

USAID KENYA Accelerated Value Chain Development Program

Potato Value Chain

FY 2019 YEAR 1 ANNUAL REPORT

1 January–31 December 2019

Prepared by:

International Potato Center

CONTENTS

Acronyms	III
Executive Summary	IV
1. Background	I
2. Key Achievements (Qualitative Impact)	4
2.1 PROGRESS BY OBJECTIVES	4
2.1.1 Objective 1	4
2.1.2 Objective 2	6
2.1.3 Objective 3	7
2.2 LESSONS LEARNED	7
3. Activity Progress (Quantitative Impact)	8
4. Performance Monitoring	12
5. Constraints and Opportunities	12
6. Progress on Gender Strategy: Youth and Private Sector	13
7. Progress on Environmental Mitigation and Monitoring	14
8. Progress on Links with Government of Kenya Agencies	15
9. J2sr, Sustainability, and Exit Strategy	16
10. Work Plan for Q4	22
Annex 1. Results Monitoring Framework: Root Crop Value Chain—Potato	24
Annex 2. List of Deliverable Products	25

List of Tables

Table 1. Traditional and nontraditional potato wards under AVCD potato value chain	1
Table 2. Potato value chain year 1 IFs and GAP and nutrition beneficiaries	5
Table 3. Potato-farming HH reached with nutrition messages in the potato value chain integrated agri-nutrition intervention	6
Table 4. Certified seed potato purchases by farmers after training in GAP and potato varieties	7
Table 5. Summary of targets vs. achievements for AVCD indicators the potato value chain is reporting against ..	9
Table 6. Mean yield of Potato varieties at LFs in year 1	12
Table 7. Farmers applying potato technologies disaggregated by traditional and nontraditional potato-growing areas	13
Table 8. Water stress-tolerant potato variety ‘Unica’ withstanding low rainfall in taita taveta county in the April–August 2019 growing season	14
Table 9. Progress toward J2SR for the potato value chain	17
Table 10. Status of activities for project Y1, January–December 2019	22

List of Photos

Photo 1. Posts from the AVCD Potato WhatsApp group. Left. Martha Maganga (holding a book) WAO, Chawia ward, training members of Furaha FG on pest and disease management, Mwatate sub-county, Taita Taveta county. Right: Humphrey Ndiazi, WAO Mt. Elgon ward, checks on the potato fields in preparation for a field day at the learning farm in Mt. Elgon ward, Bungoma County. The field day was sponsored by the CG.	5
Photo 2. Post from the AVCD Potato WhatsApp group, showing a good field crop of ‘Unica’ (left) and high number of tubers (>15) per plant (right)	14

Photo 3. Post from the AVCD Potato WhatsApp group. Farmers show off the good harvest of ‘Unica’ in Bungoma county.....15

List of Figures

Figure 1. Map of AVCD potato LFs indicating number of farms per ward in Bungoma and Taita Taveta counties in year 1.....3

ACRONYMS

AVCD	Accelerated Value Chain Development
BW	Bacterial wilt
CDCA	County Department of Cooperative and Agriculture
CG	County government
CHV	Community health volunteer
CIP	International Potato Center
FGs	Farmer groups
GAP	Good agricultural practices
HH	Household(s)
J2SR	Journey to Self-Reliance
LB	Late blight
LFs	Learning farms
MAs	Monitoring agents
NPCK	National Potato Council of Kenya
SRK	Stokman Rozen Kenya
ToC	Theory of change
ToT	Training of trainers
WAO	Ward agricultural officer

EXECUTIVE SUMMARY

Phase 2 of the potato component of the Accelerated Value Chain Development (AVCD) program, funded by the United States Agency for International Development, is replicating phase 1 interventions in the two new counties of Bungoma and Taita Taveta. These are minor potato-producing counties in Kenya, hence the number of potato farmers, general knowledge of good agricultural practices (GAP) for potato, and accessing commercial seed and were limited prior to interventions.

The theory of change (ToC) partly relies on recruiting more households (HH) into potato farming so that the economic benefits of the crop and its contribution to national food security can be realized, thereby increasing the importance of potato in these counties. The interventions addressed low productivity through an extensive farmer-training program, accompanied by seed distribution to apply the training and raise awareness of the benefits of certified seed, and nutrition messaging.

To support the ToC, the potato value chain is promoting potato production and marketing in 19 nontraditional wards where potato is grown at a very low level or not at all due to the agro-ecology, and in 8 traditional potato-producing wards where potato is commonly grown due to conducive highland, high rainfall agro-ecologies. Learning farms (LFs) managed by a progressive farmer or farmer group were project activity focal points for GAP training and agri-nutrition messaging.

Major achievements in year 1 included expansion of GAP among potato farmers with improved yields of 21 t/ha from a baseline of 8 t/ha. This improvement aligns with the ToC to increase the potato farmer base to arrive at critical mass to support seed and marketing systems. Taita Papa is the philanthropic business investing in seed production for Taita Taveta. This opportunity was a result of scaling out the apical cuttings technology that was piloted in AVCD phase 1 to enhance high-quality seed production. AVCD is supporting ward agricultural officers (WAOs) in Taita Taveta to conduct training of trainer of farmer groups (FGs) trained in GAP in producing seed on-farm from cuttings. This is expected to create demand for cuttings produced by Taita Papa.

Over year 1, the potato value chain component reached 12,458 beneficiaries of the targeted 8,000. Of these, 11,169 are smallholder farmers (67% women, 12% youth) who applied productivity-enhancing technologies. This was achieved through a four-module training in GAP for potato for 549 FGs led by county governments on 142 LFs hosted by a progressive farmer or farmer group. Women representation exceeded the target of 40% largely as a result of their being more available and wanting to participate in the GAP training. The potato value chain is reaching youth through targeting youth-only FGs to participate in GAP training and engaging youth as monitoring agents using the MEASURE tool to profile HH and collect continuous monitoring data.

Critical to the ToC is to increase farmer base in each county by developing potato farmers in wards by expanding potato production to nontraditional potato-growing areas where there is potential for the crop, and opportunities to integrate women into potato value chain. Of 11,169 applying farmers (73% women), over 50% are from nontraditional wards where potato was not grown before AVCD to any recognizable extent. This target demonstrates the key role of women in technology dissemination and scaling.

The county governments led planning and implementation of activities as part of the “journey to self-reliance.” Senior county officials participated in intervention advisory and planning meetings for agriculture and nutrition activities, 33 WAOs led training and monitoring of GAP training on LFs, and 27 sub-county nutritional technical county staff and 132 community health volunteer (CHVs) led agri-nutrition-messaging activities. The WAOs, nutritional departments, county staff, and CHVs know their roles in leading activity implementation.

I. BACKGROUND

Potato farming in Kenya supports approximately 800,000 largely smallholder farmers and another 2m people along the value chain as market agents, transporters, distributors, processors, vendors, retailers, and exporters.¹ Despite low yields, the average gross margin of potato farming is \$720/ha, equivalent to an income of \$180/month compared with gross margin of \$550/ha, which is an income of \$92/month for maize.² Doubling productivity would result in increasing gross margin to \$1,300–1,400/ha, which translates to monthly incomes of \$325–350/ha. With such an income, potato farmers can be food secure and out of poverty and graduate from subsistence to farming as business.

During the 3 years of phase I of the Accelerated Value Chain Development (AVCD) program, the potato value chain component of the program supported approximately 46,000 farming households (HH) with improved technologies to improve farm productivity and engage in market systems in Elgeyo-Marakwet, Meru, Nandi, and Uasin Gishu counties. The seed system initiated by transforming 150 progressive farmers into seed multiplier businesses, and three institutions are producing certified seed. To respond to demand for better coordinated marketing of potato, the project supported the formation and capacity building of five potato-marketing cooperatives to provide marketing, input, and production-support services to farmer members, in turn championing farming as a business culture among farmers.

Phase 2 of the AVCD potato component is replicating phase I interventions in the two new counties of Bungoma and Taita Taveta. These are not major potato-producing counties in Kenya, hence general knowledge of good agricultural practices (GAP) for potato and the access to commercial seed are weak. The theory of change (ToC) partly relies on increasing the number of potato farmers so that the benefits of this crop and its contribution to national production can be realized at a greater scale, and thereby increasing the importance of potato in these counties.

To support the ToC, the potato value chain is promoting potato production and marketing in 17 nontraditional wards where potato is grown at a very low level or not at all due to the agro-ecology, and in 10 traditional potato-producing wards where potato is commonly grown due to conducive highland, high rainfall agro-ecology (Table I, Fig. 1).

TABLE I. TRADITIONAL AND NONTRADITIONAL POTATO WARDS UNDER AVCD POTATO VALUE CHAIN

County	Sub-county	Ward	Traditional or Nontraditional Potato Agro-ecology
Taita Taveta	Mwatate	Chawia	Traditional
		Wusi/Kishamba	Nontraditional
		Bura	Nontraditional
	Voi	Ngolia/ Wogonyi	Nontraditional
		Sagalla	Nontraditional
	Taita	Mwanda/Mgange	Nontraditional
		Werugha	Traditional
		Wumigu/Kishushe	Traditional
		Wundanyi/Mbale	Traditional
	Bungoma	Kabuchai	Mukuyuni
Chwele/Kabuchai			Nontraditional

¹ Ministry of Agriculture, Livestock and Fisheries. 2016. The National Potato Strategy, 2016–2020.

² ACIDI-VOCA. 2012. Kenya Maize Development Programme II: Performance Evaluation.

County	Sub-county	Ward	Traditional or Nontraditional Potato Agro-ecology
	Mt. Elgon	Cheptais	Traditional
		Chepyuk	Traditional
		Chesikaki	Traditional
		Elgon	Traditional
		Kapkateny	Traditional
		Kaptama	Traditional
	Sirisia	Namwela	Nontraditional
	Tongaren	Tongaren	Nontraditional
		Milima	Nontraditional
		Naitiri/Kabuyefwe	Nontraditional
		Ndalu	Nontraditional
		Soysambu/Mitua	Nontraditional
	Webuye East	Mihuu	Nontraditional
		Ndivisi	Nontraditional
	Webuye West	Misikhu	Nontraditional
		Bokoli	Nontraditional

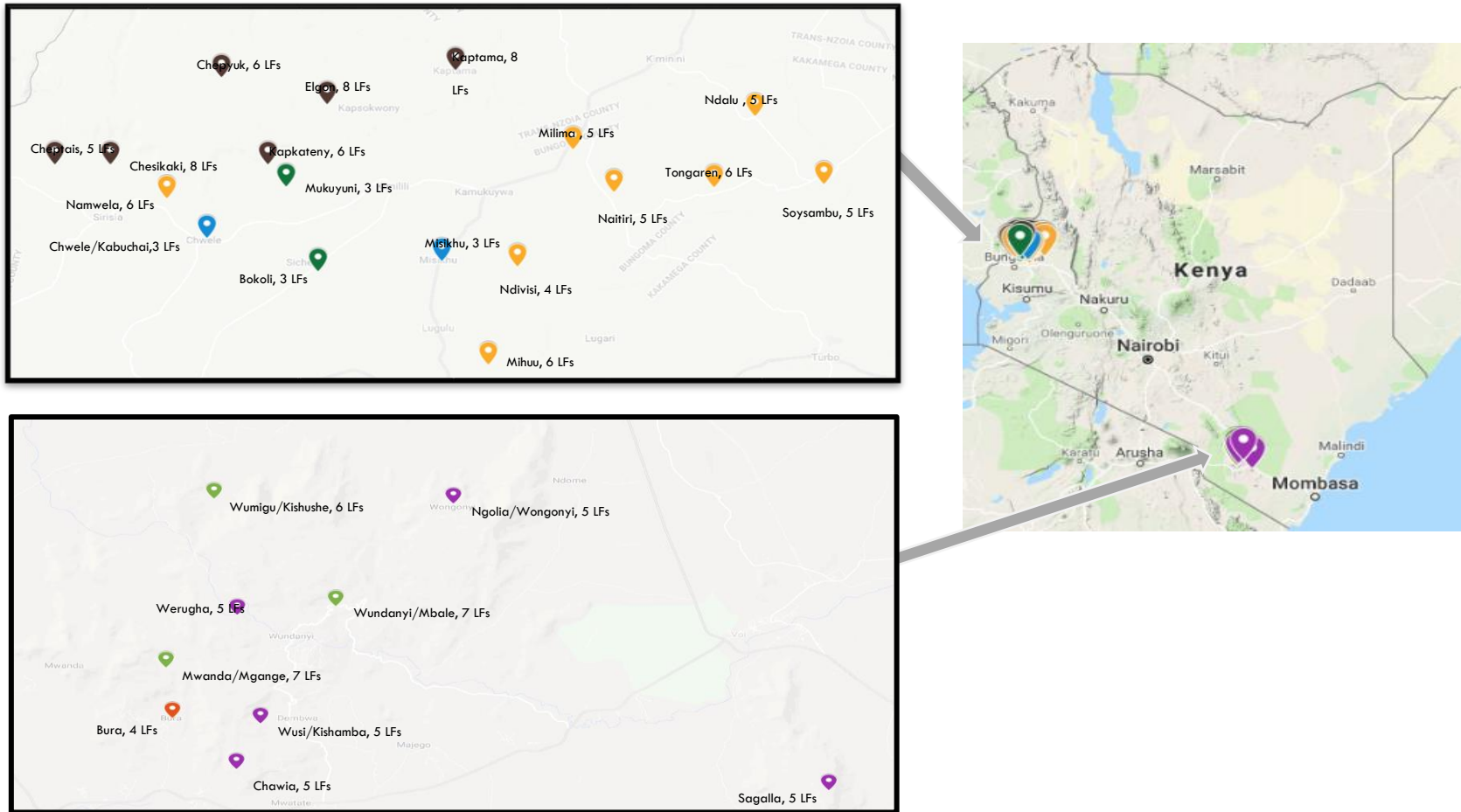


Figure 1. Map of AVCD potato LFs indicating number of farms per ward in Bungoma and Taita Taveta counties in year 1.

2. KEY ACHIEVEMENTS (QUALITATIVE IMPACT)

2.1 PROGRESS BY OBJECTIVES

Major achievements in year I expanded GAP among potato farmers with improved yields of 21 t/ha from a baseline of 8 t/ha, which aligns with the ToC to increase the potato farmer base to arrive at critical mass to support seed and marketing systems. Taita Papa is the philanthropic business investing in seed production for Taita Taveta. This opportunity was a result of scaling out the apical cuttings technology that was piloted in AVCD phase I to enhance high-quality seed production. AVCD is supporting ward agricultural officers (WAOs) in Taita Taveta to conduct ToT of FGs trained in GAP in producing seed on-farm from cuttings. This is expected to create demand for cuttings produced by Taita Papa. Farmer producer organizations are being developed in both counties.

2.1.1 Objective I

Objective I focuses on agricultural and nutritional capacity development of rural farming HH. Through season-long training on learning farms (LFs) led by the county, yields are targeted to increase by 50% for 8,000 smallholder farmers reached over year I as a result of applying productivity-enhancing technologies. Bungoma county government (CG) is finalizing a potato strategy, and Taita Taveta will develop its potato strategy in conjunction with the National Potato Council of Kenya (NPCK). Both strategies will help guide investment in the potato sector to complement AVCD interventions. Dietary diversity will improve following nutritional messaging.

A total of 142 LFs managed by a progressive farmer or FG served as project activity focal points for GAP training and agri-nutrition messaging. Thirty-three WAOs trained farmers in FGs in a season-long GAP training over four modules: (1) site preparation and planting, (2) hilling, (3) disease and pest management, and (4) harvesting and storage. Numeracy was integrated into every session. Each of the 549 FGs received 38–50 kg of seed to apply the GAP training in their own collective plot. The 33 WAOs, with supervision from sub-county crops officers, had earlier identified the FGs for their LFs.

FGs yielded 21 t/ha on the certified seed they received to apply the GAP training, surpassing the target of 18 t/ha. AVCD distributed 23 t of certified seed to 549 FGs to apply GAP training over two seasons in year I. In season 1, 307 FGs produced 120 t of quality seed on-farm from 11.2 t of certified seed, resulting in yields of 21 t/ha and sufficient to plant 60 ha. If multiplied under GAP another season, the harvested seed can collectively plant 600 ha (season 2 to be harvested in year 2).

Among the 594 FGs, 11,169 beneficiaries applied improved technologies. The GAP from LFs and 12,458 total beneficiaries were reached with GAP and nutrition messaging (Table 2). The capacity of WAOs to implement GAP training and LFs was developed over season I. As such, CGs led GAP activities of LFs and integrated into nutritional activities in season 2, as part of the “journey to self-reliance” (J2SR; Photo 1).

TABLE 2. POTATO VALUE CHAIN YEAR I LFs AND GAP AND NUTRITION BENEFICIARIES

County	Sub-county	No. of Wards	No. of WAOs	Traditional/ Nontraditional Potato Ward	No. of LFs	No. of FGs	No. of Beneficiaries
Taita Taveta	Mwatate	3	3	1/2	14	26	663
	Voi	2	2	0/2	10	18	453
	Taita	4	4	3/1	24	50	1619
Bungoma	Kabuchai	2	2	0/2	6	27	686
	Mt. Elgon	6	9	6/0	41	211	4,473
	Sirisia	1	2	0/1	6	29	585
	Tongaren	5	6	0/5	26	115	2,545
	Webuye East	2	3	0/2	9	44	873
	Webuye West	2	3	0/2	6	29	561
Total		27	33	10/17	142	549	12,458



Photo 1. Posts from the AVCD Potato WhatsApp group. Left. Martha Maganga (holding a book) WAO, Chawia ward, training members of Furaha FG on pest and disease management, Mwatate sub-county, Taita Taveta county. Right: Humphrey Ndiazi, WAO Mt. Elgon ward, checks on the potato fields in preparation for a field day at the learning farm in Mt. Elgon ward, Bungoma County. The field day was sponsored by the CG.

In Taita Taveta county, the project has had to reintroduce potato as most potato farmers had abandoned the crop due to uneconomical yields as a result of recycling seed, which led to high incidence of disease, particularly bacterial wilt (BW). Access to quality seed, combined with comprehensive training, has revamped the crop in the county. The county appreciates the AVCD project as it has enabled extension officers to meet frequently with farmers. This was not possible before the project started.

FGs improved on BW management, which is also problematic in Bungoma, although 15 of the 309 FGs who produced seed in season 1 had BW in their seed plots (13 in Taita, 2 in Bungoma). BW is reported from season 2 FGs applying the GAP on their farms. BW infected 8 of the 82 LFs in season 1 (6 from Taita Taveta), demonstrating that BW is a more significant challenge in Taita Taveta.

The LFs were the site of nutrition messaging for the 549 FGs, having delivered seven sessions of nutrition messaging using AVCD-developed nutrition dialogue cards for 5,562 adults and 886 children, which exceeded the year 1 target of 800 children (Table 3). Of the farmers who turned up for nutrition training, 1,774 (32%) were new beneficiaries and 3,788 (68%) were also trained on GAP. Over 60% of beneficiaries are 45+ years, thus reducing the outreach to young children.

TABLE 3. POTATO-FARMING HH REACHED WITH NUTRITION MESSAGES IN THE POTTAO VALUE CHAIN INTEGRATED AGRI-NUTRITION INTERVENTION

County	Adults Reached			Children under 23 Months		
	Male	Female	Total	Male	Female	Total
Bungoma	1,320	3,002	4,322	348	412	760
Taita Taveta	341	899	1,240	70	56	126
Total	1,661	3,901	5,562	418	468	886

The CG with nutrition officers and community health volunteers (CHVs) led agri-nutrition-integrated value chain activities. Backstopped by the AVCD nutritionist, 27 sub-county nutritional technical county staff trained a training of trainers (ToTs) for 132 CHVs in nutrition messaging for rural HH and young children. The nutrition messages were covered under seven sessions to review all the nutrition dialogue cards and took place at LFs to support an integrated agri-nutrition intervention. Each of the CHVs was attached to two–four FGs who had been trained in GAP at LFs.

2.1.2 Objective 2

Objective 2 focuses on seed system development by supporting two private sector seed companies to produce 400 t of seed annually. To increase access to good quality seed, especially by women and youth, farmer producer organizations will coordinate the collective purchase of inputs to support use of certified seed, creating markets for the seed companies and resulting in increased yields of 25%.

The access to clean land in Taita Taveta county is highly limited. This makes it quite tricky to produce seed following the current approach of several successive seasons of bulking seed. The apical cuttings technology is more compatible when land suitable for seed bulking is limited. Seed produced from apical cuttings is profitable after two seasons of multiplication, starting with 1,000 cuttings on 120 m². This requires about 0.25–0.35 ha for the second round of multiplication and will produce 4.5–6.5 t of seed potato. Farmers will produce 45–65 t of seed after a further season of saving seed on-farm, enough for 20–35 ha. This compares with the current practice starting from minitubers, which needs three seasons of bulking to be profitable and more clean land.

A private sector seed company, Taita Papa, has been identified in Taita Taveta to invest in seed production for the county, producing cuttings in a screenhouse and seed tubers in the field. The potato value chain will support these investments by sharing costs to establish the nursery and starter material for cuttings and seed production, along with extensive capacity and market development.

Private screenhouse owners whose capacity was developed in AVCD phase I and under another cuttings project in turn trained Taita Papa on cuttings production, with supervision from CIP. This demonstrates yet another spillover effect from AVCD phase I, which developed private sector seed business capacity in producing cuttings. Trainings included a study tour to Meru county to observe how screenhouses for cuttings are constructed and the systems around cuttings as well as training at Stokman Rozen Kenya (SRK), consisting of the tour of facilities and technical training. A screenhouse owner from Meru provided on-site technical backstopping to Taita Papa at their screenhouse.

Taita Papa will use the cuttings for internal production of seed in the field and sell cuttings directly to farmers. To build the farmer market, AVCD potato value chain will train farmers to produce seed on-farm from cuttings, and provide a sample of cuttings to apply the training at home.

The farmers from season 1 all used certified seed to apply the GAP they acquired during the trainings in their individual and group plots. After observing the benefits of certified seed, combined with GAP, 33 season 1 farmers purchased 7 t of seed in season 2, after observing the benefits of using

good seed from their LF and group plots (Table 4). The certified seed was procured from Agriculture Development Center–Molo and Kisima Farm.

TABLE 4. CERTIFIED SEED POTATO PURCHASES BY FARMERS AFTER TRAINING IN GAP AND POTATO VARIETIES

County	No. of Farmers	Variety				Total
		Unica (t)	Sherekea (t)	Shangi (t)	Dutch Robjyn (t)	
Bungoma	18	2	1	0	0	4
Taita Taveta	15	0	1	2	1	3
Total	33	2	2	2	1	7

2.1.3 Objective 3

Objective 3 focuses on empowering potato farmer producer organizations to engage in marketing and value addition through organizational and business capacity development. The idea is to then provide necessary services to support farming as a business among member farmers.

During year 1 the project, in partnership with the County Department of Cooperative and Agriculture (CDCA), supported the establishment of the Bungoma Potato Farmers’ Cooperative Society Ltd. This was in response to farmers’ request for an organized marketing structure. After being trained in GAP, farmers envisaged improved tuber yield in terms of quantity and quality; as such they needed to access better markets. The cooperative is expected to improve seed and ware potato market coordination through access to market information and linking value chain actors. Once operational, the cooperative will have a critical base of potato farmers (the project has already trained 9,723 potato farmers in the county). Moreover, they will have the capacity to organize production and aggregation/bulking economic volumes of potatoes that will attract direct sales to wholesalers and processors.

Working with the CDCA, the project started by supporting sensitization meetings in each of the 18 project-implementing wards and reached 2,600 project beneficiaries. During the sensitization meetings, project beneficiaries selected 54 representatives, who elected among themselves an interim committee of 12 members for the cooperative. The CDCA trained the interim officials on formulating cooperative society bylaws and other registration requirements. During the training the interim committee drafted bylaws that were further improved and finalized with the support from the CDCA. The interim officials have submitted the required documents to the commissioner of the CDCA for official registration. As they await the registration certificate, the interim official continues to create awareness within their community on the importance of joining the cooperative.

The project supported Taita Taveta county to identify potato champions in the three project-implementing sub-counties: Mwatate (8 members), Taita (13 members), and Voi (6 members). The 27 members elected 11 of the members to form the umbrella marketing organization, with greater than 30% women representation.

2.2 LESSONS LEARNED

During season 1, agri-nutrition messaging by trained CHVs started when GAP training by WAOs was ongoing. Consequently, GAP training ended earlier than agri-nutrition messaging. But this led to poor attendance for the session done after GAP training had ended as CHVs lack the capacity to call for a farmers’ meeting. Adjustment was done during season 2 by aligning agri-nutrition messaging with GAP training conducted by WAOs at the LFs. WAOs provided the forum for the CHVs after group registration and CHVs were matched with the respective WAOs and assigned to specific FGs.

A BW management plan will be integrated into GAP activities. In both counties BW appeared in both the LFs and the group plots, even though certified seed had been used and farm hygiene and sanitation were practiced during the cropping season. BW survives in the soil for 5–10 years and is transmitted by seed, making management plans essential for sustainable potato production. For season 2, BW was exacerbated by heavy rainfall experienced in most part of the country. As well, hilly terrain in the two project counties caused water run-off, thereby spreading BW from one farm to another. Project beneficiaries are being encouraged to practice soil erosion control measures and crop rotation in their farms as principal tools in BW management, aside from BW-free seed.

Also, farmers reported high incidence of late blight (LB) as a result of favorable conditions caused by high rainfall. Previously, farmers would lose their crop due to LB under such weather conditions. But with disease-resistant varieties—notably ‘Sherekea’—and GAP training, farmers managed LB as they learned during the training sessions.

The MEASURE platform for data collection had adopted the strategy that required profiling HH to capture greater than one beneficiary per HH. However, profiling leads to delays in entering activity data onto the platform. We are proposing that data capture and entry to be activity based to ensure that timely data collection for reporting, as AVCD no longer responds to HH-level indicators.

3. ACTIVITY PROGRESS (QUANTITATIVE IMPACT)

Over the first year of interventions, the potato value chain component reached 12,458 beneficiaries (67% women, 12% youth; Table 5). The majority of the overall project targets for year 2 will be achieved in the last season of intense project interventions, the third of three project seasons.

TABLE 5. SUMMARY OF TARGETS VS. ACHIEVEMENTS FOR AVCD INDICATORS THE POTATO VALUE CHAIN IS REPORTING AGAINST

Indicator	Q4 Targets	Q4 Achieved	Year 1 Targets	Year 1 Achieved	Project Life Target	Project Life Achieved	% Project Life Achieved	Major Achievements	Reasons For Deviation
EG.3-2: Number of individuals participating in USG food security programs [IM-level]	3,200	4,672	8,000	12,458	20,000	12,458	62	<ul style="list-style-type: none"> Enhanced farmers knowledge on GAP and numeracy skills to enable potato farming as a business. 	<ul style="list-style-type: none"> These two indicators are on track overall, as have reached just greater than 1/3 of project beneficiaries after one of three seasons of interventions 60% of beneficiaries are targeted in year 2, thus proportionately are ahead of reaching targets
EG.3.2-24 Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance [IM-level]	3,200	4,672	8,000	11,169	20,000	11,169	56	<ul style="list-style-type: none"> Farmers are now using certified seed and producing quality seed on-farm with majority of groups practicing seed plot technology 23 t of certified seed distributed to 549 FGs over two seasons in year 1 to apply GAP training. In season 1, 307 FGs produced 120 t of quality seed on-farm from 11.2 t of certified seed, resulting in yields of 21t/ha and sufficient to plant 60 ha. If multiplied under GAP another season, this seed can collectively plant 600 ha (season 2 to be harvested in year 2). In Taita Taveta county wards that received below average rainfall (78–118 mm) 'Unica' variety achieved an average yield of 14 t/ha. 	
EG.3.2-26 Value of annual sales of farms and firms receiving USG assistance [IM-level]	N/A ^b	N/A	1,000,000	N/A	4,000,000	N/A	N/A		<ul style="list-style-type: none"> Annually monitored indicators are reported after survey, this indicator is not continuously monitored
EG.3-10 -11,-12 Yield of targeted	N/A	N/A	18	21	18	N/A	N/A	<ul style="list-style-type: none"> In season 1, 307 FGs produced 120 t of quality 	<ul style="list-style-type: none"> The data are from continuous monitoring

Indicator	Q4 Targets	Q4 Achieved	Year 1 Targets	Year 1 Achieved	Project Life Target	Project Life Achieved	% Project Life Achieved	Major Achievements	Reasons For Deviation
agricultural commodities among program participants with USG assistance [IM-level]								seed on-farm from 11.2 t of certified seed, resulting in yields of 21/t/ha and sufficient to plant 60 ha. If multiplied under GAP another season, this seed can collectively plant 600 ha (season 2 to be harvested in year 2).	<ul style="list-style-type: none"> Official farmer data will be reported after survey as this indicator is annually monitored
EG.3.2-25 Number of hectares under improved management practices or technologies with USG assistance [IM-level]	N/A	N/A	1,200	N/A	3,000	N/A	N/A	<ul style="list-style-type: none"> 77 ha planted to potato under direct project interventions reported under crop genetics technology. Out of the total, 17 ha was from 142 LFs, individual farmer purchases and seed distributed to 549 FGs in both project counties. 60 ha is as a result of seed bulking seed harvested in season 1 group demo farms. 	<ul style="list-style-type: none"> The data are from continuously monitored activities and represent sample only, they are not extrapolated to total beneficiaries The official data will be reported during annual monitoring which projects results to total beneficiaries
EG.3.3-10 Percentage of female participants of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity [IM-level]	N/A	N/A	80%	N/A	80%	N/A	N/A	<ul style="list-style-type: none"> All the female farmers who received seed and trained in GAP received agri-nutrition messaging. 	<ul style="list-style-type: none"> Annually monitored indicators are reported after survey, this indicator is not continuously monitored
HL.9-2 Number of children under age 2 (0–23 months) reached with community-level nutrition interventions through USG-supported programs [IM-level]	400	486	800	886	2,000	850	44%	<ul style="list-style-type: none"> Primary caretakers of children under 23 months received agri-nutrition messaging. Over 60% of beneficiaries are 45+ years, hence do not have young children. 	<ul style="list-style-type: none"> This is on target for year 1, considering that 80% of nutrition targets are expected in season 2 and year 2 of interventions

Indicator	Q4 Targets	Q4 Achieved	Year 1 Targets	Year 1 Achieved	Project Life Target	Project Life Achieved	% Project Life Achieved	Major Achievements	Reasons For Deviation
GNDR-2 Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources [IM-level]	40%	69%	40%	67%	40%	67%	168%	<ul style="list-style-type: none"> Contrary to project expectation, majority of beneficiaries are women. Women were observed to be more enthusiastic to participate in development projects than men despite their limited control of productive resources. 	<ul style="list-style-type: none"> This target was exceeded as more women were available and more organized to participate in activities
YOUTH-3 Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) [IM-level]	15%	18%	15%	12%	15%	12%	80%	<ul style="list-style-type: none"> Youth engaged in businesses along the potato value chain. 17 youth-only-run FGs have been established; plans to further build their capacity on entrepreneurship are underway. 	<ul style="list-style-type: none"> The target is 15%; and have thus far have 11% of youth or reached the target at 73%
CBLD-9 Percent of USG-assisted organizations with improved performance [IM-level]	N/A	N/A	N/A	N/A	90%	N/A	N/A	<ul style="list-style-type: none"> At initial stage of supporting establishment of potato-based cooperative in Bungoma county and marketing organization in Taita Taveta county. Recently identified seed business in Taita for local production of seed sign the new technology piloted in AVCDI. 	<ul style="list-style-type: none"> While the organizations have been formed, their capacity will be developed and targets will be reported in Q4

4. PERFORMANCE MONITORING

Potato value chain monitoring and evaluation relies on AVCD project AMEP with specific focus on the ToC and results framework (Annex 1). Beneficiary, and continuous and annual monitoring data toward indicators, is deposited and reported through the MEASURE system/platform.

Monitoring agents (MAs) lead data collection using the MEASURE platform with the assistance of WAOs. Currently, 16 youth-MAs aged under 30 and selected from the LFs have been identified and trained on MEASURE application for beneficiary profiling and data collection. The MAs distributed beneficiary cards, whereby 8,765 beneficiaries have been issued with the unique identifier cards, which is 73% of all total reached beneficiaries. Profiling of the HH to collect basic data (e.g., head of HH, number of HH members and their names, ages, and gender) was a major activity undertaken. Other HH data collected included total land size under potato and HH experience in potato production.

5. CONSTRAINTS AND OPPORTUNITIES

New potato varieties offer and expand opportunities for farmers as demonstrated by yields at the LFs in 21 and 16 traditional and nontraditional potato-growing wards, respectively (Table 6).

‘Sherekea’ and ‘Unica’ varieties outperformed the standard ‘Shangi’ in traditional potato areas of Bungoma—largely due to resisting LB, which devastated ‘Shangi’. This led to farmers in Bungoma purchasing seed only of ‘Sherekea’ and ‘Unica’; they did not purchase ‘Shangi’ seed. The difference in the type of varieties ordered by the farmers was an informed decision, indicating that they were keen on performance of the varieties demonstrated at the LFs.

Yields overall were greater in Bungoma than in Taita Taveta; however, ‘Unica’ outperformed other varieties in both traditional and nontraditional potato regions. The strong market prices in Mombasa supports the lower yields.

TABLE 6. MEAN YIELD OF POTATO VARIETIES AT LFS IN YEAR 1

County	Yield Parameters	Dutch Robjyn (t/ha)	Shangi (t/ha)	Sherekea (t/ha)	Unica (t/ha)
Taita Taveta	Traditional potato agro-ecology wards	11.0	11.5	11.9	14.9
	SD (standard deviation)	2.3	4.6	4.2	5.6
	Range (min. to max.)	7.9–13.4	6.9–17.5	7.4–15.6	7.5–21.1
	Nontraditional potato agro-ecology wards	10.7	12.2	12.0	16.4
	SD	6.2	5.2	6.5	7.4
	Range (min. to max.)	5.8–20.5	5.3–17.5	5.3–19.6	4.8–22.1
Bungoma	Traditional potato agro-ecology wards	16.5	18.0	29.4	32.3
	SD	7.2	2.2	3.8	4.9
	Range (min. to max.)	11.4–21.6	16.4–19.5	26.7–32.1	28.8–35.8
	Nontraditional potato agro-ecology wards	21.7	21.9	24.1	23.1
	SD	16.4	15.4	13.4	12.5
	Range (min. to max.)	9.8–56.9	4.9–52.8	6.1–41.2	2.2–41.6

We originally projected that it would be easier to identify a seed business for Bungoma than Taita Taveta, which has limited availability of land. Yet the philanthropic seed business Taita Papa is investing in seed production in this county. The business is led by a philanthropist/business person with a history of philanthropic business-oriented interventions in the county: Taita Papa has organized 2,000

farmers to supply milk to Brookside Dairy. The apical cuttings technology provides an option for seed in Taita Taveta ([Apical rooted cuttings - Technology brief](#)).

Identifying a seed business qualified to serve Bungoma county is ongoing. The county faces similar land challenges as those of Taita Taveta, namely insufficient expanses of clean land for seed production. Again as in Taita Taveta, the cuttings technology is an opportunity for Bungoma county.

Because of the short duration between harvesting of seed potato by seed merchants and the onset of the following rainy season, management of dormancy for varieties with long dormancy period that had not completely broken dormancy by the start of the seasons posed a challenge. LFs were patchy as different varieties emerged at differing times. Managing dormancy is a major challenge for seed businesses requiring close capacity development and follow-up to manage. There are several periods of dormancy to manage among the varieties, ranging from 10 to 120 days.

6. PROGRESS ON GENDER STRATEGY: YOUTH AND PRIVATE SECTOR

Critical to the ToC is to increase the farmer base in each county by developing potato farmers in wards by expanding potato production to nontraditional potato-growing areas. Here, there is potential for the crop to grow and farmer demand, and opportunities to integrate women into potato value chain. Table 7 reveals that of the 11,169 applying farmers, over 50% are from nontraditional wards where potato was not grown before AVCD to any recognizable extent. These farmers comprise 73% women, demonstrating their key role in technology dissemination and scaling.

TABLE 7. FARMERS APPLYING POTATO TECHNOLOGIES DISAGGREGATED BY TRADITIONAL AND NONTRADITIONAL POTATO-GROWING AREAS

County	No. of Traditional Wards	Total Appliers Year I	Women (%)	No. of Nontraditional Wards	Total Appliers Year I	Women (%)
Taita Taveta	4	1,335	71	5	1,122	72
Bungoma	6	3,814	72	12	4,898	74
Total	10	5,149	71	17	6,020	73

After a year of project implementation, women beneficiaries represented 69% of the beneficiaries, from a baseline of 34%. The percentage of women participating was above the annual target of 40%, largely as a result of being more available and more enthusiastic to participate in the GAP training in the LFs and applying the knowledge from the trainings in FG LFs.

There has been progress in year I on youth participation in the potato value chain, as indicated by the achieved percentage of youth at 12% (13% in Bungoma county, 11% in Taita Taveta county) compared with the baseline of 3%. Of the 549 FGs trained in GAP on LFs and applying GAP in their own FGs, 17 of them at LFs were youth-only.

Field MAs within the youth age group (15–29 years) were nominated from existing youth groups from various LFs to lead data collection for continuous monitoring. In Taita Taveta, some of the marketing groups will be youth-only as done for youth-only FGs for the GAP training on LFs. Additionally, women representation on marketing committees and within the cooperative has been enhanced with over 30% women representation.

7. PROGRESS ON ENVIRONMENTAL MITIGATION AND MONITORING

In Taita Taveta yields averaged 14.5 t/ha at only 114–118 mm of rain as a result of using water stress-tolerant potato variety ‘Unica’, noting this represents sites for which rainfall data were available (Table 8, Photo 2). This is highly significant, as yields of 14.5 t/ha under extreme dry conditions provide a climate-smart technology to adapt to inconsistent and low rainfall. Normally, resilient varieties do not respond when climatic conditions are not challenging; but in this case at sites where rainfall was 575 mm, ‘Unica’ responded to this additional water with yields of 22.6 t/ha.

TABLE 8. WATER STRESS-TOLERANT POTATO VARIETY ‘UNICA’ WITHSTANDING LOW RAINFALL IN TAITA TAVETA COUNTY IN THE APRIL–AUGUST 2019 GROWING SEASON

Sub-county	Ward	Traditional/ Nontraditional Potato Ward	No. of Sites	Elevation (masl)	Nearest Weather Station	Rainfall of Nearest Weather Station	Yield (t/ha)
Mwatate	Bura	NT	4	1000–1200	Bura	118.4	19.1
	Chawia	NT	3	1400–1600	Bura	118.4	16.5
	Wusi/Kishamba	NT	4	1575	Terra	574.6	23.4
Taita	Mwanda/Mghange	T	6	1515–1619	Terra	574.6	21.7
	Wimingu/Kishushe	T	8	1549–1760	Kishushe	113.9	7.8
Voi	Sagalla	NT	6	1032–1362			5.9
	Wongonyi/Ngolia	NT	6	1266–1289			11.8
						Mean ^a	14.5

^a Mean of highlighted yields at sites with 114–118 mm of rain.



Photo 2. Post from the AVCD Potato WhatsApp group, showing a good field crop of ‘Unica’ (left) and high number of tubers (>15) per plant (right).

National yields average 8–12 t/ha under good rainfall seasons with the yield gap largely due to poor quality seed and GAP. Despite these low yields, the large market system continues to thrive due to the high value of potato. Yields of 14.5 t/ha under low rainfall conditions can support food security in times of low rainfall seasons and avoid market interruptions, thus supporting climate-resilient market system. Note that that potato needs 450–600 mm of rainfall to achieve reasonable yields of 15–20+ t/ha yields when following GAP.

In the western edge of Kenya, including Mt. Elgon, Bungoma county received greater than average rainfall, significantly increasing disease pressure from LB. Traditionally, farmers would plant the

dominant variety 'Shangi', but the training exposed them to more resilient varieties 'Sherekea' and 'Unica', which outperformed 'Shangi' largely due to resistance to LB (Table 6 and Photo 3).



Photo 3. Post from the AVCD Potato WhatsApp group. Farmers show off the good harvest of 'Unica' in Bungoma county.

8. PROGRESS ON LINKS WITH GOVERNMENT OF KENYA AGENCIES

To support counties in the J2SR, the CGs at all levels are involved in activities from planning to implementation, including monitoring activities (Table 9). Regular planning and implementation meetings are conducted, usually one meeting for senior county officials, to brief and assess project activities. These meetings are also critical to gather information on the counties' investments to complement AVCD interventions. They also offer capacity development opportunities at decision-making levels to justify investments in potato, which differs from the technical capacity development of county team in the field implementing activities.

The capacity is now on the ground for the counties at all levels, including 33 WAOs, 27 sub-county nutritional technical county staff, and 132 CHVs to know their roles and lead activity implementation, with planning and support of CIP.

In phase 2 of the AVCD potato component, CGs are the principal partners, with a minor role for the NPCK. AVCD will support the diversification of seed and table-processing potato marketing platform that NPCK hosts (Viazi Soko) to also provide agronomic and variety information to farmers, along with support marketing forums and other market support activities. This demonstrates the key roles that public institutions play in designing, implementing, and monitoring interventions. This will foster ownership of the interventions and contribute to ensuring sustainability.

There is much interest from other potato-producing counties for support to develop the potato value chain. Counties are recognizing the work of AVCD and other interventions led by CIP and are calling for CIP's support. Governors from Bomet and Kiambu counties have visited CIP in Nairobi, with Nakuru county further asking to partners with CIP.

A training program in apical cuttings is underway in Kiambu county, developing the capacity of the private sector GreenRocks Farm to produce cuttings, and the county team on a ToT to train farmers on producing seed from cuttings for on-farm use. The goal is to provide a market for the private producer. The private sector also is requesting CIP's support to develop seed businesses. There is much potential to fully develop seed systems and beyond in the value chain in these counties.

9. J2SR, SUSTAINABILITY, AND EXIT STRATEGY

Project activities are being implemented in close collaboration with national institutions, particularly CG agriculture, cooperative extension, and nutrition and dietetics departments. Close engagement with CGs helps to position potato-growing among the objectives of these departments at county level. Co-investment by CGs under their agricultural support work plans and budgets will be encouraged and monitored by the project.

Engaging private sector institutions to operate along the value chain is another key sustainability factor. A private sector seed business has been identified to undertake the challenge of producing seed in Taita Taveta county—something that initially was not thought would happen. This is quite an accomplishment toward sustainable seed supply in the county. Development of farmer organizations to support marketing will help farmers to equitably engage in the value chain.

Extensive capacity building is central to all interventions to ensure ongoing capacity to continue activities at all levels in the system: implementers, farmers, and businesses (Table 9). And although developing capacity of large numbers of farmers to improve productivity is a core goal of the project, developing capacity of implementers who drive the project will contribute to continued support to the system and scaling out interventions.

TABLE 9. PROGRESS TOWARD J2SR FOR THE POTATO VALUE CHAIN

Start Now	New Approach	AVCDP Value Chain Component Action and Outputs	
<p>1. Inclusive development</p>	<ul style="list-style-type: none"> Partners (public, private) taking the lead in implementation 	<ul style="list-style-type: none"> CGs lead in all activities related to improving productivity of potato farming by supervising LFs managed by farmers and conducting all farmer training. CGs leading implementation of all nutrition-messaging activities. ToTs trained by AVCD are training CHVs who undertake nutrition-messaging activities under supervision of Ministry of Health in the counties. Implementation model consists of initial meetings with county senior officials to review intervention, ToTs (usually county, sub-county, and ward staff), then step down training of farmers and CHVs <p>Output:</p> <ul style="list-style-type: none"> CGs lead implementation and monitoring interventions. CIP provides support for review and training meetings and technical backstopping to ensure capacity development within all levels of CGs to continue and sustain project interventions. 	<ul style="list-style-type: none"> Senior county officials participate in intervention advisory and planning meeting for agriculture and nutrition activities. 33 WAOs lead training and monitoring of GAP training on LFs. 27 sub-county nutritional technical county staff and 132 CHVs lead agri-nutrition-messaging activities. The WAOs, nutritional departments, county staff, and CHVs know their roles in leading activity implementation.
	<ul style="list-style-type: none"> SMART partnerships with public, private, and farmer institutions 	<ul style="list-style-type: none"> CGs participate in setting targets, identifying beneficiaries, collecting monitoring data. CGs will be trained to use MEASURE tool for monitoring and be equipped with tablets. Private sector provides cost, investment, production, and sales data. Farmer institutions provide membership, investment, production, and sales data. <p>Outputs:</p> <ul style="list-style-type: none"> Clear targets and deliverables/reporting from CGs to track progress by responding to specific indicators. Indicator data to track progress of interventions led by partners, and private sector and farmer institution involvement and contribution in value chain. 	<ul style="list-style-type: none"> 33 WAOs participate in targets setting based on environment and experience, then pre-identify beneficiaries and group into farmer groups 16 youth identified by WAOs conduct all continuous monitoring and household profiling activities using MEASURE. These 16 monitoring agents were trained on the use of MEASURE mobile application used in data collection by the project Targets set in cooperation for seasons 1 and 2.
	<ul style="list-style-type: none"> Support platforms that give a voice to the poor pastoralists and smallholder farmers 	<ul style="list-style-type: none"> CG in Bungoma takes lead in supporting formation of potato cooperative society. CG will provide training in good governance and AVCD support training in cooperative management, business skills development, and preparing business plans. Following to be implemented in Taita Taveta county <p>Outputs:</p> <ul style="list-style-type: none"> Cooperative developed at county level with sub-county chapters. Cooperative developed cooperative management and business plan. Farmer institutions supporting farmers' access to input and output markets. Farmer institutions fully engaged in value chain growth and development, and supporting smallholder farmers to improve productivity and access to markets 	<ul style="list-style-type: none"> Representatives from the department of cooperatives and WAOs in Bungoma lead <i>barazas</i> to support cooperative membership and provide capacity development to develop bylaws and submit application for cooperative registration. County participated in events in Taita Taveta to select marketing committees in the three sub-counties: Mwatate (8 members), Taita (13 members, and Voi (6 members). The 27 members formed an umbrella marketing group of 11 of the members covering the 3 sub-counties.
<p>2. Leveraging all US funds through partnership as norm</p>	<ul style="list-style-type: none"> Lobbying private sector investments 	<ul style="list-style-type: none"> Provide technical backstopping, support marketing/awareness of private sector commodities/services, and initial cost-sharing of capital investments to support private sector investment. In exchange, private sector provide investment, cost, production, and sales data <p>Output:</p>	<ul style="list-style-type: none"> A private-sector seed company, Taita Papa, has been identified in Taita Taveta county to invest in seed production for the county, producing cuttings in a greenhouse and seed tubers in the field. The potato value chain will support these investments by

Start Now	New Approach	AVCDP Value Chain Component Action and Outputs	
		<ul style="list-style-type: none"> Private sector investing and profiting from investments in potato value chain, namely seed potato production. 	<ul style="list-style-type: none"> sharing costs to establish the nursery and starter material for cuttings and seed production, along with extensive capacity and market development. The private sector will share all cost, production, and sales data
	<ul style="list-style-type: none"> Lobbying public sector funding 	<ul style="list-style-type: none"> Support implementation of county development strategies. Support CGs to comply with newly set national potato regulations, which require county to invest. Track investments by CGs to complement/contribute to AVCD activities Lobby CGs to complement/sustain AVCD interventions through the Kenya Climate Smart Agriculture project <p>Outputs:</p> <ul style="list-style-type: none"> CGs autonomously investing in interventions to sustain and complement AVCD interventions. CGs implementing potato value chain strategies through funding they acquired. 	<ul style="list-style-type: none"> Supporting Bungoma county in implementing the recent National Potato Regulations released in 2019. Identifying counties where potato is a priority crop for the Kenya Climate Smart Agriculture, NARIP, and ASDSP programs. County investments for potato will be documented in year 1 annual report.
	<ul style="list-style-type: none"> Lobbying other dev. Partners' investment 	<ul style="list-style-type: none"> Leverage from other interventions to holistically support AVCD (e.g., seed business development is supported through other projects to provide starter material for seed bulking with seed businesses supported by AVCD). In Bungoma closely collaborating with GIZ for further outreach of project activities <p>Outputs:</p> <ul style="list-style-type: none"> Surpassing AVCD targets Reaching smallholder farmers beyond AVCD target regions 	<ul style="list-style-type: none"> CIP is leveraging from investments support from RTB project to develop apical cuttings technology in Kenya. SRK provides technical training to produce cuttings. SRK is a large-scale private sector producer of cuttings whose capacity was developed by CIP during AVCD phase 1.
3. Focus dollars on local development organization	<ul style="list-style-type: none"> Establishing and supporting farmer producers' organizations in each value chain component, including umbrella cooperative societies 	<ul style="list-style-type: none"> Currently supporting development of cooperative society in Bungoma county, activities led by department of cooperatives within the county. County in process of electing an interim committee to develop cooperative charter and bylaws. Support training in cooperative management and business plans. <p>Outputs—Farmer institutions:</p> <ul style="list-style-type: none"> Develop cooperative management business plan to guide growth and development. Are fully engaged in value chain growth and development and supporting smallholder farmers to improve productivity and access to markets. Support farmers' access to input and output markets. Lobby for support outside of AVCD 	<ul style="list-style-type: none"> Representatives from the department of cooperatives and WAOs in Bungoma lead <i>barazas</i> to support cooperative membership and provide capacity development to develop bylaws and submit application for cooperative registration. County participated in events in Taita Taveta to select marketing committees in the three sub-counties: Mwatate (8 members), Taita (13 members), and Voi (6 members). The 27 members formed an umbrella marketing group of 11 of the members covering the three sub-counties.
	<ul style="list-style-type: none"> Building capacity in government institutions to ensure effective and sustainable service delivery 	<ul style="list-style-type: none"> Building capacity of CGs in potato production enhancing technologies to enable CGs to lead interventions on the ground. AVCD supports ToTs to enable CGs to take lead on implementing activities through step-down training to actors delivering capacity-development activities. Support CGs to train farmer institutions in cooperative management and good governance. AVCD works alongside CGs as they implement activities to ensure sound delivery of 	<ul style="list-style-type: none"> Capacity of agriculture, nutrition, and cooperative departments in the counties is being developed to plan, implement, and monitor activities: technical and indicator monitoring. 33 WAOs lead training and monitoring of GAP training on LFs.

Start Now	New Approach	AVCDP Value Chain Component Action and Outputs	
		<p>capacity development objectives.</p> <p>Output:</p> <ul style="list-style-type: none"> Capacity development of CG staff at all levels to enable them to scale out activities without technical support from AVCD. 	<ul style="list-style-type: none"> WAO capacity in potato production improved by CIP through ToTs and monitoring WAOs in the field. The potato value chain focal point for Taita Taveta and the Wundanyi WAO also participated in the Meru study tour to see how cuttings are used in the field. 27 sub-county nutritional technical county staff and 132 CHVs lead agri-nutrition-messaging activities. WAOs, nutritional departments, county staff, & CHVs know their roles in leading activity implementation.
	<ul style="list-style-type: none"> Building capacity in local private sector organizations, including small and medium-size businesses 	<ul style="list-style-type: none"> Provide technical backstopping to private sector in seed production. Support training in cooperative management and business plans. <p>Outputs:</p> <ul style="list-style-type: none"> Farmer institutions develop cooperative management business plan to guide growth and development. Increase production of certified seed. 	<ul style="list-style-type: none"> SRK provides technical training to produce cuttings to Taita Papa seed business developing in Taita Taveta. Staff from Taita Papa went on a study tour to Meru county to observe how screenhouses for cuttings are constructed and the systems around cuttings. These screenhouses were initially developed in AVCD phase I, and also supported by the RTB project AVCD is leveraging from.
<p>4. Co-creation of all new designs with Kenyan actors that have legitimate community/business links</p>	<ul style="list-style-type: none"> Building capacity of local institutions and smallholders to enable them to participate effectively in co-creation of new designs 	<ul style="list-style-type: none"> Support training in cooperative management and good governance. Training in business skills and developing business plans. <p>Outputs—Farmer institutions:</p> <ul style="list-style-type: none"> Develop business plans to guide growth and development. Are fully engaged in value chain growth and development and support smallholder farmers to improve productivity and access to markets. Support farmers' access to input and output markets. Lobby for support outside of AVCD. 	<ul style="list-style-type: none"> Department of cooperatives in Bungoma provides capacity development to develop bylaws and submit application for cooperative registration.
	<ul style="list-style-type: none"> Strengthening linkages between communities and business to ensure legitimate and genuine involvement during design 	<ul style="list-style-type: none"> Linking farmer institutions to markets and supporting platforms for networking to raise awareness of services and products farmer institutions offer, and market requirements 	
	<ul style="list-style-type: none"> Ensure involvement of Program Advisory Committee comprises Kenyans from government and private sector 	<ul style="list-style-type: none"> N/A 	

Start Now	New Approach	AVCDP Value Chain Component Action and Outputs	
5. Doing business differently	<ul style="list-style-type: none"> Binding and enforceable agreements with partners to ensure commitments are honored 	<ul style="list-style-type: none"> N/A as CGs are primary partners in AVCD potato value chain taking the lead on implementing most activities 	<ul style="list-style-type: none"> Regular meetings with all levels of CGs: county executives, sub county staff, WAOs, nutrition officers, and CHVs, and with farmers and minutes prepared with follow-up actions.
	<ul style="list-style-type: none"> SMART partnerships with county executives, private sector players 	<ul style="list-style-type: none"> CGs are main partner for activities and during review meetings. CGs commit to delivering the agreed activities and targets and monitoring data. 	<ul style="list-style-type: none"> Regular meetings with all levels of CGs: county executives, sub-county staff, WAOs, nutrition officers, and CHVs and with farmers and minutes prepared with follow-up actions. WAOs, nutritional departments, county staff, & CHVs know their roles in leading activity implementation and targets for their activities.
	<ul style="list-style-type: none"> Initiate for half-year meetings with partners (county executives and private sector partners) 	<p>Outputs</p> <ul style="list-style-type: none"> Identify intervention designs that are delivering on project goals. Modifying interventions to be better enable them to deliver on project goals. Conducted annual year2 work plan and activity budget meeting with county governments. 	<ul style="list-style-type: none"> Hold meetings with county executives before each season of interventions to update work plans and results from previous activities, resulting in 2–3 meetings annually.
6. Leading pivot to J2SR and changing our work	<ul style="list-style-type: none"> Review project components for J2SR by July 2019 	<ul style="list-style-type: none"> A joint year 2 work plan and budget planning meeting occurred with the counties. Budget disaggregated by county to track direct and indirect investments in each county. 	
	<ul style="list-style-type: none"> Drop components/interventions that are not in line with J2SR by January 2020 	<ul style="list-style-type: none"> Nutrition activities will be downscaled after season 2 nutrition messaging as the target for the children reached with nutrition messages should be achieved. This indicator was a challenge as greater than 60% of beneficiaries are 45+ years, hence do not have or care for young children. 	<ul style="list-style-type: none"> All components of potato value chain interventions contribute to the J2SR and are continuing as planned.
	<ul style="list-style-type: none"> Include/beef up interventions that are in line with J2SR by September 2019 	<ul style="list-style-type: none"> With the short rains, the number of LFs and FGs were reduced. To ensure the critical mass of farmers is in place to push the potato value chain, the upcoming season 3 of the project will be the last season of LFs which will reach the greatest number of farmers with GAP and access to membership in farmer producer organizations. 	<p>It is expected this critical mass of farmers will become members in their respective farmer producer organization.</p>
7. Self-learning of new skills and abilities for J2SR	<ul style="list-style-type: none"> Establish learning agenda that incorporate all stakeholders 	<ul style="list-style-type: none"> Capacity development of all implementing and beneficiary partners across all activities to enable them to continue the activity without technical support from AVCD. Support CGs and stakeholders to comply with national potato regulations. 	<ul style="list-style-type: none"> Capacity building at all levels is embedded in all activities.
	<ul style="list-style-type: none"> Proactively pursue learning opportunities and inculcate a culture of openness to the 		<ul style="list-style-type: none"> Targeted/specific diversification of varieties in differing agro-ecologies for different needs—consumption, marketing. Integrate apical cuttings into seed and farming systems.

Start Now	New Approach	AVCDP Value Chain Component Action and Outputs	
	learning for the organizations		<ul style="list-style-type: none"> • Unconventional private sector partnerships/ development/leveraging private sector: development social enterprise (as in Taita Papa example), seek to identify further such private sector.

10. WORK PLAN FOR Q4

Activities in year 2 for the potato component will concentrate on developing farmer producer organizations, a cooperative in Bungoma, and marketing groups in Taita Taveta. Taita marketing groups are discussing the formation of a cooperative whose structure will be finalized in Q1. CGs and AVCD will support the farmer producer organizations to develop into businesses to provide input and output market services to farmers. The farmer producer organizations will be trained in entrepreneurship and business skills.

We will follow up with harvests at LFs and FGs after season two production in Q1.

One final season of GAP training will occur at LFs to reach the critical mass of farmers to drive farmer producer organizations. CGs will lead all training-related activities: register FGs, distribute certified seed to registered groups, establish LFs, and conduct training sessions for GAP. CGs will also liaise with nutrition officers to coordinate CHVs assigned to LFs for agri-nutrition messaging. We will continue in-field technical backstopping for farmers who purchased certified seed as a result of applying GAP training and FGs who are further multiplying seed they received to apply GAP training.

After having identified a suitable seed business in Taita Taveta to invest in seed production, the potato value chain will provide technical backstopping to this business and support initial investments through cost-sharing. Further, feasibility of seed production in Bungoma will continue to be assessed, which relies on identifying the right business to produce seed potato.

All activities to close out year 1 were completed as planned or are in process as a result of continuing into year 2 (Table 10).

TABLE 10. STATUS OF ACTIVITIES FOR PROJECT Y1, JANUARY–DECEMBER 2019

Planned Actions from Previous Quarter	Actual Status (Q3)	Explanations for Deviations
Continuous monitoring/spot check	In process	An ongoing process that continues throughout all activities
Develop communication materials	In process	One deliverable (Annex 2). Developing case studies from phase I. An ongoing process throughout all activities.
County partner meetings to develop and implement potato strategies	In process	An ongoing process throughout all activities.
Rapid assessment Bungoma and Taita Taveta	Completed	Conducted in March/April 2019
County agriculture: establish LFs (season 2)	Completed	Occurred in September/October
County agriculture: train on LFs season 1	Completed	Started in April and concluded in August 2019
County agriculture: train on LFs season 2	In process	Started in October 2019; to be concluded in February 2020
County partner meetings to develop and implement potato strategies	In process	Potato strategy meeting for Bungoma held in August 2019
County agriculture: targeted training campaign on options to save seed on-farm (season 1)	Completed	Started in April and concluded in August 2019
County agriculture: collect monitoring data on farmers applying saving seed on-farm technology (season 1)	Completed	Harvested in August and data compiled and analyzed
County Nutrition: train CHVs in nutrition messaging	Completed	Conducted in June/July 2019
County nutrition: CHVs deliver nutrition messaging (season 1)	Completed	Started in April and concluded in August 2019
County nutrition: CHVs target give infant and young child-feeding messaging to HH with infants (season 1)	Completed	Started in October 2019; to be concluded in February 2020
County nutrition: CHVs deliver nutrition messaging (season 2)	In process	Started in October 2019; to be concluded in February 2020

Planned Actions from Previous Quarter	Actual Status (Q3)	Explanations for Deviations
County nutrition: CHVs target give infant and young child-feeding messaging to HH with infants (season 2)	In process	Started in October 2019 and will be concluded in February 2020
Cost-share starter material—basic seed + transport	In process	Activity occurs over several months. Just began in September after identifying a qualified seed business in September.
Cost-share starter material—cuttings + transport	In process	
KEPHIS certified seed training	In process	
Sample fields intended for use for seed potato production for key soil/seed-borne pathogens	In process	
Cost-share investments for seed storage (diffused light stores)	In process	
Support farmer producer organizations to form/ rally members	In process	Activities delayed slightly due to intensity of other activities. Systems in place to conduct activities in year 2, thus more emphasis on market development activities.
CG: good governance training	In process	
Business plan development cooperative/farmer institutional	In process	
NPCK: market studies and forums	In process	
Support youth groups to engage in potato value chain	In process	Ongoing process throughout all activities

ANNEX I. RESULTS MONITORING FRAMEWORK: ROOT CROP VALUE CHAIN— POTATO

Indicator	Annual Target (2019)		Achieved 2019 (Q1–Q4)		Overall Achieved	Notes	Reasons for Deviation
	Bungoma	Taita Taveta	Bungoma	Taita Taveta			
Objective 1. Build capacity for smallholder farmers to increase potato productivity by 50% and improve consumption of nutritious foods							
No. of county potato development strategies developed	1	1	1	0	50%	O/P Cont. Monitoring	Taita Taveta potato strategy is being developed and will be reported in year 2.
No. of potato GAP and variety LFs established	56	14	94	48	202%	O/P Cont. Monitoring	More LFs were developed to ensure that farmers do not travel longer for training to ensure building the critical mass for a potato value chain.
Percent increase in potato yield per acre	25%	25%	233%	350%	1,100%	O/C Survey	Annually monitored indicators are reported after survey; the reported data are from FGs applying GAP on distributed seed.
No. of potato farmers saving quality seed on-farm	3,200	800	3,810	1,771	139%	O/P Cont. Monitoring	FGs produced seed on-farm from 38–50 kg of certified seed each group received to apply the GAP training.
No. of potato farmers reached with nutrition messages	6,400	1,600	4,322	1,240	69%	O/P Cont. Monitoring	Low attendance in season 1 because agri-nutrition trainings are done separately. Figures expected to increase in year 2.
No. of women engaged in potato value chain	2,560	640	6,347	1,828	255%	O/P Cont. Monitoring	This target was overachieved as more women were available and more organized to participate in project activities.
Objective 2. Support access to seed system development in Bungoma county to produce at least 400 t of seed annually							
No. of seed companies in Bungoma engaged in potato seed production	1	0	0	1	100%	O/P Cont. Monitoring	In Bungoma the seed company supported to produce seed near Bungoma abandoned seed potato and didn't identify a further qualified seed business; efforts continue with an interested professional seed company near Bungoma. In Taita a private sector philanthropist company invested in seed potato business to support the county farmers.
No. of farmer producer organizations (FPOs) buying seed on behalf of member farmers	1	1	0	0	0%	O/P Cont. Monitoring	Will be done in year 2 after FPOs have been operationalized. Year 1 focused on forming the FPOs.
No. of farmers using certified potato seed	6,400	1,600	8,712	2,457	139%	O/P Cont. Monitoring	Higher than expected due to the seed distributed to the FGs to apply GAP training.
Objective 3. Empower potato farmer producer organizations to engage in marketing and value addition, and provide other necessary services							
No. of FPOs with potato business plans	2	6	0	0	0%	O/P Cont. Monitoring	In year 1 the focus was on formation and membership recruitment for producer and marketing groups members; hence there were no targets for year 1. Year 2 will involve business development and operationalization of FPOs.
No. of FPOs engaged in aggregation of produce	1	3	0	0	0%		
No. of FPOs linked to diversified markets	1	3	0	0	0%		
No. of FPOs operating as a business	2	6	0	0	0%		
No. of youth engaged in potato value chain	960	240	1,167	294	121%		

ANNEX 2. LIST OF DELIVERABLE PRODUCTS

- Developing smallholder value chains – Kenya. The AVCD potato value chain phase 2 brief: [AVCD Brief Phase 2 FtF USAID](#)
- Videos of AVCD success stories

Year	Video description	Link
2019	Cecinta Nduru: An outstanding potato farmer who rose from a subsistence potato farmer to running a successful seed business focusing on apical rooted cutting entrepreneur in Meru County, Kenya	From small-scale farmer to commercial seed potato producer: Cecinta's story
2019	Apical rooted cuttings for seed production	New technology bridging the seed potato gap in Kenya
2018	Julius Kosgei: A trained CHV delivering agri-nutrition messaging to potato farmers with children under 23 months in Kapseret/ Simat, Uasin Gishu, County, Kenya	Nutrition Kenya – Julius 2018
2018	Capturing youth involvement in potato chain through applying the apical cuttings technology	Fabian- youth potato farmer
2017	Sammy Sugut: Initially a dairy farmer but decided to diversify his farm enterprises by embracing seed potato production. Now he is a potato champion in Nandi county, Kenya, and an active member of potato-based cooperative	Sammy Sugut: seed potato business

U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

www.usaid.gov