication rates (above-ground biomass and vine length) of these varieties in comparison with 'Kabode' variety. 'Vita' was not disseminated as this variety, a candidate in 2019, was not released.

There were two peak harvest periods for the planting material. The first (May–June) coincides with the dissemination to HLC members; the second (September–November) with the scaling-out effort (Figure 3).

Figure 3. Number of harvested cuttings per variety per month.



Vines were sourced from 31 FTCs and 53 DVMs in the four project woredas at a standard price of 0.35 ETB per cutting. FTCs and DVMs received this as a gross payment. Any advance made by the project for labour and transport to feeder roads was deducted. In total, the Activity paid almost \$76,000 for the planting material. Multipliers spent about a quarter of this amount on labour and transport (Table 16).

Table 16. Amounts received for planting material per multiplier type per year over 2018–2020

Multiplier Type	2018			2019			2020		
	N	\$	%	N	\$	%	N	\$	%
FTC	3	1,877	7	19	21,611	39	31	16,693	22
Farmer	4	2,376	9	21	26,703	48	53	59,125	78
Commercial	1	21,934	84	1	6,773	12	0	0	0
All	8	26,187	100	41	55,087	100	84	75,817	100

FTC revenues from vine multiplication are expected to replenish the revolving fund. DAs are entitled to 40% of the net revenue FTCs, which is the gross amount received for their vines minus the costs of labour and other inputs. Their estimated income is about \$5,000. We hope that these institutional and personal benefits will serve as incentives to continue multiplication after the end of the Activity's lifespan.

Vines were disseminated to 4,980 HH. In 49% of the cases, a woman came to collect the material (Table 17). After the second day of OFSP vine dissemination within a given kebele, PIN-CFs, along with kebele DAs, and HDAs conducted monitoring visits to randomly selected beneficiary plots. The visits served to provide technical support and to monitor the progress of planting OFSP vine cuttings according to the recommended spacing and other recommended practices, and to reduce wastage of OFSP planting material.

Table 17. Dissemination of planting material to HLC members by woreda and cultivar (2020)

Woreda	No. of Kebeles	No. of HH	Recipients' Gender			No. of Cuttings
			Male	Female	% Female	
Aleta Chuko	18	1,980	937	1,043	53	1,188,000
Dilla Zuria	12	1,350	490	860	64	810,000
Wonago	7	750	617	43	6	450,000
Kochere	5	900	428	472	52	540,000
Total	42	4,980	2,472	2,418	49	2,988,000

The recommended practices surrounding vine planting comprised (1) land preparation with compost; (2) ridge preparation; (3) spacing cuttings 60cm between rows and 30cm within rows; and (4) row planting along the ridge, with at least two nodes below the surface. Thus, in the reporting period, 4,414 (88.6%) of the targeted HH were visited, and corrective measures were taken at 350 HH (7.9%) for missed spacing and scattered planting without ridges.

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

Dissemination to indirect beneficiaries happens in most SSA countries through sharing among HH. Data collected in August 2018 from a sample of 20 HH in Aleta Chuko suggested that some sharing is taking place but that it is far less common here. In other SSA countries, on average there are four indirect beneficiaries for one direct beneficiary due to farmer-to-farmer exchange.

Field observations in 2018 suggested that many HH did not plant all 600 cuttings. To encourage sharing, in 2019 the "sharing moment", originally foreseen at graduation, was shifted to the moment of planting. However, this did not result in a significant change. In 2020 of the fourth batch, 4,980

HLC member HH reported sharing with just 593 other HH. This means that whereas the multiplier in other countries is around 4.0, in the QDBH intervention area it is only 0.12. Assuming that this factor is representative for the entire Activity, the number of indirect beneficiaries would be around 1,800.

And though sharing is not common, there are signs that a significant number of HH who did not participate in an HLC did get access to the new OFSP varieties; this would have had to be by sharing or stealing. Of 383 HH in the intervention kebeles who farmed sweetpotato and were eligible for an HLC but who otherwise did not participate (according to the HH listing), 22% said that they harvested some OFSP. Assuming that this figure is representative for all non-HLC member HH in the project kebeles, the Activity will have reached about 3,400 additional HH. At HH level, their having access to vines may have contributed meaningfully to improved nutrition and income (Photo 2).

Photo 2. The wife of Mr Eyoel's in their sweetpotato field in Mekelle, Aleta Chuko (15 December 2020). Mr Eyoel received vines from the Mekelle kebele FTC, as his family does not belong to an HLC. According to his wife, they ate the roots for three months during last harvest season. They also sold roots at home at 10 birr/heap. She also sold one big sack for 400 birr.

(PHOTO: ASRAT WOLDEGIORGIS)



Data collected as part of the endline study show that about 7% of the HH who farm sweetpotato paid for planting material from outside their own farm. This means that local multipliers have retained at least part of their market, despite the distribution of free planting stock by the Activity.

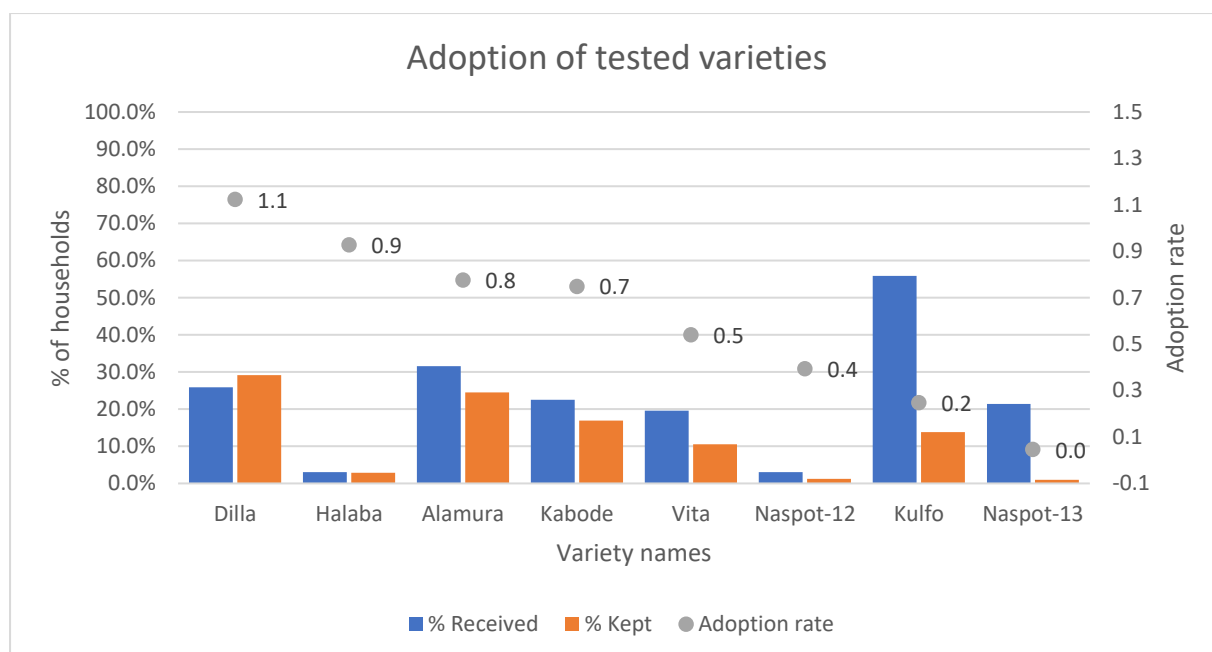
At least as important as sharing is the degree of retention of the new varieties by farmers from one season to the next. Data collected as part of the endline study indicate that out of 1,053 respondents in the sample who had received OFSP in Years 1 and 2, 745 retained them (71%). This rate is better than rates seen in other countries with unimodal rainfall regimes, which tend to be around 66%.

Retention is not the same for all varieties. Figure 4 shows the adoption rates of the tested varieties as the quotient of the percentage of HH who, according to vine dissemination data, had received a variety and the percentage of HH in the endline sample who kept that variety. It appears that about 26% of the HH received 'Dilla' variety and that in the sample 29% kept it, resulting in an adoption rate of 1.1.⁷ The results demonstrate that 'Dilla', 'Alamura', and 'Kabode' show the best adoption rates. (These are also the three varieties that were released in November 2019.) the variety 'Halaba' was dropped at an early stage due to its weak performance at the demo sites. Nevertheless, the few HH who received it seem to have kept it.

'Kulfo', until November 2019 the only officially released OFSP variety, shows weak retention: While almost 56% of the disseminated cuttings were 'Kulfo', only 14% of the respondents farming sweetpotato kept it after three or four seasons.

Figure 4. Adoption rates of tested varieties at endline (November–December 2019).

7. Retention being higher than dissemination is probably due to sampling or digitation error.



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

In 2019, 41 FTCs that have established OFSP demo and vine multiplication activities were financially supported from the revolving fund, which covered all multiplication-related issues.

Although most FTCs in the intervention kebeles are continuing sweetpotato multiplication, it is not clear how many actually made formal annual production plans that incorporate OFSP. This will be verified during the first quarter of 2021.

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

A study was carried out in 2017 (Year 1) and completed in 2018. The report is published on the SKP.

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

The QDBH training model consists of two steps: a ToT by PIN staff targeting HEWs, a step-down training supervised by PIN but facilitated by the trained HEWs of HDAs and CFs, and a training of the HLC members by the HDAs with support from the CFs and supervised by the HEWs. Owing to COVID-19, the usual BCCS training had to be cancelled. Instead, a training using the HLC curriculum was provided to HEWs, their supervisors, and PIN's CFs (Table 18).

Table 18. HLC curriculum training participants by woreda, organisation, and gender (2020)

Woreda	HEWs	HEW Supervisors	CFs	Gender		Total Participants
				Male	Female	
Aleta Chuko	18	2	18	19	19	38
Dilla Zuria	12	2	12	13	13	26
Wonago	7	2	7	8	8	16
Kochere	5	2	5	6	6	12
Total	42	8	42	46	46	92

HDA volunteers were trained in separate sessions (Photo 3). The woreda-level training of HDAs was replaced by trainings at kebele or health-post level with four to six HDAs per session to minimise the

risk of contamination. The HDAs were advised and informed to avoid attending unnecessary public gatherings and long travel. The HDA refresher training that previously preceded every HLC training was replaced by weekly orientation and coaching session at the health post on the training curriculum. These sessions were facilitated by HEWs and CFs.

Photo 3. HDA volunteers at Shakua kebele (Dilla Zuria) receive their recognition certificates.

(PHOTO: EDIGET SINTAYEHU, 20 DECEMBER 2020)



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

In 2018 the HLC training curriculum was slightly modified to respond to the experiences of the first year of implementation; in 2019 the 2018 curriculum was maintained. Details about the curriculum can be found in the 2018 QDBH' annual report as well as on the SKP.

A second revision was done in 2020, this time to respond to COVID-19 restrictions. Because the number of attendees per session needed to be restricted, each HLC was split in two. As carrying out the original programme would mean an insupportable workload for the session facilitators, the number of sessions was divided by two and the entire nutrition training programme compressed into four sessions only. Part of this adaptation was tested on the HLCs that had started in late 2019, after the endline data had been collected. The final adaptation was implemented in the last group of HLCs that started their trainings in early November and completed them in December 2020.

The first four sessions of the Batch 3 HLC followed the curriculum that had been designed in 2017 and was slightly modified in 2018, but the second half had to be adapted:

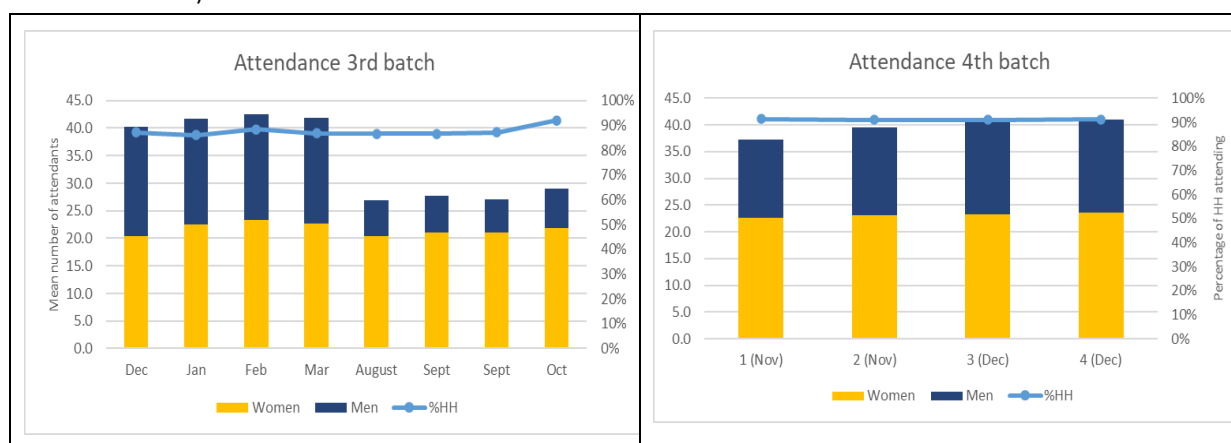
- *Session 5* was delayed until August but implemented without change.
- *Session 6* (Vitamin A and OFSP for the Family) and *Session 7* (OFSP for Complementary Feeding & Dietary Diversity) were shortened and focused on the key messages. Both were implemented in September with only a two-week interval in between.
- *Session 8* (Complementary Feeding as Children Age and Maternal Nutrition) was implemented in October and combined with the graduation award.

Organising the programme in this manner made it possible to free up the months November and December for the training of the fourth and final batch under a drastically modified curriculum:⁸

- *Session 1* combines sessions 6 and 7 of the original curriculum discussing HLC Introduction, COVID safety, OFSP, and Vitamin A with an OFSP cooking demos.
- *Session 2* combines sessions 3 and 4 of the original programme focusing on complementary feeding (Texture, Frequency, & Volume and Dietary Diversity)
- *Session 3* is a modified version of session 5, addressing responsive feeding and reinforcing messages around dietary diversity, feeding thick porridge, and the use of the Healthy Baby Toolkit.
- *Session 4* combines sessions 2 and 8 of the original programme dealing with maternal nutrition and exclusive breastfeeding as well as graduation.

Figure 5 provides insight into the attendance of the HLC training sessions of the two batches that ran over 2020. The Batch 3 of 210 HLCs had eight sessions, with attendance hovering between 86% and 92% of the 6,300 registered HH. After the declaration of the state of emergency in March, trainings were first suspended, to be restarted only in August. To avoid crowding, only one representative of each HH was allowed to attend. In practice, this meant that most men quit participating. Typically, around 20 women and six men would attend a session.

Figure 5. Attendance rates as percentage of enlisted HH (right axes) and mean numbers of women and men attending (left axes) per HLC session for Batch 3 (December 2019–October 2020) and Batch 4 (November and December 2020).



The final batch of 166 HLCs shows an attendance rate of approximately 91% of the 4,980 registered HH. When the state of emergency was lifted in September, the number of male attendees increased from a mean of 15 to 17, whereas the mean number of female attendees remained around 23. One reason for this high attendance rate is that HDAs proactively pursued HLC members who had not appeared in the first session and rounded them up for the second one.

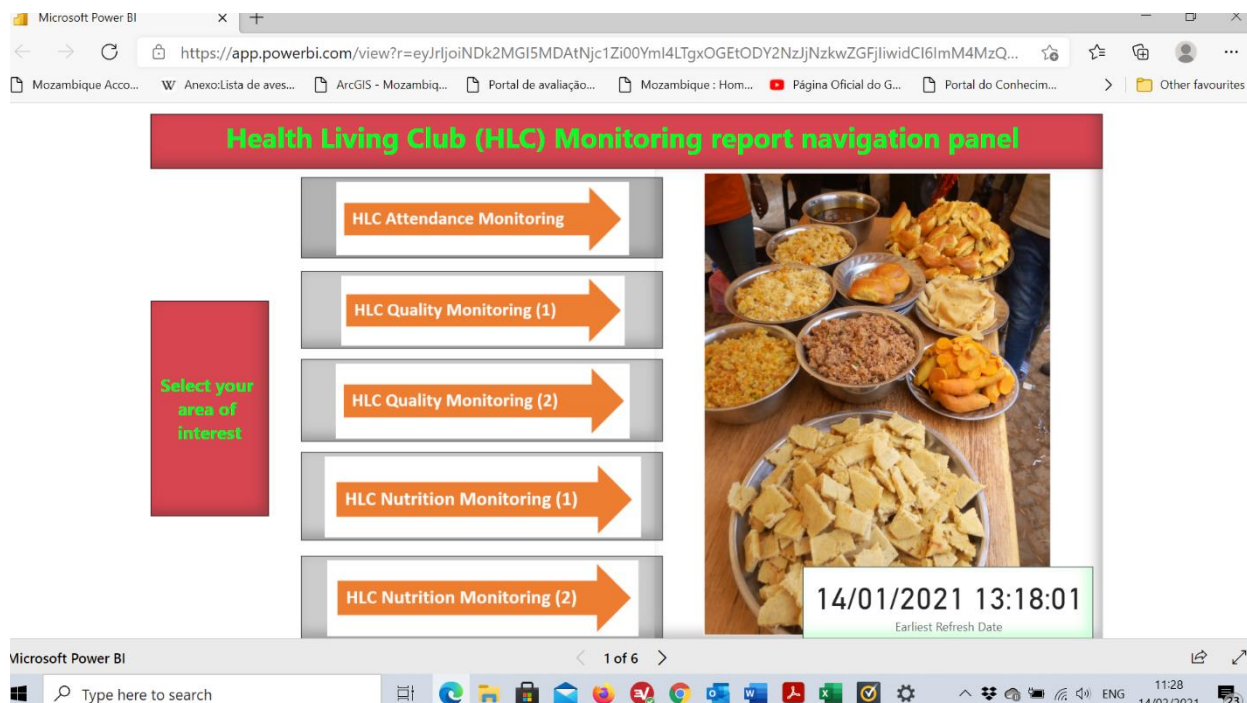
Attendance rates vary a bit between the wordas, with Kochere on average showing a slightly lower attendance rate than the others. But even in this worda, according to the monitoring data, attendance rates were never below 70% in Batch 3 and never below 80% in Batch 4.

All HH participating in Batch 4 received an HBT thanks to additional supply through another CIP project.

8. The modified curriculum is available on the SKP: <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-healthy-living-clubs/>

The digital dashboard generated by the PIN monitoring team has proved to be a valuable tool throughout the project for monitoring attendance and practice uptake (Figure 6). More details can be obtained by consulting the digital dashboard [here](#). More data extracted from the dashboard are presented, for example, in Figure 9 (page 34) and Tables 20 and 21 (page 33).

Figure 6. Screen capture of dashboard's home page.



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

The market assessment was carried out in 2018. The results show that per-capita sweetpotato consumption in Hawassa City is lower than the national average and that OFSP is known by few and eaten by almost nobody.

The value chain assessment carried out in 2017 showed that the Chuko and Wonago sweetpotato markets are supplied by local farmers, whereas Dilla and Hawassa receive roots from neighbouring areas. It also pointed at the concentration of wholesale in Hawassa in the hands of very few people, and quality problems can lead to the loss of a large part of the roots between wholesale and retail. Roots refused for human consumption were sold at an extremely low price for cattle feed.

Monthly monitoring of markets in Chuko, Dilla, Wonago, and Hawassa City started in September 2017 and has been continued without any interruption. Owing to COVID-19, however, in-person surveys were suspended between April and July. Instead, monitoring was carried out by phone. Consequently, no reliable data about per-kilogram price and traded volumes are available for this period. The collected data will be analysed in 2021.

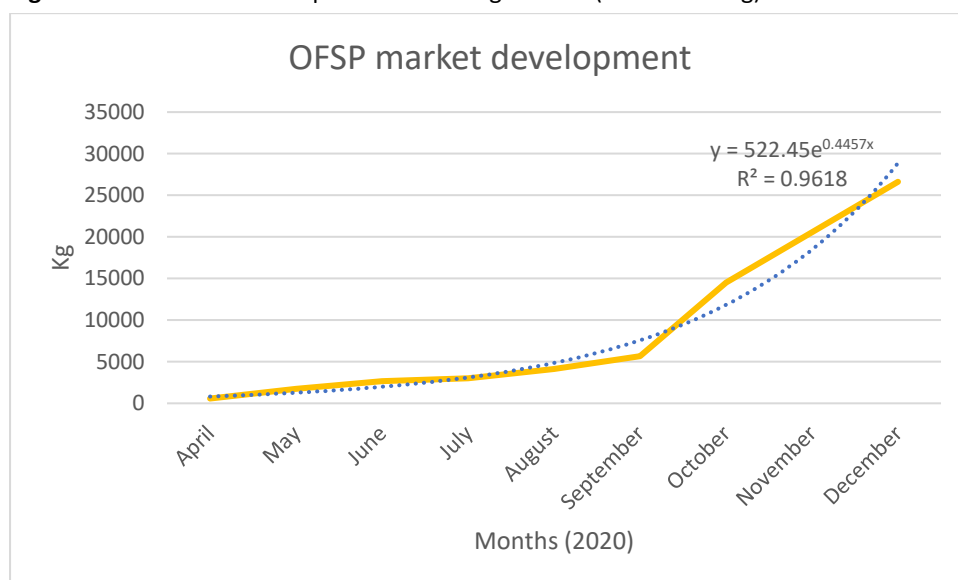
A.1.3.2 Plan and implement support to improve supply of OFSP to the target urban markets

Under this heading, the Activity developed action to improve supply, market linkages, and marketing strategies to Hawassa City. Actions were constrained by the fact that the new OFSP varieties acceptable to the majority of consumers were only released at the end of 2019.

Since the beginning of 2020, the team has actively expanded the acreage under the new varieties. Emphasis was initially on Hawassa Zuria, where around 50 farmers planted approximately 0.1 ha each. Later on, farmers in other woredas and other zones on SSNPR were also addressed.

These farmers targeted as suppliers to the urban market were trained in farming, harvest, and postharvest techniques. From April onward, the team actively engaged with connecting farmers and consumers. For eight months, about 33 t were bought from producers and almost 27 t were sold to consumers via wholesalers, retailers, and processors (Figure 7). The remainder was lost due to quality issues, especially harvest damage. The total revenue for farmers created in this manner was 174,000 birr (\$5,000) or \$120 on average per farmer. About 55% of this amount was covered by the revenues from the sales to retailers, the remainder was subsidised by the Activity as part of the demand creation strategy.

Figure 7. Evolution of sweetpotato marketing in 2020 (cumulative kg).

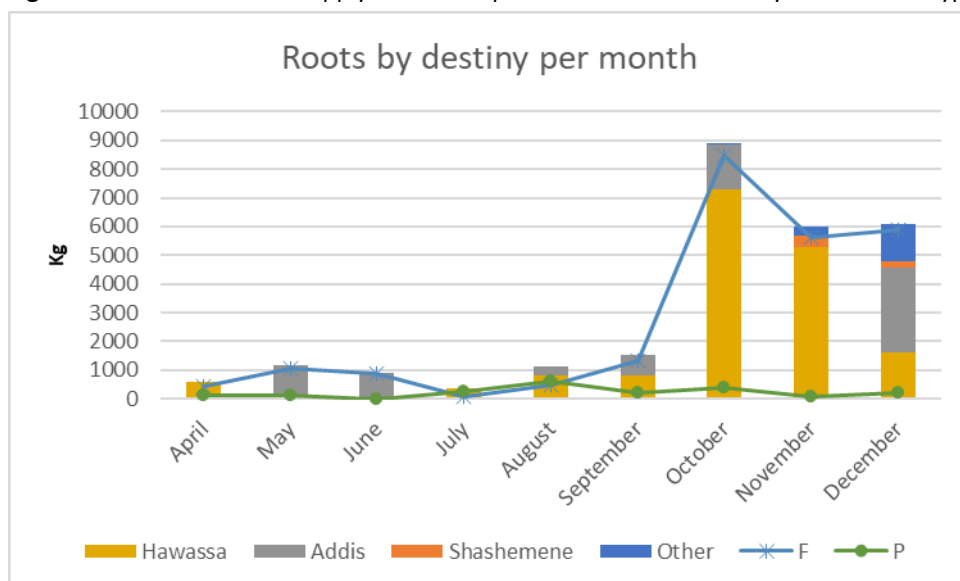


The Activity subsidised the acquisition of roots from farmers by 45%. This was partially due to concerns with farmers' incomes and partially with the desire to make the crop financially attractive to farmers so that more would become engaged. However, it implies that current market development approach is to jumpstart interest but is not sustainable long-term strategy, and that its future depends on the willingness of farmers to accept lower prices.

The strategy has been effective in the sense that a rapid, exponential growth of OFSP supply to the market was achieved (Figure 7). At the end of 2020, a cumulative volume of 26,625 kg was made available to consumers as a fresh or processed product. This growth refers only to roots that were procured and sold to processors and retailers with active involvement by the Activity team. Some, such as the bakery-sourced roots were also from other sources including their own farms.

Figure 8 shows that the Activity supplied roots to outlets in three main areas: Hawassa, Addis Ababa, and Shashemene. The most important market was Hawassa (63% of all roots sold), followed by Addis (28%). The remaining went to Shashemene (2%) and other places such as Adama and Sodo (6%). The volume of the market oscillated, reaching its highest level in September. The subsequent reduction is not so much a sign of a decrease in supply but a slump in retailing effort. Most roots supply the fresh root market (F in the graph); only a small percentage is used as an input for processing (P in the graph).

Figure 8. Evolution of root supply between April and December 2020 by location and type of market.



The Activity team has aggressively looked for ways to promote alternative ways to ensure the supply of roots to Hawassa, including the enlisting of donkey drivers (Photo 4) from Hawassa Zuria. This sometimes met unexpected obstacles such as that certain roads are not to be used by donkey carts. Photo 5 illustrates the quality of the material taken to the market.

Photo 4. Roots brought by donkey carts to the CIP office in Hawassa.

(PHOTO: ROLAND BROUWER, 29 SEPTEMBER 2020)



Photo 5. Donkey drivers showing the quality of the roots ('Alamura' variety).

(PHOTO: AREGA ALEMAYEHU, 29 SEPTEMBER 2020)

Table 19 summarises the OFSP roots supplied to different kinds of outlets. The largest share goes to roadside vendors and small vegetable retailers (65.8%), followed by supermarkets (13.7%). The supermarkets are attractive outlets as they pay a higher per kilogram price (eg, Fresh Corning in Addis Ababa, 13 ETB/kg compared with 5 ETB/kg paid by retailers in Hawassa). But they are also more demanding about quality. Among the processors, the biscuit factory is the largest outlet (5.6%), followed by the bakery (1.5%) and the injera maker (0.6%). The bakery has its own farm from which it harvested at least 1,000 kg. The injera maker started to buy from a vegetable shop next door as she wanted to reduce the visibility of sweetpotato. This means that their amounts underestimate the total amount of processed roots sold on the market. The processor who bought 400 kg in September wanted to try making OFSP flour that retains the orange colour; as expected, however, he concluded that this was not economically viable. In December 2020 he met with a maker of weaning-food formula to discuss possibilities of working together. If this partnership becomes fruitful, he may turn into one of the main OFSP processing businesses using OFSP.

Table 19. Root market (kg) by kind of market channel per month

Row Labels	Bread	Cookies	Dairy*	Demo	Fries	Hotel	Injera	Market	Private	Processing	Supermarket	Grand Total
April	106	40		300				20	2		110	578
May	30	78									1,063	1,171
June											900	900
July	30	172		2			75		10		71	360
August	145	405			34		50	127	2		347	1,110
September		200					42	575	20	400	305	1,542
October	83	320		69				7,873	232		285	8,862
November		95	292	333		44		5,171	80			6,015
December		192		418				3,750	1,150		577	6087
Grand Total	394	1,502	292	1,122	34	44	167	17,516	1,496	400	3,658	26,625
Percent	1.5	5.6	1.1	4.2	0.1	0.2	0.6	65.8	5.6	1.5	13.7	100.0

*Roots rejected by the market were sold to a dairy farmer to be fed to her cattle.

Constraints observed are:

- Payments start at the end of the chain; this means that under normal circumstances, farmers are the last ones to receive money. For the Activity this means that farmers were pre-financed while the team hunted for the clients to be paid for the roots they had received.
- Losses due to damage during harvest and size and damage due to inadequate storage or transport is a major cost, with about 11% of the amount sold by farmers not being marketable. This is less than the 25% estimated during the formative research into the gendered value chain.

Besides roots, leaves are a potential option for dietary improvement. For people who grow OFSP, leaves are easily accessible; for urban consumers, this is not the case as leaves are merely a by-product of root production. Moreover, they are highly perishable and can only be kept fresh for a very short period. The viability of sweetpotato leave production for urban consumers depends largely on the quantity and quality of the produce (leaves and roots), which is determined mainly by the number of leaf harvests that are carried out and by the number of plants. For that reason, QDBH started a trial with the objective to determine the optimum leaf-clipping interval and plant density for sweetpotato leaf as vegetable production. The experiment was established at a farmer's field in Hawassa Zuria woreda to assess the impact of four different leaf-harvesting intervals (three weeks,

five weeks, seven weeks, and no harvesting) and four different plant spacings (40 x 20 cm, 40 x 30 cm, 60 x 20 cm, and 60 x 30 cm).

In 2020 the second round of the trial was implemented. Results will be available at the start of 2021.

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

In 2020 all market development activities were severely affected by the COVID-19 pandemic.

Despite constraints encountered, it is noteworthy to mention the following:

- There has been an ongoing effort to expand the number of injera makers by training additional businesses in Hawassa and Dilla. During these trainings it became clear that the orange colour of the OFSP-enriched injera is seen as an obstacle, as clients want believe (mistakenly) that their injera is made of teff only. This means that only dark teff injera can be enriched, and that injera makers are reluctant to market this enriched injera as such.
- Bread baking continues, but expansion is limited by the delays in machine-based puree production.
- Azi biscuits uses OFSP puree as a means to enrich part of its product. It has marketed biscuits in supermarkets in Hawassa and Dilla.
- Other initiatives (*bombolino*, French fries) have not been sustainable until now.
- Additional options that are being explored are the preparation of OFSP flour as an ingredient in baby formula.

Photo 6 shows some of the food products that were adapted using OFSP as an ingredient.

Photo 6. OFSP-enriched biscuits (left) and injera (right) at CIP's office in Hawassa.

(PHOTO: MIHIRETU CHERINET, 3 MARCH 2020)



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

During the implementation of the Activity, CIP was able to initiate a parallel project financed by Bioinnovate. This project is a partnership between CIP and the School of Nutrition and Food Science of Hawassa University, and aims to support the start-up of a puree-processing business. In October 2019 the Bioinnovate team launched a tender, four bidders submitted a proposal, and in December 2019 the winner was selected.

Equipment, including a washing machine, a pressure cooker, a puree maker, and a vacuum packager for puree making at the Duwame bakery, was received from Italy, transported to Hawassa, and taken to the businesses' premises in early October. Installation was not completed in 2020 due to power supply problems—to be resolved in early 2021. Costs of the equipment, additional power supply, and technical assistance are covered via another CIP project working in Rwanda, Kenya, Uganda, and in Ethiopia.

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

In 2019 promotion activities had been constrained by the absence of suitable officially released varieties. Instead, a trial was implemented that tested two promotion strategies: the dissemination of leaflets (with and without recipes) and invitation of retailers to cooking demos to expose them to the array of sweetpotato dishes.

The study⁹ shows that leaflets have a significant impact on consumer knowledge, attitude, and practice with regard to vitamin A and OFSP. But contrary to what was expected on the basis of prior research, the impact of recipes in the leaflets was less clear. The study also showed that retailers who had been exposed to cooking demos had 50% higher sales volumes than colleagues who had only received leaflets. The lessons of this study (cooking demos for retailers and validated leaflets for consumers) were used during promotion activities in 2020.

As stated in the 2020 annual report, the project team planned the following:

- Expose retailers/vendors to OFSP cooking demos and recipes
- Use validated leaflets to raise knowledge, awareness, appraisal, and consumption of OFSP as a healthy food
- Organise promotion events in Hawassa, engaging 'champions' such as musicians and athletes at markets and during other occasions
- Use FANA television's Yordanis' cooking show to promote recipes among TV audiences
- Work with South TV and FANA FM on the broadcast of messages to reach wider audiences

The Activity's programme was severely curtailed due to COVID-19 as events attracting crowds and cooking demos had to be cancelled. Below is a summary of the activities undertaken in 2020:

- February
 - sweetpotato song as recognisable marker for promotion activities
 - promotion event near Saint Gabriel church in Hawassa City with the sales of fresh roots, tasting of sweetpotato dishes, and juice and the dissemination of information via the validated leaflet. Some 202 kg of roots were sold by farmers; about 1,000 people took leaflets. Many people wanted to try bread and injera and had no issues with paying to try.
 - injera makers in Dilla trained
- March
 - promotion event at mobile fuel station area organised in Hawassa City in March with fresh roots, sweetpotato dishes, bread, and injera. Contrary to the previous promotion event, nothing was offered for free. A total of 202 kg of roots were sold by farmers. In addition, about 90 pieces of bread and 100 injera were sold. The sweetpotato promotion song was

⁹ <https://www.sweetpotatoknowledge.org/files/promoting-ofsp-using-leaflet-and-assessing-its-effectiveness-towards-kap-of-sweet-potato-consumers-in-hawassa-city-snnpr-ethiopia-2/>

played. About 250 people took leaflets. As before, many people wanted to try bread and injera and had no issues with paying to try some (Photo 7).

- June–August
 - broadcast of an interview with South radio and television agency during planting
 - cooking demos with retailers in Hawassa (two sessions, 24 women, four men)
 - cooking shows at FANA on FANA on 13, 15, 27, and 29 June, and 4 and 6 July (ጁርዳና ኩሽና)
- October
 - Aleta Chuko bakery (retraining)
 - preparation of a standardised jingle based on the sweetpotato song with text in Amharic to ensure consistent messaging to be played at selected retailers. The jingle was also translated into Oromo-fa and Sidama-fa to cater to non-Amharic-speaking audiences in Shashemene and Hawassa (see below)
- November
 - South FM 100.9 recorded and broadcast interviews with farmers Hawassa Zuriya, Dr Fekadu, and wholesaler Zerihun in marketplace
 - training of retailers (cooking demos) in Gedeo (34 participants, 31 women, three men)
 - establishment of four retail points with leased sound systems and tents dispersed over Hawassa City
 - drive-through promotion and sales tours through Hawassa City; promotion using rental car in Hawassa and Tula sub-city (Photo 8)
 - promotion using a rental car in Shashemene town, where 470 kg of OFSP roots were sold and 350 leaflets distributed
- December
 - ten-days trade fair (“bazaar”) in Hawassa City with fresh roots, dishes, processed products reached about 1,200 visitors
 - meeting with local government and stakeholders about value chain development in Chuko, Dilla, and Wonago (15–18 December 2020)

Photo 7. Sweetpotato promotion in Hawassa City (9 March 2020).



Photo 8. Mobile root promotion and sales in Hawassa city (1 October 2020).



A total of 124 value chain actors (eg, government representatives, vine multipliers, assemblers, vendors, and processors) participated in these four meetings. Government agencies reiterated their support to extend sweetpotato farming and to support dissemination of planting material by actively buying and distributing planting material and by supporting the creation of vine multiplier cooperatives.

In response to the COVID-19 emergency, QDBH donated 3,100 kg of roots, valued at 28,700 ETB, to a programme led by Hawassa University to support poorer HH in Hawassa City and to an association of organisations supporting people with physical handicaps living there.

According to the work plan, the 2018 study assessing sweetpotato consumption in Hawassa was supposed to be repeated in 2019 to assess the impact of the Activity on OFSP consumption and knowledge about vitamin A and healthy diets. Owing to COVID-19, and the fact that market promotion only gained momentum after August, we had to postpone this follow-up study to the first quarter of 2021. As a result, Activity impact is estimated on the basis of marketed volume and the 2018 estimate of 2 kg of annual consumption per capita or 0.167 kg/month. Table 8 (page 7) shows that at least 53,200 consumers were reached (October value), and that the Activity has most likely reached its targets of 61,000. Total estimated market share hovers around 3%.

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

The monitoring system has been implemented as intended. Standard collected monitoring, learning, and evaluation (MLE) data include names and contacts of people participating in trainings, receiving vines, names and contacts of HLC members, and facilitators.

A specific system was put in place to monitor the HLC training sessions. HDAs, CFs, and field officers report on the quality of the sessions. It also includes house visits to 10% of the HLC members to see the uptake of the lessons. The results are published on the [dashboard](#) (Figure 6, page 25). **Error! Reference source not found.** summarises the results of the assessment of the HLC training sessions. The collected data indicate that performance was excellent. There is a slight dip in session 5 when the programme resumed after several months of interruption.

Table 20. Summary of the assessment of HLC training sessions (%) in 2019–2020

	Batch 3							Batch 4			
	2	3	4	5	6	7	8	1	2	3	4
	Dec.	Jan.	Feb.	Aug.	Sep.	Sep.	Oct.	Nov.	Nov.	Dec.	Dec.
1. Training materials available	100	100	100	100	100	100	100	97	100	100	100
2. Training materials in good condition	100	100	100	100	100	100	100	100	100	100	100
3. The facilitator carries out all tasks foreseen in the training	100	100	100	100	100	100	100	100	100	100	96
4. The facilitator uses all the materials that should be used	100	97	100	100	97	100	100	94	100	100	96
5. The participants take part in all activities	100	100	100	100	100	100	100	100	100	100	100
6. The participants actively participate in the session	100	100	100	100	100	100	100	100	100	100	100

Table 21 summarises the results of the HH visits. They show that all HH had access to the key teaching tools (goal card and dietary diversity wheel). In Batch 3, about one-fifth of the HH had access to the HBT, which is aligned with the fact that in their case only HH in the full treatment kebeles received these items. In Batch 4, as additional HBTs became available, all HH declared having the bowl and spoon.

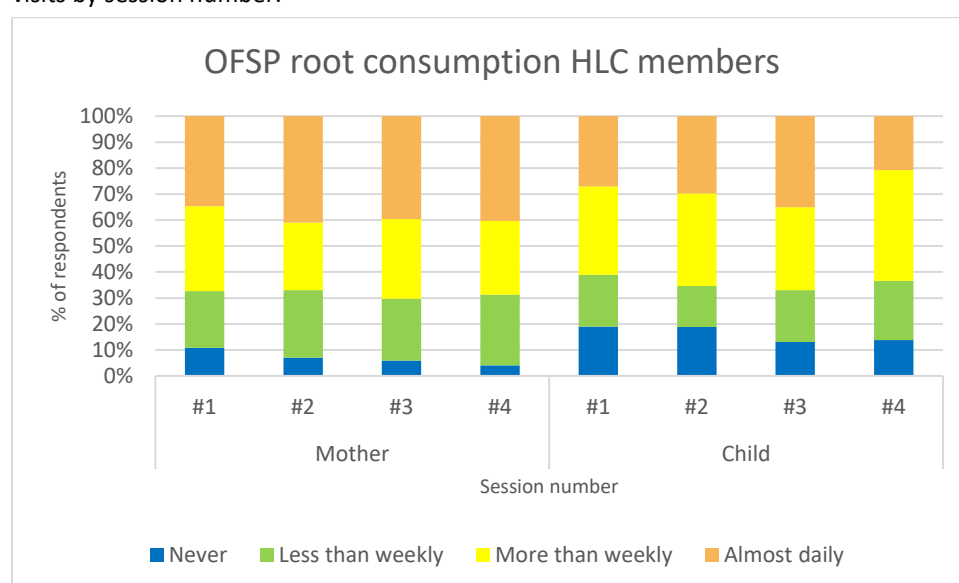
Table 21 also shows that most mothers and children claim to have eaten OFSP in the months before the visit. Consumption varies along the training programme, probably as a result of the seasonality of harvest and changes in awareness. It appears that in August and September, consumption of roots is replaced by sweetpotato leaves.

Table 21. Summary of the results of HH visits to 3 members of each HLC after each session in 2019–2020

	Batch 3							Batch 4			
	2	3	4	5	6	7	8	1	2	3	4
Session number	Dec.	Jan.	Feb.	Aug.	Sep.	Sep.	Oct.	Nov.	Nov.	Dec.	Dec.
HH has goal card	97%	94%	100%	100%	95%	100%	100%	100%	100%	98%	100%
HH has diet wheel	79%	94%	100%	100%	95%	100%	100%	100%	100%	100%	100%
Mother has bowl	16%	17%	17%	17%	17%	22%	16%	98%	94%	100%	100%
Mother has slotted spoon	16%	17%	17%	17%	17%	21%	16%	98%	95%	100%	100%
Mother did not eat OFSP roots in past month	18%	7%	25%	52%	61%	43%	20%	11%	7%	6%	4%
Mother did not eat OFSP leaves in past month	37%	8%	28%	11%	17%	12%	10%	11%	6%	8%	26%
Child did not eat OFSP roots in past month	21%	12%	34%	52%	64%	42%	25%	19%	28%	13%	14%
Child did not OFSP leaves in past month	44%	17%	44%	26%	22%	14%	16%	27%	19%	20%	42%

The monitoring tool provides more detailed information as it distinguishes frequencies (ie, never, less than once a week, more than once a week, daily, or almost daily). Figure 9 summarises that information for OFSP root consumption by mother and child in Batch 4 of the HLCs. It appears that 35–41% declared that they ate OFSP daily between the two sessions, and that between 21–35% of the children ate OFSP almost every day.

Figure 9. Frequency of OFSP consumption of mother and child in HLC Batch 4 reported during follow-up house visits by session number.



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 total cost of activities per direct beneficiaries reached. Staff-time costing is based on position/responsibility and time allocation as expressed by their job descriptions and by the justifications of their field visits.

Data for the cost effectiveness study were collected in early 2020 and cover the years 2017–2019. Draft reports were produced and discussed along 2020. A final version is expected in early 2021.

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

Baseline data for the longitudinal (see Section 1.4.5.1 for details) and the cross-sectional study were collected between December 2017 and January 2018. The longitudinal study started with a sample of 650 HH, and the cross-sectional study interviewed 1,450 HH at baseline. The cross-sectional baseline report is available on the SKP.¹⁰ It provided the information for the logframe outcome indicator data. The cross-sectional endline study is expected to be finished during the first quarter of 2021.

A.1.4.4 Plan and implement a midline assessment

As agreed in 2017, no midline study was carried out. Instead, the endline was brought forward by one year to allow for a significant intervention in the control kebeles before the end of the Activity. It was also to allow the findings from the endline to be used to provide evidence to policymakers in SNNPR about the usefulness of the integrated agriculture-nutrition approach.

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

Data for the cross-sectional endline were collected between late October and mid-December. In total 2,605 HH were interviewed in 26 kebeles. The sample was divided in three groups: HH recruited

10. <https://www.sweetpotatoknowledge.org/?s=baseline>

from the membership lists of the 2017 HLCs, HH recruited from the membership lists of the 2018 HLCs, and HH who did not participate in an HLC but had children aged under 30 months. These were recruited from lists prepared by kebele managements containing the names of all the HH heads and their spouses, plus some basic data about HH composition, their enrolment in HLCs, and their having access to OFSP.

The questionnaire was the same as in 2017 except for the section focusing on sweetpotato farming (Module 4). In line with the assessment of the baseline study, this section was drastically modified. Data were entered as soon as they came from the field using CSPro data entry software. Data cleaning and analysis were carried out during the first semester with the support of an external consultant. A final draft is ready.

Owing to the complex sample frame, the impact of the Activity was compared at three levels:

- Intervention kebeles with control kebeles
- HH in the HLC member lists in the intervention HH, with control HH in the control kebeles
- Self-declared HLC member HH in the intervention kebeles, with HH who declared that they were not HLC members in the control kebeles

Results for key indicators are summarised in Table 22. While for several indicators scores at endline are worse than at baseline score for intervention kebeles, people registered as HLC members and people who confirmed that they were HLC members have significantly improved. There are percentage gains of over 1,000%; for example, for the mean number of days that a child eats food containing vitamin A. All differences between beneficiaries and their respective controls are significant at 1%. Difference between partial and full treatment groups are not significant, however.

The beneficiary scores are given in Table 1 on page vi. Table 22 shows the project impact by presenting the quotients of the beneficiary scores and the control scores. Thus, it appears that the self-declared HLC members in the intervention kebeles received 10.1 times OFSP than did the self-declared non-HLC members in the control kebeles. Similarly, their proportion of OFSP of any sweetpotato is about 21.6% as high. Their HFIAS is 0.8 of the controls, meaning an important improvement among the beneficiaries of the Activity. Similar gains can be shown for other indicators.

Table 22. Project impact by showing key indicator values for baseline and endline, intervention kebeles, sampled HLC members, and respondents who confirmed being HLC members, showing gain as the quotient of the beneficiary and control scores

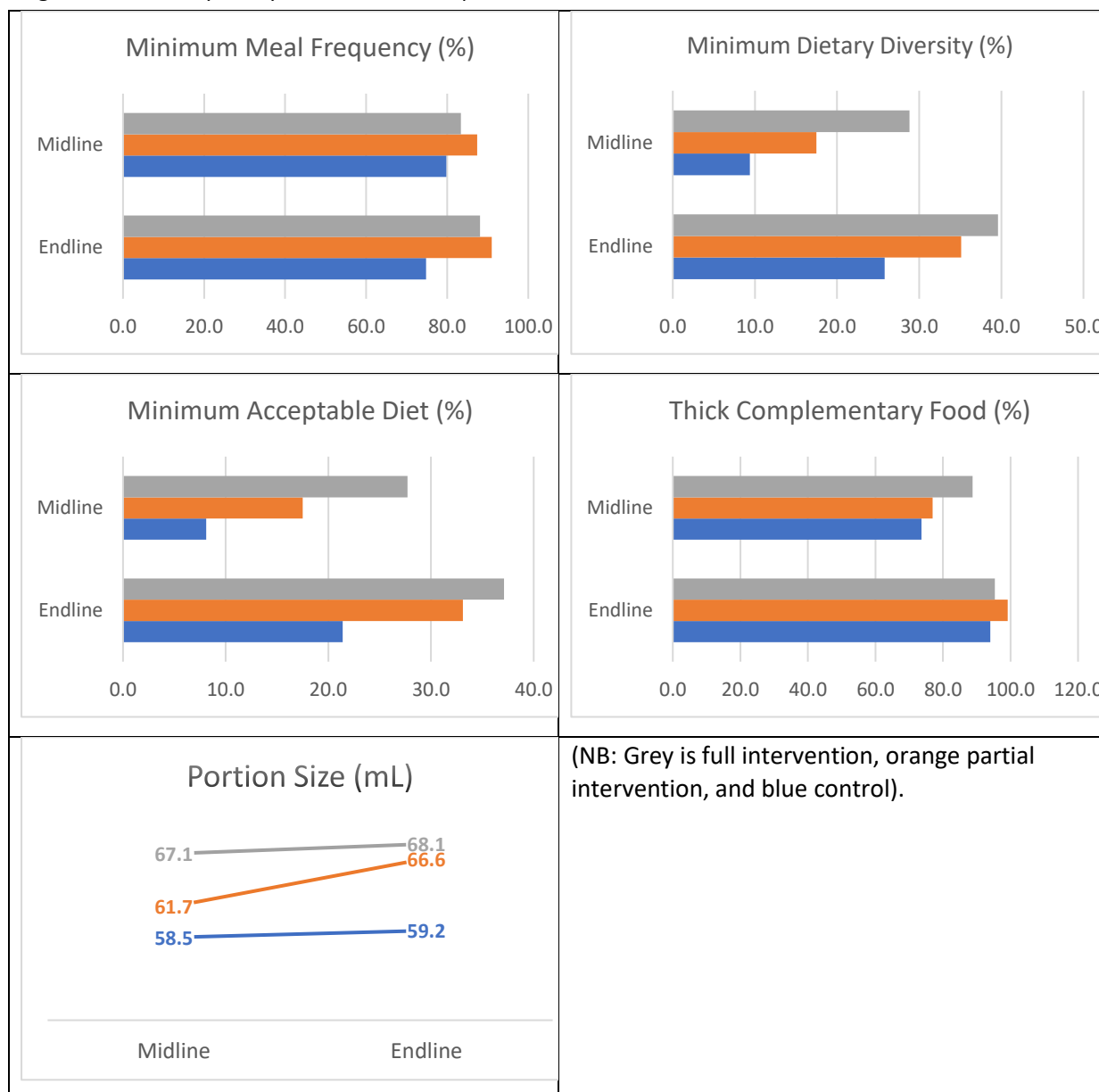
	Baseline	Endline			
		Gain (beneficiary score/control score)			
	Score	All ^a	Kebele	Assigned	Self-declared
% received OFSP	3.5	11.5	4.4 ^b	2.3	10.1
% of OFSP in harvest of all types of sweetpotato	1.5	15.8	11.8	11.7	21.6
HFIAS ^c	8.38	0.9	0.9	0.9	0.8
Days during the past week OFSP eaten by child	0.05	4.0	4.8	5.5	11.5
Vitamin A total food intake score (child)	2.11	0.8	1.5	1.4	1.7
Minimum dietary diversity (MDDS) score (W)	2.94	0.9	1.1	1.1	1.2
CDDS	2.93	1.0	1.1	1.1	1.2

^aGains compared with baseline; ^bHH in the control kebeles had received OFSP planting material before the start of endline data collection; ^ca reduction in HFIAS means an improvement in food security.

A.1.4.5.1 Implement a longitudinal study: Value addition of innovative SBCC to improve child diets

In 2020 a preliminary version of the longitudinal endline report was produced. The endline was conducted during the OFSP harvest season and when food security is relatively high. Figure 10 captures key results. It appears that full and partial intervention groups show a slightly better minimum meal frequency (MMF), dietary diversity, minimal acceptable diet, and portion size compared with the control group. There is no difference among the three groups with regards to the percentages of HH using thick complementary food.

Figure 10. Summary of key indicators for full, partial, and control HH at midline and endline.



At midline a high proportion of the sample met MMF recommendations, with only small differences between groups. At endline the proportion meeting MMF increased in both intervention groups but decreased in the control group. Notably, at midline the sample was aged 6–13 months, and the MMF is only two meals a day for any infant under 9 months. At endline the entire sample was 12 months or older, and would require three meals a day to meet the minimum recommendation.

The percentage meeting MDD increased from midline to endline, perhaps as a result of the sample getting older. At each time point, the control group had the lowest percentage meeting MDD and the full intervention had the highest percentage meeting MDD. The patterns for children meeting minimum acceptable diet (MAD) recommendations were similar.

At midline the full intervention had a higher percentage reportedly receiving thick complementary foods. At endline (ie, when the children were all about 6 months older), over 90% of the entire sample were receiving thick complementary foods, and there are only small differences between the three intervention groups. Caregiver-estimated portion sizes were lowest in the control group at midline and highest in the full intervention group. However, portion sizes were small in general, and the difference between the full intervention and control group was less than 10 millilitres (less than 0.5 fluid ounce). The partial intervention mean portion size increased from midline to endline; portion sizes in the full intervention and control groups did not markedly increase at endline.

During 2020 several presentations of the results of the study were done at virtual international fora. An overview of posters and presentations can be found in Annex D.

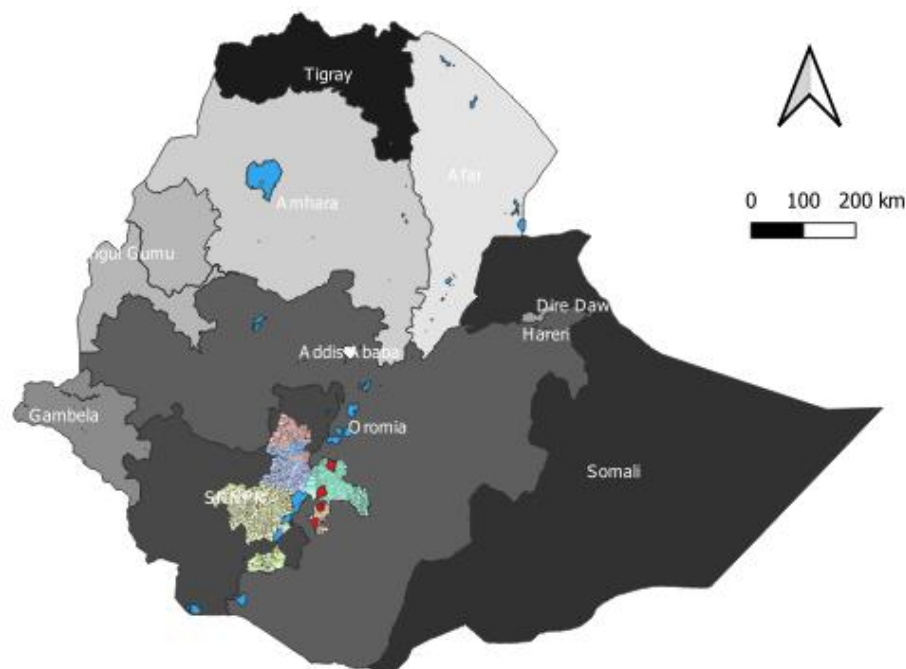
In general, the results indicate that the Activity improves HH nutritional knowledge and appears to have buffered families against seasonal food insecurity. The HBT appears to enhance the QDBH nutrition education activities and prompt improved feeding practices above and beyond access to OFSP and nutrition training alone. The nutrition component has achieved an important change in diet, with the uptake of OFSP roots and sweetpotato leaves being eaten by a large section of the population that originally did not consume these foods.

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

A least six woredas in Wolayita and Sidama (East Badiwacho, Sodo, Gibe, Mirab Abaya, Hawassa Zuria, and Aleta Chuko) have already incorporated OFSP into their plans and budgets in 2020. In late 2020, Bona in Sidama and Wonago in Gedeo also included OFSP in their annual plans for 2021. Thus, as of February 2021, eight woredas have adopted OFSP at the key administrative level.

Figure 11 gives a sense of the geographical increase in the coverage by QDBH since the start of the Activity. Initially QDBH worked only in three woredas, with a fourth added in 2018. Thanks to the scale-out in 2019 and 2020, now 37 woredas in six zones and three regions (Oromia, Sidama, and SNNPR) have received OFSP agronomic training and planting material.

Figure 11. Map of Ethiopia with the original intervention woredas (red) and the zones reached via scaling-out (coloured).



The Activity managers believe that the HBT is an innovative product that evidence will demonstrate is worth using nationally in Ethiopia and other SSA countries. In 2019 considerable effort was made to identify plastic companies in Nairobi, Kenya, that could make the HBTs at a reasonable cost. ADIX plastics was selected and has produced bowls and spoons, both dyed orange, for less than \$0.30. This means that it is now economically viable to include the HBT in proposals to the Ethiopian government to have it incorporated into regional and national nutrition education efforts.

Thanks to the availability of cheaper HBTs, 2,580 additional sets were obtained. This effort was co-financed by the Development and Delivery of Biofortified Crops at Scale project—funded by the UK’s Foreign, Commonwealth and Development Office (formerly DFID). All HH who benefitted from the Activity in 2020 received a bowl, spoon, and counselling card. On the basis of the midterm findings from the longitudinal studies, HBTs are being used in integrated OFSP-nutrition efforts in Kenya and Uganda.

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

Owing to COVID-19, separate one-day training sessions were held in each of the woredas that received cuttings. Cuttings were disseminated to FTCs for demonstration and multiplication and to farmers. Table 8 (page 7) contains the details.

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

The baseline study was carried out in August 2018. The endline was foreseen in late 2020 but has been postponed to early 2021 due to COVID-19.

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

Owing to COVID-19, all public meetings were cancelled. We had planned to host a webinar to gain visibility and support for scaling out the Activity’s approach with the support of 2FAS, but in the end this was not possible. The Activity contributed to the Fill the Nutrition Gap led by the World Food Programme and the Ethiopian Institute of Public Health. During the second round of webinars, the Fill the Nutrition Gap team quoted the QDBH project, citing the use of OFSP puree at bread baking and sweetpotato leaves as a form of food fortification in its presentation on food systems, agricultural production and fortification.

QDBH was also showcased in presentations to the European Union: 16 January in Brussels in a consultation on the European Commission’s food fortification guidance; 5 February in a meeting of the European Parliament on “Food Fortification as an Essential Development Strategy”, and 19 May in a webinar for European Union delegations on food fortification.

Annexes

Annex A. Updated logframe matrix

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019			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 diarrheal 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.; 0 at baseline as children under 6 months of age		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
			17% of reference children suffered of diarrhoea past 2 weeks (M07_13)	9%	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				14%		
			8.38 HFIAS score (M05_1B M05_9B)	7.7 all 8.3 control 6.7 benef.	3) At least 30% reduction in food insecurity score compared with control group (rural only)				5.87		
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 urban consumers in 3 urban centres, achieved through an improved delivery of nutrition-sensitive	1) Frequency of intake of vitamin A-rich foods during past 7 days by urban consumers and rural mothers and children aged <5 years	Urban consumers 51% last 24 hours (August 2018)	N.A. To be collected in 2021	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 nutrition intervention; 1 & 4) URBAN consumers: Survey at local markets of adult consumers at end of intervention period:	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 advertising skyrocket or rules restrict promotion campaigns
			Rural mothers 2.19	1.9 all 1.5 control 2.4 benef.							
		2) Rural woman's dietary diversity index for past 24 hr, including category for	MDD-W; 2.94	2.56 contr. 3.05 benef.	2) At least a 20% improvement in the woman's dietary diversity score				3.5		

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019			Y1	Y2	Y3	Y4		
	agricultural and health extension services.	biofortified foods	Bio-fortified food 2.5%	6.6% all	compared with control group (rural)					OFSP purchasers vs. non-purchasers	
			IYCF=2.6 (M06_01) (M06_20) 2.95	-	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				3.8		
			% Biofortified food 3.3%	5.5% all					4,3%		
		3) % of rural children <2 minimal acceptable diet	% of children with minimum dietary diversity (≥4 food groups) 34.2%	15.0 all 23.9 contr. 41.0 benef. -					44.5%		
			MAD breastfed 25.32	4.5 all 8.7 control 5.6 benef (non sign.)					32.9%		
			MAD not breastfed 9.64	14.0 all 10.4 control 19.3 benef (sign. 1%)					12.5		
		4) For urban consumers: Awareness of vitamin A and its role in the body & awareness that OFSP is an excellent source of vitamin A	% Aware of vitamin A 55%	In 2021	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%		
			% aware OFSP source 3%	IN 2021					20%		
			% knowing role Vit. A 43%	In 2021					20%		
Outputs	Op1.1 53 decentralized OFSP vine multiplication sites, operated by trained DAs of FTCs and selected	1) % of supported sites supplying local HH with vines at the end of the Activity	Planting materials for OFSP available only at national research programme	31 FTC & 53 DVM provide 100% of all planting material	1) 70% of 53 vine multiplication sites established operating at end of Activity	26	48	48	84	1) Multiplication site monitoring forms 2) Dissemination records from monitoring system 3) Baseline and endline	There is no devastating drought that severely affects water table Government continues to support and operate FTCs
		2) Vine multiplication sites provided vines to at least 15,000 HH									

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019			Y1	Y2	Y3	Y4		
	private farmers, provide 15,000 local HH with the inputs and knowhow required for a homestead production of OFSP	3) % of trained HH are able to explain/demonstrate at least 3 correct OFSP production practices introduced by the extension workers	0 HH received vines	15,328 received vines	2) 15,000 HH are provided with vines	780	4050	10,410	15,330	surveys among HH with children aged < 5 years	Biofortification remains a priority in government strategies
			0 trained HH, adequate is at least 2 lessons mentioned	15,328 trained HH, 42% all 9% control 91% benef	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	0 (no recipes taught)	5 recipes in cooking demos; and HLC trainings, 26 recipes mentioned at endline	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	0	1,420	3,470	5,110	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
				23% of sampled HLC members shared with around 23,000 HH	2) At least 30% of women in HLCs have shared OFSP-based recipes with other non-group members	0	850	2,080	3,066		
			% reporting change	No info	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	568	1,249	1,840		
	Op1.3 Improved supply of and demand for OFSP products in the urban areas with the increased consumption of at least 61,000 beneficiaries	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 producers supplying agro-processors 3) % of urban shoppers purchasing a baked or fried product during the past week that purchased an OFSP product	No OFSP available	4 Chuko 3 Wonago 8 Hawassa, OFSP slightly cheaper	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 receiving roots from farmers 3) Endline survey of urban consumers at 3 major markets	Agro-processor respects MOU requiring company to share sales figure data Market authorities & shopkeepers permit the collection of data Farmers are interested in commercialization opportunities & OFSP is competitive with alternative crops
			No processed products	3 processed products, 50 sold to market	2) At least 500 farmers (50% women) supply agro-processor(s)	0			500		
			0% of urban shoppers	Unknown							

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019			Y1	Y2	Y3	Y4		
			OFSP seasonally available in limited roadside selling points	Available at markets in Addis, Hawassa, Chuko, Wonago	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 agricultural extension and health promotion systems, with a potential to reach at least 3m women and children at risk of VAD	1) No. of additional DAs/ HEWs or other government personnel trained about sweetpotato by those trained as ToTs	No trained staff	322 DA at ToTs, 113 DAs in step-down, and 135 HEWs and 511 HDAs in step-down 3400 HH received via sharing	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
		2) No. of woreda agriculture offices that have been exposed to the results of the intervention that have incorporated OFSP into their own programmes.	0	8 out of 41 <i>woredas</i> (4 target and 37 scaling out)		0	9	9	20		
		3) No. of HH reached with OFSP vines in Y 4 & Y5 by extension personnel NOT backstopped by project	0	7255 in 37 <i>woredas</i>		0	0	0	3000		
						Y1 (2017)	2019	2019	2020		
Activities	A.1.0.1. Inception: Recruitment, staff training, office, setup in Hawassa & Project launching workshop			Completed	N.A.						Funding, office space, candidates available
	A.1.0.2. Hold monthly project progress review and planning meetings with consortium staff			2 steering committee meetings	Biweekly meetings at Hawassa level		Only planning meetings at Hawassa level				Frequency adequate for implementation
	A.1.0.3. Hold annual stakeholder meeting, presenting project progress and receiving feedback			3 meetings	3 meetings in 2019		Written report plus feedback from all woredas and kebeles due to COVID			Meeting reports	Interest in the project

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019			Y1	Y2	Y3	Y4		
	A.1.1.1. Design and implement qualitative research on women and men's roles along the OFSP value chain		Completed	Published as working paper		-				Report	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	83 demo plots in 42 kebeles		83 plots multiply and demonstrate				Report	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	3rd training course, 41 participants (not foreseen)		One-day trainings at 30 new woredas for scaling out as meetings were forbidden				Report	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		26 DAs trained, FTCs equipped with irrigation equipment	27 additional trained in TOT, 44 in step-down, total 51 and 82 respectively						Report	Equipment available in Ethiopia
	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		4,048 HH in HCLs	6,300 HH added, cumulative 10,348; 62 short of target		15,328 women and ... men (estimate)				MLE data, activity report	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.		4,048 HH received vines through baby trials	6,300 HH added, cumulative 10,348; 62 short of target						MLE and endline data	OFSP varieties officially released
	A.1.1.7. Plan and implement events to promote dissemination to indirect beneficiaries		Sharing at dissemination	Revise target downwards to about 2000 as people are reluctant to share		Sharing expected to have reached 3400 HH in 26 kebeles				MLE and endline data	OFSP varieties released, multiplication on speed; people willing o share
	A.1.1.8. Integrate OFSP production into FTCs annual production plans and budgets		No clear data	FTCs trained in accounting and financial planning		8 woredas adopted				Progress reports	FTCs have market for OFSP
	A.1.2.1. Conduct formative research on the key barriers and boosters to OFSP production and consumption. Develop social behaviour change communication (SBCC) and promotion strategy, including use of health baby toolkit (bowl/spoon).		Completed	Published on Knowledge portal		On knowledge portal				Report available	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		0 HEW	86 new HEW trained, total is 135; 210 new HDAs, total is 345.						Activity reports	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	9 events for each batch of HLCs (2017, 2018, 2019)		8 trainings for batch #3, 4 for batch #4				MLE reports	HH willing to participate
	A.1.3.1. Plan and implement rapid market assessment of sweetpotato value chain		Seed system components completed	Draft paper presented		Combined with gender study				Paper published, material available on the market	Planting stock, vines and roots are marketed

	Results Chain	Indicators	Baseline	Current Value	Targets	Targets				Sources and Means of Verification	Assumptions
			December 2019	Y1		Y2	Y3	Y4			
	A.1.3.2. Plan and implement support to improve supply of OFSP to the target urban markets.		Not yet	7540 kg supplied to fresh root and processed product markets under pilot and promotion events		33 tonnes bought from farmers, 27 tonnes sold to retailers and processors		Biweekly reports, activity reports	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		Zero	Dabo, injera and bombolino piloted on the market		Dabo, injera, cookies. Puree making still not active		Biweekly activity reports	Products economically attractive for private sector		
	A.1.3.4. Identify private sector partner and provide technical support for establishing 1 OFSP-processed product value chain		Not yet	Private sector partner identified via BioInnovate to produce puree.		Private partner identified, equipment at perimeter but not commissioned due to power supply issues		BioInnovate Trip report	Capable entrepreneurs exist		
	A.1.3.5. Design and implement an OFSP promotion campaign in targeted urban areas		Not yet	First three events implemented		Three events in Hawassa town, COVID constraints; TV shows on FANA		Activity report	OFSP varieties officially released		
	A.1.4.1. Design and implement monitoring system for R1 & R2 targets		In place	MLE system running		MLE dashboard available		MLE reporting			
	A.1.4.2. Design system for collecting disaggregated cost data developed, drawing on Phase 1 experience and collect data		In place, needs testing	Study delayed till early 2020		Study carried out, final draft ready, final version expected before March 2021		Expenditure reports, additional study			
	A.1.4.3. Plan and implement baseline study on community-level intervention		Data collection completed	Draft report ready		Report available on knowledge portal		Baseline report			
	A.1.4.4. Plan and implement midterm assessment		To be skipped	To be skipped		Skipped		-	Time span between base-, mid-, 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	Data collected for 2605 HH		Draft report ready for internal review		Data set, endline report			
	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	6 already did. Further negotiations over 2020		8 did		Written agreements	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		12 new woredas in 2018	One new woreda from Oromia in 2019		37 woredas reached in Oromia, Sidama and SNNPR		Training reports	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	Done, marketing pilot to validate and assess impact of leaflets		Marketing pilot report on knowledge portal; Consumer study to be implemented before March 2021		Report (not published)			
	A.1.4.9. Plan strategy for final write-up and dissemination of findings; implement the strategy		Not yet	Not yet		Under design					

Annex B. Updated action plan for future project activities

Year													
Activity	Half year 9												Implementing body (comment)
	1	2	3	4	5	6	7	8	9	10	11	12	
<i>Example</i>													<i>Example</i>
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 (report published)
Conclusion A.1.1.2. Establish demo trials of OFSP in major sites & acceptability assessment													CIP (task concluded)
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, no 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 (166 HLCs, mostly in Kochere and control kebeles)
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 and PIN
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 (concluded and available on internet)
A.1.2.2. Design, plan, and train health extension personnel on nutrition and SBCC techniques													PIN
A.1.2.3. Plan and implement series of participatory 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)

Year													
	Half year 9												
Activity	1	2	3	4	5	6	7	8	9	10	11	12	Implementing body (comment)
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 (second trials)
A.1.3.4. Identify private sector partner and provide technical support for establishing 1 OFSP-processed product value chain													CIP, Hawassa University
A.1.3.5. Design and implement an OFSP promotion campaign in targeted urban areas													CIP, Hawassa University
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 (document report)
A.1.4.5. Plan and implement longitudinal study on community-level intervention													Emory (reporting)
A.1.4.5. Plan and implement endline study on community-level intervention													CIP
A.1.4.6. Negotiate agreement with the regional and <i>woreda</i> 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 <i>woredas</i> 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

Note: This plan will cover the financial period between the interim report and the next report.

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; CIP has 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: (1) design and roll-out of irrigation equipment for FTCs, (2) selection of beneficiaries and implementation of vine dissemination, and (3) 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.

The third partner, Emory University, no longer has a staff member present in Hawassa as its activities in the field have been completed. Communication with Emory is now ad hoc by email or via Skype.

- 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 regional and zonal levels, relations with the BANRD are cordial. Zonal staff have been supportive and very much engaged with the Activity's actions. Owing to COVID-19, regular stakeholder meetings could not be held and field visits were minimised. There are also restrictions on having passengers in vehicles. As a result, interaction has been less than expected.

Sending a brief and requesting feedback has proved a workable alternative, but face-to-face meetings remain important, in particular at a stage where partners need to be made aware of the opportunities the Activity's approach offer for scaling out to other parts of Ethiopia.

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

- The relation with Southern Agricultural Research Institute / Hawassa Agricultural Research Center has become less intensive as at this stage they have no longer contributed with basic seed, recipe development, and cooking demos. There is an ongoing informal discussion with the breeder about the performance of the released varieties in the field.
- The relation with the Nutrition and Food Science School of Hawassa University is currently structured around setting up of a processor business together with CIP's BioInnovate project.
- Wolayta Sodo Agricultural Technical and Vocational Education and Training Institute has become a key partner for the implementation of the ToT "Everything You Want To Know about Sweetpotato". As reported in 2019, the college included elements in their regular curriculum and committed to running the trainer in the future. But as the educational institutes were closed, the ToT was not organised in 2020. Owing to the pandemic, there have only been minimal contacts addressing their involvement in the one-day trainings that have replaced the ToT as a vehicle for scaling out.

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

- The Activity has coordinated work on vine dissemination and training with the USAID financed Emergency project and with the DFID-financed Development and Delivery of

Biofortified Crops at Scale project. In some cases, these projects operated in the same woreda. In those cases, each project would select different kebeles to work with.

- With the CG's Research Program on Roots, Tubers and Bananas, the project works on the promotion and scaling out of locally adapted Triple S techniques for the conservation of planting material.
- With Hawassa University, actions are around the installation of the puree production facility. The Activity has also contributed to an emergency food aid initiative by Hawassa University in Hawassa City.

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's contribution. In line with this strategy, during Year 4 the following actions have been undertaken:

- Message carriers
 - banners for vendors/retailers
 - signs at the 42 FTCs benefiting from investments through the project.
 - banners during vine dissemination and HLC graduation events
 - leaflets for consumers
- Public record of database
 - cross-sectional baseline study data set: <https://doi.org/10.21223/P3/HBCVUN>
- Public record of reports
 - all materials that Emory has produced (curriculum, counselling card, dietary diversity wheel, and goal card) include the EU emblem and credit the EU for funding. Informed consent documents for data collection disclose the EU as the funder of the research. All reports, papers, presentations and theses produced by Emory and derived from this project acknowledge the EU as the funding agency. They are available at <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-formative-nutrition-report/> and <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-healthy-living-clubs-curriculum/> https://www.sweetpotatoknowledge.org/files/pres15_qdbh_designing_nutrition_education_for_behavior_change/ and <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-longitudinal-baseline-report/>
 - the gendered value chain study was published on the CGIAR website: <https://doi.org/10.4160/02568748CIPWP20191>. <https://cgspace.cgiar.org/handle/10568/106237>
 - trans-sectional baseline report: <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-baseline-report/>
 - longitudinal baseline report: <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-longitudinal-baseline-report/>
 - formative research nutrition <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-formative-nutrition-report/>
- Media
 - sweetpotato song and sweetpotato promotion jingles
 - FANA cooking shows
 - two programs at FANA TV project as part of EUs visibility activities <https://www.sweetpotatoknowledge.org/ofsp-processing-enriches-diets-in-snnpr-ethiopia/>
 - two promotion videos (Boosting nutrition in Ethiopia with orange-fleshed sweetpotato: <https://youtu.be/eYFBkyiWJRQ> and Growing markets, growing demand for nutritious sweetpotato in Ethiopia: <https://youtu.be/7LNniKWDbx0>)
- Training materials: Amharic version TOT manual available on CG space:
 - Vol.1: <https://hdl.handle.net/10568/109220>
 - Vol.2: <https://hdl.handle.net/10568/109221>

- [Vol.3: https://hdl.handle.net/10568/109222](https://hdl.handle.net/10568/109222)
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- [Vol.6: https://hdl.handle.net/10568/109225](https://hdl.handle.net/10568/109225)
- [Vol.7: https://hdl.handle.net/10568/109226](https://hdl.handle.net/10568/109226)
- Conference posters/presentations
 - Faerber EC, Pyo L, Brouwer R, Low J, Webb Girard A. *A Nutrition-Sensitive Orange-Fleshed Sweet Potato Project Improves Dietary Diversity, Food Security in Southern Ethiopia*. Micronutrient Forum, online conference. November 2020. (Poster) <https://www.eventscribe.com/2020/MNF-CONNECTED/fsPopup.asp?Mode=posterinfo&PosterID=310456>
 - Faerber EC, Brouwer R, Low J, Webb Girard A. *Agricultural Production Diversity and Dietary Diversity and Food Insecurity During Food Secure and Food Insecure Seasons in Southern Ethiopia*. Micronutrient Forum, online conference. November 2020. (Poster) <https://www.eventscribe.com/2020/MNF-CONNECTED/fsPopup.asp?Mode=posterinfo&PosterID=310454>
 - Faerber EC, Brouwer R, Low J, Webb Girard A. *A Nutrition-Sensitive, Orange-Fleshed Sweet Potato Project in Southern Ethiopia Improves Complementary Feeding Practices: An Examination of Potential Impact Pathways*. Micronutrient Forum, online conference. November 2020. (Poster) <https://www.eventscribe.com/2020/MNF-CONNECTED/fsPopup.asp?Mode=posterinfo&PosterID=310455>
 - Faerber EC, Brouwer R, Low J, Webb Girard A. *A Nutrition-Sensitive, Orange-Fleshed Sweet Potato Project in Southern Ethiopia Improves Complementary Feeding Practices: An Examination of Potential Impact Pathways*. Agriculture for Nutrition and Health 2020, online conference, June-July 2020. (Oral) <https://www.youtube.com/watch?v=QB8qhKZB53I>
 - Faerber EC, Brouwer R, Low J, Webb Girard A. *A Nutrition-Sensitive, Orange-Fleshed Sweetpotato Project in Southern Ethiopia Improves Seasonal Food Insecurity and Household Dietary Diversity*. Agriculture for Nutrition and Health 2020, online conference. June-July 2020. (Poster) <https://www.youtube.com/watch?v=QYCDsmtj0rw>
 - Faerber EC, Pyo L, Brouwer R, Low J, Webb Girard A. *Community-Based Nutrition Education Improves Caregivers' Knowledge of Complementary Feeding in Southern Ethiopia*. Nutrition 2020 (American Society for Nutrition), online conference. May-June 2020. (Poster) https://academic.oup.com/cdn/article/4/Supplement_2/979/5844617
 - Faerber EC, Pyo L, Brouwer R, Low J, Webb Girard A. *A nutrition-sensitive orange-fleshed sweetpotato project improves household food security, nutrition outcomes in southern Ethiopia*. African Potato Conference, Kigali, Rwanda. August 2019. (Poster)
 - Pyo L, Faerber EC, Brouwer R, Low J, Webb Girard A. *Increased exposure to an integrated agriculture and nutrition intervention is associated with improved complementary feeding practices in southern Ethiopia*. African Potato Conference, Kigali, Rwanda. August 2019. (Poster)
 - Faerber EC, Waugh E, Webb Girard A. *Designing Nutrition Education for Behavior Change: Experiences from Quality Diets for Better Health* (presented by Jan Low on behalf of Emory University). International Potato Center. June 18, 2018. Available at: https://www.sweetpotatoknowledge.org/files/pres15_qdbh_designing_nutrition_education_for_behavior_change/.

- Faerber EC, Waugh E, Brouwer R, Webb Girard A. *Formative Nutrition Work in Southern Ethiopia: Ensuring Success of Orange-Fleshed Sweetpotato Promotion Amid a Broader Strategy to Improve Child Nutrition*. Sweetpotato for Profit and Health Initiative, Annual Conference, Dar Es Salaam, Tanzania. September 2017. (Poster).
- Technical publications
 - Faerber EC, Webb Girard A. *Quality Diets for Better Health: Longitudinal Baseline Report. Prepared for the International Potato Center*.
<https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-longitudinal-baseline-report/>
 - Faerber E, Waugh, E, Webb Girard, A. *Quality Diets for Better Healthy Formative Nutrition Report: Assessment of Infant and Young Child Feeding in Southern Nations, Nationalities, and Peoples' Region, Ethiopia. February 13, 2019*. Prepared for the International Potato Center.
<https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-formative-nutrition-report/>
 - Waugh E, Faerber E, Webb Girard A. *Quality Diets for Better Health: Healthy Living Clubs Curriculum: A Manual for Health Extension Workers and PIN Community Facilitators*. February 18, 2019. <https://www.sweetpotatoknowledge.org/files/quality-diets-for-better-health-healthy-living-clubs-curriculum/>
 - Waugh E, Faerber E, Webb Girard A. *Quality Diets for Better Health: A social and behavior change communication strategy for nutrition and orange flesh sweet potato promotion in SNNPR, Ethiopia*. Prepared for International Potato Center and People in Need, September 2017.

The European Commission may wish to publicize 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:

CIP is a research-for-development organization with a focus on potato, sweetpotato and Andean roots and tubers. It delivers innovative science-based solutions to enhance access to affordable nutritious food, foster inclusive sustainable business and employment growth, and drive the climate resilience of root and tuber agri-food systems. Headquartered in Lima, Peru, CIP has a research presence in more than 20 countries in Africa, Asia and Latin America.

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