MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY AND FISHERIES

NATIONAL OIL PALM PROJECT

(NOPP)

ANNUAL REPORT

FINANCIAL YEAR 2022/23

PROJECT MANAGEMENT UNIT

JULY 2023

IFAD
Investing in rural people

Table of Contents

List of Tables

List of Figures

LIST OF ACRONYMS

ACF	Agricultural Credit Facility
BUL	BIDCO Uganda Limited
CAO	Chief Administrative Officer
CAPI	Computer-Assisted personal interviewing
CBOs	Community Based Organisations
CDO	Community Development Officer
CPO	Crude Palm Oil
DLG	District Local Government
DNRO	District Natural Resources Officer
EA	Engineering Assistant
EHS	Environment, Health and Safety
EHSO	Environment, Health and Safety Officer
ESIA	Environmental and Social Impact Assessment
FFB	Fresh Fruit Bunch
FFS	Farmer Field School
FO	Farmer Organisation
GIS	Geographic information system
GoU	Government of Uganda
HCS	High Carbon Stocks
HCV	High Conservation Value
HDI	Human Development Index
HDP	Hub Development Plan
HH	Household
HIV/AIDS	Human Immuno-deficiency Virus infection/Acquired Immune Deficiency Syndrome
HUB	Geographical area covering favourable areas for OP growing within 30 km radius from a mill and benefiting from technical and FFB marketing support services
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activities
IPSAS	International Public Sector Accounting Standards
IRB	Institutional Review Board
KOPGT	Kalangala Oil Palm Growers Trust
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MGLSD	Ministry of Gender, Labour and Social Development
NEMA	National Environment Management Authority
NFA	National Forestry Authority
Non-OPG	Non-Oil Palm Grower
NOPP	National Oil Palm Project
NRM	Natural Resource Management

OP	Oil Palm
OPG	Oil Palm Grower
OPUL	Oil Palm Uganda Limited
PPI	Poverty Probability Index
SACCO	Savings and Credit Cooperative Organization
TORs	Terms of Reference
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
UNCST	Uganda National Council for Science and Technology
UNHS	Uganda National Household Survey
UNRA	Uganda National Roads Authority
UOPGT	Uganda Oil Palm Growers Trust
USD	United States Dollars
VODP	Vegetable Oil Development Project (Phase 1 = VODP1; Phase 2 =VODP2)
VSLAs	Village Savings and Loan Associations
WDDS	Women Dietary Diversity Scores
ZARDI	Zonal Agricultural Research and Development Institute

CURRENCY EQUIVALENTS

Currency Equivalents

As of September 2019

Currency Unit = Ugandan Shillings (UGX)

USD 1 = UGX 3,700

Weights and measures

1 kilogram (kg) = 1000g

1kg = 2.204 Ib

1 hectare = 2.47 acres

1 acre = 0.405 hectare

Fiscal Year

July 1 – June 30

BASIC PROJECT DATA

COUNTRY	:	Uganda
PROJECT TITLE	:	National Oil Palm Project (NOPP)
EXECUTING AGENCY	:	Ministry of Agriculture, Animal Industry and Fisheries
REPORTING PERIOD	:	As at 30th June 2023.
IFAD LOAN NUMBER	:	2000002292
GOU PROJECT CODE	:	1508
PROJECT EFFECTIVE DATE:		November 29, 2018
FIRST DISBURSEMENT:		September 13, 2019
APPROVED LOAN AMOUNT:		USD 75.82 Million
APPROVED GRANT AMOUNT:		USD. 1.210 Million

I. EXECUTIVE SUMMARY

Performance Highlights for FY2022/2023

- *In May 2023, His Excellency the President visited Kalangala hub where he visited 2 outstanding farmers and directed on the utilisation of the dividends from OPUL and expansion to Kyamuswa County.*
- *The Buvuma Hub Team was recruited and deployed.*
- *The Ferry was delivered and launched on 27th May 2023.*
- *32km of farm roads and 16.1km of access roads were*
- *The Environmental and Social Impact Assessments (ESIAs) for Masaka, Mayuge were completed and NEMA approval issued for the ESIA of the Buvuma fertiliser store.*
- *The Environmental Audit for compliance by smallholders Kalangala and the outlying islands of Bugala was completed.*
- *The International NGO for Environment (RSPO compliance) was contracted.*
- *The Africa RSPO office visited the smallholder OPGs of Kalangala and Buvuma.*
- *The Regulatory Impact Assessment report was drafted.*
- *A memorandum of understanding was signed with Uganda Development Bank Limited, for Ush. 11.6 bn for commercial oil palm growers in Buvuma.*
- *The Project Steering Committee had their first meeting and a field visit to Buvuma.*
- *Fund manager contract signed to manage development loans*
- *The Project was enrolled onto the GoU Integrated Financial Management System (IFMS) IFAD End-tp-End System for Procurements (Open)*
- *The Project Baseline Survey was completed.*
- *The Project Management Information System was completed.*
- *All the project beneficiaries were mapped.*
- *The project expended 63% of its annual donor budget allocation and 100% for GoU – there was improved efficiency in approval of payment requests in the last month of the last quarter.*

The National Oil Palm Project (NOPP) was declared effective on November 29th, 2018. The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is the Executing Agency and established a Project Management Unit (PMU) in September 2019. NOPP received its first disbursement on the 13th of September 2019. The overall goal is inclusive rural transformation through oil palm investment. The project targets to reach an estimated 30,800 households with an outreach of 154,000 beneficiaries of which 30% are women and 40% are youth.

The project comprises of three (3) operational and one (1) management sub-component, namely: i) Scaling-up smallholder oil palm development; ii) Livelihoods diversification and resilience; iii) Oil Palm Sector Development Framework; and (iv) Project Management.

NOPP is establishing sustainable commercial partnerships between smallholder oil palm growers and a private processor. In total, NOPP intends to involve some 11,000 growers with a 19,700 ha under oil palm in 5 hubs comprising of Buvuma, Mayuge hub(Mayuge, Bugiri and Namayingo districts), Masaka hub(Masaka, Kalungu and Kyotera districts), Buikwe/Mukono hub where the crop will be planted for the first time, and in Kalangala where production is ongoing.

Under the Scaling-up smallholder oil palm development component; NOPP has supported 562 smallholders in Buvuma district to establish 1,304.18 Ha of oil palm plantation. In Mayuge district, 3,488 potential farmers have pledged 4,370 ha for oil palm establishment; Bugiri district, 500 Ha have been surveyed and mapped for 523 smallholder farmers; Masaka district has mobilized 404 potential smallholder farmers with 634 Ha; Kyotera district, 500 potential smallholders have pledged 3000 Ha

Under the Development of Oil Palm Grower (OPG) organizations; NOPP has supported Farmer Organisations including Kalangala Oil Palm Growers Trust (KOPGT), Ssese Oil Palm Growers Cooperative Society Limited (SOPGCO), Ssese Oil Palm Growers Savings and Credit Cooperative Society Limited (SOPAG) and Buvuma Oil Palm Growers Cooperative Society Limited (BOPGCO). The support included the registration of the cooperatives, capacity building in cooperative philosophy, Governances roles and responsibilities.

NOPP has in addition completed two 400 MT fertilizer stores on the outlying islands of Bunyama & Bubembe and the farmer's office in Buvuma. Construction of 16.4 km of access road in Buvuma is at 88% completion while the construction of the 32km farm roads is at 90% and commissioned a 604 MT Ferry on the 27th of May, 2023 at Kiyindi Landing site.

Under Private sector-led infrastructure development**;** On Buvuma Island, the private sector partner has established 1,944.91 Ha of nucleus estate including 1,119,373 seedlings on the 14.68 Ha nursery. 12 hectares have been identified as the site for the Buvuma oil palm processing mill in Busamuzi sub county. The private partner has employed 756 works (25% are Female) and has constructed 561.42 Km of access road in Buvuma. In Kyotera, 16,745 Ha of Nucleus estate has been identified by Government of Uganda through NOPP.

Under alternative economic opportunities; NOPP has supported 2,841 Households in alternative livelihood economic opportunities. These opportunities include Piggery, Poultry, Apiary and back yard gardening of vegetables. NOPP has supported 31 enterprise groups (doubling as Village Savings and Loan Associations) formed in Kalangala with trainings on institutional development, record keeping and financial literacy. 17 groups have also been linked to the Parish Development Model (PDM) for financial inclusion.

Under the mitigation of social risks sub component, NOPP has enrolled 1300 mentees in the Mentorship program (500 households in Kalangala, 400 households in Buvuma and another 400 households in Mayuge). The mentees are sensitized on food and nutrition; HIV/AIDS and Gender Based Violence issues. In addition, the project in partnership with Ministry of Land, Housing and Urban Development (MoLHUD), conducted sensitization exercises at DLG & community levels for 2,039 persons in Buvuma in land administration and user rights. Four Grievance Redress Committees (GRCs) each with 13 members have been formed in Buvuma to receive and address any concerns, complaints, notices of emerging conflicts, or grievances alleging actual or potential harm to affected person(s) arising from Project activities.

NOPP has supported restoration of 72.6 Ha of degraded area in Buvuma and Kalangala districts. NOPP conducted an assessment of protected areas equivalent to 119 Ha of forests, wetlands and lakeshore buffer zone. The Project trained 253 farmers in Buvuma and Kalangala on waste management, safe agrochemicals use and best management practices. Finally, under Environment, Health and Safety Sub Component, the ESIAs of Masaka and Mayuge were completed and submitted to NEMA for review and approval.

Under the Oil palm Sector development framework, the Regulatory Impact Assessment (RIA) draft report was presented to the MAAIF Top Policy Management in July, 2023.

Under research development, the project has identified and planted 26 acres of oil palm adaptive trials in the districts of Arua, Zombo, Moyo and Adjumani, Nwoya, Amuru, Apac and Dokoro to evaluate their yield performance. Trial establishment is on-going with 5 varieties exhibiting Fusarium wilt resistance, Ganoderma tolerance, shot growth and drought tolerance traits in Kagulube and Kayunga blocks in Kalangala

Under the Project Management Component; Project Management Unit organized the first Steering Committee meeting to guide project implementation; completed the baseline survey, is rolling out communication and knowledge management activities in all project activities. The project baseline survey was conducted in the 3 existing hubs and a final report was produced. The project also captured GPS coordinates of the smallholder farmers in Buvuma, the potential oil palm farmers in Bugiri and the alternative livelihood beneficiaries in Kalangala. And Buvuma hub staff were recruited and deployed to the Buvuma hub office.

II. INTRODUCTION

1.1 Background

1. The Government of Uganda (GOU) received a loan from the International Fund for Agricultural Development (IFAD) to finance a ten-year National Oil Palm Project. The project is implemented by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The project is in its fourth year of implementation.

1.2 Project Objectives

2. The overall objective of the project is inclusive rural transformation through oil palm investment. The specific project objective is to sustainably increase rural incomes through opportunities generated by the establishment of an efficient oil palm industry that complies with modern environmental and social standards. The project targets to reach an estimated 30,800 households with an outreach 154,000 beneficiaries of which 30% are women and 40% are youth.

3. The project was designed based on the strategic objectives of the sector including the need to increase production and productivity; value addition and quality assurance for access to the different types of markets. The Ministry of Agriculture, Animal Industry and Fisheries is the Executing Agency and has in this line established a Project Management Unit (PMU).

1.3 Project Components

4. The project comprises of three (3) operational and one (1) management component namely: i) Scaling-up smallholder oil palm development, ii) Livelihoods diversification and resilience, iii) Oil palm Sector Development Framework; and (iv) Project Management.

1.3.1 Scaling-up smallholder oil palm development Component

5. This component will establish sustainable commercial partnerships between smallholder oil palm growers and private processors, whilst putting in place enabling infrastructure. This will be done through 4 sub-components.

Sub-component 1.1: Development of smallholder oil palm plantations

6. The project will enable about 9,230 new smallholder producers to establish a total of 15,000 ha of oil palm. The project will support households to establish 2 ha of oil palm while providing quality inputs and extension services.

Sub-component 1.2: Development of oil palm grower organisations

7. The project plans to ensure sustainability of the oil palm operations through establishment of strong oil palm farmer organisations. The project will support the formation of 10 oil palm farmers' organizations in the new hubs; capacity assessment and strengthening of

farmer institutions undertaken in Kalangala hub; and a National Oil Palm Growers Trust established.

Sub-component 1.3: establishment of support infrastructure

8. The following support infrastructure will be established: 300 km of access roads and 910 km of farm roads; Fertilizer storage capacity of 1,500 metric tons in each hub; and a new ferry for Buvuma island.

Sub-component 1.4: private sector led infrastructure development

9. The private sector partner, BIDCO will 5000 ha establish a nucleus estate on Buvuma, construction of the estate road network; finance the establishment of a nursery to supply oil palm seedlings in all new hubs; and set up four processing mills in each hub where 3000 ha of oil palm are planted

1.3.2 Livelihood diversification and resilience Component.

10. The component consists of two subcomponents designed to empower oil palm and non-oil palm growers, their families and entire community where oil palm development will take place. It will support the creation of alternative economic opportunities and the mitigation of social risks in the project areas.

Sub-component 2.1: Alternative economic opportunities

11. This sub-component is designed to empower community members to be able to capture the range of economic opportunities arising from stream generated in the local economy by oil palm investment. Focus will be on agricultural intensification, entrepreneurship and financial accessibility interventions. These interventions will help communities in the project areas to overcome risks identified in connection with oil palm development. These include:

- The inability of some local households to take advantage of emerging economic opportunities
- The threat of long-term food and nutrition insecurity due to mono-cropping.

Sub-component 2.2: Mitigation of Social Risks

12. This sub-component addresses social risks and external shocks affecting households and communities that arise from rapid economic development in rural areas where poverty is widespread.

- The social risks include:
- Increase in intra-household tensions and vulnerabilities.
- Increase in high-risk sexual behaviour.
- Pressure on the traditional land tenure system.
- External shocks include:

- Adverse weather conditions.
- Migration of household head; and ill health.

1.3.3 Oil Palm Sector Development Framework

13. This component is focused on assisting Government of Uganda to establish the enabling conditions for the sustainable scaling-up and long-term development of the oil palm sector, during and beyond the lifetime of NOPP.

Sub-component 3.1: Policy and institutional support for oil palm sector development

14. This will focus on the establishment of an enabling policy, legal, strategic and institutional framework for the inclusive and sustainable development of the oil palm sector.

15. The project will support a nationally owned process to develop a set of enabling policies for oil palm sector development.

16. It will also support establishment of the long-term institutional arrangements required for promoting and regulating the sector and will leverage commercial financing to the oil palm sector.

1.3.4 Project Management and Coordination

17. The objective of this component is to ensure all activities of MAAIF and other agencies are coordinated. The Executing Agency is the Ministry of Agriculture, Animal Industry and Fisheries, and it established a Project Management Unit which is responsible for the day-to-day coordination of project activities, monitoring, evaluation and reporting, communication and Knowledge management, coordination of financial management processes and procurement processes.

1.4 Project Funding

18. The project total costs are USD 210.5 million comprised of a loan of USD 75.82 million, a 1.21 million grant from International Fund for Agricultural Development (IFAD) and a government contribution of USD 11.74 million. The project was declared effective on 1st March 2019 and will be implemented over 10 years. By the end of June 2023, xx % of the project funds had been disbursed. And xx % has been expensed. The table 1 below show the details of the NOPPs financial performance.

III. PERFORMANCE BY COMPONENT

19. In implementing the project, the Project Management Unit collaborates with various partners, including the Private Sector partner BIDCO Uganda Limited (BUL) subsidiaries in Kalangala (Oil Palm Uganda Limited (OPUL)) and Buvuma (Oil Palm Buvuma Limited (OPBL)), National Agricultural Research Organisation (NARO), District Local Governments and Private Service Providers (PSPs).

20. This section presents the status of project implementation as at the end of June 2023.

A. Component 1. Scaling up investment in smallholder oil palm development

21. Under this component, the project is establishing sustainable commercial partnerships between smallholder oil palm growers and private processors, whilst putting in place enabling infrastructure. This is done through 4 sub-components. The detailed progress under each sub component is below.

i. Subcomponent 1.1: Development of smallholder oil palm plantations

a. Buvuma Hub

22. **Overview**. The project, in partnership with the Buvuma District Local Government leadership has conducted sensitization and mobilization meetings across the main island. These have been all inclusive, with stakeholders invited to both formal and informal sittings to clarify roles and responsibilities, manage expectations, present progress on the pledging of farmland for oil palm growing as well as responding to any emerging issues. To date, over 2,550 farmers have been mobilized and sensitized on their roles and responsibilities including understanding the benefits of oil palm growing.

23. The tripartite Memorandum of Understanding (MoU) between MAAIF, NOPP and OPBL, for the establishment of smallholder oil palm plantations in Buvuma, was signed on June 20, 2022. The purpose of the MoU is to streamline contractual arrangements between OPBL and MAAIF/NOPP. A Contract Management Team was constituted, with the responsibility of contract oversight, including quality assurance and harmonization of prices of inputs and services supplied to the farmers, and in the future, the cost of Fresh Fruit Bunches (FFBs).

24. **Survey and Mapping of smallholders' farmland**. The first phase of out-grower's land surveyed and mapped in 2021-22 for 323 farmers totalled to 634.21 hectares in the four sub counties of: Buvuma Town Council, Nairambi, Busamuzi and BuwooyaThe second survey covered 171 farmers covering 366 hectares. In FY 2022-2023, a total 1072.69 ha of land belonging to 631 small holder farmers has been surveyed and mapped in Buvuma.

25. **Land clearing and planting of Oil Palm**. The Hub has a target of 2,500 ha of oil palm for smallholders, and for the FY of reporting, 349.36 ha were planted against the planned 500 , bringing the total oil palm establishment to 1,304.18 ha. An additional 385 ha have been identified and surveying is undergoing. Table 1 below articulates the progress in establishment

of out-growers hectarage, whilst table 2 indicates the total hectarage across the 4 project sub-counties (blocks), and the respective number of beneficiaries.

Table 1: Out-grower Plantations Establishment Progress, Buvuma Hub, June 2023

Plantation	Project Target	Planting Jan-Dec 2021		Planting Jan-Dec 2022		Planting Jan-Dec 2023		All cum. June 2023	2 ha cum. June 2023	Balance to 2 ha Project Target
		Target	Achieved	Target	Achieved	Target	Achieved, June '23			
Out-growers (Ha)	2,500	500.00	501.00	1,000.00	602.44	1,000.00	200.74	1,304.18[1]	732.98[2]	1,767.02[3]

Table 2: Oil Palm Establishment by Block, July 2021 - June 2023

#	Block	Hectares planted	No. of farmers
1.	Busamuzi	413.49	197
2.	Buvuma T/C	452.61	155
3.	Nairambi	368.76	165
4.	Buwooya	69.31	45
TOTAL		**1,304.18**	**562**

26. The smallholders' planting target of 500 ha was not achieved because, over the first half of the FY there was prolonged delay in reimbursement of land clearing and maintenance funds to farmers, which also negatively impacted the pledging of more land and consequently the off-take of seedlings from the nursery.

27. **Inputs usage**. The quantities of fertilisers (Rock phosphate, NPK, Kieserite, etc.) and pesticides (Chloropyrifos) used in establishing and maintaining the out-growers' plantations are summarised below:

Table 3: Summary inputs usage report, June 2021 - June 2023

Agro-chemicals (Fertilisers & Pesticides) Application Table					
Input	2021	2022	2023		Totals
	June - Dec	Jan - Dec	Jan - March	Apr - Jun	
Rock phosphate (Kg)	60,724	72,997	13,277	20,652	167,650
NPK (Kg)	22,577	146,169	31,863	57,480	258,089
Dolomite (Kg)	-	80,770	6,923	10,242	97,935
Kieserite (Kg)	-	200		17,780	17,980
NK3 (Kg)				1,272	1,272
Chloropyriphos (L)	0	876	200	100	1,176

28. **Field husbandry and development of the palms**. After signing the MoU between MAAIF, NOPP and OPBL, the company continued to provide on-spot training to farmers, to ensure the quality maintenance of out-grower's immature oil palms. To ensure high

[1] This total is for both development and commercial hectarage.
[2] Total for development (2 ha) hectarage only.
[3] Balance against development target of 2 ha per out-grower.

productivity of the smallholders' oil palm plantations, field inspections and routine fertilizer application (NPK, Dolomite and Kieserite) have been undertaken, after circle weeding, as well as pest control especially for termites and bush rats

29. Garden inspections done by Hub Agricultural Extension Workers and OPBL indicate that most oil palms planted during first and second planting windows (July 2021 - June 2022; 869.71 ha; 88,591 seedlings) representing 66.6% of the total establishment, have started flowering, hence requiring ablation (de-flowering), since they are not yet strong enough to bear the fruits. Below is a detailed table.

Table 4: Physiological progress of established Oil Palm gardens

Planting season	**June–Dec 2021**	**Jan-June 2022**	**July-Dec 2022**	**Jan-July 2023**	**Total**
Acreage (ha)	590.23	279.48	153.29	281.18	1304.18
Seedlings (No.)	84378	4213	24,219	44,426.44	212,228
Status	Flowering	Flowering	Not yet flowering	Not yet flowering	

30. **Logistics**. To access inputs, the out-growers are issued with loading permits by the Logistics Officer and the Hub Manager, upon meeting minimum requirements. The permits are presented at OPBL for release of the permitted inputs, which the farmer then transports to his garden, by means of post-paid or cash-paid transportation. Owing to delays in reimbursements including for transportation resulting change to IFMS,, some farmers have opted pay transportation in cash the more which isn't in the means of many farmers. According to contract signed between OPBL and MAAIF transportation is the responsibility of OPBL..

31. Upon the delivery to site, the labourers do the planting and application of the first fertiliser – rock phosphate. The Hub Extension Officers are also present to ensure compliance and offer extension services.

32. **Training and Extension**. NOPP, in conjunction with OPBL, has trained 562 OPGs on various topics including appropriate agronomic practices, ablation, pruning, safe agrochemical use and financial literacy. The trainee summary details are below.

Table 5: Oil Palm Growers trained in Buvuma

#	**Block**	**Male**	**Female**	**Totals - Gender**
1.	Busamuzi	138	59	**197**
2.	Buvuma TC	89	66	**155**
3.	Nairambi	115	50	**165**
4.	Buwooya	34	11	**45**
	Totals - Sex	**376**	**186**	**562**

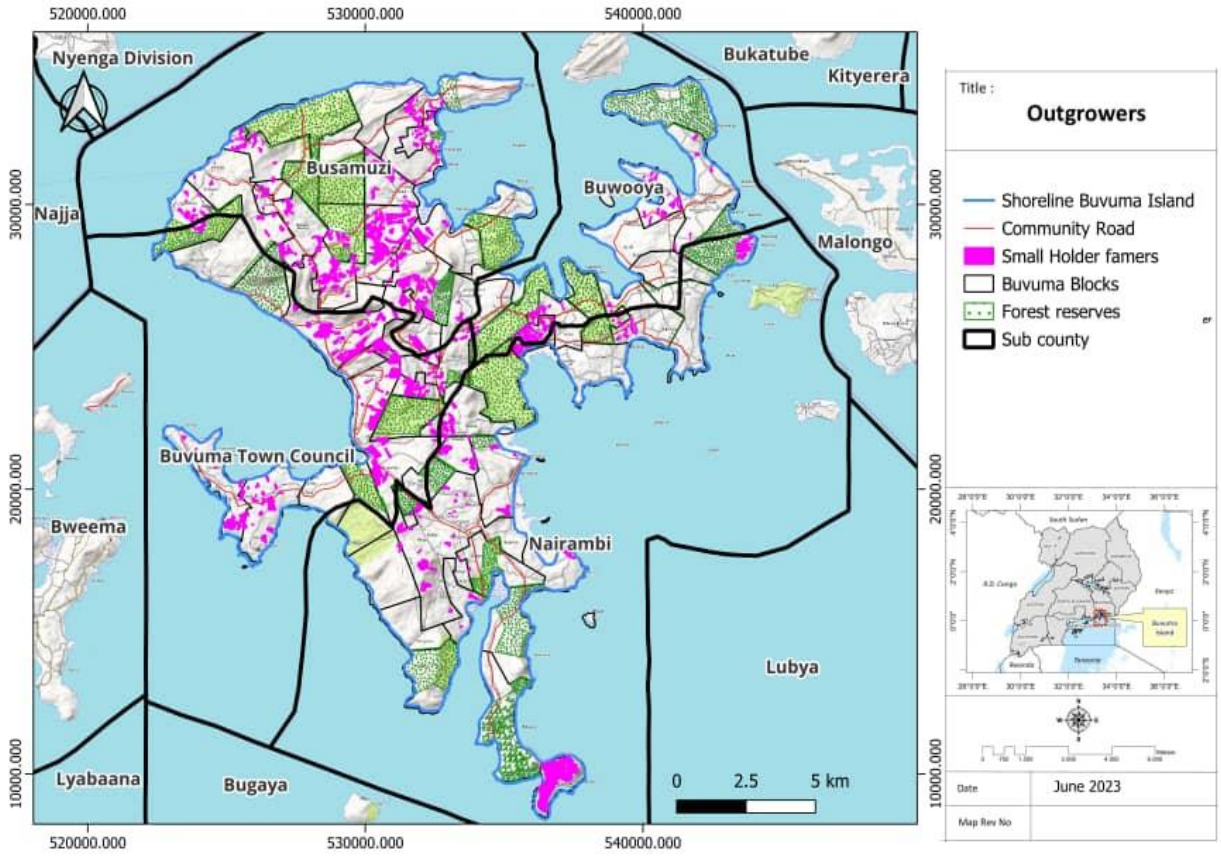

Figure 1: Map of OPGs distribution on Buvuma island, Buvuma district

b. Mayuge Hub

33. **Overview**. In the reporting period, the Project Surveyor has surveyed and mapped 2,022 potential OPGs with 2,965.2 ha, in Mayuge district.

34. Previously, the project had registered 3,488 potential farmers (F=21%) who pledged 4,370 ha for the establishment of oil palm. In Mayuge district, 425.5 ha was surveyed and mapped for 304 Households. In addition, NOPP surveyed and mapped 523 potential smallholders with 500 ha in Bugiri district.

c. Masaka Hub

35. **Overview**. Masaka hub comprises of the districts of Masaka, Kalungu and Kyotera.

36. In the year of reporting, entry meetings were conducted in Kalungu and Kyotera, where the MoU for cooperation between MAAIF/NOPP and the DLGs was introduced and submitted for consideration by the leadership.

37. In Masaka hub, an additional 566 ha has been identified, bringing the total up to 1,200 ha, and potential OPGs up from 404 to 600.

38. In the previous reporting periods, an entry meeting was held to explain the implementation modalities to district stakeholders. A Memorandum of Understanding was subsequently signed between MAAIF/NOPP and Masaka District Local Government. An experiential learning visit was conducted to Kalangala district, for the Local Leadership of Masaka and Kyotera districts - there were 64 participants (27% women).

39. In Kyotera district, the Ministry of Lands, Housing and Urban Development together with MAAIF and the District Local Government have completed the identification and valuation of project affected persons (PAPs) on the Sango Bay land. To date, government has handed over 16,745 hectares of Sango Bay land to BIDCO and its partners for nucleus establishment in the sub-counties of Kasasa, Kakuuto, Kabira, Mutukula TC and Kyebe.

d. Mukono Hub

40. **Overview**. Mukono hub comprises of Mukono and Buikwe districts.

41. In FY2021/22, an entry meeting was held in Buikwe district, where 61 District Leaders were introduced to the project implementation modalities.

e. Kalangala Hub

42. **Overview**. At the end of Vegetable Oil Development Project II in 2019, there were 4,848 ha planted by out-growers in Kalangala hub/district. The NOPP target for Kalangala is 500 ha, commercially or privately financed.

43. **Land clearing and planting of Oil Palm**. In the reporting period, 727 ha have been established privately, bringing the total hectares since 2019, to 5,891. The Nucleus estate remains at 6,500 hectares.

44. **Production of Fresh Fruit Bunches (FFBs)**. Cumulatively, the farmer members of Kalangala Oil Palm Growers Trust (KOPGT) have harvested 390,067 MT of FFB valued at UGX 267.8 bn, between January 2010 and June 2023. The increase in production is largely attributed to an increase in area of mature trees for harvesting, age of the trees and an increase in yield due to more farmers adhering to the recommended agronomic practices and fertilizer application.

45. **Further outcomes**. The average price of FFBs has been on an upward trend since production commenced in 2010. In 2022 however, there was a significantly marked price spike, arising from a combination of factors on the international scene – reduced exports of Crude Palm Oil (CPO) from Malaysia and Indonesia, and the outbreak of the Russia-Ukraine war.

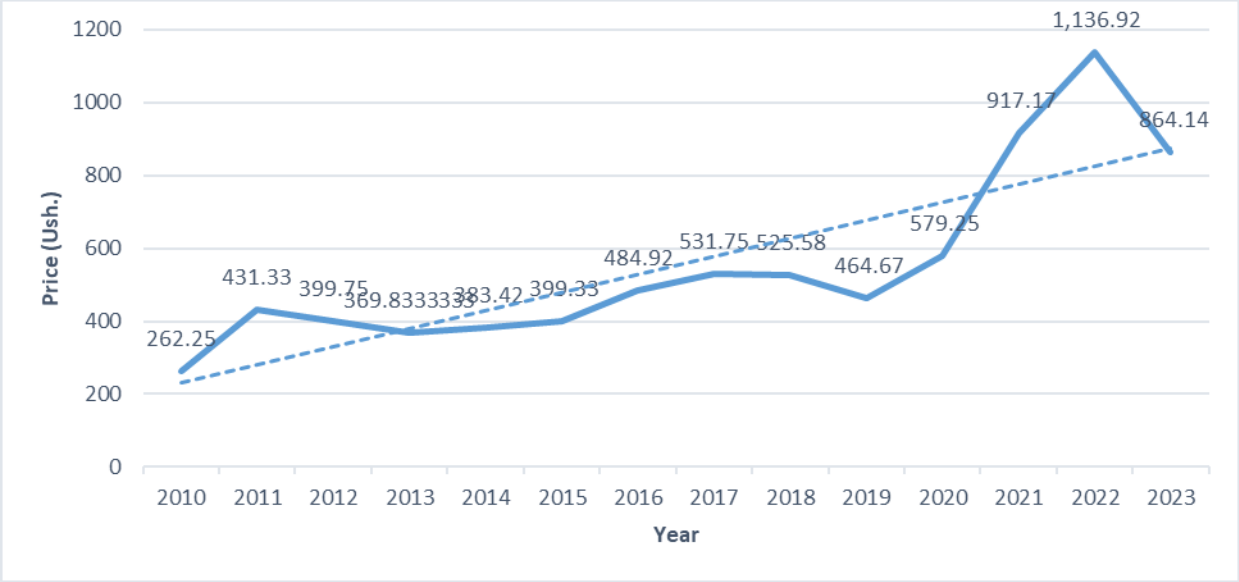

***Figure 2: Average annual price trend for FFBs in Kalangala*[4].**

46. Relatedly, arising from the 10% shareholding in OPUL, the farmers have so far earned Ush. 50.2 bn in dividends. Following the directive of H. E. The President in May 2023, these dividends will revert to the farmers, as shareholding in the Ssese Oil Palm Growers Association Savings and Credit Cooperative (SOPAG SACCO).

Table 6: Dividends arising from KOPGT 10% shareholding in OPUL

Date	Gross Income	Tax	Net Income
17/12/2018	3,900,000,000	585,000,000	3,315,000,000
10/9/2018	8,300,000,000	1,240,000,000	7,055,000,000
12/12/2020	5,550,000,000	832,500,000	4,717,500,000
22/07/2021	5,400,000,000	810,000,000	4,590,000,000
29/03/2022	14,200,000,000	2,130,000,000	12,070,000,000
16/01/2023	12,845,000,000	1,926,750,000	10,918,250,000
Total	**50,195,000,000**	**7,524,250,000**	**42,665,750,000**

ii. Sub-component 1.2: Development of oil palm growers' organisations

47. In the FY2022/23, NOPP recruited a consultancy firm on a 5-year contract, to build capacities of the OPG organisations in Buvuma and Mayuge. For Kalangala, an individual consultant was recruited to strengthen farmer organisations in Kalangala, for 2 years. The consultancies are in start-up phases.

48. The Buvuma Oil Palm Growers Cooperative Society Limited (BOPGCo) membership has increased from 547 (110 females, 437 males) in July 2022 to 612 (154 females, 458 males) by the end of December, 2022. Additional new member totalling to 200 were recruited between

[4] The average price for 2023 is for 6 months only viz., January - June 2023.

January 2023-June 2023. Previously NOPP facilitated the formation of Buvuma Oil Palm Growers Cooperative Society Limited (BOPGCo); trained the organization's leadership in governance and their roles and responsibilities; formed three governance committees, viz., the Board, Supervision Committee (SUPCO) and a Vetting Committee (VETCO). The project also organized the OPGs into 4 blocks comprising of 27 units.

49. Following the signing of MOU between MAAIF-NOPP and BOPGCO in FY 22/23, NOPP released cash loans equivalent to Ush. 388.84 million for land clearing and Ush. 240.53 million for maintenance activities of up to 2 hectare-holdings.

50. In Mayuge, NOPP facilitated the transformation of the existing farmer organisation (Mayuge Oil Palm Growers Association) into a cooperative. A pre-registration training has been conducted by NOPP and MTIC and the cooperative is to be registered by end of August 2023, after fulfilling the requirements for registration.

51. In Kalangala, the project supports Kalangala Oil Palm Growers Trust (KOPGT), Ssesse Oil Palm Growers Cooperative (SOPGCo) and Ssesse Oil Palm Growers Savings and Credit Cooperative Society (SOPAG SACCO). The areas of support broadly include governance, management, loan management, mobilizing savings and membership. The KOPGT now scores 100% on the performance indicator of "% of OPGs' organisations costs covered by own income". As for the SACCO, the table below highlights its performance against key parameters for the last 4 years – notably, the portfolio at risk has more than halved since 2022.

Table 7: Ssese Oil Palm Growers Savings and Credit Cooperative Society performance

Performance Parameters	**2020**	**2021**	**2022**	**2023**
Savings (Ush.)	239.8 million	590 million	2.2 billion	3.5 billion
Loans (Ush.)	794.8 million	1.71 billion	3.5 billion	4.5Billion
Share capital (Ush.)	262.7 million	315 million	709 million	447 million
Membership (No.)	673 members	786 members	836 members	875 members
Portfolio at Risk (PAR)	16.8%	5%	30%	14%

52. The producer cooperative (SOPGCO) in Kalangala has taken on the technical roles of providing transport, extension services, management of inputs after signing an MOU with KOPGT, devolving these roles from KOPGT.

iii. Sub-component 1.3: Establishment of support infrastructure.

53. In the current reporting period, in Buvuma hub, the progress under the infrastructural interventions is highlighted below.

Table 8: Progress of infrastructural interventions in Buvuma

Deliverable	**Target**	**Progress to date**
Survey, Design, Demarcation of Access and Farm Roads	40 km	• 40km (100%)

Access roads	16.45 km	• Construction of access roads is at 14.53km (88%)
Farm roads	32 km	• Construction of farm roads is at 28.8 km (90%)
Ferry	1	• The 604 MT ferry was commissioned on the 27th May, 2023.
Hub Office	100% payment	• 100% payment was effect, post the Defects Liability Period
Fertilizer Store	1	• Designs and bills of quantities for the fertilizer store and meeting hall were completed. • Procurement of a contractor for construction awaits resolution of land ownership.

54. **Landing sites**. The two contractors having failed to perform the works within the contract period, even after the extension of time from 12 months to 24 months, had their contract terminate in 2021, upon expiry of the contracts. Subsequently, MAAIF took over the sites (Bugala, Kalangala district; Kiyindi, Buikwe district; Kirongo, Buvuma district) and requested Ministry of Works and Transport (MOWT) to value the works done by the contractors, review designs done by the contractors and prepare BoQs for purposes of retendering the works. The valuation report is awaited from MOWT to enable MAAIF conclude the contracts.

Figure 3: The MV Palm, launched 27th May, 2023

iv. Sub-component 1.4: Private sector-led infrastructure development

55. **Land for the Nucleus Estate**. As of June 2023, Oil Palm Buvuma Limited (OPBL) is in possession of 5,872.92 ha. The land use is detailed below.

Table 9: Oil Palm Buvuma land use distribution

#	Land use	Hectares
1.	Nursery	14.68
2.	Planted area	1,984.33
3.	Land cleared, ready for planting	369.12
4.	Plantable reserve	2,231.26
5.	High Conservation Value & High Carbon Stock areas	1,043.29
6.	Roads and housing	155.11
7.	Not plantable	75.13
Total		**5,872.92**

56. On the landholding in possession, OPBL has identified 12 hectares for siting of the processing Crude Palm Oil (CPO) Mill in Busamuzi sub-county and the construction of the mill will commence in 2024.

57. **Roads**. OPBL has opened 561.42 km of access roads in and around the nucleus estate in Buvuma hub in a bid to ease access to FFB harvests and movement from the gardens to the processing mill.

58. **Staffing and housing**. BIDCO has so far recruited 835 workers (F 27%; Y 70%); there are 9 expatriates. In addition, BIDCO has constructed houses for its various staff categories.

Figure 4: Oil Palm Buvuma Limited Nursery, Buvuma district

B. Component 2. Livelihood diversification and resilience

59. The component consists of two subcomponents designed to empower oil palm and non-oil palm growers, their families and communities where oil palm development will take place. It will support the creation of alternative economic opportunities and the mitigation of social risks in the larger communities. The detailed progress under this component is below:

i. Sub-component 2.1: Alternative Economic Opportunities

a. Agriculture Intensification

60. **Apiary value chain in Buvuma**. NOPP is promoting activities along the apiary value chain in Buvuma. This is a Natural Resource Based enterprise that is enhancing community protection of the forest ecosystem that the project is currently restoring. As at June 2023, the project had facilitated the training of 309 farmers in the management of honeybees and use of bee gear. Fifteen (15) bee-keeping groups comprising the 309 farmers were formed and integrated with the Village Savings and Lending Associations (VSLAs). Furthermore, during the group trainings, 37 group facilitators/honey aggregators were identified (2-3 per group). These were further trained as trainers, to further train the beekeepers.

61. **Piggery and poultry value chains in Buvuma and Kalangala**. The project has continued to work with the respective District Local Governments in promotion of piggery and poultry value chains.

62. In Kalangala Hub, 1,350 new beneficiaries have been selected in FY 2022/23 and supported with piggery and poultry inputs, to set up 33 demo plots through financing to the DLG. Similarly, in Buvuma, 20 demo plots have been financed to benefit 500 beneficiaries.

63. The project also provided funding to the DLGs to train the new beneficiaries on proper management of their respective enterprises, formation of business-oriented enterprise groups and financial literacy.

b. Self-employment and Entrepreneurship

64. **Vocational skilling**. Under vocational skilling, the project is targeting 2,500 beneficiaries (500 per hub) for promotion of self-employment of youth and women.

65. Following the capacity assessment of Bumangi Polytechnic Institute in Kalangala, and subsequent selection of 122 beneficiaries, the training was done in 2 phases; with the first phase of 61 beneficiaries graduating in June 2022. In FY22/23, the remaining 61 beneficiaries were trained and graduated on 1st May 2023. These were assessed by the Directorate of Industrial Training (DIT) and graduated in 2022 (61) and 2023 (61). See details of vocational skilling for the 122 youth below.

Table 10: Vocational skills categories and respective beneficiary numbers

Vocational Skill	Total beneficiaries	Females	Males
Catering	10	08	02
Carpentry and Joinery	23	0	23
Driving	07	0	07
Building and Concrete practice	28	01	27
Hairdressing	26	26	0
Tailoring	28	26	02
Total	**122**	**61**	**61**

66. **Outcomes**. Of the graduates, 73% are already either employed or self-employed and earning on average UGX 200,000 per month . 11 graduates were retained by the polytechnic for further training to attain National Certificates.

ii. Sub-component 2.2: Mitigation of Social Risks

a. Household and community-level sensitisation and empowerment

67. **Household Mentorship program**. In Buvuma, 400 mentees were enrolled for the mentorship program. The program has 40 mentors who guide the mentees.

Table 11: Mentors and mentee households in Buvuma district

Subcounty	Mentors	Mentees		Total Mentee Households
	No.	1st batch	2nd batch	
Nairambi	13	44	86	**130**
Buvuma TC	9	34	56	**90**
Buwooya	9	34	56	**90**
Busamizi	9	24	66	**90**
Total	**40**	**136**	**264**	**400**

68. In Kalangala, the selection of the 1st batch (98) was done by the community guided by the mentee selection criteria together with the LC1 and unit leaders and the second batch, due to challenges of COVID-19 where communities were not allowed to gather in big numbers, selection was done by leaders only. See table below.

Table 12: Mentors and Mentee households in Kalangala district

Subcounty	Mentors	Mentees		Total Mentee Households
	No.	1st batch	2nd batch	
Bujumba	7	15	55	**70**
Kalangala	6	17	36	**53**
Mugoye	34	61	276	**337**
Bunyama	2	5	25	**30**
Total	**49**	**98**	**382**	**490**

69. Mugoye is the largest sub county in Kalangala and hosts the most beneficiaries of Oil Palm establishment and Household Mentoring. There are 50 mentors (F 26, M 24) and 490 mentees (F 183 M 307). Of the 490 mentees, 181 are oil palm farmers while 309 are non-oil palm farmers. A total of 98 Mentee households from the 1st batch were graduated as they had achieved 70% of their Vision Road journey. Sixty-three (63) were males and 35 females, OPGs were 63 and Non-OPGs 87.

70. In Mayuge, the mentoring commenced in 2021 with a deployment of 40 mentors to carry out activities of household mentoring in 400 mentee households in 4 sub-counties of Malongo, Kityerera, Busakira and Baitambogwe.

Table 13: Mentors and Mentee Households in Mayuge district

Subcounty	Mentors	Mentees		Total Mentee Households
	No.	1st batch	2nd batch	
Busakira	10	97	3	100
Malongo	10	99	1	100
Kityerera	10	95	5	100
Baitambogwe	10	0	100	100
Total	**39**	**291**	**109**	**400**

71. NOPP conducted an assessment of the household mentoring programme in Kalangala, Buvuma and Mayuge. There were positive changes observed at household level, with at least 70% of the households ready for graduation. The positive changes included improved sanitation and hygiene, social empowerment and social inclusion of vulnerable groups especially women in development activities, households have developed a spirit of self-reliance, improved gender relations, improved self-esteem and self-worth and increase in agriculture production and productivity at household level.

72. However, there was a knowledge gap observed among the CDOs and mentors, on how to effectively graduate qualifying mentees. Based on this, NOPP conducted a refresher training for 129 mentors and 49 CDOs in Buvuma, Kalangala & Mayuge. Following the training, an evaluation tool has been developed for data collection and will guide on the graduation of at least 70% of the households by end of August 2023.

73. The graduation of mentee households will facilitate the scale-up of the programme in Kalangala and Buvuma, as champions will be selected among the graduated mentees to conduct peer-to-peer mentoring for new mentees, with support from the mentors and CDOs.

74. **Gender Action Learning Systems (GALS)** is an approach to Household Mentoring. The project in partnership with the Buvuma District Local Government is implementing the Gender Action Learning Systems (GALS), which develops participatory visioning and planning skills and strengthens social networks for both women and men at all levels. The project facilitated trainings on the following topics: Resource map, Vision Road Journey, Gender

Balance Tree, Social Empowerment Map, Challenge Action Tree and Increasing Income Tree; in all Oil Palm growing areas.

75. In the first group of GALS implementation, 233 beneficiaries were trained (100 female, 88 male and 48 youth) in Nairambi sub-county. In the second group, a target of 300 beneficiaries are being trained in Busamuzi and Buwooya sub-counties. The beneficiaries trained in Nairambi sub-county have started using GALS tools in their household planning and are overcoming household challenges.

76. **Community-level sensitization on HIV/AIDS, gender and nutrition**. The project in partnership with the Buvuma District Local Government, facilitated a food and nutrition training in the sub-counties of Buwooya, Busamuzi, Nairambi and Buvuma Town Council. The objective of these trainings was to reinforce specific nutrition related practices or behaviours to change habits that contribute to poor health. The training was delivered by Community Development Officers, Health Assistants, Parish Chiefs and Agricultural extension workers. Mentee households, Household mentors, Local leaders and the entire community. A total of 949 (427 female, 522 male and 346 youth) individuals attended the 3-day training on food and nutrition.

77. A sensitisation seminar on HIV/AIDS was held for 436 youths, involving sports and cultural activities, in Buwooya sub county-Buvuma hub. This aimed at empowering youths in mindset change for replication of Peer to Peer (P2P) education in communities. The seminar tackled 2 thematic areas (HIV/AIDS prevention measures and sustainable youths' economic empowerment).

Table 14: Community-level sensitizations by the numbers

Hub	**Target**	**Actual**				
		Gender	F&N	HIV/AIDs	**TOTAL**	**% achieved**
Kalangala	5,215	980	683	574	**2,237**	**42**
Buvuma	5,526	340	2,881	436	3,657	**66**
Mayuge	7,404	380	325	154	**859**	**11**
Masaka/Rakai	6,346	0	0	0	0	**0**
Hub 4	6,346	0	0	0	0	**0**
Total	**30,837**	**1700**	**3889**	**1,164**	**6,753**	**21.8**

78. Some of the lessons learnt from the Food & Nutrition trainings include: 80% children are normally given one meal per day**;** Latrine coverage is low in all areas covered which calls for interventions and despite the availability of fruits, families don't consume them often.

b. Improved land access and tenure security

79. In addition, the project in partnership with Ministry of Land, Housing and Urban Development (MoLHUD), conducted sensitization exercises at DLG & community levels for 2,039 persons in Buvuma on land tenure security. In addition, NOPP in partnership with Ministry of Land, Housing and Urban Development (MoLHUD), facilitated the training of land management institutions in Buvuma (Area land committee, District land board and district land office). 20 area land committee members, 5 District land board members and 3 District land office staff were trained on legal and policy framework in the land sector, the roles and responsibilities of Land Management institutions, the various linkages between Ministry of Lands, Housing and Urban Development and other Land Management institutions, the various process of acquiring land in Uganda and alternative dispute resolution.

80. The land management institutions and the GRCs will act as TOTs to scale up land sensitizations at community level.

Grievance Redress Mechanism. The project facilitated the formation of four Grievance Redress Committees (GRCs) in Buvuma hub each with 13 members to receive and address any concerns, complaints, notices of emerging conflicts, or grievances alleging actual or potential harm to affected person(s) arising from project activities.

Table 15: Grievance Redress Committee memberships in Buvuma

Subcounty	**Males**	**Females**	**Total**
Nairambi	12	01	13
Buvuma TC	09	04	13
Busamuzi	10	03	13
Buwooya	10	03	13
Total	**41**	**11**	**52**

81. The Four Grievance Redress Committees (GRCs) were trained/inducted in Buvuma on their roles and responsibilities. They were also equipped with complaint log books and suggestion boxes to facilitate their work. 61 community meetings (23 in Buwooya s/county, 19 in Nairambi s/county and 18 in Buvuma T/C) held at village/cell level to receive and handle community grievances.

The concerns and complaints recorded by the GRCs were mainly related to land (valuation and compensation). To enable them address these issues, NOPP with Ministry of Lands, Housing and Urban Development (MoLHUD), conducted a training for the GRCs on the legal and policy framework in the land sector, the roles and responsibilities of GRCs in land administration and management, the various processes of acquiring land in Uganda and the Alternative Dispute Resolution (ADR) process.

iii. Sub-component 2.3: Environment, Health and Safety (EHS)

82. **Restoration and demarcation**. In FY2022/23, the PMU in collaboration with the District Local Governments of Buvuma and Kalangala brought 642 ha, out of an annual target

of 955 ha and a project target of 5,751 ha, under climate resilient practices. Of these, 42 ha were restored with indigenous tree seedlings and 600 ha (30 km boundary line) are under demarcation as lakeshore buffer, using bamboo as a live marker, as guided by the National Environment Management Authority (NEMA). Cumulatively, the project has brought 672.6 ha under climate-resilient practices.

Table 16: Hectares of land brought under climate-resilient practices

Climate-resilient practice	**District**	**Hectares**
Restoration	Buvuma	52.0
	Kalangala	20.6
Demarcation	Kalangala	600.0
Total		**672.6**

83. In order to augment efforts to restore degraded sites, in FY2022/23, a 40,000-tree seedling nursery has been established at Namunyolo Local Forest Reserve, in Buvuma Hub. The nursery has been used to train the 172 female members of women groups – 102 from Kojja-Tojjwe Environment Conservation and Tree Planting Association (KECTPA), 20 from Bukalabati Environmental Conservation Group and 50 from Twesige Women's Environmental Protection Group, on tree nursery management.

84. The NOPP, in conjunction with the National Forestry Authority (NFA) office in Buvuma, opened the boundaries of 4 forest reserves – Bugomba ((270 ha), Lukale (382 ha) and Olamusa (391 ha) in Buwooya Sub county, and Bukaibale CFR (1,137 ha) in Busamuzi Sub county with respective boundary lengths of 6 km, 5.7 km, 11.5 km and 27 km).

85. **Environmental and Social Impact Assessments**. The ESIA for the fertiliser store in Buvuma district, was completed and approved by NEMA in 4th quarter of the FY22/23.

86. The project, working with Wetlands Management Department (WMD) of Ministry of Water and Environment (MWE) mapped wetlands in Masaka and Mayuge Hubs of the NOPP, as part of the Environmental and Social Impact Assessment studies. And in collaboration with the National Agricultural Research Laboratories, Kawanda, the NOPP undertook soil suitability analyses in Mayuge and Masaka Hubs as an input to the respective ESIA processes. The soil suitability reports were annexed to the final ESIAs reports.

87. The NOPP, working with the National Forestry Authority (NFA) mapped central forest reserves in Mayuge as part of the ESIA for establishment of smallholder oil palm plantations. Preliminary desk analysis covering 4 Central Forest Reserves (i.e. Walulumbu, South Busoga, Bukaleba and Namafuma) was undertaken and a list of farmers whose gardens are within 50 metres of the actual boundary of the respective CFRs generated. A field verification exercise was then undertaken targeting farmers that are close to the CFR boundary and the report finalised. The report was annexed to the ESIA for Mayuge.

88. The ESIA for Mayuge Hub has since been submitted to NEMA and is in advanced stages of review. The respective ESIAs for the constituent districts of Masaka hub have been

finalized and are due for submission to NEMA, pending the identification and mapping of additional farmers.

89. **Environmental Audit**. The Environmental Audit for smallholder oil palm growing in Kalangala, including the outlying islands of Bunyama and Bubembe, was concluded in March 2023 and issued a compliance agreement by NEMA in June 2023.

90. **Private Sector EHS interventions**. In October, 2022, the EHSO participated in the HCV/HCS consultative meeting for Sango Bay at which it emerged that Sango Bay is a seasonally inundated grassland area, part of which is a Ramsar site. An ESIA study was commissioned by Oil Palm Buvuma Limited (OPUL) that included mapping of the Ramsar site that lies in the proposed wider Sango Bay landscape. Mapping of the Ramsar site was undertaken by the WMD of MWE as the institution mandated to oversee the management of wetlands in the country. On the basis of recommendations of the ESIA, growing of oil palm in Sango Bay is to be done in strict observance of the boundaries of the Ramsar site.

91. The EHSO and officials from MWE joined OPBL and the sustainability team from Wilmar International on a verification visit to Buvuma to assess HCV/HCS areas and propose approaches to managing them. An issue of contention emerged that about 1,330ha out of the 5,400 provided to OPBL for oil palm growing is being conserved as an HCV/HCS area and yet this forms part of the area that people were compensated. The guidance from MWE was that the HCV/HCS areas need to be introduced as new regulated areas for oil palm growing.

92. **Local Environment Committees**. A total of 64 Local Environment Committees (LECs) were formed in the districts of Kalangala, Buvuma and Mayuge. In Mayuge, 26 LECs were formed – 23 at parish level and 3 at sub-county level i.e., Malongo, Bukabooli and Busakira Sub counties (69F, 773M); while in Kalangala 7 (at unit level) and Buvuma 31 (27 at unit level and 4 at block level). In total, 75 LECs were trained (including those that were formed in earlier financial years). Through the efforts of LECs in Kalangala, and the community at large, the district natural resources office has been notified of fresh encroachment of the buffer zone (especially planting of food crops) and so far, 10 improvement notices have been issued to offenders. The district has followed up to ensure that these sites are restored.

93. The NOPP engaged NFA and KDLG with regards to the rampant encroachment of Kijogolo CFR on Bunyama Island, especially through charcoal burning. As a result, NFA in conjunction with KDLG has enhanced surveillance leading to halting of charcoal burning. The NOPP PMU and KDLG held a meeting with NFA to discuss restoration of Kijogolo CFR and the following was agreed:

- Boundaries of Kijogolo CFR be secured by surveying and placing boundary marks
- Map the badly degraded areas of the CFR
- 100ha of be restored with indigenous tree species planted in strips.
- Formulate community forest groups to help in restoration efforts and/or policing
- Support neighbouring community to grow fast growing wood species as a measure to reduce pressure on the reserve

94. **Roundtable on Sustainable Palm Oil**. Working with Roundtable on Sustainable Palm Oil (RSPO) Africa Office, a stakeholder engagement was conducted in May 2023, to sensitize smallholder farmers in Kalangala and Buvuma, on the RSPO Independent Smallholder Standards. The engagement is a first step towards enabling the smallholder farmers attain RSPO certification. Besides enabling the smallholder farmers access to credits[5] (in addition to the incomes they already obtain from the sale of FFB to the private investor), RSPO certification will improve the image of Uganda's oil palm sector on the international scene.

Figure 5: Restoration planting in Kojja Central Forest Reserve in collaboration with a local CBO - Kojja-Tojjwe Environmental Conservation and Tree Planting Association, November 2022.

[5] There are 2 types of credit; Crude Palm Oil (CPO) and Crude Palm Kernel Oil. These are convertible into monetary income.

C. Component 3. Oil palm Sector development Framework

95. This component is focused on assisting Government of Uganda to establish the enabling conditions for the sustainable scaling-up and long-term development of the oil palm sector, during and beyond the lifetime of NOPP. The detailed progress under this component is below:

i. Sub-component 3.1: Policy and institutional support for Oil Palm sector development

a. Policy Development

96. The first Regulatory Impact Assessment Draft Report was completed in May 2023 and presented to the MAAIF Senior Management Team for their input. The next phase is a Stakeholders Validation Workshop, a Technical Working Group review, before a final submission to the MAAIF Top Policy Management.

b. Institutional support

97. In Buvuma, the project engaged UDB, Stanbic Bank, Post Bank and Centenary Bank, with the aim of attracting commercial financing of oil palm production.

98. In October 2022, a line of credit worth Ush. 11.6 billion from Uganda Development Bank Limited (UDBL) was approved for to finance 1000 hectare for commercial farmers in Buvuma. The MoU between MAAIF and UDB is in place.

ii. Sub-component 3.2: Strengthening of national capacity for oil palm research

a. New sites

99. **New adaptive oil palm trials establishment in Northern and West Nile region**. National Oil Palm Project and the National Agricultural Research Organisation (NARO) have the responsibility of expanding commercial oil palm production across suitable agro-ecologies in Uganda. The suitability of agro-ecologies is best determined by evaluating the performance of oil palm in various areas. The NARO research team has identified and planted oil palm adaptive trials in West Nile region in the districts of Arua (1 site), Zombo (1 site), Moyo (3 sites) and Adjumani (3 sites), to evaluate their yield performance. In the same line seven sites have been identified in the districts of Dokolo (4 sites), Apac (1 site) and Nwoya (2 sites) to host oil palm adaptive trials in Mid North. Trial establishment is on-going with 5 varieties exhibiting Fusarium wilt resistance, Ganoderma tolerance, short growth and drought tolerance traits.

b. Research sites

100. **Existing oil palm adaptive trial growth and yield performance**. The research team continues to evaluate oil palm growth and yields under research and on-farm trials in different environments. Data collection is yet to begin in the newly established trials. On-station trials

exist at NaCORI Kituza and at NaCRRI – Namulonge. The trials provide data for benchmarking Uganda's oil palm industry with the rest of the oil palm producing countries. The 25-year old trial at NaCORI Kituza yielded 14.01 ton of fresh fruit bunches per hectare while the 7-year old trial at NaCRRI yielded 1,489 bunches and 10.8 ton/ha. The growth parameters have increased with age to a canopy of 8.1 m, height of 2.14 m, girth 2.7 m.

c. Kalangala Hub

101. **Management of Fusarium wilt disease of oil palm and Ganoderma trunk rot**. In devising sustainable measures for the management of Fusarium wilt disease of oil palm, 250 oil palm seedlings resistant to Fusarium wilt and tolerant to Ganoderma obtained from CIRAD-Benin were planted in Fusarium wilt of oil palm and Ganoderma trunk rot infested fields in Kagulube block in Kalangala district. These seedlings are being evaluated against Fusarium wilt disease under field conditions for 5 years.

102. **Best Management plots**. Incidence and severity data collection in the Best Management Plots (BMPs) set for management of Fusarium wilt disease in Kagulube block and Ganoderma trunk rot in Kayunga block were initiated. Furthermore, to demonstrate best management practices to farmers in the management of Fusarium wilt of oil palm and Ganoderma trunk rot, *Arachis pintoi* (pinto nut) was planted as a cover crop, as a best management practice, BMPs plots in Kayunga for Ganoderma trunk rot and Fusarium wilt of oil palm in Kagulube block as a cover crop. Pintoi nut is intended to replace the more vigorous and harder to manage Mucuna that had been ignored by smallholder farmers in Kalangala.

103. **Oil palm bunch maturity period**. Understanding maturity days of oil palm is among the indicators used in developing harvesting indices. Harvesting index is used to determine the time for harvesting ripe bunches. Experiments to determine maturity period were set up in 2021 in Kayunga block in Kalangala. Findings from this trial indicated that oil palm in this location takes an average of 6.3 months to mature, from the time of flowering. This information will be key in developing a harvesting index for Kalangala hub.

104. **Integrated Pest Management**. *Rhynchophorous phoenicis* (African oil palm weevil) remains an important pest affecting oil palm fields. A study on pheromone traps has been initiated to assess their effectiveness in controlling the pest. Surveillances also focus on any other pests that may exist in the fields and trial sites.

d. Buvuma hub

105. **Training.** In the reporting period, a training was conducted for the extension officers in Buvuma hub. The training was aimed at skilling the oil palm extension officers in site selection, establishment, and management of young oil palm fields.

106. **Best Management Plots Establishment**. Three (3) acres of land, out of 15 acres allocated for research in Buvuma, has been identified for establishment a demonstration, research and BMP research plots. The research plot will serve as a testing area of research materials and also as a demonstration field.

107. A detailed report is attached as Annex 4.

D. Component 4. Project Management, Monitoring and Evaluation and Knowledge Management

i. Project Management

108. The Ministry of Agriculture, Animal Industry and Fisheries established a Project Management Unit (PMU) to coordinate implementation of project activities between the respective implementing partners. The PMU is responsible for preparing and submitting the project work plans and budgets to the Government of Uganda and International Fund for Agriculture Development; Technical Backstopping; Monitoring and Evaluation; Procurement Management, Financial Management; preparation of reports to the different stakeholders including MAAIF, Office of the Prime Minister, Ministry of Finance, Planning and Economic Development, Operation Wealth Creation, Parliament of Uganda, and IFAD

109. The project prepared quarterly and annual work plans and progress reports using both GoU's Program Budgeting System (PBS) and IFAD formats and submitted them on time to MAAIF and IFAD for approval. The project produced the annual report for FY 2021/22.

110. The Ministry established a multi-sectoral Project Steering Committee (PSC) to provide policy oversight of the project, approve work plans and budgets, and ensure adherence to relevant strategies established by Government during project implementation. The Steering Committee is chaired by the Permanent Secretary, MAAIF and comprises of the technical heads of agencies responsible for implementation of Project activities including; National Environment Management Agency, Ministry of Finance Planning and Economic Development, Ministry of Works and Transport, Uganda National Road Authority and Ministry of Trade Industry and Cooperatives. The Steering Committee is supposed to meet twice a year and held a meeting on 06th October, 2022.

Table 17: Summary of the key action points agreed upon in the inaugural PSC meeting

Key issues	Agreed Action
Communication from Chair	• To fast track the production of palm oil so as to cover the demand and supply of palm oil. • Plan for Project Steering Committee meetings as it is in the Project Design Document such that stake holders contribute to the progress of the Project.
Matters arising from the NOPP progress report presentation	• NOPP team to share the detailed expansion plan to other Hubs and timelines. • Project to conclude ESIAs in the expansion hubs and submit for timely approval by NEMA. • Project to enforce environmental guidelines through the District Natural resources in the respective Hubs. • MAAIF- NOPP to conclude on land acquisition process for nucleus establishment.

Key issues	Agreed Action
	• Develop a clear plan/extended plan on how to fast track/increase the disbursement rate and catch up on targets and deadlines.
Presentation and approval of the Annual Work Plan and Budget & Procurement Plan 2022/23.	• Provide details on the AWPB and share with PSC members. • Provide Oil palm expansion and research strategy. • Involve the political leaders, district leaders and the locals in an effort to mobilise more growers in the expansion hubs.

111. The Project Management Unit is fully constituted except for the vacancies of Mobilization and Participatory Planning Officer and the Project Accountant. The Buvuma hub staff were recruited and are all based at their work station in Buvuma - however, one of the hub staff resigned and has not been replaced, whilst the position of administration officer was not filled. A project surveyor was also recruited.

ii. Financial Performance

112. The project was declared effective on the 1st March 2019. The first disbursement to the country was made on the 13th September, 2019 of USD 500,000 and USD 5,200,000. The total startup costs amounted to USD 500,000 and additional USD 5,200,000 was made for project activities and to increase it to USD 5,700,000 as authorized allocation.

113. To-date, a total of USD 16,335,001.33 (21.54%) equivalent to approximately Ush. 59,793,368,735/= has been disbursed to the country, of which USD 354,066.68 and USD 523,206.00 were a direct payment to UNOPS for supply and delivery of ten (10) double cabin pick-ups and to Oil palm Buvuma Ltd (OPBL) for supply of inputs, respectively.

114. Out of the total disbursed funds to the country, 86% (Ush. 51,603,989,348/-) has been absorbed in total, since project inception.

115. In the FY 2022/23, Ush. 35,897,042,000/- was budgeted, and Component 1 registered actual expenditure at Ush. 22,939,758,503 (63.9%). Component 1 expenditure included the final payment for the Ferry, of USD 1,008,150., Component 2 registered the lowest at 29.7%, Component 3 was at 62.4%, whereas Component 4 registered the highest at 83.7%.

116. Cumulatively, performance remains low for Component 1 at 11.1%, and Component 4 the highest at 60%, followed by Component 3 at 21% and 14% for Component 2 This is expected to increase with the expansion to other hubs after IFAD board approval in September, 2023; in addition to the signing of the contract with the Fund manager to cover especially component one (farmer loans) and the civil works (roads and fertilizer stores).

Table 18: Project External Financing Performance, FY2019/20 - 2022/23

FY	Budget	Actual Expenditure	% Actual
2019/2020	44,429,596,000	5,189,091,235	**12%**
2020/2021	39,969,765,700	18,624,786,849	**47%**
2021/2022	39,318,000,000	10,269,497,072	**26%**
2022/2023	35,897,042,000	22,939,758,503	**63.9%**

117. The GoU financial performance for the project life is indicated below. In the cases of performance above 100%, this arose because the project had opening balances at the start of those particular Financial Years.

Table 19: Project GoU Financing Performance, FY2019/20 - 2022/23

FY	Budget	Released	Actual Exp.	% Release	% Expenditure.
2019/2020	10,597,033	6,152,500	3,456,332	58%	56.1%
2020/2021	7,597,033	7,582,032	9,809,789	100%	129%
2021/2022	4,897,000	4,647,000	5,096,111	95%	110%
2022/2023	5,240,000	4,100,000	4,100,000	78%	100%

118. In FY2022/23, the sub-component financial performance is here below:

Component & Sub-component	Budget	Actual Expenditure	% Expenditure
1.1: Smallholder oil palm plantations developed	14,578,519	6,076,808,945	42%
1.2: Development of OPG organisations	751,050	228,730,140	30.00%
1.3: Support Infrastructures Established	4,118,298	7,131,468,879	173%[6]
Component 1 sub-total	**19,447,867**	**13,437,007,965**	**69.00%**
2.1: Alternative Economic Opportunities	1,729,198	535,745,400	30%
2.2: Mitigation of social risks	1,665,589	748,140,634	44.90%
2.3: Environment, Health and Safety	4,150,206	959,477,246	23%
Component 2 sub-total	**7,544,993**	**2,243,363,280**	**29.70%**
3.1 Oil Palm Sector Development Framework	376,000	261,424,667	69.50%
3.2 Strengthen the National Capacity for Oil Palm Research	547,973	315,280,000	57.50%
Component 3 sub-total	**923,973**	**576,704,667**	**62.40%**
4.: Project Management, Monitoring and Evaluation and Knowledge Management	7,980,209	6,682,682,591	83.70%
Component 4 sub-total	**7,980,209**	**6,682,682,591**	**83.70%**
Grand Total (Ush. '000)	**35,897,042**	**22,939,758.6**	**63.90%**

[6] Letter of Credit payment of $ 1,008,150 equiv. to Ush. 3.6 bn.

iii. Procurement

119. The procurement of goods and non-consultancy services, works and the acquisition of consulting services, financed by the IFAD, have been carried out in accordance with the *provisions of the Government of Uganda's Public Procurement and Disposal of Public Assets Act (PPDA Act) of 2003and associated regulations*.

120. **Procurement Methods and Procedures:** The application of different methods of procurement for goods, works and consulting services will be in accordance with the methods of procurement for goods, works and consulting services as established and approved in the Procurement Plan or in accordance with the provision of the PPDA.

121. **Borrower Procurement System/PPDA:** Specific Procurement Methods and Procedures under Public Procurement & Disposal of Public Assets (PPDA) Act and Regulations 2003 (as amended), using the PPDA Solicitation Documents for various transactions have been used under the project.

122. **Procurement function of NOPP:** A delegated Project Contracts Committee (comprising 5 senior members who include an Attorney representing Solicitor General's office) has been adjudicating project related procurement transactions. A Procurement and Contracts Manager, Procurement Officer and Procurement Assistant constitute the Project Procurement Unit.

Table 20: Procurement performance by category

Category	Signed Contracts (Under implementation		Initiated and in progress		Not yet initiated		Total	
	No.	**Value**	**No.**	**Value**	**No.**	**Value**	**No.**	**Value**
Goods/Non-Consultancy Services	19	3,628,606,623	3	315,000,000	6	956,249,978	28	4,899,856,600
Works	5	1,969,274,050	1	1,700,000,000	0	0	6	3,669,274,050
Consultancies	10	143,068,180,060	1	350,000,000	0	0	11	143,418,180,060
Total	**34**	**148,666,060,733**	**5**	**2,365,000,000**	**6**	**956,249,978**	**45**	**151,987,310,710**

123. In the table above on Procurement Performance, the exchange rate used is 3,700. For consultancies, there is the Fund Manager procurement whose estimated contract value is $36m. This is a 10-year fund Management service. See Annex 2 for a detailed report.

iv. Monitoring and Evaluation

124. The project is implementing a results-based Monitoring, Evaluation and Learning approach where an M&E system customized for the NOPP is being implemented. The project

maintains updated and detailed Logical and Results Management Frameworks. It is also incorporating the use of Geographic Information Systems (GIS) in the project surveys. The project Management Information System will improve efficiency in data entry, analysis, storage and report production for the PMU and implementing partners.

125. **Project Management Information System and Tools**. The Project Management Information System contract was completed and the project has a functional MIS. The project is in the process of transferring project data from the excel data sets to the newly developed MIS.

126. **Project Baseline Survey**. The Ministry contracted M/s Janda Consult Limited to conduct a Baseline Survey for the NOPP. The Consultant collected quantitative data from 1,534 randomly selected farming households across three project hubs; Kalangala (424), Buvuma (492), and Mayuge Comprising of Bugiri (198), Namayingo (107) and Mayuge (312). The data was collected using a structured questionnaire, cleaned and analyzed using STATA. Qualitative data was also collected to provide in-depth information on project indicators through Focus Group Discussions and Key Informant Interviews. The key findings include:

- The average household monthly income was UGX 26.2 million among oil palm farmers and UGX 4.4m among non-oil palm farmers.
- Based on the Food Insecurity Experience Scale (FIES), Food insecurity was reported in 13.4% of the OPGs and 23.4% of non-OPG households.
- On Financial inclusion: Only 27.2% of non-OPGs and 100% of OPGs reported having an account with a financial institution.
- Land acreage under oil palm plantations: The average size of an oil palm plot was 6.0 acres in male-headed households and 4.2 acres in female-headed households. Moreover, half of the smallholder OPGs had less than 5 acres of land. Eighty-two percent of the total agricultural land owned by smallholder OPGs is under oil palm production. On average, each OPG household had less than an acre of land (0.8 acres) left for food production.
- Attitudes toward the environmental regulations: Whereas, a big proportion of OPGs were aware of regulations about lake buffer zones (62.8%), wetlands (63.3%), and natural forests (61.1%), the attitudes toward following these regulations were poor.
- Gender issues: Of the 247 plots with oil palm plantations that were reported in the survey, 35.1% were owned by women only while 10.1% were owned jointly by women and their partners. It was noted that many oil palm plantations owned by women are planted on land where the male partners are the rights holders.

127. **Routine monitoring activities**. The M&E team has been undertaking routine monitoring in the project intervention areas. The monitoring has served to assess the extent to which planned activities and outputs are achieved, by implementers at the different levels of implementation, viz., PMU, NARO, Local Governments and Private Service Providers – specifically these are agronomy interventions for establishment of Oil Palm and for non-OPGs under subcomponent 2.2; support to farmer organisations; infrastructure interventions, particularly road works and training of road forepersons; support to non-OPGs in off-farm enterprises and vocational skilling; interventions for environment and Oil Palm research. The

basis for assessment is the annual work plan and budget and any recommendations made previously.

128. The project also validates the data reported by the different implementation partners. The monitoring reports highlight the progress in the implementation of the annual work plans, challenges being encountered, recommendations and lessons learned that can be scaled up in other project areas.

129. **Mapping**. The project has undertaken mapping activities in Buvuma, Kalangala and Mayuge hubs. In Buvuma, the project M&E unit using kobo collect captured the GPS coordinates of the oil palm smallholders' gardens. The exercise enabled the project verify the number of smallholder and the location of the oil palm plantations in Buvuma. All gardens were captured and a map showing the smallholders was developed. In Mayuge, as a critical requirement for the ESIA, the project responded to NEMA's recommendation and captured the GPS locations of the potential smallholder farmers in Mayuge. 523 potential farmers' gardens were captured and a GIS map developed. The project also captured the locations of all the 1300 mentees under the mentorship program.

Figure 6: Mapping of Mentee Households in Buvuma district

130. **Project Reporting**. The project also prepared on-demand special reports to IFAD, Parliament of Uganda, Cabinet Ministers, Ministry of Finance, Planning and Economic Development, Office of the Prime Minister and other stakeholders, reporting progress on the implementation of different project activities. Highlights of the other progress under M&E are below:

- The Results Based Logical Framework, **Annex 2**, has been revised and updated to ensure all the indicators are well defined, baselines are clear, targets over the project lifetime are set.
- The project in partnership with the implementing partners i.e., DLGS and NARO developed planning and reporting formats to guide project implementation at their levels.

v. Communication and Knowledge Management

131. The roles and responsibilities of the Communication and Knowledge Management Officer are to oversee successful planning and implementation of the Communication and Knowledge Management Strategies, to contribute to realization of overall project goal and objectives.

132. **Knowledge Management**. The purpose of KM in the NOPP context is to facilitate and enable the capture, exchange and uptake of knowledge within and beyond with two key objectives: to inform stakeholders on options and approaches to; and to improve the impact of NOPP. The key steps, products and activities that have strengthened KM included information management and sharing, and collaboration and learning across the stakeholders.

133. The CKMO organized and/or contributed to knowledge and learning events at exhibitions and produced and disseminated a number of knowledge products, including project IEC materials.

134. Participated in the NARO/MAK Conference themed Innovations for Enhancing productivity and Agro Industrialization where a special Panel discussion on Oil palm opportunities in Uganda was hosted. NARO Oil palm research team shared their papers.

135. The CKMO organized and/or contributed to knowledge and learning events at exhibitions and produced and disseminated a number of knowledge products, including project IEC materials.

136. Joined WhatsApp forums for farmers in Buvuma, Kalangala and Mayuge for sharing of knowledge and learning.

137. Attended several KM cafes facilitated by "Feed the Future" Uganda Institutional and Systems Strengthening Activity.

138. **Knowledge Products**

a. The third edition of the Oil Palm newsletter was published head lined "New Buvuma Ferry to boost oil palm sector"

b. Work in progress of developing a dedicated information portal for oil palm with support from NARO Knowledge Management & Information officer

c. "Our Field Series", Stories from the field, Edition Two on household mentoring and Alternative livelihoods in Buvuma was documented

d. Curation of field activity pictures from component officers

e. Back to office report format was designed and shared with project officers for use.

f. Updated Project FAQs was undertaken.

139. **Community of Practice (CoP)**. CKMO is a member of the d4ag@dgroups.io where we discuss online on the days topical issues. This is a CoP with over 2,000 members across the world.

Lessons learnt. This is a continuous process, lessons learnt from the implementation of the project activities were carried out. A compilation of the lessons from the MOU between Oil palm Buvuma Limited and Buvuma Oil Palm Growers Cooperative was undertaken.

E. CHALLENGES

140. Failure to avail all the land required by the Private Sector Investor. Whilst the verification process has been rather slow, neither have the GoU allocations to the project for land purchase, compensation of tenants and other associated costs been sufficient for the requirements in Buvuma and now Sango Bay in Kyotera district. This has the effect of slowing down the investments by the Private Sector and consequently benefits to the out-growers and the economy at large.

141. Failure to access the project reflows from Kalangala repayments by farmers, as stipulated in the Financing Agreement. Ministry of Finance, Planning and Economic Development has not responded to MAAIF's repeated requested pertaining to the aforementioned, yet this is clearly stated in the Financing Agreement signed between IFAD and the Minister of Finance, Planning and Economic Development. These funds would go a long way in establishment of smallholder oil palm in other areas across the country.

142. Relatedly, the low budgetary allocation has also affected maintenance of roads in Kalangala district, and this is affecting transportation of the FFBs to the factory.

143. The project is not designed to finance commercial oil palm growing. As such, farmers with more than 2 ha have to source alternative funding. This constraint has negatively impacted the rate of oil palm establishment as the process of getting alternative financing has been lengthy, and only recently achieved with Uganda Development Bank Limited.

ANNEXES

ANNEX 1. Mission Recommendations

	Action Points	Responsibility	Deadline	Proposed Action points to complete Recommendation	Steps	Status of the Action Point
1	**Fund flow to the project.** NOPP and MAAIF to review the internal processes for sanction and ensure adequate delegation at various levels for smooth funds flow for timely implementation.	PS MAAIF, PM, NOPP	April 2023	• Hold internal discussions at the PMU to find solutions to the internal process gaps. • Assign an officer to follow up funds' requests in MAAIF. • Hold weekly meetings to provide updates on the different funds' requests.		Incomplete

2	**Adequate financing for livelihood producer groups** Since internal savings of VSLAs are inadequate to finance the business plans of households fully, leverage funds to groups through revolving funds from the project, PDM and bank finance.	PM, Operations manager, IEDFO	August 2023	• Organize meetings with financial institutions to leverage funds for the VSLAs.	-2 meetings have been held with post bank to leverage funds for VSLAs. -Post Bank has assessed VSLA groups in Kalangala and report discussed with the project. Post Bank is yet to commit on financing VSLA groups -Project Beneficiaries have received PDM funds (as individuals) and have scaled up their livelihood projects at HH level	Complete

					-Revolving funds for groups budgeted for in FY 2023/24. Guidelines developed and discussed with DLG implementors	
3	**MAAIF and MOFPED to ensure reflows to project finance** MAAIF to engage MOFPED to increase the ceiling of GoU funds allocated to NOPP to include the reflows to finance oil palm. PMU to discuss with MAAIF and MOFPED options to set up by Dec 2023 a revolving fund.	PS, MAAIF, PM	March 2023 Dec. 2023	• Write a letter to MoFPED about the reflows to the project. • Request for a meeting with the PS/ST to discuss the reflows issue.		Incomplete
4	**Training and capacity development for senior management** Structured team building events through external facilitation by	PS MAAIF, PM	Dec. 2023	• Identify management courses for the NOPP senior management and ensure their		In process

	Organisation development consultants to be organised for PMU and Hubs. Senior NOPP management to undergo structured trainings on leadership and personal development.			enrolment and participation. • Organize team building activities quarterly		
5	**PMU to continue the use Force Account** PMU should continue to use the force account mechanism to deliver the farm road construction. The PMU should however, at all times during implementation follow the PPDA requirements for using the force account modality for road construction. The progress and continuous suitability of this method of delivery should be reviewed annually.	PMU, Project Engineer	Continuous	• Continue to use the force account mechanism to deliver the farm road construction adhering to the PPDA requirements at all times.		In progress
6	**BOPGCO to have clear identity to instill trust in members** Allocate office space and basic	PM, hub manager, IEDFO	April 2023	• Provide office space for BOPGCO at the Buvuma Farmers' Office.	-Office Space has been allocated to BOPGCO at Buvuma hub	Complete

	furniture, to ensure that farmers have confidence to become shareholders. Support the board to meet essential costs of mobility, meeting expenditure etc., since the cooperative at present has no income			• Provide basic furniture i.e. desks and chairs. This will be coordinated by the Hub Manager. • IEDFO to request for funds to support the board to meet their essential costs.	office -Funds to support the Board with meeting expenditure have been incorporated in the hub budget for FY 23/24 -Funds were requisitioned to facilitate the BOPGCO SGM in May 2023	
7	**Proposals to be funded out of OPUL dividends** The Institution development consultant to develop a template for project proposal development and assessment including technical, economic, financial, social aspects apart from value for money considerations for financing out of dividends.	KOPGT, MAAIF/	May 2023	• Ensure the institution development consultant develops a template for project proposal development and assessment.	Recommendation may have been overtaken by events. We need to discuss this in light of the recent presidential visit to Kalangala	Incomplete
8	**Revise MOU with OPBL to include emergent productivity**	PM, Operations	April 2023	• Hold meeting with OPUL and	Meetings were held between	In progress

	related issues and Development loan also to include emergent costs Since farmers in Buvuma are facing a number of challenges a) rodents, b) termites, c) yellowing of leaves requiring magnesium application etc., the MOU with OPBL to be revised to address these issues and costs to be included under development financing arrangement.	manager,		revise issues including cost in the MOU	OPBL and NOPP. In the meeting held, MOU are to be amended were identified and agreed upon	
9	**Capacity building on M&E for district staff** The M&E team of NOPP will conduct a training to district staff on M&E, including orientation on indicators, templates for reporting, and staff roles in relation to M&E and reporting	M&E team	June 2023	• M&E team to conduct training sessions for the district in each hub.	M&E Training session conducted in Buvuma Hub, Funds for training in Kalangala still under approval process.	Complete
10	**Revisit the Alternative Livelihoods strategy to be more comprehensive** The alternative livelihoods strategy need to focus more on economic models that can transform livelihoods from	Operations Manager, IEDFO and M&E officer with support from IFAD	May 2023	• Hold brainstorming sessions with key stakeholders from MAAIF, district Local Governments and IFAD to	Sessions held with MAAIF, district local Governments and IFAD and currently incorporating	Complete

	subsistence to commercial, more strategic approach with the engagement of VSLAs and accessing other sources of finance, distinguishing between value chains for different hubs and involvement of private sector to implement technology intensive initiatives, and adding part on who the phasing out will be done to ensure that different groups can be fully graduated to work on their own.			produce a comprehensive Alternative Livelihood Strategy acceptable to all parties.	feedback from DLGs into the strategy	
11	**Environmental safeguards training of farmers and Alternative Livelihoods Groups.** Continue to train local environment committee members at the Block and Unit levels of the Farmer Organisation Structures, as Trainers (ToT) and facilitate them to cascade the training to lowest level, i.e., individual farmers and Alternative Livelihoods Group. Each plot holder and Alternative Livelihoods Group must be	EHS Officer NOPP,	Plan by March 2023; Thereafter implementation	• EHS Officer to conduct training sessions for Local Environment Committees in all project hubs.	The districts have received funding to undertake trainings of the Local Environment Committees and these are due to be undertaken in July, 2023	In progress

	assisted to develop a site-specific environmental checklist which they will use to mitigate any site-specific impacts from their plot/sub-project.					
12	**Roads passing through sensitive areas. Complete the connectivity of** access roads that are passing through Forests and HCVs/HCS areas etc. under strict environmental requirements to protect the sensitive areas. road contracts should include- extra environmental requirements, like stone pitching of drainage channels. This may require a variation of contract.	EHS Officer NOPP, BDLG, NFA, WMD, NEMA BIDCO	Initiated with immediate effect.	• EHSO and project Engineer to identify sensitive areas where roads pass through Forests and include extra environmental requirements on these sections.	The connectivity of roads was concluded and those passing through forests and HCV/HCS areas were identified. Stone pitching to be included in the next contract to cover even the earlier areas that require this to be done.	Complete
13	**Development and Implementation of Safeguards Instruments.** NOPP to develop all requisites safeguards instruments which include ESIAs, project wide IPMP and. • Engage NEMA to	EHS Officer NOPP, MAAIF, IFAD, PM, NEMA	By June 2023. There after ongoing for the rest of the instruments.	• Follow up with NEMA to expedite the reviewing of all ESIAs to facilitate speedy implementation. • PMU to coordinate and	Review of the ESIA for Mayuge Hub is in advance stages, NEMA has requested the district to provide their comments. The	In progress

	expedite the reviewing of all ESIAs to facilitate speedy implementation of national programmes. • Initiate the disclosure of the Safeguards Instruments at IFAD and in-country. (Involve NEMA for In-country disclosure)			the initiate the disclosure of the safeguard's instruments at IFAD and in country.	ESIAs were disclosed on the IFAD website 17th April, 2023. NOPP is engaging with NEMA as to the appropriate date for the public consultation for Mayuge ESIA. ESIAs for Masaka Hub are due for submission, subject to mapping of farmers relative to wetlands.	
14	**Environmental Impacts of oil palm farming and production.** • NOPP to consider value chain-wide impacts, from planting to oil processing including impacts on critical habitats and all waste management issues.	EHS Officer NOPP, MAAIF, IFAD, PM, NEMA	Initiate with immediate effect. August 2023	• PMU to prepare and undertake a rapid environment assessment for alternative livelihoods by August 2023.	The recently concluded environmental audit for smallholder oil palm growing in Kalangala considered	In progress

	• A Rapid Environmental Assessment for Alternative Livelihoods.		There after ongoing implementation		environmental impacts along the value chain. The Rapid Environmental Assessment for alternative livelihoods is planned to be undertaken in July, 2023	
15	**RSPO Smallholder Standards** Work with the INGO implementing partner (once appointed) and RSPO Africa Office to provide training on the RSPO Smallholder Standard and continue to facilitate certification of Smallholder groups starting in Kalangala.	ESHO/KOPGT	July 2023	• EHSO to facilitate and conduct trainings on the RSPO smallholder standards • EHSO to ensure facilitation of the certification of smallholder groups starting with Kalangala.	The NOPP in conjunction with RSPO Africa Office conducted trainings on the RSPO smallholder standards in May, 2023.	Complete
16	**Contract Renewals and Appraisals** The current contracts for staff	Project Manager	June 2023	This recommendation was dropped by PS-MAAIF.		Dropped

	are issued for only one year which are implicating the job security of staff. The mission recommends that the contracts are extended until 2028 with a condition that they are renewed on annual basis, subject to satisfactory performance.					
16	Team buildings for staff engagement and motivation need to be planned and budgeted for in the annual work plan and budget Workplace grievances at the Hub should have a streamlined management process with support from the human resource department at the Ministry			• Schedule team building activities.	A team building activity took place between the 4th and 6th of July 2023 at the National Farmer's Leadership Centre, Kampiringisa	Complete
17	**Staff roles and responsibilities** Regular appraisals…individual & unit performance	Project Manager	May 2023	• Project Manager to ensure all Project staff have Performance Plans and appraisals are carried out in a timely manner	All PMU staff have performance plans in place and appraisals of individuals and units are held regularly.	Complete

				quarterly.		
18	**Personal Protective Equipment (PPE) and insurance** The PMU should expedite provision of critical PPE and insurance for the staff.	Project Manager	June 2023			In progress
19	**Adequate and timely finance to Local Governments** To ensure smooth funding to Local Governments (i) Indicative Planning Figures for NOPP activities will be communicated to participating local governments before the end of November each year (ii) for the financial year 2023/2024, Indicating Planning Figures should officially be submitted to local governments by 15th April 2023 (ii) funds will be disbursed to districts on an advance basis, depending on a six month forecast of activities expected to be implemented by the respective local government. (iii)	PM, FAM, OM	15th April 2023	• FAM to ensure indicative planning are communicated to the districts officially on time. • PMU to ensure		Complete

	subsequent releases will be subject to submission of accountability by a local government.					
20	**MIS Roll out** Ensure timely completion and roll out of the MIS	M, E and KM Manager	June 2023	• MEL Manager to ensure the success completion of the MIS development contract.		In progress
21	**Compliance with timeliness of plans and reports** M&E Team should support the Operations Team in developing their work plans, budgets and reports	Project Manager, Section Heads	Immediate	• M&E team to develop a Dashboard for all mandated deliverables with timelines and all deadlines are met.	Dashboard with timelines developed.	Complete
22	Include private sector and beneficiary funds in the AWPB for the financial year 2023/2024; PMU should include costs incurred by Private Sector and Beneficiaries in the project financial statements	FAM, MEL Manager	Jun 2023	• FAM to ensure private sector and beneficiary funds are included in the AWP&B FY 23/24		Complete
23	PMU transactions should be posted into Sage Pastel on a timely basis	FAM	April 2023	• FAM to ensure of transactions are posted into Sage Pastel		Incomplete

ANNEX 2: NOPP – CONTRACT REGISTER AS AT JUNE 2023

A.	**Goods/Supplies/Non-Consultancy Services**				
#	**Procurement Subject**	**Service Provider**	**Contract amount**	**Amount Paid**	**Status**
1.	Procurement of Oil palm seedlings	Oil Palm Buvuma Ltd	$797,235	$797,235	Completed
2.	Procurement of Oil Palm Fertilizers				
3.	Procurement of assorted Pesticides				
4.	Procurement of Office Computers for Buvuma Hub Offices	Kata Technologies and Logistics Ltd	58,520,000	58,520,000	Completed
5.	Procurement of Heavy-duty printer for Buvuma Hub	Kebir Contractors and Logistics Ltd	34,500,000	34,500,000	Completed
.6	Design, Printing and Supply of Farmer Diaries	Blue Print Limited	25,150,000	25,150,000	Completed
7.	Procurement of Fertiliser Weighing Scales for Buvuma Hub	Shonimar Investments Ltd	1,870,000	1,870,000	Completed
8.	Printing and supply of Newsletter	Knowledge Edge Investments Limited	9,800,000	9,800,000	Completed
9.	Procurement of fireproof filing cabinets loan documentation for Buvuma office	NINA Interiors Limited	8,305,000	0	Delivery completed awaiting payment
10.	Procurement of bicycles for HH mentors	Design Series and Supplies Ltd	15,000,000	15,000,000	Completed
11.	Printing of handbooks and guides for HH Mentors	Harrina Enterprises Ltd	8,500,000	8,500,000	Completed

12.	Procurement of Tablets for CDOs	Giant Plum Enterprises (U) Ltd	58,800,000	58,800,000	Completed
13.	Procurement of Suggestion boxes for Grievance Redress Committees (GRCs)	Megaline Agencies Ltd	29,200,000	29,200,000	Completed
14.	Procurement of Motor Vehicle Maintenance services	Various			As and when need arises
15.	Procurement of assorted office stationery	Remacy Concept Limited	39,799,000	0	Awaiting delivery
16.	Procurement of small Office Equipment for PMU	This procurement was not undertaken due to delay in processes but in the new Procurement plan			
17.	Procurement of Maintenance services for - Machinery, Equipment & Furniture	Various	Requests given and payments made as and when need arises		
18.	Procurement of Cleaning and sanitation Services for NOPP Office	Top Best Cleaning Services Ltd	51,276,000	51,276,000	Completed
19.	Procurement of a professional multi-functional camera for still and video photography enhanced with lenses, microphone and tripod	Allied Synergies Ltd	18,770,000	18,770,000	Completed
20.	Provision of Land clearing services to Buvuma SH farmers	Buvuma Oil Palm Ltd	Services not rendered Farmers opted to do this by themselves		
21.	Procurement of company to provide services for lining farm land in Buvuma				
22.	Procurement of company to provide planting services for Buvuma SH farmers				
23.	Procurement of Maintenance services of established				

	young palms in Buvuma				
24.	Supply and delivery of tyres for NOPP Vehicles	City tyres Ltd	48,559,322	48,559,322	Completed
25.	Procurement of office furniture for Buvuma Hub Team	Century Holdings Ltd	37,000,000	37,000,000	Completed
26.	Procurement of Protective Gear for Buvuma Hub Team	Shonimar Investments Ltd	5,400,000	5,400,000	Completed
27.	Procurement of Medical Insurance services to NOPP Staff and their dependants	Sanlam Life Insurance (U) Limited	168,376,171	168,376,171	Under implementation
28.	Procurement of Group Personal Accident Insurance services to NOPP Staff	The procurement process is on-going and under evaluation			
29.	Procurement of Hub Medical Insurance services	Prudential Assurance (U) Limited	60,011,630	60,011,630	Under implementation
B.	**Consultancy Services**				
S no.	**Procurement Subject**	**Service Provider**	**Contract amount**	**Amount Paid**	**Status**
30.	Procurement of Consultancy Services for business skilling, vocational skilling and financial accessibility	Acholi Private Sector Development Co. Ltd APSEDEC	948,698,750	0	Contract signed and implementation to start shortly
31.	Procurement of Consultancy services to undertake an Environmental and Social Impact Assessment for establishment of oil palm plantations in Mukono-Buikwe Hub of National Oil Palm Project	The advertised has been placed to solicit for proposals			

32.	Procurement of Consultancy Services to develop an MIS for M&E function	Impiger Technologies Pvt Ltd	241,849,390	241,849,390	Completed and consultant providing support and backstopping for 12 months
33.	Procurement of Consultancy Services of an Implementing Partner (International NGO) to build capacity of key stakeholders in environmental. Social Sustainability and RSPO	Solidaridad Eastern & Central Africa (Solidaridad ECA)	USD 1,197,713	0	Contract signed and implementation to start shortly
34.	Procurement of Consultancy Services to conduct a Strategic Environment and Social Assessment for Oil Palm Development in Mayuge, Masaka, Buvuma and Kalangala Hubs under the National Oil Palm Program	Atacama Consulting	634,269,938	0	Contract signed and implementation to start shortly
35.	Procurement of Consultancy Services for implementation of the HIV/AIDs awareness and Engagement of Youth Through Sports and Cultural Activities; to mitigate Social risks and external shocks affecting households in Kalangala	Youth Alive Uganda Ltd	613,993,191	0	Contract signed and implementation to start shortly
36.	Procurement of individual consultant for strengthening OPG organisations in Kalangala	AGABA TIMOTHY	150,500,000	15,050,000	Under implementation with inception report presented and accepted. 10% paid
37.	Procurement of Consultancy Services of a Fund manager	Equity Bank Ltd	$36m (2.5% to be paid on disbursed and recovered)	0	Contract signing in the final stages
38.	Procurement of consultancy firm to strengthen OPG organisations in Buvuma and Mayuge	Acholi Private Sector Development Co. Ltd APSEDEC	1,958,233,000	156,658,640	Under implementation with inception report presented and accepted. 8% paid

39.	Procurement of Consultancy Services for implementation of the HIV/AIDs awareness and Engagement of Youth Through Sports and Cultural Activities; to mitigate Social risks and external shocks affecting households in Buvuma and Mayuge	Youth Alive Uganda Ltd	719,947,691	35,997,385	Under implementation with inception report presented and accepted. 10% paid
40.	Procurement of Consultancy services to conduct an Environmental Audit for outlying Islands of Bunyama and Bubembe	HEBOCO Consult Ltd	169,150,000	169,150,000	Completed
C.	Works				
S no.	**Procurement Subject**	**Service Provider**	**Contract amount**	**Amount Paid**	**Status**
41.	Procurement of a Contractor for the Construction of Access Roads in Buvuma	HEAAT General Engineers & Contractors Ltd	997,051,850	778,511,546	Physical progress of contract at 88%. Remaining works include; head wall construction and draining channels
42.	Procurement of a Contractor Construction of Fertilizer Store and Meeting Hall at Buvuma	This procurement could not take off due to land ownership disputes on Project Office land in Buvuma			
43.	Procurement of a Contractor for the Connection of Buvuma Hub Office to District Water Grid	Central Umbrella of water & sanitation Ltd	75,494,000	0	Contract completed, paid but money bounced
44.	Procurement of Air conditioning for boardroom	Shonimar Investments Ltd	18,750,000	0	Contract signed. Deliveries and installation not completed
45.	Construction of Farms Roads in Buvuma	Force Account	873,433,200	873,433,200	Physical progress of contract at 90%. Remaining works include; culvert installation and drainage

					channels
46.	Procurement of civil minor Maintenance works	Chris Builders Ltd	Ugx 4,545,000	0	Completed. Awaiting payment

ANNEX 3: Oil Research Development Report

IMPROVING OIL PALM PRODUCTION IN UGANDA THROUGH RESEARCH

NATIONAL OIL PALM PROJECT (NOPP)

ANNUAL RESEARCH REPORT FY2022/2023

NATIONAL CROPS RESOURCES RESEARCH INSTITUTE (NaCRRI)/
NATIONAL AGRICULTURAL RESEARCH ORGANIZATION (NARO)

JUNE 2023

Table 1: A summary of achievements and challenges faced during implementation of oil palm research in FY 2022/2023

Output	Indicator	Annual target	Achieved	Remarks	Challenges
Existing Oil palm adaptive trials are maintained	Number of acres maintained	16	14	Not all planned acres were maintained	The delay in release of funds prevent timely execution of the planned
New oil palm adaptive trials established in Mid North and West Nile region	Number of oil palm adaptive trials established	7	7	Oil palm adaptive trials established in Apach,Dokolo,Nwoya, Zombo, Arua, Moyo, Adjumani	
Oil palm yield data collected from adaptive trials	Number of oil palm yield data sets	8	6	2 Off-station datasets not collected	Lack of funds to facilitate the collection of 2 data sets
Best Management Practices (BMPs)demonstrated in Kalangala	Number of BMP plots maintained	5	4	4 BMPs demonstrated on smallholders farmers in Kalangala	Due to delayed release of funds inputs for the 5th demonstration were not procured in time

Fusarium wilt and Ganoderma surveillance to prevent further spread conducted	Number of Surveillance reports	4	1		2 instead of 4 surveillances conducted due to untimely release of funds
Develop Ganoderma pathogen isolation protocol developed	Number of isolation protocols	1	0		Activity put on hold due to delayed release of research funds from NOPP
Oil palm pest surveillance and control methods designed	Number of surveillance conducted	4	1	Only one station trial established	Limited funds available to buy enough pheromone traps which attract and kill pests
	Number of datasets collected	4	2	Only one data set collected	Shortage of funds

Executive summary

The National Oil Palm Project (NOPP) with NARO have the responsibility of expanding commercial oil palm production across suitable agro-ecologies in Uganda. The suitability of areas for oil palm production is best determined by evaluating the performance of oil palm in various these areas. The NARO research team has identified and planted oil palm adaptive trials in West Nile region in the districts of Arua (1 site), Zombo (1 site), Moyo (3 sites) and Adjumani (3 sites) and 7 sites in Mid North including Dokolo (4 sites), Apac (1 site) and Nwoya (2 sites) to evaluate their yield performance. Trial establishment was completed and management is going on. Five (5) varieties exhibiting Fusarium wilt resistance, Ganoderma tolerance, short growth and drought tolerance traits are under trial.

The research team continues to evaluate oil palm growth and yields under research and on-farm in different environments. Data collection is yet to begin in the newly established trials. On station trials exist at NaCORI Kituza and at NaCRRI – Namulonge. The trials provide data for benchmarking Uganda's oil palm industry with the rest of the oil palm producing countries. The old trial at NaCORI Kituza yielded 14.01 ton of fresh fruit bunches per hectare while the young trial at NaCRRI yielded 1,489 bunches and 10.8 ton/ha. The growth parameters have increased with age to a canopy of 8.1 m, height of 2.14m, girth 2.7m.

Arachis pintoi has been earmarked as a potential cover crop for oil palm. Its short stature, ability to cover the ground and potential to fix nitrogen make it an appropriate covercrop. Seedlings have been prepared and circulated to increase its distribution and enhance adoption among farmers. Studies are underway to determine the appropriate propagation methods for easy multiplication of the cover crop for large scale planting.

Findings from trial on maturity indicated that oil palm in Kalangala takes an average of 6.3 months to mature from the time of flowering. This information will be key in developing harvesting index for Kalangala hub.

Rhynchophorousphoenicis (African oil palm weevil) remains an important pest affecting oil palm fields. A study on pheromone traps has been initiated to assess their effectiveness in controlling the pest. Surveillances also focus on any other pests that may exist in the fields and trial sites.

A training was conducted for the extension officers in Buvuma hub. The training was aimed at skilling the oil palm extension officers in site selection, establishment, and management of young oil palm fields.

Three 3 acres of land have been earmarked for research to establish a research plot in Buvuma. The research plot will serveas a testing area of research materials and also as a demonstration field.

In devising sustainable measures for the management of Fusarium wilt of oil palm, 250 oil palm seedlings imported from CIRAD-Benin were planted in fields infested with Fusarium wilt of oil palm and Ganoderma trunk rot in

Kalangala.These seedlings will be evaluated for performance against the major disease over a period of not less than 5 years.

Data collection initiated in the BMPs set for evaluation of measures against Fusarium wilt of oil palm in Kagulube block and for the management of Ganoderma trunk rot in Kayunga block. The BMPs also serve as demonstration plots for farmers in Kalangala district.

To furthermore improve on the achieved results, a number of activities have been planned.

1. Maintain the established new oil adaptive trials in mid north and West Nile region.
2. Evaluate Fusarium wilt under field condition for resistant oil palm varieties
3. Manage BMPs in Kalangala and established BMPs in Buvuma
4. Finalize evaluation of diversity of pollinators in Kalangala during wet and dry season.
5. Continue surveillance, identification and management of both major and currently minor diseases of oil palm in Uganda.
6. Continue with surveillance of oil palm pests in Kalangala and develop integrated oil palm weevil management strategies through use of different traps and suitable cultural practices.
7. Demonstrate appropriate oil palm technologies and products to the public through field demonstration plots and agricultural exhibitions.

Challenges in conducting the research activities

1. Limited human resource capacity - the project lacks a fulltime entomologist and as the project spreads out the scope of work has increased
2. Research lacks a reliable vehicle. The two old vehicles often break down and are not fit for long distances.
3. Delay of funds delays implementation and limited funding of the oil palm research activities compared to the planned annual targets.

Table of contents

List of Tables

List of figures

INTRODUCTION

Oil palm is the most productive vegetable oil crop in the world yielding up to 9 tons of oil per hectare yearly (Cochard *et al.*, 2001). In Uganda, first commercial farms were planted in Kalangala District in the 2005. The government is supporting oil palm production in order to provide income sources for small holder farmers growing oil palm in the country. Indeed, oil palm has spurred the socio-economic transformation of the poor communities after two decades of its introduction in Kalangala islands in Uganda. The government is expanding oil palm production to other suitable areas across the country. With the success registered in Kalangala, oil palm has proved to be a potential crop that can improve livelihoods of the farming communities involved in production.

Despite the success in Kalangala, expansion to other areas is preceded by trials to determine the suitability of such areas for oil palm production and thus cannot be rushed until proved. New areas have been identified and trials established in Mid North (Dokolo, Apac, Nwoya districts), North (Gulu, Amuru, Omoro districts) and West Nile (Adjumani, Moyo, Arua and Zombo districts) to assess the performance of oil palm and also test the new materials with characteristics of Fusarium resistance, drought tolerance, drought tolerance, short stature (slow growth) and high yields. Other areas in future will be planted in for assessment and determining the suitability of oil palm. The team is in the process of developing a water deficit map which will shed more light on suitability of areas even without adaptive trials.

For the time that oil palm has been in production, challenges have emerged. The production challenges cause low yields which result into low profits. They include poor agronomic practices, physiological disorders, diseases outbreaks, pest infestations, farmer ignorance, and irregular weather patterns among others. Poor agronomic practices are as a result of non-adherence to recommended practices such as weed management, proper pruning and fertilizer application routine. This requires increased sensitization and demonstration.

Physiological disorders and disease out breaks are a major threat to oil palm production in Uganda. Preliminary surveys indicated the presence of bunch rot, bunch failure, uneven ripening, Fusarium wilt (*Fusarium oxysporum*f. sp. elaeidis), and *Ganoderma* stem rot (*Ganoderma* spp.). Fusarium wilt has the potential to kill up to 70% of oil palm trees if not managed (Cooper, 2011; Rusli *et al.,* 2013). In order to devise appropriate management strategies for the current outbreak of Fusarium wilt, the pathogen responsible for the disease has been isolated and used to test the resistant oil palm materials. The screenhouse trials have shown that the materials are resistant to fusarium and the materials were planted in the fusarium infested fields for further confirmation.

Similarly, pests especially *Rhynchophorousphoenicis* (African palm or red strip weevil) and giant beetles have devastated oil palms. These bore into the crown or root bulb of a young palm causing frond chlorosis. Repeated boring

into growing points can be lethal to the palm (Mariau *et al.,* 1981). Currently, the African palm weevil is the most significant oil palm pest in Kalangala district according to our surveys. Practices involving physical destruction of breeding sites and borrowed mature beetles have been recommended. Regular surveillances are conducted to track pest incidences and spread. A study on pheromone traps has been initiated to assess their effectiveness in controlling the pest.

Oil palm is a relatively new crop and research in Uganda is in its initial stages. Research is on the lookout for any emerging challenges in production. The production areas as well as the areas under assessment for commercial production have increased greatly increasing the scope of work. This calls for timely financial support for the research team effectively deliver on the set outputs.

Considering the production constraints at hand, the following objectives guided the research:

Objectives

1. Develop agronomic practices aimed at increasing oil palm yields of small-holder farmers
2. Conduct physiological studies on oil palm growth, yield and maturity to inform optimum harvesting conditions
3. Conduct oil palm disease surveillance and design their control methods
4. Conduct oil palm pest surveillance and design their control methods
5. Capacity building and dissemination of developed technologies through appropriate pathways
6. Coordinate Research

ANNUAL PROJECT ACHIEVEMENTS

OUTPUT 1: develop agronomic practices aimed at increasing oil palm yields of small-holder farmers

Establishment and Maintenance of New oil palm trials in Mid North (Dokolo, Apac and Nwoya) and West Nile (Adjumani, Moyo, Arua and Zombo districts)

The National Oil Palm Project (NOPP) is responsible for expanding commercial oil palm production in suitable agro-ecologies across Uganda. The National Agricultural Research Organisation (NARO) is tasked with identifying suitable areas and varieties for commercial oil palm growing in Uganda's agro-ecologies. NARO established 23 acres of oil palm adaptability trials with 5 tenera hybrids under evaluation for yield, drought and disease

tolerance. The trials are in Apac, Dokolo, Nwoya, Adjumani, Moyo, Arua and Zombo districts.

The established trials will be under maintenance and proper agronomic management to facilitate good growth and eventual yields of the varieties under test. The maintenance activities commenced in December 2022. Slashing, ring weeding and creation of the fire bands were carried out in the 23 acres of the oil palm trials. The fields were prepared ready for the next round of fertilizer application.

Figure 7. A weeded oil pal trial in Adjumani district

Figure 8. A maintained oil palm trial in Dufile Sub-county, Moyo district

Figure 9. An oil palm trial field planted in Kango sub-county, Zombo district

Existing oil palm adaptive trial growth and yield performance:
The old trial at NaCORI Kituza yielded 13.6 ton of fresh fruit bunches per hectare while the young trial at NaCRRI yielded 11.8 ton/ha and 1,590 bunches. The bunch weight has increased from the previous 6.3kg to the current 7.4kg. The growth parameters have increased with age to a canopy of 8.1 m, height of 2.14m, girth 2.7m.

Yields obtained from the old trial in Kituza reduced compared to the normal steady trend. The difference could have been caused by the lapse in fertilizer

application. The yields of the trial in Namulonge are showing steady increase overtime. This is expected and the trial is growing towards the peak period of production in the oil palm production cycle.

Table 21. Growth parameters for oil palm trees at Namulonge for March 2023

Location	Canopy size (M)	Plant Height (M)	Girth (M)	Number of fronds	Number of spears	Frond length	Frond width
Namulonge A	8.1	2.14	2.7	39.8	4.1	3.4	1.4
Namulonge B	7.7	2.02	2.4	35.6	4.8	3.07	1.25

Table 22. Yield data for the new oil palm research trial at NaCRRI for the year ending in June 2023

Bunch number	**Bunch weight (Tons)**	**Average bunch weight (kg)**
1,489	10.8	7.2

Table 23. Oil palm Yields parameters for Kituza for the year ending in June 2023

Bunch number	**Bunch weight (Tons)**	**Average bunch weight (kg)**
694	14.01	20.2

Cover crop management trials:

Arachis pintoi has been earmarked as a potential cover crop for oil palm. Its short stature, ability to cover the ground and potential to fix nitrogen into the soil make it an appropriate cover crop in oil palm.

Multiplication of the cover crop and distribution to farmers has been approved by the oil palm consultant. However, preparation of planting materials from sods leaves the source bare and requires a large area of established cover crop. Using the research plot at Namulonge as the source of material, studies are underway to determine the appropriate propagation methods for easy multiplication of the cover crop for large scale planting of the cover crop.

Meanwhile, seedlings have been prepared and circulated to some oil palm farmers to increase the distribution of the cover crop and enhance adoption among farmers.

Figure 10. Pinto nut (Arachis pintoi) growing in the oil palm farmers field

Cover crops fix nitrogen in the soil, control soil erosion and control weeds among other functions. *Arachis pintoi* can fix about 146kg N ha^{-1} $year^{-1}$(Rose *et al.*, 2019) relieving the farmers of costs of fertilizers, minimizing the risks of pollution of water bodies with fertilizers and also by control erosion. It also reduces the costs of weed management by controlling weeds and the frequency of weed control. *Mucunabracteata* is the only cover crop available for oil palm farmers in Kalangala but farmers have not adopted it citing its vigorous growth and regular management and very thick ground cover among others. Arachis pintoi which is low growing and not vigorous is presented as an alternative.

OUTPUT 2: Physiological studies on oil palm growth yield and maturity to inform optimum harvesting conditions conducted

Determination of variation in oil palm pollinator weevils in Uganda

Survey experiments have been initiated in mature oil palm plantations that are at least five years old in out-grower fields in Kalangala, and adaptive trials in Bugiri, Mayuge, Buvuma, Masaka, Kibaale, Kagadi, and Bundibugyo to determine abundance and sexual variation of pollinator weevils on blooming male inflorescence. The male inflorescence is safely removed from the plant. Three spikelets are taken out of the male inflorescence's lower section on each side of the flower, then three more are taken out of the middle section on each side of the flower, and three more are taken out of the top section on each side of the flower. The three spikelets from the various portions are safely packed in three distinct sealable packs and delivered to the NaCRRI entomology lab, where counting is done.

Farmers have seen physiological issues including bunch failure and bunch rot in some locations, and our recent study by Masika et al (2020) has validated this. Poor pollination is one of the reasons of several of these illnesses, such as bunch failure, among others. Therefore, we are interested in figuring out the pollinator weevil population in Kalangala and other oil palm growing regions of Uganda in order to assess how they affect oil palm bunch failure and bunch rot so that assisted pollination can be implemented in areas of need. Preliminary results show that most of the study areas have sufficient number of oil palm weevils

Determination of maturity rates from anthesis to bunch ripening

The time span from flower anthesis and pollination to fruit ripening in Ugandan circumstances must be carefully examined in order to ascertain the oil palm maturity period. By using this knowledge, the proper harvesting standards that are appropriate for the environmental circumstances in Uganda may be developed, minimizing any losses caused by the present harvesting standards that might not be suitable for the local conditions.

Preliminary trials have been running continuously in Kituuza, Mukono District, Bugiri and now districts since February 2019 to determine these time frames. Before anthesis, the fields are inspected to identify female inflorescences. Selected palms were tagged and their flowers were then isolated before being treated with a 40% formalin solution to destroy any foreign pollen and broad-spectrum insecticides to prevent insect pollination. Results have been collected in Bugiri, on station trial at NaCRRI, Kituza at NaCORI and now the last data set is being collected in Kalangala. This will give a clear indication of the true time from anthesis to flowering that will help to set standards for harvesting hence increasing quality of the harvested fresh fruit bunches and maximize profits.

OUTPUT 3: Major diseases of oil palm identified and their management options developed

Disease outbreaks are part of the biggest challenges facing the oil palm industry in Uganda. Identification and development of sustainable management measures to oil palm diseases is one of the tasks assigned to oil palm research. As a result, both major and minor nursery and main field disease of oil palm have been identified in the country, including; Leaf spots of oil palm, anthracnose, rust, blast, Fusarium wilt of oil palm and Ganoderma trunk rot. The occurrence of these diseases, especially Fusarium wilt of oil palm is threatening the development of the oil palm industry in Uganda.

Management of Fusarium wilt of oil palm

Five oil palm varieties, imported from CIRAD-Benin, were evaluated under screen house conditions for resistance to local strains of Fusarium wilt of oil palm over a period of 6 months.

In the experiment, pure Fusarium spp cultures isolated from Fusarium wilt symptomatic oil palms observed in Kalangala were used in the study. To multiply the pure cultures, a plug was picked from the edge of the isolated cultures and placed at the center of a petri dish with PDA media. These were incubated at room temperature for 7 days before being used for preparation of conidial suspensions.

Eight 3mm-diameter plugs were picked from the 7-day old Fusarium spp cultures and placed in a 250ml conical flask containing 100 ml of sterilized Sucrose salt solution. This were incubated at room temperature for 10 days in an orbital incubator. At the end of the incubation, the content in the conical flask was macerated with a warren blender and sieved through a muslin cloth. After decanting, the suspension was diluted with sterile water to the required spore concentration of 1X106 spores per ml. The spore count was determined using a hemocytometer and cover slip method as described by Paul, 1995.

At four months, 30 seedlings were inoculated with each of the fungal isolates by dispensing with a syringe 10ml of conidia/spore suspension on exposed roots. The roots were exposed by removing a small layer of soil around the roots. Fertilizer was applied after one month of inoculation. Observations and data collection continued for 6 months after inoculation.

By observation, all varieties showed resistance to the local strain of Fusarium wilt of oil palm. Mild Fusarium wilt symptoms were observed externally (Figure 5) and internally (Figure 6) after 6 months of the experiment. However, for conclusive results, the experiment needs to be repeated with susceptible varieties.

(a) (b)

Figure 11. An inoculated seedling with dry older leaves after 6 months (a) and an experimental seedling after dissection to reveal internal discoloration

To evaluate for resistance under fields conditions, Similarly, 150 seedlings were planted in a Fusarium wilt of oil palm hotspot field in Kagulube production block (Fig. 3). The seedlings were planted as a replacement of suspected Fusarium wilt diseased palms in a severely infested and poorly nourished fields in Kagulube. First data sets are yet to be collected. Data (occurrence, average severity and percentage incidence) will be collected bi-annually over a period of 5 years (short term) and over 10 years (long term).

Figure 12. A seedling being planted in a fusarium wilt of oil palm hot spot field in Kagulube

Maintenance of Best Management Plots:
To demonstrate best management practices to farmers in the management of Fusarium wilt of oil palm and Ganoderma trunk rot, *Arachis pintoi* (pinto nut) was planted in the best management practice, BMPs plots in Kayunga for Ganoderma trunk rot and Fusarium wilt of oil palm in Kagulube block as a cover crop. Pinto nut is intended to replace the more vigorous and harder to manage Mucuna that had been ignored by small scale farmers in Kalangala.

The pinto nut is expected to minimise soil erosion, improve soil biomass and thus the soil structure and nutrient content while effective reducing spread of both Fusarium wilt and Ganoderma trunk rot in the affected field through improved palm nourishment and reduced soil movement.

Figure 13.Planting of pinto nut between oil palm rows and 2 meters apart in the Ganoderma management BMP in Kayunga block.

OUTPUT 6: Conduct oil palm pest surveillance and design their control methods
Oil palm weevil, *Rhynchophorusphoenicis* (Coleoptera: Curculionidae) is a key pest of palms in Kalangala. The research team at NaCRRI do surveillance of oil palm pests, including oil palm weevils. Environmentally sustainable management options have beendesigned to control oil palm weevil, including use of sex pheromone traps, bio-insecticides and improved agronomic practices.

Oil Palm weevil infected trees per acre:

A higher number of fields assessed in Bbeta West and Bbeta East showed 8.2% and 6.8% infected trees per acre compared to Bubembe and Bbeta East. The growers whose fields were assessed noted that oil palm weevil infected trees range from 1-14 trees per acre (Fig. 8). It was also noted that a higher number of oil palm weevil infested trees were in lowland oil palm plantations when compared to infected trees in the upland plantations (Fig. 9)

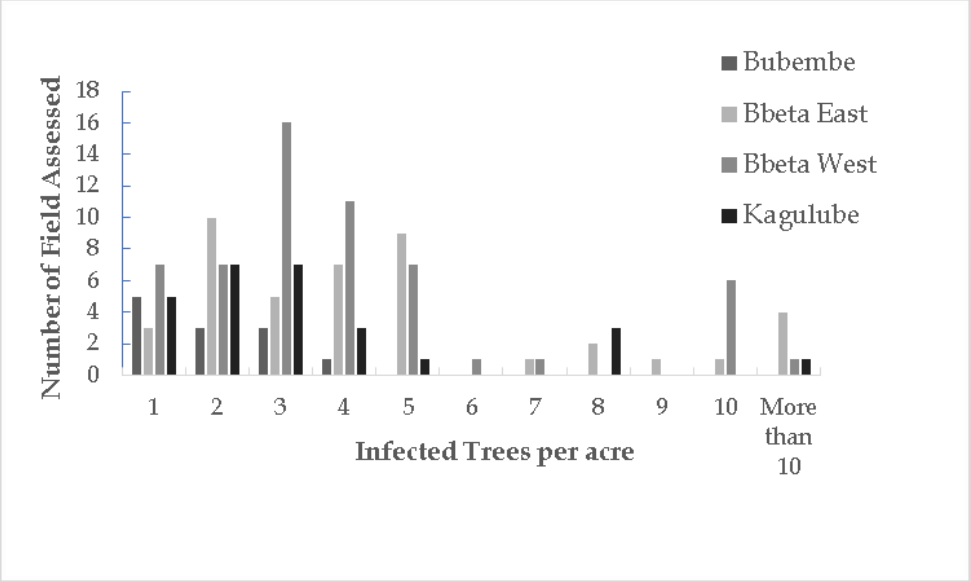

Figure 14. Estimated trees infested trees/acre by the oil palm weevils of the four blocks

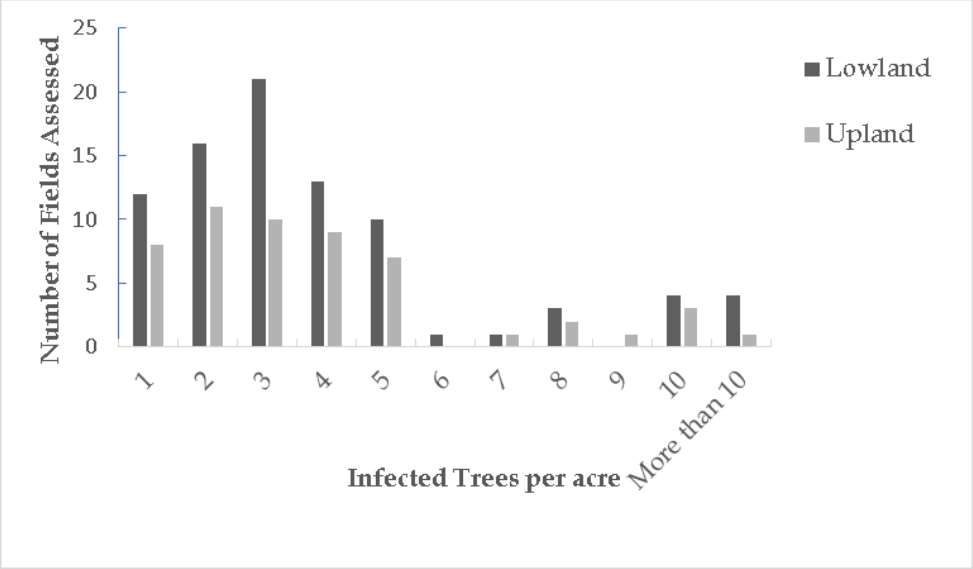

Figure 15. Estimated infested and damaged trees/acre in low land and upland plantations

(a)

(b)

Figure 16. Assessment of oil palm farms for oil palm weevil infestation and damage in the trunk (a) and in the canopies (b), Kalangala

OUTPUT 5: Capacity building and dissemination of developed technologies through appropriate pathways

Training of the Hub extension officers

The Oil Palm Research participated in a training organized by NOPP agronomist for Buvuma hub extension officers. The training was aimed at skilling the oil palm extension officers in site selection, establishment, and management of young oil palm fields. The extension staff were given knowledge that would help them in field situations related to oil palm in the

early stages of the plant establishment and care including ideal site selection,lining, holing, planting, nutrient deficiency identification, fertilizer application, pest and disease control.

Figure 17. Demonstration on management of a palm in a waterlogged area

Best Management Plot

The project aims at transferring oil palm production knowledge through practical participation and observation. Three 3 acres of land have been earmarked for research to establish best management plots in Buvuma. These will be planted with three oil palm varieties under testing in Uganda's conditions that have characteristics of fusarium resistance, Ganoderma tolerance and drought tolerance. Establishment of these sites will take place in the first quarter of 2023/2024 financial year.

To furthermore improve on the achieved results, a number of activities have been planned.

PLANNED ACTIVITIES FOR FY2023/2024

1. Maintain the established new oil adaptive trials in mid north and West Nile region.
2. To fast-track importation of some leguminous plants for assessment and increase the options of cover crops.
3. Establish and manage fertilizer trials in Kalangala district.
4. Evaluate Fusarium wilt under field condition for resistant oil palm varieties
5. Efficiently manage BMPs at Kalangala and established BMPs in Buvuma
6. Finalize evaluation of diversity of pollinators in Kalangala during wet and dry season.
7. Continue surveillance, identification and management of both major and currently minor diseases of oil palm in Uganda.
8. Continue with surveillance of oil palm pests in Kalangala and develop integrated oil palm weevil management strategies through use of different traps and suitable cultural practices.

Challenges in conducting the research activities

1. Limited human resource capacity - the project lacks a fulltime entomologist and as the project spreads out the scope of work has increased
2. Research lacks a reliable vehicle. The two old vehicles often break down and are not fit for long distances.
3. Delay of funds delays implementation and limited funding of the oil palm research activities compared to the planned annual targets.

Conclusion

The research activities reported are additive and continuous and results will continuously be generated. Periodically, journal publications, and information materials are published to communicate the research achievements and best management practices. Adaptability trials will be continuously managed to generate data needed to design appropriate management practices for commercial oil palm production. All the research activities in pathology, physiology, entomology and agronomy go a long way to develop the appropriate production practices to improve production of oil palm based on the current trends.

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