

PROJECT MID TERM EVALUATION
Environmental Protection, Food Security and Economic
Strengthening (EPFOSE) Project
Manafwa District Uganda

Final Report

Submitted to
The Salvation Army (TSA)

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ACRONYMS

CAO	Chief Administrative Officer
CATS	Community Action Team
CBO	Community Based Organization
CBT	Community Based Trainer
CDO	Community Development Officer
CFM	Collaborative Forest Management
DLG	District Local Government
EPFOSE	Environmental Protection, Food Security and Economic Strengthening
FFS	Farmer field school
FGD	Focus Group Discussions
FL	Financial literacy
FSN	Food security and Nutrition
GBV	Gender Based Violence
HHs	Households
IGA	Income Generating Activity
IMAM	Integrated Management of Acute Malnutrition.
KIIs	Key Informant Interviews
NORAD	Norwegian Agency for Development
NPE	Nutrition peer educators
NUSAF	Northern Uganda Social Action Fund
OVC	Orphans and other vulnerable children
OWC	Operation Wealth Creation
PMG	Production and Marketing Group
SAACO	Savings and Credit Cooperative Organization
SEAP	Sub community Environmental Action Plan
SPM	Selection Planning and Management
TSA	The Salvation Army Uganda
UWA	Uganda Wildlife Authority
VHH	Vulnerable Household
VSLA	Village Savings and Loans Association
WASH	Water, Sanitation and Hygiene

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EXECUTIVE SUMMARY

This report presents findings from a mid-term project evaluation of EPFOSE, a five-year (2014-2018) project implemented by The Salvation Army Uganda (TSA) under the auspices of NORAD through Digni and TSA Norway, in Manafwa district Uganda. The project seeks the long-term protection of Mt Elgon forest reserve and its adjacent areas from environmental degradation, promote a food secure community, and initiate economic empowerment activities. The main purpose of this mid-term project evaluation was to examine project impact, by examining level of achievement of project goal and outcomes, to establish project relevance, effectiveness, efficiency, sustainability, and document lessons learned.

The midterm evaluation was conducted using quantitative and qualitative approaches of social investigation applied in a framework consisting of cross sectional, descriptive and case study research designs. For the quantitative component, structured interviews using interviewer administered questionnaires were conducted with a sample of household beneficiaries. For the qualitative part, participatory approaches were employed using selected methods especially Focus Group Discussions, Key Informant Interviews, gender analysis, case studies and observations for extensive consultations with all stake holders.

Findings

Environmental protection: In respect to environmental protection, the project has scored highly in terms of promoting tree planting and planting of nursery gardens. This is commendable because of its potential to contribute to environmental protection and to addressing the challenge of climate change. However, there is a challenge of sustaining nurturing and growth of the trees. The growth of trees is affected due to limited or inadequate care and therefore the trees get stunted, wither or die. There is therefore need for the project to improve training including demonstration of proper care for the trees to enable them to develop and grow.

The project has also succeeded in promoting acquisition and use of energy saving stoves. It has also made some considerable success in sensitizing beneficiaries to adopt biogas. However, use of biogas is still very limited because the cost is very high. Most of the households targeted cannot afford the cost. There is need for the project to link farmers with other service providers who can facilitate them to acquire and use biogas at subsidized costs. Similarly, although the project has made commendable efforts to promote nature based income generating projects especially beehives/bee keeping. The rate of adoption of these IGAs is low among the beneficiaries. There is need to consider promoting exchange visits and to improve use of demonstration plots while training on bee keeping.

Household food security and nutrition: EPFOSE has contributed to improvement of the capacity of farming households in the six sub-counties of Manafwa to apply appropriate technologies to increase on food security and nutrition in their communities. This has increased the production/yields from the farmers' gardens and therefore improved food

and nutrition security. Nearly all (97%) beneficiaries reported to have received any training in better farming practices. This shows 60% increase (from 36.7% to 97%) at the time of the baseline survey. The trainings contributed to adoption better farming technologies by nearly all farmers that participated in the survey: integrated pest and disease management (92%), use of organic fertilizers (94%), and soil and water conservation (96.4%). For example, majority of the beneficiaries (94.2%) reported an increased use of organic manure to improve soil fertility compared to the baseline (62.3%). It is also evident that the sourcing of fertilizers has changed much with majority of farmers in all the sub counties currently making their own organic fertilizers. Before the EPFOSE project, most farmers were buying the fertilizers from the common market. This has positive implication including reduced household spending for inputs and development of skills and knowledge in making of fertilizers. However, beneficiaries noted that the intensity, frequency as well as the practical demonstrations of the trainings are inadequate that need to be improved.

In respect to improving nutrition, one of the major achievements of the project has been the promotion of back yard gardening. It was clear from interviews that before the project beneficiaries did not have any vegetable gardens however, after project intervention, many farmers established BYGs. By the time of evaluation, a total of 703 households had established BYGs. This was acknowledged by beneficiaries as one of the strategies that have led to diversification of the diet and contributed to families having a balanced diet. Therefore, a combination of increased food production, BYG and nutrition counselling has contributed to most households having more than two meals a day and enriching the meals with vegetables and fruits. Similarly, findings show that there has been a reduction in the number of HH who got worried that they would not have enough food in the past 4 weeks from 90% at baseline to 56.8% currently. Similarly, among those who got worried about the availability of food, majority (64.2%) report that it rarely (Once or twice in the past four weeks) compared to the baseline where majority reported that it sometimes happens (Three to ten times in the past four weeks). These results show a positive move towards food security and nutrition.

Economic empowerment: There has been improvement in HH income. Results show that there has been increase in the number of HH engaged in crop farming from 61% at baseline to 97.8%, increase in the number of beneficiaries engaged in animal rearing and trade from 14% at baseline to 60.7% and from 10.2% at baseline to 34.9% respectively. These results show an increase in the number of HH engaged in IGAs as well as diversification of IGAs which could be attributed to beneficiaries' adoption of better farming practices and trainings in IGAs as well as training in financial literacy.

Although the yields and production is improving due to the project interventions, there has been limited achievement in relation to marketing of the produce. Considerable efforts have been made to encourage farmers to become members of producer marketing organizations, but these have not yet translated into increasing the practice of bulking produce and selling it through producer marketing organisations. This is an area where the project needs to draw lessons from other NGOs like Heifer Project International and CLUSER Uganda that have been actively engaged in working with farmers through producer organisations.

Relatedly, there is a gap in relation to post harvest handling practices. The evaluation has demonstrated that during bumper harvest, there is a lot of wastage due to poor storage and little or no value chain/value addition activities that would ensure that the farmers yields last long and are of good quality or are processed further to add value and gain more income. Therefore, follow-up on project activities should place a strong emphasis on post-harvest handling and value addition. The other major challenge observed was poor record keeping by farmers about their crop yields as well as the income they earn from the surplus produce. This makes it difficult for them to accurately measure the difference in yields and income from one season to another.

The project has succeeded in creating demand for Savings and Loans Associations (VSLAs) and a considerable number of VSLAs are transforming into SACCOS. This is likely to continue promoting the savings and investment culture and help vulnerable households to learn new skills and diversify sources of income. The evaluation clearly shows that VSLAs serve as a vehicle for accessing several services including marketing of their produce, accessing better seeds and better farming tools.

Improved Gender relations: The project made commendable efforts towards improving gender relations. In-depth interviews and FGDs revealed that it is the women who generally collect and hold the income gained through vegetable sales, VSLA but decisions on its use is generally decided jointly. Generally, money generated from sell of vegetable sales, VSLA was reportedly used to meet personal needs of the beneficiaries, household needs and school fees for children. The availability of kitchen gardens on the other hand was reported to reduce the pressure on the men to buy sauce (vegetables) on a regular basis. This has impressed the husbands and has improved the husband-wife-children relationship of working together to see development in their homes and to look after their livestock. In addition, energy cooking stoves and biogas technology have provided benefits to women and children; it has reduced smoke related diseases such as headaches, and reduced work related to cleaning and collecting firewood. Among HH with biogas, it was observed that it has reduced the time spent on collecting fire wood especially by women and children. It was not easy to quantify the time spent on collecting firewood. However, during FGDs, participants revealed that now day's women and children spend little time for collecting fire wood. Time saved was used for other activities such as doing homework, attending community meetings, gaining access to education and information and engaging in other economic activities

There has also been improvement in decision making and sharing of responsibilities between men and women at home compared to the baseline. Decisions in the household were reported to be based on dialogue rather than authoritarianism. This ensures that decisions are made putting the best interest of the all members of the household at the fore. Joint decision making at household and community levels was also reported to have significantly contributed to reducing gender based violence and easing implementation of community development projects. Beneficiaries reported that women are now allowed by their husband to participate in community activities. These results are attributed to the trainings and sharing of experiences from successful households guided by community based trainers on gender.

Although the project made commendable efforts towards promoting sustainability of its activities through working with existing structures at the local government and community level and creating spaces for increasing participation of beneficiaries in the project activities, there is lack of a structured and well-defined sustainability plan and exit strategy. There has affected the clarity, intensity and strategic vision of the project in respect responding comprehensively to the various dimensions of sustainability (economic, political, environmental and social) that are very crucial for project sustainability.

Recommendations

There is need to design mechanisms to improve the intensity, frequency and the practical demonstrations elements of the trainings. This would help farmers to get maximum benefits and increase adoption of modern farming technologies and practices.

Although farmers have been oriented and encouraged to join producer marketing organisations, this is still a challenge. There is need for TSA/EPFOSE to draw lessons from other NGOs working in Eastern and northern Uganda that have made considerable success in promoting bulking of produce and selling it through producer organisations. Heifer project International and CLUSER Uganda may provide good case studies.

Given the substantial wastage of produce due to poor post-harvest handling strategies including poor storage and limited agro processing to add value on the products, therefore follow on projects to place a strong emphasis on post-harvest handling and improving the value chain or value addition to the produce generated by farmers.

In respect to VSLAs, there is need to put more emphasis on financial literacy and business development skills especially as they transform from VSLAs to SACCOs. This would give them the necessary tools and skills to effectively and competently transition into SACCOS. There is also need to systematically use VSLAs to enable farmers to access several services including messages on health, family planning and WASH.

The growth of trees is affected due to limited or inadequate care and therefore the trees get stunted, wither or die. There is therefore need for the project to improve training including demonstration of proper care for the trees to enable them develop and grow. Most of the households targeted cannot afford the cost of biogas. There is need for the project to link farmers with other service providers who can facilitate them to acquire and use biogas at subsidized costs.

Given the low rate of adoption of nature based IGAs especially beehives/bee farming among the beneficiaries, there is need to consider promoting exchange visits and to improve use of demonstration plots while training on bee keeping.

Although there are good indications that the project has adopted strategies to make quite a number of its outputs, outcomes and impact sustainable, there is lack of a structured and well-defined sustainability plan and exit strategy. There is therefore need to consider developing a comprehensive sustainability plan with clear goal, objectives, activities and indicators to monitor progress of follow on projects towards sustainability.

1. INTRODUCTION AND PROJECT BACKGROUND

1.1. Project description

The Salvation Army Uganda (TSA) is implementing a five-year (2014-2018) Environmental Protection, Food security and nutrition and Economic strengthening project, funded by NORAD through Digni and TSA Norway, in Manafwa district Uganda. The project contributes to protection of the environment and empowering the communities to be food secure and economically well in the six sub counties in Manafwa district.

The long-term goal of this project is to lay the ground work for long term protection of the areas surrounding Mt Elgon National park and its ranges. The purpose of the project is to develop and test effective measures for the reduction of the root causes of biodiversity degradation; the elicited use of the protected resources by the subsistence population. This will be achieved through pilot activities to raise income in the sub-counties along the slopes of the mountain by supporting environmentally sound district planning. This will also further be achieved through the promotion of food secure community through the provision of inputs that support sustainable agriculture, nutrition and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services.

The project seeks to assist the district to establish the basic conditions for long term protected area integrity by implementing environmentally sound and economically sustainable land use systems in the six sub-counties in the district by end of 2018. It aims to improve the capacity of 6000 farming households in the six sub-counties of Manafwa and surrounding areas to apply appropriate technologies to increase on food security and nutrition in their communities by end of 2018. Furthermore, the project will also initiate pilot economic activities to increase income of 6000 households in the six sub-counties adjacent to Mt Elgon National park by end of 2018

Project Goals and objectives:

Project Goal: The project seeks the long-term protection of Mt Elgon forest reserve and its adjacent areas from environmental degradation, promote a food secure community, and initiate economic empowerment activities.

Objectives:

- **Objective 1:** To establish the basic conditions for long term protected area integrity by implementing environmentally sound and economically sustainable land use systems in the six sub-counties in the district.
- **Objective 2:** To improve the capacity of farming households in the six sub-counties of Manafwa and surrounding areas to apply appropriate technologies to increase on food security and nutrition in their communities.
- **Objective 3:** To initiate pilot economic activities to increase income of households in the six sub-counties adjacent to Mt Elgon National park

1.2. Purpose and objectives of the evaluation

The main purpose of this mid-term project evaluation was to examine project impact, by examining level of achievement of project goal and outcomes, to establish project relevance, effectiveness, efficiency, sustainability, and document lessons learned. The evaluation also aimed at providing recommendations for improvement of the project, should there be a possibility for an extension following the end of the current project period, or serve as a baseline study for another phase of the project which may entail scaling up the project, replicating its model elsewhere or changing the focus altogether in order to respond to new challenges.

The Specific objectives of the of project evaluation include;

1. Assess the **relevance** and appropriateness of project design/strategies.
2. Assess project **effectiveness** in achieving project outcomes?
3. Assess project **efficiency** in delivering project results?
4. Examine the progress towards achievement of EPFOSE Project objectives (**impact**).
5. Assess **sustainability** of project results and outcomes
6. Document lessons learned (what worked? what didn't?) from the entire project cycle.
7. Recommendations for future projects implementation.

2. METHODOLOGY

2.1. Overview

The midterm evaluation team used quantitative and qualitative approaches of social investigation applied in a framework consisting of cross sectional, descriptive and case study research designs.

For the quantitative component, structured interviews using interviewer administered questionnaires were conducted with a sample of household beneficiaries. For the qualitative part, participatory approaches were employed using selected methods especially Focus Group Discussions, Key Informant Interviews, gender analysis, case studies and observations for extensive consultations with all stake holders. This mixed-method approach was particularly important because it helped to capture programmatic challenges that have been encountered and how they have been addressed to reach the expected outcomes. This approach was also equally important since the programme used different intervention strategies and the beneficiaries are heterogeneous.

The midterm evaluation was conducted in Manafwa District in the sub counties Bumbo, Bukokho, Bukiabi, Bumwoni, Bupoto & Bubutu where the EPFOSE project is being implemented.

2.2. Sample Selection and Sample Size

As this study cannot cover all the communities served by the project or reach all the participating beneficiaries, only a sample will be studied. To select a representative sample, the following procedure will be followed:

Sample of HH beneficiaries

In terms of quantitative data, multi-stage sampling was used to select different clusters specifically the parishes and villages. The sample for each sub county was selected using “probability proportionate sampling relative to the number of beneficiaries per Sub County” basing on project documents. Sample size calculation was calculated using the formula developed by Bernard (1995) and Krejcie and Morgan (1970), for a 5% level of significance and a chi-square value (3.841) for 1 degree of freedom with a 50% response distribution scenario because it is the one that gives you the largest sample size and limits skewness. Using these formulae above and the project target of 5376 household beneficiaries reached instead of 6,000 households originally planned, a total of 361 respondents were interviewed. This sample was proportionally distributed across the sub counties basing on the number of beneficiary HH of the specific sub counties. See table 1 below for the distribution of sample size.

Table 1: Distribution of survey sample size per Sub County

Sub county	Sample
Bukokho	70
Bumbo	64
Bupoto	63
Bukiabi	58
Bubutu	66
Bumwoni	40
Total	361

Sample of other Participants in the Study

The sample for other groups of participants in the projects and in the evaluation was undertaken using purposive sampling. The selection of FGD participants depended on their eligibility to participate as well as their availability. Key informants were selected depending on their positions and roles in the project, as well as on the basis of their presumed special knowledge about the operations of the project. The selection procedure ensured geographical representation across the project area.

The table below summaries the target and number of interviews to be conducted:

Method	Participants	Number
Key Informant interviews	<ul style="list-style-type: none"> • District environmental officer • DCDO (District Community Development Officer) • District TSA project staff <ul style="list-style-type: none"> ○ Coordinator food security ○ Coordinator economic empowerment • Community based Trainers/facilitators 	8

Focus Group Discussions	• Beneficiaries in VSLA and FFS groups	6 (3 FGDs for Males and 3 for Females comprising of 8-10 participants)
Case studies	• Project beneficiaries	3

2.3. Socio-demographic characteristics of HHs in target area.

Majority of the respondents were 25 years and above, had attained at least some primary education (69%) and were married (89%). In addition, majority of the respondents were Christians belonging to Anglican/Pentecostal, Catholic/Orthodox and The Salvation Army and farming was their main occupation.

Table 2: Socio-demographic characteristics of HHs

	Male	Female	Total
Age			
15 – 24	6.4%	6.8%	6.7%
25 – 34	21.1%	23.8%	23.0%
35 – 44	25.7%	25.0%	25.2%
45 – 54	21.1%	24.2%	23.3%
55 and above	25.7%	20.2%	21.9%
Level of education			
None	0.9%	7.9%	5.8%
Primary	66.1%	70.6%	69.3%
Secondary	30.3%	20.2%	23.3%
Tertiary	2.8%	1.2%	1.7%
Occupation			
Farming	96.3%	91.7%	93.1%
Petty trade	3.7%	6.8%	5.8%
Salaried employment	-	0.4%	0.3%
Others	-	1.2%	0.8%
Religion			
Anglican/Pentecostal	56.9%	52.4%	53.7%
Catholic/Orthodox	10.1%	16.7%	14.7%
Muslim	3.7%	1.2%	1.9%
Seventh Day Adventist	0.9%	3.2%	2.5%
The salvation Army	26.6%	23.0%	24.1%
Others	1.8%	3.6%	3.1%
Marital status			
Married/Cohabiting	94.5%	86.9%	89.2%
Single/Never married	0.9%	0.4%	0.6%
Divorced/Separated	1.8%	1.6%	1.7%
Widowed	2.8%	11.1%	8.6%

2.4. Data management and analysis

All quantitative data was collected using the computer tablets. The tablets were programmed with internal checks to ensure completeness and logical entries, and partially the consistency of the responses. Daily meetings were held between the research assistants and the supervisors to review the data collection methodology and to resolve any logistical or methodological issues that occur. Supervisors were responsible for conducting this review process, but shared any issues with other teams that may be experiencing some of the same issues. Qualitative data will be audio recorded.

Quantitative data were collected using mobile data devices with data collection tools programmed in Survey CTO. Data were exported into STATA for cleaning, recoding and analysis. Select frequencies and proportions are reported for: the demographic characteristics of the participants, including gender, age, marital status, among others; food security and nutrition, economic empowerment and environmental protection.

Data generated through KIIs, FGDs, and case studies was processed and analyzed, focusing on reducing raw data into manageable proportions and summarizing it in a form that brings out salient issues, themes and sub-themes related to the assignment. Research assistants wrote expanded notes and transcribed most of the audio-recorded data and simultaneously translated it from local languages to English. This process was carried out daily for every interview/discussion conducted. The handwritten transcribed notes were later typed up. The notes were read thoroughly and coded manually. Coding helped to classify responses into meaningful categories to bring out their essential pattern. The codes were carefully developed to ensure that they are mutually exclusive, exhaustive and representative. A summary description of emerging themes, making use of key quotations, cases and explanations were used in writing the evaluations report.

3. FINDINGS

3.1. Relevance and appropriateness of project design and strategies.

In general, the evaluation found that the project objectives and interventions were relevant to the apparent and latent needs of the beneficiaries. Many beneficiaries talked with gratitude about how the project has transformed their lives and improved their welfare. The different project interventions were aimed at sustainable improvements in the incomes and food security of targeted families, sustainable environmental practices as well as general improvement in household welfare. In respect to food security and nutrition, the evaluation found general improvements in the availability of food for consumption, increase in food kept for future emergencies and in vegetable consumption and improvement nutritional diet of beneficiaries' households. The use of organic manure to enrich crop fields was a wide spread practice; contributing to an increase in the basket of food consumed by the households.

The project has facilitated production of vegetables such as eggplants, cabbages, sukuma wiki which not only facilitate improvement in dietary intakes but also saves households costs that would otherwise have been incurred in buying these vegetables. The consumption of these foods has boosted the health conditions especially in areas of reducing malnutrition problems among families. The promotion of ecologically friendly farming practices including use of composite manure and agro-ecology represented a capable intervention that enhanced the food security for the targeted households—through soil fertility conservation and enhancement. However, there is need to put more emphasis on the planting and use of leguminous fodder shrubs/trees.

The holistic approach to food security and nutrition, economic empowerment and environmental protection involving training farmers in modern methods of farming and environmental protection, providing inputs including seedlings and addressing gender inequality in access to and control over resources and decision making, demonstrates that EPFOSEs holistic approach to rural poverty is not theoretical but rather a reality. The adoption of practices, such as kitchen gardening, better farming practices, tree planting and formation or joining of VSLAs by non-EPFOSE beneficiaries is an example of the reverberating impact and relevance of EPFOSE interventions to the wider community.

The current project activities are also aligned to the Strategic Plan of the TSA. TSA developed a Strategic Plan and some of the key project activities including promoting sustainable livelihoods, promoting the saving culture through VSLAs, promoting environmental protection are part of the strategic plan. In essence the project activities are part of the strategic vision for the TSA. Therefore, even when the project phases out TSA is likely to continue mobilizing resources to continue some of the prime activities because they are part of the Strategic Plan, and it is held accountable to implement the priority actions in its Strategic Plan.

Challenging the traditional insubordination and disempowerment of women and girls, this project has empowered women economically and socially. By being members of VSLAs, they are ably earning some money hence contributing to household livelihoods and respect

from men. There is improved ownership of resources by women such as land (see section 3.2.4. for details)

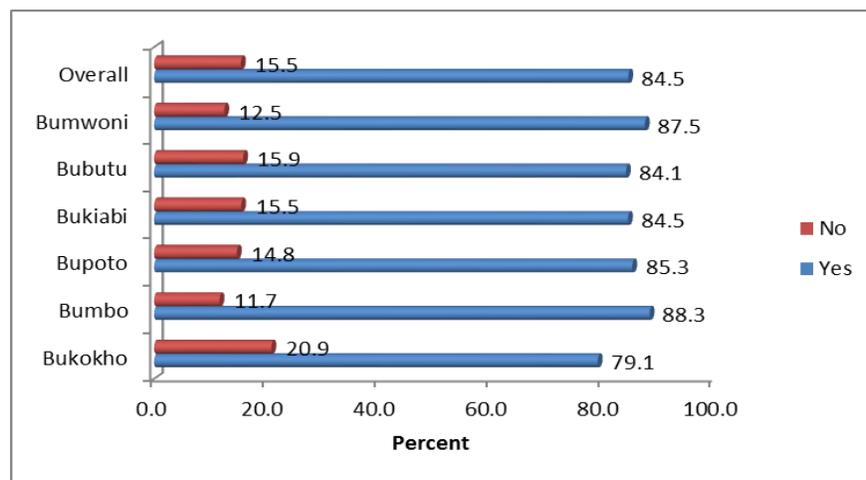
3.2. Project effectiveness in achieving project outcomes

3.2.1. Objective 1 Environmental protection

The project sought to establish the basic conditions for long term protected area integrity by implementing environmentally sound and economically sustainable land use systems in the six sub-counties in the district. To achieve this objective, a number of interventions have been implemented. Some of these include; raising awareness on gender and environment including decision making on access to and control over environmental resources, training selected beneficiaries on nature based IGAs, supporting community tree planting interventions, training and scaling out renewable energy saving technologies to vulnerable households, conducting radio talk shows on community environmental awareness creation and early warning systems for disaster risk reduction. These activities have contributed to the following.

3.2.1.1. Adoption of tree planting

Figure 1: Engaged in tree planting



Findings show that Majority of the HH beneficiaries visited (84.5%) reported to engage in tree planting. Compared to the Baseline (55.8%), these results show that there has been an increase in the number of people engaged in tree planting. These results have been attributed to trainings

received by beneficiaries on the importance of tree planting. In addition, discussions with beneficiaries revealed that some have received assorted tree seedlings, especially eucalyptus, for planting. Apart from planting, beneficiaries were also trained in management of the seedlings, including adherence to environmental standards involving afforestation and reforestation management regimes, pruning, trimming, and spacing; activities which were not practiced before.

I thank you so much this program because I didn't know that I had to plant trees around my home but since the project came, I have learnt, and I started planting trees around my home, they gave us some trees to plant and I really want to thank them for that, we have got that knowledge and we shall continue to do so as we were taught (FGD male Bukokho).

Because previously programs and projects were just promoting tree planting without making follow up and know whether the spacing was correct, whether the management regimes are being followed,

you would find that a tree is being destroyed at the age of one because of lack of follow up. But for us, with this follow up, you find that they are compliant to environmental standards. Even with appropriate spacing in a small area, you can have maximum output. Also through those trainings they learnt that even tree planting is one of the ways of appreciating the environment, the role of trees in environmental conservation. You know these trees do a lot, like water purification and soil conservation. So all those factors, trees contribute to the environmental conservation so they appreciated that and most of them have been mainstreamed. And as we talk, all the six sub counties in every financial year, if you observe in the budget, there is tree planting, it is because of this project (KII Environmental protection officer).

Discussions with key informants also revealed that some assorted tree seedlings were planted were planted at water banks to avoid silting. Remarks below further illustrated the adoption of tree planting. In addition, through the eco schools approach, the project has encouraged young people to engage in their environment by allowing them the opportunity to actively protect it. Some schools including Buteteya primary school, Bukokho secondary school and Bumbo secondary school have embraced this approach. Discussion with key stakeholders revealed that students, teachers and governance structures at these schools were trained to appreciate the concept of environmental protection. This resulted into set up demonstration plots at school. For instance, at Buteteya primary school, eucalyptus trees were planted at the boundaries of the schools. Similarly, at Bumbo Secondary School and Bukokho Secondary School, woodland for demonstrations were set up. Participants noted that through this programme, young people experience a sense of achievement at being able to have a say in the environmental management policies of their schools, which has helped to embark on a meaningful path towards improving the environment in both the school and the local community; while at the same time having a life-long positive impact on the lives of young people, their families, school staff and local authorities.

The first strategy we used was the eco school approach. We identify an institution, maybe a school or church, and then we build their capacity. I don't know whether you passed a school called Buteteya primary school in Bumbo. Did you see the eucalyptus trees? Those are EPFOSE trees. We trained the pupils in the school to appreciate the concept that it can be done, and they are of environmental value and even of community value, because if a child is in primary two, by the time he/she reaches primary seven, the trees can be ready and can be sold to get school fees, and they appreciated it. We combined the teachers, the school management committee, and also the pupils and we demonstrated that. We also went to Bumbo Secondary School. We established woodland for demonstration. We went to Bukokho Secondary School and also set up one, so the school approach helped because when the pupils go back home, they can do the same thing there, and some of the children who are in those schools belong to the vulnerable households we are targeting. Although you are not going to the 6000 households as environment but the pupils in those schools come from those vulnerable households so we believe they will transfer the message at home (KII Environmental protection officer).

Other environmental protection measures are being done by beneficiaries. Some of these include practicing contour ploughing and agro-forestry. Similarly, project has also supported the setup and management of community tree nurseries for seedlings production and propagation and graduating them into carrying capacity of 30,000 assorted seedlings annually to support afforestation interventions. A review of project documents also revealed that as a way of scaling out the seedling propagation and production in order to meet the increasing high demand of tree seedlings, some small-scale nursery bed operators in the pilot sub counties have been trained in the establishment and

management of nursery beds, including vegetative propagation methods like budding, grafting and layering.

People are now recognizing environmental issues in their daily activities. You find that they at least try each day to have a seedling planted. Even if it is one, it will contribute a lot in terms of firewood and even in terms of modifying the local climate in the farmland. Even just trying to make a trench in the garden to improve on water conservation to increase production. Those small changes have occurred, and people have adopted environment as one of the cross cutting issues in development but mainly mind set change (KII Environmental protection officer).

We were not able to have nurseries in every sub county, but we first started with capacity building, trained them in nursery establishment and management. People thought that if you want to plant trees, it is about going to town, you find someone who has established, you buy from that person, but we have different types of nurseries. There is what we call a flying nursery, it is established for a small period of time, achieve the objective and then abandon it. We trained them in that one. Somebody can set up a small nursery, maybe wants to plan coffee seedlings, like a thousand. Will you go and buy and yet it is a vulnerable household? Of course, no. the household will not have the money. But we trained them on how to establish and manage however small it is. We also have a primary nursery, that one runs year after year producing seedlings to meet the local needs. So we established a pilot and we established three (KII Environmental protection officer).

3.2.1.2. Adoption of energy saving technologies for environmental protection

The study also investigated about the energy usage pattern. This includes the main source of energy and device used for cooking. Results show that firewood is still the main source of energy used for cooking. This is probably because most of the beneficiaries stay in relatively rural areas where firewood is most preferred due to its ready availability and cheap to use. In relation to devices used for cooking, three quarters of the beneficiaries reported open fire as main device used. However, compared to the baseline, findings show that there has been an increase in the number of beneficiaries using energy saving stoves from about 4% to 19.7%. Use of energy saving stoves was promoted by the project to ease the cooking demands of the family by using less of wood fuel for more food cooked.

EPFOSE went on and helped us in a way that those days we were using stones which would consume a lot of fire wood but now EPFOSE taught us about the firewood saving cooking stoves that we make on our own and now we are saving on the fire wood consumption.in hat way I see that they help us and the trees we planted. (FGD Males Bukiabi)

Table 3: Main source of energy and device used for cooking

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Source							
Kerosene/Paraffin	-	1.6	-	-	-	-	0.3
Gas	1.4	-	-	-	-	2.5	0.6
Charcoal	5.7	6.3	1.6	-	1.5	0.0	2.8
Firewood	91.4	92.2	98.4	100.0	98.5	97.5	96.1
Others	1.4	-	-	-	-	-	0.3
Device used for cooking							
Open Fire	71.4	87.5	76.2	63.8	75.8	75.0	75.1
Charcoal	7.1	6.3	12.7	0.0	0.0	-	4.7
Energy saving Stove	18.6	6.3	11.1	36.2	24.2	25.0	19.7
Other	2.9	-	-	-	-	-	0.6

Other source of energy used for cooking reported was biogas. Some beneficiaries reported to use biogas for cooking especially light meals and snacks. Although this energy source

was not frequent, result show some beneficiaries received training in use of biogas. Discussions with beneficiaries and project staff revealed that some HHs have adopted the use of biogas especially in the pilot sub counties. Beneficiaries expressed benefits that have accrued from the use of Biogas including cooking and lighting and use of bio slurry as feeds for animals and organic fertilizers. Participants revealed that biogas slurry as a by-product of biogas is a high-quality organic fertilizer and conditioner for the soil that surpasses farmyard fertilizer. It was noted that if composted properly, the slurry gives higher yields of superior quality fertilizer and can increase crop production, thereby augmenting income. Simultaneously, as it replaces chemical fertilizers, the slurry saves the money previously spent on chemical fertilizers. Farmers with biogas noted that they used bio slurry in their own gardens while other revealed that slurry was also used for agribusiness.

People had open fire, but since EPFOSE came they were trained in building saving stove (use little firewood), and biogas benefits. After biogas training, people picked interest and constructed biogas plants, which has enabled them to use cow dung and this has reduced tree cutting. Biogas has also helped with lighting, manure, and feeds for birds and pigs (KII, CBT Bukokho Sub county)

TSA trained me and gave me trees, which I planted. It also gave me biogas, which helps in conserving the environment (FGD, Male Bukokho subcounty).

...this bio gas, because of the economic, environmental and social values and uses of it, the demand is so high (FGD, Male Bukokho subcounty).

Biogas interventions have a direct impact on the local environment. Local environmental benefits occur as part of a switch away from biomass to cleaner fuels, and more fuel-efficient stoves lead to less consumption. Essentially, this results in fewer trees being cut down in an unsustainable fashion (being used either for firewood or charcoal). The local effects of trees being cut down are soil erosion, desertification, and, in hilly areas, landslides.

During the field visit it was not easy to ascertain the effect of biogas project on the environment since it had just started, and people are still appreciating the technology. However, the practice by the users reflects that overtime a positive impact can be achieved. Discussion and interviews revealed that there is;

- Reduced tree cutting, and at the same time increase in tree planting.
- Reduction in polluting matters, as organic wastes which otherwise host disease causing organisms are now converted into energy form.
- Reduction in indoor air pollution by replacing fuel wood and other poor-quality fuels used for cooking

However, it should be noted that energy saving stoves and biogas was piloted in a few sub counties. Therefore, the project should consider scaling out these technologies given the benefits associated to them.

That component was captured in our budgets but as I told you, it was mainly capacity building with few pilots. So we tried to test out bio gas in Bukokho and few energy saving technologies. We believe that if we scale out the energy saving technologies we will be reducing on pressure on some of the trees, the trees we are promoting. The energy saving technologies will now be a safeguard for the trees because you find that some of those technologies don't consume a lot of firewood, they can have like three pieces and the food is ready. Biogas, some of those households have animals, so the cow

dung can be used as a source of energy and at the same time will be mitigating methane, you know methane is one of the green house guards that affect the ozone layer and climate change, and the methane's biggest source is cow dung. (KII Environmental protection officer)

3.2.2. Objective 2 Agricultural practices, Household food security and nutrition

The project sought to improve the capacity of farming households in the six sub-counties of Manafwa and surrounding areas to apply appropriate technologies to increase on food security and nutrition in their communities. To achieve this objective, the project has carried out several interventions including; Formation and support of FFS groups, providing technical support in backyard gardening, training groups in post-harvest handling techniques, conducting nutrition education dialogues and cooking demos, training nutrition peer educators in IMAM (Integrated Management of Acute Malnutrition). The services provided by the project have seen changes in adoption of better farming technologies, increase in food security and nutrition.

3.2.2.1. Adoption of better farming technologies

By the time of evaluation, a total of 108 FFS groups had been formed with a total number of 3,233 members (2,301 female, 932 male) of whom 2,668 are Vulnerable Household members. These have received a range of services including technical and support supervision with skills and knowledge in best agronomic practices. Overall, nearly all (97%) beneficiaries reported to have received training in better farming practices. These results show 60% increase (from 36.7% to 97%) in HHs that have received training in better farming technologies from the time of the baseline survey. The trainings were mainly provided by TSA/EPFOSE (see table 4 below), the training covered a range of aspects including integrated pest management and disease control, use of organic manure, mixed cropping, post-harvest management, farm planning, soil and water conservation, integrated farming and sustainable agriculture, animal management and production, kitchen gardening, efficient agro-ecological practices. The voices below illuminate the different aspects in which the beneficiaries were trained in:

Farmers have been trained on intercropping, mixed farming, tree planting and leaving the land to rest for a while. They have also been trained in mulching of land using wastes, terracing and ...planting in straight lines, ploughing (KII, CBT, Bukokho Sub county).

Table 4: Who provided the trainings (Multiple responses)?

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Overall
TSA/EPFOSE	100	98.39	98.36	100	98.46	100	99.15
Extension workers	7.35	35.48	16.39	1.72	4.62	8.11	12.54
Other NGOs	1.47	11.29	11.48	3.45	-	-	4.84
Private sector provider	-	1.61	1.64	-	-	-	0.57

In addition, discussions also revealed that the training improved the beneficiaries' knowledge on modern methods of farming and majority of the HH have adopted better farming technologies, including; integrated pest and disease management (92%), use of organic fertilizers (94%), and soil and water conservation (96.4%) (See table 5 below). Farmers have also adopted modern agronomical practices including optimum row spacing and line planting, agro forestry, composting and green manure practices and crop rotation

and integrated farming and sustainable agriculture. Most of these technologies are practiced by farmers at least for two to three seasons.

Table 5: Adoption of farming practices

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Integrated pest and disease management	85.7	93.8	93.7	98.3	95.5	82.5	92.0
Use of organic fertilizers	97.1	92.2	90.5	100.0	92.4	92.5	94.2
Mixed cropping	78.6	89.1	76.2	72.4	54.6	50.0	71.5
Farm planning	82.9	90.6	87.3	84.5	86.4	82.5	85.9
Soil and water conservation	92.9	93.8	96.8	100.0	98.5	97.5	96.4
Integrated farming and Sustainable agriculture	81.4	90.6	84.1	82.8	81.8	80.0	83.7

It is clear from table 4 that across all the sub counties, integrated pest and disease management, use of organic fertilisers and soil and water conservation ranked higher in terms of key adopted farming practices. By sub counties, this was highest in Bukiabi Sub County.

From the training and adoption of these farming technologies has yielded benefits to farmers including, improved crop yields (94%), reduced pests/diseases (64.6%) and improved quality of produce (64.9%). See table below

Table 6: Benefits from the farming practices

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Improved crop yields	94.12	93.55	93.44	96.55	93.85	94.59	94.3
Reduced pests/diseases	66.18	70.97	55.74	82.76	49.23	64.86	64.67
Improved quality of produce	57.35	75.81	60.66	79.31	49.23	72.97	64.96
Other (specify)...	5.88	9.68	6.56	0	7.69	2.7	5.7

Notwithstanding benefits from the training; it was noted that the frequency and regularity of the trainings needs to be improved. There were very few incidences of follow-up and refresher trainings for beneficiaries. Some beneficiaries indicated that they had been trained a long time ago and could not adequately remember and identify with the issues that were covered during the training. They expressed need for additional trainings to enable them adequately to maximize the other benefits that come with the trainings. Findings show that FFS groups have pro-actively set up demonstration plots and experimental gardens on soil fertility, pest control and crop management as per the guidance by the FFS facilitators and the project staffs to operate according to FFS guidelines.

3.2.2.2. Use of organic manure

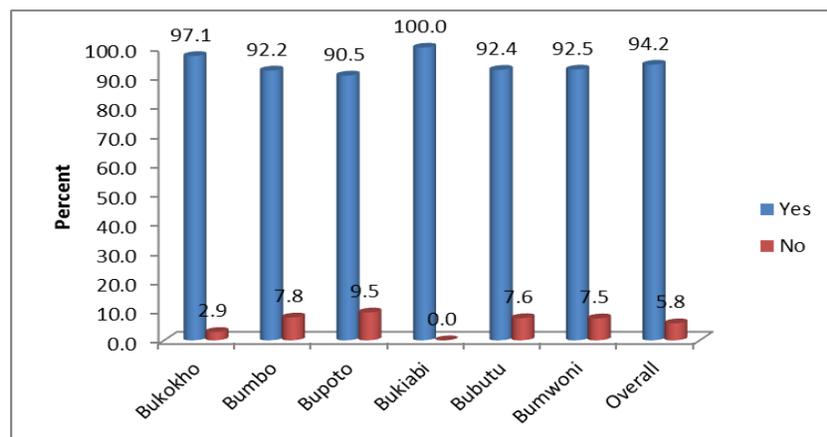


Figure 2: Use of organic manure
Majority of the beneficiaries (94.2%) reported an increased use of organic manure to improve soil fertility (see figure 2 and

table 5 above) compared to the baseline (62.3%). Most of the beneficiaries used the manure for two to three seasons and the main source of organic manure was homemade compared to before the project, which was common market. Discussions with beneficiaries revealed that the use of organic manure has translated into more crops for sale and food for home consumption. Beneficiaries consistently highlighted the benefits— increased yields — gained from the use of organic manure (99%). When asked to try and quantify the increase in yields, most beneficiaries talked about increasing production (usually maize) in terms of number of sacks produced.

The use of organic fertilizers is further illustrated in the remarks below:

...so, it has really helped me a lot because I had food, coffee but my earnings were poor, but since EPFOSE came introduced composed manure, it has really helped me a lot and am now tripling the previous earnings, the Matooke now looks so good, good yields so I discovered that manure is of great impact because am now getting good yields, am eating nice Matooke... (FGD Female Bubutu)

We had the knowledge, but we have not been working hard. So EPFOSE came and sharpened our brains. They showed us in the gardens that we should leave using the artificial fertilizers and we start using the local organic manures. And they even taught us how to make the organic manure, so we see that EPFOSE gave us knowledge that can keep our soil and it remains good unlike the other times. (FGD Male Bukokho)

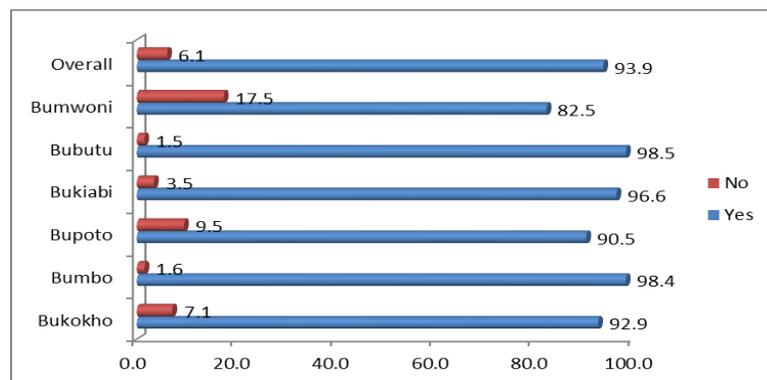
Table 7: Use of organic fertilizers

		Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Overall
Use of organic fertilizers								
Male	Yes	92.3%	95.0%	100.0%	100.0%	95.7%	100.0%	96.3%
	No	7.7%	5.0%	-	-	4.3%	-	3.7%
Female	Yes	93.2%	86.4%	86.7%	100.0%	79.1%	94.4%	89.7%
	No	6.8%	13.6%	13.3%	-	20.9%	5.6%	10.3%
Main source before and after EPFOSE								
Before EPFOSE	Input dealer	26.2%	22.8%	31.6%	22.4%	32.1%	21.1%	26.3%
	Fellow farmers	3.1%	10.5%	12.3%	10.3%	1.8%	18.4%	8.8%
	Common market	64.6%	61.4%	31.6%	67.2%	50.0%	52.6%	55.0%
After EPFOSE	Locally made	1.5%	1.8%	17.5%	-	8.9%	5.3%	5.7%
	Input dealer	1.5%	-	-	-	3.6%	-	.9%
	Fellow farmers	-	-	5.3%	-	-	-	.9%
	Common market	6.2%	1.8%	3.5%	3.5%	5.4%	5.3%	4.2%
	Locally made	86.2%	96.5%	86.0%	96.6%	87.5%	94.7%	90.9%
Benefits from Use of fertilizers								
Improved yield		100.0%	100.0%	98.3%	100.0%	100.0%	94.6%	99.1%
Improved water conservation		23.5%	40.7%	31.6%	41.4%	16.4%	43.2%	31.8%
Improved soil fertility and conservation		67.7%	64.4%	59.7%	81.0%	65.6%	64.9%	67.4%
Improved weed control		5.9%	8.5%	1.8%	17.2%	-	21.6%	8.2%
Reduced time in the garden for planting/tilling		10.3%	15.3%	14.0%	19.0%	3.3%	27.0%	13.8%
Facilitate germination		25.0%	49.2%	33.3%	43.1%	26.2%	35.1%	35.0%
Others		4.4%	-	3.5%	-	1.6%	-	1.8%

It is also evident that the sourcing of fertilizers has changed much with majority of farmers in all the sub counties currently making their own organic fertilizers. Before the EPFOSE project, most farmers were buying the fertilizers from the common market. This has positive implication including reduced household spending for inputs and development of skills and knowledge in making of fertilizers.

3.2.2.3. Post-Harvest handling of produce between harvest and storage

Figure 3: Training in post-harvest handling



Results show that majority (93.9%) of the beneficiaries have been trained in post-harvest handling. By Sub County, Bukiabi ranked highest and Bumwoni lowest in terms of beneficiaries that had been trained in post-harvest handling.

The training was reported to be mainly done by TSA/EPFOSE and extension workers.

The training has facilitated the improvement in post-harvest handling of produce among beneficiaries as reflected in table 28 in annex I.

Storage facilities

In addition, results show some improvement in storage of produce. There has been increase in the number of HH storing their produce in traditional granary (52.1%) or improved granary (9.7%) compared to only 6% who stored in granaries at the time of the baseline. In addition, beneficiaries also reported to store their produce in sacks either placed on the floor (57.6%) or on pallets (33.5%) (See table 8 below).

Table 8: Storage methods

Storage methods	SUBCOUNTY (%)						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
Sacks placed on pallets							
Yes	18.6	40.6	46.0	32.8	30.3	35.0	33.5
No	81.4	59.4	54.0	67.2	69.7	65.0	66.5
Sacks placed on floor							
Yes	58.6	54.7	55.6	65.5	56.1	55.0	57.6
No	41.4	45.3	44.4	34.5	43.9	45.0	42.4
Store debbe/Tin							
Yes	42.9	29.7	41.3	37.9	42.4	35.0	38.5
No	57.1	70.3	58.7	62.1	57.6	65.0	61.5
On floor with no container							
Yes	48.6	34.4	41.3	37.9	50.0	40.0	42.4
No	51.4	65.6	58.7	62.1	50.0	60.0	57.6
Tradit. Granary							
Yes	65.7	42.2	38.1	58.6	54.6	52.5	52.1
No	34.3	57.8	61.9	41.4	45.5	47.5	47.9
Modern granary							
Yes	5.7	20.3	11.1	6.9	7.6	5.0	9.7
No	94.3	79.7	88.9	93.1	92.4	95.0	90.3
Hanged in house/compound							
Yes	37.1	42.2	50.8	44.8	28.8	37.5	40.2

No	62.9	57.8	49.2	55.2	71.2	62.5	59.8
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3.2.2.4. Improved Food Security and Nutrition

The project has also offered support supervision to Nutrition Peer Educators (NPEs). This was aimed at imparting knowledge and skills on proper infant and young child feeding and nutrition care for sick children. Findings show that NPEs have conducted a number of nutrition education sessions and food/cooking demonstrations to stimulate adoption of optimal feeding for infants and young children. They have also facilitated the adoption of Back Yard Gardens (BYG), energy saving, and proper water, sanitation and hygiene (WASH) practices.

Back yard gardening is one of the pillars of addressing human nutrition among the EPFOSE beneficiaries. By growing vegetables near the home, the family is assured of regular vegetable supply. Because of their proximity to the homestead, the gardens are easily managed. Interviews revealed that before the project beneficiaries did not have any vegetable gardens. However, after project intervention, many farmers established BYGs.

Before the project, people were starving (not having enough vegetables). But now people were trained in backyard gardens (sack mounts, chicken gardening). They now use their own vegetables during draught without buying and even they sell some (CBT Bukokho).

Similarly, a review of project documents shows that there has been improvement in the groups which have established BYGs across all the six sub counties with the project officers, NPEs and VHTs. By the time of evaluation, a total of 703 households had established BYGs. Discussions with key informants revealed that farmers were also supported with skill of maintaining the gardens through water management techniques like bottle irrigation and mulching which were provided during the refresher trainings. Beneficiaries were encouraged to plant a variety of vegetables so that they can have a variety to eat at home in order to improve their nutrition status.

Table 9: No. of backyard gardens per Sub County

Sub county	Number
Bukokho	42
Bumbo	243
Bukiabi	121
Bumwoni	80
Bupoto	74
Bubutu	143
Total	703

In collaboration with health workers, the project also conducted nutrition screening and counselling. Children less than 5 years screened under severely Acute Malnutrition (SAM) are referred immediately for case management at health facilities. Discussions with key informants revealed that through the continuous home visits, nutrition guidance and counselling to the caregivers and existence of BYGs the nutrition status of HHs has improved and reduced cases of malnutrition among children in the communities where the project is being implemented.

People before thought that eating meats, using oil is the best way but when EPFOSE came taught people about vegetables and change of diet. This has improved the lives of people. He said also eating at right time, the peer role mothers were trained on assessing the malnutrition of babies. (CBT Bukokho)

Before the training, the feeding was bad but after teaching us, the feeding has improved, we would always go to the hospital taking the children because the water but when they came and taught us...I feel that it scores 4/5(FGD male Bupoto)

Discussions with beneficiaries revealed that there has been an increase in amount of food consumed. This reflects a move in the positive direction in respect to food security and nutrition. Number of meals adults and children have a day is a key indicator of food and nutritional security. As indicated in Table 10, most participants reported that both children (68.7%) and adults (88.4%) have 2-3 meals a day. The respective figures show a decline from the baseline figure (81%) for children and increase for adults from the baseline figure (82%). A sizeable number (29.6% and 11.1%) also reported that children and adults had 4 meals respectively. This indicates a big improvement from the baseline findings in which participants reported that children (5%) and adults (3%) had 4 meals a day. Overall, the changes show that beneficiaries have had an increase in food and nutritional.

Table 10: Number of meals consumed by families

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Adults 18 years above							
Less than 1	-	-	2(3.1%)	-	-	-	2(.6%)
2-3	59(84.3%)	59(92.2%)	52(82.5%)	53(91.4%)	60(90.95%)	36(90.0%)	319(88.4%)
4+	11(15.7%)	5(7.8%)	9(14.3%)	5(8.6%)	6(9.1%)	4(10.0%)	40(11.1%)
Children 0-17 years							
Less than 1	-	3(4.7%)	2(3.2%)	-	1(1.5%)	-	6(1.7%)
2-3	50(71.4%)	45(70.3%)	40(63.5%)	43(74.1%)	42(63.6%)	28(70.0%)	248(68.7%)
4+	20(28.6%)	16(25.0%)	21(33.3%)	15(25.7%)	23(34.9%)	12(30.0%)	107(29.6%)

Furthermore, to understand the extent to which a beneficiary household has a balanced diet, they were requested to mention the number of times that they ate cereals, roots, vegetables, fresh fruits, ground nuts, fish and meat, eggs, and milk in the last seven days. In respect to cereals, it was found that most (52.4%) had eaten cereals 7 times or three times (23.8%) in the last 7 days. With regard to roots and tubers, most (97%) had it 4-5 times while 53.2% had it 2-3 times in the last 7 days.

Table 11: Number of times consumed maize grain, cereals, roots and tubers and Matooke

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Maize grain (361)							
0-1	8.6%	31.3%	44.4%	5.2%	6.1%	15.0%	18.6%
2-3	45.7%	32.8%	20.6%	43.1%	36.4%	37.5%	36.0%
4-5	24.3%	14.1%	19.1%	34.5%	33.3%	27.5%	25.2%
6+	21.4%	21.9%	15.9%	17.2%	24.2%	20.0%	20.2%
Cereals (Rice, Sorghum, millet, ...) (361)							
0-1	42.9%	60.9%	68.3%	41.4%	56.1%	50.0%	53.5%
2-3	51.4%	29.7%	20.6%	55.2%	34.9%	42.5%	38.8%
4-5	5.7%	9.4%	9.5%	1.7%	4.6%	7.5%	6.4%
6+	-	-	1.6%	1.7%	4.6%	-	1.4%
Roots and tubers (potatoes, cassava, ...) (361)							

0-1	38.6%	45.3%	57.1%	13.8%	7.6%	30.0%	32.4%
2-3	54.3%	48.4%	38.1%	60.3%	60.6%	60.0%	53.2%
4-5	7.1%	3.1%	4.8%	19.0%	16.7%	7.5%	9.7%
6+	-	3.1%	-	6.9%	15.2%	2.5%	4.7%
Matooke (361)							
0-1	15.7%	40.6%	47.6%	31.0%	43.9%	20.0%	33.8%
2-3	18.6%	40.6%	39.7%	48.3%	43.9%	67.5%	49.3%
4-5	3.2%	15.6%	9.5%	19.0%	12.1%	7.5%	14.1%
6+	4.3%	3.1%	3.2%	1.7%	-	5.0%	2.8%

Vegetables consumed in the last seven days:

In regard to vegetables and legumes, most (39.6%) reported to have 2-3 times a week while 30% had them 6 or more times in the last 7 days. In respect to consumption of bean and peas, 42.9% reported that they had them 2-3 times in the last 7 days while 25.2% had 4-5 times a week. Similarly, more beneficiaries (33%) consumed ground nuts, sim sim 2-3 times a week while 31% consumed it 4-5 times a week.

Table 3: Number of times consumed vegetables and legumes

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Beans and peas (361)							
0-1	10.0%	26.6%	39.7%	13.8%	12.1%	25.0%	20.8%
2-3	50.0%	34.4%	23.8%	63.8%	47.0%	37.5%	42.9%
4-5	32.9%	25.0%	22.2%	20.7%	25.8%	22.5%	25.2%
6+	7.1%	14.1%	14.3%	1.7%	15.2%	15.0%	11.1%
Other Vegetables (273)							
0-1	-	6.7%	17.8%	14.1%	20%	28.6%	17.2%
2-3	34.3%	37.8%	48.9%	38.5%	44%	25.5%	39.6%
4-5	37.1%	8.9%	13.3%	10.3%	16%	14.3%	12.5%
6+	28.6%	46.7%	20%	37.2%	20%	32.7%	30.8%
Ground nuts, simsim (143)							
0-1	-	23.4%	38.1%	3.5%	-	-	11.4%
2-3	34.3%	21.9%	30.2%	41.4%	36.4%	35.0%	33.0%
4-5	37.1%	28.1%	15.9%	36.2%	39.4%	27.5%	31.0%
6+	28.6%	26.6%	15.9%	19.0%	24.2%	37.5%	24.7%

Consumption of fruits, fish, meat, eggs and milk

With respect to fish and meat, 58.7% and 67.4% respectively consumed it once or never in the last 7 days. However, a considerable proportion had fish (36.3%) and meat (27.3%) 2-3 times in the last 7 days. In relation to fruits, close to two quarters (43.5%) of the beneficiaries consumed once in the last 7 days while 38.5% consumed them in 2-3 times in the last seven days.

Table 4: Number of times consumed fruits, fish, meat, eggs and milk

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Fresh Fruits (361)							
0-1	230.0%	71.9%	63.5%	25.9%	27.3%	42.5%	43.5%
2-3	47.1%	21.9%	20.6%	58.6%	45.5%	37.5%	38.5%
4-5	15.7%	6.3%	4.8%	5.2%	6.1%	7.5%	7.8%
6+	7.1%	-	11.1%	10.3%	21.2%	12.5%	10.3%
Fish (106)							
0-1	35.7%	75.0%	90.5%	43.1%	43.9%	70.0%	58.7%
2-3	57.1%	23.4%	9.5%	51.7%	467.0%	22.5%	36.3%
4-5	5.7%	1.6%	-	5.2%	7.6%	7.5%	4.4%
6+	1.4%	-	-	-	1.5%	-	.6%
Meat (172)							
0-1	66.7%	62.1%	76%	63.4%	62.1%	73.8%	67.4%
2-3	16.7%	34.5%	20%	34.1%	31%	19%	27.3%
4-5	16.7%	3.4%	-	-	6.9%	7.1%	4.1%
6+	-	-	4%	2.4%	-	-	12%
Eggs (140)							
0-1	60.0%	71.9%	81.0%	53.5%	65.2%	70.0%	66.8%
2-3	28.6%	21.9%	15.9%	32.8%	28.8%	22.5%	25.2%
4-5	8.6%	3.1%	3.2%	10.3%	6.1%	7.5%	6.4%
6+	2.9%	3.1%	-	3.5%	-	-	1.7%
Milk (229)							
0-1	21.4%	71.9%	74.6%	36.2%	39.4%	52.5%	48.8%
2-3	22.9%	15.6%	7.9%	27.6%	18.2%	10.05	17.5%
4-5	11.4%	4.7%	-	6.9%	6.1%	2.5%	5.5%
6+	44.3%	7.8%	17.5%	29.3%	36.4%	35.0%	28.3%

Main Sources of food

Participants were also asked to reveal the sources of food consumed. Apart from cereals and meat, majority reported that own production was the major source of food consumed by beneficiaries. Regarding to cereals, majority (73.9%) reported purchase while only 24.9% reported that they own production. In regard to roots and tubers, 88.5% reported own production as their major source while only 10.8% reported purchase as their source. Concerning vegetables and legumes, and fruits majority all beneficiaries reported own production as their sole source.

Table 5: Main Sources of food

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Maize							
Own production	89.7	85.1	83.0	85.7	95.4	82.9	87.7
Purchases	10.3	8.5	15.1	14.3	4.6	14.3	10.8
Gift (food) from family members	-	6.4	1.9	-	-	2.9	1.5
Cereals							
Own production	17.0	29.4	29.7	29.8	24.0	23.3	24.9
Purchases	83.1	67.7	67.6	70.2	74.0	76.7	73.9
Gift (food) from family members	0.0	2.9	2.7	-	2.0	-	1.2
Roots and tubers							
Own production	69.4	91.3	93.9	94.6	96.8	86.8	88.5
Purchases	30.7	8.7	6.1	5.4	3.2	7.9	10.8
Gift (food) from family members	-	-	-	-	-	5.3	0.6

Household food insecurity scale indicator

The study also added information on the availability of food in the past one month. Compared to the baseline, findings show an improvement level of food insecurity across the project area for instance, results in table 15 below reveal that there has been a reduction in the number of HH who got worried that they would not have enough food in the past 4 weeks from 90% at baseline to 56.8% currently. Similarly, among those who got worried about the availability of food, majority (64.2%) report that it rarely (Once or twice in the past four weeks) compared to the baseline where majority reported that it sometimes happens (Three to ten times in the past four weeks). There were no major sub county variations however; majority of the respondents in Bubutu Sub County (60.6%) reported that they are not worried about not having enough food.

Table 6: Household food insecurity scale

	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
In the past four weeks, did you worry that your household would not have enough food?							
Yes	60.0	53.1	58.7	69.0	39.4	65.0	56.8
No	40.0	46.9	41.3	31.0	60.6	35.0	43.2
How often did this happen?							
Rarely (Once or twice in the past four weeks)	54.8	70.6	76.0	72.5	46.2	53.9	64.2
Sometimes (Three to ten times in the past four weeks)	35.7	20.6	16.0	20.0	46.2	42.3	28.0
Often (More than ten times in the past four weeks)	9.5	8.8	8.0	7.5	7.7	3.9	7.8
In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?							
Yes	58.6	48.4	46.0	67.2	34.9	60.0	51.8
No	41.4	51.6	54.0	32.8	65.2	40.0	48.2
How often did this happen?							
Rarely (Once or twice in the past four weeks)	61.0	74.2	62.1	66.7	34.8	54.2	60.4
Sometimes (Three to ten times in the past four weeks)	31.7	16.1	31.0	30.8	60.9	45.8	34.2
Often (More than ten times in the past four weeks)	7.3	9.7	6.9	2.6	4.4	0.0	5.4

3.2.3. Objective 3 Economic empowerment

3.2.3.1. Improvement in Household Income

Results (in table 16) show that nearly all (97.8%) beneficiaries are engaged in crop farming compared to 61% at baseline. There has been an increase in the number of beneficiaries engaged in animal rearing and trade from 14% at baseline to 60.7% and from 10.2% at baseline to 34.9% respectively. The main crops grown that generate income include; coffee, onions, maize and beans. Animals reared include; cows, goats, pigs and sheep. Poultry farming include birds such as hens, turkey and ducks. Overall, these results show an increase in the number of HH engaged in IGAs as well as diversification of IGAs which could be attributed to beneficiaries' adoption of better farming practices and trainings in IGAs as well as training in financial literacy.

Table 7: Main sources of income

	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
Crop Farming	97.1	96.9	100.0	96.6	98.5	97.5	97.8
Animal rearing	68.6	60.9	47.6	60.3	65.2	60.0	60.7
Trade	32.9	23.4	38.1	43.1	31.8	45.0	34.9
Salaried employment	1.4	0.0	3.2	0.0	0.0	0.0	0.8
Other specify)	2.9	14.1	6.4	1.7	3.0	2.5	5.3

Results in table 17 below show that most (45.7%) of the households earn an average monthly income of UGX 100,000 below. At baseline time, 73% of the households were earning below UGX 100,000. A sizeable proportion (21.6%) of the households earns average income of UGX 110,000-200,000 per month from 17% at the baseline time, and 13% earn 210,000-300,000. This positive change in incomes could be attributed to the increase in number of beneficiaries engaged in IGAs especially, crop farming, animal rearing and engagement in small scale trade.

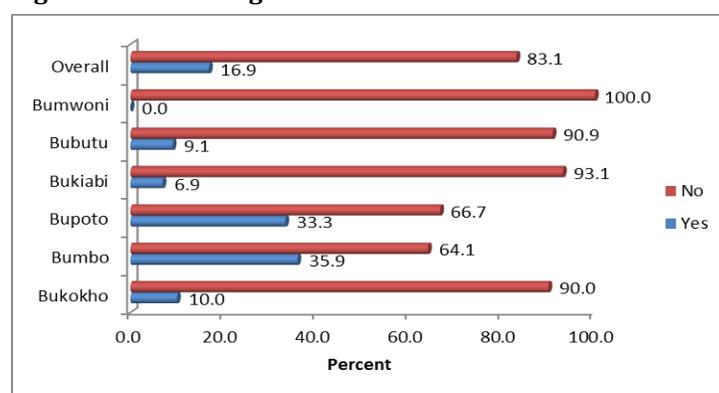
No major sub county differences were noted except for Bukiabi Sub County where more (16%) households were earning UGX 100,000 below. In regard to expenditure, majority (68%) of the household spend UGX 100,000 or less while 22% spend UGX 110,000-200,000. No major sub county differences were noted.

Table 8: HH Income levels

	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
100,000 below	35.7	42.2	54.0	31.0	66.7	42.5	45.7
110,000-200,000	17.1	29.7	19.1	31.0	10.6	25.0	21.6
210,000-300,000	14.3	9.4	11.1	20.7	12.1	10.0	13.0
310,000-400,000	10.0	7.8	3.2	6.9	4.6	12.5	7.2
410,000-500,000	8.6	7.8	4.8	3.5	1.5	5.0	5.3
Above500,000	14.3	3.1	7.9	6.9	4.6	5.0	7.2

3.2.3.2. Marketing

Figure 4: Sale through PMG



A review of project documents show that the project also sought to support FFS groups to register as producer marketing groups (PMGs) to facilitate linkages for beneficiaries to other services including marketing. Discussions with projects staff show that beneficiaries have been encouraged to bulk and sale through PMGs. However, HH interviews with beneficiaries show

that very few (16.9%) are selling their products through PMG (see figure 4). Most of these were reported in Bumbo (35.9%) and Bupoto (33.3%). Among those who were selling

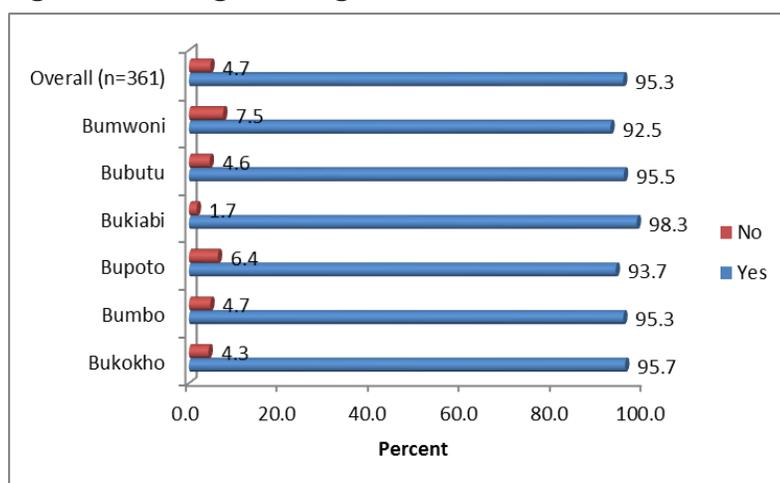
through PMGs, majority reported benefits related to high prices (80.3%) due to collective bargaining power and ready market (65.6%). However, there some challenges reported including transport burden to the collection centers (37.7%) and storage (31.2%) at home and the collection centers (see table 18 below).

Table 9: Benefits and challenges of selling through PMGs

	SUBCOUNTY					Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	
Benefits						
Ready market	57.1	73.9	57.1	50.0	83.3	65.6
High price	100.0	56.5	100.0	75.0	83.3	80.3
Other	0.0	4.4	0.0	0.0	0.0	1.6
Problems						
Low prices	0.0	0.0	4.8	25.0	0.0	3.3
Transport burden	57.1	21.7	52.4	50.0	16.7	37.7
Storage	42.9	47.8	19.1	25.0	0.0	31.2
Insufficient volumes	0.0	0.0	9.5	0.0	16.7	4.9
Low profit margins	0.0	8.7	4.8	0.0	0.0	4.9
Mistrust of Leaders in PMGs	14.3	4.4	4.8	0.0	0.0	4.9
Other	28.6	30.4	19.1	50.0	66.7	31.2

3.2.3.3. Training on savings and credit services

Figure 5: Training on savings



Training on savings and credit services is critical for increased awareness, access and utilisation of these services which is critical for local economic development and poverty reduction. Survey participants were asked on whether they have ever received this form of training. Overall, 95.3% reported having been trained in savings and credit services with the highest percentage being in Bukiabi sub

county (98.3%) and lowest in Bumwoni Sub County (92.5%). Bumwoni Sub County has the highest number of households that has never been trained in savings and credit services, and this needs to be addressed. Among those who received the training, almost all beneficiaries reported savings management (96.8%) and more than three quarters (79.6%) reported to have received training in loan usage. In addition, 31.9% reported to have received training in record keeping, 25.2% received training in leadership and only 18.3% received training in marketing (See table 19 below).

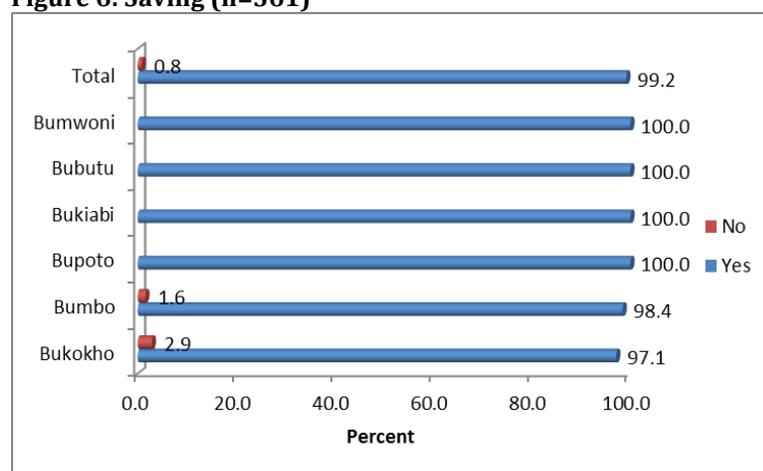
Table 10: Issues covered during the trainings

Issues covered	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	

Record keeping	20.9	54.1	49.15	19.3	22.22	24.32	31.98
Marketing	7.46	39.34	23.73	21.05	6.35	10.81	18.31
Leadership	19.4	36.07	25.42	31.58	11.11	32.43	25.29
Savings management	97.01	93.44	96.61	96.49	98.41	100	96.8
Loan usage	64.18	88.52	93.22	71.93	82.54	78.38	79.65
Other (specify)	=	1.64	3.39	1.75	4.76	5.41	2.62

3.2.3.4. Saving Mobilization

Figure 6: Saving (n=361)



The study sought information on saving situations among households. Findings in table 18 show that majority (99.2%) of households were saving any money. This is a significant improvement compared to the baseline study findings that revealed that only 32.5% of households were saving money and points to the successful savings mobilisation during project implementation. Overall,

the household capacity to save is an indication of increased incomes and poverty reduction.

Table 11: Saving institutions

	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
Formal Banks	-	-	-	-	-	2.5	0.3
Micro finance institution (MFI)	-	-	-	-	-	2.5	0.3
SACCO	1.5	3.2	6.4	1.7	1.5	-0	2.5
VSLA group	98.5	100.0	100.0	100.0	100.0	100.0	99.7
Cooperatives	1.5	-	-	-	-	-	0.3
Others specify	-	-	6.4	1.7	3.0	-	2.0

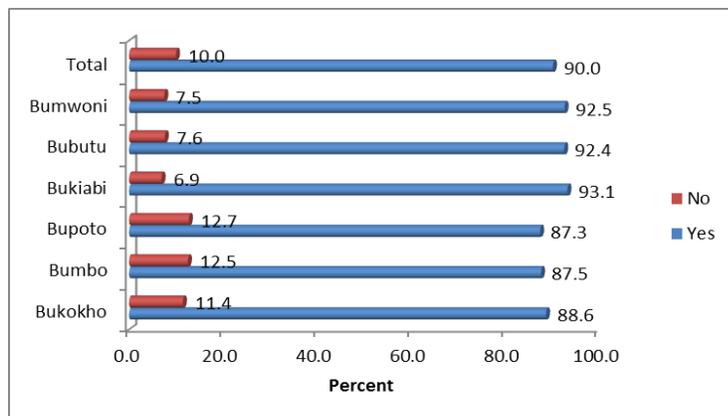
In addition, among those who were saving, almost all (99.7%) were saving with VSLAs. These results show that there has been an increase in the number of HHs saving with VSLAs compared to the baseline (48%). These results are not surprising since the project was promoting the concept of VSLAs among the beneficiaries. According to the mid-2017 project report, there were 108 active VSLA groups with a total savings portfolio of UGX 359,833,840, 3,233 members and average savings per member is UGX 152,631. The importance of VSLA for household savings is captured in the case of one person cited in the mid 2017 project report:

“At the beginning I thought I was too poor to save money weekly but during the training I realized I have resources that I can convert into money, VSLA is favourable

not like Bank which target the rich people and not accessible, but here our money is safe and accessible anytime”.

3.2.3.5. Access to credit

Figure 7: Proportion that have accessed loans



1. Regarding accessing credit services, majority (90.08%) had accessed loans while only 9.97% had not accessed the loans (see figure 7). This is a significant improvement from the baseline findings that indicated that only 17.4% of households were accessing credit services and 82.6% were

not accessing credit services. Among those who had accessed a loan, nearly all (98.5%) had accessed it from VSLAs (see table 20 below). Village Savings and Loans Associations were the main source of loans at baseline (48.4%) and this has increased to 98.5% as per the study findings. This positive change implies increased level of awareness by the community of credit services and deepening of VSLAs services within the project area.

Table 12: Source of loan

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Formal Banks	-	3.6	1.8	-	-	2.7	1.2
SACCO	-	-	7.3	1.9	-	-	1.5
VSLA group	98.4	98.2	98.2	100.0	98.4	97.3	98.5
Others specify___	1.6	-	1.8	1.9	1.6	-	1.2

The mid-2017 project report provides a summary of the number of VSLAs, total savings and total loaning. Total membership of VSLA members stands at 3,233 of whom 2,668 are from vulnerable households. It is evident that Bukiabi ranks highest among the sub counties in numbers of VSLAs, savings and loan portfolio, while Bupoto subcounty was the lowest on all these aspects as indicated in the table 22 below.

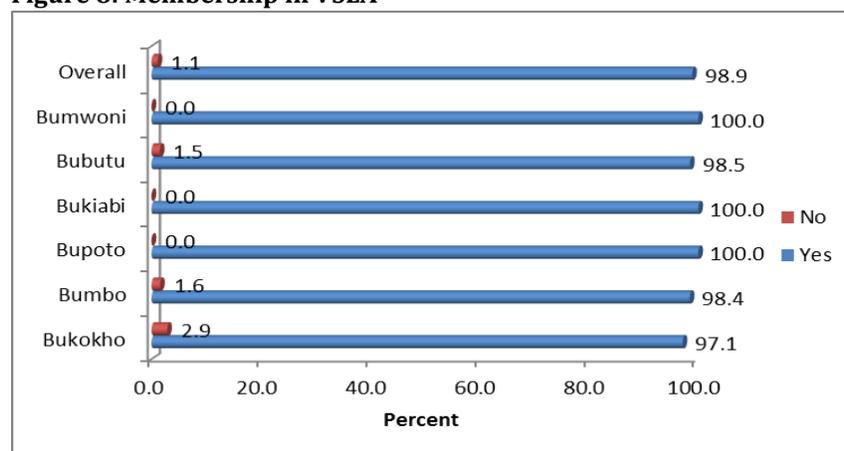
Table 13: Summary of Sub county VSLA performance of VSLA groups

Sub county	Number of groups.	Total Savings	Total Loaning
Bumbo	18	42,371,300=	51,369,460=
Bubutu	20	57,776,500=	63,838,200=
Bumwoni	16	60,112,400=	67,117,000=
Bukiabi	22	109,071,600=	130,222,720=
Bupoto	13	30,302,040=	34,409,650=
Bukokho	19	60,200,000=	70,838,200=
Grand Total.	108	359,833,840=	425,187,430=

Mid-2017 EPFOSE project report

3.2.3.6. Membership in VSLAs

Figure 8: Membership in VSLA



The study also sought information on households in VSLAs. Findings in figure 8 show that majority (99%) were members of VSLAs. This is a big improvement in relation to the baseline which indicated that only 33.3% of households as being members in VSLAs. This

shows that mobilisation of households into VSLAs has been widespread with potential for increased savings and access to VSLA-based credit services. About 90% of the HH beneficiaries reported to have been in VSLAs for about 1-3 years (see table 22 below) which indicates further the significance of project activities in mobilising households for VSLA membership. With the reported benefits realised from the VSLAs, such inclusion is integral for improved household livelihoods, poverty reduction and leveraging household access to other critical services in the community.

Table 14: For how long have you been in savings group?

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Less than a year	1.47	3.17	1.59	00.0	00.0	00.0	1.12
1-2years	33.82	41.27	55.56	43.10	49.23	70	47.34
2-3 years	52.94	49.21	26.98	50.00	43.08	30.00	42.86
More than 3 years	11.76	6.35	15.87	6.90	7.69	00.0	8.68
Total	19.05	17.15	17.65	16.25	18.21	11.20	100%

Generally, there are noticeable increased benefits reported by households from being members of FFS. In all sub counties, there was report of increased access to better seeds, access to better farming methods and access to credit because of being FFS members. Majority (65%) of members reported that this has helped them to access modern farming methods, access to cheap credit (66.7%) and access to better seeds (60.2%). By using FFs for marketing their produce, it implies that farmers have potential for increased agricultural production (see table 15 below).

Table 15: Relevance of VSLA

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Marketing of produce	13.2	39.7	36.5	20.7	4.6	12.5	21.6
Access to better seeds	60.3	54.0	54.0	58.6	64.6	75.0	60.2
Access to better farming tools	47.1	55.6	27.0	55.2	24.6	37.5	41.2
Modern farming methods	60.3	66.7	58.7	82.8	64.6	55.0	65.0
Access to cheap credit	61.8	60.3	68.3	60.3	84.6	62.5	66.7
Other(specify)	2.9	3.2	3.2	3.5	3.1	5.0	3.4

It is evident from the findings that VSLAs are central in enabling savings mobilisation and credit access by the beneficiary households. As a sign of increased financial deepening in the project area, there is an emerging trend where VSLAs are forming SACCOs. This was reported in Bukiabi Sub County where four VSLAs have come together, constructed a permanent building for their offices and have opted to form a SACCO.

They have consulted us, we have linked them to Post Bank, and we have trained them on how to become and operate a SACCO. On the for commissioning this SACCO, we shall invite chairpersons of other groups to witness what their groups can become (KII_ Economic Empowerment coordinator)

The transformation of VSLAs is a positive step for increasing community accessing to savings and credit facilities as well as the connection between formal and informal banking services. SACCOs will benefit more community members than those in the VSLAS that come together.

3.2.4. Improved Gender relations

The project also seeks to address gender disparities as a cross cutting issue. Discussions and interviews with beneficiaries revealed that as a result of EPFOSE supported interventions, the decision-making power of women over income has gradually improved.

In-depth interviews and FGDs revealed that it is the women who generally collect and hold the income gained through vegetable sales, VSLA but decisions on its use is generally decided jointly. Generally, money generated from sell of vegetable sales, VSLA was reportedly used to meet personal needs of the beneficiaries, household needs and school fees for children.

The availability of kitchen gardens on the other hand was reported to reduce the pressure on the men to buy sauce (vegetables) on a regular basis. This has impressed the husbands and has improved the husband-wife-children relationship of working together to see development in their homes and to look after their goats or dairy cow. This is illuminated in the voice below:

We used to have conflicts with our neighbors and other people especially when looking for vegetables, but now with the backyard gardens even people come at home and ask for some. (FGD with beneficiaries, Bukiabi)

The project has improved relationships at home. Before men used to buy everything at home and know the financial issues alone but now days it is not the case, they even come back home and find when the food is ready, and it is the whole family which sits and makes the budget for the proceeds. (FGD with beneficiaries, Bukokho)

Ever since I entered last year I have seen many changes even I used to beat my wife but now I also allowed my wife to join the group and so there are no wrangles (FGD men Bukokho).

It's good and bad but also men we suffer since women were emancipated, they delay coming back home but also, she helps me to buy some items like paraffin in the house (FGD men Bumwoni).

In addition, results show that there has improvement in decision making and sharing of responsibilities at home compared to the baseline. On all the notions measured under HH decision making, more than half of the beneficiaries reported joint decision making with their partner (see table 25 below). Decisions in the household were reported to be based

on dialogue rather than authoritarianism. This ensures that decisions are made putting the best interest of the all members of the household at the fore. These results are attributed to the trainings and sharing of experiences from successful households guided by community based trainers on gender. These have lead the community into understanding and defining of gender, roles and responsibilities which people are conditioned to perceive as male or female. Similarly, these results also show a shift from the traditional social set up in which husbands used to completely dominate decision making in the household to joint decision making across all the sub counties. This positive change is also partly attributed to women’s involvement in income generating activities and financial contribution to sustaining the family.

Such increasing joint decision making at household and community levels was also reported to have significantly contributed to reducing gender based violence and easing implementation of community development projects. Beneficiaries reported that women are now allowed by their husband to participate in community activities.

There is a change in gender relations in a positive way, because there was a training, we trained the FFS facilitators in gender and environment, it was a full module and I think they learnt a lot especially gender and control of environmental resources. Most of the trainings we would organize, you would find that the participation of women is okay, at least like 30% compared to the previous trainings that we have been carrying out in communities before even this project. There is a training we had some time back, and the biggest percentage was men and we had to suspend it. But this was among the first trainings to capture their responses, so most of our beneficiaries have been gender responsive because of what we impacted in them at the earlier stages. So it is a positive impact. (KII Environmental protection officer)

Table 16: Household decision making

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Buying Food and clothing and utensils for the family							
Yourself	28.6	40.6	25.4	13.8	28.8	22.5	27.2
Partner	20.0	3.1	20.6	12.1	19.7	15.0	15.2
Jointly	51.4	54.7	50.8	72.4	51.5	62.5	56.5
Someone else	-	-	-	1.7	-	-	0.3
Yourself and someone	-	1.6	3.2	-	-	-	0.8
Making a decision to study or work outside home							
Yourself	20.0	39.1	25.4	12.1	21.2	17.5	23.0
Partner	14.3	6.3	15.9	15.5	19.7	17.5	14.7
Jointly	65.7	50.0	57.1	70.7	57.6	62.5	60.4
Someone else	-	-	1.6	1.7	1.5	-	0.8
Yourself and someone	-	4.7	-	-	-	2.5	0.8
Buying some assets for the home such as bicycles, radio and land.							
Yourself	21.4	28.1	25.4	12.1	21.2	10.0	20.5
Partner	18.6	12.5	15.9	12.1	24.2	12.5	16.3
Jointly	60.0	50.0	55.6	74.1	53.0	72.5	59.8
Someone else	-	6.3	1.6	1.7	1.5	-	1.9
Yourself and someone	-	1.6	1.6	-	-	2.5	0.8
Disposing off vital assets such as land							
Yourself	14.3	26.6	15.9	5.2	18.2	10.0	15.5
Partner	12.9	6.3	11.1	6.9	18.2	15.0	11.6
Jointly	71.4	57.8	61.9	86.2	59.1	67.5	67.0
Someone else	0.0	1.6	3.2	1.7	1.5	-	1.4
Yourself and someone	1.4	1.6	1.6	-	-	2.5	1.1
NA	-	6.3	6.4	-	3.0	5.0	3.3

Participation in community development activities							
Yourself	24.3	29.7	25.4	8.6	16.7	15.0	20.5
Partner	17.1	9.4	15.9	8.6	24.2	12.5	15.0
Jointly	58.6	57.8	57.1	81.0	57.6	70.0	62.9
Someone else	-	1.6	1.6	1.7	1.5	-	1.1
Yourself and someone	-	1.6	-	-	-	2.5	0.6

Additionally, there appears to be a sense of personal empowerment among female beneficiaries. Economically, the initial vulnerability and insecurity for most women have largely been substituted by feelings of empowerment and equality, as access to and control over incomes and other household resources has increased. Women are now taking over the roles which were believed to be for men i.e. planting of trees, construction of houses, transacting small business (IGAs) buying household assets. The MTR assessed household asset ownership on four aspects; land, present house/dwelling place, livestock, farm tools, transport means and furnishings (bed, modern stove, radio). The interest was to find out whether respondents owned or never owned assets and whether assets were independently owned by respondents or jointly with partners. Compared to the baseline, results in table 26 below show improvement in access to and ownership of resources. In regard to land ownership, majority (82%) of the beneficiaries reported joint ownership with their partners compared to 66% at baseline. Similarly, majority (83.7%) of the beneficiaries reported joint ownership of the house they live in compared to 55.3% at baseline. In relation to livestock ownership, majority (81.2%) also reported joint ownership compared to less than half of the respondents (47.7%) at baseline. Overall these results show increase in joint ownership and access to control over vital resources at HH level.

Table 17: Ownership of resources at HH level

	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	Total
Land							
Does not own	2.9	3.1	9.5	-	3.0	5.0	3.9
Jointly owns	90.0	71.9	73.0	96.6	78.8	82.5	82.0
Owns alone	7.1	25.0	17.5	3.5	18.2	12.5	14.1
The house/dwelling							
Does not own	2.9	1.6	7.9	-	1.5	-	2.5
Jointly owns	90.0	75.0	77.8	94.8	80.3	85.0	83.7
Owns alone	7.1	23.4	14.3	5.2	18.2	15.0	13.9
Owns alone	4.3	15.6	15.9	1.7	10.6	10.0	9.7
Livestock (goats, cows, chicken)							
Does not own	2.9	9.4	6.4	6.9	3.0	5.0	5.5
Jointly owns	87.1	73.4	74.6	91.4	80.3	80.0	81.2
Owns alone	10.0	17.2	19.1	1.7	16.7	15.0	13.3
Farm tools (hoes, panga, slashers, wheelbarrow)							
Does not own	2.9	1.6	-	1.7	-	-	1.1
Jointly owns	90.0	76.6	81.0	94.8	78.8	85.0	84.2
Owns alone	7.1	21.9	19.1	3.5	21.2	15.0	14.7
Transport means (bicycle, car, Motorcycle)							
Does not own	50.0	39.1	33.3	31.0	24.2	32.5	35.5
Jointly owns	45.7	48.4	52.4	67.2	59.1	65.0	55.4
Owns alone	4.3	12.5	14.3	1.7	16.7	2.5	9.1
Furnishings (bed, modern stove, radio)							
Does not own	4.3	7.8	1.6	3.5	3.0	2.5	3.9

Jointly owns	88.6	76.6	77.8	94.8	78.8	85.0	83.4
Owns alone	7.1	15.6	20.6	1.7	18.2	12.5	12.7

Discussion with beneficiaries revealed that this positive change is attributed to trainings provided by TSA, women economic empowerment through VSLAs that has increased their ability to independently or jointly purchase assets with their husbands. However, although results show that there is increase in joint decision making and ownership of resources, discussion with key informants revealed that men still have greater access to, control and ownership over most of the resources. It was revealed that although women have gained access to some of the resources, they lack full control and ownership of most of the resources especially land, livestock and other assets.

In relation to environment, using energy in any household is not limited to any gender. Traditional bio fuels, such as crop residues, dung and fuel wood are still used in rural areas, but these have diverse impacts especially on women’s health, due to the physical burdens involved in gathering and transporting these fuels, as well as the indoor air pollution resulting from fires (Parikh, J., et al., 2002).

Discussions and interviews revealed that energy cooking stoves and biogas technology have provided benefits to women and children; it has reduced smoke related diseases such as eye irritation and headaches, and reduced work related to cleaning and collecting firewood. Similarly, it was observed that biogas plants have reduced the time spent on collecting fire wood especially by women and children. It was not easy to quantify the time spent on collecting firewood. However, during FGDs, participants revealed that now days women and children spend little time for collecting fire wood. Time saved was used for other activities such as doing homework, attending community meetings, gaining access to education and information and engaging in other economic activities. For details see remarks from study participants below.

Since the work of collecting firewood is mostly done by women the introduction of biogas has reduced on this burden among the user households. The women are somehow relaxed and have time to do other activities. (KII environmental officer)

According to the tradition the woman suffers most with family cores like the cooking off course the traditional setting cannot be thrown overboard it is the role of a woman to cook unlike these days where you young men do the cooking you know these are gender norms set known by the Bagisu so you can see how the women suffer...so by planting trees the EPFOSE addresses this because if a husband went home and found no food on table because of fire wood this wood result into a quarrel and in the end domestic violence so they plant trees for the environment and use the brunches for cooking (KII District official Manafwa).

It was also revealed that women are able to participate in home based enterprises (such as sell of vegetables from Kitchen gardens, poultry keeping, selling of second hand clothes) to generate additional income or at least generate income in a way that suits their life and obligations. However, the biogas stoves were only used as a complementary stove to the traditional stoves and could not fulfill the variety of cooking needs of local women. For instance, they needed to use traditional stoves for cooking big meals.

3.2.5. Main Factors for Success; Implementation and Stakeholder participation

Community participation

Discussion with community members and projects documents show that EPFOSE project has been using Community Based Trainers (CBTs), Community Action Team (CATs) in the implementation of the project activities in order to ensure sustainability of project interventions. The CATs included VHTs, local leaders, religious and cultural leaders. The CBTs and CATs were recruited in consultations with the local government and community structures in the target sub-counties. These received training on how to effectively deliver services, emphasizing food security and nutrition, economic empowerment and environmental protection. These trainings provided the CBTs and CATs with basic knowledge on food security and nutrition, economic empowerment and environmental protection and how to effectively and accurately pass on this information to the vulnerable HHs.

Of course, as EPFOSE, it had some structures around like the farmer field schools, community based trainers. So, our entry point was now through those farmer field school facilitators. We built their capacity after they delivered the information to the beneficiaries on ground. The farmer field schools facilitators were like a conduit for transferring the information to the primary beneficiaries. Any training, we would first capture them so they deliver it. They have been good disciples. They were eager to learn. To some, the environmental concept was new to them, they were familiar with things like VSLA so they were eager to learn and deliver. Like when we trained them to make bee hives, everyone was involved in learning how to make a bee hive so that they could go back and teach and make their own at home. So, they are eager to learn and then they learn very fast compared to when you use the CDO (KII, District Official).

Local government participation/ownership

A review of project documents and discussions with district officials revealed that from the inception of the EPFOSE project, Manafwa district local government was involved especially in the design, selection of target sub counties, baseline study, and selection of beneficiaries.

In the whole of this region there are areas, for example let's talk about the environment, there are areas that are more hit by lack of trees and so forth. So when a project is coming to a district we sit down and discuss because we have a number of sub-counties and areas, so which area would be most suitable for kind of project. And the district counselors and all of us the technical staff brain storm and eventually we identify the places that we think this project will be most viable. For example, when you talk about environment, when you look at the sub-counties where these projects are now that is the most hit sub-county when it comes to tree cover. And it is also close to Mt. Elgon where a number of intruders are encroaching upon on the forest, and cutting trees and so forth. So having an intervention in that area helps awaken people to understand that this is very important. And also when you are taking a project to the people you do not just plant it there, there is sensitization of people and helps people to know that this is a concern and we have to do A, B, C, D (KII District official).

In addition, review of project documents showed that TSA/EPFOSE has been participating in the quarterly District meetings organized at the District. The meetings bring on board several stakeholders including the district leaders, District Local Council chairperson (LCV), Chief Administrative officer (CAO) Manafwa district, District Community Development Officer (DCDO), among others, CDOs from the sub counties, health worker at

the sub county level, CATs, Facilitators and HH members from the six sub counties of the project catchment area. It is during these meetings TSA has shared the EPFOSE project's progress, best practices, challenges and lessons learnt. The district would also offer feedback on the project and provided suggestions for better implementation. The project together with sub county local government officials also developed sub county environmental development plans especially in the pilot sub counties of Bumbo, Bukokho. These plans have guided the implementation of environmental protection activities in the specific sub counties.

We developed what we call environmental development plans as one way of capturing key environmental aspects on the counties and coming up with the measures. So, in the sub counties those we piloted among the six, maybe I can give an example of Bumbo and Bukokho, you find that from that time, every financial year, the budget for tree planting is there (KII Environmental officer)

In addition, the district and sub-counties have been actively involved the monitoring and supervision of EPFOSE activities. Project staff revealed that sub-county community development officers (CDOs) and chiefs took on the supervision of project activities within their respective sub-counties and the district's community services department together with the natural resources office conducted random supervision visits to implementation areas. All the technical heads in the Sub-counties appreciate the project's contribution to food security and nutrition, economic empowerment and environmental protection in their respective jurisdictions and request for more involvement of local government staff in both implementation and support supervision.

I co-ordinate a number of staff, actually at the time when the project came I had about over thirty Community Development Officers at sub-county level. So, I do not go there as me but in every county, there is a CDO. So, in this program we had the CDO's at different levels get involved purely, actually the whole of mobilization and planning process and so forth and so with EPFOSE the CDOs and EPFOSE staff who were doing the community sensitization in those specified sub-counties. So, my office as a District Community Development Officer was fully evolved (KII District official).

Partnerships

Finding show that TSA established a partnership with other institutions to ensure effective & adequate service delivery. These partnerships have enabled the availability and accessibility food security and nutrition, economic empowerment and environmental protection services in the project area. The table below indicates the various partnerships TSA established under EPFOSE and their roles.

Table 18: Partnerships

Partner Organization	Role of Partnership
Manafwa District	Directly implemented the environmental component of EPFOSE project Participated in CBTs and CRPs Trainings, Monitor the implementation of project Linkages to services
Sub-Counties (Bukokho, Bumbo, Bupoto, Bukiabi, Bubutu, Bumwoni)	Participated in CBTs and CRPs Trainings, Monitor the implementation of project Linkages to services
Local Government Health Centres	Provided personnel for nutritional outreaches and are also referral partners for nutritional services
Uganda Women Entrepreneurship Program	Provided technical expertise and training in financial literacy

	and formation of SACCO/Village bank
Biogas Uganda	Provided technical expertise and training in use of biogas
Trauma Healing Centre	Linkages to Livelihood services
Uganda Wildlife Authority	Proper land management, afforestation and reforestation

3.3. Project Efficiency

The project main lines of expenditure in the four years included: salaries, benefits, travel, equipment, administration, contracts and equipment. Overall, salary and training have taken the biggest share of project expenses with salaries taking 34% and training 32%. As budgeted, the least expenditure (3%) was on equipment followed by contracts (5%).

The percentage of the budget spent was highest in year 1 (97%), followed by year II (91%). The least project expenditure was in 2017 with only 44% of the budgeted resources utilised. There reduction on all expenditure items with the highest reduction in salaries, travel administration and training.

More expenditure than the budgeted amount was evident mainly in travel, contracts and equipment. In 2014 (year 1), travel and contract expenditure exceeded the budgeted amount by 12% and 3% respectively. In 2015 (year II), there was 37% excess of travel expenses than the budgeted amount. In 2016 (year III), variation from the budget was mainly caused by the purchase of unbudgeted equipment.

Overall, the expenditure pattern shows that there was efficiency in implementation of EPFOSE project activities. Generally, management worked within the budget except for a few variations. This implies that there were adequate resources for project work. It is worth noting that since 75% of the budget has been used so far in the last four years. This to some extent exhibits lack of absorptive capacity by the project management team. There is need to use this resources allocating them to the most priority activities that can help to increase capacity building and sustainability.

Discussions with the project team revealed a number of aspects that have constrained implementation of project activities and hence affected efficiency and effectiveness of the project in relation to achieving its objectives with the resources available.

The project implementation team has been using only one motor cycle which is used by both the coordinators for economic empowerment and food and nutrition security coordinator. As a result, the two have been planning jointly to be in the same sub-counties to use the motorcycle which sometimes constrains their work since they may have different work demands in different sub-counties.

There were also concerns raised about the limited budget for the trainings conducted. The project team reportedly coordinates training for VSLAs in the following areas; soap and *jik* making, making baskets, necklaces, and making table clothes, among others. Whereas this is a good initiative the annual training budget of UGX. 13,000,000/= was considered

inadequate because experts to train the different groups have to be outsourced. As a result, only group chairpersons are trained to go and train other group members.

The splitting of Manafwa district to form of Namisindwa District also affected EPFOSE project implementation by affecting structures for project implementation. Whereas all the six sub counties were put in the new Namisindwa district, some staff who were originally part of the project were transferred to other areas in Manafwa district.

Most staff that were part of the project remained in Manafwa district. Those in the new district (Namisindwa) needed training and orienting in the project design. (KII- Coordinator, Economic Empowerment)

Other challenges that have influenced implementation include high community expectations. Despite the great contributions of EPFOSE project in terms of skills and knowledge in farming, environment and business, community members reportedly have expectations of material support. Sometimes they openly complain that they have learnt a lot, but they should be given some material support such as spray pumps. Furthermore, there are also cases of persons who are extremely vulnerable like those with disabilities and the elderly who deserve some material assistance rather than only trainings. To address this problem, the project emphasized the importance of community empowerment through access to skills and knowledge as the key

Furthermore, the EPFOSE project partnership with the Uganda Wildlife Authority (UWA) was reportedly a challenge in the early phases of project implementation. This was mainly because of the unfriendly relationship between UWA and the community because of the Mountain Elgon forest reserve. People claimed this land was theirs yet UWA had to protect the reserve as part of its mandate leading to tensions. People hated the project because of UWA but the situation has improved because of government intervention. As a result of community members' death at the hands of UWA, it reached a situation where UWA was equated to "*wuwa*", a Swahili word meaning to kill. This mainly affected project implementation in Bupoto subcounty.

3.4. Project Impact

Assessing impact is a complex process given that there are always some confounders especially in relation to other players like government, private sector and CSOs that may be undertaking related activities in the project areas. However, it is clear from the evaluation findings that EPFOSE contributed to improving livelihoods through promoting income generating activities that were reported to have positively affected the socio-economic status of beneficiary households. Below we present only a summative picture given that the details are in the results section.

The project also contributed to improved agricultural productivity through promotion of especially through improved farming practices among the beneficiary communities and households. The improvements in agricultural productivity had a positive impact on food security and nutrition of beneficiary households therefore helping to boost the health of

members of the beneficiary households. This further contributes to productivity because for a household to be productive, it must have health household members. Better nutrition also helps to reduce vulnerability to diseases that arise from poor nutrition and this contributes to reducing the costs spent on health care seeking and saves time that can be invested in productive activities.

The results clearly show that work with VSLAs helped to promote the savings culture and to improve relationships and cohesion among the members of VSLAs and their families. This cohesion is linked to improving the networks and generally social capital among the beneficiary communities. Similarly, through improving networks and cohesion, the project impacted positively on institutional growth of VSLAs. A case in point is the evolution of four VSLAs in Bukiabi sub-county to form a SACCO that is currently running.

One of the major areas that EPFOSE has come to be associated with is contributing to improvement in gender relations between men and women as well as women economic empowerment through VSLAs that has increased their ability to independently or jointly purchase assets with their spouses. Although men still have greater access to, control and ownership over most of the resources, women have increasingly participated in decision making and to independently own assets. Similarly project activities particularly energy saving stoves have complimented gender relations by saving time to enable women to attending community meetings, gaining access to education and information and engaging in other economic activities.

EPFOSE also contributed to improving linkages between the district and sub-county local government departments especially production, community development and environmental protection with the beneficiary communities. These linkages are instrumental in the community continuing to access extension services and information as well as demanding services from the respective offices that have the mandate to meet their needs.

However, it is important to note that EPFOSE project did not achieve these impacts in isolation. It worked in partnership with district local government departments, community structures and TSA church structures. Therefore these results should be seen as coming from the strategy of building partnerships with structures and actors at various levels.

3.5. Project Sustainability

In the most obvious sense, the term “sustainable” refers to something which can be sustained, or kept going (Sugden 2003).¹ “Sustainability is the ability of a . . . development project to maintain or expand a flow of benefits at a specified level for a long period after project inputs have ceased.”² Similarly, a number of key considerations have been identified in the literature as critical to achieving sustainability in development. For example, the UNN designates three “pillars of sustainability”: economic, social, and environmental (UN 2002). McConville and Mihelcic (2007) further subdivide the social

¹ Sugden S. 2003. Indicators for the Water Sector: Examples from Malawi. London, UK. WaterAid.

² WASH Technical Report no. 94: The Sustainability of Donor-Assisted Rural Water Supply Projects (Hodgkin 1994)

pillar into three components: socio-cultural respect, community participation, and political cohesion.³

Table 19: Sustainability factors

Social Sustainability	Socio-Cultural Respect	A socially acceptable project is built on an understanding of local traditions and core values.
	Community Participation	A process which fosters empowerment and ownership in community members through direct participation in development decision-making affecting the community.
	Political Cohesion	Involves increasing the alignment of development projects with host country priorities and coordinating aid efforts at all levels (local, national, and international) to increase ownership and efficient delivery of services.
Economic Sustainability		Implies that sufficient local resources and capacity exist to continue the project in the absence of outside resources.
Environmental Sustainability	Environmental Sustainability	Implies that non-renewable and other natural resources are not depleted nor destroyed for short-term improvements.
Source: Source: McConville 2006⁴		

From the above framework, it is clear that one of the facilitators of sustainability is participatory planning because it makes projects more acceptable. It also contributes to ownership of the project processes and outcomes. The other key issue emphasized is adaptability of a project to the context (including cultural sensitivity and respect) and needs of the beneficiaries. It also requires integrating project strategic activities into National and Local Government Plans (political cohesion) and coordinating aid efforts at all levels to increase ownership and efficient delivery of services. This makes the project relevant and creates demand for the project activities and outputs. Similarly aligning a project to the strategic plan of the implementing agency as well as the development plan of the country and district or local government where it is being implemented is a strategic step towards sustainability. However, these need to be backed up by working through and with existing local government and community structures and building their capacity and sufficient local resources to continue the project in the absence of outside resources to continue with project activities once the funding declines or phases out (economic sustainability). Last but critical is environmental sustainability. To achieve this sustainability plan or what is conveniently referred to as an exit strategy is critical. These too need to be complimented by strong internal systems for organizational development that streamline and link projects to the strategic vision and plan of the prime implementing agency.

The team therefore used these issues as key parameters to assess if the EPFOSE project has taken the right steps to ensure sustainability when the project phases out. It was noted during the evaluation that project has been implemented in a participatory manner by involving and engaging key stakeholders including the community beneficiaries, the TSA church structures, the relevant local government officials (especially the sub-county chiefs,

³ McConville JR and Mihelcic JR. 2007. Adapting life cycle thinking tools to evaluate project sustainability in international water and sanitation development work. *Environmental Engineering Science*, 24(7):937-948.

⁴ McConville JR. 2006. *Applying Life Cycle Thinking to International Water and Sanitation Development Projects: An assessment tool for project managers in sustainable development work*. Houghton, Michigan. Michigan Technological University. 19.

the community development officers and the environmental officers) and local council officials. This involvement of key stakeholders has helped to raise awareness about the project, increase its acceptability and ownership among stakeholders at the community, sub-county and the district level. Therefore, this is likely to contribute to sustainability of some of the activities and to encouraging other the local government and NGOs to continue implementing these activities.

It was further established that some of the major activities implemented by the project such as the livelihood activities, environmental protection activities, and the promotion of modern methods of agriculture, post-harvest handling and the support to VSLAs have been incorporated into the district and sub-county Development Plans. The project has developed relationships with the production department and this has facilitated linking of the VSLAs to producer organizations that are very important with respect to bulking produce and finding markets as well as making efforts to add value to the produce.

It was further established that the project has developed a strong relationship with the Village Health Teams and primary health care facilities especially in relation to nutrition and referral of malnourished children for care at the health facilities. The project has also collaborated with schools to integrate environmental protection and good nutrition into their extra-curricular activities. In respect to environmental sustainability, some milestones have been achieved in collaboration with the Department of Environment at the district including promotion of energy saving stoves, awareness about biogas projects and developing nursery beds and promoting tree planting.

Interviews with district and project staff indicate that this has been achieved through strengthening partnerships with the existing district structures and consistently participating in meetings organized at the district as well as sharing project reports and plans with the district and inviting the local government officials to participate in the planning and implementation of activities. This integration of project activities or aligning them to the local government Development Plan priorities is a step in the right direction as far as sustainability is concerned.

So, we engaged those structures, and also another strategy was involving the sub county leadership, the office of the CDO: Those are the planners at the sub county, they look at planning. So we believe that for sustainability purposes the CDO, once the project ends, some of the components can be copied and they mainstream them in the planning even if it was not there (KII, environmental officer).

Furthermore, EPFOSE project created the Community Action teams (CAT) at parish level comprising of different chairpersons of local council committees in the parish and headed by the parish chief. These teams were deliberately created to ensure that project activities are sustained even after the project officially winds up.

The formation of production and marketing groups was also one of the sustainability strategies of EPFOSE project. These groups have been registered, introduced to sub counties and district authorities as conduits through which households can access different services even after the project ends.

However, the drawback is that the project has not developed a sustainability plan or at its minimum an exit strategy. This means that sustainability is being done to some extent on an ad-hoc basis rather than following a systematic plan that has clear indicators and milestones for sustainability of the project activities and outcomes. There are also no clear indications of a robust resource mobilization plan to systematically mobilize funds to continue the project activities after the project phases out. It is also not clear how the current technical staffs who have gained knowledge, skills and experience will be retained to continue to support the project activities. Therefore because of lack of a comprehensive sustainability plan, economic sustainability and technical sustainability may be negatively affected when the project phases out.

3.6. Lessons Learned

Working with grass root actors; the project realized the indispensability of working with grassroots actors, such as CRPs especially VHTs, local leaders, religious leaders and community based trainers in the implementation of the EPFOSE project. CBTs and CRPs have contributed to increasing demand and access to food security and nutrition, economic empowerment and environmental protection services in the community. This has been done through consistent follow-ups in the community as well as their proximity to communities. In addition, CBTs and CRPs have been trained in provision of food security and nutrition, economic empowerment and environmental protection services. CRPs are effective in mobilization of communities especially during outreaches, community, follow-up, and referral of clients for nutritional services. Overall, involving the CRPs helped the project to understand the unique challenges that face communities served and together find sustainable and relevant solutions to them. This strategy also encouraged community ownership of project.

The other lesson learned over the course of the program is that authentic multi-stakeholder involvement in project activities is vital for tapping into resources and knowledge of other organizations. TSA endeavored to involve various stakeholders in the planning, implementation, and monitoring of all project activities. These include the beneficiaries, Community resource persons, local leaders at district, sub-county and village levels; local institutions like health centers, CSOs such as Biogas Uganda, UWEPI, among others. Through working with stakeholders, the project has benefited through technical advice and network building, making referrals of the beneficiaries to receive services as well as capacity building of project staff to effectively deliver food security and nutrition, economic empowerment and environmental protection services. This has also contributed to a greater involvement and ownership by relevant stakeholders, as a well as strengthening TSA's referral and networking strategy.

The lessons we learn; one is that engaging the district stakeholders in the implementation of project activities can easily create a sense of ownership and also at the community level. You know when the communities find a team from the district moving with an NGO, there is a message it delivers, there is a level of cooperation and hence there will be some level of ownership. Some projects just come, carry out inception, inform you about what they are going to do and then they disappear into the field. You don't know what they are going to do or what is happening, only to be called for a midterm review without even subsequent supplementation. So that one is some good lesson that it enhances a sense of ownership in terms of delivering the output (KII, district official).

Integration of services increases uptake of services and customer satisfaction. For example, provision of food security and nutrition, economic empowerment and environmental protection services at the same time. TSA integrated food security and nutrition, economic empowerment and environmental protection messages in dialogues, interactive learning sessions among community groups like VSLAs, FFS groups and schools. This increased demand and uptake of food security and nutrition, economic empowerment and environmental protection services. This has led to increased knowledge, dispelling of misconceptions and up take of family planning services. In addition, beneficiaries have been mobilized to form VSLA groups where they save and borrow money to improve their socio-economic status. Poverty has been identified as a driver to poor nutrition and environmental degradation; TSA therefore enabled many vulnerable HHs get out of the state of poverty that puts them at risk of poor nutrition and environmental degradation by engaging them in these VSLAs where they can easily access money to start up Income Generating Activities (IGAs).

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

Overall, the project achieved most of its objectives and targets. A comparison of baseline and mid-term evaluation indicators as articulated in the report shows clear indicators of success. EPFOSE has contributed to improvement of the capacity of 5,376 farming households in the six sub counties of Manafwa District to apply appropriate technologies to increase on food security and nutrition in their communities. This has increased the production/yields from the farmers' gardens and therefore improved food and nutrition security. Nearly all (97%) beneficiaries reported to have received any training in better farming practices. This shows 60% increase (from 36.7% to 97%) at the time of the baseline survey. The trainings contributed to adoption better farming technologies by nearly all farmers that participated in the survey: integrated pest and disease management (92%), use of organic fertilizers (94%), and soil and water conservation (96.4%). For example, majority of the beneficiaries (94.2%) reported an increased use of organic manure to improve soil fertility compared to the baseline (62.3%).

However, beneficiaries noted that the intensity, frequency as well as the practical demonstrations of the trainings are inadequate that need to be improved. Although the yields and production is improving due to the project interventions, there has been limited achievement in relation to marketing of the produce. Considerable efforts have been made to encourage farmers to become members of producer marketing organizations, but these have not yet translated into increasing the practice of bulking produce and selling it through producer marketing organisations. This an area where the project needs to draw lessons from other NGOs like Heifer project International and CLUSER Uganda that have been actively engaged in working with farmers through producer organisations.

Relatedly, there is a gap in relation to post harvest handling practices. The evaluation has demonstrated that during bumper harvest, there is a lot of wastage due to poor storage and little or no value chain/value addition activities that would ensure that the farmers yields

last long and are of good quality or are processed further to add value and gain more income. Therefore, follow on project activities should place a strong emphasis on post-harvest handling and value addition. The other major challenge observed was poor record keeping by farmers about their crop yields as well as the income they earn from the surplus produce. This makes it difficult for them to accurately measure the difference in yields and income from one season to another.

In respect to improving nutrition, one of the major achievements of the project has been the promotion of adoption of Back yard gardening. It was clear from interviews that before the project beneficiaries did not have any vegetable gardens however, after project intervention, many farmers established BYGs. By the time of evaluation, a total of 703 households had established BYGs. This was acknowledged by beneficiaries as one of the strategies that have led to diversification of the diet and contributed to families having a balanced diet. Therefore, a combination of increased food production, BYG and nutrition counselling has contributed to most households having more than two meals a day and enriching the meals with vegetables and fruits.

The project has succeeded in creating demand for Savings and Loans Associations (VSLAs) and a considerable number of VSLAs are transforming in SACCOS. This is likely to continue promoting the savings and investment culture and help vulnerable households to learn new skills and diversify sources of income. The evaluation clearly shows that VSLAs serve as a vehicle for accessing several services including marketing of their produce, accessing better seeds and better farming tools.

In respect to environmental protection, the project has scored highly in terms of promoting tree planting and planting of nursery gardens. This is commendable because of its potential to contribute to environmental protection and to addressing the challenge of climate change. However, there is a challenge of sustaining nurturing and growth of the trees. The growth of trees is affected due to limited or inadequate care and therefore the trees get stunted, wither or die. There is therefore need for the project to improve training including demonstration of proper care for the trees to enable them to develop and grow.

The project has also succeeded in promoting acquisition and use of energy saving stoves. It has also made some considerable success in sensitizing beneficiaries to adopt use biogas. However, use of biogas is still very limited because the cost is very high. Most of the households targeted cannot afford the cost. There is need for the project to link farmers with other service providers who can facilitate them to acquire and use biogas at subsidized costs. Similarly, although the project has made commendable efforts to promote nature based income generating projects especially beehives/bee keeping. The rate of adoption of these IGAs is low among the beneficiaries. There is need to consider promoting exchange visits and to improve use of demonstration plots while training on bee keeping.

Although the project made commendable efforts towards promoting sustainability of its activities through working with existing structures at the local government and community level and creating spaces for increasing participation of beneficiaries in the project activities, there is lack of a structured and well-defined sustainability plan and exit strategy.

There has affected the clarity, intensity and strategic vision of the project in respect responding comprehensively to the various dimensions of sustainability (economic, political, environmental and social) that are very crucial for project sustainability.

4.2. Recommendations

- 1. There is need to design mechanisms to improve the intensity, frequency and the practical demonstrations elements of the trainings.*

This would help farmers to get maximum benefits and increase adoption of modern farming technologies and practices.

- 2. There is need for TSA/EPFOSE to draw lessons from other NGOs working in Eastern and northern Uganda that have made considerable success in promoting bulking of produce and selling it through producer organisations.*

Although farmers have been oriented and encouraged to join producer marketing organisations, this is still a challenge. Heifer project International and CLUSER Uganda may provide good case studies for learning.

- 3. There is a need for projects to place a strong emphasis on post-harvest handling and improving the value chain or value addition to the produce generated by farmers.*

Given the substantial wastage of produce due to poor post-harvest handling strategies, including poor storage and limited agro-processing innovations needed to add value to the products.

- 4. In respect to VSLAs, there is need to put more emphasis on financial literacy and business development skills especially as they transform from VSLAs to SACCOS.*

This would give them the necessary tools and skills to effectively and competently transition into SACCOS.

- 5. There is also a need to systematically use VSLAs to enable farmers to access several services including messages on health, family planning and WASH.*
- 6. There is a need for the project to improve training including demonstration of proper care for the trees to enable them to develop and grow.*

The growth of trees is affected due to limited or inadequate care and therefore the trees get stunted, wither or die.

- 7. There is a need for the project to link farmers with other service providers who can facilitate them to acquire and use biogas at subsidized costs.*

8. *There is need to consider promoting exchange visits and to improve use of demonstration plots while training on bee keeping.*

Given the low rate of adoption of nature based IGAs especially beehives/bee farming among the beneficiaries.

9. *There is a need to consider developing a comprehensive sustainability plan with clear goal, objectives, activities and indicators to monitor progress of follow on projects towards sustainability.*

Although there are good indications that the project has adopted strategies to make quite a number of its outputs, outcomes and impact sustainable, there is lack of a structured and well-defined sustainability plan and exit strategy.

ANNEX

ADDITIONAL TABLES

Table 20: Post-harvest practices before project intervention and after

	SUBCOUNTY						Total
	Bukokho	Bumbo	Bupoto	Bukiabi	Bubutu	Bumwoni	
Practices before EPFOSE							
Timely harvesting							
Yes	22.9	45.3	44.4	22.4	19.7	35.0	31.3
No	77.1	54.7	55.6	77.6	80.3	65.0	68.7
Threshing							
Yes	62.9	71.9	74.6	55.2	59.1	65.0	64.8
No	37.1	28.1	25.4	44.8	40.9	35.0	35.2
Winnowing							
Yes	40.0	46.9	65.1	55.2	48.5	52.5	51.0
No	60.0	53.1	34.9	44.8	51.5	47.5	49.0
Sorting							
Yes	20.0	37.5	57.1	29.3	21.2	37.5	33.2
No	80.0	62.5	42.9	70.7	78.8	62.5	66.8
Packaging							
Yes	44.3	40.6	46.0	50.0	53.0	45.0	46.5
No	55.7	59.4	54.0	50.0	47.0	55.0	53.5
Drying							
Yes	91.4	85.9	90.5	93.1	90.9	97.5	91.1
No	8.6	14.1	9.5	6.9	9.1	2.5	8.9
Cleaning the store							
Yes	37.1	56.3	58.7	51.7	42.4	50.0	49.0
No	62.9	43.8	41.3	48.3	57.6	50.0	51.0
Peeling							
Yes	74.3	70.3	52.4	72.4	50.0	67.5	64.3
No	25.7	29.7	47.6	27.6	50.0	32.5	35.7
Practices after							
Timely harvesting							
Yes	100.0	98.4	100.0	98.2	100.0	100.0	99.4
No	0.0	1.6	0.0	1.8	0.0	0.0	0.7
Threshing							
Yes	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Winnowing							
Yes	89.2	96.8	96.3	94.6	96.9	100.0	95.2
No	10.8	3.2	3.7	5.4	3.1	0.0	4.9
Sorting							
Yes	92.3	95.2	96.3	98.2	96.9	100.0	96.1
No	7.7	4.8	3.7	1.8	3.1	0.0	3.9
Packaging							
Yes	75.4	81.0	92.6	73.2	100.0	72.7	82.5
No	24.6	19.1	7.4	26.8	0.0	27.3	17.5
Drying							
Yes	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cleaning the store							
Yes	98.5	96.8	81.5	96.4	100.0	100.0	96.8
No	1.5	3.2	18.5	3.6	0.0	0.0	3.2
Peeling							
Yes	83.1	84.1	40.7	87.5	72.3	84.9	78.3
No	16.9	15.9	59.3	12.5	27.7	15.2	21.7

ANNEX 2: EPFOSE Project Progress Matrix

EPFOSE Project Performance Measurement Framework/Log frame

ACTIVITIES	OUTPUTS	Progress
Objective 1: To assist the district to establish the basic conditions for long term protected area integrity by implementing environmentally sound and economically sustainable land use systems in the six sub-counties in the district by end of 2018		
Community environmental awareness creation (conservation education and early warning systems for disaster risk reduction) to the beneficiaries through mass media.	02 Radio talk-shows aired out in the 1st and 3rd Quarter	2 Radio Talk shows aired.
Sensitization of subcounty community development officers, FFS and TSA officers on mainstreaming environment in budgets and development plans, climate change adaptation and mitigation options.	200 FFS/TSA officers/community leaders trained	174 members were sensitized.
Follow-up, technical backstopping, Monitoring and coordination of afforestation and reforestation activities in implementing sub counties.	6 Sub counties reached	6 Sub counties reached
Scale out renewable energy saving technologies to vulnerable households in implementing sub counties.	6,000 households sensitised on energy stoves	756 households sensitised on energy stoves
Conduct refresher training on renewable energy saving technologies including briquetting to the FFS facilitators & TSA Officers	6,000 households	1, 672 households
Management of established tree nurseries and graduating them to a carrying capacity of 30,000 assorted seedlings annually to support afforestation interventions.	3 assorted nurseries established	15,000 assorted tree seedlings distributed to the community members and 3000 supplied to two schools i.e. Buteteya and Bukokho Primary schools.
Training beneficiaries (FFS and TSA Officers) on seedlings production/tree nursery bed establishment and management including vegetative propagation methods like budding, grafting and layering.	6000 people trained	3,323 people trained
Disseminate sustainable land management technologies for adoption with focus on climate smart/conservation agriculture. Under take a training of FFS/TSA on climate smart agriculture.	6000 people reached	3,233 people reached
Objective 2: To improve the capacity of 6000 farming households in the six sub-counties of Manafwa and surrounding areas to apply appropriate technologies to increase on food security and nutrition in their communities by end of 2018		
Train FFS group members in FFS methodologies and approaches in the six sub counties	6,000 household members trained	3,233 household members trained
Provide technical support to registered Production and Marketing Groups (PMGs) to enable them access extension services, markets and networking.	200 PMG groups supported	65 PMG groups supported and registered with certificates
Train FFS group members in post-harvest handling techniques to minimize on the post -harvest losses	6,000 household members trained	1,600 household members trained
Support registration of FFS groups as production and marketing groups (PMGs) at the sub county level	200 FFS registered as PMGs	108 FFS supported to register as PMGs
Link FFS/PMGs to agriculture production institutions to	200 groups linked with	65 groups linked with

access support and benefits from extension service	production institutions	production institutions
Conduct FFS field days to assess the knowledge of the group members on FFS methodologies and approaches	200 groups assessed	108 groups assessed
Graduate FFS groups that have completed the FFS learning cycle	200 groups graduated	101 groups graduated are confirmed with FFS assessment forms.
Train Production & Marketing groups (PMGs- Graduated FFS groups) members in value addition for better marketing of their farm products	2000 members to be trained in value addition	358 members were trained in value addition
Provide technical support to Households (HH) in back yard gardening	6,000 Households supported	1,176 households supported
Conduct nutrition education dialogues and cooking demonstrations	6,000 households reached	3,400 households reached
Conduct nutritional screening, counselling and assessment to reduce on cases of malnutrition	6,000 households reached	2,400 households reached verified with screening forms on file.
Conduct refresher training for nutritional peer educators (Village Health Teams-VHTs).	32 peer educators re-trained	32 trained
Objective 3: To initiate pilot economic activities to increase income of 6000 households in the six sub-counties adjacent to Mt Elgon National park by end of 2018		
Establish, train and support VSLA groups	200 new VSLAs established and trained	108 VSLAs established and trained
Train VSLA members in financial education (savings and loan management, budgeting, bank services and financial negotiations etc).	6,000 VSLAs members	3,233 VSLA members
Train VSLA members in Selection, Planning and Management (SPM) of IGAs (profitability, business location and customer care etc)	6,000 VSLAs members	1,453 VSLA members trained
Train VSLAs in agric- market and market linkage.	6,000 members from the 200 VSLAs trained	1,433 VSLA members trained
Train VSLAs group members in community skilling e.g. soap making, candle making, hand craft making etc	6,000 members from 200 VSLAs trained	675 VSLA members were trained
Support the registration of VSLAs at the sub-county level.	200 VSLAs registered	65 VSLAs registered
Link registered VSLAs to financial institutions	200 VSLAs trained	No group has been linked to financial institutions (still in negotiation with post bank and Africa bank)
Supervise, monitor and support registered VSLAs	200 VSLAs supervised	108 VSLAs supervised