ENHANCING INCLUSIVE MARKET ACCESS FOR AFRICAN INDIGENOUS VEGETABLE SEED AND VALUE-ADDED PRODUCTS BY SMALLHOLDER FARMERS IN UGANDA

END OF PROJECT REPORT-TP006

TP006

UGANDA CHRISTIAN UNIVERSITY

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List of acronyms used in the report	
AIRTEA	Strengthening Agricultural Knowledge & Innovation Ecosystems for inclusive Rural transformation & Livelihoods in Eastern Africa
AIV	African Indigenous Vegetables
UCU	Uganda Christian University
UNFFE	Uganda National Farmers Federation
FGA	Farmgain Africa
SYOVA	
MIS	Management information system
VPUs	Vegetable Producing Units

Description

1.1 Name of project leader

Elizabeth Balyejusa Kizito

1.2 Title of the action

Enhancing inclusive market access for African Indigenous Vegetable seed and value-added products by Smallholder farmers in Uganda

1.3 Contract number

FED/2020/421 - 369

1.4 Start date and end date of the action

March 2022 – August 2024

1.5 Target country(ies) or region(s)

Central and Eastern Uganda

1.6 Final beneficiaries &/or target groups (if different) (including numbers of women and men)

300 farmers

1.7 Country(ies) in which the activities take place (if different from 1.6)

N/A

2.0 Assessment of the implementation of action activities and its results

2.1 Executive summary of the action

Uganda Christian University (UCU) in partnership with Uganda National Farmers Federation (UNFFE), SYOVA Seeds (U) Ltd and Farmgain Africa Ltd (FGA) was awarded a grant to implement a project titled, **"Enhancing inclusive market access for African Indigenous Vegetables (AIV), seed and value-added products by Smallholder farmers in Uganda".** This two-and-a-half-year project began on the 1st March 2022 and is expected to conclude by the end of February 2025 with a no cost extension. The project's thrust lies in enhancing capacity and competitiveness of Youth/ Women small scale farmers to access sizable and reliable markets. A digital system was developed to streamline UNFFE operations to link small scale farmers with key stakeholders in the vegetable value chain. The intervention focused on Central and Eastern Uganda, specifically Mukono, Buikwe, Mityana, Luwero, Kayunga, Jinja, and Bugiri.

In terms of outcomes, the project significantly strengthened the knowledge base of VPU members on quality production, improved seed quality, and value-added product development. The number of training workshops on seed production, quality assurance, Good Agronomic Practices (GAPs), the numbers of VPU members trained, mentored, and engaged through on-farm demonstrations and field days all exceeded the targets. The activities involved not only fostered improved agricultural practices but also involved the development of production plans that aligned with market demands. By the end of the project, 326 farmers were actively participating in project activities. Of the 326 farmers, 104 were male, 138 were women, and 84 were youth, who remained engaged in the project intervention activities.

The project also excelled in strengthening market linkages and value chain development. Key interventions included mobilizing stakeholders in markets, finance, and insurance, convening multiple stakeholder meetings, and delivering comprehensive business training in areas such as business planning and contract management. Notably, the project organized 18 stakeholder mobilization events, established 17 commercial linkages, and optimized one out of four value-added products. Regular performance monitoring through 30 sessions of the active Vegetable Producing Units (VPU) ensured that these processes remained dynamic and responsive to evolving market conditions. At the organizational level, the project achieved its management system objectives at UNFFE. A thorough review of the existing system was conducted, leading to the successful development, testing, and commissioning of a fully validated Management Information System (MIS). The MIS framework was designed, implemented, and its functionality verified through comprehensive testing and staff training sessions even surpassing the training target by conducting two sessions.

The consistent achievement and overachievement of set indicators indicate that our assumptions ranging from favorable weather conditions to the willingness of VPUs to adopt improved production practices and engage with market actors remain valid.

Given these strong performance metrics, it is highly likely that the final impact targets, particularly those related to long-term improvements in market access, productivity, and sustainable agricultural practices, could be obtained. Comprehensive capacity-building, enhanced operational tools, and strengthened linkages not only underpin current success but also pave the way for future advancements and resilience in the agricultural value chain.

2.2 Results and activities

Outcome 1: Improved quality of AIV Seed and value-added products produced by Vegetable production units (VPUs)

The AIRTEA project achieved impressive results in improving the quality of seeds and value-added products produced by Vegetable Production Unit (VPU) members, as reflected in its major two key indicators. For Indicator 1.1, which measured the rejection rate of seeds by seed companies, the project aimed to reduce this from 5% in 2022 as per the baseline to 2% by 2024. The project surpassed its target by eliminating the rejection rate entirely, achieving a 0% rejection rate. This reflected advancement in seed quality, attributed to comprehensive farmer training programs, rigorous quality control measures, and the adoption of best agronomic practices. Indicator 1.2, focused on the rejection rate of value-added products by traders and food processors. In 2022, there was no baseline record for value-added products, and the project set a target rejection rate of 5% by 2024. By the end of the reporting period, the rejection rate had been reduced to 4%. Of the 327.25 kilograms of dried pumpkin chips produced by VPU members, only 13 kilograms were rejected.

Generally, the project has delivered notable achievements across both indicators. The complete elimination of seed rejection demonstrates the sustainability and efficacy of technical support and farmer engagement strategies, while the reduction in rejection rates for value-added products highlights the project's potential for long-term growth in market access and competitiveness. The assumptions underpinning this indicator, such as the availability of supportive markets and sustained demand for high-quality seeds by seed companies, remained valid throughout the implementation period, ensuring the smooth realization of this outcome.

Output 1.1: Strengthened knowledge of members of Vegetable Production Units (VPUs) on quality production, improved seed and value-added products

Under this output, all targets associated as outlined in the logical framework matrix, were achieved and, in some cases, exceeded. For Indicator 1.1.1, which measured the number of training workshops in seed production, quality assurance, and Good Agronomic Practices (GAPs) organized for VPUs, the project surpassed its target of three workshops by delivering 11 training sessions by 2024. For indicator 1.1.2, while the baseline was zero in 2022, the project set a target to train 100 VPU members in seed production, quality assurance, and GAPs by 2024. By the end of the reporting period, 308 members had been trained, including 84 men, 133 women, and 84 youth.

Indicator 1.1.3, which tracked the number of VPU members mentored on-site in quality production practices, demonstrated success. Starting with no on-site mentorship in 2022 and a target of 50 participants by 2024, the project achieved a total of 257 participants, including 96 men, 89 women, and 74 youth.

The target for indicator 1.1.4, was also achieved. This indicator measured the number of garden demonstration trainings held for VPUs. From a baseline of zero in 2022, the project aimed to conduct three demonstrations by 2024 but delivered eight. These demonstrations served as critical platforms for hands-on learning and the dissemination of best practices. For Indicator 1.1.5, the project aimed to involve 50 VPU members in the garden demonstrations by 2024 but achieved participation from 83 individuals, comprising 40 women, 20 youth, and 23 men. Similarly, indicator 1.1.6, which tracked the number of field days conducted for VPUs, exceeded expectations. With a target of three field days set for 2024, the project successfully conducted six. Indicator 1.1.7, which measured the number of VPU members participating in these field days, saw participation from 500 members, which surpassed the target of 150. This included 175 men, 225 women, and 100 youth. The project's success can be attributed to the willingness of VPU members to apply the knowledge and skills acquired during the trainings and mentoring sessions.

Activity 1.1.1. Identification and Recruiting vegetable producing Units (Mobilising VPUs)

The Uganda National Farmers Federation (UNFFE) played a pivotal role in the project by mobilizing Vegetable Production Units (VPUs) and collaborating closely with consortium members (UCU, Farmgain Africa, and Syova Seeds Ltd). For the identification and recruitment of VPUs (Indicator 1.2), the project initially aimed to mobilize 300 members by 2024 from a baseline of zero in 2022. By the close of the project period, 500 members had been recruited, surpassing the target. The recruited members included 90 men, 200 women, and 210 youth, demonstrating a focus on inclusivity and gender balance. Out of the 500 mobilized farmers in the first year, 326 AIV farmers, predominantly women and youth (200 youth, 170 women, and 20 adult men) were maintained to the end of the project. These members were distributed in fifteen VPUs and their details are as in the table below;

District	VPU Name	Members	Male	Female	Youth
Bugiri	Twekembe Farmers Group	27	4	6	17
Buikwe	Bakyala Kwagalana Farmers Group	18	4	12	2
Kayunga	Lusenke farmer Group	33	12	12	9
Mityana	St. Lawrence youth Group	23	20	3	23
Kayunga	Kisa kyamukamaTomato Farmers Group	14	4	4	6
Kayunga	Patience Pays Tomato Farmers Group	20	5	13	2
Mityana	Tukolerewamu Bufuuma Farmers Group	14	2	9	3

Jinja	Bufuula Church women Farmers Group	16	4	9	3
Jinja	Butiki-Kyekidde Farmers Group	28	12	11	5
Luweero	Eden Farmers Development Group	14	6	4	4
Nakaseke	Kyamutakasa Vegetable Farmers Group	32	18	10	4
Mityana	Agali Awamu Farmers Group	16	2	12	2
Mityana	Abayita ababiri Farmers Group	28	3	12	13
Mityana	St. Joseph farmers Group	14	2	5	7
Mukono	Nakisunga Women Farmers Group	29	6	16	7

Activity 1.1.2. Development of production plans for seed and value-added products for VPUs

The development of production plans for seed and value-added products (Indicator 1.1) also exceeded expectations. Starting from no production plans in 2022, the project set a target of 15 by 2024. By the end of the reporting period, 25 production plans had been developed. These plans were instrumental in aligning production activities with market demands and ensuring the efficiency and timely delivery of signed contracts. These plans involved scheduling and grouping small-scale farmers' vegetable production. For each VPU, production plans for at least six months were established, guided by the terms and conditions outlined in the VPU contractual agreements with the market. The development of production plans was prioritized for VPUs that had signed contracts with markets in each year.

It was observed that understanding the concept of production plans took time for VPUs, as many had never implemented synchronized activities as a group in year one. So regular follow-ups were made to ensure that farmers adhered to the agreed schedules and to address any questions they had. Participatory planning with VPUs was conducted to ensure effective staggered supply according to market demand for vegetable produce and seeds.

Activity 1.1.3. Conduct trainings on quality assurance in seed production

In terms of training, the project performed well across multiple focus areas. While the target was to conduct three trainings in seed production, four in value addition, and three in good agronomic practices (GAPs) by 2024, the project exceeded these targets, delivering six, seven, and six trainings, respectively. Additionally, the project establishes nine on-farm demonstrations by 2024.

Given that the seed market does not require large quantities, only a few VPUs were recruited. Trainings were conducted during the establishment of on-farm demonstrations in Nakaseke for nakati, Kayunga for tomatoes and Mityana for pumpkin. Accurate demand forecasting, including projections of specific varieties needed, their quantities, and timelines, is crucial for a seed company like SYOVA (U) Ltd to effectively match supply with demand. Overshooting production targets could lead to managing expensive inventory, while undershooting targets risks losing market share. Although quality assurance trainings were initially planned to conclude by the end of year one, three additional training sessions were conducted in the second year. This is because not all groups had begun their production. There was also need for processing infrastructure such as processing machines and solar dryers, which farmers did not in place. Therefore, Uganda Christian University took the initiative to conduct a hands-on practical training for the youth group in Mityana, during which they participated in pumpkin processing for seed and flour (by cutting pumpkin chips).

Training on GAPs was intended to improve productivity for the vegetables as well ensure environmental sustainability. Five (5) training workshops were conducted as planned for pumpkin, nakati, amaranths and tomatoes for respective VPUs ; one in Luwero, one in Mityana, one in Mukono, one in Jinja/ Bugiri and the lastly in Kayunga. The workshop sessions were facilitated by UNFFE trainers. Some experienced farmers also participated in passing useful tips to newcomers into the vegetable production business. Many farmers had never heard of modern and sustainable ways of producing indigenous vegetables as they grow them using rudimentary methods. The farmers have many questions on managing pests and diseases, fertilizer use especially organic, how to prune especially pumpkin, differentiating between abiotic and biotic stress symptoms. This has brought out the need for more close follow ups with them, which have been constrained by the budget. More regular trainings were necessary due to new members joining the group and the need for refresher sessions for existing members.

Activity 1.1.4. Conducting field days

Starting with a baseline of zero in 2022 and targeting three field days by 2024, the project exceeded this target, organizing five field days in total. Field days were used for both as project's outreach as well as for capacity-building. These events provided essential hands-on learning opportunities, where VPU members engaged in practical demonstrations and peer-to-peer knowledge exchange. In parallel, the Uganda National Farmers Federation (UNFFE) played a critical role in mobilizing VPUs, working closely with consortium partners Uganda Christian University (UCU), Farmgain Africa, and Syova Seeds Ltd. to ensure extensive participation and engagement.

The project extended its outreach through active participation in major agricultural events. During the annual National Agricultural Trade Show held in August 2022, the project reached 55 farmers and sparked considerable interest, as demonstrated by the enthusiastic response of two women's groups from Bugiri and Jinja who expressed interest in joining the initiative after visiting the AIRTEA exhibition booth. Preparatory efforts for the trade show were comprehensive; following an invitation from UNFFE via the Faculty of Agricultural Sciences at UCU, the project team makes a series of four trips to Jinja—ranging from the procurement of construction materials and fertilizers to finalizing logistics and booking accommodations. The well-prepared project exhibit not only showcased a variety of African Indigenous Vegetables (AIVs) and available seeds but also effectively communicated the project's agenda.

Further expanding its educational impact, the project also participated in the 8th Annual Farm Camp at Gayaza High School in Wakiso, held from 12th to 17th August. Conceived originally in 2014 by the school's administrators to equip youth with practical agricultural skills, this year's theme, "Empowering the Youth with Entrepreneurial Skills through the Agriculture Value Chain," resonated strongly with the event's over ten participating schools. Our role was to deliver focused training sessions on urban farming and the safe use of agro chemicals in vegetable production. During the urban farming module, we covered essential topics such as various approaches to designing urban gardens—from sack and vertical to horizontal and kitchen gardening—demonstrating the practical steps and materials required for a successful setup. The camp culminated with an exhibition where we showcased a range of African Indigenous Vegetable seeds promoted under the project. Not only did these events facilitate the dissemination of innovative agricultural practices and the promotion of AIVs, but they also significantly enhanced market linkages and engagement with the broader agricultural community.

Activity 1.1.6. Monitoring of the performance of small-scale VPUs

The project planned to conduct performance monitoring once a season per active VPU but ultimately conducted 24 monitoring sessions. Monitoring performance of VPUs is a continuous activity and offers technical advice on vegetable production to farmers and guides them on the necessary inputs and services. All the mobilised VPUs were visited at least twice by the project team to ensure they keep on course with their contracts. As mentioned above, commercial production of AIVs is a very new concept to them and many are grappling with keeping up with the required standards. Poor production practices would impact on the yield and quality of produce. Insights gained from interactions with farmers include:

- Farmers in Kayunga and Jinja reported more excitement from the incomes earned from tomatoes and pumpkin. For instance, in Kayunga, tomato farmers were able to supply the buyer under the contract at 150,000/= per box, while in Jinja, the VPUs fetched better prices from tomatoes by selling to Ambacoat Market and did not desire a contract.
- During monitoring of the VPUs located in Mityana, it was observed that the buyer was selective of the size of pumpkins to buy, and the price varied according to the size. This caused controversy between the buyer and the farmers.
- Other challenges facing the VPUs included access to affordable credit, machinery for irrigation, storage needs, specific seed (e.g., for red amaranths), and persistent pests and diseases.

Outcome 2: Improved Market Access for Vegetable production units

The project demonstrated success in achieving and surpassing the targets for commercial linkages and formal contracts. For Indicator 2.1, which measured the number of commercial linkages established between VPUs and seed companies, traders, and food processors, target was surpassed, with 18 commercial linkages established. This was built from a baseline of three linkages in 2022 and the target which was set at 15 for 2024. This achievement reflected the project's emphasis on fostering productive relationships between VPUs and market entities, ensuring that VPUs were equipped with the knowledge and tools necessary to attract and engage potential partners.

Indicator 2.2, focused on the number of formal contracts signed between VPUs and seed companies, traders, and food processors, the results exceeded the target with 17 contracts finalized by the end of the project. Starting with a baseline of three contracts in 2022, the project had set a target of six contracts by 2024. The interest and willingness of seed companies, traders, and food processors to formalize these partnerships further validated the assumption of market enthusiasm for collaborations with VPUs.

Output 2.1: Linkages between small-scale VPUs and vegetable markets established

The AIRTEA project has successfully established strong linkages between small-scale Vegetable Production Units (VPUs) and vegetable markets, achieving the targets set out in its logframe matrix. Regarding indicator 2.1.1, which measured the number of business management trainings provided to VPUs, the project exceeded the targets. From a baseline of zero trainings in 2022, and a target of five for 2024 to seven trainings which were delivered. These trainings played a pivotal role in equipping VPU members with essential knowledge to enhance their business operations and market engagement. For Indicator 2.1.2, which tracked the number of VPU members trained in business management, the project exceptional delivered beyond the target by training 100 members. Beginning from a baseline of zero in 2022, and the target for 2024 which was set at 30 members. Indicator 2.1.3, which measured the number of networking meetings organized between VPUs and key market players, also demonstrated remarkable results by organizing 19 networking meetings. The baseline for 2022 was zero, with a target of 10 meetings by 2024.

The achievements for Indicator 2.1.4 further underscore the project's success by establishing 17 commercial linkages hence creating valuable partnerships between VPUs and market entities. From a baseline of zero in 2022, the project aimed to establish 10 linkages by 2024. Finally, Indicator 2.1.5, measured the frequency of annual supply of African Indigenous Vegetables (AIVs) and value-added products by VPUs to the market. Starting from a baseline of two supplies per year in 2022, the project achieved its target of four supplies per year by 2024. The assumptions underpinning these indicators, including the willingness of vegetable value chain actors to collaborate, remained valid throughout the project period. Through targeted training, networking initiatives, and market integration strategies, the

AIRTEA project has set the stage for continued growth and innovation in the vegetable value chain.

Activity 2.1.1. Conduct stakeholder and value chain analysis for AIV

The project's stakeholder and value chain analysis for AIVs was successfully conducted as planned. From a baseline of zero in 2022, the project targeted completing one analysis by 2024, and this was achieved. This analysis provided the foundation for strategic interventions by identifying gaps and opportunities in the value chain, facilitating the alignment of project activities with market needs and expectations.

The value chain of most of the AIV is not well understood, thus limiting its access to markets and down-stream activities especially processing. Against this background, the AIRTEA project designed to contribute to research, marketing, extension and value addition of AIVs to widen their trade and utilization. The project was designed to improve linkages between, input suppliers especially seed companies, support institutions, farmers, traders, and processors, thus increasing their availability to consumers and in different forms. In this, the project partnered with a consultant to conduct a baseline survey. This activity was completed in September 2022.

The findings revealed that there is limited contract farming in vegetable production which partly explains the losses farmers make during peak production seasons. Contract farming is one of the interventions that can smoothen supply. This however required deliberate effort especially third-party stakeholders, including AIRTEA project to link farmers and buyers and help them build trust between them since contracts heavily survive on trust. Trainings that focused on both production, marketing and improving the quality of supply were important for farmers. Linking farmers to value addition firms would also help in diversifying markets for farmers especially during peak production period (a detailed report shared).

Activity 2.1.2. Mobilising stakeholders in markets, finance and insurance

For Activity 2.1, which involved mobilizing stakeholders in markets, finance, and insurance, the project exceeded its target of engaging 10 stakeholders by 2024. A total of 16 stakeholders were mobilized, reflecting the project's success in broadening engagement across critical sectors. Among the seventeen established markets, the highlighted five continued with follow-up communication, and some have actively participated in purchasing. However, the remaining markets couldn't be satisfied by the VPU, or farmers were unwilling to supply produce to them. In the second year, farmers primarily sold pumpkin seeds, dried chips, tomatoes, and Nakati. This endeavor demands consistent effort, adaptability, and genuine commitment to collaboration to achieve success. Through effective stakeholder engagement, we aim to leverage their collective power and instigate positive change in the market. Below is the cumulative list of buyers and their preferred vegetables:

SN	Buyer	Contact Person	Contact Number	Vegetable Preference	Contact acceptance
1	**Pure Grow Africa**	**Mr. Ronnie**	**0782 055158/ 0751940286**	**Pumpkins**	**Yes**
2	Kajubi-Kalerwe	Mr. Kajjubi		Leafy vegetable	No
3	Kasangati market			Leafy vegetable	No
4	Bivamintuyo market			Leafy vegetable	No
5	Carrefour Supermarket			Leafy vegetable	No
6	Farmers market Lubaga			Leafy vegetable	Yes
7	**Dani Agro Ltd**			**Tomatoes**	**Yes**
8	**Rawatt Industries**			**Tomatoes**	**Yes**
9	Thomas Company Ltd	Mr. Thomas	0706186579/0757757757	Tomatoes & Cucumber	Yes
10	**Psalms Company**	**Mr. Onesimus**	**0782055158**	**Pumpkin Seed**	**Yes**
11	**Food herb**	**Ms. Nanziri**	**0709428800**	**Nakati & Amaranth**	**Yes**
12	KK Foods			White Eggplant	Yes
13	KSAM Food company	Mr. Kabuye Sam	0780235171 / 0751940286	Pumpkins	No
14	**Chillos company**	**Ms. Merab**	**0751871902**	**Pumpkin floor/chips**	**Yes**
15	**Mityana Area Cooperative Enterprise (ACE)**	**Mr. Kasozi Henry**	**0708991256/ 0772362851**	**Pumpkin**	**Yes**
16	Equator Commercial	Ms. Florence Kakande		Pumpkin	Yes
17	Slow foods Mukono				Yes

Activity 2.1.3. Convene stakeholder meeting

Activity 2.2 focused on convening stakeholder meetings, with the objective of fostering collaboration and information exchange among key actors in the value chain. These engagements played a vital role in strengthening networks, building trust, compliance and facilitating partnerships between VPUs and other stakeholders. Other meetings have been held with individual stakeholders, mainly at their premises, to foster further collaborations during the project implementation period.

Additional meetings were conducted between VPUs, farmers, and project staff to address contentious issues. For instance:

- The Project Team intervened between the VPUs in Kayunga and the buyers when farmers, enticed by rising market prices, sold outside the contract.
- A disagreement arose between Nakati and bugga producers regarding quantity at the last minute in Luwero and Nakisunga, where farmers couldn't meet the agreed-upon quantity, impacting the buyer's transportation arrangements.
- Similar situations occurred in Mityana VPUs, where farmers agreed to sell pumpkins to Retal but sold to another irregular buyer the day before pickup.

Special meetings were convened with VPUs to evaluate their experiences during the transaction period. From these discussions, it became evident that some farmer groups weren't interested in value addition due to its perceived complexity and initial investment requirements. Instead, they preferred selling raw produce with minimal value addition, such as cakes (St. Lawrence youth group). Additionally, farmers expressed concern about losing indigenous pumpkin varieties as buyers dictated the preferred varieties (St. Joseph Group).

Activity 2.1.4. Conducting business trainings and Contract Management

Under Activity 2.3, the project delivered business trainings on business plans and contract management to VPUs. The target was to conduct four trainings by 2024, and this was fully achieved. These trainings equipped VPU members with essential business skills, enhancing their ability to negotiate contracts, develop strategic plans, and operate sustainably in competitive markets. This project considered providing farmers with a core skill set that includes business planning and contract management. Business training was conducted in four farmer groups. Business planning helps farmers analyze costs, production and revenue to increase profitability while contract management should give them the confidence to handle and negotiate their affairs with buyers. Four (4) different trainings have been conducted in Mityana, Luwero, Mukono and Jinja/ Bugiri. The farmers were guided on the general principles of farming as a business to enable them realise the cost of production and the expected profits. During the trainings, it was observed that many farmers do not keep records and as such have no idea about their input costs. Awareness was brought to farmers on the losses they incur as a result of poor record keeping. Farmers were therefore encouraged to keep records of all their input and transactions.

Prior to signing of contracts, the VPU members are taken through trainings to understand what contracts are and what it takes to engage in contract farming. The trainings are designed to address the importance of contractual agreements to the established VPUs growing vegetables. The sessions were facilitated by the trainers from UNFFE. The goal was to enable farmers to get appropriate skills and knowledge in contractual agreements particularly as VPUs. The concept of contractual farming was not only new to VPUs but some buyers as well. **Some VPUs therefore have not embraced the idea.** Trial periods were advocated for to monitor performance. Examples VPUs with contracts include:

i. **Eden Farmers Development group** was a VPU that, initially signed to supply 15 bales of Nakati per week and 15 bales of doodo to Food Herb Ltd in October 2022. However, they did not start as the expected rains did not come and they therefore did not grow any vegetables. During monitoring, we advised them to change to a more resilient vegetable as they had no capacity for irrigation, nor did they want to procure an irrigation system for their production. They later changed their vegetable focus, after cancellation of the contract with the buyer to pumpkin in December 2022 which they will supply 800 kilos to Psalms food industry in 6 months after planting. They have just planted in April 2023.

ii. **Bakyala Kwagalana Farmers Group** and **Nakisunga farmers Groups** were a VPU that had signed **to** supply 15 bales of Dodo and Buga weekly for a season of four months to Food Herbs Ltd. in August 2022. The expected rains did not materialise as the leafy vegetables got stunted and did not meet the quality standards. During monitoring visits, we advised them to change to a more resilient vegetable as they had no capacity for irrigation, nor did they want to procure an irrigation system for their production. The contracts were discontinued after that.

iii. A VPU (consisting of 100 pumpkin farmers) was constituted in … subcounty of Mityana to supply an average of 15,000 fresh pumpkin to Nkokonjeru ACE in 6 months from September 2022. Unfortunately, Nkokonjeru ACE was unable to buy from the farmers their pumpkin. According to the contract, the farmers were free to consider other buyers in the event the contracted buyer was unable. Farmers have begun to sell their pumpkins to available buyers. For instance, Nakiwala Saniya Nalongo who had planted 5 acres and had harvested 1000 pumpkins in the first harvest was able to her pumpkins at UGX3000 for 5 kilogramme pumpkins and smaller ones went for UGX1000. Ms. Nakanyike Josephine was equally able to sell 700 pumpkins from her first harvest grown on 0.5 acre.

iv. Kayunga VPU consists of Lunsenke and Kisakyamukama farmer groups and they have just signed a contract in March 2023 for a year with DaniAgro (U) Ltd to supply tomatoes at a price of UGX75,000 per 100 kgs box. DaniAgro (U) Ltd prefers to sign contracts with individuals though.

v. Butiki Kyekidde VPU formed to supply on a gentleman's agreement Thomas and company cucumber and leek on a trial basis for one season beginning November 2022. The farmers' engagement in this agreement will be assessed together with the buyer after they have made the first delivery to see if they are up to the task of entering into a contract. The vegetables are now flowering.

vi) St. Lawrence youth group in Kakindu subcounty, Mityana formed a VPU to supply Psalms Food Industry 2 tonnes per season of pumpkin seeds per season. Their contract was signed in January 2023. The youth group has committed to raising 15 acres of pumpkin per month for the next six months. So far, 42 acres have been planted.

Some VPUs exhibited exceptional skills as they were able to source their market and negotiated modest prices for their produce. " Kyekidde farmers group said that they were glad not to have signed contracts with the project buyers as they were able to generate exceptionally high prices for their tomatoes. They went ahead to appreciate the project for facilitating their motivation in farming". Defined as an agreement between farmers and companies for the production and supply of agricultural products, contract farming is another training that was carried out to the beneficiaries of AIRTEA in the above-mentioned districts.

Activity 2.1.5. Optimising value-added products

The project achieved its target by successfully optimizing at least one value-added product based on farmers' preferences. Optimisation of value-added products focused on the pumpkin value chain. The expected products included pumpkin flour, pumpkin seed as a snack and bread from pumpkin flour. It was noticed that this activity required extra support for farmers in terms of drying facilities. Therefore, optimisation of value-added products was conducted at UCU. The objective was to process pumpkins into pumpkin flour and pumpkin seeds. The flour was envisaged to be used in local industries for bakery (bread and buns), confectionery (cakes, biscuits, chapatti, mandazi), porridges and soups. The dry seeds have a ready market at Psalms Food Industries (U) Limited, a local company that makes a wide range of snack products. One solar dryer was established in Mityana and is run by one of the youth groups. However, it was too small to take up all the pumpkins that were grown by the group. Also, the quality of flour and seeds produced was poor. A decision was made to transport the pumpkin harvest from the three production areas (Mityana, Luwero and Bugiri districts) and process them centrally at Uganda Christian University. Challenges faced while processing the pumpkins at a central location included high transport costs, expensive labor and lack of processing equipment. It was noted that the curved morphology of the pumpkins was not compatible with commercial pulping equipment on the local market that was designed to process cassava. This further limited the volumes that could be processed per day; on top of the constant breakdowns encountered. There is thus needed to provide extra support for farmers in terms of processing and drying facilities.

In utilizing pumpkin in bakery and confectionery products, both the flour and blended pumpkin puree were used. Since drying into flour is a cumbersome procedure, it was envisaged that using the pumpkin as puree might be beneficial. Bakery (bread), and confectionery (chapati/flat bread, doughnuts, American pancakes) were developed and tested on potential consumers. Local bakeries were recruited to pilot commercial production of some of the products. From the results, the optimal formulation for preparing the best American type of pancake was 50% wheat, 26.4% pumpkin, 13.6% sugar and 10% eggs. The pumpkin pancake was perceived as healthier, cheaper and more sustainable for the local market. The best chapati formulation was 68.1% wheat, 30% pumpkin puree and 2.1% salt. For bread, the effect on product quality was heavily influenced by the pumpkin variety. The local varieties gave good bread when incorporated as cooked puree at 10% (as calculated on dry weight basis of wheat flour). A local company is already selling this product. An exotic cream variety that was introduced to the farmers by Psalms Food Industries (U) Limited for its superior seed characteristics significantly increased the volume of bread. It is now being studied as a potential bread improver of composite breads incorporation various local non-wheat flours.

Figure 1 shows the physical properties of bread baked from the different formulations. Specific volume, which shows the ability of the bread to raise during baking and firmness/hardness of the crumb are the most important physical properties affected by addition of non-wheat flours. Bread baked with 10% raw exotic pumpkin puree expanded better than the control made with 100% wheat flour. It was also softer than wheat bread. The raw puree performed better than the pre-cooked puree in both attributes. The local bakery at Kyambogo University Business Incubation Center has piloted commercialization of the pumpkin bread with great success.

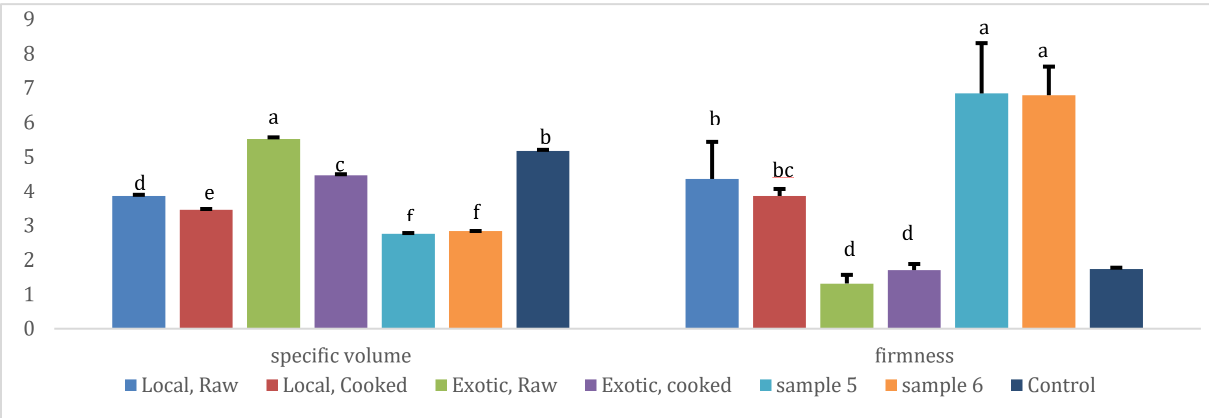

Figure 1: Physical properties of bread baked with 10% local pumpkin variety puree (raw or cooked); exotic pumpkin and 100% wheat flour.

10% raw exotic pumpkin 10% cooked exotic pumpkin Wheat bread

Activity 2.1.6. Monitor performance of VPU Sales

The project's target was to conduct at least one performance monitoring session per active VPU by 2024, but this was significantly exceeded with 30 monitoring sessions completed. This robust monitoring process ensured that VPU activities remained on track, enabling timely identification and resolution of challenges. By the end of project implementation period several groups sold their produce and for example all the 5 groups in Mityana district sold off pumpkin to Kenyan buyer and other Sumz Company Ltd. The group in Luwero also sold Pumpkin to Sumz Co.Ltd, the groups in Kayunga have been selling tomatoes to DaniAgro Co.Ltd, the groups in Jinja have sold Tomatoes to Ambacoat market. In Jinja, over 50 boxes of Tomatoes have been sold at Ambacoat at 160,000 Ugx per box. In Kayunga, Patience Pays farmers group sold close to 70 boxes of tomatoes to DaniAgro Co.Ltd at 150,000 Ugx.

By the end of year two 90% of the VPU produce had been sold therefore the Project team plans to monitor performance of their sales more quantitatively in the first quarter of year three. Additionally, all the VPU groups will be prepared for the upcoming season by developing production plans.

Some of the farmers voices;

Another farmer from St. Joseph Agricultural Development Farmers Group in the names of Mr. Magezi Joseph was quoted say ***"AIRTEA in the short period of time has benefited farmers with Knowledge, increased incomes and reliable markets under the contract farming system."***

Outcome 3: Improved service delivery by UNFFE

The AIRTEA project achieved significant results in enhancing the operational capacity of the Uganda National Farmers Federation (UNFFE), particularly through the development and use of its Management Information System (MIS) for improved service delivery to stakeholders. For Indicator 3.1, which measured the number of market information reports produced by UNFFE, the project successfully met its target. Beginning with no reports in 2022, and the goal of producing two information reports by 2024. These reports are met to facilitate improved decision-making, supporting the assumption that the provision of accurate market information would benefit registered users of the MIS.

The project's performance in Indicator 3.2, tracked the average response time by UNFFE to service requests from District Farmer Associations (DFAs). While the baseline was unknown at the start of the project, the target for 2024 was set at two days. By the end of the project, UNFFE had the potential to reduce its response time to just one day, exceeding expectations. This outcome highlights the organization's enhanced efficiency and ability to address stakeholder needs promptly, ensuring effective coordination with DFAs. The results for Indicator 3.3 demonstrated success in registering individual UNFFE members on the MIS. Starting from a baseline of zero in 2022, the project aimed to register 50 members by 2024. This target was surpassed, with 70 members registered by the end of the project. The increased membership reflects growing confidence in the utility of the system, validating the assumption that registered users would actively utilize the platform for their benefit.

Indicator 3.4, which tracked the number of other value chain actors registered on the MIS, also met its target. Starting from a baseline of zero in 2022, the goal was to register 15 actors, including agro-service providers, traders, processors, and seed companies, by 2024. This target was reached, indicating robust collaboration between UNFFE, project partners and diverse stakeholders within the agricultural value chain. Overall, the project achieved its objectives for these indicators without underperformance. The assumptions outlined such as the active usage of the MIS by registered users, proved to be valid and supported the sustained implementation of related activities.

Output 3.1: Management Information System (MIS) established at UNFFE to track performance between its headquarters and district offices

The AIRTEA project achieved remarkable progress in establishing and operationalizing a Management Information System (MIS) at the Uganda National Farmers Federation (UNFFE), designed to track performance between its headquarters and district offices. The implementation of the MIS represents a critical milestone in enhancing data management, operational efficiency, and decision-making processes within the organization. For Indicator 3.1.1, which focused on the number of MIS platforms developed, the project successfully met its target of one MIS by 2024, starting from a baseline of zero in 2022. This achievement marked the creation of a functional and robust platform to support information exchange and performance tracking. In relation to Indicator 3.1.2, the project also met its target of developing two MIS modules beginning from a baseline of zero modules in 2022. The modules were essential in streamlining the flow of information and ensuring efficient tracking of performance metrics, thus addressing the operational needs of UNFFE.

Additionally, indicator 3.1.3, which measured the number of staff at UNFFE using the MIS, achieved its target of 10 staff members by 2024. With no staff initially trained to use the system in 2022, this progress reflects the effective capacity-building efforts undertaken during the project. Staff training enabled seamless adoption of the MIS across various positions, ensuring that the system was fully integrated into UNFFE's operations. The assumption of reliable internet connectivity continued to hold, providing the necessary infrastructure to facilitate MIS usage.

Activity 3.1.1. Review of the existing management system in UNFFE

The third output of the project focused on reviewing and enhancing the management systems at UNFFE through the development and deployment of a functional Management Information System (MIS). The initial step involved a comprehensive review of the existing management system in UNFFE. With a target of one review and an achievement of one, the project successfully established a clear understanding of the current operational framework. This review served as the foundation for subsequent improvements and was completed as planned, confirming that the system's limitations and potential for improvement were well understood. Gathering of MIS Requirements was done between June and July 2022 which involves an assessment of the UNFFE business processes through interacting with the different organisation staff and stakeholders to generate a comprehensive requirements document. This process determined information exchange, desirable system sections or modules and provides a clear needs framework for development purposes.

Activity 3.1.2. Develop MIS Framework

The project developed a detailed MIS framework, again starting from a baseline of zero with a target of one. The framework was developed successfully, laying out the architectural and functional specifications required to support the organization's information management needs. This step was crucial in ensuring that the MIS would align with the strategic goals of UNFFE. Modules were developed from the requirements gathered. Having identified the desirable system section, an MIS framework was developed together with two modules namely Contract Management and Registration and Profiling. The development was guided by the requirements document and insights from update feedback meetings with key stakeholders at UNFEE. The percentage of completion for registration and profiling modules completed include UNFFE MIS Utilities: Messaging service (Sending email and phone messages.) and File management service.

Activity 3.1.3. Install and Test MIS Prototype

Following the framework development, the project moved to the technical implementation phase by installing and testing the MIS prototype. The target was to install and test one prototype, and this was achieved as planned. The prototype underwent rigorous testing to confirm its functionality and reliability under real operational conditions.

Activity 3.1.4. Design linkages with FARMGAIN market information system services to UNFFE's app that encourages farmers to use e-services

Market Access Sub-Module was split into 7 microservices. The Microservices were met to guarantee independent development, deployment, maintenance and uptime of a given application without affecting the functionality of other programs. A change request was approved and executed resulting in Farm grain integration and ICT for farmers integration microservices have been merged into one microservice "Systems Integration microservice". One microservice "file management microservice" was added to the three that already existed. Currently 4 of the 7 microservices have been developed. The expected microservices are as below;

- The general microservice, hosting the MIS core functionalities.
- Messaging microservices.
- Application microservices.
- File management microservice.

Activity 3.1.5. Validate Established MIS, Conduct Trainings for UNFEE Management/staff and commission MIS

Once the prototype met the necessary requirements, the next key milestone was the validation of the established MIS. This validation exercise was designed to confirm that the system met the predetermined performance and quality standards. With the target set at one and the achievement matching that target, the MIS was successfully validated, marking a significant step towards full-scale implementation.

In addition to the technical roll-out of the system, capacity building for organizational staff was a vital component. Although the target was to train one session for the UNFFE management and staff, two training sessions were conducted during the reporting period. This overachievement not only ensured that staff were well equipped to use the MIS but also reflected a strong commitment to organizational development and change management. Finally, the project commissioned the MIS, with the target and achievement both set at one. Commissioning the system marked the full transition from development to operational status, ensuring that the MIS was now integrated into the organization's daily management processes.

2.3. What will ensure the sustainability of the action? (Sustainability Plan)

This project is anchored in UNFFE, which is a country-wide community of small-scale producers- farmers inclusive. The leadership of UNFFE, that cascades to the grass root level, will oversee the management and coordination of the integrated MIS thereby enabling business, social and financial demands and concerns are attended to, thus ensuring responsible, ethical and success of project outcomes during and beyond project life. To realise financial sustainability, the capacity of UNFFE staff and small-scale producers to do AIV production as a business has been factored in the project. The farmers subscribe to UNFFE and therefore their annual dues should contribute to the sustainability of the federation. The MIS will encourage accountability and transparency in transactions as registered members will be able to link and make contractual agreements for markets. The small-scale producers will get to understand the workings of a supply chain. Inputting an 'effort rewarding' by prequalifying small producers that meet the required standards as a component in the project is aimed at improving the stake and motivation on the side of the small-scale producers to participate in the contractual agribusiness. Above all, the MIS ensures continuous access to information and engagements between actors in the value chain. The technology/knowledge transfer centre/hub created at UNFFE, with strengthened link with UCU, will ensure sustained knowledge and skills post-project.

2.4. The Logical framework (logframe) matrix

RESULTS MATRIX/LOGICAL FRAMEWORK*			
Name of Organization	**Uganda Christian University**		
Contact Person	**Elizabeth Balyejusa Kizito**		
Project Title:	**Enhancing inclusive market access for African Indigenous Vegetables (AIVs) and value-added products in Uganda**		
Duration	**March 2022 - August 2024**		
Development objective: Increased market opportunities of African Indigenous Vegetables (AIVs) seeds and value-added products among vegetable value chain actors in East and Central Uganda			
	Objectively verifiable indicator	**Means of verification**	**Key assumptions**
Outcome 1: Improved quality of AIV seed and value-added products produced by Vegetable Production Units (VPUs)	1.1 Percentage of rejection rate by seed companies of seed produced by VPU members (by gender and age) 1.2 Percentage of rejection rate by traders and food processors of value-added products produced by VPU members (by gender and age)	Production reports from seed companies, traders and food processors; Annual project reports	Continued demand from the market for AIV quality produce.
Output 1.1: Strengthened knowledge of members of VPUs on quality production,	1.1 Number of training workshops in seed production, quality assurance,	Training reports; Participation registries;	Willingness of VPUs to apply the acquired knowledge on quality

improved seed and value-added products	and good agronomic practices (GAPs) organized for VPUs 1.1.2 Number of VPU members trained in seed production, quality assurance, and GAPs (by type of training, gender and age) 1.1.3 Number of VPU members mentored on quality productions on site (by gender and age) 1.1.4 Number of garden demonstration trainings held for VPUs 1.1.5 Number of VPU members participating in the garden demonstrations (by gender and age) 1.1.6 Number of field days conducted for VPUs 1.1.7 Number of VPU members participating in the field days (by gender and age)	Project back-to-office reports; Annual project reports	production. Willingness of buyers and VPUs to enter into contracts.
Outcome 2:Improved market access for VPUs	2.1 Number of commercial linkages established between VPUs and seed companies, traders and food processors 2.2 Average number of contracts between VPUs and seed companies, traders and food processors	Endline survey report; Annual project reports	Growing interest of market entities to enter business with VPUs.

Output 2.1 Linkages between small-scale VPUs and vegetable markets established	2.1.1 Number of business management training provided to VPUs 2.1.2 Number of VPU members trained in business management (by type of training, gender and age) 2.1.3 Number of networking meetings organised between VPUs, seed companies, food processors and traders 2.1.4 Average number of commercial linkages between VPUs and seed companies, traders and food processors established by the project 2.1.5 Frequency (per year) of supply of AIVs and value-added products by VPUs to the market (by crop)	Training Reports; Participation registries; Annual project reports; Signed contracts and MoUs; Minutes of meetings held;	Willingness of VPUs to apply the acquired knowledge on quality production. Willingness of buyers and VPUs to enter into contracts. Willingness of vegetable value chain actors to collaborate

Outcome 3: Improved service delivery by the Uganda National Farmers Federation (UNFFE)	3.1 Number of market information reports produced by UNFFE 3.2 Average response time (in days) by UNFFE to service requests from District Farmer Associations (DFAs) acting as focal point for VPUs 3.3 Number of individual UNFFE members registered on the Management Information System (MIS) (by gender and age) 3.4 Number of other value chain actors (agro-service providers, traders, processors and seed companies) registered on the MIS (by type of actor, gender and age)	Reports on operations of UNFFE's MIS; MIS analytical reports; Annual project reports	Active usage of the MIS platform by registered users.
Output 3.1 Management Information System (MIS) established at UNFFE to track performance between its headquarters and district offices	3.1.1 Number Management Information System (MIS) developed 3.1.2 Number of MIS modules developed 3.1.3 Number of staff in UNFFE using the MIS (by position, gender and age)	MIS test reports; Annual project reports UNFFE reports;	Reliable Internet connectivity

2.5 Activity matrix

Work packages	Description	Deliverables	Timeline of deliverables	Assumptions
Work package 1	**Improvement of quality of AIV seed and value-added products by Vegetable Production Units (VPUs)**	Training reports; Participation registries; Project back-to-office reports; Annual project reports training manual; training report Site selection report training manual; training report		Favorable weather to facilitate continuous production. Willingness of VPUs to improve AIV quality production
Task 1.1	**Development of a production plan for seed and value-added products for VPUs**		Dec 2022	
Task 1.2	**Identification and Recruiting vegetable producing Units (Mobilizing VPUs)**		Dec 2022	
Task 1.3	**Conducting trainings for VPUs**			
1.3.1	Conduct trainings on quality assurance in seed production		June23	
1.3.2	Conduct trainings on quality assurance in Value Addition			
1.3.3	Conduct trainings in good agronomic practices (GAPs)			
Task 1.4	**Establishing demonstrations on farm**		Mar 2024	
1.4.1	Site Selection for Demonstration gardens			
1.4.2	Training demonstration garden hosts (VPUs) on Management			
1.4.3	Land preparation of demonstration gardens			
1.4.4	Planting of Demonstration gardens			
1.4.5	Crop Management/ demonstration garden management			
1.4.6	Harvesting and post-harvest management			
1.4.7	Germplasm maintenance and regeneration			
Task 1.5	**Conducting field days**		April 2024	
1.5.1	Mobilize farmers and project partners for Field days			
1.5.2	Hiring field day stalls			

1.5.3	Set up field days stalls			
1.5.4	Evaluation of field day activities			
Task 1.6	**Monitoring of the performance of small-scale VPUs**		Apr 2024	
Work package 2	**Creating markets linkages between small scale production units and markets**	Training Reports; Participation registries; Minutes of meetings; Annual project reports Signed contracts and MoUs;		
Task 2.1	Conduct stakeholder and value chain analysis for AIV		Nov 2022	
Task 2.2	Mobilize stakeholders in markets, finance, insurance		Dec 2022	
Task 2.3	Convene Stakeholder meetings		Dec 2022	
Task 2.4	Conduct Business trainings in Business plans, Contract Management		Dec 2022	
Task 2.5	Optimizing value added products		Dec 2023	
Task 2.6	Monitor performance of VPU Sales		Apr 2024	
Work package 3	**Establishing a Management Information System (MIS) at UNFFE**	Status reports MIS test reports; Annual project reports; UNFFE reports		
Task 3.1	Review of the existing management system in UNFFE		Jul 2022	
Task 3.2	Develop MIS Framework		Sept 2022	
Task 3.3	Design linkages with FARMGAIN market information system services UNFFE's app that encourages farmers to use e-services		Dec 2022	
Task 3.4	Install and Test MIS Prototype		Dec 2022	
Task 3.5	Validate Established MIS		July 2023	
Task 3.6	Conduct Trainings for UNFEE Management/staff		July 2023	
Task 3.7	Commission MIS		July 2023	
Work package 4	**Project Management and Knowledge transfer**			
Task 4.1	**Setting up of project management system**	Meeting minutes; procurement plan;	Apr 2024	
4.11	Conduct steering committee meetings			

4.1.2	Conduct regular Team Meetings	Invoices, Receipts, Project financial and technical reports; registries; prints, recordings, baseline report; endline report		
Task 4.2	**Development of a Monitoring and Evaluation system**			
Task 4.3	**Financial management**			
4.3.1	Development of a procurement plan		Aug 2022	
4.3.2	Purchase Internet Server/Hard ware and software		Sept 2022	
4.3.3	Purchase of other materials		Apr 2024	
Task 4.4	**Reporting mechanism**		Apr 2024	
4.4.1	Quarterly and annual reporting to AIRTEA management			
4.4.2	End of project report writing			
Task 4.5	**Risk management**			
Task 4.6	**Development of a Sustainability plan**			
Task 4.7	**Conduct a Baseline Survey**		Oct 2022	
4.7.1	Development of Survey tools			
4.7.2	Pre-testing survey tool			
4.7.3	Training enumerators			
4.7.4	Participant mobilization			
4.7.5	Data collection			
4.7.6	Data entry			
4.7.7	Data analysis			
4.7.8	Report writing			**Pre-conditions** Market demand for continuous vegetable supply. Favorable national policies (Se and farm certification laws) to promote vegetable production.
4.7.9	Presentation and dissemination of survey report			
Task 4.8	**Conduct an Endline Survey**		Apr 2024	
4.8.1	Development of Survey tools			
4.8.2	Pre-testing survey tool			
4.8.3	Training enumerators			
4.8.4	Participant mobilization			
4.8.5	Data collection			

4.8.6	Data entry			Vegetable farmers interested t expanding their supplies to the market
4.8.7	Data analysis			
4.8.8	Report writing			
4.8.9	Presentation and dissemination of survey report			
Task 4.9	**Communication plan**		Mar 2023	
Task 4.10	**Producing promotional materials**		Apr 2024	
4.10.1	Designing and development of dissemination material			
4.10.2	Audio Visual Productions			
4.10.3	Radio programs			
4.10.4	Print productions			
Task 4.11	**End-of-Project event to present the project results**		July 2024	
4.11.1	Mobilization of stakeholders (Farmers, Buyers, Policy makers, financial institutes)			
4.11.2	Booking meeting rooms			
4.11.3	Meeting facilitation			
4.11.4	Report writing and dissemination			

2.6 Explain how the action has mainstreamed cross-cutting issues

The project targets gender equality and environmental sustainability as the main cross-cutting issues. Gender equality was addressed by giving priority to youth and women farmer groups. Of the 390 active farmers, 71% are women (50%) and youth (20%). By linking women and youth farmers to markets, the project has increased their incomes and increased their participation in income generating activities.

Environmental sustainability was addressed through farmer training in good agronomic practices. The training put emphasis on safe use of agrochemicals, sustainable use of organic fertilisers and pesticides. Climate resilient agriculture, mulching and use of irrigation were also promoted.

2.7 Please summarise the results of the feedback received from the beneficiaries and others.

Feedback from farmers; Farmers appreciated the implementation of the project since it will relieve them from the middlemen in the market value-chain who have been exploiting them.

Linking Farmers to markets and the interactions they have had with buyers has motivated them to increase their production area thereby increasing their income.

Some groups had given up on farming because of lack of reliable markets and over exploitation by brokers/middlemen. These Farmers indicated that this project had given them 'hope'.

Leaders of district Farmers Associations and production officers at the district have greatly appreciated the project since it improves the livelihoods of their farmers.

Feedback from buyers; Some buyers appreciated the initiative as it relieves them from their responsibilities such as farmer training and mobilisation; thereby enabling them to focus on what they do best (for example marketing).

Psalms food industries, a local snacks processing Company, expressed appreciation for linking them to local pumpkin farmers. The Company has been importing pumpkin seeds from Kenya and Tanzania. Therefore, this project gives them an opportunity to easily access them at a low transport cost compared to what they have been incurring when getting them from outside of the country.

2.8 What has your organisation, or any actor involved in the action learned from the action and how has this learning been utilised and disseminated?

- All the actors realised that the farmers were growing a mixture of indigenous and exotic vegetables. This caused the project to consider and include exotic vegetables among the vegetables to be linked with key buyers/markets.
- Farmers have not been growing AIVs on commercial scales and to appropriate agronomic standards. This implies that more trainings should have been planned for to emphasize the learning needed that can translate into improved productivity.

- More training is needed to support the groups in managing group dynamics. Time has been lost where groups are not in harmony over key decisions to be made.
- Culture and gender roles are a strong influence in some communities and hinder participation in production for markets. This was particularly evident in the Mityana VPUs.
- The youth in Mityana were not willing to be integrated into a VPU where older farmers were yet they lack sufficient capacity, knowledge and skills set to deliver on market deliveries. The project has decided to handle them as a separate VPU. In other VPUs, youth are working together with the elderly farmers however, they are in most cases overshadowed.

2.9. Please list all materials (and number of copies) produced during the action

- Two Pull up banners, usually displayed whenever there are project meetings.
- One thousand Leaflets/factsheet, distributed to all farmer group members and interested parties: potential collaborators, buyers, companies, institutions, government officials and schools.
- Twenty Project T-Shirts, these were distributed to the project team and few immediate neighbouring communities.
- Two short project documentaries

2.10 Please list all contracts (works, supplies, services) above EUR 10 000

N/A

3.0 Beneficiaries/affiliated entities, trainees and relations with Government/other cooperation

3.1. How do you assess the relationship between the beneficiaries/affiliated entities of action?

This action has brought together four entities from diverse backgrounds i.e UCU, SYOVA, FARMGAIN and UNFFE. The entities have forged a good working relationship that has complemented each other's strengths in addressing market gaps. The beneficiaries are farmers growing indigenous vegetables and the buyers. The project has forged a strong relationship between the implementers and the beneficiaries.

3.2. Is the above partnership between the beneficiaries of the action and implementers going to continue after the end of this action?

The partnership will hopefully continue after the duration of the project. The implementers have developed a system for collecting market information and making it available to the farmers via the use of USSD codes. This arrangement will continue since the physical infrastructure will have been installed at UNFFE and UCU; and FARM GAIN will be providing market information. Further, the developed MIS system will continue to link farmers to buyers.

3.3. How would you assess the relationship between your organisation and State authorities in the action countries?

UCU is a chartered university licensed by the National Council of Higher Education (NCHE). The university has good working relations with NCHE and has not received any interference with regards to implementation of this action. The key stakeholders such as the Ministry of agriculture, Animal industry and Fisheries staff have been involved from time to time to work towards improving the farming communities in their area. We also interact closely with the respective district farmer associations.

3.4. Where applicable, describe your relationship with any other organisations involved in implementing the action:

- **Associate(s) (if any)**
- **Contractor(s) (if any)**
- **Final beneficiaries and target groups**
- **Other third parties involved (including other donors, other government agencies or local government units, NGOs, etc.)**

N/A

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

N/A

3.6. List all previous relevant EU grants.

NWO/WOTRO - W 08.270.340; Development of a Gender Responsive Commercial Seed System for African Indigenous Vegetables (AIVs) in Uganda from September, 2017 to September, 2020.

EU/ FARA (PAEPARD) - SUBGRANTUCUUGANDA/FARAPAEPAR DII-CRF-CONSOR TIUM AGREEM ENT/DCI FOOD/20 13/308 - 657; Enhancing nutrition security and incomes through adding value to indigenous vegetables in East and Central Uganda from September 2014 to September 2017.

3.7. How do you evaluate cooperation with the services of the contracting authority which is FARA?

The cooperation with FARA is good and inclusive. FARA has endeavoured to provide the necessary training to ensure smooth implementation of the project and create platforms for exposure as well multi sectoral partnerships.

3.8 Where applicable, include a traineeship report on each traineeship

N/A

4.0. Visibility

4.1. How is the visibility of the EU, FARA and the consortium partners contribution being ensured in the action?

Visibility is being ensured through online presence like twitter (social media), website, sharing dissemination material like fliers and leaflets, pull up banners which are displayed every time there is a project activity, participation in national exhibitions such the Trade show and School outreaches. More dissemination is active through D-groups in short success stories, newsletters and press releases where all the AIRTEA consortium partners; FARA, ASARECA, EAFF as well as Funders; EU and OACPS are well acknowledged.

4.2. Location of records, accounting and supporting documents

Please indicate in a table the location of records, accounting and supporting documents for each beneficiary and affiliated entity entitled to incur costs.

The records are with the Department of Finance, Uganda Christian University.

Name of the contact person for the action: Elizabeth Balyejusa Kizito

Signature: **Location**: Uganda Christian University

Date report due: 28-Feb-2025 **Date report sent**: 30-04-2025