

TC module: Promotion of nutrition-sensitive potato value chains in East Africa (Uganda country package)

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A site visit to the Kapchorwa Seed Potato Producers Association screenhouse established in partnership with PNSP in August 2020.

List of abbreviations	3
1 Brief description	5
2 Positioning of the module	6
2.1 Updated positioning of the module	6
2.2 Other development measures in the module's specific area of intervention	7
3 Developments in the area of intervention	8
4 Achievement of objectives and changes to risks	9
4.1 Assessment of objectives, target groups, results hypotheses and indicators	9
4.2 Measures/activities implemented during the reporting period	15
4.3 Implementation of measures to ensure the long-term effectiveness of the project	24
4.4 Module term and time schedule	25
4.5 Costs incurred and reallocations	27
4.6 Assessment of results and risks	27
5 Overarching recommendations and lessons learned	27
5.1 Recommendations and reminders for the political dialogue on policies and priority areas	27
5.2 Lessons learned that may be of interest for the country strategy and future programmes	28
6 Declaration (TC)	28

List of abbreviations

ASSP	Agriculture Sector Strategic Plan
BugIZARDI	Buginyanya Zonal Agricultural Research and Development Institute
CD	Community Dialogues
CIP	International Potato Center
CUSP	Civil Society in Uganda Support Programme
DLS	Diffused Light Store
DSIP	Development Strategy and Investment Plan
EG	Early Generation
EnDev	Energizing Development
EREPP	Elgon Regional Potato Platform
FFBS	Farmer Field and Business School
GAP	Good Agricultural Practice
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ha	hectare
IDDS	Individual Dietary Diversity Score
IFDC	International Fertilizer Development Center
ISSD	Integrated Seed Sector Development
IYCF	Infant and Young Child Feeding
KASPPA	Kapchorwa Seed Potato Producers Association
LSA	Local Subsidy Agreement
KAaZARDI	Kachwekano Zonal Agricultural Research and Development Institute
MAAIF	Ministry of Agriculture, Animal Industry, and Fisheries
MIFA	Mengya Integrated Farmers Association
mt	metric tons
PCN	Potato Cyst Nematode
PNSP	Promotion of Nutrition-Sensitive Potato Value Chains in East Africa
QDS	Quality Declared Seed
RAC	Rooted Apical Cutting
REACH	Resilient Efficient Agribusiness Chains
RHITES-E	Regional Health Integration to Enhance Services-East
UPP	Uganda Potato Platform
USAID	United States Agency for International Development

VSLA	Village Savings and Loan Association
WASWAPA	Wanale Seed and Ware Potato Association
WRA	Women of Reproductive Age

1 Brief description

Sector	Rural development and agriculture
Programme	Not applicable for global programme and country package
Programme objective	Not applicable for global programme and country package
Date of last report	31.12.2019
Module	Country package: Promotion of Nutrition-Sensitive Potato Value Chains (PNSP) in East Africa
Module objective	Country package: The potentials of a nutrition-sensitive promotion of the potato value chain are utilized in selected regions (improved productivity, sector coordination, and dietary diversity).
Reporting period	10/2019 to 09/2020
Changes in the area of intervention of the module during the reporting period	<input checked="" type="checkbox"/> significant <input type="checkbox"/> minor <input type="checkbox"/> none
Changes in the donor landscape during the reporting period	<input type="checkbox"/> significant <input type="checkbox"/> minor <input checked="" type="checkbox"/> none
Achievement of module objective	<p>Country package: Progress toward objective achievement</p> <p>Objective 1: Increase productivity of 8,000 small-scale potato producers. The figure of 8,000 is expected to be reached and the adoption of 18/25 good agricultural practices (GAPs) is also realistic. The target of 10% of farmers accessing clean seed may not be met given the long-term nature of the current investments that have been made. The project proposes a revised target of 5% of the farmers accessing clean seed potato by June 2022.</p> <p>Objective 2: Strengthen coordination in the potato value chain. This is still expected to be reached despite delays in development of the strategic plan of the Uganda Potato Platform (UPP) at the national level. If this is finalized in early 2021, then the seven actions are achievable.</p> <p>Objective 3: Improve the dietary diversity of vulnerable groups in Eastern Uganda. The target of 7,000 with an improved Individual Dietary Diversity Score (IDDS) is still on track despite constraints with community mobilization in 2020 due to the pandemic. If the current restrictions</p>

	remain in place (gatherings of 200 people or less), this should still be manageable for outreaches.
Module is on schedule	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Risk assessment	COVID-19
Proposals for module adjustment	<p>Module Indicator 2 and Indicators D1, D2: Include efforts at regional level in the indicators as well and allow to count activities/strategies identified and implemented at regional level.</p> <p>Output B1: Reduction in target for access to clean seed from 10% to 5%. The figure of 5% is based on the impact of the screenhouses that will provide a combined total of around 400 metric tons (mt) of basic seed per annum by the end of the project, which is sufficient to reach 400 out of 8,000 farmers (5%).</p>

2 Positioning of the module

2.1 Updated positioning of the module

The project is aligned with the National Development Plan, the Development Strategy and Investment Plan (DSIP) of the Government of Uganda. In the agriculture sector, although potato had previously been one of 12 priority crops of the Agriculture Sector Strategic Plan (ASSP), it currently does not feature in the 2020/21-2024/25 version, which is the third ASSP. The reasons for this are that the data on the potato sector is limited in depth and reliability; therefore, a decision was made by the National Planning Authority to omit it from the plan. The project is currently supporting the UPP to coordinate the gathering of data on the potato sector from various sources. This will hopefully be presented to the Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF) before the end of 2020. Once that is complete, MAAIF and the National Planning Authority will decide on whether to include potato in the plan.

The enabling environment is also hampered by some lack of clarity at the policy level, particularly on potato certification and inspection. At present there are no official potato-specific guidelines or protocols in place to determine the quality of seed potato, which means that small-scale farmers cannot be sure about what they are buying on the market. As such, the work to develop the seed potato certification and inspection guidelines, which has been spearheaded by MAAIF and supported by GIZ through the International Potato Center (CIP), is both timely and important.

2.2 Other development measures in the module's specific area of intervention

Donor	Area of intervention / project objective	Synergies achieved at the results levels (outcome and impact)
GIZ-CUSP	Strengthen governance and build capacity in leadership within established potato farmer associations and other related organizations	Provided a grant for leadership and governance capacity building for the Elgon Regional Potato Platform. The Civil Society in Uganda Support Programme (CUSP) has also provided support to the UPP in the development of its five-year strategic plan and co-facilitated the strategic planning process for the Elgon Regional Potato Platform (EREPP).
Embassy of the Kingdom and the Netherlands (EKN) REACH-Uganda	Rice and potato market systems development	The Resilient Efficient Agribusiness Chains (REACH) in Uganda project spearheaded the low-cost screenhouse model for early generation seed potato production, which has also been adopted by PNSP.
CIP	Collaborative research to strengthen the capacity of seed multipliers to produce quality seed	Built capacity of 33 seed multipliers to produce mini-tubers from rooted apical cuttings. CIP furthermore presented research results on potato storage, which will be considered when supporting the establishment of future ware storage facilities under the PNSP project.
GIZ-Energizing Development (EnDev) partners-	Promotion of fuel-saving cooking stoves with local partners; UpEnergy and Lifeline	Started conducting joint community dialogues (outreaches), whereby the energy-saving cooking stoves were integrated into the cooking-demonstrations sessions conducted by PNSP.
Private tissue culture laboratories - AgroMax	Production of in vitro seedlings and rooted apical cuttings, support to the establishment of screenhouses	Supplied rooted apical cuttings and potato plantlets to the seed multipliers under the farmer group associations.

Donor	Area of intervention / project objective	Synergies achieved at the results levels (outcome and impact)
USAID/ RHITES-E project	Strengthen integrated health service delivery in nutrition, maternal child health, HIV, etc.	Exchange of information on the possible areas of collaboration, particularly on integration of nutrition and health services into the Farmer Field Business School (FFBS). Improved nutrition status of women and children through an increase in nutrition knowledge, dietary diversity, and adoption of healthy behaviours.
AVSI-SKY project	Build skills in agriculture among youth	Provided linkages to locally available experts in horticulture that can support the FFBS further. Increased production, access, and consumption of diverse foods through improved production skills and income.
USAID/BOCY	Empower households with vulnerable children and youth in several aspects, such as nutrition, education, and health	Improved the nutrition status of vulnerable children and youth. Shared experience on the integration of nutrition into the farmer field days and establishment of kitchen gardens in vulnerable households.
ISSD Plus	Improve access to high-quality seed services to smallholder producers	Involved in training of seed potato multipliers. Supporting the 33 individual seed multipliers for registration as quality declared seed (QDS) producers.
Self-Help Africa	Collaborative research to strengthen the capacity of seed multipliers to produce quality seed	Building the capacity of 33 farmers to produce mini-tubers from rooted apical cuttings in Kapchorwa and Mable districts.

3 Developments in the area of intervention

COVID-19 restrictions: As the case was globally, the PNSP operation areas were affected by the COVID-19 control measures that led to the suspension of the FFBS (the main platform of project implementation) throughout season 2020A (March-August 2020).

Furthermore, the large community dialogues (mega outreaches), the main channel to reach the wider community with nutrition messages, were halted, as public gatherings were strictly prohibited. This affected the target of numbers anticipated to have been reached through community dialogues this year.

Adverse weather conditions: This reporting period was characterized by continuous rainfall, which was above average in many project areas. This led to a favorable environment for severe late blight disease infection of the potato crop and, hence, increased disease management costs. Soil erosion was excessive, as most land under potato cultivation is bare, with minimal tree cover.

4 Achievement of objectives and changes to risks

4.1 Assessment of objectives, target groups, results hypotheses and indicators

Module Objective: To improve productivity, sector coordination, and dietary diversity

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
Module Objective Indicator 1 Average productivity of 8,000 small-scale farmers (k; 30% women) has increased by 40%	Baseline value: p: 12.5 mt/ha k: 0 Target value: p: 17.5 mt/ha k: 8,000 Actual value: p: 14.4 mt/ha k: 3,307	Yes	The 2020 reported yield improved from the baseline value of 12.5 mt/ha to 14.4 mt/ha, which was attributable to increased adoption of GAPs in 2020. The figure 3,307 is the number of farmers trained on GAPs in the previous reporting period. In season 2020A, no additional training of new farmers on GAPs was conducted because of the lockdown restrictions due to COVID-19, which prohibited gathering of groups. However, in season 2020B, 2,900 new farmers were recruited, of whom 2,400 are anticipated to complete GAP trainings in January 2021.

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
Module Objective Indicator 2 Out of the defined measures/activities a, number of the recommendations/strategies that have been adopted within the public-private dialogue platform for national sector coordination are being implemented	Baseline value: a: 0 u: 0 Target value: a: 15 u: at least 7 Actual value: a: 0 u: 0	Yes	The UPP strategic plan was still under development in 2020 and is expected to be finalized in early 2021. Support was provided in two action areas of the UPP – the national seed potato protocol and the re-insertion of potato into the ASSP, although neither was finalized during the reporting period. A draft five-year strategic plan on the potato value chain has been developed by the EREPP. EREPP feeds into UPP. The project has supported the strategic planning meetings, which have been co-facilitated by the GIZ CUSP regional team. The project has supported the legal registration of the platform, which now has a registration certificate.
Module Objective Indicator 3 The diversity of the food of 7,000 people (p; 40% are women aged 15-49) has improved, measured through the <i>Individual Dietary Diversity Score</i> (IDDS).	Baseline value: d: 3.1 Target value: d: 3.6 p: 7,000 Actual value: d: 5.6 p: 5,136	Yes	An assessment was conducted among the FFBS participants and community dialogue participants. Overall, dietary diversity increased from 3.8 (2019) to 5.6.

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
Output A Indicator Indicator A.1: 8,000 potato smallholders (k; 30% are women) apply 70% (u) of 25 “Good Agricultural Practices for sustainable potato production” (p), as defined by the project (crop rotation, adaptation to climate change, use of quality seed potatoes, etc.), in two successive planting times.	Baseline value: p: 25 u: 11 (42%) k: 0 <ul style="list-style-type: none"> Women reached (in %) out of the target group reached: 0 Target value: p: 25 u: 18 (70%) k: 8,000 <ul style="list-style-type: none"> Women reached (in %) out of the target group reached: 30% (2,400) Actual value: p: 25 u: 16 (64%) k: 3,307 farmers <ul style="list-style-type: none"> Women reached (in %) out of the target group reached: 67% (2,237) 	Yes	A cumulative 3,307 out of the targeted 8,000 farmers have been trained in GAPs, of whom 67% are female. In August 2020, an additional 2,400 new farmers are anticipated to complete GAP trainings in January 2021. These farmers are now applying 16 out of 25 GAPs, which is a good improvement from 2019 when the application was 14 out of 25 GAPs.
Output B Indicator Indicator B.1: At least 10% (q) of the 8,000 potato farmers (k; at least 30% female farmers) in the project region that have been trained use seed potatoes that comply with national quality criteria.	Baseline value: q: 0 Target value: q = 800 k = 8,000	Yes	At least 1.3% of the farmers reported to have used quality seed potato according to the annual household survey which is a slight improvement from 2019. Three screenhouses were completed and the process of production of early generation seed (EG) seed potato was begun. Also, a local subsidy

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
	<p>Actual value:</p> <p>q = 42 (1.3%)</p> <p>k = 3,307</p> <ul style="list-style-type: none"> Share of female farmers using seed potato that comply with the national quality criteria is 21 (0.65%) 		<p>agreement (LSA) was signed with Buginyanya Zonal Agricultural Research and Development Institute (BugiZARDI) for EG seed potato production. Therefore, some improvement is expected by end of the project life. It is anticipated that the figure of 5%, rather than 10%, will be reached. This is mainly due to the long-term nature of these investments, which produce seed within 18-24 months. Also, some delays were encountered with the delivery of tissue culture plantlets by AgroMax, which was a setback to the greenhouse owners.</p>
<p>Indicator B.2: 70% (q) of 800 potato farmers (Y) that have been trained (at least 30% female farmers) indicate that the marketing opportunities for their products have been improved.</p>	<p>Baseline value:</p> <p>q = 0</p> <p>Y = 0</p> <p>Target value:</p> <p>q = 70% (560)</p> <p>Y = 800</p> <ul style="list-style-type: none"> Share of female farmers trained (in %): 30% (240 women) 	Yes	<p>The marketing module was integrated into the GAP trainings curriculum, starting in season 2019B. A total of 2,952 farmers (2,132 female, 820 male) were trained in marketing. An additional 2,200 farmers are anticipated to complete training in season 2020B.</p> <p>The figure is very low at present due to the cultural norm of individual selling. Also, COVID-19 reduced marketing opportunities for farmers who were pressured</p>

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
	Actual value: $q = 0.65\%$ (19) $Y = 2,952$ <ul style="list-style-type: none"> Share of female farmers trained that indicated improved marketing opportunities: 100% (19 women) 		to sell at low prices from the farm gate for quick returns.
Output C Indicator C.1: The knowledge concerning family nutrition of 13,000 people (p), of whom 30% are women aged 15-49, that were reached through all information formats of the project has increased by one step on a five-tier scale (s).	Baseline value: $p = 0$ $s = 2$ <ul style="list-style-type: none"> Women aged 15-49 reached (in %): 0% Target value: $p = 13,000$ $s = 3$ <ul style="list-style-type: none"> Women aged 15-49 years reached (in %): 30% (3,900 women) Actual value: $p = 5,136$ $s = 4.5$ <ul style="list-style-type: none"> Women aged 15-49 years old reached: 2,165 women (42%) 	Yes	<p>There has been a consistent increase in knowledge from 2 at the baseline to 4.4 in 2019 and to 4.5 in the 2020 annual survey. This could be attributed to the increase in the various message rollout channels (FFBS, radio, phone messages, and nutrition champions) in 2020 compared to 2018 and 2019. Also, the radio and phone formats provided for the continuity of message rollout even during the suspension of project ground activities due to the COVID-19 outbreak.</p> <p>People that participated in Community Dialogues (CDs) /FFBS module: 5,136 people (3,833 female, 1,303 male) reached within the FFBS. An additional 5,500 beneficiaries are anticipated to complete training in 2020B through CD/ FFBS module: 2,500 FFBS and 3,000 CDs.</p>

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
Output C Indicator C.2: 80% of the people that have participated in “Community Dialogues” (CD) (at least 40% women aged 15-49) state that they implement acquired knowledge on nutritional diversification.	Baseline value: $X = 0$ Target value: $X = 80\% (10,400)$ <ul style="list-style-type: none"> Share of females (in %): 40% (4,160) women 15-49 years out of the 80% (10,400) Actual value: $X = 76.7\% \text{ of } 5,136 (3,939)$ <ul style="list-style-type: none"> Share of females that participated in CD/FFBS module and indicate an application of the acquired knowledge = 77.4% (2,966). 	Yes	<p>The current achievement is still slightly below the target. Throughout most of the year, the hands-on activities were suspended due to COVID-19 restrictions. However, with continued implementation of best practices and response to emerging needs, the target could be met.</p> <p>People that participated in CD/FFBS module: 5,136 people (3,833 female, 1,303 male) reached within the FFBS. An additional 5,500 beneficiaries are anticipated to complete training in season 2020B through the CD/FFBS module: 2,500 FFBS and 3,000 CD.</p>
Output D Indicator D.1: Stakeholders along the complete potato value chain, including 30% women, have adopted a total of 7 recommendations/strategies (e) in the frame of the public-private dialogue platform for national sector coordination.	Baseline value: $e = 0$ <ul style="list-style-type: none"> Participation of women (in %): 0% Target value: $e = 7$ <ul style="list-style-type: none"> Participation of women (in %): 30% 	Yes	<p>In 2020 the focus has been on the development of the UPP's five-year strategic plan, which has been supported by CUSP. It is anticipated that this will be finalized in early 2021, which will allow the project to support some key actions.</p> <p>Two actions that have been supported by the project are the seed potato protocols led by CIP and the development of the potato section of the ASSP; however, these will be finalized in 2021.</p>

Indicators	Values	Is target value achievable within the term?	State of implementation, issues, milestones etc.
	Actual value: $e = 0$ <ul style="list-style-type: none"> Number of participated stakeholders (absolute): 22 Participation of women (in %): 18% 		The project has supported the development of the strategic plan, which has been co-facilitated by CUSP. Support has also been provided to coordination meetings and the registration of the platform.
Output D Indicator D.2: 70% of the stakeholders (i), thereof 30% women, evaluate the national exchange of learning as good or very good.	Baseline value: $i = 0$ <ul style="list-style-type: none"> Number of stakeholders that participated at platform meetings: 0 Women who participated (in %): 0% Target value: $i = 70$ <ul style="list-style-type: none"> Women who participated (in %): 30% Actual value: $i = 100$ <ul style="list-style-type: none"> Number of stakeholders that participated at platform meetings: 22 Women who participated (in %): 18% 	Yes	<p>For the UPP, due to the pandemic no face-to-face meetings were held in 2020; therefore, national exchange could not be assessed.</p> <p>For EREPP, 27 members participated in the two coordination meetings, of whom 12 (44%) were women. EREPP contributes to the UPP. 100% of participants evaluated the exchange of learning as good or very good.</p>

4.2 Measures/activities implemented during the reporting period

Output A: Small-scale potato producers apply GAPs for sustainable potato production.

- Indicator A.1:** 8,000 potato smallholders (30% are women) apply 70% (u) of 25 GAPs for sustainable potato production (p), as defined by the project (crop rotation, adaptation to climate change, use of quality seed potatoes, etc.) in two successive planting times.

For season 2020B, the project recruited and trained a total of 36 facilitators, who established 144 demonstrations/learning sites in September 2020. The learning sites demonstrated the use of quality seed, fertilizer application, pest and disease management, harvest, and post-harvest handling. A total of 2,900 farmers were registered and 2,400 farmers are anticipated to complete training in GAPs. This current number will bring the cumulative number of farmers trained to 5,707 by the end of season 2020B. As a result of this training and technical backstopping, farmers are now practicing 16 out of 25 (or 64%) of GAPs, which is a significant improvement compared to previous year of 14 out of 25 GAPs (or 54%).¹

Increased efforts now need to be made in reinforcing some of the key GAPs that are not being practiced, particularly the use of clean seed, correct fertilizer, and crop rotation. For correct fertilizer application, the project is linking with agro-input suppliers of crop-specific fertilizers, such as Grainpulse. For proper rotation, farmers are being trained on rotations using non-solanaceous crops, such as barley and maize, that suppress bacterial wilt inoculation in the soil.

The current potato yield averaging 14.4 mt/ha has improved from 12.5 mt/ha in 2019. This can be attributed to the further adoption of GAPs in 2020. At the same time, some further understanding of soil fertility levels and the response of yields to different fertilizer applications in Mount Elgon is required to make further improvements. This will be done by conducting on-farm evaluation trials through an M.Sc. student internship program, which the project proposes to take place in 2021.

The project team developed phone-based short message services (SMSs) on ware and seed potato GAPs and nutrition. These messages were periodically sent to farmers' phone numbers following the potato cropping calendar. These SMSs were even more useful during lockdown due to COVID-19, when there were no face-to-face contact sessions.

The project also facilitated a meeting between FFBS facilitators and the Microfinance Support Centre (MSC). MSC is a Government of Uganda-owned agency mandated to manage micro-credit funds. It provides credit to farmer groups and other businesses at the lowest interest rates in Uganda. The FFBS facilitators have transferred the information to all registered farmers and follow-ups are being conducted.

Output B: Business relations between potato farmers and the upstream / downstream sectors have improved

- **Indicator B.1:** At least 10% of the 8,000 potato farmers (at least 30% female farmers) trained in the project region use seed potatoes that comply with national quality criteria.
- **Indicator B.2:** At least 70% potato farmers who have been trained (at least 30% female farmers) confirm that their marketing opportunities have been improved

In 2020, 1.3% of the project farmers reported to have accessed and used clean potato, which is a slight improvement from 2019. This low figure can be explained by the limited availability

¹ In 2019 the project reported a figure of 18/25 GAPs, which was based on a misunderstanding of the indicator as the percentage of farmers that were adopting 18/25 GAPs rather than the mean average number of GAPs. On discussion with GIZ in March/April 2020, this was recalculated to 14/25 GAPs for 2019 although this was not changed in the annual report.

of QDS or certified seed nationally in Uganda (where there is an annual seed gap of 17,000 mt) and the increased price of seed in 2020, which was raised to 320,000 UGX/80-kg bag according to the COVID-19 impact survey conducted by the project. In addition, the time frame for the longer-term investments in the localized seed system (details below) that have started in the project area will take time to mature, with some availability of basic seed by June 2022. As such, the project proposes to modify this target at least to 5%.

The project has mainly focused on development of two key aspects of the seed system: the production of mini-tubers through the planned establishment of screenhouses with seed associations and building the capacity of a local network of seed producers that can multiply seed from basic to pre-basic and then QDS.

An LSA has been signed with BugiZARDI for establishment of one low-cost screenhouse and rehabilitation of the two existing ones for production of EG seed potato. Also included is the construction of on-farm diffused light stores (DLSs) and upgrading the three on-station DLSs. It is hoped that, on completion of the contract agreement activities, BugiZARDI will be a source of clean seed and rooted apical cuttings (RACs) in the Mount Elgon region.

LSAs were signed with three seed producer organizations (Mengya Integrated Farmers Association [MIFA], Wanale Seed and Ware Potato Association [WASWAPA], and Kapchorwa Seed Potato Producers Association [KASPPA]) that have resulted in the establishment of screenhouse units for the localized production of mini-tubers. The project has linked the associations to AgroMax and Kachwekano Zonal Agricultural Research and Development Institute (KaZARDI) for supply of quality potato plantlets, and to start with, 4,500 potato plantlets were ordered. So far, AgroMax has supplied enough plantlets for one screenhouse, although delays have been encountered with the remaining two orders due to technical and managerial challenges the company has experienced. Each screenhouse will be able to produce enough mini-tubers that, through further multiplication (three stages), can produce approximately 150 mt of clean seed per annum (after an initial 18-month establishment phase).² In addition, the technology of RACs promoted by CIP will enable higher mini-tuber productivity if adopted by the screenhouse owners. Another two potential seed producers that will host screenhouses have been identified and due diligence conducted.

The four LSAs mentioned above (from three associations and BugiZARDI) will also cover the establishment of three DLS units capable of storing 100-150 mt of seed each.

² Using a multiplication ratio of 1:10: 1 TC plantlet produces 10 mini-tubers. Therefore, in a screenhouse with 1,500 = (1500 x 10 = 15,000 mini-tubers. Prebasic: 15,000 mini-tubers will generate 15,000 x 10 = 150,000 pre-basic seed. Basic seed: We plant 150,000 tubers of pre-basic and get 150,000 x 10 = 1,500,000 tubers. On average, each tuber weighs 50 gm = (0.05 kg) Therefore, 1,500,000 tubers = 1,500,000 x 0.05 = 75,000 kg = 75 mt for one season. So annually, production will be 75 mt x 2 = 150 mt.



Screenhouse established with KASPPA in Kapchorwa



Screenhouse being established with WASWAPA in Mbale



PNSP potato agronomist on a support supervision visit at the KASPPA screenhouse

To support the professionalization of seed potato producers/associations through seed technology and seed business training, an additional 17 seed producers were taken on a learning visit to seed producer businesses in southwestern Uganda. During the visit, they

had practical trainings in the seed potato production process. Cumulatively, a total of 34 seed producers have now been trained on seed production.

The production of good quality seed also goes hand in hand with a proper quality assurance system. To improve the local availability of independent seed quality assurance services in collaboration with CIP, a draft seed potato inspection and certification protocol was developed and discussed and is being refined for adoption. CIP hosted a virtual meeting where potato value chain stakeholders, including IFDC, MAAIF, research, and farmer associations, contributed to the document.

In collaboration with Integrated Seed Sector Development (ISSD), the 34 trained seed multipliers have started the registration process as certified seed producers. This, however, has been delayed due to MAAIFs current reluctance to engage with a decentralized certification process.

Module Objective Indicator 2: Strengthening coordination of the potato value chain

Output D: Public-private potato sector dialogue is strengthened at national and regional levels

- **Indicator D.1:** Stakeholders along the entire potato value chain, including 30% women, have adopted a total of seven common recommendations/strategies in the frame of the public-private dialogue platform for national sector coordination.
- **Indicator D.2:** 70% of the stakeholders, 30% of whom are women, evaluate the national exchange of learning as good or very good.

At the national level, the project has continued to support the efforts of the UPP to perform its role as a coordination and advocacy body on potato sector issues in Uganda. As previously mentioned, coordination efforts have been restricted by COVID-19 during the reporting period, which has not allowed the usual steering committee meetings to proceed. Much of the focus of the UPP has been to develop and finalize the strategic plan in 2020, which it hopes to complete in early 2021. Once this is finalized, the project will be able to support some of the key areas of the strategic plan. So far, the project has supported the participation of UPP in the development of the seed certification and inspection protocols and in gathering information for the inclusion of potato in the ASSP, both of which are key issues in the potato sector at present.

At the regional level, the project, in collaboration with CUSP, supported EREPP in developing a five-year strategic plan, which is now in the final stages. In addition, a total of two EREPP coordination meetings have been held during the reporting period. The additional meeting that was scheduled in June was not held, as the country was under lockdown due to COVID-19.

Module Objective Indicator 3: Improve the dietary diversity of vulnerable groups in Eastern Uganda

Output C: The population in the project area, especially women aged 15-49, applies their newly obtained knowledge with regard to family nutrition.

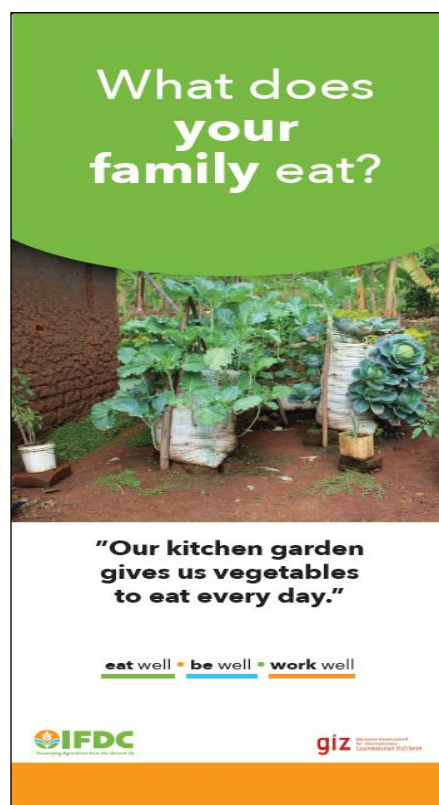
- **Indicator C.1:** The knowledge concerning family nutrition of 13,000 people (p), of whom 30% are women aged 15-49, that were reached through all information formats of the project (mViazi, dialogue and coordination platforms, etc.) has increased by one point on a five-tier scale (s).
- **Indicator C.2:** 80% (10,400) of the people that have participated in Community Dialogues (at least 40% women aged 15-49) confirm they utilize the knowledge on diet diversification.

The project finalized the design of a dietary diversity campaign dubbed “What does your family eat?” complemented by the tagline: “Eat well, Be well, Work well” in the month of June. The rollout of the campaign started in August 2020.

Furthermore, promotional materials for the campaign were developed including: 500 T-shirts, 300 recipe cards, 7 pull up banners, and 4 feather banners. A total of 243 promotional materials (195 T-shirts and 48 recipe cards) were disseminated among nutrition champions, media personalities, district officials, FFBS facilitators, health workers, and a few lead farmers in a bid to enhance campaign visibility.



One of the campaign promotion materials, a T-shirt won by active participants, nutrition champions, and staff of the project.



One of the outdoor branding materials for the community outreaches.

The other intention of developing the promotional materials was to encourage active participation by the community members during CDs/outreaches. Participants who are able to relay the knowledge acquired through the dialogue are awarded with the promotional materials after an interactive quiz at the end of the activity. Therefore, there may be a need to print additional materials in the event the large CDs resume.

To support the rollout of the nutrition training program, the project provided three capacity building trainings for 36 FFBS facilitators based on emerging needs and identified areas of improvement from their performance review, including the role of diverse diets in the fight against COVID-19, diverse diets on low budgets, how to leverage the partnership with the nutrition champions and media houses, and kitchen gardening. Also, the 13 new facilitators were taken through the complete nutrition training and the use of the support materials.

Through the nutrition training program, a cumulative total of 3,329 (740 male, 2,589 female) farmers have been reached with nutrition messages across 180 FFBSs during seasons 2018B, 2019A, and 2019B. Additionally, the project is anticipating to reach 5,500 farmers across the 144 FFBSs recruited in season 2020B and community outreaches: 2,500 farmers through the FFBS module and 3,000 from community outreaches. Therefore, by close of the 2020B season, the project is anticipated to reach a cumulative number of 10,636 farmers through the FFBS module and community outreaches (5,136 by reporting time November + 5,500 to be reached in season 2020B through January 2021).

The nutrition training is based on eight modules, six of which are purely nutrition and two cross cutting. The six include why nutrition matters in agriculture, kitchen gardening practical, basic principles of nutrition, dietary diversity, infant and young child feeding (IYCF), and cooking demonstration. These are followed by a module on behavior change communication and gender (covers both agriculture and nutrition) and community outreach led by the FFBS participants.

From this year's annual survey, an increase in family nutrition knowledge was registered from 4.4 (annual survey 2019) to 4.5, versus the project target of 3. This is a testament to the continuous integration of the nutrition dialogue sessions into the FFBS. Furthermore, the 2020 survey indicated that 76.6% of the participants put the knowledge to use.

Similarly, the nutrition research conducted among the FFBS participants by an independent consultant reported an increase in nutrition knowledge and dietary diversity from 3.1 to 5.9 among women of reproductive age (WRA) –15-49 years of age.

Furthermore, a cumulative total of 180 kitchen garden demonstration sites (30 in season 2018B, 60 in season 2019A, and another 90 in season 2019B that ended in February 2020) have been established across the three districts of Mbale, Kapchorwa, and Kween. Each site had six types of vegetables, including kale, amaranth, cabbage, onions, carrots, and pumpkins. As per the 2020 annual survey, the adoption rate of the kitchen garden stands at 73%, with 69.4% growing more than three types of vegetables.

The project still encourages a peer-to-peer support component in the establishment of kitchen gardens among FFBS participants, to which the high adoption rate can be attributed. However, the project has also noted that a few of the older FFBS beneficiaries have not been

able to sustain their kitchen gardens, as indicated by a slight decline in adoption from 76% to 73%. This could be associated with the weak follow up of the older groups and the suspension of field activities as part of the COVID-19 control measures.

Still, within the FFBS, 87 cooking demonstrations (86 within FFBS and one at a CD in collaboration with EnDEV) were conducted, reaching 1,691 farmers (445 male, 1246 female) and 303 community members, respectively. The annual survey indicated an overall adoption of knowledge and skills from the demonstrations among all FFBS participants, WRA within FFBS, and community dialogue (mega outreach) participants at 93.4%, 95.7%, and 69.2%, respectively. The high adoption rate can be further supported by the nutrition research findings that cited the cooking demonstrations as one of the components that enhance farmer participation in the FFBS.

The above can also be related to the increasing dietary diversity score from 3.1 (baseline) to 5.6 (2020 annual survey) against nine food groups among WRA, with consumption of dark green vegetables at 93.8%. At household level, dietary diversity is at 9.2 out of 16 food groups, which is also an indication of moderate access to adequate healthy diets.

In the reporting period, an independent consultant conducted research to assess the impact of FFBS participation on the dietary diversity of project beneficiaries and identify the components of the FFBS that foster adoption of diverse diets among pregnant and breastfeeding women 15-49 years and children 6-23 months. The survey was conducted in Mbale, Kween, and Kapchorwa districts in October-November 2020. Key findings from the survey were as follows:

- **Dietary diversity:** Among pregnant and breastfeeding women, most (74.6 % in Mbale, 77.1% in Kween, and 91.7% in Kapchorwa) consumed more than five food groups, with an overall average of 5.9. In comparison to the baseline (3.1); this could be an indication that FFBS participation has had a positive impact on dietary diversity. For children 6-23 months, dietary diversity was at 3.8, which is slightly lower than the minimum of 4.
- **Components of the FFBS training that promote improved dietary practices:** Potato growing, kitchen gardening, food demonstrations, and village savings and loan associations (VSLAs) greatly contributed to improved dietary practices and better livelihoods.
- **Enablers and barriers to participation of women in the FFBS:** The VSLA component, cooking demonstrations, and the training content encouraged participation in the FFBS.

Overall, the findings indicate that the nutrition interventions integrated into the FFBS model are promising in terms of improving dietary diversity and could be scaled up by partners.

In this reporting period, a dietary diversity campaign was rolled out using the following grassroots approaches:



Cooking demonstration led by a FFBS participant session during the outreach



Kitchen garden demonstration session during the outreach

- 1. Mega community dialogue (outreach):** This was conducted in partnership with the Mbale local government, GIZ-EnDev partners Upenergy and Lifeline, and the PNSP nutrition champions at Busano sub-county. In February 2020, a total of 303 (103 male, 200 female) community members were reached with messages on family nutrition, dietary diversity, kitchen gardening, and use of energy-saving stoves and were provided with some nutrition-related health services. The findings from the 2020 annual survey reported knowledge levels among participants in the mega outreach at 4.4 out of 5 and overall application of knowledge at 76.6%. However, only one mega outreach out of the five planned was conducted due to the COVID-19 outbreak.
- 2. Radio engagement:** The project engaged three radio stations – OPG FM for Mbale, KTR for Kapchorwa, and Elgon-Sebei FM for Kween – to roll out nutrition and COVID-19 messages for three months (August-October). A total of nine nutrition messages in the form of deejay (DJ) mentions and nine radio talk shows on dietary diversity were aired. Furthermore, eight radio talk shows and five DJ mentions on COVID-19 were run for two

months (May and June) for Kween and Kapchorwa districts and seven talk shows facilitated in terms of logistical support for three panelists in Mbale. Findings from the radio-listening survey indicate that 64.4% of the non-FFBS participants (wider community members) had heard the nutrition messages on the radio by the end of the three months. Of these, 68% reported that the messages had benefited them.

3. **Phone-based messages:** Developed and rolled out phone messages on COVID-19, hygiene, and family nutrition to 1,074 farmers (581 female, 493 male) to registered mobile phone contacts during the three-month suspension of FFBS activities.
4. **Nutrition champions:** A total of 28 (26 male, two female) champions were recruited among sub-county-level religious and cultural leaders in collaboration with the District Community Development Office. It is estimated that the champions have reached 9,600 people using the following platforms: religious gatherings, burials, celebrations, cultural meetings, and joint FFBS sessions with facilitators. Much as the champions have been reported as an influential channel to increase the reach of the messages, accurate documentation of the numbers reached by them is still a challenge. Therefore, the project plans to develop a stronger reporting mechanism for the champions. Also, among three media houses, 15 radio personalities underwent a mini-orientation as champions.

4.3 Implementation of measures to ensure the long-term effectiveness of the project

The project supported the establishment of three screenhouses together with three seed producer associations. An additional three screenhouses will be established or rehabilitated with BugiZARDI and at least one further association will be supported with a screenhouse in 2021. With seasonal multiplication, this will sustain continuous availability of seed potato in the region after 18-24 months. It is hoped that other local producer associations spring up in the future once this business model can be demonstrated in the area. The three local associations that are recipients of the LSAs have also committed their own resources to the interventions, which is a good indication of ownership of the process. The three local associations are also receiving hands-on capacity building in financial management and accountability, since they are in control of the local subsidy funds.

Some multiplier effects of the training on storage and post-harvest handling have emerged in Kween District. One seed multiplier, who was part of the 33 trained by the project, has gone ahead and established his own DLS. Similarly, the Kween District Local Government, which was also part of the trainings, has already established one DLS as a central demonstration site for other farmers in the area. These are good signs that farmers and District Local Governments are ready to adopt this improved storage technique for seed based on the knowledge provided from the training and study visits.

4.4 Module term and time schedule

Outputs	Main activities for the coming year	Time frame/milestones for the coming year
Output A	<p>Train an additional 140 FFBSs.</p> <p>Train an additional 140 FFBSs (approx. 3,000 farmers) on full the agricultural curriculum: 1,500 in season 2021A and 1,500 in season 2021B.</p>	Jan-Dec 2021
Output B	<p>Support production of EG seed potato by BugiZARDI through rehabilitation of two screenhouse units and establishment of one additional unit.</p> <p>Continue supporting screenhouse owners in commercial production of potato EG seed potato of 110,000 mini-tubers and 20 mt of prebasic seed potato.</p> <p>Improve the availability of quality assurance services through capacity building of local government District Agricultural Officers.</p>	Jan-Dec 2021
Output C	<p>Print an additional 500 campaign promotional materials for community outreach.</p> <p>Train an additional 140 FFBS on the full nutrition curriculum (approx. 6,000 participants): 3,000 in season 2021A (1,500 through the FFBS module and 1,500 through community outreaches) and 3,000 in season 2021B (1,500 through FFBS module and 1,500 through community outreaches).</p> <p>Continue to build the capacity of the FFBS facilitators in areas of weak performance as per the surveys.</p> <p>Continue with the three radio engagements in the dietary diversity campaign.</p> <p>Strengthen working relationship with the nutrition champions.</p> <p>Document lessons and best practices.</p>	Jan-Dec 2021

Outputs	Main activities for the coming year	Time frame/milestones for the coming year
Output D	Support EREPP and UPP in implementation of their activities in the strategic plans. Support up to six actions at the national level.	Jan-Dec 2021

For the planned activities as per the 2020 workplan (as per the 2019 report), most were initiated; however, some were not completed due COVID-19 and other challenges. Under Output A, the GAP training for FFBSs was not conducted as planned due to the restrictions placed in season 2020A because of the lockdown, which restricted travel and meeting of groups. In addition, the ware potato stores and DLSs did not take off as planned due to budget realignment, which reallocated budget to these items in April 2020, and the subsequent slow pace of implementation of the DSA by BugiZARDI, which took two months to open a bank account to allow the release of funds. These activities will be intensified in 2020.

Under Output B, the establishment of three screenhouse units was implemented although delays were encountered from the travel restrictions placed because of COVID-19. In addition, the supply of tissue culture plantlets by AgroMax has been inconsistent. The project hopes to be working with a new partner in 2020 to address this challenge of consistency and quality in the supply of these materials. For the two additional screenhouses with farmer associations, one LSA was finalized in 2020 and the final one will be added in early 2021.

Under the nutrition objective, no training was done in the first half of 2020 due to COVID-19 restrictions; however, the project still expects to reach 2,500 FFBS members trained by the end of 2020. In addition, radio campaigns on key nutrition messages related to COVID-19 were conducted during the lockdown months and the food diversity campaign was started through radio communications and small community dialogues in September 2020.

Under Output D, the lockdown restrictions prohibited steering committee meetings of the UPP at the national level from proceeding. At the same time, the strategic plan of the platform was still under development during the reporting period; therefore, a list of actions that could be supported was not developed. However, two activities or actions were supported but not finalized in 2020.

4.5 Costs incurred and reallocations

4.6 Assessment of results and risks

Risk	Rating*	Influence-ability*	Risk management measure taken
COVID-19	4	1	During the lockdown in Uganda from March to July 2020, the project followed the guidelines provided by the Government of Uganda, which included travel restrictions and no gatherings of groups of people. Once restrictions were lifted in August 2020, the project adopted a cautionary approach of only training groups of 20 participants or fewer and ensuring Standard Operating Procedures, such as use of masks, hand washing, and social distancing, were in place .
Adverse weather conditions	3	2	Use of crop protection products (curative fungicides) was encouraged to manage late blight. Social and water management/conservation strategies were promoted to prevent excess runoff.
Availability of certified seed	3	2	Current interventions will reach maturity in early 2022 to bridge this gap; however, more scale up is required.

* Scores: 1=low, 2=medium, 3=high, 4=very high

5 Overarching recommendations and lessons learned

5.1 Recommendations and reminders for the political dialogue on policies and priority areas

For improving seed potato quality, there is a need for MAAIF to hasten finalization of the seed inspection and certification protocol and decentralization of the roles of seed inspectors to the district level. Also, there is a need for disease diagnostic kits at the district level or at BugiZARDI for efficient and fast testing of seed potato lots for major pests and diseases, including BW, viruses, and potato cyst nematode (PCN).

Due to declining soil fertility, there is a need to conduct on-farm research to develop new and/or potato crop-specific fertilizer use recommendations for the farmers in order to improve

tuber yield. It is anticipated that this research will be conducted by an M.Sc. intern who will be hosted by the project in 2021.

5.2 Lessons learned that may be of interest for the country strategy and future programmes

- Strengthening partnerships and creativity (e.g., introducing groups to agro-dealers and other project such as EnDev) in the FFBS should be done to minimize message fatigue and encourage consistent attendance.
- There is need to strengthen the follow-up of older FFBS to encourage sustainability of adopted improved practices and reduce dropout of groups.
- In its current capacity, AgroMax is not a reliable source of tissue culture plantlets to supply screenhouses in the Mount Elgon area. Other options need to be explored at both the public and private sector levels for future sustainability of this supply chain.
- Working with nutrition champions is a promising strategy to communicate key nutrition messages in various forums.
- The listenership survey revealed that radio messages enhance discussions at community and FFBS levels and therefore are an effective communication approach in reaching remote communities

6 Declaration (TC)

After a review of alternative options, the TC measure presented, and its modes of implementation are held to yield the optimal relationship between the purpose of the TC measure and the funds used.