

USAID KENYA Accelerated Value Chain Development Program

Potato Value Chain

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ACRONYMS

AGM	Annual general meeting
AVCD	Accelerated Value Chain Development program
BW	Bacterial wilt
CHV	Community health volunteer
CIP	International Potato Center
DLS	Diffused light store
FGs	Farmer groups
FPOs	Farmer producer organizations
GAP	Good agricultural practices
HH	Household(s)
J2SR	Journey to Self-Reliance
KBPFCS	Bungoma Potato Farmers' Cooperative Society Ltd
KEPHIS	Kenya Plant Health Inspection Service
KWESTO	Kabuchai, Kimilili, Webuye, Elgon, Sirisia, Tongaren
LFs	Learning farms
M&E	Monitoring and evaluation
NARIGP	National Agricultural and Rural Inclusive Project
NPCK	National Potato Council of 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 I 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 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 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 conditions and high rainfall agro-ecologies. Learning farms (LFs) managed by a progressive farmer or farmer group served as project activity focal points for GAP training and agri-nutrition messaging.

Most field activities support this first objective and is responsible for reaching smallholder farmers and rural households with agri-nutrition interventions. Extending potato production to non-traditional agro-ecologies for potato accounts for 49% of the 18,687 beneficiaries and was key to reaching the targets for farmers reached and applying productivity-enhancing technologies. The capacity development as a result of transitioning towards counties independently leading interventions in seasons 1 and 2, WAOs continued to lead activities for season 3 during COVID. To ensure continuation with activities during restrictions following COVID-19 safety guidelines, WAOs were able to maintain minimal level of training for representatives of farmer groups (FGs) and LF host farmers throughout the season. With investing \$6,150 US in safety and COVID response measures, WAOs were able to organize input (seed) distribution and establishment of the 60 and 82 season 2 and 3 LFs, respectively. Once restrictions lightened, training resumed in July on the developing potato crop to complete season 3.

Performance at LFs was 2-3 fold higher than the average baseline of 8.0 and 6.3 t/ha for Bungoma and Taita Taveta, respectively. Yields of the four varieties on LFs in traditional and non-traditional agro-ecologies had a relatively narrow range of 18.7 to 22.2 t/ha over the three seasons, with an overall yield of 20.7 and 21.7 t/ha at LFs in traditional and non-traditional agro-ecologies, respectively. FGs yielded 12 t/ha on the certified seed they received to apply the GAP training, up from the baseline yield as above.

Taita Papa nursery was accredited and licensed by the Horticulture Development Crops Authority (HCDA) as a registered nursery in May 2020. Over the past year, Taita Papa produced cuttings over two production cycles. Kenya Climate Smart Agriculture project (KSCAP) is supporting FGs trained by AVCD in season 1 to bulk basic seed one generation to produce certified seed. AVCD is aligning with KSCAP to ensure sustainability to this intervention as there are gaps in sustainability.

KWESTO: Potato Farmers' Cooperative Society Ltd. Of Bungoma county and Taita Taveta Potato Farmers Producer Organization (TT FPO) were officially registered in 2020. The cooperative and FPO are becoming operational with each having a manager and having undergone good governance and business skills training. They are now preparing business plans and mobilizing farmer members.

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 margins 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, led by the International Potato Center (CIP), supported about 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, 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 conditions and high rainfall agro-ecology (Table I, Fig. 1).

TABLE I. 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
Mt. Elgon		Cheptais	Traditional
		Chepyuk	Traditional

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
Bungoma		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

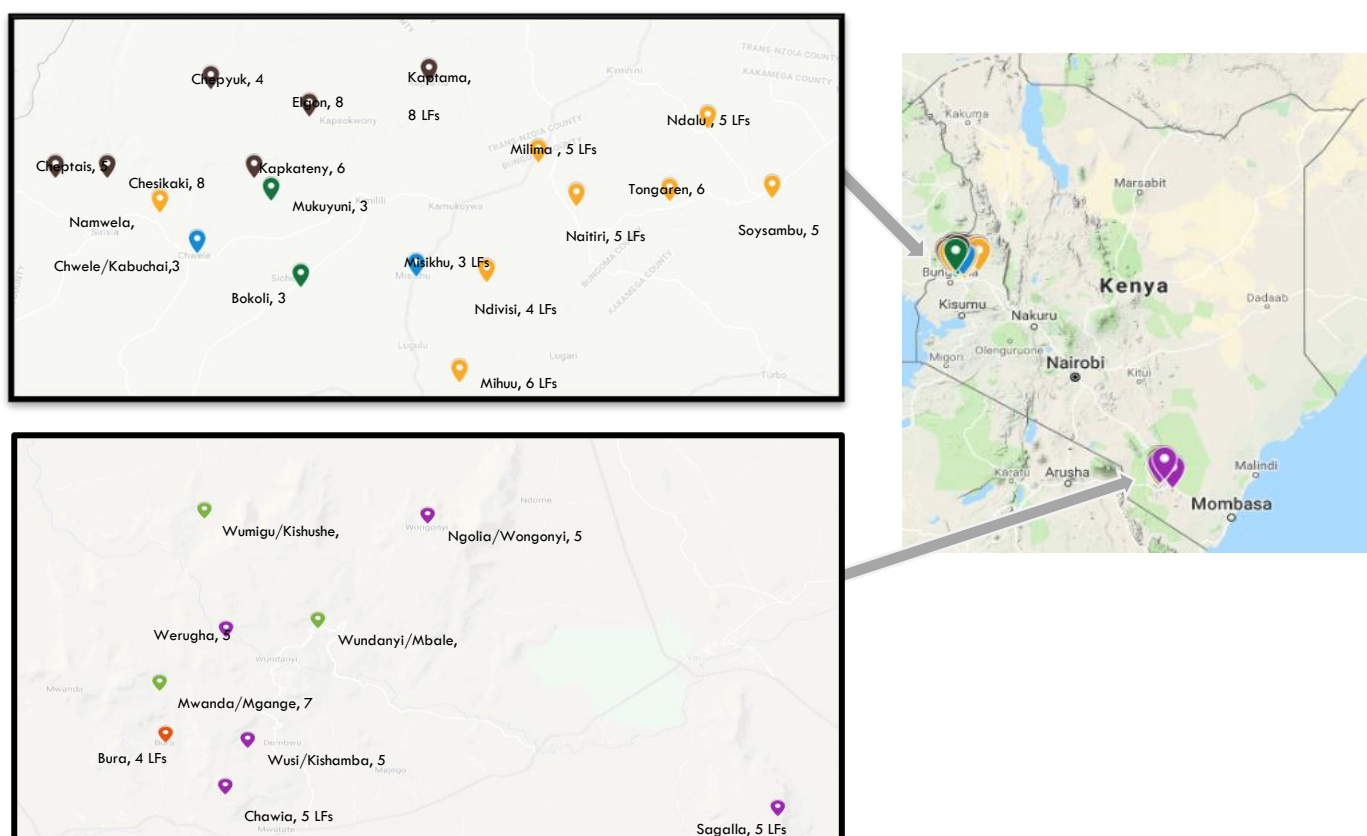


Figure 1. Map of AVCD potato learning farms by ward in Bungoma and Taita Taveta counties in Y2Q1.

2. KEY ACHIEVEMENTS (QUALITATIVE IMPACT)

2.1 POTATO VALUE CHAIN UNDER COVID

Partnerships and capacity development of county government partners to lead interventions enabled activities to continue during COVID-19 restrictions. Having worked with the counties over the past 1.9 years has imparted the capacities to plan, implement and monitor agriculture and nutrition field activities, which turned out to be essential for activities to continue with minimal CIP supervision during this third season of activities. This further demonstrates the commitments of counties to support potato value chain development due to the benefits brought to farmers and the county.

Under COVID-19, activities along the three objectives and M&E progressed, albeit at a reduced pace due to COVID-19 pandemic with mid-March – July being the most affected. During this period, only critical activities led by the county governments were being implemented involving the host and few neighboring farmers. These critical activities included seed and input distribution and establishment of learning in March/Early April, monitoring field crop management, and training learning farm (LF) host farmers and farmer group representatives at the LFs in May-June.

To facilitate implementing critical activities so as to not lose the third of three project cropping seasons, **AVCD invested \$2,900 US to support preventive measures** to ensure the safety of the 33 Ward Agricultural Officers (WAOs) implementing critical field activities in the 27 wards across Bungoma and Taita Taveta counties. WAOs used the one-pager FAO-FFS information sheet on COVID-19 guidelines including pictorial messages on social distancing and hygiene while conducting farmer training sessions. WAOs were also provided with airtime to enable them to remotely support farmers. Plus the AVCD Potato WhatsApp group allowed the project team to follow activities, and provide remote and immediate guidance.

"Farmers were so excited to have sanitizers and masks, they had only heard about the two items but had never seen or used them. AVCD was the first project to provide these items for us" said Rhoda Khamuka WAO, Tongaren ward, Bungoma in May, 2020.

Feedback from the counties revealed that farmers faced difficulties accessing inputs due to movement restrictions, inputs not available or insufficient income to buy inputs. With late blight being a high disease risk this past season due to high rainfall, farmers risked losing their crops without access to fungicides. Thus, **AVCD further provided fungicides to manage late blight and top dressing fertiliser valued at \$3,250 US** to ensure a vibrant crop, with WAOs distributing the inputs.

Implementing safety measures not only allowed activities to progress, but bigger outcomes are supporting counties on the journey to self-reliance (J2SR) and teaching rural farmers about COVID-19 and how to protect themselves and their families from the virus.

Training on a full scale in the two counties resumed in July 2020 following the partial opening of the economy and was guided by Ministry of Health protocols.

2.2 PROGRESS BY OBJECTIVES

2.2.1 Objective I

Objective I focuses on agricultural and nutritional capacity development of rural farming HH. Through season-long training on LFs led by the county governments, yields are targeted to increase by 50% for 12,000 smallholder farmers reached over year 2 as a result of applying productivity-enhancing technologies.

Most field activities support this first objective and is responsible for reaching smallholder farmers and rural households with agri-nutrition interventions. Extending potato production to non-traditional agro-ecologies for potato accounts for 49% of the 18,687 beneficiaries and was key to reaching the targets for farmers reached and applying productivity-enhancing technologies (Table 2). Three cropping seasons occurred during AVCD phase 2, long rains (LR) 2019 (April to August), short rains (SR) 2019 (October to February) and LR 2020, of which SR2019 and LR2020 comprise the past annual period.

TABLE 2. SUMMARY OF SMALLHOLDER FARMERS AND RURAL HOUSEHOLDS REACHED WITH AGRI-NUTRITION INTERVENTIONS OVER THREE PROJECT SEASONS

County	Traditional agroecology	Non-traditional agroecology	Total
Bungoma	7,604	7,431	15,035
Taita Taveta	1,955	1,697	3,652
Total	9,559	9,128	18,687

The capacity development as a result of transitioning towards counties independently leading interventions in seasons 1 and 2, WAOs continued to lead activities for season 3 during COVID. To ensure continuation with activities during restrictions following COVID-19 safety guidelines, WAOs were able to maintain minimal level of training for representatives of farmer groups (FGs) and LF host farmers throughout the season. With safety measures, WAOs were able to organize input (seed) distribution and establishment of the 60 and 82 season 2 and 3 LFs, respectively. Once restrictions lightened, training resumed in July on the developing potato crop to complete season 3.

Over the last year, **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 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 **550 FGs** representing **16,389 farmers applying productivity-enhancing technologies** received 38–50 kg of seed to apply the GAP training in their own collective plot and use the harvest as seed for a following market crop. The **33 WAOs**, with supervision from sub-county crops officers, had earlier identified the FGs and their associated LF (Table 3).

TABLE 3. SUMMARY OF POTATO LEARNING FARMS, FARMER GROUPS AND FARMERS APPLYING TECHNOLOGIES OVER THREE PROJECT SEASONS

County	Traditional/ Nontraditional Potato Ward	No. LFs annual	No. LFs total	No. FGs annual	No. FGs total	No. WAOs	Total no. appliers of technologies
Bungoma	6/12	94	148	456	709	24	13,244
Taita Taveta	4/5	48	76	94	140	9	3,145
Total	10/17	142	224	550	849	33	16,389

Across the three seasons of GAP training, each LF measured 220 and 45 m² in Bungoma and Taita Taveta, with establishment and training material costing \$400 and \$290 US, respectively. Identifying

plots greater than 45 m² in Taita Taveta was not possible due to extreme limitations on land holdings.

Performance of the four potato varieties at LFs was 2-3 fold higher than the average baseline of 8.0 and 6.3 t/ha for Bungoma and Taita Taveta, respectively (Table 4). The high yield obtained at yield learning farm is as a result of using quality seed combined with GAP, and trained farmers were able to see for themselves the importance of applying GAP. Yields of the four varieties on LFs in traditional and non-traditional agro-ecologies had a relatively narrow range of 18.7 to 22.2 t/ha over the three seasons, with an overall yield of 20.7 and 21.7 t/ha at LFs in traditional and non-traditional agro-ecologies, respectively (Table 4). The results from the learning farmers over the 3 season has shown that potato cultivation is possible outside the traditional areas.

TABLE 4. SUMMARY OF YIELDS AT POTATO LEARNING FARMS OVER THREE PROJECT SEASONS

County	Category	Dutch Robyjin	Shangi	Sherekea	Unica	Average
Taita Taveta	NT	13.4	15.1	13.4	15.8	14.4
	T	18.9	18.1	18.7	18	18.5
Bungoma	NT	23.9	20.9	19.9	28.9	23.8
	T	18.5	21.4	23.6	24.4	21.9
Average Traditional		18.7	20.3	22.0	22.2	20.7
Average Non-Traditional		19.5	21.0	22.0	24.6	21.7

FGs yielded 12 t/ha on the certified seed they received to apply the GAP training, up from the baseline yield as above. AVCD distributed 40 t of certified seed to 857 FGs to apply GAP training over three project seasons, resulting in yields ranged from 6.9 to 20.4 t/ha and sufficient to plant 115 ha (Table 5). While this is up from the baseline yields, the lower yields among FGs compared to LFs shows the gap that FGs need to close. Through extension support from WAOs and farmer producer organization should continue to build the skills of farmers as this was their first time growing potato under GAP, a few more seasons should see farmers obtaining same and greater yields as that from LFs. The low yields in season 3 for Taita Taveta are a result of the rains just stopping in April – there was minimal rain

TABLE 5. SEED POTATO DISTRIBUTED TO FGS TO APPLY THE GAP TRAINING AND PRODUCE SEED ON-FARM OVER 3 PROJECT SEASONS

County	Season*	No. of FGs	Quantity of Seed Received (t)	Expected Production (t) [†]	Area Covered (ha)	Yield (t/ha)
Bungoma	1	253	9	72	36	20.4
	2	202	10	80	35	6.9
	3	254	13	102	51	15.2
Taita	1	46	2	18	9	10.8
	2	40	3	16	7	-
	3	54	3	22	11	8.8
Total		857	40	310	155	11.9

* Season 1 long rains (LR2019), planted April 2019, Season 2 short rains (SR2019), planted October 2019, season 3 long rains (LR2020), planted April 2020.

Bungoma finalised a county potato strategy thereby ensuring an enabling environment to sustain AVCD interventions. Taita Taveta county has started to develop a potato strategy after observing how the value chain can contribute to development outcomes for the county. Both strategies are supported by the National Potato Council of Kenya (NPCK).

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 were trained in nutrition messaging for rural households and young children who in turn trained 132 CHVs. Each of the CHVs was attached to two–four FGs who had been trained in GAP. The LFs were the site of nutrition messaging for the 549 FGs from seasons 1 and 2, having delivered seven sessions of nutrition messaging using AVCD-developed nutrition dialogue cards for 7,302 adults and 1,518 children, which met 76% of the 2,000 children target (Table 6). The majority of beneficiaries (62%) are above reproductive age 49 years, hence the lower number of children under 23 months.

TABLE 6. POTATO-FARMING HH REACHED WITH NUTRITION MESSAGES IN THE POTATO VALUE CHAIN INTEGRATED AGRI-NUTRITION INTERVENTION

County	Adults Reached			Children under 23 Months		
	Male	Female	Total	Male	Female	Total
Bungoma	1,459	3,308	4,767	582	680	1,262
Taita Taveta	697	1,838	2,535	142	114	256
Total	2,156	5,146	7,302	724	794	1,518

During the year 2 work planning meeting, county governments were assigned to support nutrition messaging from county budgets. Bungoma county now has 3,000 CHVs on 2019-2020 payroll, receiving a monthly stipend. Taita Taveta county has 1,500 CHVs included 2020-2021 budget. CHVs are using nutrition fact sheets supported by AVCD for nutrition messaging, and have the comprehensive nutrition dialogue cards for more intense training and messaging when suitable. Both counties are finalizing their County Nutrition Action Plans, with contributions from AVCD and external partners.

2.2.2 Objective 2

Objective 2 focuses on seed system development by supporting private sector seed businesses to produce 400 t of seed annually. To increase access to good quality seed, especially by women and youth, farmer producer organizations (FPOs) 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%.

Taita Papa nursery was accredited and licensed by the Horticulture Development Crops Authority (HCDA) as a registered nursery in May 2020. Over the past year, Taita Papa produced cuttings over two production cycles. The first production cycle, January-May, the nursery produced 2,454 cuttings with seven individual farmers and five farmer groups having bought 970 cuttings – impressive as this was the first season of production and an entirely new technology for farmers, AVCD purchased 1,350 for farmer distribution and Taita Papa planted 134 cuttings.

In early June, the nursery started their second cycle of production, targeting the September/October planting season. Tissue culture plantlets were transplanted without any losses – a steep learning curve from the first cycle where many tissue culture plantlets did not survive transplanting. However, production was much reduced from the first cycle at 816 cuttings to date, and it is suspected that the cocopeat planting medium wasn't washed properly which impeded growth through making nutrients unavailable. This is being addressed by providing the nursery with an EC meter to ensure cocopeat is washed properly. With the low production, KEPHIS was not requested to inspect the crop, this will occur for the next production cycle.

First generation seed from cuttings harvested in January was planted in April/May for a second season of multiplication. WAOs provided in-field training and technical backstopping throughout the cropping season to Taita Papa and the four farmer groups (Matendo, Ilira Mwaweche and Mbirwa) who planted early generation tubers or cuttings did final harvesting at their seed plots. The four

groups harvested a combined 495 kgs of high-quality, early generation seed. As already explained in the earlier section, there was inadequate rainfall received during the last growing season. However, members of the four groups carried out supplementary irrigation and that explains the fairly good yields obtained by the four groups an average of 17.7 t/ha compared to farmer groups who averaged 8.8 t/ha (Table 5). This is a good indication that investing in irrigation in the county can increase yields 2-3 fold compared to what that what farmers were harvesting before they received GAPs training and in particular during seasons with less rainfall. This harvest of these six varieties will be distributed to farmers for them to assess: Chulu and Konjo (late blight resistant), Wanjiku (robust, big yielder), Nyota and Unica (heat tolerant) and Lenana.

The farmers supported in LFs 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 I farmers purchased 7 t of seed the following season (October, SR 2019) after observing the benefits of using good seed from their LF and group plots (Table 7). COVID interfered with farmer purchases as the onset of the pandemic was as the LR 2020 season began and farmers were not confident to purchase seed. The FPOs supported in Objective 3 will take over collective seed purchases to ensure that farmers have access to certified seed. While Taita Papa is producing cuttings and seed from cuttings, their capacity cannot meet demand thus seed needs to be supplemented through collective purchases managed by FPOs.

TABLE 7. CERTIFIED SEED POTATO PURCHASES BY FARMERS AFTER TRAINING IN GAP AND POTATO VARIETIES

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

Kenya Climate Smart Agriculture project (KSCAP) is supporting FGs trained by AVCD in season I to bulk basic seed one generation to produce certified seed. AVCD is aligning with KSCAP to ensure sustainability to this intervention as there are gaps in sustainability. Minimal land holdings in Taita Taveta suitable for seed production limit land for bulking seed over successive generations and seasons to ensure sustained seed production, and there is no cropping plan for the seed groups. So while one or two seasons of bulking will be accomplished, there are concerns how to sustain the intervention. Additionally, there was no follow up training for the farmer groups multiplying seed, with KSCAP having relied on the AVCD GAP training, which is insufficient for seed production. Seed producers need continual technical backstopping for the first few seasons of production as seed potato is a difficult crop to produce with the quality standards. Further with Taita Papa in Taita Taveta, cuttings can be used as starter material for seed production, rather than transport basic seed from Tigoni or Meru.

In general, CIP has observed inconsistency in seed interventions and questions sustainability of some interventions. To address these concerns to ensure sustainability of seed interventions, a Potato Seed System Intervention Workshop was planned with stakeholders from the Ministry of Agriculture, KALRO, NPCK, KSCAP and NARIGP national coordination, and CIP. The workshop will take place in October 2020 over three partial days and will culminate in a National Seed Forum convened by the Ministry of Agriculture and Council of Governors – Agriculture committee.

2.2.3 Objective 3

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

Profiles of each FPO in Bungoma and Taita Taveta indicating progress to date. There is a combined total of 21 management and supervisory committee members (eight women) between the two county FPOs (Fig. 1).

Bungoma: KWESTO: Kabuchail/Kimilili, Webuye, Elgon, Sirisia, Tongaren, Potato Farmers' Cooperative Society Ltd. Formation of the cooperative was in response to farmers request for an organized marketing structure as indicated in the county potato strategy. The formation of the cooperative started in April/May 2019 after WAO organized for one public barazas in each of the 18 project intervention wards. This was followed by two sensitization/mobilization meetings (one with Members of County Assembly and another with WAOs and sub-county cooperative officers.

- The cooperative was officially registered by the Commissioner of Cooperative with the Certificate, No CS/24790 dated 24th January 2020 (Fig. 2).
- KWESTO objectives: seed sourcing, providing extension services and collective marketing.
- KWESTO FCS held its first annual general meeting (AGM) on 24 February 2020.
- In May 2020, County Government has officially allocated an office space for FCS at Mt Elgon sub-county Agricultural office located in Kapsokwony

Taita Taveta Potato Farmers Producer Organization (TT FPO). Formation of the FPO was in response to farmers request for an organized marketing structure so as to maximize their profitability given their proximity to Mombasa market. The formation of TTFPO started in April/May 2019 after WAOs organized for group meetings in each of the 9 project intervention wards. During the meetings, 11 interim committee members were elected by farmer groups.

- FPO objectives: seed sourcing, providing extension services and collective marketing.
- In June 2020, County Government has officially allocated an office space for FPO at Wundanyi sub-county Agricultural office located in Wundanyi town.
- Taita Taveta Potato Farmers Producer Organization (TTFPO) was officially registered on 16th July 2020 by the Department of Social Development, No 51799. The 11 committee members contributed Kes. 5,000 being the registration fee paid to the Department of Social Development (Fig. 2).

Training on good governance and leadership skills. Eleven elected committee members each from KWESTO and TTFPO were trained in good cooperative governance and leadership skills. For KWESTO, the two-days comprehensive training was facilitated by County Cooperative Officers and officially opened by the County Executive Committee Member (CEC), Agriculture, Bungoma County. Key topics covered included: leadership and governance, roles and responsibility of the management and supervisory committee, seven principles of cooperative, cooperative policies, legislation and management structure. At the end of the training which was an eye opener for the newly established cooperative, the members came up with way forward for the next six months. The County Director of Cooperative and the Cooperative members appreciated the project for organising the much needed training.

For TTFPO, the two-days comprehensive training was facilitated Social Development Officer from the country. Some of the topics covered included: group formation and dynamics, leadership and governance, roles and responsibility of group officials and members. As part of the training, the committee members came up with a draft constitution with the guidance from the Social Development Officer who also facilitated official registration. The 11 committee members contributed Kes. 5000 being the registration fee.

Membership Recruitment by KWESTO Committee Members. Membership recruitment activity is continuing in both counties with support from FCS/FPO operation managers who on a continuous basis create awareness on the importance of joining FCS/FPO. The total number of paid up members for 64 for TT FPO and 78 members for KWESTO FCS.

Each new member is required to pay a registration fee of Kes 500 and Kes 200 respectively for KWESTO FCS and TT FPO. Both FCS and FPO have a receipt book and each member is given a receipt upon payment.

Farmer Association	KWESTO BUNGOMA POTATO FARMERS COOPERATIVE SOCIETY 11 Committee Members					
Committee Members per Sub County	Kabuchai 1	Sirisia 0	Tongaren 2	Mt. Elgon 3	Webuye East	Kimilili 1
# of WAOs (Extension) Trained	2	2	6	9	3	2
# of intervention Wards	2	1	5	6	2	2
# of Farmer Groups Trained in GAPs	45	43	177	327	72	45
# of beneficiaries reached in 3 seasons LR2019/SR2019/ LR2020	937	901	3,754	6,907	1,502	925
Potential FPO members Assuming 25% of the beneficiaries	235	226	939	1,727	376	232

Figure 1. Organigram for Kabuchai/Kimilili, Elgon, Webuye, Sirisia, Tongaren, Potato Farmers' Cooperative Society Ltd of Bungoma County

Farmer Association	Taita Taveta Potato Farmer Producer Association 11 Committee Members		
Committee Members per Sub County	Mwatate 3	Taita 8	Voi 0
# of WAOs (Extension) Trained	3	4	2
# of intervention Wards	3	4	2
# of Farmer Groups Trained in GAPs	43	79	26
# of beneficiaries reached in 3 seasons LR2019/SR2019/ LR2020	1,121	2,048	696
Potential FPO members Assuming 25% of the beneficiaries	280	512	174

Figure 1. Organigram for Taita Taveta Potato Farmer Producer Organization



Figure 2. Certificate of Registration for Taita Taveta Potato Farmer Producer Organization (left) and KWESTO Farmer Cooperative Society of Bungoma (right)

Operations manager for KWESTO and Taita Taveta FPO: each county recruited a manager for their respective FPO in August 2020. Both Manager, Mr Calistus Kwoba and Mr Peter Mwaburi for KWESTO and TTFPO, respectively, officially started working from 1st September 2020 in conjunction with the committee members and the county team focusing on operationalizing the FPOs.

AVCD supported each FPO with essential stationeries and furniture. The items for KWESTO were officially received by the County Director of Cooperative, Mr. Wambani and committee members while that for TTFPO were received by the County Chief Officer (CO), Mr. Boniface Mwavula and committee members of the FPO (Fig. 3). Both Mr. Wambani and Mr. Mwavula acknowledged and appreciated the support and promised to bring farmers together in an efficient and sustainable way.



Figure 3. Left: Business Skills and Enterprise Development training session for elected committee members of Taita Taveta Potato Farmer Producer Organisation. Middle and Right. Committee members receiving the furniture on the same day.

Business Skills and Enterprise Development Training training. The 11 elected committee members for each KWESTO and TTFPO together with operations managers received training in business skills and enterprise. The business skills training module developed in AVCD phase I was refined based on experience from phase I. The trainings were organized in such a way that the days 1 and 2 were held consequently and a follow up session a week later.

The training focused on six key topics: (i) Enterprise Analysis, (ii) Business Planning, (iii) Record Keeping & Store Management, (iv) Markets and Marketing, (v) Savings and Resource Mobilization and (vi) Basic Financial Literacy. The training sessions were conducted physical through face-to-face sessions and facilitated by the County Agribusiness Officer in each county, Mr. Silvanus Wanjala for

KWESTO and Edwin Wawire for TTFPO. A few sessions were lead virtually by the project Agribusiness Development Officer. The hybrid training sessions went on very well and committee members were excited to participate in a virtual training

At the end of the 2-day training, participants were given taken away assignment to prepare them for 3rd day which focused on development of the business plan. Development of the business plan specific for KWETSO and TTFPO is ongoing.

NPCK hosts the Viazi Soko (potato marketing) platform where farmers are able to query and access seed availability information such as; variety, quantity, price per kg, location and contacts of seed producer and market prices of ware potato in major towns. Farmers have also been receiving advisory messages through the platform such as soil testing, fertilizer recommendations, among others. Currently the platform has 82,052 registered potato farmers. Following the success of the platform, other areas have been identified to upgrade based on the need of potato farmers and stakeholders, noting upgrades started August 2020 and is expected to be launched in Q4:

- a) The platform to be modified to run on USSD for ease of registration and querying of seed and market information by farmers,
- b) Include option for placing orders for inputs such as seeds, fertilizers and agro-chemicals,
- c) Integrating M-pesa option or any other agreed payment platform for making payments,
- d) Generation of reports and graphs for analysis,
- e) Incorporation of Geographical Information System (GIS) into the platform for ease of locating farms and categorization of potato farmers,
- f) Capture real time details from the field including map coordinates and weather information,
- g) Provide capacity to associate each farmer in the platform with a farmer group/cooperative,
- h) The ability to match farmers supply with market demand for potatoes,
- i) Include the interactive voice over and links for sharing videos and printable brochures.

2.3 LESSONS LEARNED

Strong partnerships with county governments were key in continuation of activities, even if at a slower pace due to COVID-19. Counties were committed to keeping activities going to not lose the investments in the learning farms and ensure farmers had access to training. Actually, farmers were also demanding the county for GAP training despite COVID-19. By supporting safety first by providing PPE gave the county governments and farmers the confidence to continue with activities respecting national guidelines. Capacity development, establishing implementation and operational systems early in the project were also key for the counties to progress with remote support and with to being able to deliver in the changing and challenging environment created by COVID-19.

With several seed system interventions occurring by diverse projects, the need for alignment and consistency in these interventions is needed. A seed workshop was planned to respond to this as described in Objective 2.

3. ACTIVITY PROGRESS (QUANTITATIVE IMPACT)

Annual achieved against targets includes results from the endline survey to be uploaded into FTFMS, with indicators largely achieving or surpassing the target (Table 8).

TABLE 8. SUMMARY OF ANNUAL TARGETS VS. ACHIEVEMENTS FOR AVCD INDICATORS THE POTATO VALUE CHAIN

Indicator	Q1 Achieved	Q2 Achieved	Q3 Achieved	Q4 Achieved	Annual Target	Annual Achieved	Reasons for Deviation
EG.3-2: Number of individuals participating in USG food security programs [IM-level]	4,672	1,009	4,996	224	12,000	10,901	<ul style="list-style-type: none"> Most of the beneficiaries were reached in the first 2 seasons of the project.
EG.3.2-24 Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance [IM-level]	4,672	-	4,996	224	12,000	17,779	<ul style="list-style-type: none"> The reported values is based form extrapolation from endline survey. It is higher because the number of appliers used in extrapolation is a combination of year1 and year 2 beneficiaries.
EG.3.2-26 Value of annual sales of farms and firms receiving USG assistance [IM-level]	N/A	N/A	N/A	N/A	4,000,000	4,929,310	<ul style="list-style-type: none"> The indicator surpassed the set target owing to improved productivity and favorable unit price of potato at farmgate
EG.3-10 -11,-12 Yield of targeted agricultural commodities among program participants with USG assistance [IM-level]	21	N/A	N/A	12	18	12	<ul style="list-style-type: none"> The project reported figures are from continuous monitoring in season 2 with the data coming from farmer groups saving seed on farm Generally, this indicator is annually monitored, and the official figures reported after endline survey.
EG.3.2-25 Number of hectares under improved management practices or technologies with USG assistance [IM-level]		N/A	N/A	7,561	1,200	6,095	<ul style="list-style-type: none"> This indicator is not continuously monitored, and the official data will be reported after endline survey which projects results is extrapolated 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	N/A	78%	80%	78%	<ul style="list-style-type: none"> This indicator is not continuously monitored, and the official data will be reported after endline survey which projects results is extrapolated to total beneficiaries

HL.9-2 Number of children under age 2 (0–23 months) reached with community-level nutrition interventions through USG-supported programs [IM-level]	511	591	41	-	1,200	1,143	<ul style="list-style-type: none"> • This target was under achieved because majority of beneficiaries (62%) are above reproductive age 49 years) hence the lower number of children under 23 months. • Some caregivers did not attend more than one training sessions required to consider children as reached. • Agrinutrition training sessions only occurred in SR2019 in year 2, tehre was no messaging int eh second cropping season, LR2020.
GNDR-2 Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources [IM-level]		72%	71%	52%	40%	70%	<ul style="list-style-type: none"> • This target was exceeded as more women were available and more organized to participate in activities taking place at the learning farms.
YOUTH-3 Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) [IM-level]	18%	12%	10%	8%	15%	12%	<ul style="list-style-type: none"> • The target is 15%; and have thus far have 12% of youth which is Over 70% achievement. • Fewer youth are participating due to their limited access to productive resources
CBLD-9 Percent of USG-assisted organizations with improved performance [IM-level]	13%	-	-	25%	60%	25%	<ul style="list-style-type: none"> • While the organizations have been formed, their capacity will be developed, and targets will be reported in Q4

While some indicators did not achieve the annual target, this is made up in the overall achieved against targets (Table 9).

TABLE 9. SUMMARY OF OVERALL TARGETS VS. ACHIEVEMENTS FOR AVCD INDICATORS THE POTATO VALUE CHAIN

Indicator	Year 2 Targets	Year 2 Achieved	Project Life Target	Project Life Achieved	% Project Life Achieved	Reasons for Deviation
EG.3-2: Number of individuals participating in USG food security programs [IM-level]	12,000	6,338	20,000	18,687	94%	<ul style="list-style-type: none"> • These two indicators are on track overall, as have reached just greater than 90% of project beneficiaries after three seasons of interventions
EG.3.2-24 Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance [IM-level]	12,000	5,220	20,000	17,779	92%	<ul style="list-style-type: none"> • To be reported in FTFMS 2020 for annually monitored indicators and its official results will be reported after the endline survey. • The reported values are from seed distribution activities for the last 3 seasons.
EG.3.2-26 Value of annual sales of farms and firms receiving USG assistance [IM-level]	4,000,000	N/A	4,000,000	4,929,310	123%	<ul style="list-style-type: none"> • To be reported in FTFMS 2020 for annually monitored indicators This indicator is not continuously monitored
EG.3-10 -11,-12 Yield of targeted agricultural commodities among program participants with USG assistance [IM-level]	18	-	18	12	67%	<ul style="list-style-type: none"> • This indicator is to be reported in FTFMS 2020 for annually monitored indicators, and the official figures reported after endline survey • The project reported figures are from continuous monitoring in season 2 with the data coming from learning farms and farmer groups saving seed on farm
EG.3.2-25 Number of hectares under improved management practices or technologies with USG assistance [IM-level]	1,200	N/A	3,000	6,095	203%	<ul style="list-style-type: none"> • To be reported in FTFMS 2020 for annually monitored indicators and the official data will be reported after annual survey which projects results is extrapolated 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]	80%	N/A	80%	78	98%	<ul style="list-style-type: none"> • To be reported in FTFMS 2020 for annually monitored indicators, and the official data will be reported after endline survey.
HL.9-2 Number of children under age 2 (0–23 months) reached with community-level nutrition interventions through USG-supported programs [IM-level]	1,200	632	2,000	1,518	76%	<ul style="list-style-type: none"> • This target was under achieved because majority of beneficiaries (62%) are above reproductive age 49 years) hence the lower number of children under 23 months.

						<ul style="list-style-type: none"> Some caregivers did not attend more than one training sessions required to consider children as reached
GNDR-2 Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources [IM-level]	40%	78%	40%	73%	183%	<ul style="list-style-type: none"> This target was exceeded as more women were available and more organized to participate in activities taking place at the learning farms and in seed multiplication at group level
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%	12%	15%	11%	71%	<ul style="list-style-type: none"> The target is 15%; and have thus far have 12% of youth or reached the target at 80%
CBLD-9 Percent of USG-assisted organizations with improved performance [IM-level]	60%	25%	60%	25%	42%	<ul style="list-style-type: none"> While the organizations have been formed, their capacity will be developed, and targets will be reported in Q3 and Q4

4. PERFORMANCE MONITORING

Potato value chain monitoring and evaluation relied on AVCD project AMEP with specific focus on the ToC and results framework. Beneficiary, and continuous and annual monitoring data toward indicators, was uploaded and reported through the MEASURE system/platform. Monitoring agents (MAs) lead data collection for continuous monitoring using the MEASURE platform with the assistance of WAOs. Since monitoring agents are field based within a rural setting, they were supported through technical backstopping to ensure seamless data collection and entry. As a result of successful backstopping, there was an increase in the number of submitted data from nutrition interventions. After the season 3 activities (agri-nutrition training and GAP harvesting) ended, 17,204 data records (Bungoma 12,450 Taita 4,754).

Amidst Covid-19 pandemic, training smallholder farmers took place in small clusters and were conducted by the WAOs. As part of participatory monitoring of activities, WAOs visited 308 farmer groups and 82 leaning farms 3-6 times i.e. during planting, hilling, top dressing and at harvesting within the season. These monitoring visits were documented with data being collected in these routine monitoring visit specifically on the dates of visit, list of farmers participating, their age and gender.

A national potato assessment is being conducted to assess the impact of COVID on the value chain and the current challenges from various stakeholders: 400 farmers, 35 WAOs, 20 agro-input dealers, 27 wholesale traders, 16 producer organizations and 18 senior county officials from AVCD and then other important potato counties: Elgeyo-Marakwet, Meru, Nandi, Uasin Gishu, Bungoma and Taita Taveta, Kiambu, Nakuru and Nyandarua. This activity is being conducted in collaboration with NPCK. Report generated from the assessment will be key in defining future interventions and the understanding coping mechanisms by various stakeholders.

Endline survey was concluded, and data has since been downloaded for cleaning and analysis to enter into FTFMS. The data was collected from respondents from the following wards: Elgon, Kaptama, Chesikaki, Ndal, Cheptais, Chepyuk, Kapkateny and Namwela wards in Bungoma County and Weregha and Wundanyi/Mbale wards in Taita Taveta County. Each of the sampled wards has a target sample of 26 respondents and 256 respondents in total within the 2 counties. Preliminary results indicate commendable progress in both FTFMs and custom-made indicators. For instance, 98% of the respondents applied at least 1 technology, whereas the average value of sales is approximately USD 266 per farmer.

5. CONSTRAINTS AND OPPORTUNITIES

The constraints as a result of the coronavirus pandemic are obvious. But this is also an opportunity to demonstrate how during restrictions that interventions can continue to be delivered and thus contribute to project results. Remote technical and operational support through different communication platforms, along with having developed county government capacity and experience in the interventions, enabled activities to continue and contribute to the J2SR.

Because the activities contributing to the majority of indicators require people to gather, were delayed as a result of covid-19. As described above, however, the county governments were committed to keeping minimal activities operating during the restrictions. This will enable activities to resume immediately once the situation normalizes as a result of observing the positive results of AVCD interventions and buying into the value of investing in potato.

6. PROGRESS ON GENDER STRATEGY: YOUTH AND PRIVATE SECTOR

As in the second year of project implementation like the first year, women beneficiaries represented 70% 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.

7. PROGRESS ON ENVIRONMENTAL MITIGATION AND MONITORING

Rainfall has been extremely limited in Taita Taveta during season 3. To mitigate dependence on rainfall, farmer groups have irrigated their potato crop. This season of low rainfall will enable to further assess further the water stress tolerance of Unica var by comparing yields of irrigated and non-irrigated crops of the variety.

8. PROGRESS ON LINKS WITH GOVERNMENT OF KENYA AGENCIES

CIP was appointed to the technical advisory committee of Agriculture Sector Network (ASNET) for root crops potato and sweetpotato. ASNET has been formed through a very strong partnership of the Kenya Private Sector Alliance (KEPSA), Kenya National Chamber of Commerce and Industry (KNCCI) and the SDG Partnership Platform at the United Nations, with support from the Business Advocacy Fund (BAF), Elgon Kenya Limited, and other partners.

CIP is working closely with Kenya Climate Smart Agriculture project (KSCAP) seed potato intervention in Taita Taveta. KSCAP is supporting farmer groups trained by AVCD in season 1 to bulk basic seed provided by KALRO. There are several gaps in this intervention which AVCD-CIP is working to address: long term sustainability of bulking seed considering land limitations in Taita Taveta, seed cropping plan, and transforming the groups into seed merchants as KALRO lends its seed merchant license for two seasons to outgrowers with the expectation that outgrowers will take the next step to becoming seed merchants. The discussions also circulate around using cuttings from Taita Papa as starter material to bulk seed and avail to farmers to produce seed on-farm.

9. J2SR, SUSTAINABILITY, AND EXIT STRATEGY

The potato value chain operates under a model of private sector institutions leading activities along the value chain, while public institutions provide the enabling environment and support services. Close engagement with county governments supports positioning potato-growing among the objectives of these ministries at county level. Co-investment by county governments under their

agricultural support work plans and budgets will be encouraged and monitored by the project as an indicator to future investments after the project ends and sustainability.

Engaging the private sector and farmer institutions to operate along the value chain is the other 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 expected to happen. This is quite an accomplishment toward sustainable seed supply in the county. Development of FPOs to support marketing will help farmers to equitably engage in the value chain.

The detailed matrix detailing the J2SR was submitted in the YI annual report. No changes have been made in this reporting period.

Cecinta Nduru: producer of cuttings as a result of AVCD phase I: an article featuring her in the Standard newspaper:

<https://www.standardmedia.co.ke/farmkenya/crop/article/2001388288/concerted-efforts-boost-kenyas-potato-sector-through-new-technologie>

Meru County: Jungu farm located in Kibirichia ward, Meru County and owned by Mr James Ngugi, one of the youths supported by FIPs-Africa, an implementing partner for AVCD-PVC during Phase I has been producing clean seed for some time. In August, the farm successfully applied to KEPHIS for Registration as a Seed Merchant. After a thorough inspection by KEPHIS seed inspectors, the application was accepted and the farm received the Certificate of Registration as a Seed Merchant, Registration Number 1055 of 17th August 2020 (Fig. 4). The farm will start producing certified seed from October 2020.



Figure 4. Copy of the Certificate of Registration as a Seed Merchant for Jungu farm, Registration Number 1055 of 17th August 2020.

Meru Tamu Potato Cooperative Society one of the five cooperatives supported during Phase I, successfully applied for the competitive grants from the World Bank funded NAGRIP project receiving Kes 17,045,000 for upgrading potato value chain in the county. The approved funds will be used for farm machinery and equipment including a tractor and implements such as disc plough, harrow, bed former, planter and harvester, ridge making and fertilizers spreader. The machineries and equipment will have hired out to paid up members. Currently, members are raising the money through purchase of shares. by members. The cooperative is expected to contribute Kes1,101,000 to bring the sum of grants to Kes. 18 million.

Nandi Potato Farmer Cooperative Society Ltd (NPFCS), one of the five cooperatives supported during Phase I received financial support World Bank funded NAGRIP project. With the support, the Cooperative planted 36 acres of land under seed potato for Shanghi and Sherekea varieties. The starter material was procured from ADC-Molo in April 2020. Harvesting which started in end of August 2020 was fully mechanized and was launched by H.E The Governor Nandi County, Hon Stephen Sang and CECM Agriculture, Dr. Kiplimo Lagat with other county officials from Ministry of Agriculture (Fig. 5). **After sorting and grading, 63 tonnes of seed were realized and waiting for certification labels from KEPHIS.**



Figure 5. Posts from the AVCD Potato WhatsApp group: Left: Potato harvester ready for harvesting potatoes after being commissioned by the Governor; Right: Members of Nandi Potato Farmers' Cooperative Society assessing tuber yield in the harvested row. With the members is the Nandi County Governor, Hon Stephen Sang (second on the left and holding the gadget for manual grading of tubers)

According to the Chairman, Mr. Jairus Sugut, seed demand from within and outside the county is so high and this is giving them the motivation to increase the acreage during the upcoming season.

In addition to the 17 acres of current seed potato field crop, the cooperative has planted approximately 2 acres using apical cuttings. A total of 40,000 (Shangi: 20,000, Unica and Sherekea each 10,000) apical rooted cuttings were bought from Stokmen Rozen Kenya in Naivasha in two batches: early and mid-August, 2020.

All these seed business activities were made possible using the competitive grants the cooperative received from World Bank funded NAGRIP project and technical support from the county government and AVCD project staff. The management committee is also approaching other partners as they plan to expand the acreage under seed potatoes, contract new storage facilities with an emphasis on cold storage.

For the current harvest (LR 2020), the cooperative is using the seed merchant certificate for ADC-Molo but for the upcoming season (starting during the SR 2020), the cooperative expects to use own seed merchant Certificate having successfully applied to KEPHIS for Registration as a Seed Merchant. CIP through another project has committed to support the cooperative with the payment of registration fee of Kes. 75,000.

Uasin Gishu County. All the four potato multiplication satellite centers selected and supported by KCSAP project had been trained by AVCD project during phase I. The four centers which includes Chebororowa ATC and three progressive farmer groups each group receive 1 tonne (20 bags) of basic seed of Shanghi variety procured from KALRO- Marindas Centre (Fig 6.). Three of the four

centers completed harvesting in September and successfully obtained KEPHIS certification. According to Joseph Wanyeki, WAO, Ainabkoi Ward and who supervises one of multiplication satellite centers, the crop performance is impressive and the seed demand is overwhelming and in some cases, farmer booked the seed in advance.



Figure 6. Posts from the AVCD Potato WhatsApp group: Left: Harvesting, sorting grading and packaging of seed potatoes by members of Happiness Kapn’getuny Self Help Group. All the mandatory seed activities have been approved by KEPHIS. Joseph Wanyeki, (standing and holding a bag of potatoes on the left) supervised all the field activities.

10. WORK PLAN FOR Q4

Activities planned for Y2Q4:

1. Development of Businesses Plan for KWETSO FCS and TT FPO
2. Potato Seed System Intervention Workshop for implementors, service providers, supporters and beneficiaries and report
3. Report on assessment of the effects of COVID-19 on the potato value chain from production to marketing.
4. Report on endline survey to assess annually monitored indicators as stated in Table 8, and entry into FTFMS.
5. Upgrade and intergrade Viazi Soko (Potato Marketing) Platform of NPCK to include agronomic, weather information, M-Pesa payments and support marketing services for producers and markets, and collect and report user and platform use data.
6. Support Taita Papa nursery to start third production cycle of apical cuttings for seed production, targeting sales to start late-March/early April 2021.

The past year focused on season 2 and resuming and completing season 3 the GAP LF training after the COVID restrictions lightened, FPO capacity development, and the endline survey (Table 10).

TABLE 10. STATUS OF ACTIVITIES FOR Y2 (OCTOBER 2019 TO SEPTEMBER 2020)

Planned Actions for Year 2	Actual Status (Q2)	Explanations for Deviations
Continuous monitoring/spot check	In process	An ongoing process that continues throughout all activities
Develop communication materials	In process	See Annex 1 for completed deliverables. Deliverables in process as per outputs and outcomes AVCD PVC Phase 2 deliverables

Planned Actions for Year 2	Actual Status (Q2)	Explanations for Deviations
County Government: partner meetings to develop and implement potato strategies	Suspended	Completed in Bungoma Delayed for Taita Taveta due to COVID-19
County Government: establish season 2 and season 3	Completed	
County Government: Train good agricultural practices on potato learning farms	Completed	
Cost-share starter material—cuttings + transport	Completed	
HCDA nursery licensing of Taita Papa to produce apical cuttings	Completed	
Sample fields intended for use for seed potato production for key soil/seed-borne pathogens	Completed	
Cost-share investments for seed storage (DLS)	Completed	
County Government: Support FPOs to form/rally members	In process	Activities delayed slightly due to intensity of other activities. Progress made in all these activities in Q2 and they are on-going in Q3 and Q4
County Government: good governance/leadership training	Completed	
Business plan development cooperative/farmer institutional	In process	
Establish office for each FPO	Completed	
NPCK: Expand Viazi Soko (Potato Marketing) Platform	In process	Activities delayed slightly due to intensity of other activities. Progress made in all these activities to be completed by Q3
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

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

Note this table was submitted for the Y1 annual report; only a few changes occurred in Y2Q1. The framework will be updated in the Q2 report.

Indicator	Annual Target (2020)		Achieved 2020 (Q1-Q)		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 Y2.
No. of potato GAP and variety LFs established	56	14	54	28	117%	O/P cont. monitoring	More LFs were developed to minimize the distance farmers travel longer to ensure building the critical mass for a potato value chain.
Percent increase in potato yield per acre	25%	25%	133%	216%	150%	O/C Survey	The figures are based on the percentage increase in yield between the baseline and the endline survey.
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	9,600	2,400	445	1,295	44%	O/P cont. monitoring	There were fewer number of beneficiaries reached in Year 2 since there were no Agrinutrition trainings in season 3.
No. of women engaged in potato value chain	2,560	640	4,532	688	163%	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 did not 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 access quality seed.
No. of FPOs buying seed on behalf of member farmers	1	1	0	0	0%	O/P cont. monitoring	Plans are in place for the operationalization of FPOs engagement in seed purchases through cooperative as an umbrella body.
No. of farmers using certified potato seed	9,600	2,400	4,532	688	44%	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 Y1 the focus was on formation and membership recruitment for producer and marketing groups members; hence there were no targets for Y1. Y2 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	597	151	63%		

ANNEX 2. LIST OF DELIVERABLE PRODUCTS

The following deliverables were produced over the past year:

1. Bungoma County Potato strategy 2020–2024: [Bungoma County Potato strategy 2020-2024](#)
2. Manual and brief: Diffused light stores: Locally adapted solution for seed potato storage: [Diffused Light store Brief and guide](#)
3. Project brief: AVCD Potato - Impacts of 4 years of interventions: [AVCD Potato - Impacts of 4 years of interventions](#)
4. [Video: Value chain approach accelerates potato farming in Kenya](#)

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