END OF PILOT PROJECT EVALUATION REPORT

PROJECT: TO INCREASE AGRICULTURAL PRODUCTIVITY & VALUE ADDITION.

TARGET: 20 HOUSEHOLDS, BUTEBELE-HOIMA DISTRICT, UGANDA. FEB 2020 TO FEB 2021

STRATEGY: PROVIDE TRACTOR, INPUT, STORAGE.

IMPLEMENTED BY: PROSPER MAMA AFRICA-UGANDA

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Table of Contents

EXECUTIVE SUMMARY

PMA https://www.prospermamaafrica.org/ was established in 2017 as a nonprofit organization with offices both in Cambridge, USA and Kampala, Uganda with the cardinal aim of empowering African rural communities to lead their own development out of poverty. PMA came up with a "Village Resilient Model" & decided to pilot test it in Butebele Village, Hoima District for one year between Feb 2020 to Feb 2021.

The aim was to test the model viability, in order to determine if it is Relevant, Effective, Efficient, Impactful & Sustainable enough to be replicated on a large scale to drive away Poverty, Hunger and Malnutrition in the communities in Uganda and Africa. The strategy was to provide Technology Access, Community Farming, Input & Market focus, all cushioned by mind set training and appropriate extension service.

The evaluation methodology used was a cross sectional design executed using a-hybrid of participatory and conventional approaches to research. All key stakeholders including beneficiaries, duty bearers-PMA were involved while the consultant provided technical guidance. Both Qualitative and Quantitative Methods and associated data collection tools were used for purpose of triangulation to crosscheck the validity and reliability of the finding(s)**.** Data was collected from both Primary and Secondary sources through Document Review, Focus Group Discussion & On-Site Verification" Key Informant consultation

Based on facts, statistical and non-statistical evidence available, the pilot project was found to be relevant, viable for large scaling, effective, efficient, & sustainable. It was concluded that it could be socially and financially profitable if the identified challenges, which include late onset of activities, inadequate training, inadequate monitoring and evaluation function, limited storage, high cost of tractor hire are addressed.

Generally, based on the findings and conclusion observed, the consultant therefore, recommended that the project was fit for replication on a larger scale, while taking into consideration specific recommendations and lesson learnt amongst others:

Timely delivery of the required training and input, which would ensure timely land preparation and planting as per seasonal needs. If that is done, it would mitigate the kind of losses observed in (cap 6.1.4.1)

Identify/ negotiate for affordable access to tractor services preferably between USD 16.3 to USD 24.5 per acre which is still a profitable venture on both the farmers and tractor provider. Otherwise, the current tractor hire charge of USD 35.4per acre was exploitative and eats away much of the farmers' profit.

Provide linkage to a sustainable market in time to minimize farmers selling their produce at a giveaway price, a scenario observed in (cap 6.8.1). This could be done through negotiating contracted farming with commercial grain dealers or bulking for value addition & exported directly to regional/global markets.

Provide access to safe and affordable stores which can add value for instance, sort, dry and safely prolong the produce shelf life to wait for better market price period. This initiative would mitigate the post-harvest loss of 37% observed. It could be done through installation of silos at strategic position easily accessible to the farmers.

Adequately train farmers, on poultry management specific to the kind of breeds at hand, they need to be advised on poultry husbandry including housing, feeding, medication, prey management amongst others. If that is done it would mitigate the unnecessary losses/death of 70% observed in (Cap 6.5 above)

PMA management should urgently put in place a functional M&E System, with Capacity to support program Planning, Strategy, Monitoring & Evaluation to provide timely information necessary for decision making on activities, milestone, achievements and general progress. This would help to keep the project on track, enhance accountability, extract lessons learnt to improve on future program design.

1. INTRODUCTION

1.1 Contextual Background .

PMA https://www.prospermamaafrica.org/ was established in 2017 as a non-profit organization with offices both in New York and Kampala as shown on front page. Our cardinal aim is to empower African rural communities to lead their own development out of poverty. The PMA strategic objectives are designed to address the biting problems and gaps that exist in the community, ie, poverty, hunger, malnutrition using agriculture as the pathway.

1.2 Problem Statement

Poverty, Hunger, Malnutrition & Environmental Degradation have a debilitating consequences in Africa, Uganda notwithstanding**.** About 435 million of the 1.216 billion Africans live in extreme poverty.

The National Average Poverty Rate of 21% (UBOS Feb 2018), means that 9.2 million Ugandans leave below poverty level. Furthermore, the national average Per capita household income of Ugx325,800, and Youth Unemployment at 83% (28Million) demonstrate the need for job creation, increased income and poverty alleviation. The (ADB March, 2017), further confirms that many households in Uganda are still trapped in abject poverty cycle.

Uganda's Population is at least 44.27million; 78%(34M) youth, with age group 0-14 contribute 48.47%(21.4m), which group are purely dependents (http://worldpopulationreview.com/ June 2019). This phenomenon is fueled by high average fertility rate of 6.7 children per woman. Much as this astronomical population growth rate needs to be checked, it has increased the demand for food and agro-processed products, a market.

Both the UN and Uganda government in Sustainable Development Goals(SDGs) and Vision 2040 respectively, identified Agriculture & Financial Inclusion amongst the key strategy in reducing/eradicating poverty and its effects.

Agriculture Contribution to National Economy, Challenges & Opportunity

According to https://www.worldbank.org/en/country/uganda/publication/making-farming-more-productive-and-profitable-for-ugandan-farmers Agriculture is the backbone of Uganda's economy, employing at least 70% of the population, contributing 50% of Uganda's export earnings and 37% of GDP. Most Ugandans who are rural based, practice largely subsistence farming for food security and incomes, which makes agriculture a critical national strategy to creating jobs and reducing poverty, especially for women and youth.

Challenges

Despite the huge contribution, agricultural sector and its value chain is faced with bottlenecks such as poor agricultural practices, low technological adoption, insecurity over land ownership, poor access to extension services, low quality inputs, lack of credit and low uptake of digital integration. These problems are further exacerbated by climate change and unstable market.

If the problems are not mitigated, it will deter Uganda from realising its development goal of eradicating POVERTY, which can be done largely through Agriculture & Financial Inclusion, a key strategy to achieving Vision 2040(middle income status) and the UN's Sustainable Development Goals as well.

Opportunities

The booming domestic and regional demand for higher-value foods, makes agricultural technology, ICT, tailored agribusiness models and financial inclusion, to offer massive opportunities for Ugandan

farmers.

Because Africa's land productivity is ¼ that of the developed world, rural farmers still practice subsistence farming methods, and farmers lack capital plus basic knowledge/skills for commercial farming, specifically:

1. At least 9 out of 10 smallholder farmers in Uganda use antiquated farming methods, eg these farmers still primarily use the hand hoe to clear their land as opposed to tractors
2. Limited access to financing for small farmers due to the high risks. Or high interest rates /other cost when available.
3. Counterfeit seeds, fertilizer and pesticides; farmers lose their productivity due to fake seeds, fake pesticides and other inputs.
4. Lack of access to quality farm inputs and farm equipment due to limitations in availability and affordability. Producers often face challenges accessing quality input like seed, pesticide, fertilizer, because of high cost and physical distance from certified stockists.
5. Lack of storage for crops; Farmers lose up to 40% of their produce due to poor harvest and post-harvest handling.
6. Lack of market knowledge; at harvest, farmers sell to middlemen who take advantage of their ignorance, hence earning very little from their efforts
7. The use of mixed varieties often results in inconsistent grain qualities with different grain sizes/color in the same batches.
8. The cost of doing business is high for the farmer because of: distance to get to the inputs, to the markets and to the agro experts.
9. There is a need for access to water for crop and animal production due to their proximity from local water source.

1.3 What do Smallholder Farmers Need?

i. Integrate the use of technology starting with the use of tractor service to increase their farm acreage, ensure timely cultivation
ii. Genuine and Improved farm inputs (seeds, fertilizers, pesticides).
iii. Sufficient storage facilities at community level to protect their harvest and sell when the market price is right.
iv. Access of affordable micro loans as working capital to boost production.
v. Training in new farming techniques and mindset change
vi. They need services relevant for farming brought close to them in order to reduce the overall cost of production.

It is upon this background that PMA set out to run a pilot test in Butebele Village, Hoima District as an attempt to provide sustainable solution to the observed problem and narrow the identified gap with a unique approach, model and strategy and as described below.

1.4 Pilot Project Goal

To pilot test the viability of the "Village Resilient Model" on a group of 20 small holder farming households in Butebele Village, Hoima District, between Feb 2020 to Feb 2021, in order to determine if the model is Relevant, Effective, Efficient, Impactful & Sustainable enough to be replicated on a large scale to drive away Poverty, Hunger and Malnutrition in the communities in Uganda and Africa.

1.5 Strategy, Approach & Model

PMA believe that the reason why poverty has remained endemic to Africa, Uganda in particular despite huge investment in agriculture, is because we are not producing for export. This is because our farmers lack access to appropriate production technology, quality inputs and fitting storage. And so, the best way forward is to fix & enable production for export.

PMA therefore, has come up with a unique model called "Resilient Village Model", hinged on three pillars; Technology Access, Community Farming & Market Focus, all cushioned by mind set training.

1.6 Pilot Project Purpose

To train a group of 20 small holder farming households in Butebele Village, Hoima District, on mindset change, group them up, provide agri-based extension services then, pilot test access to tractor service, quality input, safe storage and market, focusing on production of poultry, grains, honey, fruits and vegetables for income and food security between Feb 2020 to Feb 2021

1.7 Pilot Project Specific Objective

1.7.1 To train a group of 20 small holder farming households heads in Butebele Village, Hoima District on mindset change from subsistence agriculture to farming as a business by Feb 2021

1.7.2 To provide appropriate technology such as access to tractor services to a group of 20 small holder farming households heads in Butebele Village, Hoima District on mindset change from subsistence agriculture to farming as a business between Feb 2020 to Feb 2021

1.7.3 To provide access to quality agro inputs to a group of 20 small holder farming households heads in Butebele Village, Hoima District between Feb 2020 to Feb 2021

1.7.4 To introduce a group of 20 small holder farming households heads in Butebele Village, Hoima District to sustainable modern "kitchen garden" by Feb 2021

1.7.5 To introduce a group of 20 small holder farming households' heads in Butebele Village, Hoima District to Sustainable Modern Apiary (beekeeping) by Feb 2021.

1.7.6 To provide access to Safe Produce Storage Facility to a group of 20 small holder farming households heads in Butebele Village, Hoima District by Feb2020 to Feb 2021

1.7.7 To provide access to quality agri based extension service to a group of small holder farming households leaders in Butebele Village, Hoima District between Feb2020 to Feb 2021

1.7.8 To provide access to markets to a group of small holder farming households leaders in Butebele Village, Hoima District between Feb2020 to Feb 2021

1.7.9 To provide access to agricultural financial services to a group of small holder farming households leaders in Butebele Village, Hoima District between Feb2020 to Feb 2021

1.8 General Objective for Evaluation .

To assess whether the PMA Pilot was Relevant, Effective, Efficient, Impactful & Sustainable enough, to be recommended for future programming on large scale with clear lesson learnt.

1.9 Specific Objectives of the Research

1.9.1 To find out if the project was relevant to addressing the need of beneficiaries.

1.9.2 To find out if the project implementation process was Effective & Efficient.

1.9.3 To identify and document the expected and unexpected impact of PMA's interventions on the target beneficiaries on large scale.

1.9.4 To identify if there are adequate sustainability mechanism in place to ensure continuation of benefits after project closure.

1.9.5 To document and share lessons learnt with stakeholders to inform a "Go or No Go" decision on large scale in the future programming.

1.10 Scope of the Assignment

The evaluation was conducted between 6th to 12th January 2021, primary data was collected from Butebele Village, Hoima District on the 8th January 2021.

Technically, it involved:

- Conducted rigorous review of strategic documents to get an in-depth understanding of The PMA strategic expectation & stakeholders needs to identify gaps and options.
- Developed data collection tools in consultation with PMA & other relevant stakeholders.
- Familiarized data collection team on tool administration during field data collection
- Coordinated with PMA team to collect, analyze data and Report on the finding.
- Prepared, presented and discussed a draft report with PMA and stakeholders.
- Undertook a validation of findings with PMA & incorporated comments into the final report
- Submitted a final reports.

2 METHODOLOGY

2.1 Design

A cross sectional design was adopted for this information need. This research process was conducted using an-hybrid of participatory and conventional approaches. All key stakeholders above will be involved.

Qualitative and Quantitative Methods and associated data collection tools were used for purpose of triangulation to crosscheck the validity and reliability of the finding(s)

Data was collected from both Primary and Secondary sources using the following methods:-

2.1.1 Secondary data:

2.1.1.1 Document Review.

A critical desk-review was done to analyze relevant strategic documents including:- The Strategic Business Plan; Periodic Implementation Progress Reports, Baseline Report to understand project ideation, formation, stakeholders, baseline information, targets, indicators and expected results.

2.1.2 Primary data:

Because the target beneficiary were operating as a group, "Focus Group Discussion & On Site Verification" was therefore the most fitting method of collecting data from primary beneficiaries. PMA Team were then given a chance to give their views through a key informant guide.

2.1.2.1 Focus Group Discussion/Consultative meetings

with the stakeholders was conducted to fish out more qualitative information (opinion, observation, suggestions, advise, options, recommendations). Beneficiaries for example, will point out key priority needs.

2.1.2.2 On Site Observation.

Evidence of key achievements was accessed. Statistics, Description, Photographs were taken where it enabled necessary aid in explanation of details and for primary beneficiary consumption during dissemination of findings.

2.1.2.3 Anecdote

Anecdotal evidence were also collected especially from beneficiaries to enrich credence. Some specific members gave their side/experience.

2.1.2.4 Key Informant Interviews (KIIs)

This involved conducting in-depth interviews with purposefully selected informants, the Butebele small holder farmer group *"Prosper Mama Butebele"* Chairman, PMA CEO & Head of Production, who have experience and knowledge about the project and its products. Key informants helped to generate information on how well the pilot project worked, successes, challenges met and mitigation measures taken, best practices, and recommendations for the future options.

2.1 Population

- ❖ All the category of stake holder in Cap 1.4.2 above were profiled as respondents for sampling based on the scientific sampling rule.

2.2 Sampling

- ❖ Purposive Sampling was used for the Key Informants Interview & Focus Group Discussion. Document reviewed were systematically cataloged.
- ❖ Key opinion leader (group chairman) was identified and involved.

2.3 Details of Methods and Tools for Data Collection

The following methods and tools of data collection will be used.

S/No	Methods	Tool	Source of Data	Type of data collected	Sampling technique
1.	Document review	Review checklist	Secondary • *Archive* • *Databases*	Qualitative Quantitative	Relevant charter • *Available reports*
2.	Interview (KII) Focus Group Discussion (FGD)	Interview guide FGD Guide	Primary: • *Beneficiaries* • *Local authorities* • *Key informants*	Qualitative	Purposive
3.	Field Observation	Observation checklist, cameras	Primary: • *Onsite* • *Beneficiaries,* • *key informants*	Quantitative& Qualitative Photos/video	Purposive

Note: *Confidence level will be at 95%*

2.4 Data Analysis

2.4.1 Quantitative

The data processing and detailed analysis was done using computer software Excel Pack program to analyze quantitative data. Graphic presentation, statistical interpretation of the findings (explaining the meaning of the data individually), conclusions and recommendation

2.4.2 Qualitative

The Qualitative data analysis was based on analytic deduction, where the researcher defined and described the observation, examined the raw data, to determine the most important characteristics/indicator of current situational parameters on a case by case, objective by objective.

2.5 Triangulation

The qualitative and quantitative data/information were used to cross check the validity and consistency of the observed indicators, and backup-explanation of the statistical observation

2.6 Quality Control

- The data collection instruments were designed by experienced expert and double reviewed by The Innovation Village, discussed and approved in the inception meeting.
- Experienced data collectors were used.
- The technical consultant was practically in the field to check for completeness, quality and supervise & guide the data collection and analysis exercise.

2.7 Ethical Consideration

Anonymity; Confidentiality and Privacy; Justice; Respect of respondents' time; Voluntary & informed consent; were strictly observed during the research process. Meanwhile, Misuse of privileges; violent questions; Research plagiarism and fraud were not allowed.

2.8 Key Analysis Questions

Key questions were technically reviewed to bring out the data & information demanded by the analysis objectives.

3 RESEARCH TEAM

The profile of the evaluation team is provided in table 3.1 below.

3.1 Table: Summary of Team Composition

No	Name	Specialization/ Qualification	Current task	Address	Role
1.	MR. Geoffrey Alengo	***1. PhD Student*** *(Evaluation & Applied Research Methods: PhD in Psychology:)@ Claremont Graduate University; California, US, Yr: 2019* 2. Master Degree in Project Planning & Management of UMI) 2014. (Thesis: Monitoring & Evaluation) Score: 70% 3. Post Graduate Diploma (Project Planning & Management) UMI, 2011.*Score: CGPA 4.19 (2nd Upper)* 4. B.Sc. Aquaculture &Fisheries Science (MUK)-2004: *Score: CGPA 3.64, (Second Upper)*	❖ Applied Research ❖ Project [Design, Management, Monitoring & Evaluation (M&E)]. ❖ Lecturing-(UMI) ❖ Microfinance-Strategist ❖ 15yrs	ogwokalengo@gmail.com +256 752 843 731/ +256 772 843 731.	Lead consultant Evaluation
2.	Fiona Nambaziira Luswata	1, E4Impact MBA Student – (Entrepreneurship for Social Enterprises) 2020 2 Post Graduate Certificate Business Administration – University of Wales 3. Supply Chain Management - ICT 4. B.A Social Sciences	Business Development Consultant Project Management Women in Entrepreneurship	fluswata@gmail.com +256772852399 +256701852399	Management Consultant

		Makerere University	Management Consultant		

4 Table: WORK PLAN.

ACTIVITY	Day					Responsibilities
	1	2	3	4	5	
Inception meeting/Report						*PMA/Consultant*
Initial Advance payment of 60%						*PMA*
Review of project Doc						*Consultant*
Data Collection Tool Development						*PMA/Consultant*
Data Collection, Analysis & Reporting						*PMA/Consultant*
Presenting draft report						*Consultant*
Review of draft report						*PMA/Consultant*
Presenting final Report						*Consultant*
Final payment of 40%						*PMA*

5 Table: DELIVERABLES

Deliverables	***Content***
Inception Report	❖ *Clarifications on tools & methodology, approval .*
Draft Report	❖ *Evaluation report*
Final Report	❖ *Evaluation report*

6 FINDINGS

6.1 Group formation and organization

Initially there were 20 group members as at Feb 2020 however, by Jan 2021, the number of group members had dropped to 15, implying attrition rate of 25%. This drop was still within acceptable limits because 75% of the members were still active.

The members were present on the ground, well informed about their objectives. They were organized for instance, had functional leadership structure (chairperson, vice chairperson, treasurer, secretary and committee members). they kept records of their activities including attendance list, meeting minutes, visitors' book, work tracking register, planting record amongst others. In fact, they were operating as a team because they could support each other.

6.1.1 *Fig 1: Showing some of the records kept by "Prosper Mama Butebele" group*

6.2 Trainings

6.1.2 Mindset trainings

The beneficiaries stated that they had received mindset training prior to the kick off of the project. Training manual was available, during FGD, group members responses indicated that their minds and ambitions had shifted from subsistence to farming as a business and consuming balanced nutrition. They specifically expressed the need for early supply of input, timely input & PMA to avail safe storage facility.

6.1.3 Extension Service Trainings

Both the PMA record and observations from the beneficiaries themselves during FGD in principal confirmed that, they received the trainings in agronomy, apiary & poultry which were relevant to the pilot project objective achievement. There has been regular monthly follow-up visit on agronomy from PMA Extension technical team to guide the farmers on, ongoing activities.

However, the group members observed that the project started late due to the Covid 19 lock down in February through March. Training was done late in the first season 2020, inputs were equally delivered late. This delay in turn affected their planning timing for instance, the 20 acres of maize was planted in April 2020 instead of late Feb 2020. This delay, further affected their second season's timing, they had to plant 10 acres of beans while maintaining 1 acre of the kitchen garden in October 2020 instead of August 2020, because they had to wait for the same field cultivated in the first season.

On poultry, the group members observed that, only one training was done, which in their view wasn't adequate. In addition, the poultry technical follow up was also inadequate largely due to the Covid 19 lockdown movement restrictions. As a result, most of the birds died due to preventable and treatable causes.

The apiary (bee keeping) training was deemed adequate, the hives were placed in a naturally forested area and they had bees colonies hosted. The expected first honey harvest was slated to be on 20th Jan 2021 according to plan.

6.3 Technology Access (Tractor Services)

Tractors for pilot group are readily available in the community and the beneficiaries are able to hire them if the money to do so is available. Each tractor is hired at Ugx130,000(USD 35.4) per acre. This price is considered high and affects the profitability directly. Ordinarily, the farmers have been using hand hoes for tilling the land because they cannot afford tractor services.

There is a need to provide affordable access to tractor services. Ugx 60,000 (USD 16.3) to 90,000(USD 24.5) per acre is recommended for profitable venture on both the farmers side and tractor provider. This is the average rate for e.g. in Northern Uganda.

6.4 "Combo" Access

PMA provided access to quality afri-inputs, the maize & beans seed, fertilizer, herbicides and agronomical extension support during the planting season for both seasons. However, the start of activities for the two seasons were delayed as observed in cap 6.2 above. This affected yield as below.

6.4.1 Commercial Crops

The group planted 2 seasons of crop 2020.

6.4.1.1 Season 1, 2020

- In April 2020, the group planted the first season of Maize. It was planted on 20-acres.
- They planted according to the specifications of the agronomist extension advise.
- The expectation from the maize planted was 3.5 to 4 tons per acre. However, the total harvest from the 20 acres were only 16 tons. This means that each acre yielded 0.8 tons, leaving a negative variance of 2.7 tons per acre.
- The low yield was attributed to the late planting. The planting took place in April 2020which was late for the season that was supposed to be in latest late February 2020. For instance, the first season dry period set in when maize was hardly 45 days in the filed hence affected yield.
- While part of the maize was sold as observed above, some portion provided food security during the covid-19 lockdown as well.
- Kitchen Garden harvest were consumed by the farming household themselves since there was limited market due to covi-19 lockdown during covid-19.
- This late planting in turn also affected the second planting season where the group planted beans, as observed above.

6.4.1.2 Season 2, 2020

For the second season, the group planted 10 acres of beans. The expectation of harvest was to 1.5 tons per acre however, drought affected production. They do not expect to get more than 500 Kgs due to the bad weather. The final harvest figure would be determined upon actual harvest completion. The group members in the meantime, were looking forward to utilizing the proceed to buttress up food security.

PMA advised and provided farmers the "*Nambaale long"* seed variety of beans with a guarantee for market upon harvest because of its market value proposition. The group members however, expressed concerns that incase PMA failed to get market for *"Nambaale Long",* such beans didn't have known market within Hoima district locality, and this would risk marketability. They then requested to be provided with the *"Nambaale Short"* which is easily locally marketable. However, since PMA's strategy is the

provide access to better market to the farmers, its recommended that they provide reassurance to the farmers to allay the identified concerns above so that they can carry on with planting *"Nambaale long".*

Fig. By the evaluation visit 8th Jan 2021, some beans were still drying in the filed waiting harvest as shown below.

6.5 Poultry

Two breeds of poultry were given to the beneficiaries, the Red Rooster and the Kuroilor. Each participant representing the family was given 25 chicken as a pilot.

From the 15 household that had remained active in the group, the average number of poultry that had remained per household was 4 out of 25 initially given.

Majority, about 70% of the loss were due to death attributed to following reasons.

a) The chicken needed chicken houses, yet the households either had them, nor means to acquire.
b) The chicken needed feed and the beneficiaries did not have resources to buy feed. However, the consultant believed that the farmers could have been advised to utilize part of the produce to feed the birds.
c) Some of the chicken were eaten by wild cats. This is because unlike the indigenous local breed, the introduced breed was too docile to run off as fast and furthermore is unable to recognize the danger.
d) Beneficiaries received only 1 training before receiving the chicken. This led to less information about how to look after chicken, which led to loss of some of the chicken.

Because of fear of all the birds dying about 20% of the chicken were either eaten while others were sold off prematurely.

The above observation means that in the next cycle, there should be provision for chicken house, feeds, adequate training and follow-up extension services during the growing cycle.

Otherwise the beneficiaries testified that the new breed grew faster, gain more weight and produces more eggs. For instance, Mrs Sola Peter, confirmed that she had collected 50eggs from the two hens within December 2020.

6.6 Apiary

The group of 20 was collectively given 10 modern beehives which they put in the forest like area in the land near them. The beehives were received in June 2020 with a 7month grace period before first harvest. Bees had taken up host in the hives. The initial harvest was planned for 20th Jan 2021. Honey production tracking visit was done in 15 December 2020 and found significant production going on inside the hive.

After the initial harvest, the modern hives are expected to be producing honey for harvest every two months. This unique productivity enhancing innovation is what makes a difference from traditional hives where harvest would only be done once a season(after every six months).

According to the beneficiaries, the apiary was the least labor-intensive venture of the programs that PMA had introduced to them. They were not having any challenges with the program. They expressed the need for more hives.

6.7 Kitchen Garden

The first project of Kitchen Garden was done on 1 acres of the group land. On this land, they were able to plant vegetables like tomatoes, green pepper, watermelon, green banana*(matooke)* and potatoes.

While this was a good project and the beneficiaries received adequate training prior to the planting, they were not able to make much sales from the harvest. The harvest coincided with the Covid-19, lock down where the local markets were closed and in addition, external traders were also unable to reach to the local markets and this caused a regional market to shut down. However, beneficiaries nourished their

body by consuming most of the produce domestically. This resonated with one of the PMA which objective, “To improve nutritional welfare of the beneficiaries”.

Due to the lack of market and the losses they made from the season, they planted only 1/2 an acre of the Prosper Mama Kitchen Garden during the second season as shown below.

6.8 Marketing

6.8.1 Maize

The beneficiaries did not have a challenge in finding market for the maize and the harvest was sold as soon as it was harvested in September 2020. However, 16 tons were sold at giveaway price Ugx 500/Kg (USD 0.13/kg) against expected Ugx 800/kg (USD 0.22/kg) if they had safe storage to prolong produce shelf life . The lack of appropriate storage partly and high poverty largely forced farmers early sales that resulted into a loss of Ugx 300/kg (USD 0.082/kg). This means that up to 37% the post-harvest loss was due to hurried sale because of inadequate safe storage. The storage gap therefore, needed urgent solution if large scale production is to be profitable.

6.8.2 Beans

PMA gave the beneficiaries a new variety of beans referred to as *“Nambaale Long”* as opposed to the *“Nambaale Short”* which they ordinarily used to plant. With the distribution of this variety, PMA also guaranteed the group that it would be providing the market for these beans in line with their promise to provide market access at a group level. The group was therefore, relying on the promise by PMA that they shall provide market for these beans.

6.8.3 Chicken

Officially, there were no significant sale due to the high losses observed in (Cap 6.5) above. They were however, positive for the next production cycle.

6.8.4 Apiary

The group had also not been able to make any harvest from the 10 hives as the first harvest was expected on 20th Jan 2021.

6.9 Sustainability & Ownership

The project had adequate sustainability strategy for instance, the group members had a functional leadership structure with effective management system to ensure all members participate, a work tracking register existed, group meetings were being held every week amongst others.

The mindset training had caused some observable change in farmers attitude from subsistence to farming as a business. Agronomic trainings which were done and ongoing, meant that knowledge and skills base remained in the community as they practiced new way of doing things. The visualization of increased income possibility and improved nutrition had motivated group members not to look back. If the challenges of store, and high tractor cost are addressed, it would bolster the sustainability of impact

Because the community appropriated their own land for production, and in addition they did participate physically in production activities jointly, they felt attached to the project and therefore, would not allow it to collapse

6.10 Monitoring and Evaluation

PMA being relative a young organization (about 2years old), was still at initial stages of developing its M&E System, Capacity and Function. As a result, there was insufficient monitoring and reporting on activities as they unfolded to inform timely intermediate corrective decision and learning on a rolling basis as would be required to keep the project on track. However, a consultant has been brought in as at January 2021, to setup and operationalize the M&E infrastructure, systems, frameworks and function

7 CONCLUSION

Based on facts, statistical and non-statistical evidence available, the consultant concluded that the pilot project was relevant, viable for large up-scaling, effective, efficient, sustainable and can be financially profitable if the identified challenges are addressed.

Relevance

The project was found to be relevant because it provided solution to the biting problems of the community, which are Poverty, Food Insecurity & Malnutrition. It's also designed to address structural problems of disjointed production and market systems through consolidation of land, provision on tractor services, quality input and safe storage.

Viability

The project was found to be viable because the key initiatives that were piloted such as Tractor Services, Maize/Beans, Kombo, Apiary, Kitchen Garden & Poultry, all produced significant positive results as discussed in cap 6.1 to 6.8 above. The challenges became good learning points to inform future programming as detailed in the recommendations section.

Effectiveness

Out of the 9 specific objective pilot project objectives, 6 have been achieved. Only one (objective No.6) i.e, "access to safe storage" which had not yet been achieved however, according to PMA, efforts are underway to have the silos delivered by end of first season, 2021.

8 RECOMMENDATIONS & LESSONS LEARNT

Based on the findings and conclusion discussed above, the consultant therefore, recommends that the project is generally fit for replication on a larger scale. However, the following specific recommendations and lesson learnt should be taken into consideration when under taking the expansion:

8.1 Timely delivery of the required training and inputs; this is to ensure timely land preparation and planting as per seasonal needs in order to match the seasonal rain pattern. If that is done, it would mitigate the kind of losses observed in (cap 6.1.4.1 above)

8.2 Source/ negotiate for affordable access to tractor services preferably between. Ugx 60,000 (USD 16.3) to 90,000(USD 24.5) per acre, which is still profitable venture on both the farmers and tractor service provider. Otherwise, the current tractor hire charge of Ugx130,000(USD 35.4) per acre was exploitative and eats away much of the farmers' profit. The farmers can be organized to procure their own group tractor either through grands or loans/leasing, which is a cheaper option.

8.3 Provide linkage to a sustainable market in time to minimize farmers selling their produce at a gave away price, such as the scenario observed in (cap 6.8.1) above. This could be done through negotiating contracted farming with commercial grain dealers or bulking for value addition and then exported directly to regional/international markets.

8.4 Provide access to safe and affordable stores which can add value for instance, sort, dry and safely prolong the shelf life of the produce to wait for better market price period. This initiative would mitigate the post-harvest loss of 37% or more observed. This could be done through installation of small holder matching silos at strategic position easily accessible to the farmers. The tractor engine powered silos, solar powered or biomass powered designs are some of the available and be cost effective innovations for considerations.

8.5 Adequately train farmers, on poultry management requirements specifics to the kind of breeds at hand, they need to be advised on poultry husbandry including housing, feeding, medication, prey management amongst others. If that is done it would mitigate the unnecessary losses/death of 70% observed in (Cap 6.5 above)

8.6 PMA management should urgently put in place and developing its M&E System, Capacity and Function to support program planning, strategy, monitoring evaluation and to provide up to date information necessary for timely decision making on activities, milestone, achievements and general progress. This would help to keep the project on track, enhance accountability, extract lessons learnt to improve on future program design.

9 APPDENDIX: DATA COLLECTION TOOL

My name is _____ and I work for PMA. Your household has been selected by chance from all households in the area for this interview. The interview will take 10 to 20 minutes. The purpose of this interview is to obtain current information about Agric productivity of your household in this area (for example, mindset change, tractor usage, access to finance, access to inputs, access to storage, access to extension service). The survey is voluntary and the information that you will give us will be treated as confidential. PMA will use this information for planning especially for farmers. There will be no way to identify that you gave this information as your particulars will remain anonymous except with your consent. It's your right to decide whether to respond to this survey or not.

SECTION A: GENERAL INFORMATION			
Please complete before the Interview			
A01	Enumerator ID: |___|___|		
A02	Date: |__|__| / |__|__| / 2020 Day Month	A03 GPS Coordinates X|__|__|.|__|__|__|__| Y: |__|__|.|__|__|__|__|	
A04	Zone:_____Village/Location Name:_____		
A05	Setting Type:	1. Treatment [ ]	2. Control [ ]

A06	Did you or any member of your family benefit from the Pilot Project?	Yes |__|	No |__|
A07	If yes, How did they / you benefit?	1. Mind-set training [ ] 2. Extension service[ ] 3. Kitchen Garden [ ] 4. Apiary [ ]	5. Poultry [ ] 6. Tractor service[ ] 7. Inputs [ ] 8. Storage [ ]

SECTION B: DEMOGRAPHICS & BACKGROUND INFORMATION						
B01	Is the respondent the household head?	**Yes |__|**	**No |__|**			
B02	Sex of respondent 1[ ]Male 2[ ]Female					
B03	Age of household head/ Respondent. _____					
B04	Marital status of household head / Respondent 1[ ]Single 2[ ]Married 3[ ]Separated 4[ ]Widowed 5[ ]Widower					
B05	What is the highest level of education attained by the respondent? 1[ ] Primary 2[ ] Secondary 3[ ] Tertiary 4[ ] Vocational 5[ ] Functional Adult Literacy 6[ ] No Formal Education 7[ ] Other (specify)					
B06	Total number of people living in Household	**Adults** |___|___|	Female |___|___|	Male |___|___|		
		Children |___|___|	Girls |___|___|	Boys |___|___|		
B07	Are you or a member of your family in farmer production groups?	**Yes |__|**	**No |__|**			

SECTION C: MIND SET TRAINING			
C01	Do you know about farming for a purpose?	1 = Yes **|__|**	0 = No **|__|**
	If yes, what was your purpose of farming last season?		
C02	Do you know about farming as a business?	1: Yes 3: Don't Know	2: No
	If yes how are you doing farming as a business?		
C04	What challenges to you face with storage? Solutions?	1 challenges	2 = solutions

SECTION D: EXTENSION SERVICE/TRAINING			
D02	Have you received any extension service training in the last 10 months from PMA?	1 = Yes **|__|**	0 = No **|__|**
D03	If yes, on which enterprise?	1. Kitchen Garden [ ] 2. Apiary [ ] 3. Tractor service[ ] 4. Inputs usage [ ]	5. Poultry 6. Storage [ ] Other (specify) [ ] _____
D04	What were you trained on? Describe		
D05	Are you applying the knowledge/ skills you were trained on?	1 = Yes **|__|**	0 = No **|__|**
D06	If yes, explain how you are applying it		
D07	If no, state the reasons		
	OUTCOME 2: TECHNOLOGY (TRACTOR ACCESS)		
D08	What technology did you use to till, plant the crops last season?	1. Hoe [ ] 2. Tractor[ ] 3. Animal traction [ ]	
D09	What was the reason for the choice above?		
D10	Have you accessed tractor service in the last 1year?	1 = Yes **|__|**	0 = No **|__|**
D11	If yes above, how many acres did you cultivate?	1. Two[ ] 2. Three[ ]	3. Four [ ] 4. Over four [ ]

D012	If tractor, how much did it cost you per acre?	1. 50,000-79,000[ ] 2. 80,000-99,000[ ]	3. 100,000- 120,000[ ] 4. Above 120,000[ ]
D05	What are the major challenges with accessing/ using tractor ?	1 = challenge …… ……	2 = solution …… ……
	OUTCOME 3: COMBO		
D22	Did you plant all the area you have for farming the last planting season of Aug 2020 – Dec2020?	**1 = Yes |__|**	**0 = No |__|**
	If no, What hindered you from planting on all the available land.		
	What crops did you plant last season?	1. Maize[ ] 2. Beans[ ] 3. Soy beans[ ]	4. Rice [ ] 5. Vegetables [ ] 6. Others specify **[ ]**
	Did you record your previous season input/output quantities for the farm anywhere?	1 = Yes |__|	0 = No |__|
D11	If yes above, how many acres did you plant for each?	1. Maize[ ] 2. Beans[ ] 3. Soy beans[ ]	4. Others specify **[ ]** 5. Rice [ ] 6. Vegetables [ ]
D23	What varieties of seeds did you plant last season?	1. From last season harvest	2. Improved seeds
	Did you apply fertilizers? 1 = Yes |__|	0 = No |__|	Cost/acre……
	Did you apply herbicides? 1 = Yes |__|	0 = No |__|	Cost/acre……
	Did you apply pesticides? 1 = Yes |__|	0 = No |__|	Cost/acre……
	Did you use irrigation? 1 = Yes |__|	0 = No |__|	Cost/acre……
	What were sources of your input above?	1. PMA[ ]	2. Others specify[ ]……
	What yield per acres?(kg)	Specify	
	Did you join land with your neighbor and planted similar crops, but everyone took what grows on their piece of land?	1 = Yes |__|	0 = No |__|
	If no, what was the reason?		
	If yes how many acre did you join?		

	SECTION C: STORAGE		
C01	Where did you store your harvest for last season?	1. One of the rooms at home 2. Silo	3. Community storage 4. Others……
C02	Is the storage safe from water leakage, caking, pest?	1: Yes 3: Don't Know	2: No
C03	Is the storage space adequate for your produce	1: Yes	2: No
C04	What challenges to you face with storage? Solutions?	1 challenges	2 = solutions
	OUTCOME4 MARKETING		
	How did you sell your produce?	1. Farm gate 2. Direct to market 3. Agents/brokers?	
	What was selling price per kg of each?		
	Who determined the market price	1. Buyer 2. Seller 3. Both	
	How much profit did you make?		
	If you haven't sold, when do you expect to sell and how much?	1. When……	2. Price/kg……
		3.	4.
	OUTCOME 5: ACCESS TO FINANCE		
D34	Do you have access to agric microfinance?	1= Yes |__|	0 = No |__|

	If yes how much did you get and what did you use it for?	Amount	Usage
	If no, what is the reason?	1. No collateral 2. No service providers 3. Expensive 4. Others……..	5. Long procedures 6. Fear of losing property 7. Not informed
	What would you propose as a solution?		
	OUTOME 6.POULTRY		
D35	Did you receive poultry from PMA?	1= Yes |__| 0 = No |__|	
D36	If yes, which variety and how many did you receive?	Croilors……..No…….. Red rooster……..No……..	
	How was their survival rate?		
	Did you sell some?	1 = Yes |__| 0 = No |__|	
	If yes how many did you sell?		
D37	How much did you sell each?		
D05	What are the major challenges with access to finance ?	1 = challenge …… ……	2 = solution …… ……
	OUTOME 7.KITCHEN GARDEN		
D38	Do you have kitchen garden?	1 = Yes |__| 0 = No |__|	
D39	Which crops have you planted?		
	What do you use the crops for?	Food…… Income……Other……	
	What challenges do you face with kitchen garden?		
	Solutions?		
	OUTOME 7.APIARY		
	Did you receive modern bee hives?	1 = Yes |__| 0 = No |__|	
	If yes, how many did you receive?		
	Do they all have bees?		
	Have you started harvesting?	1 = Yes |__| 0 = No |__|	
	If yes, how many Kgs have you harvested so far last season ?		
	How much did you sell each Kg?		
D05	What are the major challenges with bee keeping ?	1 = challenge …… ……	2 = solution …… ……