



Agro-Industrialisation Programme

Semi-Annual Budget Monitoring Report

Financial Year 2021/22

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Budget Monitoring and Accountability Unit
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ABBREVIATIONS

A.I	Artificial Insemination
ACDP	Agriculture Cluster Development Project
ACF	Agriculture Credit Facility
AEG	Agricultural Extension Grant
AGPP	Agriculture Geo Portal Platform
AnGRC	Animal Genetic Resource Centre
ARMC	Agricultural Regional Mechanization Centres
AVCP	Agriculture Value Chain Development Project
BMAU	Budget Monitoring and Accountability Unit
Bn	Billion
BoQs	Bills of Quantities
BoU	Bank of Uganda
CAO	Chief Administrative Officer
CDO	Cotton Development Organization
CF	Community Facilitator
CGS	Competitive Grant Scheme
CI	Credit Institution
COVID-19	Corona Virus Disease- 2019
CPDCP	Crop Pests and Diseases Control projects
CSR	Community Social Responsibility
CWD-r	Coffee Wilt Disease Resistant
DAES	Department of Agricultural Extension and Skills Management
DAIED	Department of Agricultural Investment and Enterprise Development
DAP	Di-ammonium Phosphate
DDA	Dairy Development Authority
DFCS	Dairy Farmers Cooperatives
DiFR	Directorate of Fisheries Resources
DLG	District Local Government
DLP	Defects Liability Period
EDF	European Development Fund
EDTS	Entebbe Dairy Training School
EIA	Environmental Impact Assessment
ESIA	Environmental Social Impact Assessment
ESMP	Environmental and Social Management Plans
EU	European Union
EVMG	Electronic Voucher Management Agency
FFB	Fresh Fruit Bunches
FMD	Foot and Mouth Disease
FPF	Fisheries Protection Force
FY	Financial Year
GoU	Government of Uganda

Ha	Hectare
HH	Households
HRD	Human Resource Development
ICT	Information and communications technology
IDA	International Development Association
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IFMS	Integrated Financial Management System
IT	Information Technology
IVF	Invitro-fertilization
JICA	Japanese International Cooperation Agency
KCCA	Kampala Capital City Authority
Kg	Kilogram
KOPGT	Kalangala Oil Palm Growers Trust
LES	Livestock Experimental Station
LG	Local Government
LLG	Lower Local Government
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MATIP	Markets and Agricultural Trade Improvement Project
MCAL	Mutuma Commercial Agencies Limited
MCC	Milk Collection Centre
MDAs	Ministries, Departments and Agencies
MFPED	Ministry of Finance, Planning and Economic Development
Mn	Million
MOH	Ministry of Health
MOLG	Ministry of Local Government
MOPs	Ministry of Public Service
MoU	Memorandum of Understanding
MT	Metric Tone
MTIC	Ministry of Trade Industry and Cooperatives
MWE	Ministry of Water and Environment
NAADS	National Agricultural Advisory Services
NaCORI	National Coffee Research Institute
NaCRRI	National Crops Resources Research Institute
NADDEC	National Animal Disease Diagnostics and Epidemiology Centre
NAEP	National Agricultural Extension Policy
NAES	National Agricultural Extension Strategy
NaFIRRI	National Fisheries Resources Research Institute
NaFORRI	National Forestry Resources Research Institute
NAGRIC&DB	National Animal Genetic Resources Center and Data Bank
NaLiRRI	National Livestock Resources Research Institute

NARL	National Agricultural Research Laboratories
NARO	National Agriculture Research Organization
NAROSEC	National Agriculture Research Organization Secretariat
NASARRI	National Semi-Arid Resources Research Institute
NDAL	National Dairy Analytical Laboratory
NDP	National Development Plan
NEC	National Enterprise Corporation
NEMA	National Environment Management Authority
NLI	National Leadership Institute
NLR	National Laboratories Research
NOPP	National Oil Palm Programme
NPA	National Planning Authority
OAG	Office of the Auditor General
OPBL	Oil Palm Buvuma Limited
OWC	Operation Wealth Creation
PBS	Programme Based Budgeting System
PDM	Parish Development Model
PFI	Participating Financial Institution
PFM	Public Financial Management
PIAP	Programme Implementation Action Plans
PMG	Production and Marketing Grant
PMU	Programme Implementation Unit
PPDA	Public Procurement and Disposal of Assets
PPP	Public-Private Partnership
PPR	Peste Des Petits Ruminants
PWD	Persons with Disabilities
Q	Quarter
SAGIP	Strategic Intervention for Animal Genetic Improvement Project
SLM	Sustainable Land Management
SOFTE	Soroti Fruit Factory
SOP	Standard Operating Procedure
TC	Town Council
UBA	United Bank of Africa
UCDA	Uganda Coffee Development Authority
UDC	Uganda Development Corporation
Ug shs	Uganda Shillings
UGCEA	Uganda Ginners and Cotton Exports Association
UGIFT	Uganda Intergovernmental Fiscal Transfer Program
UHT	Ultra-High Temperature
UNBS	Uganda National Bureau of Standards
UPDF	Uganda Peoples Defense Forces
ZARDI	Zonal Agricultural Research Development Institute

FOREWORD

The Government is implementing programmatic planning and budgeting which harnesses synergies from a number of previously independent sectors and avoids duplication of resources, thus enabling us attain efficiency in our development investments.

The Budget Monitoring and Accountability Unit (BMAU) is now undertaking Programme-Based Monitoring to assess performance of the targets and outcomes set in the Programme Implementation Action Plans (PIAPs) of the third National Development Plan (NDPIII), Ministerial Policy Statements, plus the Programme and Sub-Programme work plans.

These BMAU findings are the first Programme assessments we have conducted and I urge you to embrace the findings therein, and fully adopt the recommendations as we strive to ensure compliance to Programme-Based Budgeting.

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke extending to the right.

Ramathan Ggoobi

Permanent Secretary/Secretary to the Treasury

EXECUTIVE SUMMARY

Introduction

Starting Financial Year (FY) 2021/22, the Budget Monitoring and Accountability Unit (BMAU) is undertaking Programme-Based Monitoring to assess performance against targets and outcomes in the Programme Implementation Action Plans (PIAPs) of the third National Development Plan (NDPIII), Ministerial Policy Statements among other key planning documents. This report presents findings from monitoring the Agro-Industrialisation Programme for the budget execution period 1st July to 30th December 2021.

The Agro-Industrialisation Programme goal is to increase commercialisation and competitiveness of agricultural production and agro-processing. The programme has five sub-programmes, namely: a) Agricultural Production and Productivity; b) Storage, Agro-Processing and Value Addition; c) Agricultural Market Access and Competitiveness; d) Agricultural Financing; and e) Institutional Strengthening and Coordination.

Programme Performance

Financial performance

The total approved budget for the Agro-Industrialisation Programme for FY 2021/22 is Ug shs 1,850.913billion (bn), of which Ug shs 984.176million (m) (53%) was released and Ug shs 540.612m (55%) spent by 31st December 2021. This was very good half year release and fair expenditure performance. Close to a half of the funds that were released were not absorbed. The sub-programmes that performed worst in absorbing available funds were: Storage, Agro-Processing and Value Addition (8%); Agricultural Financing (55%) and Agricultural Production and Productivity (53%).

The low funds absorption was largely attributable to delayed releases and disbursements to implementing agencies leading to late procurements; incomplete works of agricultural infrastructure; the prevalence of the COVID-19 pandemic that affected staff availability and implementation of meetings and workshops; lock downs that led to delays in importation of key equipment and materials; and staffing gaps especially in the local governments.

Performance highlights

The overall performance of the Agro-Industrialisation Programme was fair and on-track rated at 62.80%. In general, the programme was on track, although only one sub-programme was substantially meeting its semi-annual targets.

Despite the fair performance, there was a weak focus on programme-based planning, execution and implementation of the value chain approach that would promote agro-industrialisation. Most spending agencies were still functioning in the silo mode, with funds spent on discrete interventions and projects that were not contributing fully to the achievement of the programme and sub-programme objectives.

The programme performance was largely driven by the Agricultural Market Access and Competitiveness sub-program which had very good performance (93%) explained by the significant multi-year investments and 90% absorption of released funds in FY 2021/22. Nine out of 12 markets that were redeveloped by Ministry of Local Government (MOLG) under the Markets and Agricultural Trade Improvement Programme Phase 2 (MATIP-2) were completed and in use, especially by traders of agricultural produce. The strengthening of enforcement and adherence to product quality requirements was on track.

Functionality of markets in use was however lower due to: poor infrastructure designs that made it difficult for clients to reach the food stalls; and lack of shades to protect the perishable products from weather vagaries leading to high post-harvest losses. The interventions under this highly performing sub-programme were implemented mainly by institutions that are not traditionally in the agricultural sector (MOLG, UNBS) pointing to the importance of cross-sectoral collaborations to deliver services more holistically in the programme approach.

Underperformance of the Agro-Industrialisation Programme was due to the poor performance of the Institutional Strengthening and Coordination Sub-Programme which was off track (30%); and Agricultural Financing Sub-Programme (55%). It was difficult to trace the interventions and outputs related to the Institutional Strengthening and Coordination Sub-Programme, despite the relatively good absorption of released funds (71%). The main intervention under implementation was the ongoing recruitment of Parish Chiefs in local governments under the Parish Development Model (PDM). Poor specification of indicators and targets for this sub-programme partly explain the poor performance as credible information could not be found.

Access to agricultural financing by farmers and agricultural enterprises was still very limited. The fair performance (55%) of the Agricultural Financing Sub-Programme was largely attributable to increased access and utilisation of funds from the Agricultural Credit Facility (ACF). For example, by 31st December 2021, 550 individual small holder farmers and enterprise were funded under the block allocation with alternative collateral arrangements and funds totaling to Ug shs 6.33bn. Farmers and firms used the bulk of disbursed funds as working capital to purchase grain (37%), on-farm investments (29%), agro-processing (19%) and post-harvest management (15%).

By 31st December 2021, the key challenges to the ACF were: non-performing loans that stood at Ug shs 5.5bn with a non-performing asset (NPA) ratio of 1.6% compared to the aggregate ratio of 5.3% for all commercial banks; and the COVID-19 pandemic that impacted negatively on the agricultural production and fund recovery for the ACF. In line with the Bank of Uganda guidelines on credit relief and loan restructuring measures, a total of 107 loans amounting to Ug shs 31.79bn were restructured. The high interest rate for agricultural lending, delayed processing and disbursement of loans, provision of inadequate amounts, and lack of access to agricultural extension services by beneficiaries negatively impacted on performance of the sub-programme.

Access to Uganda Development Corporation (UDC) finance by the companies engaged in agro-processing was low partly due to delays in completion of the investment procedures including the registration and incorporation of the Special purpose vehicles; low readiness of identified

projects for investment; and difficult of spending disbursed funds that were tied to specific projects.

The performance of the Agricultural Production and Productivity Sub-Programme was good (70%) but lower than planned as this sub-programme used the bulk of resources (57.44%) under the programme. The performance of the sub-programme was largely contributed by actions to strengthen research and technology development and animal breeding under the National Agricultural Research Organisation (NARO) and the National Animal Genetic Resources Center and Data Bank (NAGRC&DB); and extension and input provision by various institutions more especially the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), National Agricultural Advisory Services (NAADS) and the Local Governments (LGs). However, weak synergy and linkages and sometimes duplications were noted between institutions that were aiming to achieve the same objectives under the sub-programme.

Several agricultural infrastructures were constructed especially for research and technology development and animal breeding but many were not in use awaiting completion and equipping. The functionality of existing infrastructure constructed in previous financial years was low, compromised by lack of equipment, furniture, power connections, maintenance budgets; and inadequate funding to pay utility bills. Large consignments of equipment that were procured in the previous financial year (s) were in storage waiting for experts to install them.

Overall, the full attainment of the programme objectives was hampered by: inadequate staffing especially among the extension workers; low funds absorption (53%); COVID-19 pandemic and lock downs; slow translation of the Programme Implementation Action Plan (PIAP) commitments into the Annual Approved Budgets to ensure attainment of programme objectives; and the weak link between agriculture research and value addition interventions leading to production of input varieties that did not meet the demand of the value addition industries in the different agriculture zones.

Other constraints were the land encroachment on most Government farms especially by high ranking citizens; poor planning demonstrated by release of Parish Development Funds without corresponding detailed implementation guidelines and limited linkages between interventions to enable Government of Uganda (GoU) to holistically address farmer needs. There were weak linkages for example between agriculture research and value addition interventions leading to production of input varieties that did not meet the demand of the value addition industries in different agriculture zones.

There was general delay in initiation and approval of both procurements and disbursement of funds among the agro-industrialisation Ministries, Departments, and Agencies. Majority (80%) of the civil works that that recorded progress were rolled over projects from the previous financial years' indicative of poor procurement planning and management especially for projects with twelve month or less duration.

Challenges

1. Low absorption of released funds for the programme (55%) due to delayed releases and disbursements to implementing agencies resulting in late initiation of procurements; stalling of construction works and in some cases, abandonment of sites by contractors; disbursement of funds for projects with low readiness for implementation; COVID-19 pandemic and lack of advisory fund to implementing agencies.
2. Low performance of four out of the five sub-programmes due to slow or non-implementation of core activities as a result of the issues raised in 1 above.
3. Limited translation of the PIAP commitments into the annual approved budgets and work plans to ensure attainment of programme objectives
4. Inadequate staffing especially extension workers in the lower local governments
5. Weak linkages, synergy and collaboration between the implementers of the different sub-programmes resulting in duplication of effort and wastage of resources; missed opportunities for learning from each other for more effective programme implementation.
6. Gender disparity in access and use of agricultural services in the programme, with males dominating.

Recommendations

1. The MFPED and programme implementing agencies should focus on removing bottlenecks to timely release and absorption of funds to investment ready interventions; initiation of procurements; and hiring of competent contractors.
2. The MAAIF and implementing agencies should review and speed up implementation of actions that contribute to enhancing performance of lagging sub-programmes especially Institutional Strengthening and Coordination; and Agricultural Financing.
3. The MAAIF and implementing agencies should prioritise, align and translate the PIAP commitments into the annual work plans and budgets in line with the NDPIII interventions.
4. The MAAIF and LGs should prioritise recruitment and equipping extension workers with transport and facilitation especially in the newly created Administrative Units (cities, districts and sub-counties).
5. The MAAIF and agencies should strengthen intra-programme collaboration and synergy in resource prioritisation and implementation of the core actions.
6. The MAAIF and implementing agencies should strengthen affirmative action to females to enhance access to agricultural services.

CHAPTER 1: INTRODUCTION

1.1 Background

The mission of the Ministry of Finance, Planning and Economic Development (MFPED) is, “*To formulate sound economic policies, maximize revenue mobilisation, and ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development.*”

The MFPED through its Budget Monitoring and Accountability Unit (BMAU) tracks implementation of programmes/projects by observing how values of different financial and physical indicators change over time against stated goals, indicators and targets (how things are working). The BMAU work is aligned to budget execution, accountability, service delivery, and implementation of the Domestic Revenue Mobilisation Strategy (DRMS).

Starting FY 2021/22, the BMAU is undertaking Programme-Based Monitoring to assess performance against targets and outcomes in the Programme Implementation Action Plans (PIAPs) of the third National Development Plan (NDPIII). Semi-annual and annual field monitoring of government programmes and projects is undertaken to verify receipt and application of funds by the user entities and beneficiaries, the outputs and intermediate outcomes achieved, and level of gender and equity compliance in the budget execution processes. The monitoring also reviews the coherency in implementing the PIAP interventions; the level of cohesion between sub-programmes; and challenges of implementation.

The monitoring covered the following Programmes: Agro-Industrialisation; Community Mobilisation and Mindset Change; Digital Transformation; Human Capital Development; Innovation, Technology Development and Transfer; Integrated Transport Infrastructure and Services; Manufacturing; Mineral Development; Natural Resources, Environment, Climate Change, Land and Water Management; Public Sector Transformation; Sustainable Development of Petroleum Resources; and Sustainable Energy Development.

This report presents findings from monitoring the Agro-Industrialisation Programme for the budget execution period 1st July to 30th December 2021. Agro-industrialisation is defined¹ to comprise three main areas: a) agro-processing, distribution, provision of farm inputs; and off farm activities; b) institutional and organizational coordination between agro-processing firms and farms; and c) management of changes in product composition, technology and sectoral and market structures.

¹ Reardon and Barrett (2000).

1.2 Programme Goal and Objectives

The Agro-Industrialisation Programme goal is to increase commercialisation and competitiveness of agricultural production and agro-processing. The programme objectives are to: 1) Increase agricultural production and productivity; 2) Improve post-harvest handling and storage; 3) Improve agro-processing and value addition; 4) Increase market access and competitiveness of agricultural products in domestic and international markets; 5) Increase the mobilisation and equitable access and utilisation of agricultural finance; and 6) Strengthen the institutional coordination for improved service delivery.

The programme objectives are pursued through interventions along the agricultural value chain for strategic export and food security commodities including: coffee, tea, cotton, maize, poultry, horticulture, vegetable oil, bananas, beef cattle, dairy cattle, goats and fisheries.

1.3 Sub-Programmes

The Agro-Industrialisation Programme is implemented through five sub-programmes, namely:

- i) Agricultural Production and Productivity
- ii) Storage, Agro-processing and Value Addition
- iii) Agricultural Market Access and Competitiveness
- iv) Agricultural Financing
- v) Institutional Strengthening and Coordination

1.4 Programme Outcomes

The key results to be achieved over the five-year period (FY 2020/21 to FY 2024/25²) are:

- i) Increased total export value of processed agricultural commodities; coffee, tea, fish, dairy, meat, and maize (and its products) from; USD 0.935 Billion to USD 2.7 billion;
- ii) Reduced total value of imported cereals and cereal preparations, vegetable fats and oils, and sugar preparations from USD 931.1 million to USD 500 million;
- iii) Increased agricultural sector growth rate from 3.8 percent to 6.0 percent;
- iv) Increased labour productivity in the agro-industrial value chain (value added, USD per worker) from USD 2,212 to USD 3,114;
- v) Increased number of jobs created per annum in agro-industry along the value chain by 180,000;
- vi) Reduced percentage of households dependent on subsistence agriculture as a main source of livelihood from 68.9 percent to 55 percent; and
- vii) Increased proportion of households that are food secure from 60 percent to 90.

² Third National Development Plan (NDPIII)

1.5 Programme Financing

More than half (53%) of the Programme Budget³ was released as at 31st December 2021, which was a good performance . Expenditure performance on the other hand was not satisfactory as only 55% of the released funds were absorbed (Table 1.1).

The sub-programme that performed worst in relation to use of available funds was Storage, Value Addition and Agro-Processing which absorbed a dismal 8% of the available funds.

The low funds absorption was in the most part attributed to incomplete works at the agro-processing and value additional facilities under the Markets and Agricultural Trade Improvements Programme (MATIP-2), and slow pace of implementation of the Agriculture Cluster Development (ACDP) component for value addition and agro-processing including construction of road chokes (community and feeder roads for enhanced market access during the period under review. Programme expenditure was greatly slowed by the prevalence of the COVID 19 pandemic and lock downs that led to delays in importation of key equipment and materials.

Table 1.1: Financial Performance of the Agro-Industrialisation Programme by 31st December 2021

Sub-programme	Budget (Ug shs)	Release (Ug shs)	Expenditure (Ug shs)	% of release spent
Agricultural Production and Productivity	1,208,047,300,140	565,354,501,011	297,813,409,858	53
Storage, Agro-Processing and Value Addition	72,722,167,159	71,919,433,159	5,602,792,281	8
Agricultural Market Access and Competitiveness	78,150,912,000	31,415,000,000	28,247,780,272	90
Agricultural Financing	101,871,437,979	99,290,010,465	54,634,201,593	55
Institutional Strengthening and Coordination	390,121,593,918	216,197,807,746	154,314,767,778	71
Grand total	1,850,913,411,196	984,176,752,381	540,612,951,782	55

Source: Approved Estimates of Revenue and Expenditure Vol.1 and II, FY2021/22, IFMS Data, BoU reports

³ The contribution to the Programme Budget reviewed from the various votes was as follows; BoU- ACF at 2%, CDO at 1%, DDA at 1%, LGs and MAAIF each at 30%, MoLG at 4%, MoTIC-UDC at 3%, MWE at 9%, NAADS at 6%, NAGRIC & DB at 4%, NARO at 6%, UCDA at 5%.

CHAPTER 2: METHODOLOGY

2.1 Scope

This monitoring report is based on selected interventions in the five sub-programmes (section 1.3) of the Agro-Industrialisation Programme. A total of eighteen of the thirty-five (51%) interventions in the PIAP were reviewed. The 18 reviewed interventions translated into 91% coverage of allocation⁴ for the FY2021/22. The selected interventions monitored were:

- 1) Strengthen agricultural research and technology development
- 2) Strengthen the agricultural extension system
- 3) Increase access and use of water for agricultural production
- 4) Increase access to and use of agricultural mechanisation
- 5) Strengthen farmer organizations and cooperatives
- 6) Strengthen systems for management of pests, vectors and diseases
- 7) Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades
- 8) Develop concessional long-term financing for agricultural infrastructure and capital investments
- 9) Digitalize acquisition and distribution of agricultural market information
- 10) Improve agricultural market infrastructure in rural and urban areas
- 11) Improve transportation and logistics facilities for effective product marketing and distribution
- 12) Strengthen enforcement and adherence to product quality requirements including; food safety, social and environmental standards, grades, etc.
- 13) Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security
- 14) Equip regional farm service centers
- 15) Establish new and rehabilitate existing agro-processing industries to minimize negative environmental impacts for processing of key agricultural produce
- 16) Establish post-harvest handling, storage and processing infrastructure including silos, dryers, warehouses, and cold rooms of various scale and
- 17) Improve the transportation and logistics infrastructure such as refrigerated trucks and cold rooms for priority commodities
- 18) Construct and regularly maintain community access & feeder roads for market access.

The selection of interventions to monitor was based on the following criteria:

- 1) Outputs were planned for and undergoing implementation in the year of review, whether financed or not
- 2) Significant contribution to the programme objectives and national priorities
- 3) Availability of progress reports for the period under review.

⁴ Allocation as indicated in the Programme Implementation Action Plans

- 4) Interventions that had clearly articulated gender and equity commitments in the policy documents
- 5) Completed projects to assess beneficiary satisfaction, value for money and intermediate outcomes.

The inputs, activities, processes and outputs tracked were a combination of those under implementation as reviewed in the PIAP, Ministry Policy Statements and Annual and Quarterly work plans of the Agro-Industrialisation Programme.

The semi-annual monitoring focused on the following Ministries, Departments and Agencies (MDAs) and entities that were responsible for the realisation of the agro-industrialisation goals and objectives: Agriculture Credit Facility (ACF) - Ministry of Finance, Planning and Economic Development (MFPED)/Bank of Uganda (BoU), Cotton Development Organisation (CDO), Dairy Development Authority (DDA), Local governments (LGs) and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).

The others were: Ministry of Local Government, Ministry of Trade, Industry and Cooperatives-Uganda Development Corporation (UDC), Ministry of Water and Environment, National Agricultural Advisory Services (NAADS) Secretariat, National Animal Genetic Resource Centre and Data Bank (NAGRC&DB), National Agricultural Research Organisation (NARO) and Uganda Coffee Development Authority (UCDA). **The interventions, actions or outputs reviewed under each MDA/vote are listed in Annex 1.** A total of 43 districts were monitored.

2.2 Approach and Sampling Methods

Both qualitative and quantitative methods were used in the monitoring exercise. Physical performance of interventions, actions, outputs and intermediate outcomes was assessed through monitoring a range of indicators and linking the progress to reported expenditure and/or planned targets. The purposive sampling method was used in selecting sub-interventions and outputs from the Programme Implementation Action Plans (PIAPs), Ministerial Policy Statements (MPS) and progress reports of the respective Ministries, Departments, Agencies and Local governments (MDALGs) for monitoring.

To aid monitoring, mapping was done of the PIAP interventions and outputs, to the actions and outputs of programmes and projects in the Vote MPS and progress reports. Multi-stage sampling was undertaken at four levels: i) Sub-programmes ii) Sub sub-programmes iii) Local governments and iv) project beneficiaries. The selection of districts that were monitored took into account the aspect of regional representativeness.

2.3 Data Collection and Analysis

Data collection

Data was collected by two monitoring teams, one operating in the Central and Western part of the country, and the other in the Northern and Eastern regions. Both primary and secondary data was collected from the sources indicated below:

- i) Literature review: MPS FY 2021/22; National and Programme Budget Framework Papers; A handbook for implementation of NDPIII Gender and Equity commitments for Agro-Industrialisation Programme, Programme intervention or actions documents, Programme Implementation Action Plans (PIAPs), (NDP III), quarterly progress reports and work plans for the respective implementing agencies, District Performance Reports, Budget Speech, Public Investment Plans, Approved Estimates of Revenue and Expenditure, project reports, Aide Memoires and Evaluation Reports.
- ii) Review and analysis of data from the Integrated Financial Management System (IFMS); Programme Budgeting System (PBS); Budget Website; Quarterly Performance Reports and Bank statements from some implementing agencies.
- iii) Consultations and key informant interviews with project managers, value addition or processing facility managers and service beneficiaries at various implementation levels. Focused group discussions were also held in instances of group beneficiaries.
- iv) Field visits to various districts, farms, ranches, irrigation facilities, and demonstration sites, value addition facilities for primary data collection, observation and photography.
- v) Call-backs in some cases were made to triangulate information.

Data analysis

Both qualitative and quantitative approaches were used to analyse the data. Qualitative data was examined and classified in terms of constructs, themes or patterns to explain events among the beneficiaries (interpretation analysis) and reflective analysis where the monitoring teams provided an objective interpretation of the field events.

Quantitative data on the other hand was analysed using advanced excel tools to aid interpretation. Presentation took various forms including histograms, bar charts, pie charts, curves, tables and graphs among others.

Comparative analysis was done using the relative importance of the outputs and the overall weighted scores. Relative importance (weight) of an output monitored was based on the amount of budget attached to it; thus the higher the budget the higher the contribution of the output to the programme performance. This was derived from the approved annual budget of each output divided by total annual budget of all outputs of a particular programme/project.

The weight of the output and percentage achievement for each output were multiplied to derive the weighted physical performance. The attained outputs contributed 100% to the overall semiannual programme performance.

The overall programme performance is an average of individual sub programme performances assessed. The performance of the programme and sub-programme was rated on the basis of the criterion in **Table 2.1**. Based on the rating assigned, a traffic light colour coded system was used to alert the policy makers and implementers on whether the interventions were achieved (Green), on track (Umber) or off track (Red) to aid decision making.

Table 2.1: Assessment guide to measure performance in FY 2021/22

Score	Comment	Traffic light
90% and above	Very Good (Achieved at least 90% of outputs)	Achieved
70%-89%	Good (Achieved at least 70% of outputs)	On Track
50%- 69%	Fair (Achieved at least 50% of outputs)	
49% and below	Poor (Achieved below 50% of outputs)	Off Track

Source: Author's Compilation

2.4 Limitations

- i) Monitoring from the programme perspective was constrained by the FY2021/22 budget and work plans that were prepared in sector mode with an old Chart of Accounts, and Output Codes and were not in sync with the PIAP interventions.
- ii) Lack of reliable and real time financial data on donor financing as this aspect is not accessible on the IFMS. Relatedly some implementing agencies were operating manual accounting systems which limited access to credible expenditure data.
- iii) Incomplete information especially in entities where senior managers were new or in acting positions.
- iv) High dependency on secondary data from MDAs for programme outcomes.

2.5 Structure of the Report

The report is structured into five chapters. These are: Introduction, Methodology, Programme Performance, Conclusion, and Recommendations respectively.

CHAPTER 3: PROGRAMME PERFORMANCE

3.1 Overall Performance

The overall performance of the Agro-Industrialisation Programme was **fair and on track at 62.80%**, with the semi-annual targets being partially attained. Agricultural Market Access and Competitiveness performed better than all the other sub-programmes. The worst performance was recorded under Institutional Strengthening and Coordination. (Table 3.1)

Table 3.1: Performance of the Agro-Industrialisation Programme by 31st December 2021

Sub-Programme	Financial Performance (%)	Physical Performance (%)	Performance	Remark
Agricultural Production and Productivity	62	70	Good	On track
Storage, Agro-processing and Value Addition	29	66	Fair	On track
Agricultural Market Access and Competitiveness	100	93	Very good	Achieved
Agricultural Financing	72	55	Fair	On track
Institutional Strengthening and Coordination	10	30.02	Poor	Off track
Overall programme performance	54.6	62.8	Fair	On track

Source: Field findings

Good performance under the market access was attributed to nine markets which were constructed and operationalised/near operationalisation with financing from the Ministry of Local Government (MOLG) Markets and Agricultural Trade Improvement Project 2 (MATIP-2) and Promotion of priority agriculture products in the domestic and international markets where dairy products registered a favorable balance of trade as at 31st December 2021. Good performance was as a result of rolled over projects, enhanced regulation and quality controls of priority products for both domestic and international market.

Poor performance recorded under the Institutional Strengthening and Coordination on the other hand was a result of delayed issuance of Parish Development Model (PDM) guidelines and inadequate finances to undertake capacity building drives among others.

Some of the key interventions undertaken by the median performing sub-programmes that contributed to the performance of the programme included: agriculture research and technology development undertaken; farm inputs distributed across the country; agriculture finance provided, extension services provided, water for production and surveillance against crop and livestock diseases; and animal vaccination undertaken. Agricultural infrastructure such as access roads, value addition facilities, research and technology development and animal breeding structures and markets constructed.

Despite the recorded performance as at 31st December 2021, key issues were identified that stifled attainment of the programme objectives as follows;

- i.) Delayed initiation and or approval of procurements especially for infrastructure, equipment and re-agents in the program
- ii.) Poor infrastructure designs affected the full functionality of the completed markets as clients could not easily reach the food stalls; in addition to lack of shades to protect the perishable products from weather vagaries leading to high post-harvest losses.
- iii.) Inadequate collateral and information about loan facilities especially among small holder farmers.
- iv.) A weak focus on programme based planning, execution and implementation of the value chain approach that would promote agro-industrialization. Most spending agencies were functioning in the silo mode, with funds spent on discrete interventions and projects that were not contributing fully to the achievement of the programme objectives.
- v.) Inadequate staffing especially among the extension workers compromising production and productivity; COVID 19 and associated lockdowns;
- vi.) Slow translation of the PIAP commitments into the Annual Approved Budgets to ensure attainment of programme objectives; and
- vii.) Weak linkages and synergy between agriculture research and value addition interventions leading to production of input varieties that did not meet the demand of the value addition industries in different agriculture zones.
- viii.) Land encroachment on most Government farms especially by high ranking citizens;
- ix.) Poor planning demonstrated by release of Parish Development Funds without corresponding detailed implementation guidelines and limited linkages between interventions to enable Government of Uganda (GoU) to holistically address farmer needs.
- x.) Gender disparity in access and use of agricultural services in the programme, with males dominating. This was coupled with cases of equity disparities especially in accessing Agriculture Finance with East and North benefiting less than west and central.

Detailed performance of the different sub-programmes is subsequently presented.

3.2 Agricultural Production and Productivity Sub-Programme

3.2.1 Introduction

There are 13 interventions under the Agricultural Production and Productivity Sub-Programme in the Agro-Industrialisation PIAP, namely: i) strengthen agricultural research and technology development ii) strengthen the agricultural extension system iii) strengthen the agricultural input markets and distribution systems iv) increase access and use of water for production v) increase access and use of agricultural mechanisation vi) increase access and use of digital technologies vii) improve land tenure systems and security mechanisms.

The others are: viii) strengthen farmer organisations and cooperatives ix) strengthen systems for management of pests, vectors and diseases x) promote sustainable land and environmental management practices xi) improve skills and competencies of the labour force xii) strengthen

capacity to collect, disseminate and use weather and accurate metrology information and xiii) strengthen and develop mechanisms to prevent incidences of child labour within the sector.

Eight out of the 13 interventions were monitored and the findings are presented below. Credible data was not available to measure the performance of the remaining five interventions.

During the FY2021/22, the sub-programme was allocated Ug shs 1.208 trillion representing 65% of the Agro-Industrialisation budget.

Performance

The overall performance of the Agricultural Production and Productivity Sub-Programme was good at 70% attainment of semi-annual targets. *Refer to Annex 2 for details of sub-programme and intervention, and outputs performance.*

Only one out of the eight interventions achieved the semi-annual targets; four (50%) were on track, while three (37%) were off track. **(Table 3.2)**. Those off track were occasioned by delayed initiation of procurements, limited prioritisation demonstrated by low absorption amidst stalled works at regional maintenance workshops, limited funding to support sufficient procurement of vaccines for disease prevention and control among others. *Detailed performance of the monitored interventions is discussed subsequently.*

Table 3.2: Performance of the selected interventions of Agriculture Production and Productivity Sub-Programme as 31st December 2021

Interventions	Performance Rating	Remark
Increase access and use of digital technologies in agriculture	Achieved	ICT systems such as E-voucher system for access of inputs was in place. Digital technologies in data acquisition and mapping of beneficiaries for the irrigation system was done under the UgiFT
Increase Access and Use of Agricultural Mechanisation	On track	Outputs varied in performance. Procurement delays however affected procurement of equipment, and limited prioritization of the ongoing works at regional mechanization workshops demonstrated by stalled works at some workshops such as Mbale amidst limited absorption of project funds.
Increase Access and Use of Water for Agricultural Production	Off track	Approximately 23 schemes had not commenced works while others were still at preliminary stages such as Acomai, Atari. The completed ones such as Doho, Mobuku largely enhanced access to water for production among the farmers.
Strengthen Agricultural Research and Technology Development	On track	Research in key technologies continued registering some successes. Infrastructure development continued.
Strengthen Farmer and Organisations and Cooperatives	Off track	Limited formation of cooperatives was recorded. Some key informants attributed the low performance to the change in approach of SACCO formation based at parish level to tap into the

Interventions	Performance Rating	Remark
		Parish Development Model contrary to produce based cooperatives that would have members from different parishes and sub counties.
Strengthen Systems for Management of Pests, Vectors and Disease	Off track	Crop pests and livestock diseases were inadequately addressed. The vaccines provided did not meet the demand across all the districts.
Strengthen the Agricultural Extension System	On track	Private and Public extension services were provided. The staffing levels however continue to below the recommended averages thus affecting effective provision of extension services. This is if not addressed will have significant undesirable outcomes with the roll of the Parish Development model.
Strengthen the Agricultural Input Markets and Distribution Systems	On track	E-voucher that was rolled out, quality controls from the MDAs ensured that quality priority inputs are availed to the farmers.

Source: Source: Field findings

3.2.2 Strengthen Agricultural Research and Technology Development

Introduction

The Strengthen Agricultural Research and Technology Development intervention focuses on investing in new and rehabilitating research, animal breeding and administrative infrastructure; undertaking strategic recruitment and training of agricultural research staff; establishment of climate smart technology demonstration and multiplication centres; promotion of linkages with agro-industry and agro-processing and upscaling research on bio fortification and multiplication of food staples such as beans, cassava, sweet potatoes and rice.

The planned outputs for FY2021/22 included;

- (i) Breeding & multiplication of goats, pigs, beef and dairy cattle, chicken done
- (ii) Breeding infrastructure developed
- (iii) Production and distribution of chicks done
- (iv) Production, procurement and sale of liquid nitrogen and associated equipment done
- (v) Research and technology development
- (vi) Research and agricultural infrastructure
- (vii) Crop resources technologies developed
- (viii) Fisheries Resources technologies generated
- (ix) Fisheries resources infrastructure maintained
- (x) Livestock resources technologies generated.
- (xi) Livestock resources infrastructure maintained
- (xii) Semiarid technologies developed
- (xiii) Coffee research conducted (No. Rooted stem cuttings generated)
- (xiv) Equipment procured to support dairy and beef value chain (AVCP)
- (xv) Enhancing availability of improved dairy and beef cattle germplasm done
- (xvi) Bulk semen storage tank established

The progress of the planned outputs is presented as follows;

Animal breeding

The performance of the animal breeding sub-interventions was good. Several actions were undertaken on the NAGRC&DB farms to promote animal breeding and increase access to genetic resources by farmers. Supportive breeding and administrative structures were constructed or rehabilitated; genetic resources for cattle, goats, pigs, poultry and fisheries were conserved, multiplied and distributed to farmers; nitrogen and semen production was undertaken and community breeding promoted. Late disbursement of funds from NAGRC&DB headquarters, land encroachment, and abandonment of construction sites by contractors negatively impacted on the animal breeding programmes.

Breeding and administrative infrastructure

By 31st December 2021, various infrastructures were at different stages of construction or rehabilitation on NAGRC&DB farms to aid the animal breeding work. These included: establishment of the National Poultry Development and Conservation Centre in Busunju Wakiso district; calf pens, paddocks, spray races, farm access roads, cowsheds, feed storage facilities, pig maternity units, poultry grower units, staff houses and pit latrines.

For example, completion of civil works at Lusenke Animal Genetic Resources Centre (AnGRC) in Namsaala parish Busaana subcounty Kayunga district was as shown in Table 3.3. Most works were behind schedule or stalled due to financial constraints faced by contractors, delayed payments for completed works, collapsing soil conditions, late importation of key materials and abandonment of sites by contractors.

Table 3.3: Progress in establishment of selected breeding infrastructure at Lusenke Animal Genetic Resources Centre as of 21st January 2022

Infrastructure	Completion Progress (%)	Remark
Hatchery Unit	40	
Feedlot	80	
Calf pen	80	
Cattle shed 60%,	60	
Piggery Unit	100	
Piggery Growers Unit	10	<i>Site was abandoned</i>
Poultry Growers Unit	65	
Pit latrines	10	<i>The contractor withdrew due to collapsing soils and water logged conditions, then asked for compensation as part of project was relocated to another site.</i>
Biosafety gate	35	
Milking parlor	60	<i>Adjustments were being made to allow accommodation of more animals.</i>

Source: Field Findings



Left: Calf pen on extreme left and milking parlour under construction on the right; Right: Partially completed cattle shade at Lusenke Animal Genetic Resource Centre in Kayunga District

Most civil works at Rubona Stock Farm in Buhuna Parish Rubona Town Council in Bunyangabo District were behind schedule, despite the fact that they spilled over from FY 2020/21, including: calf pen (98% completion); hostel (60%); renovation of office block at roofing level; junior quarters (90%); senior quarters at foundation level; and the construction of pit latrines and installation of solar units (0%).



The hostel, planned to be completed in FY 2020/21 was still at roofing stage at Rubona Stock Farm in Bunyangabo District

Construction works for the NAGRC&DB Gene Bank/Headquarters in Entebbe Municipality, Wakiso District was at 53% after the scope of works was expanded. The project was behind schedule by one year beyond the original completion date of March 2021. Phase II of the works (2019/20 to 2020/21) involving construction of the substructure, excavation, retaining walls, foundation super structure and main frame was at 100% completion level; Phase III being undertaken during July 2021 to May 2022 and involving walling, internal and external painting, mechanical and plumbing works, doors and paving was 23.1% complete. The project was experiencing a time and cost-overrun due to halting of works during the COVID-19 lockdowns and additional scope of works involving leveling of grounds on the site. An additional time extension up to November 2022 was needed to complete the works.

At the Livestock Experimental Station (LES) located in Old Entebbe Village Entebbe Division in Wakiso District, construction of a spray race, low cost cow shed, hay and silage storage facility was completed and the facilities were operational. The 57 cheap wooden feed troughs and 18

metallic water troughs that were fabricated eased quarantining of the 257 heads of cattle that were imported in the reporting period.



External view of the hay and storage facility (left) and internal view (right) that was constructed at LES in Wakiso District

Animal breeding stock

Animal breeding and stock multiplication of cattle, poultry, goats, pigs, and fish was on course on some ranches while others experienced reversals (Table 3.4). Overall, there was slow growth in the animal breeding stocks across the NAGRC&DB centres with some farms posting negative trends due to animal sales; deaths due to disease outbreaks, old age, bites from stray animals; theft; and abortions. The mortalities negatively impacted on the growth of the animal breeding stock.

Table 3.4: Progress in multiplication of animal breeding stock at selected NAGRC&DB farms by 31st December 2021

Farm	Changes in Animal Stocks	Reasons/Key Challenges
Lusenke AnGRC - <i>Kayunga District</i>	The number of cattle decreased from 306 on 1 st July 2021 to 265 by 30 th November 2021; poultry stock increased from 4,157 to 10,848 birds; the total egg production decreased from 10,726 on 1 st July 2021 to 539 by 30 th November 2021	Cattle sales The parent stock of the rainbow roosters was past disposal stage leading to declining egg production. Majority of eggs being cracked or rejects.
Livestock Experimental Station - <i>Wakiso District</i>	Cattle herd increased significantly from 94 animals on 1 st July 2021 to 309 animals as at 31 st December 2021.	The cattle herd increase was due to importation of 257 in calf heifers (133 of Jersey breed and 124 in calf Ayrshires) some of which gave births after arrival in Uganda Inadequate water reservoir and land as 44 acres of land were re-allocated to the Civil Aviation Authority; and land encroachment by other groups.

Rubona Stock Farm - <i>Bunyangabo District</i>	Cattle herds reduced from 493 animals on 1 st July 2021 to 291 by 31 st December 2021. The goats stock reduced from 130 to 119 animals during the same period.	Cattle internal transfers to Njeru Stock Farm, sale of old animals and young bulls (118), and deaths (21) due to old age and disease. Goats – internal transfers and deaths due to diseases. Inadequate feeds, and lack of basic infrastructure such as water pumps, paddocks and dip tanks.
Njeru Stock Farm - <i>Bulkwe District</i>	Cattle herd declined from 97 to 78 from 1 st July to 31 st December 2021.	Diseases and disposal of old stock.
Aswa Ranch - <i>Pader District</i>	13% growth rate of the cattle stock from 1,836 animals to 2,084 as at 31 st December 2021.	
Kasolwe Stock Farm - <i>Kamuli District</i>	Kruoiler chicks declined by from 8,200 to 6,780; cattle declined from 621 to 460; goats declined from 401 to 270 ⁵ Coccidiosis.	Vitamin E and Selenium deficiency and cannibalism led to mortality of 1,420 kruoiler chicks at Kasolwe Stock Farm in Kamuli district.
Maruzi Ranch - <i>Apac District</i>		A total of 92 goats were transferred internally to another farm. Limited vaccine coverage led to disease out breaks such as Peste des Petits Ruminants (PPR) that led to mortality.

Source: Field findings

To support the feeding of animals, 30 acres of maize, 20 acres of Napier grass and 20 acres of Chloris Guyana pasture were planted and maintained. A total of 460 acres of bush were cleared on the farm to encourage pasture regeneration.



Part of the imported cattle herds at the Livestock Experimental Station in Entebbe Division Wakiso District



Pasture production at Rubona Stock Farm in Bunyangabo District

Community breeding

Community breeding using artificial insemination (A.I.) technology was promoted by some of the NAGRC&DB farms to increase access by farmers to good genetic animals. For example, by 31st December 2021, Rubona Stock Farm enabled 34 farmers (13 females and 21 males) to access breeding services; 207 inseminations were conducted (74 on farm and 127 in communities); and 151 farmers and 15 interns were trained in improved animal breeding technologies. COVID-19 restrictions led to less farmers being reached by the programme.

Establishment of seven regional community breeding offices for Northern (Gulu), Western (Mbarara), Eastern (Soroti), Busoga (Iganga), Central (Mukono) and Karamoja and West Nile regions was in progress. Recruitment of Regional Community Breeding Heads to man the offices was ongoing.

Semen and liquid nitrogen production

Nitrogen production improved with recruitment of three additional staff and timely delivery of reagents at the NAGRC&DB Bullstud in Lunyo Village, Entebbe Municipality Wakiso District. By 3rd February 2022, a total of 137,000 doses of semen (100%) were produced out of the annual target of 75,000 doses. However, only 17,800 doses of semen (12%) were dispatched to the districts and NAGRC&DB Centres as there was low utilisation of artificial insemination services. This posed a challenge as there was no working space in the semen laboratory as it was hosting many cans of uncollected semen.



Cans of uncollected/undispatched semen using up all space at the semen laboratory at the Bullstand in Entebbe Municipality

Low dispatch and utilisation of semen was associated with the inadequate staffing in District Production Departments to implement the intervention over the large geographical areas; absence of AI Technicians in lower local governments (LLGs); and the COVID-19 pandemic that negatively affected farmer training programmes.

The MAAIF through the Agriculture Value Chain Development Project (AVCP) built the capacity of NAGRC&DB in delivery of Artificial Insemination inputs (semen, liquid nitrogen) and A.I technicians to offer modern breeding services to farmers. The ministry further supported profiling of dairy and beef breeders to engage in multiplication of improved stock to avail to other farmers. Thirty-three A.I. technicians were trained and this terminology was introduced to farmers and breeders in Nakasongola, Luwero, Mpigi, Wakiso, Gomba and Sembabule districts.

The project procured 60 Artificial Insemination (A.I) kits. Procurements of 5,000 doses of sexed semen, 150 exotic embryos, 25 exotic bulls and 8 bulk semen storage tanks were at evaluation stage. Works were at design stage to expand and equip the semen laboratory at the Bullstud, with support from the MAAIF AVCP.

Two regional mini Liquid Nitrogen production plants were installed: the one installed at Njeru Stock farm was functional producing 60 litres of Nitrogen per day. This was being used to preserve the semen that is collected from Entebbe. The unit price for a litre of liquid nitrogen was Ug shs 6,000 while that of a semen straw costed Ug shs 4,000.

Research and technology development

New and old agricultural research and administrative facilities were constructed/rehabilitated and equipped, staff were recruited and demonstrations and multiplication centres were set up at the Zonal Agriculture Research and Development Institutes (ZARDIs).

Research and agricultural infrastructure

By 31st December 2021, research laboratories, demonstration facilities, mini-irrigation systems and offices were established and equipped at the NARO Institutes and ZARDIs. These were, at various completion levels: a screen house at NAFORRI (100%); aquatic laboratory at Kajjansi (100%); Administration block at NARL Namalere (50%); alfasafe facility at the National Livestock Resources Research Institute NaLIRRI (65%); Bullstud (25%); Calf and Heifer Barn (35%) at NALIRRI and external civil Works at Rwebitaba ZARDI (100%). **The procurements for projects to commence in FY2021/22 were either at initiation, approval, evaluation stage or in a few cases at site handover for contractors.**

Construction works for the vaccine production unit at NALIRRI were behind schedule due to changes in scope and interruptions in importation of materials during the COVID-19 pandemic period. The facility was at 55% completion and would not be completed by the contract end date of June 2022. The Contractor was in the process of seeking a time extension up to October 2022.



Anti-tick vaccine production facility (left) and Alfasafe Facility (right) under construction at the National Livestock Resources Research Institute NaLIRRI, Wakiso District



Works for the milking parlour at NALIRRI in Wakiso District near completion

Construction of a milking parlour at NALIRRI was at 90% completion level and machinery for research and production of pasteurised milk, butter, fortified yoghurt and ice cream was procured awaiting installation. It was however noted that similar facilities were under establishment at the Entebbe Dairy Training School (EDTS) under DDA but there was no collaboration between the two institutions. It would be important that linkages are strengthened between NARO and DDA on this facility to enable the students in EDTS to learn from NARO where the complete livestock chain is present, including the different animal breeds.

An invitro-fertilisation (IVF) laboratory was under renovation at NALIRRI and machinery was already delivered to set up a modern semen bank. NARO imported improved animal breeds to aid the collection of good quality semen and for doing research on milk quality. Training of three Scientists in IVF research and technology development was completed. The facility was intended to research in the problem of low conception rates of animals that are inseminated using NAGRC&DB semen at farm level and generate products with high efficacy.



Renovation and equipping of IVF laboratory and Semen Bank at NALIRRI near completion

Duplication was noted at the NAGRC&DB Bullstud and NALIRRI in production of nitrogen and semen; there was no collaboration between the sister institutions in offering similar services. It is essential to strengthen collaboration between NAGRC&DB and NARO in these areas of nitrogen and semen production and research. NAGRC&DB could benefit from the improved research technologies that are generated at NARO.



Junior staff quarters under construction at Maruzi in Apac District

Construction of junior staff quarters at Maruzi Ranch in Apac District was estimated at 70% completion. Fencing of the land was ongoing. At Aswa Ranch in Pader District, the civil works including Construction of a honey processing plant, goat structures, pig maternity

sty, and junior staff quarters were on going and at various levels of progress.



NARO administration building under construction in Namaleere Village Wakiso District

Progress of construction works for the administration building at the Agricultural Engineering and Appropriate Technology Research Centre in Namaleere Village Kiteezi Parish, Nangabo Sub-County in Wakiso District was at 65%. The project was behind schedule, due to delays arising from significant variations in scope of works during implementation and inadequate labour force during COVID-19 lock down period. The original contract was for the period 1st March 2021 to 28th February 2022. A time extension was granted with the end date being 30th May 2022. It was unlikely that the project would be completed by the new extension date.

Agricultural technologies developed

Overall, four new rice varieties were released for farmer use. Additionally, 18 new varieties were submitted to the NARO Variety Release Committee for release key among which were: 8 rice lines and 4 maize lines; 6 sorghum candidate lines for malting, fodder and grain yield; one prototype of energy saving stove. The release of completed varieties was slow due to the Variety Release Committee not meeting during the COVID-19 period. The pandemic restrictions negatively affected processes of generating the technologies.

A total of 85 technologies were generated and tested across the NARO Institutes and ZARDIs. Demonstration sites were established at the ZARDIs for climate smart technology. The multiplication of the technologies in the Northern and Eastern Uganda was however affected by the dry weather conditions during the period under review with some instances of recording 0% survival rate as it were at Ngetta ZARDI. Below are examples of technology generation that were monitored:

At the National Livestock Resources Research Institute (NaLIRRI) in Nakyesesa village Wakiso district, three animal vaccination products were produced for Anti-Tick, Foot and Mouth Disease (FMD) and African swine fever. The research on anti-tick vaccines slowed during the COVID 19 pandemic. NALIRRI sourced external support to test the anti-tick vaccine for efficacy out of the country. There were challenges associated with fulfilling the regulatory requirements for certification of the vaccine and its importation back to the country. Research on the Foot and Mouth Disease (FMD) Vaccine was going through protocols to ensure safety of the product. Research was also ongoing on the treatment of African swine fever.

Forage improvement experimental plots were established at NALIRRI to generate high yielding, drought resistant and highly nutritional fodder species for cattle. The Institute successfully developed a protocol for extraction of Anti-Diabetic Milk.

At National Semi Arid Resources Research Institute (NaSARRI) in Serere the Cowpea trials for advanced genotypes were planted. Data on agronomic and biotic stresses was collected. Morphological characterisation for 10 isolates was done and more isolates are being characterised.

Bio-technology research was undertaken at the National Agricultural Research Laboratories (NARL) in Kawanda Village, Nansana Municipality, Wakiso District, involving raising tissue culture of planting materials to increase their rate of production. These included bamboo, medical plants, ginger, lemon grass, sugar cane, turmeric and medical plants such as *Warbugia Ugandensis* (COVID-19 treatment plant).



Dilapidated screen houses at NARL in Wakiso District let in more substances into the experiments than what was required leading to faulty findings

Plant genetic resources were conserved on-station and in seven community seed banks in Nakasongola, Mityana, Nakaseke, Sheema, Hoima and Kabale districts. The main challenges were: inadequate funds for research and technology generation.

At the National Crop Resources Institute (NaCRRI) in Namulonge Village, Kikoko Parish, Busukuma Sub-county in Wakiso District, research and technology generation was undertaken to generate high yielding climate and disease tolerant varieties for rice, maize, beans cassava, yams, sweet potatoes, horticulture and oil palm, among other commodities. Foundation seed was produced for farmers accompanied with protocols on the good agronomic practices to enhance production and productivity.



Oil palm seedlings nursery at NaCRRI in Wakiso District

However, low production and yields at the farm level were noted due to distribution of low quality seeds especially through the NAADS and

MAAIF ACDP interventions and other players in the private sector. The NACRRI lacked capacity to multiply and commercialise foundation seed.

The MAAIF through AVCP supported NACCRI to accelerate rice variety development and release; variety maintenance and production of early generation seed (nucleus, breeder and foundation seed); and providing a platform for variety identification and utilisation by different stakeholders. Using MAAIF funding, NACCRI supported seed producers in Nwoya, Oyam, Olwenyi, Alebtong and Doho to produce 22 MT of breeder and foundation seed of four (4) upland and four irrigated rice varieties. Cumulatively, 50% (30 MT) of the targeted 60 MT of rice foundation seed were produced. Also, 4.81 MT of rice breeder seed were produced, surpassing the project target of 1.2 MT. This seed will be further multiplied and availed as quality declared seed to increase seed access among project beneficiaries.



Innovation of breeding and multiplication of Irish potato seed in rooting medium in screen houses at Kachwekano ZARDI in Kabale district

The production and promotion of foundation seed potato and stocking materials was implemented in Kachwekano ZARDI in Kabale District. A total of 219,645 plantlets, 162,291 minitubers and 34 tons of pre-basic and basic seed were produced. A total of 2.5 hectares were planted for seed production. Projects on advanced innovations of growing rooted cuttings in screen houses (Aeroponics) to multiply the min-tubers for commercial production were in progress.

Two seed potato varieties were submitted to the Variety Release Committee for approval in December 2021. Seed potato seed demonstrations were conducted in

Kabale and Rubanda districts.

Improved goat breeds were bred and distributed to organised farmer groups. Selective breeding of fish species sourced from different lake bodies was undergoing. Other research was focused on evaluation of forage species, agro-forestry technologies and screening of apple cultivars. Research outputs were highly constrained by understaffing and lack of scientists in critical areas like agri-business and value addition and Technology promotion; COVID-19 lockdown; inadequate resources for other research programs other than Irish potato and dilapidated infrastructure, vehicles and equipment.

The research performance at Rwebitaba ZARDI was low due to poor implementation of planned interventions as the institution did not receive quarter 1 GoU non-wage funds. The ZARDI continued to maintain mother gardens of the 5 existing tea varieties as funding was insufficient to generate new clones. The NARO was implementing a Ug shs 1.2bn contract since December 2021 to procure equipment for setting up the Biochemistry Laboratory, Soil Science Laboratory, Tissue Culture Laboratory and Biomolecular Laboratory.

The agronomic practices in tea production at the farm level were noted to be poor as there was a weak linkage between the ZARDI and extension services at the district level. Most extension workers in the districts did not have adequate knowledge of the good agronomic practices for tea production for sharing with the farmers. There is a need to strengthen collaboration between NARO and the extension service at the district level.

Innovations for food nutrition, agro-processing and industry

There were some efforts to address the upper value chain by the programme stakeholders. The Food Biosciences and Agribusiness Department in National Agricultural Research Laboratories (NARL) collaborated with MAAIF, Uganda National Bureau of Standards (UNBS) and to transform research outputs into commercial products for the market, in collaboration with the private sector, UNBS and MAAIF. Prototypes of different research products were quality assured along the value chain of food preservation, storage, post-harvest management, packaging and food safety, market testing and approval by the UNBS.

The food processing and grading equipment for commercialising research prototypes was secured between 2018 and 2020 through partnerships between GoU and the Governments of India and Korea. Farmers and private sector companies were supported by MAAIF to access food processing and grading equipment and technical guidance from NARO to certify their products. Products under various stages of development and market testing included pre-cooked beans, instant maize products, preserved peeled and unpeeled bananas, soya bean cakes, pumpkin and tomato seeds, jackfruits and other items used as ingredients for fortifying low protein foods.



Packaged food research products that are at stage of market testing (left) and the food processing and grading machinery that is constantly maintained at NARL in Wakiso District

Although there were charges levied for users to access the facility, affirmative action was given to companies in formative stages and those owned by youth to use the equipment at no cost as they lacked operational capital. The key challenges affecting the functionality of the food processing facility were: lack of a budget for maintenance of equipment, pay for utilities especially power and technical staff. Most personnel were volunteers or students on attachment.

The NARL and the Agricultural Engineering and Appropriate Technology Research Centre established partnerships with private sector companies to popularise the Fish Smoking Kilns that reduce exposure to cancer causing agents by the users. The technology targeted mostly females involved in fish smoking business and was being used by women groups at Kiyindi landing site in Mukono District and Bwondha landing site in Mayuge District; and by private sector companies in Iganga and Buvuma districts. The technology reduced working hours of smoking fish from 4 days to 12 hours. The main challenge faced by NARO was the lack of funds to procure adequate materials to multiply and popularise the Kilns.

Using private sector (off budget) support, the NARL developed soaps from medicinal plants and banana based products (banana fibre used on furniture, banana resistant starch and industrial bio-ethanol). The development of the medicinal soap product stalled with the end of the donor fund; further research was needed on composition analysis, standardisation, packaging and marketing. NARO was in search for private sector partners to multiply the banana based products.



NARL samples of partially developed medical soap product (left) and banana based ethanol and starch technologies in bottles and cream and brown banana fibre products used for beautifying the table (right) all awaiting further development and commercialisation

Research on green and black teas and tea cooking oil was undertaken in Rwebitaba ZARDI in Kabarole District. Prototypes were generated and were at the level of proof of concept. The main challenge was lack of financing to develop the products fully, test quality and viability, access UNBS certification, package them appropriately and commercialise them.



Value added tea products developed at Rwebitaba ZARDI in Kabarole District

Gender perspective of the breeding, research and technology development human resource
The majority (85.53%) of staff implementing the breeding programme were male (Table 3.5). There was only one female manager in all the 10 ranches monitored, the others being manned by males. However, the youth formed more than half (52.20%) of the workforce in the breeding programme. The high participation of youth in the ranches was explained by the high labour intensity required of herdsmen that herded animals over long distances of more than 10km in search of good pastures and water which was not possible for women and persons with disability (PWDs).

Table 3.5: Breeding programme staff at NAGRIC&DB farms by gender by 31st December 2021

Farm	Total staff	Staff		o/w Youth
		Male	Female	
LES	31	21	10	17
Lusenke	17	14	3	4
Ruboona	26	22	4	10
Ruhengere	57	48	9	43
Sanga	16	14	2	12
Nshara	55	50	5	22
Aswa	20	18	2	15
Njeru	23	19	4	9
Kasolwe	38	33	5	16
Maruzi	35	33	2	18
Total	318	272	46	166
% of Total		85.53	14.47	52.20

Source: Field findings

There was gender imbalance in participation of research staff in the Agro-Industrialisation Programme with the majority 445 (68.5%) being male. (Table 3.6) The low number of female

staff 205 (31.5%) was attributed to limited female applicants and high staff attrition due to low remuneration.

Table 3.6: Research staff at NARO Institutes by gender by 31st December 2021

Institute	Male	Female	Total Employee
NAROSEC	47	36	83
Kachwekano ZARDI	21	11	32
Mbarara ZARDI	20	14	34
Rwebitaba ZARDI	28	6	34
NARL	55	29	84
Bulindi ZARDI	24	11	35
NaCRRRI	55	31	86
NaLIRRI	50	18	68
ABIZARDI	30	5	35
NGETTA ZARDI	24	9	33
NAFIRRI	44	25	69
NASSARI	47	10	57
Total	445	205	650

Source: Field findings

Agricultural research staff trained

The eight NARO scientists supported since FY 2020/21 to enroll in various universities for PHD and Masters programmes continued their studies. The staffing levels at ABI ZARDI was at 80%, National Fisheries Resources Research Institute (NaFIRRI) at 81%. Despite the efforts to recruit staff, National Agriculture Research Organization (NARO) continues to experience staff turnover mainly due to wage differentials between NARO and universities.

Challenges

- i) Lower technology generation and research due to inadequate staff especially in new emerging areas such as agri-business, value addition and technology promotion.
- ii) Inadequate research and breeding infrastructure and equipment.
- iii) Inadequate focus by programme on prioritization and funding the entire value chains. The bulk of funding was at production level with less for technology generation and promotion.
- iv) Lack of synergy and collaboration between implementing agencies leading to resource wastage.

Recommendations

- i) The MAAIF and implementing agencies should review and re-align staff placement with the programme approach, paying attention to new emerging areas in the value chains.

- ii) The MAAIF and agencies should strengthen inter-agency collaboration on areas of shared interest to reduce resource wastage.

3.2.3 Strengthen the Agricultural Extension System

Introduction

The strengthen the agricultural extension system, interventions are six focus areas namely; develop and equip youth with knowledge, skills and facilities for access and utilization of modern extension services; develop and operationalize an ICT-enabled agricultural extension supervision and traceability system; operationalize agricultural extension system; scale-up innovative extension models such as nucleus farmers in all agro-ecological zones; strengthen the research-extension-farmer linkages to increase uptake of new climate smart technologies; and strengthen the research-extension-farmer linkages to increase uptake of new technologies.

Other actions are: to provide logistical support to public extension service workers under the Parish Development Model (PDM); continuously identify capacity gaps, equip and retool extension workers; set structures for village agents, nucleus farmers and parish models; and support village agents and nucleus farmers. Below are findings on the action areas that were monitored.

The planned outputs included:

- (i) Staffing of extension workers enhanced
- (ii) Training, demonstrations and mentorship done
- (iii) Extension policy reviewed

Performance

The performance of the agricultural extension system was fair. The farmers received extension services including training on good agronomic practices, pest and disease control and post-harvest handling. The model farmers in the various sub counties provided an avenue for knowledge transfer to the other farmers. Details per output is discussed as follows;

Staffing of extension workers:

Staffing of extension workers at national level was lower at 3,790 (77%) compared to the required staffing number of 4898⁶. This is similarly lower than the recommended ratio of one extension worker to 1800 households in Uganda with 8.933 million households⁷.

The effectiveness of the extension system continues to be affected by limited staffing, facilitation and transport equipment. For instance, in Mbale district, the extension worker to farmer ratio under the LG extension system was at 1: 30,000 against the approved 1:500; similarly, in Iganga

⁶ The staffing levels were as 1st July 2021

⁷ UBOS (2021), Uganda National Household Survey FY2019/20

district, the extension worker to farmer ratio was at 1:5000. Less than 50% of the cotton farmers were reached by the CDO extension staff in West Nile region due to under staffing.

Overall, there was low outreach of extension services to farmers under the LG sectoral conditional grant due to under staffing; inadequate facilitation to carryout extension activities; lack of community access roads; and impassable roads in hard to reach areas. For example, in Kasese District, there was limited access to advisory services by most farming households in the sub-counties of Ahandilro, Kitholu, Mbunga, and Kyondo due to bad roads that restricted outreach to these remote areas.

Nebbi District for instance had 19 extension workers to serve 8 sub-counties instead of the recommended 32 extension workers⁸. Similarly, Jinja District Local Government (DLG) had 18 extension staff out of the recommended 32. It was estimated that 25% of extension workers in Jinja DLG lacked motor cycles to facilitate service delivery to farmers.

Ntungamo DLG, had 45 extension workers to serve 35 Lower local governments (LLGs). The farmer-to-extension staff ratio was overwhelming, which limited access to advisory services by most farming households; Pader DLG recruited an additional 9 extension staff; however, MAAIF had not catered for wages of these new staff. Relatedly, there was a high coffee farmer to extension staff ratio in the Eastern region leading to limited contact and dissemination of coffee specific knowledge and information. There were seven staff to coordinate the 22 districts in the Eastern region.

Gender perspective of the extension workers

Generally, there was gender disparity among the extension workers serving in the agro-industrialization programme, with the majority being male. For example, the majority of UCDA field extension workers in the monitored districts were males 32 (84.2%) with low representation of females 6 (15.8%) and no PWDs. A total of 676 dairy farmers were trained in good dairy farming practices by the DDA regional centers of whom the majority 567 (83.9%) were male; fewer 109 (16.1%) female dairy farmers were trained.

Similarly, the majority of extension workers in LGs were makes (86.55%) as shown in Table 3.7. The low numbers of females among the extension workers in LGs were attributed to: the hilly terrain, long distances to the farmers, inadequate means of transport, cultural beliefs of women staying at home, harsh climatic conditions and difficulty of travelling to hard-to-reach areas.

Table 3.7: Local Government extension workers in selected districts by gender by 31st December 2021

District	Male	Female	Total
Lira	12	1	13
Pader	18	3	21
Ataika	13	1	14

⁸ Each Sub-county according to the Staffing norms requires to have four staff including; An Agricultural Officer, An Assistant Agricultural Officer, One Veterinary Officer and an Assistant Veterinary Officer

Amuru	14	2	16
Nwoya	10	1	11
Nebbi	17	0	17
Yumbe	17	2	19
Buikwe	10	5	15
Jinja	13	5	18
Bukedea	15	4	19
Serere	14	0	14
Kasese	8	1	9
Total	161	25	186
Percentage (%)	86.55	13.44	

Source: Field findings

Training, demonstrations and mentorship

The MAAIF in collaboration with the DLGs provided training and mentorship to extension workers country wide. Technical and routine support supervision was undertaken. Model farmers were established in the districts as part of the measures to enhance access to agricultural extension services. Through the Uganda Intergovernmental Fiscal Transfer Program (UGIFT), demonstration sites for irrigation systems were established and knowledge sharing was ongoing in 40 districts⁹.

In addition, the MAAIF promoted innovative extension models (model farmers and farmer field schools) in Western and Eastern Uganda, conducted sensitisation meetings to upscale E-Extension delivery and updated the Agriculture Extension Staff database. A total of 65,000 farmers were trained by extension workers and Lead Farmers to ensure adoption of productivity and sustainable land management (SLM) technologies.

The Cotton Development Organisation (CDO) trained 520 Field Extension Workers (455 for Uganda Ginnery and Cotton Exporters Association UGCEA and 65 LG extension workers) on cotton production and mechanisms for delivery of extension services to farmers. A total of 38 UGCEA extension workers were deployed in 10 hard-to-reach districts. Under the guidance of the CDO extension team, the UGCEA extension workers conducted over 14,000 training sessions at the demonstration gardens for over 138,120 farmers including 350 women groups, 210 youth Groups and 120 PWDs and 250 elderly persons. The farmers were trained on crop establishment, proper weeding, pest control, fertility management, soil and water conservation, harvesting and post-harvest handling of cotton.

The DDA trained dairy stakeholders and built capacity of women, men, youth and PWDs in critical dairy production along the dairy value chain. A total of 324 dairy farmers were trained in hygienic milk production, handling, silage making, group dynamics and breeding technologies. A cumulative total of 107 women and youth were skilled in yoghurt processing, quality control

⁹ Kyenjojo, Kamwenge, Ibanda, Kitagwenda, Kibaale, Mubende, Kyegegwa, Rukungiri, Ntungamo, Bushenyi, Masaka, Kalungu, Butambala, Bukomansimbi, Rakai, Luweero, Nakaseke, Lwengo, Mpigi, Sembabule, Kyotera, Wakiso, Mityana, Mukono, Buikwe, Kayunga, Iganga, Mayuge, Sironko, Kapchorwa, Mbale, Bududa, Tororo, Manafwa, Kamuli, Luuka, Jinja, Amuru, Omoro, Nwoya.

and value addition along the dairy value chain. However, two training sessions were deferred due to use of the Entebbe training facility for housing the COVID-19 patients.

The UCDA trained 637 Master Trainers of sub-country extension officers and regional coffee extension officers (RCEOs); and trained and recruited 1,517 Parish Coffee Advisors for delivery of coffee specific extension services. Under the MAAIF ACDP sub-intervention, 81 lead farmers were trained in rice, coffee, and maize agronomy at Kakindo Primary School and 255 farmer groups trained in attitude change, wealth creation and farmer institution development in Hoima District.

In Kasese DLG, 9,314 farmers were trained in the areas shown in Table 3.8. The training equipped the farmers with knowledge and skills on agronomic and post handling practices which greatly improved their farm yields.

Table 3.8: Number of farmers trained by the ACDP sub-intervention in Kasese District by 31st December 2021

Training carried out	E-Voucher Management System	Financial literacy	Input use	Agronomic practices	SLM	Total trained
Achieved	1790	2004	1891	2760	869	9,314
% age trained	19.5	21.8	13.9	20.3	23.2	

Source: Field findings

There was continued capacity building of mentors to support the implementation of household mentoring activities in Kalangala District under National Oil Palm Project. In liaison with the Kalangala District Local Government (KDLG) and Kalangala Oil Palm Growers Trust (KOPGT), the project management unit (PMU) conducted 3 support trainings for the 49 mentors and 5 community development officers (CDOs); included were refresher training of trainers on household mentoring based on the newly updated training manual.

For example, under the Alternative Livelihoods Support intervention, total of 31 groups comprising of 434 households were trained in management, institutionalisation of farmer groups, savings and credit.

Extension policy

The Agriculture Extension Bill was reviewed and a draft shared with stakeholders before discussion in the Top Policy Management; regional structures for extension delivery based at ZARDIs were strengthened; and Agricultural Extension Strategy accredited; coordinated meetings with Operation Wealth Creation and prepared draft guidelines for the parish development model.

There was evidence that farmers accessed the cotton extension services as illustrated by the case study below:



Mr. Irumba standing by his car which he bought from cotton growing proceeds in Hoima District

Irumba's testimony: Access to cotton extension services in Hoima District

Mr. Zubair Irumba of Kayera Village, Kabaale Parish, Kabaale Sub-county in Hoima District benefited from extension services and was equipped with skills in cotton agronomic practices. Such skills included: garden preparation, fertilizer application post-harvest management among others. This improved his production hence increased income. "Growing cotton is nice work; I am able to pay school fees for my children in a private school, bought a car, built a house. My family's nutrition has greatly improved because I can now afford to buy food and cultivate more" said Mr. Zubair Irumba

Challenges

- i) Inadequate extension service access due to under staffing and limited transport means for the available staff.
- ii) Failure to conduct farmer's mobilisation and training due to COVID-19 restrictions.
- iii) Budget cuts and late disbursements to the Department of Agriculture Extension and Skills Management (DAESM) led to limited implementation of some planned activities.
- iv) Lack of field operational tools and equipment such as GPS and weather forecast tools for work in local governments
- v) Lack of coordination between DAES and other sister departments like NAADS-OWC affected the effectiveness of extension service delivery

Recommendations

- i) The MFPED, MoPS, MAAIF and LGs should prioritize recruitment and equipping more extension workers.
- ii) The MAAIF and other agencies should further strengthen and support extension services and farmer group cohesion.
- iii) The MFPED and MAAIF should review and revise the budget ceiling for extension services to cater for increased staff recruitment and their operational expenses at the LG level.
- iv) The MAAIF should strengthen internal collaboration between its associated agencies to improve extension delivery at the LG level.

3.2.4 Strengthen the Agricultural Input Markets and Distribution Systems to Adhere to quality Standards and Grades

Introduction

This intervention has six focus areas and aims to; i) enforce pre-export verification for all agricultural inputs at source of origin; ii) establish and equip nine regional mechanization centers to increase uptake of agricultural mechanization and labour saving technologies; iii) reform the current input subsidy program including: scaling up the e-voucher model of inputs distribution; iv) setup and equip farm service centers within the public service e-service centers for bulk input procurement, storage and distribution; v) strengthen licensing procedures, inspection, certification, import processing; and vi) regulation for improved inputs and new seed varieties.

The planned outputs for FY2021/22 included:

- i) Provision of priority agricultural inputs- Oil palm (Seedlings) carried out
- ii) E-Vouchers subsidies provided
- iii) Capacity assessment of 400 lower agro-input dealers to participate in subsidy program done
- iv) Priority inputs (fish fingerlings, cotton, coffee, cassava, maize among others) distributed
- v) Priority agricultural inputs provided - Cotton (Bags)
- vi) Coffee seedlings raised(No.)
- vii) Pesticides provided (Units)

Findings by the planned outputs are presented as follows;

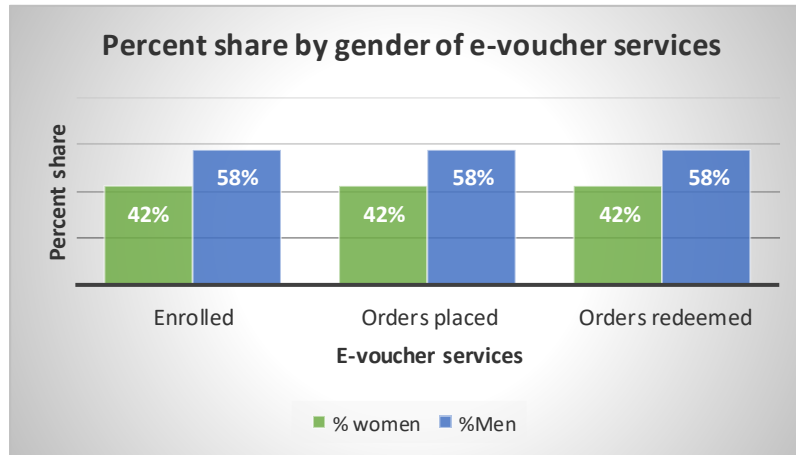
Performance

The performance of the intervention was good. By 31st December, the National Oil Palm Programme (NOPP) supplied inputs to 67 oil palm out growers in Buvuma District, the majority being male farmers 41 (61.2%) compared to females 26 (38.8%). Planting materials and inputs were not easily available for female farmers as they lacked land and were not growing oil palm.

The MAAIF spent Ug shs 72.8bn in scaling up the E-voucher system under the Agriculture Cluster Development Project (ACDP) complemented by farmer contributions worth Ug shs 36.8bn. As of December 2021, 37,199 farmers were enrolled on the system. Cumulatively, a total of 463,274 farmers of which 267,317 (57.70%) were male had been enrolled between FY2018/19 to FY2021/22 December 2021; 274,046 (59%) redeemed (accessing subsidized inputs on system) their inputs.

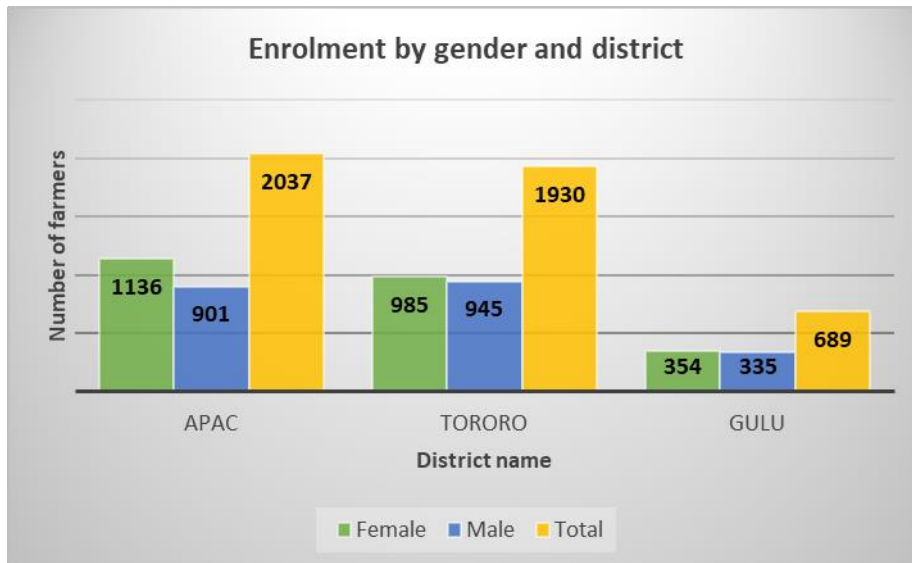
Overall the male dominated the female in the e-voucher system of enrolment, order placement and receipt of the inputs (Figure 3.1) except in Apac, Tororo and Gulu districts (Figures 3.2 up to 3.4) out of the 57 districts.

Figure 3.1: Gender Disaggregation of ACDP farmers by Enrolment, order and input receipts by 31st December 2021



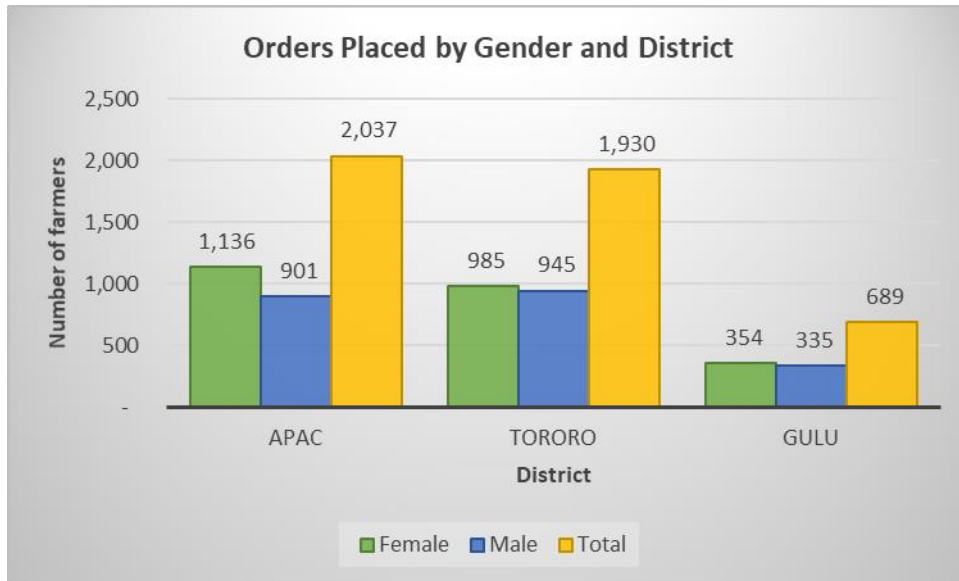
Source: MAAIF, 2021

Figure 3.2: Gender Disaggregation of ACDP farmers by enrolment for Apac, Tororo and Gulu by 31st December 2021



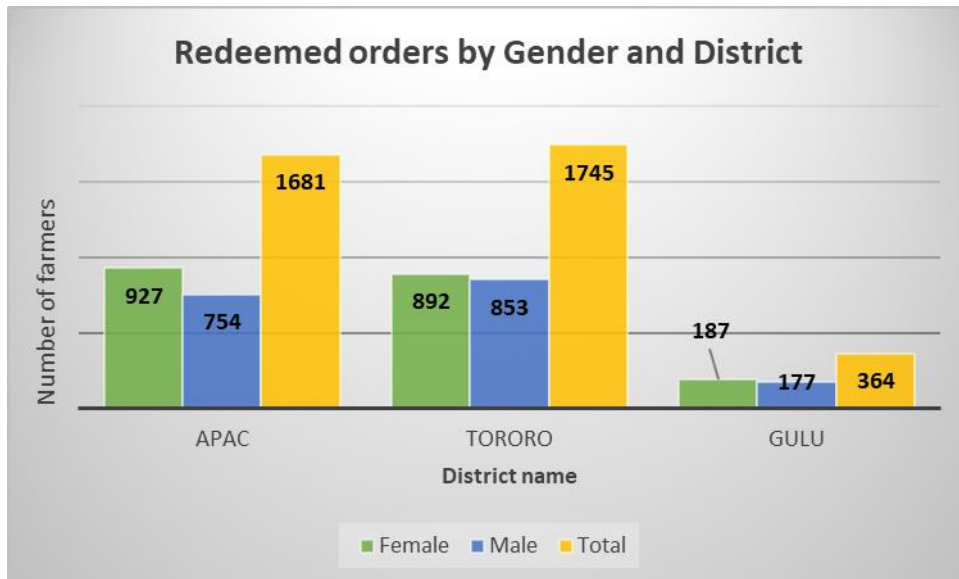
Source: MAAIF, 2021

Figure 3.3: Gender Disaggregation of ACDP farmers by Orders placed for Apac, Tororo and Gulu by 31st December 2021



Source: MAAIF, 2021

Figure 3.4: Gender Disaggregation of ACDP farmers by Orders redeemed for Apac, Tororo and Gulu by 31st December 2021



Source: MAAIF, 2021

The redeemed in puts included: Agrochemical Fumigants, Agrochemical Fungicide, Agrochemical Herbicides, Agrochemical Insecticides, Bean Seeds, Cassava Cuttings, Fertilisers, Hermetic bags, Maize Seeds, Pangas, Post-harvest Materials, Rice Seeds, Tarpaulins, Tractor Hire Services.

In Ntungamo District, 200 farmers received inputs which included improved seeds of bean variety NARO bean 2, Di-ammonium Phosphate (DAP), Blended fertilisers of nitrogen (N), phosphorus (P) and potassium(K), NPK for beans (11:29:23), NPK for Coffee (16:2:31), Tarpaulins, pruning saws, secateurs, and chemicals., *30 farmers did not received inputs because their e-voucher accounts were blocked.*

Table 3.9 provides examples of farmers that accessed inputs countrywide from the various sub-interventions under the Agro-Industrialisation Programme.

Table 3.9: Access to Agricultural Inputs by farmers by 31st December 2021

Beneficiary	Location	Inputs accessed	Remarks
Mr. Godfrey Sabit (male)	Village: Lukooki Parish: Nyamwamba Subcounty: Kasese municipality District: Kasese	Cotton (12kg); fertilizer (18 bags); pesticides (2 units)	The proceeds from the cotton sales were used cater for the family's domestic needs and paying school fees and the rest of the other money was put to saving account and this greatly improved his standard of living.
Ms. Namatende (female)	Village: Lunyanja Parish: Lunyanja Subcounty: Buvuma Town Council, District: Buvuma	Oil palm seedlings (548 no.); fertiliser (bags)	Low production was attributed to lack of extension services, late application of fertilisers.
Mr. Ssekadde (male)	Village: Buguzi Parish: Buswa Subcounty: Bujumba District: Kalangala	Oil palm seedlings (no.); fertilizer (bags)	The proceeds from oil palm sales was used to pay all his debts, cater for the family's needs and other savings were used to startup other projects such as poultry, piggery and cassava plantation.
Mr. Rumayisa Yafesi (male)	Subcounty: Nyaravu District: Nebbi	Pesticides (26 units); cotton (120 kg)	Germination was not good, he expected to harvest 8tonnes of cotton but he got 6tonnes, Poor germination was attributed to the severe drought in the region. He used the money to buy scholastic materials for his children and paying school fees
Rwothogeyo James (male)	Village: Angalyila Parish: Angalyila Sub county: Nyaravur District: Nebbi district	Cotton (210 kg); pesticides (400 units)	He used the money to start up an electronic shop/business and he is also constructing a guest house in Nebbi Town and a residential house in Pakwach District.
Fr Mukwaya John Baptist Kaddu (male)	Village: Walugogo, Parish: Walugogo Sub county: Bulamagi District: Iganga	Coffee cuttings (450 No.)	98% of the coffee dried due to too much sunshine. Watering the coffee plants was not sustainable because he fetched water from a very long distance.

Beneficiary	Location	Inputs accessed	Remarks
Kifutuko Emmanuel (male)	Village: Bukyaye Parish: Nakalama Subcounty: Nakalama District: Iganga	Coffee cuttings (900 No.)	Out of the 300 planted coffee stems, 250 are still surviving; he uses a sprinkler for irrigation to mitigate the harsh drought in the region.
Bamanya Hellen (female)	Village: Kale cell Parish: Makuku Ward Subcounty: Industrial division District: Mbale City	Coffee seed (40,000 kg)	Her challenge was unpaid coffee seedling arrears from UCDA for the coffee seedlings distributed. She has Ug shs 15 million as unpaid arrears for the seedlings distributed in the previous season
Otim Tom (male)	Village: Nakawa Parish: Nakawa Subcounty: Kidera District: Buyende	Fertiliser (75 bags); cotton (90 kg)	There was low production which was attributed to late planting, drought, infertile soils and late delivery of pesticides. He used the money from sales to buy scholastic materials for his children and invest more in agriculture city
Oduru Leonard (male)	Parish: Lira city west City: Lira	Pesticides (8 units); cotton (12 kg)	Poor yields were attributed to prolonged drought that caused cotton flower buds to shed off. His main challenge was lack of a spray pump and an irrigation system.
Angom Agnes (female)	Village: Ogari Parish: Myene Subcounty: Myene District: Oyam	Pesticides (15 units); cotton (24 kg)	His main challenge was lack of fertiliser, all the fertiliser from CDO was taken to Oyam Prison's farm.
Oryema Jimmy (male)	Village: Pazongo Parish: Padero Subcounty: Palambo District: Nebbi	Pesticides (120 units); cotton (48 kg)	He was very happy with his harvest. He used the money from sales to commence construction of a residential house. His main challenge was pests and diseases since he had to spray his garden twice a week.
Odoki Charles (male)	Village: Mutema Parish: Reckicike Subcounty: Layima District: Amuru	Fish fingerings (no. 4,000); fish feeds (60 kg)	They were happy with the enterprise and hoped to expand them further.
Oyet Robert (male)	Village: Mutema Parish: Reckicike Subcounty: Layima District: Amuru	Fish fingerings (no. 1,000); fish feeds (20 kg)	
Nakimuli Sophia (female)	Village: Nabukalu Parish: Namavundu Subcounty: Budomelo	Pesticides (10 units); cotton (12 kg)	She expected to harvest one tonne; production was 20kg of cotton. Low production was attributed to prolonged sunshine and late delivery

Beneficiary	Location	Inputs accessed	Remarks
	District: Kaliro		of pesticides; she lost 95% of his garden to drought.
Ms Kalungi (female)	Kibengyeya village, Kapapi sub county Homa district	2 bags of fertiliser, 1 tarpaulin, secateurs, and pruning saw	Fertiliser was applied on 3acres of coffee and 1 acre of maize. She harvested in August 2021, paid 148,500 for these inputs and they were of good quality.
Ms Hellen Nakimera (female)	Bulubandi village, Bulubandi parish, Nakigo Sub County, Iganga district	10kg of maize seed, 50kg of DAP fertilisers, 5 polythene bags	She however did not receive the pesticides which partly affected the yields. <i>“I am happy with intervention. Men and women obtained the same inputs. Just that for me I have not yet received the pesticides and the inputs that should be applied nearly at the same time I wish all inputs are received on the same day”</i> Ms Hellen, Iganga District.

Source: Field findings



Tarpaulin received by Ms. Kalungi Alice in Kibengeye Village, Hoima District



Some of the fish ponds owned by Mr. Odoki Charles in Amuru District

In Mbale District, the cumulative input redemption was 6,281 (2,622 females and 3,659 males) for coffee farmers) representing 29% achievement. This was a poor performance. This was because the maize farmers did not receive their inputs since the market prices were higher than the price in the E-voucher system. *Fraud partly due to inadequate fire walls on the E-voucher system led to enrolment of ghost farmers. A total of 900 ghost farmers were identified under Mbale DLG.*

‘We are happy that M-cash is taking over from UBA... we hope there will be stronger firewalls to avoid fraud. ... The e-voucher if well managed meets the needs of an ordinary farmer’
District official Mbale DLG

‘ACDP is a good project if well managed from the centre ... those who paid and received their inputs are happy, while those who paid and have not received their inputs are cursing the district team which has no control on the supplier,’ District Agriculture Officer – Mbale DLG

Farming households were similarly supported with critical farm inputs by the government through the NAADS/OWC, CDO and MAAIF interventions. For example:

The NAADS/OWC procured and distributed; 2,742,844 kg of maize seed, 500,000 kg of bean seed, 166 bags of Irish potato seed, 354,828 tissue cultured banana suckers, 145 in calf heifers delivered to 145 beneficiaries targeting youth groups and women leaders in 13 DLGs¹⁰ and 2,404 improved pigs. For example, Yumbe DLG received 15,000kg of maize seed which was distributed to 13 sub counties, germination was very good at 98%. However, the seeds were inadequate and delivered late in August instead of July, this affected crop performance in sub counties of; Lomeli, Lodonga, Dragjini and Kochi among others.

Pader DLG received 10,000kg of maize seed and 182 piglets. The maize and piglets were of good quality; maize germination was at 95%. However, the commodities were delivered in small quantities and on a very short notice when the eligible farmers had not prepared their gardens.

Mukono DLG received and distributed, a total of 6,000kg of bean seed, 10,000kg of maize seed, 11,000plantlets of banana, 1,500bags of cassava, 30,000 cat fish fingerings, 30,000 tilapia fingerings, 1,900kg of fish feeds to farmers. The quantities distributed were however inadequate as farmers in Nama and Kyampisi sub-counties did not receive bean seeds. The key challenges were inconsistency in supply dates of inputs by different suppliers, delays in supply of aquaculture inputs and prolonged dry spells that affected the yields.

Kikuube DLG received and distributed 395,878plantlets of pineapple suckers, 10,340kg of maize seed, 1,321bags of cassava cuttings, 120 pigs, 30,000 fish fingerings and 950kg of fish feeds. The quantities of inputs distributed were inadequate and received late by the farmers which negatively affected production, household income and food security

Kalangala DLG received and distributed a total of 60,000 fish fingerings, 1900kg of fish feeds. The fingerings were of good quality



Well established oil palm nursery at Buwangwe Village in Buvuma District; seedlings were ready for transplanting to out grower plantations

¹⁰ Gulu, Kitgum, Nwoya, Omoro, Amuru, Ntungamo, Rukiga and Mbarara

with a survival rate of 90% in fish cage farming, but the quality of feeds was poor yet expensive; for example the price for tilapia was charged 7,000per kg. The NOPP procured and distributed seedlings, fertilizers and farm equipment to farmers and farmer organisations to increase production and higher yields.

For instance, in Buvuma District, Oil Palm Buvuma Limited (OPBL) procured 370,000 seedlings to be distributed to outgrowers. Of the 7,875.4 hectares paid for by GoU, a total of 5,043.48 ha were handed to BIDCO by Uganda Land Commission.

The CDO procured and distributed a total of 2,037 Mt of planting seed to 72 cotton growing districts in Busoga, South Bukedi, North Bukedi, Bugisu, Teso, Lango, Acholi, West Nile, Bunyoro and Rwenzori Regions. Out of the 2,037 Mt, about 106 Mt of cotton planting seed were distributed to farmers in the 10 hard-to-reach districts, namely Amuria, Katakwi, Abim, Koboko, Karenga, Zombo, Adjumani, Moyo, Yumbe and Ntoroko. A further 365 Mt of cotton planting seed were distributed to members of the 350 women groups, 210 youth groups and 120 PWDs and 250 elderly persons in the above regions.

The UGCEA procured and distributed the following inputs to seed growers: 386 Mt of fertilisers, 157 spray pumps (48 motorized sprayers, 72 knapsack sprayers & 37 ULV pumps), 50,000 one-acre units of pesticides and 4,975 litres of herbicides. The inputs enhanced farm production and household income.

The production and productivity of the cotton and other commodities across the country was affected by: (i) the late delivery of farm inputs, for example the South Eastern region CDO delivered pesticides a month to harvesting time, farmers had already lost 70% of the cotton crop to pests; ii) distribution of inadequate inputs compared to the planned inputs under OWC iii)Seed uptake by farmers was affected by the delayed on-set of the second rains (rains started at the end of August/beginning of September).

The UCDA procured and distributed 3,814,541 CWD-r plantlets to 557 large and medium scale commercial farmers for establishing 5 acres and above in; Central, Eastern, Greater Masaka, Rwenzori, South Western and Western regions. Additionally, the UCDA procured and distributed 153,333 bags of organic fertilisers, 38,500 CWD-r plantlets to establish 20 CWD-r mother, 4,350kg of Arabica seed to 164 nursery operators, 513,496 CWD-r plantlets to 411 demo host farmers at parish level across the coffee growing regions, and 47,600 kg of Copper Nodox. distributed total of 13,750 kg were distributed to 2,688 coffee farmers in Elgon region.

Challenges

- i) Inadequate quantity of planting materials/inputs supplied to the beneficiary farmers affected production, household incomes and food security. Most were delivered late and without advance notification to farmers leading to wastages.
- ii) Low survival of crop based enterprises due to weather vagaries and high prevalence of pests and diseases.
- iii) Inadequate/lack of transport for the extension staff led to low outreach to farmers, more especially in the hard to reach areas

Recommendations

- i) The MFPED, MAAIF and programme agencies should re-purpose the funds for free inputs to the interventions under the Parish Development Model.
- ii) The MAAIF and LGs should promote climate smart agriculture, including farmer adoption of drought resistant varieties and appropriate irrigation systems.
- iii) The MAAIF, agencies and LGs should continue filling the staffing gaps of extension workers and equip them adequately to undertake their responsibilities more effectively.

3.2.5 Increase Access and Use of Water for Agricultural Production

Introduction

Access and use of water for agricultural production refers to the availability of water within reach of farmers. The Ministry of Water and Environment (MWE), MAAIF, NARO and UCDA planned to increase access and use of water for agricultural production through five sub-interventions namely: i) Completion of the irrigation schemes under construction/rehabilitation namely: Doho Phase II, Mubuku Phase II, Wadelai, Tochi, and Olweny; ii) construction new irrigation schemes: Ngenge, Acomai, Atari, Amagoro, Nabigaga, Rwimi, Nyimur, Musambya, Kibimba, Kabuyanda, Matanda, Igogero, Angololo, Namatala, Namulu, Sipi, Unyama, Lumbuye, Palyec, Porongo, Lopei and Imyepi;

The other sub-interventions are: iii) development of infrastructure and services for bulk water storage and transfer including water abstraction systems, transmission mains, water pumping systems, storage tanks, water distribution networks; iv) development of solar powered small-scale irrigation systems for small holder farmers outside conventional irrigation schemes; and v) promotion of water use efficiency in agricultural production

The planned outputs for FY2021/22 included:

- Irrigation schemes under construction/ rehabilitation completed
- New irrigation schemes constructed
- Infrastructure and services for bulk water storage and transfer including water abstraction systems, transmission mains, water pumping systems, storage tanks, water distribution networks developed
- Solar powered small-scale irrigation systems for small holder farmers outside conventional irrigation schemes developed
- Water use efficiency in agricultural production promoted

Performance

The performance of the intervention was good. The large scale irrigation schemes, valley dams and tanks, fish ponds, canals, deep and shallow wells for micro-irrigation were established countrywide by the implementing agencies as presented below:

(i) Irrigation schemes under construction/ rehabilitation completed

The planned action was to complete defects liability monitoring of the five irrigation schemes of Doho phase II, Mobuku phase II, Wadelai, Tochi, and Ngenge. Three schemes were monitored namely: Wadelai, Doho phase II and Mobuku phase II.

As at 31st December 2021, the Farmers benefiting from the completed schemes (Doho II and Mobuku II) recorded improved production and productivity due to access to water for production in Doho and Mobuku Irrigation schemes

Doho II irrigation scheme was completed as 31st December 2021. The scheme is located in Wanghale Village, Kangalaba Parish, Himutu Sub-county, Butaleja District. The scheme was functional but operating below capacity due to drought conditions. The management rationed the water between Doho I and Doho II with each receiving the available water during day and night respectively.

In Doho II scheme the farmers recorded improvement from 700kg of yield per acre to between 1,100kg to 1,200kg. The yield was however lower than the expected due to lack of fertiliser and pesticides application. Other beneficiary farmers however noted that provision of water at night was not appropriate as they could not use it in the night for irrigation. The beneficiaries also noted that at least 20% of the farmers do not effectively access the water as before with some them having dry lands due to inadequacies in scheme designs.

“MWE helped in controlling flooding of gardens, however access to water for production by all farmers has been compromised. We were better off before the construction of the scheme as at least all of us received water. The MWE engineers did not consult us the locals who were using this land before. Our land was initially irrigated,” a farmer in Himutu Sub-county.

“Farmers who are not reliably receiving the water in their gardens are hesitant to pay the annual fee of Ug shs 100,000 that the MWE introduced” a board member of Irrigation Waters Users Association.,

The scheme managers were unable to desilt the main canals due to lack of an excavator. This affected effectiveness of the supply of the water for production.

At Mobuku Irrigation Settlement Scheme which is located in Sebwe Village, Nyamwamba Divison, Kasese Municipality, Kasese District was designed to settle 262 farming households with each settler having approximately 3.2ha/8 acres and the reminder 1010 ha was planned for pasture and diary production with 730 cattle.

As at 31st December 2021, the scheme was serving 164 farmers who had tenancy agreements with MAAIF compared to the planned target of 262.

Relatedly, Mobuku II which was recently completed was however not fully functional to serve 530 hectares under management of Nyakatonzi Growers Co-operatives Ltd that is comprised of 66 cooperatives society in different regions.

The Water Users' Association (WUA) was in place and functional with support from the ALTUS Consult that was contracted by MWE to work in Mubuku Irrigation Settlement Scheme for three years (2019-2022).

There was an improved extension service and trainings to the beneficiary farmers who became more interested in maize seed production with the increase of the acreage and yields, however outbreak of fall army worm, affected the crop production and productivity. In addition, the seed company FICA&NASECO that was purchasing the maize yield also made late payments to the farmers leading to loss of morale.

In terms of sustainability, the scheme was supported with a ploughing tractor and an excavator. This was however not functional as at 18th January 2022, partly due to deployment of the equipment outside the scheme areas without approval from MWE/MAAIF. The equipment that was deployed outside the scheme area drowned in the river and was not removed for one year thus affecting maintenance of the scheme infrastructure.



Left to Right: Diversion point from Mubuku I main silted channel and faulty excavator in Kasese District and silted main canal at Doho II Irrigation Scheme in Butaleja District

The key challenges observed at Mubuku was lack of functional earth moving equipment (excavator and tractor) critical in the maintenance of the irrigation scheme, land grabbing and encroachment where approximately 1,000 acres of scheme land including the dairy units have been encroached upon by people settling in Bagdad area, Kizungu and Kyodo in Kasese District.

Overall, the construction of Wadelai Irrigation System – 1,000ha located in Pakwach District was behind schedule (The initial project period was 23rd November 2018 to 23rd November 2020. The contract was extended to 23rd November 2021. This was not achieved as works remained incomplete as at 10th January 2022)

The time overrun was attributed to delays in land acquisition and Resettlement Action Plan (RAP). As at 10th January 2022, the works were however ongoing with a physical progress of 80.5% against a financial progress of 83.6%.

Components of the scheme which were substantially complete included; the earth dam embankment, main canal, secondary canals, access roads, and scheme buildings. Some scheme buildings however such as the office and residential structures that were constructed at the very beginning of the project developed cracks on the walls and ceiling.



Key pending works at Wadelai Irrigation System included tertiary canals, animal watering facilities (troughs), sanitation facilities (farm toilets), and works on a piece of community land (365ha) that was acquired late in replacement of the Ragem Prison Land that was in the original design.

L-R: A section of the main canal; Cracks on the scheme office building of Wadelai Scheme in Pakwach

(ii) New irrigation schemes constructed

The construction of 23¹¹ schemes is planned within the NDP III span of five years to be constructed. The target for FY 2021/22 was to start construction of at least one scheme.

Construction started for Acomai Irrigation Scheme and the findings are presented below. For the other schemes, progress was at various levels of feasibility studies and detailed design. The only completed detailed design was that of Kabuyanda Irrigation Scheme in Isingiro District. Twelve (12) schemes had detailed designs ongoing, and 10 designs had not commenced. Some of the planned schemes have prospects of funding from ADB, World Bank and Islamic Development Bank, whereas others are yet to get funding. The formation of sustainable management structures for effective utilisation of the schemes was pending construction commencement.

MAAIF through the Agriculture Value Chain Development Project (AVCP) commenced the construction of the Acomai Irrigation Scheme covering 1,608 Ha with associated infrastructure including: an administrative block; 2 drying yards; a ware house; a workshop; a bridge; 58 km of access roads. The scheme serves Bukedea District (Kamutur Sub-county) and Bulambuli District.

The contractor was on site and excavation works for diversion of the river, works on scheme roads, and preliminary clearance for the secondary drains were ongoing. The overall physical progress was estimated at 4% as at 9th February 2022. The Resettlement Action Plan implementation was slow due to resistance from the Project Affected Persons (PAPs). The total PAPs were 555 in Bukedea, while 24 PAPs in Bulambuli District.

¹¹ Acomai (Bukedea and Bulambuli), Atari (Kween and Bulambuli), Amagoro (Tororo), Nabigaga (Kamuli), Rwimi (Kasese and Bunyangabu), Nyimur (Transboundary between Uganda and South Sudan), Musambya, Kibimba (Bugiri), Kabuyanda (Isingiro), Matanda/Enengo (Kanungu), Igogero, Angololo (Transboundary Uganda and Kenya), Kagera (Isingiro), Namatala (Budaka), Namalu (Nakapiripirit), Sipi (Bulambuli), Unyama (Amuru), Lumbuye (Luuka), Nyabanja (Tororo), Palyec (Nwoya), Purongo (Amuru), Lopei (Napak) and Imvepi (Arua).

The attainment of targets was compromised by poor culture among the farmers that dump rubbish into the canals thus affecting the flow and access to water, delayed supply of mechanisation equipment including excavators for effective desilting of the main canals and lack well-structured project hand over between the MAAIF and MWE.

(iii) Infrastructure and services for bulk water storage and transfer including water abstraction systems, transmission mains, water pumping systems, storage tanks, water distribution networks developed

Various water for production infrastructures were under establishment through interventions implemented by MWE, MAAIF and LGs through collaborative partnerships with other stakeholders.

Earth dams: Under the MWE, the programme planned to commence construction of 22 new multipurpose water development schemes of: Kyenshama, Geregere, Ojama, Makokwa, Kyahi, Kakingole, Kokonyuko, Korisae, Lothar, Girik, Komothing, Achorichori, Katabok, Kulodwongo, Katabok, Kaputh, Longore, Naoyamuwe, Kokyeyo, Lemsui, Nakonyen and Nangololapolon over the NDP III period. Three earth dams Kyenshama and Rushozi in Mbarara; Geregere in Agago are to commence in FY 2021/22, including feasibility study/design of 13 others.

By 31st December 2021, feasibility studies and preliminary designs of fourteen (14) multipurpose earth dams and watering facilities in Karamoja sub-region had reached the final stages. The feasibility study and detailed design of three (3) earth dams and water facilities of Geregere in Agago District; Kyenshama and Rushozi and Mbarara District were completed. Detailed designs for Kyahi, Makokwa and Ojama Earth Dams in the districts of Gomba and Serere respectively were in the final stages of completion. Planned construction of three (3) earth dams and watering facilities of Geregere, Kyenshama and Rushozi awaits design completions; however, procurement of works contractors was also underway.

Under the MAAIF Improving Access and Use of Agricultural Equipment and Mechanisation Project, the physical progress of the mechanised irrigation demonstration centre hosted by Mr. Kabiito in Lwemodde Village, Kyesiga Parish, Kyesiga Sub-county in Masaka District that stalled during FY 2020/21 was at 45% and was not functional. The dam was partially excavated;



had silted and had weeds all over it.

The contractor abandoned works with materials such as 40 bags of

Dam that was partially completed and part of the materials that were abandoned onsite at the MAAIF Mechanised Irrigation Demonstration Centre in Kyesiga Sub-County in Masaka District

cement, pipes, chain link, wire meshes and three water tanks which had been mobilised.

Valley tanks: Out of the 35 planned community valley tanks for livestock watering construction countrywide under MWE, only one (1) in Kapelebyong District was completed by end of Q2. The filling of the valley tank in Moroto District awaited the onset of rains. Grass planting around the tank was yet to be done. The tank size was 20,000CM, which is expected to serve the community for three months when filled.



Arengetekai Valley Tank in Nabilatuk Sub-county, Moroto District

Valley Tanks, Dams, Fish ponds constructed and desilted (302) assorted: MAAIF completed a total of 112 sites out of the targeted 302. The MAAIF also completed designs 10 water facilitates (valley tank/dams and on farm water harvesting and storage infrastructure in Northern Uganda, Rehabilitated and Operationalised Small Scale Water and Irrigation Facilities in western and Eastern Uganda.

Irrigation system at NaCRRI

Agricultural Value Chain Development Project under MAAIF, supported establishment of an irrigation facility on 1.2 hectares at the National Crops Resources Research Institute (NaCRRI) in Namulonge, Wakiso District to help in the production of rice breeder and foundation seed. By 7th February 2022, the facility was not in use with some parts full of weeds and silted due to delayed disbursement of maintenance funds for more than eight months. There were some broken walls on the canals awaiting the contractor's receipt of payment before rectification.



Completed civil works of irrigational system at NACRRI in Wakiso District; facility was not yet operational

Microscale Irrigation with support under UgIFT

The MAAIF and LGs are implementing the Micro-Scale Irrigation Program, with support of the World Bank - Uganda Intergovernmental Fiscal Transfer (UgIFT). The aim of the Program is to support farmers to purchase and use individual irrigation equipment. The program targets to support at least 5,000 smallholder farmers in the selected 40 DLGs to purchase and use micro irrigation equipment every Financial Year.

By 31st December 2021, the Program had registered 21,300 farmers expressing interest (largely exceeding the target of 10,000 EOIs), and 6,960 successful farm visits indicating a steady progress towards the target of 5,000 farmers per year.

A total of 112 irrigation demonstration sites were planned, designed and established in FY 2020/21. In FY 2021/22, the districts were required to operationalise the irrigation demonstration sites. The irrigation demonstration sites were installed with the different kinds of irrigation methods supported under the Micro-Scale Irrigation Program i.e., sprinkler, drip and drag hosepipe methods using either solar or petrol energy sources for the farmers to appreciate and be able to make their selections in line with the packages offered by the Program.

MFPED disbursed funds for micro-scale irrigation to support the purchase of the irrigation equipment. By 31st December 2021, procurements had not been completed in all the monitored districts in the North and Eastern Uganda. The roll out in Western region had however commenced though at a slow pace. The key challenge was delayed initiation of procurements, delayed co-financing by the farmers to the districts partly due to poverty, lack of access to credit and the 100% requirement that did not allow farmers to contribute in instalments.

By 31st December 2021, only establishment of demonstration sites had been completed an activity that spilled over FY2020/21. The demonstrations were made in coffee and horticulture enterprises.

Examples where the roll out had commenced is presented hereafter:

In Bushenyi District, four out of the targeted 116 farmers for FY 2021/22 benefitted from the irrigation technologies. The four farmers were located in Rwentuuha TC, Nyabubare Sub-County, Kyamuhunga Sub-county and Ishaka Division. Key challenges noted in the district were: inadequate funds disbursed for procurements; high cost of co-financing which was unaffordable by farmers; lack of personnel and budget in the district to maintain the irrigation equipment and the high cost of fuels for operating motorized pumps.



Straw berry garden under drip irrigation with UgIFT support in Ryanshana Village, Bushenyi District

The solar powered drip irrigation system that was installed in the strawberry demonstration garden of Ms. Anna Ayokekire in Ryanshana Village, Kashenyi Ward, Ishaka

Division, Bushenyi District was functional.

The farmer realised larger berry sizes as a result of irrigation. The pack of berries that costed Ug shs 2,000 before irrigation was now sold at Ug shs 5,000 each due to the increased weight of the berries. Poor agronomic practices were however noted at the demonstration site with weeds competing with the crops. The farmer complained of inadequate operational funds to maintain the garden.

Two irrigation systems established in Kayunga District were not functional by 25th January 2022. The sprinkler irrigation system established at a secondary school in Kinyala Village, Nateeta Parish, Nazigo Sub-county was not functional due to lack of adequate water for irrigation. A 1,000 litre tank of lower capacity was installed instead of the required a 10,000-liter tank.

Other challenges noted were the weak sprinklers that often blocked and required frequent repairs; with some failing to rotate and thus sprinkling water in the same place and at short distances, hence not covering the garden. The fuel for pumping the water was expensive for the school as at least Ug shs 20,000 was needed every week for irrigating less than half an acre of the existing crop. As a result, the school resorted to manual methods of using watering cans for irrigation.

The sprinkler irrigation system that was installed on Mr. Lwanga's farm in Kabalila Village, Nakivubo Parish, Kitimbwa Sub-County in Kayunga District was not functional. The irrigation system was installed in the coffee and banana plantation August 2021, with two sources of power – the solar panels and generator. The solar system worked for one month only. The panels were taken by the district production department for repair and had not been returned by January 2022. The farmer failed to use the generator as an alternative source of power due to the high cost of fuel. The quality of the sprinklers was poor as most holes in the sprinklers got blocked and so did not function well within the one month of operation.

The irrigation demonstration, hosted at the District headquarters in Mayembe Upper Nsamizi Village Ward D, Mpigi Town Council was partially functional due to inadequate water for irrigation. The demonstration was established without a permanent source of water. The 1,000 litre tank installed could only irrigate 0.5 acres out of the 1.5 acres and for a few hours in a day. The district improvised and harvested rain water in old existing storage facilities that had a capacity of 5,000 litres however these leaked and only hold about 1,000 litres of water.



4

Horticulture crops garden with functional sprinkler irrigation (left) and improvised water source that had little water for irrigation as it was leaking (right)

Nwoya DLG conducted a total of 4 awareness events at the district level and 36 at the LLGs with the leaders. However, there was a system breakdown and errors in the irriTrack app and poor network connection for some farmers who live in hard-to-reach areas, leading to the delay in conducting farm visits. Out of the 422 Expression of Interest (EOIs) submitted, a total of 399 were successful.

By 31st December 2021, Jinja DLG conducted awareness creation and sensitisation through farm visits to farmers who expressed interest in the micro scale irrigation. Their target was 90 benefiting farmers, only 34 farmers had shown interest. Eligible supplier was also identified however farmers found the irrigation equipment expensive irrespective of the co-funding with UgIFT.

Buikwe DLG approved 42 farmers in the first batch, however all of them had not made their co-payment contribution at time of monitoring in January 2022, and this was because the available irrigation equipment suppliers quoted over and above the specified limit of the equipment cost. In addition, most of the interested farmers preferred to pay in instalments to lessen the financial burden an arrangement inconsistent with the design of UgIFT.



Emmanuel's panel kept in the store as he waits for a better water pump

By 31st December 2021, Iganga DLG had created awareness among the local leaders and interested farmers through farm visits, operationalised three (3) demonstration sites with agricultural inputs and linked 120 interested farmers, to five (5) prequalified suppliers and five (5) financial institutions.

Among the beneficiaries, Emmanuel Kifutuko a coffee and horticulture farmer from Bukyaye Village, Nakalama Parish, Nakalama Sub-county received a solar water pumping system for for micro-scale irrigation under UgIFT in November 2021. However, the pump was taken back due to its low capacity to draw/sprinkle water to the required radius. He was promised that a more efficient pump would be delivered but he hadn't received it at the time of monitoring.

Amuru District LG submitted 490 expression of interested farmers, to MAAIF through IrriTrack app, 145 farmers were approved by the district by 31st December 2021. The signing of Memorandum of Understanding (MoU) for the first Lot between the farmers and the district was not achieved by the 31st December 2021.



Mr. Ayela's Onion garden under drip irrigation with UgIFT support in Labila-om village Amuru District

The delays in the signing the MoU was partly attributed to delays among the selected farmers to make their financial contribution. The key challenge was lack of clear financing arrangement between financial institutions and the farmers to aid acquisition of credit for farmers without ready capital.

Alfred Ayela a horticulture farmer from Labila-om Village, Pongu Ward, Amuru District had benefitted from the irrigation technologies out

of the targeted beneficiaries. He received the irrigation equipment in July 2021. His main challenge was that the solar powered equipment had limited capacity to irrigate the required radius (entire garden) he instead used the generator powered system to irrigate the garden, this was however noted to be expensive.

(iv) Solar powered small-scale irrigation systems for small holder farmers outside conventional irrigation schemes developed



L: A water pump of Tangi Small Scale Irrigation Scheme, Nwoya District; R: A farmer transplanting onions in Bukise Small Scale Irrigation Scheme, Sironko District

The MWE planned to construct 95 small scale solar powered irrigation schemes to benefit small holder farmers countrywide, and 32 of these were at different completion levels. The land area for these schemes ranges between 5-10ha. The construction of these schemes was ongoing countrywide. A total of 11 small scale irrigation schemes were monitored in various districts (Asada in Zombo, Ogolo in Adjumani, Alyec in Oyam, Tangi in Nwoya, Bukise in Sironko, Rwakabengo and Garuka in Rukungiri, Nyarurambi in Kanungu, Ntarama in Kiruhura, Kataigwa and Namutya in Kayunga).



The demonstration gardens in Namutya Scheme, Namusala Parish, Kayunga District and a farmer with a harvested sack of cabbage ready for the market in Rwakabengo scheme in Rukungiri Town Council, Rukungiri District

The general observation was that the works were ongoing at a very slow pace. The contract periods ranged between six months to one year per scheme, however, none was completed within the contract period. Substantially completed schemes including Asada (Zombo), Namutya (10 acres), Rwakabengo (10 acres) and Bukiise (Sironko) were in use by farmers. The delay to complete works was mainly due to limited funds and lengthy land acquisition process among

others. The contract for construction of Nyarurambi SSI expired but the scheme was not yet complete due to land issues. Land negotiations for the Asada Small Scale Irrigation Scheme in Zombo District lasted for about six months.

The uptake of irrigation technology was low due to the farmers' inadequate skills. Flooding destroyed the farmers' crops forcing them to abandon the Ogolo scheme in Adjumani District. In Bukise, hailstorms affected farmers' crops during the second planting, and subsequently their incomes reduced. Farmers generally had limited market and transport for their produce which was demotivating.

Water management issues were also observed where some farmer's plots were not receiving sufficient water such as in Bukise, Asada and Doho II schemes. The water scarcity in Karamoja region poses challenges for sustainability of small scale irrigation schemes. The water levels reduce drastically during the dry seasons.

The source of water for the irrigation schemes sometimes pose challenges if not well sited/located like for the case of Kataigwa small scale irrigation scheme where the valley tank silted before commissioning. The contractor had to get another source which is a borehole in this case which was some few metres away.



L-R: A silted valley tank of Kataigwa Scheme in Nabuganyi Parish, Kayunga District

(v) Water use efficiency in agricultural production promoted

Community based management system for water for agriculture production developed: The sustainable management structures ensure effective utilisation of the WfP facilities. The establishment of three (3) management structures for multi-purpose bulk water schemes of Geregere, Kyenshama and Rushozi was pending construction commencement. The integration of gender is normally done in the training and formation of management structures or while choosing beneficiaries of the Small Scale Irrigation (SSI) demos. The completed facilities which were visited and had integrated gender were: Namutya SSI in Kayunga District, the beneficiaries were composed of 17 males and 10 females; in Rwakabengo SSI (Rukungori District), the beneficiaries were 22 of which 10 were female and 12 males; Asada SSI there were 43 farmers of which 17 were female and 26 males. In Bukise the beneficiaries were 27 with one female in leadership position but information about the other members was not gender disaggregated.

3.2.6 Increase Access and Use of Agricultural Mechanisation

Introduction

The intervention has three focus areas namely: establishment agricultural mechanisation manufacturing plants; establish appropriate public and private financing options for agricultural mechanisation; and expand and equip regional agricultural mechanisation and service centers in the 9 agro ecological zones

The actions on the other hand focus on development designs, construct and equip 2 regional mechanisation service centres, establishment of agricultural mechanisation manufacturing plants; identification and accreditation of mechanisation equipment suppliers, dealers, manufacturers or importers and fabricators; support the private sector, through the regional farm service centres, to acquire and deploy assorted sets of Agric-mechanisation equipment (heavy equipment and machinery units; test, certify and promote agriculture mechanisation equipment; roll out the tractor hire services; procure and deploy tractors with all implements among others.

The planned outputs for the FY2021/22 included;

- i) Construction and equipping of the 5 regional units in Bushenyi/Kiruhura, Mbale, Kiryadongo, Agwata and Buwama and Namalere National Referral Agric Mech Centre
- ii) Agriculture mechanization equipment procured
- iii) 1,510 acres of bush cleared
- iv) 6,500 acres opened and ploughed
- v) Eight pcs of heavy equipment and accessories and drilling rigs, 285tractors/implements, procured
- vi) A total of 100 tractors & matching implements procured & equitably distributed all regions of Uganda for agricultural mechanisation in an effort to boost agricultural production towards commercialization.
- vii) Heavy equipment (101) units equipment/accessories including tractors, implements, other machinery, motor vehicles, and workshop machinery in Namalere and Regional centers maintained

Monitoring focused on six out of the eight outputs as discussed subsequently.

- i) **The 5 regional centres in Bushenyi/Kiruhura, Mbale, Kiryadongo, Agwata and Buwama and Namalere National Referral Agriculture Mech Centre constructed and equipped**

Overall progress averaged at 60% as at 31st December 2021 at the different sites. The percent progress varied with Buwama in Mpigi at 90% completion, Mbale at 60%, Bushenyi, and Kiryandongo 0% (still at design stage). Renovation works at the National Referral Agriculture Centre in Namalele in Wakiso and the Agwata station in Dokolo was 100% completed.

The works at Mbale however stalled and the contractor was off site. This was attributed to delayed payments to the service providers.



Mechanisation workshop in Mbale with some of the materials redundant on site

ii) Agriculture mechanisation equipment procured:

As at 31st December 2021, contracts were signed for the supply and delivery of 100 tractors and matching implements; and the earth moving equipment (4 excavators, 2 wheel loaders and 2 motor graders). The process of procuring additional sets of earth moving equipment was at bid evaluation by the 31st December 2021

iii) 1,510 acres of bush cleared

MAAIF cleared 4,227 acres against the annual target of 1,510 as at 31st December 2021 in different districts.

iv) 6,500 acres opened and ploughed

MAAIF opened up and ploughed 1,500 acres of land against the targeted 6,500 representing a poor performance of 23% as at 31st December 2021.

v) Heavy equipment (101) unit's equipment/accessories including tractors, implements, other machinery, motor vehicles, and workshop machinery in Namalere and Regional centers maintained

A total of 51 out of the targeted 61 units of equipment were maintained. Maintenance of all the equipment was not achieved due to limited funding.

Challenges

- Procurement delays affecting attainment of the planned outputs.
- Low prioritisation in MAAIF to commit funds to the completion of the mechanisation workshops. The local contractor in Mbale was not paid any funds in this financial year despite the release of funds totaling to Ug shs 18 billion to the Project 1357 of improving access and use of agricultural equipment and mechanisation through the use of

Labor saving technologies. The project had absorbed only Ug shs 8.8 billion as at 31st December 2021.

Recommendations

- MAAIF should fast track the procurements including adopting a good practice of early initiation.
- The Agro-Industrialisation Programme Working Group through the MAAIF should prioritise funding for the ongoing works at the mechanisation centres.

3.2.7 Increase access and use of digital technologies in agriculture

The Government aims to enhance access and use of digital technologies in disease diagnosis, marketing, input delivery and financing. There are two planned sub-interventions for achieving this intervention: i) To develop information communication technology (ICT) modules that can improve extension services and delivery of Government input supplies ii) Empower youth to use ICT in developing agro-enterprise innovations, including the integrated livestock information management system.

The planned outputs for the FY2021/22 included;

- (i) ICT modules for extension service and input delivery scaled up
- (ii) Youth empowered to use ICT in developing agro-enterprise innovations, including the integrated livestock information management system.

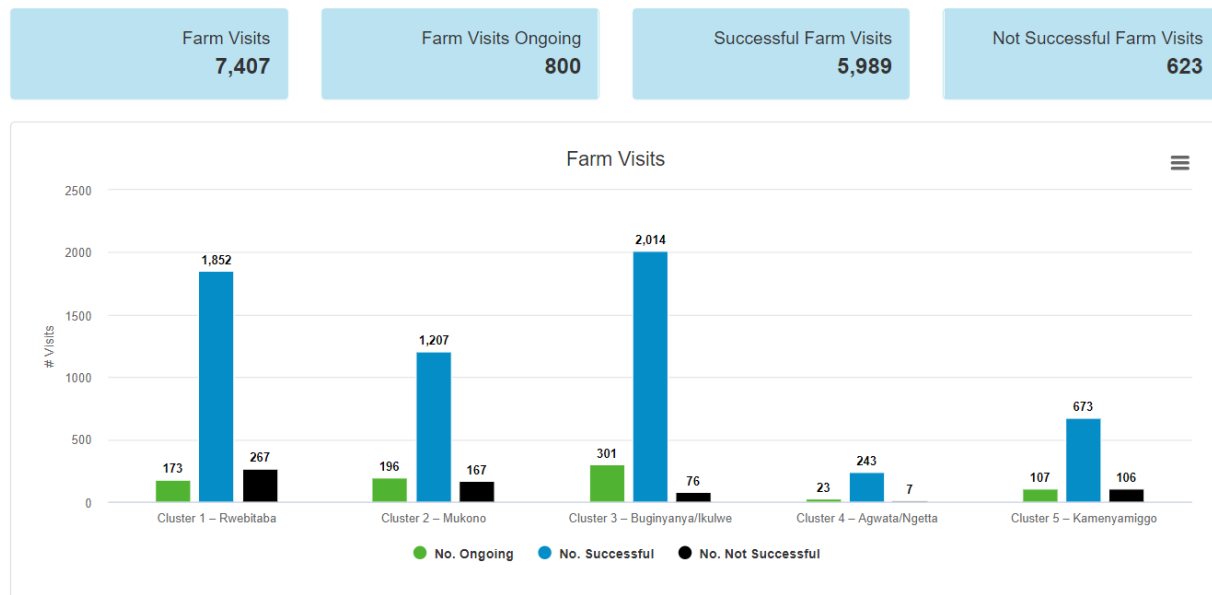
The following section presents the performance of the selected outputs.

(i) ICT modules for extension service and input delivery scaled up

With support from the World Bank UgIFT intervention, the MAAIF developed the ‘**IrriTrack**’ (an online irrigation app) as a planning and support supervision tool to record awareness events, land size, soil types, collect farmer expressions of interest, prepare for farm visits, and collect geotagged farm data during the farm visit.

By 31st December 2021, 300 technical staff in 40 UgIFT implementing districts were trained in the use of the app to collect data which they are using to-date. The data entered in the IrriTrack app is continuously received, and analyzed by the Microscale Irrigation Programme Management Information System (MIS) which was developed as a database and decision-making tool to track progress of the program. The districts initiated procurement of irrigation equipment on the **IrriTrack** and undertook farm visits of the farmers that were registered on the system to assess their capacity to implement the project. Figure 3.5 provides a sample of the farm visits undertaken by district extension staff to farmers that were registered on the **IrriTrack**.

Figure 3.5: Visits to farmers registered on the IrriTrack by 31st December 2021



Source: UgIFT

Mpigi is one of the districts piloting the E-procurement system using the IrriTrack system. Eighty farmers applied for the irrigation equipment and were registered on IrriTrack. The process of uploading farmers and suppliers details on the system and measuring field sizes was too slow as the system frequently broke down making it difficult to capture relevant data for the UgIFT program. There was delay in delivery of tablets from MAAIF to be used in data capture. The district officials resorted to using personal phones for capturing data which gave partial results as they were not compatible with the IrriTrack software.

Under the ACDP sub-intervention, the MAAIF designed the Electronic Voucher Management System to provide subsidised inputs to farmers by issuance of e-vouchers. The system was used for farmer registration, placing orders, loading the farmer wallets and redemption of vouchers. Cumulatively, a total of 463,274 farmers had been enrolled between FY2018/19 to FY2021/22 December 2021; 274,046 (59%) accessed subsidised inputs on the system. The sub-programme performance was behind schedule due to frequent system break down, poor internet connectivity, inadequate staff to operate the system and low capacity of users to redeem the inputs.

(ii) Youth empowered to use ICT in developing agro-enterprise innovations, including the integrated livestock information management system.

The following actions were implemented to promote innovations in the programme that benefitted all categories of farmers, including the youth:

- The MAAIF continued digitalising the registration and issuance of electronic phyto sanitary certificates to exporters

- The MAAIF continued the processes of designing a National Livestock Identification and Traceability System for surveillance and control of trade related animal diseases. The Livestock Identification and Traceability Policy was developed and discussed in Top Policy Management of MAAIF.
- Reformatted the digital animal disease control data analysis and reporting system awaiting dissemination and pretesting with the stakeholders. Developed digital epidemiology reporting forms that were shared with District Local Governments and sub-counties.
- A national GIS data base on beekeeping established and maintained for decision support.
- Efforts were made to strengthen agricultural statistics and Geographical Information System (GIS) data base at MAAIF to improve access to information on farmers and agricultural infrastructure. By 31st December 2021, registrations on system included 156,497 farming households in 2,862 villages in five districts; 3,000 agricultural infrastructures and 700 agro-input dealers mapped in 50 districts. Over 3,000 Android Smart Phone Tablets were given to districts to strengthen digital data collection.

3.2.8 Strengthen farmer organisations and cooperatives

Introduction

The intervention has two focus areas namely: sensitising farmers on the benefits of cooperating; and support up-coming farmer groups and cooperatives to effectively manage themselves. The intervention has four actions:

1. Engage cooperatives and colleges of commerce to inculcate cooperative and entrepreneurial skills to the farmers and farmer groups;
2. Register and profile farmer organisations;
3. Register breeder associations; and
4. Undertake capacity assessment of farmer groups, identify and fill their capacity gaps.

The planned outputs for FY2021/22 included:

- i.) Small farmer groups strengthened (good governance, increased, enrolment, bulking inputs and outputs) - % of coverage.
- ii.) Farmers/farmer groups registered and profiled (No).

Semi-annual monitoring focused on the two outputs. The detailed performance is presented below.

Performance

i.) Small farmer groups strengthened (good governance, increased, enrolment, bulking inputs and outputs)

MAAIF through ACDP facilitated Uganda Cooperative Alliance (UCA) to strengthen the targeted 5,000 Farmer Organisations on commodity value chain development (cumulative total of 25,000 groups as 31st December 2021). The Dairy farmer's cooperatives under Dairy

Development Authority (DDA) were formed and strengthened across the country in the areas of group dynamics, sustainability and business development and management.

In the South-Western region for instance, dairy farmers of Akajumbura, Rwetamu, Kasaana and Kinoni cooperatives were strengthened in leadership and governance skills.

Governance trainings were offered in the districts of Kakumiro, Kagadi among others in mid-western, Tororo, Namutumba in Eastern region, Masaka, Mukono and Nakaseke in Central region Akajumbura, Rwetamu, Kasaana and Kinoni Cooperatives in Southwest.

ii.) Farmers/farmer groups registered and trained

Twenty-one (21) dairy farmer groups were registered in the districts of Kakumiro, Kagadi among others in mid-western, Tororo, Namutumba in Eastern region, Masaka, Mukono and Nakaseke in Central region Akajumbura, Rwetamu, Kasaana and Kinoni Cooperatives in Southwest.

In addition, the DDA supported sixteen (16) dairy farmer groups to register and received training in group formation, procedures and requirements for registration of cooperatives in Eastern, North Eastern, Central and South Western regions (Tiriny dairy farmers in Tororo District, Maddo Dairy Farmers Cooperatives(DFCS) in Masaka District, Nampate DFCS in Mukono, Kagosyo women DFCS in Nakaseke, Akajumbura, Rwetamu, Kasaana and Kinoni Cooperatives in Southwest, and 8 farmer cooperatives in Katakwi to operationalise the new MCC at Katakwi District).

3.2.9 Strengthen Systems for Management of Pests, Vectors and Diseases

Introduction

The intervention has three focuses areas namely; the development and equipping of infrastructure and facilities for disease diagnosis and control; development of human capacity for management of pests, vectors and diseases; and investment in agricultural drugs manufacture and distribution.

The planned outputs for FY2021/22 included:

- i) Vaccines procured, distributed and utilised
- ii) Crop pests controlled
- iii) Animal holding grounds quarantine stations and animal check points established:
- iv) Appropriate pests and disease control technologies and innovations demonstrated
- v) Appropriate use of pesticides (safe use and handing of pesticides promoted).
- vi) Engage national, regional and international level to prevent pest spread inspections of fruit and vegetable nurseries conducted in 24 major fruits and vegetable production districts for pests and diseases.

- vii) Linkages for appropriate pest and disease control technologies strengthened (quick testing and diagnostic kits, e-survey software, pest reporting, pest detection)
- viii) Plant clinic curriculum developed and disseminated
- ix) Stakeholders (Public & Private Extension workers 30% women 50% youth) trained
- x) on management and control of pests and disease
- xi) Surveillance for storage pests and control, assurance of safety use of products conducted
- xii) Capacity of at least 200 horticultural exporters and farmers 40% women built on integrated management of harmful organisms in a systems approach
- xiii) Capacity of at least 200 extension service providers 30% women on pests and disease control built
- xiv) Demonstrations on appropriate technologies and innovations for control of Fruit flies and Striga weed conducted
- xv) Equip plant clinic diagnostic mini labs to feed into the national plant health laboratory

Semi-annual monitoring focused on the following outputs as discussed below.

i.) Vaccines provided

As at 31st December 2021, the need for Foot and Mouth Vaccines was met by only 47% among the 112 districts. The MAAIF also issued out to selected districts a total of 261,200 doses of Rabbits Vaccines. Some districts received the Peste des Petits Ruminants (PPR) vaccines for vaccination of goats and sheep.

In terms of livestock diseases prevention, the MAAIF issued a total of 490,000 doses of Foot and Mouth Disease to the 112 districts compared to the request of 1,039,439 doses. For instance, Nwoya received 5,000 doses of Rabbits and 5,000 doses of Foot and Mouth Disease (FMD) vaccine.

All the districts visited decried of the poor cold chain system. Some districts were using cold boxes with no temperature monitors for storage of vaccines instead of the recommended refrigerators, others kept the vaccines in private vet drug shops that had refrigeration services while others sought help from the District Health Offices where they had more than one refrigerator for storage of the vaccines.

The MAAIF through Livestock Disease Control Project Phase 2 procured and distributed 6,660 liters of eprinomectin for Tick cleansing and 700,000 doses of rabies vaccine across the country. It also initiated the procurement of assorted vaccines: Foot and Mouth Disease (FMD) 5 million doses, 3 million doses for PPR, 2 million doses of contagious bovine pleuropneumonia (CBPP), and 2 Million doses of Blantharax, and 1 million doses of lumpy skin disease. However, the adjuvant used in the manufacture of the FMD vaccine is the same used in the manufacture of the COVID-19 vaccine which led to a scarcity of the vaccine. Rabies, FMD, and PPR vaccines was distributed in all the monitored districts of Nebbi, Arua, Yumbe, Buikwe, Jinja, Serere, and Pader.

However, there was a lot of wastage of vaccines in most of the monitored DLGs due to; lack of cold chain storage facilities for the vaccines; and lack of operational funds and transportation means for the District Veterinary Officers:

For example, in Yumbe the vaccines expired from the office because the DVO had no transport means of distributing the vaccines to the farmers across the district. Similarly, Nwoya DLG lost 5,000 doses of rabies and 5,000 doses of PPR due to lack of a proper cold chain, and as a result they haven't vaccinated in three years. Lastly low volumes of the vaccines were delivered against the plan and animals numbers available in the DLGs, only 10% of the vaccine is delivered by MAAIF.

Mpigi District received 5,000 doses of FMD vaccine to help control this epidemic and a total of 4,933 (3,190 doses to cattle, 1,220 doses to goats, 523 doses to sheep) were used with 67 doses spoilt due to spillages mostly resulting from poor restraint of the animals. The key challenge was the strict observation of the standard operating procedures (SOPs) where farmers had to be visited individually. Many did not want to be involved in animal vaccinations fearing transmission of COVID-19 in the process.

By 31st December 2021, 7,000 FMD doses, 5,000 rabies and 5,000 PPR doses were received in Ntungamo district and were of good quality although inadequate. The key challenge was lack of cold chain facilities, temperature tags, and ice boxes for field based activities.

ii.) Technical and support supervision, and equipping to districts for crop pests control

MAAIF Crop Pests and Diseases Control projects provided technical advice, motorized pumps and protective clothing/gears and pesticides for pest control to Adjumani DLG, monitored plant clinic operations in the DLGs, and interacted with the trained plant doctors of (Luwero, Buvuma, Mubende, Kagadi, Mbarara and Kazo DLGs).

iii.) Equip plant clinic diagnostic mini labs to feed into the national plant health laboratory

The districts including Luwero, Buvuma, Mubende, Kagadi, Mbarara and Kazo DLGs were equipped with full sets of plant clinics (Set of items; plant clinic tent, chairs, bucket, hand lenses, laboratory coats, dissecting knife, diagnostic guides/ manuals and prescription books among others).

Relatedly, the districts held one-day mobile plant clinic sessions where farmers brought diseased samples and the well-trained plant doctors diagnose the problem and provide appropriate and effective solution to the farmer.

iv.) Surveillance for storage pests and control, assurance of safety use of products conducted

The MAAIF through Crop Pest and Disease Control Project carried out inspection of crop pests and diseases of mother gardens and nurseries to ensure pest and disease-free planting materials in

Apac, Lira, Kole, Soroti, Kumi, Bukedea, Masaka, Kalungu and Mpigi; results indicated that 73% of cassava mother gardens were free from key diseases like Cassava Brown Streak Virus and Cassava Mosaic Virus.

v.) Animal holding grounds quarantine stations and animal check points established:

MAAIF under the under Agriculture Value Chain Development Project (AVCDP) set out to construct animal holding grounds quarantine stations and animal check points established: The construction of two zonal animal disease control centres in Lyantonde and Nwoya districts with an office block, animal clinic, laboratory, vaccine storage facility, holding area and other amenities had not commenced.

As at 31st December 2021 the designs and bidding documents for the zonal animal disease control centres were completed and approved by the Directorate of Animal Resources and the user districts. The contract for the construction of the Zonal Animal Disease Control Centre in Nwoya was signed but works were yet to commence.

Challenges

- i) Lack of operational funds and transportation means for the District Veterinary Officers.
- ii) Understaffing of the District Veterinary Officers.
- iii) Lack of cold chain facilities, temperature tags, and ice boxes for field based activities.

Recommendations

- i) The MAAIF should facilitate transport means for the DVOs.
- ii) The MAAIF should strengthen cold chain system to preserve vaccines.

3.2.10 Conclusion

The performance of the Sub-Programme was good at 70%. Five of the eight interventions were on course with one achieving its semi-annual targets. Four were on track, while three were off-track for various reasons. Water for production critical for enhance production and productivity was off-track mainly due to delayed commencement of works for the 23 schemes, rolling out micro scale irrigation to farmers under UgiFT, limited coordination between MAAIF, and MWE for completed schemes. Strengthen Systems for Management of Pests, Vectors and Disease was affected by limited prioritisation of funding with the programme exacerbated by inadequate allocation towards vaccines, pests and disease surveillance, functional cold chain system among others. Strengthen Farmer Organisations and Cooperatives was affected by deliberate shift of SACCO formation from sub-county to parish level to match the new government policy of Parish Development Model (PDM). This is anticipated to gain momentum with the roll out of the PDM.

Overall, performance was hampered by inadequate staffing and facilitation under extension services; low coverage of mechanisation equipment, poor functionality of the cold chain system

and unmet demand for pests, vectors and diseases response respectively among the farming communities. *There is therefore need to focus on addressing the identified core binding constraint*

3.3 Storage, Agro-Processing and Value Addition Sub-Programme

3.3.1 Introduction

The sub-programme aims to improve post-harvest handling, storage and increase agro-processing and value addition in Uganda. The sub programme is composed of nine interventions including the last four in the following outline which were unfunded in FY2021/22. These are;

- i) Construct and regularly maintain community access & feeder roads for market access
- ii) Establish a strategic mechanism for importation of agro-processing technology
- iii) Establish eco-friendly fully serviced agro-industrial parks/export processing zones and equip regional farm service centers
- iv) "Establish new and rehabilitate existing agro-processing industries to minimize negative environmental impacts for processing of key agricultural"
- v) Establish post-harvest handling, storage and processing infrastructure including silos, dryers, warehouses, and cold rooms of various scale and
- vi) Establish regional post-harvest handling, storage and value addition facilities in key strategic locations; grain in Jinja; Cassava in Gulu; Dairy in Mbarara; Meat in Nakasongola; fresh fruits in Soroti; vegetable oil in Kalangala; cotton in Lira; beverages in Fort Portal, Fish in Mukono and Rice in Butaleja
- vii) Improve skills and competencies of agricultural labor force at technical and managerial levels in post-harvest handling, storage and value addition
- viii) Improve the transportation and logistics infrastructure such as refrigerated trucks and cold rooms for priority commodities
- ix) "Provide affordable, adequate and reliable electricity in the various production zones of the country

During the FY2021/22 the sub-programme was allocated Ug shs 72.722 bn¹² representing 4% of the Agro-Industrialization budget. Semi-annual monitoring focused on five out of the nine interventions.

Performance

Overall performance of storage agro-processing and value addition sub-programme was fair with 66% of the planned outputs achieved. All the five out of the nine interventions reviewed were on track towards attainment of the sub-programme outputs. ***Refer to Annex 3 for details of sub-programme and intervention, and outputs performance.***

¹² The allocation excludes the funds for rolled over components for road chokes, High Value addition facility under MATIP-2 among other interventions captured in the analysis template of this sub programme

The interventions performance levels however varied. The intervention for establishing post-harvest handling and storage infrastructure nearly achieved its outputs while equipping regional farm centres with tractors under the NAADS/OWC nearly went off track (table 3.10).

Table 3.10: Performance of the selected interventions of Storage, Agro-Processing and Value Addition Sub-Programme

Intervention	Performance	Remark
Construct and regularly maintain community access and feeder roads	On track	66% semi-annual targets achieved
Equip Regional Farm Centres	On track	51% semi-annual targets achieved
Establish and rehabilitate existing agro-processing industries	On track	54% semi-annual targets achieved
Establish post-harvest handling and storage infrastructure	On track	87% semi-annual targets achieved
Improve the transportation and logistics infrastructure	On track	65% semi-annual targets achieved

Source: Field findings

The key constraint under the sub-programme was delay in initiation of works among the MDAs; and inadequate capacity of contractors thus, leading to low absorption of funds especially the donor funding under the AfDB and ACDP for establishment of high value processing facilities particularly in Soroti and establishment of road chokes affected overall attainment of the planned outputs.

Detailed performance of the five out of the nine interventions of Storage, Agro-processing and Value Addition Sub-Programme are subsequently discussed.

3.3.2 Establish post-harvest handling and storage infrastructure

The intervention contributes to the objective of Improving post-harvest handling and storage. During the FY2021/22, the planned outputs included:

- i.) High-level value addition facilities established in Arua, Busia and Soroti districts.
- ii.) Cooperative societies, communities supported with cleaning, drying, grading and processing equipment.
- iii.) A total of 38 grantees under cohort 03 under ACDP supported establish post-harvest handling and storage infrastructure.¹³

Monitoring of the intervention focused on establishment of post-harvest handling and value addition facilities under the Markets and Agricultural Trade Improvement Programme (MATIP 2), and ACDP matching grants and the findings are as follows:

i.) The Markets and Agricultural Trade Improvement Programme (MATIP- 2)

To facilitate value addition of agro-produce, the MoLG planned to establish High Level Additional facilities under MATIP 2. As at 31st December 2021:

- The 500 Metric Ton Multi Grain Pre-Cleaning, Processing & Storage Complex in Arua was completed. All machine installations and testing was done. The contractor handed over the value addition facility on the 20th January 2022 to the Arua City Authorities.

The contractor however noted that the Defects Liability Period (DLP) for the facility including equipment would commence after training of the users. The facility has a capacity of multigrain sorting of 3 to 5 tonnes per hour.



L-R: Equipment for maize milling among others and packaging and equipment for millet, sorghum among others processing and packaging in Arua processing facility

- **1,000 metric Ton Capacity, Pre-Cleaning, Drying and Storage Complex in Soroti** was at 75% physical progress against 35% financial and 99%-time progress. The Project is thus, behind schedule. Consequently, an application for extension to enable installation and testing of machines was still under review by the donor and the MoLG.
- As at 9th February 2022, installation of storage silos for cereals had been completed Equipment installation was estimated at 60%. Terrazzo works in preparation for installation of, machinery and equipment for processing/value addition was ongoing.



Top-Bottom: Silos installed and construction works ongoing at Soroti High Value Addition Facility

ii.) ACDP matching grants¹⁴

As at 31st December 2021, a cumulative total of 167 stores were established and 146 value addition equipment installed by 192 farmer organisations in 24 districts at a cost of Ug shs 68.6 billion¹⁵. The total storage capacity established was 42,714 MT (94%) against the 45,000 MT target.

The value addition facilities installed include: 58 coffee hullers, 39 maize mills, 27 rice mills, 15 cassava mills and 7 bean seed sorters, 58 weighing scales, 64 moisture meters and 27 grain driers.

In relation to the FY2021/22, the MAAIF disbursed funds to all the targeted 38 grantees under

cohort 03 to support the value addition initiatives.

The beneficiaries were satisfied with the interventions and the details are presented per district as follows;

In Kikuube District: Wambabya Community Development Society in Kidoma Parish, Kizirafumbi Sub-County, Kikuube District; received a matching of the maize facility and milling machine. Construction started in 19th June 2021 with an expected end date of 31st January 2022. The total cost of the project was 219,843,225 (MAAIF contributed 148,343,725 and the cooperative contribution was 71,499,500). The storage facility was complete though cracks were visible on the floor and there was no ramp for PWDs; the toilet was incomplete as ventilation pipes were missing. The maize milling machine was not yet bought at the facility yet the season had started.

In Iganga District: Bulubandi farmers group located in Bulubandi Village and Parish, Nakigo Sub County in Iganga District composed of 480 members of whom 264 are female, received Ug shs 274,700,000 as GoU contribution towards construction, procurement, delivery, installation,

¹⁴ Utilisation of funds at the Farmer Organisations do not follow the financial years hence the monitored activities relate to the expenditures for FY2021/22.

¹⁵ The Government contributed Ug shs 46 billion while Farmer Organisations contributed Ug shs 22.6 billion

testing and commissioning of maize mill. As at 8th February, the testing and training of equipment users was ongoing having completed installation in January 2022. The installed equipment had a processing capacity of 600kg per hour. The users however noted that it was working at excess capacity due to inadequate capital to acquire the raw materials.

The beneficiaries were happy with the intervention as they only contributed 33% translating into Ug shs 135,300,000 to have the value addition facilities. The key benefit highlighted was the ability to add value to the farm produce. *“We are able to produce and sell maize bran as animal feed,”* said the chairperson of the farmers group.

Nakisenhe Adult Literacy Group (NALG) is located in Busowobi parish, Nakigo sub county in Iganga District is composed of 1262 members of whom 400 are female, with an approximate number of 12 disabled persons received a matching grant of Ug shs 267,906,200 as GoU contribution for establishing value additional facility including, procurement, delivery, installation, testing and commissioning of Maize mill.

As at 8th February 2022, the maize mill was operational with a capacity of 700Kgs per hour upon a temporary closure in January 2022 due to faulty UMEME meter. The facility was noted to operate at less than optimal in most part due to limited finance to acquire the raw materials. The group noted to have resolved to acquire credit from a commercial bank to boost their business.

The beneficiaries were somewhat satisfied as the equipment they received in comparison with what other groups had lacked cleaners and driers of the grain. *“We are manually and locally using wire mesh or nets for cleaning and using tarpaulin for drying... other groups at least had better suppliers of equipment.”* The Manager of the farmer group. The beneficiaries also highlighted the lack of transport equipment.

The farmers proposed that Government: -

- i.) Fast tracks and deepens crop finance and agriculture insurance among the farmer groups.
- ii.) Fast tracks and links farmers and farmer group to agriculture mechanisation equipment including tractors for ploughing
- iii.) Additional training of farmers in financial management practices



L-R: Packed processed maize flour and milling equipment installed at Bulubandi Farmers and Agro-Processors Cooperative

In Mbale District, Namanyonyi Farmers' Cooperative is located in Namanyonyi Centre A cell, Namanyonyi Nkoma ward, Northern Cell Division, Mbale City. This group is composed of 343 members as at 31st December 2021 with 193 females, of whom three were Persons with Disabilities (PWDs). The contribution from GoU was Ug shs 138,565,000. The structure was completed awaiting final delivery and installation of the value addition equipment. The quality of works was fairly done.



Substantially complete structure for post-harvest handling in Namanyonyi cell for Namanyonyi Farmers' Cooperative



Installed rice huller at Amuru Tek Livestock Cooperative Miller

In Amuru District, Amuru Tek Livestock Cooperative Miller located in Pogo Ward, Labilalom subward, Amuru Town Council is composed of 34 members, of whom 16 were women.

The group confirmed receipt of Ug shs 153 million GoU contribution for establishment and installation of processing equipment.

As at 13th January 2022, the equipment was installed. This however was not tested and commissioned due to lack of a transformer in the location to supply grid power to the facility.

In Serere District, Atiira Farmers' Cooperative Society is located in Apokoro Village, Atiira Parish and Atiira Sub-County is composed of 444 members of whom 322 are females (3 PWDs). The cooperative confirmed receipt of Ug shs 180

million towards establishing a facility and procurement, installation, testing and commissioning of the processing equipment. As at 10th February 2022, the structure was substantially complete awaiting the delivery and installation of the value addition equipment.

The quality of work was substandard as most ceiling and floor finishes had several cracks. The facility also lacked a power connection which was likely to affect installation, testing and commissioning.



Substantially completed value addition facility of Atiira Farmers' Cooperative Society in Serere District

3.3.3 Establish and rehabilitate existing agro-processing industries

The intervention contributes to the objective of Improving post-harvest handling and storage. During the FY2021/22, the planned outs included:

- Cotton seed processing factory and ancillary infrastructure completed
- Livestock breeding and storage facilities completed
- Value addition equipment provided to farmers
- 15 farmer (organizations) 30% women linkages supported to engage in supply contracts to value addition and processing plants
- Capacity building of Grains, Cassava, Fruits and Tea stakeholders. Potential sites operators and Joint ventures supported to obtain necessary approvals for investment
- 47 sets of micro agro value addition equipment for key enterprises procured and distributed
- Entebbe Dairy Training School (EDTS) revived with focus on enhancing dairy market access and value addition
- Rehabilitate milk collection centres

Findings of the two out of the five outputs for FY2021/22 are discussed below.

a) Cotton seed processing factory and ancillary infrastructure

The Cotton Development Organisation (CDO) completed the construction of the processed seed store and ancillary machine workshop in Akwara West village, Laput Sub-County, Pader District.

The store was operational with the eight gin stands fully installed and functioning. The maintenance equipment for workshop had however was not installed awaiting the supplier whose arrival was disrupted by COVID-19 safety restrictions in India and Uganda.

Construction works for the six units of staff quarters was similarly substantially complete pending final connection to the sewer system. The storage facilities for both processed cotton and raw seed cotton however remained insufficient at the cotton seed plant. The processing facility was also affected by rampant power outages.



L-R: Staff Houses at Pajule Ginning factory and complete processed seed stores in Pader District

b) Livestock breeding and storage facilities at NAGRC&DB completed

The breeding and storage facilities at the Livestock Experimental Station located in Old Entebbe Village Katabi Sub-County, Wakiso District was completed. The completed infrastructure included: one (1) feed storage facility for hay and silage, two (2) cowsheds, and one (1) spray race and biogas plant and all were operational.



NAGRC&DB new feed storage facility in use at LES in Katabi Sub-County, Wakiso District

The key challenge was shortage of land following the allocation of a part of the NAGRIC &DB land to Civil Aviation Authority for airport expansion. This was further exacerbated by the rampant encroachers.

c) Entebbe Dairy Training School (EDTS) revived with focus on enhancing dairy market access and value addition

Assorted equipment was installed and functional for milk reception, chilling, heat generation and milk processing. The milk processing factory at EDTS however was not fully functioning as some key equipment was not procured due to inadequate funding. Such equipment included the butter, ghee and milk parking machine among others. The factory also lacked the waste treatment line and was temporarily using soak pit.

Training of students in quality control and production of yoghurt continued albeit on small scale as the EDTS hostels were temporarily under use as COVID-19 isolation and treatment centres.



Installed processing equipment in operation at the DDA Entebbe Dairy Training School in Entebbe Municipality, Wakiso District

d) Milk collection centres rehabilitated

As at 31st December 2021 commencement of works was pending conclusion of the procurement process. Works were expected to commence in the second half of the Financial Year.

3.3.4 Improve the transportation and logistics infrastructure

This intervention contributes to the objective of improving post-harvest handling and storage through establishment of transport infrastructure. The planned outputs included:

- i.) Construction of 1 landing site at Nkusi on Bugala Island
- ii.) Construction of 2 landing sites in Buvuma and Buikwe districts
- iii.) Design and build of one ferry to improve transportation between Buvuma and Buikwe districts
- iv.) Maintenance of 60km of farm roads in Buvuma
- v.) Survey and design of 50km of access and farm roads in Buvuma
- vi.) Construction of 45km of access and farm roads in Buvuma

Semi-annual monitoring focused on Bugala Ferry Landing Site and ferry landing sites at Kiyindi and Buvuma:

i.) Construction of Bugala Ferry Landing Site

Project was behind schedule at 8% physical progress against more than 200%-time progress (behind schedule for more than two years). The project implemented by MAAIF under the National Oil Palm Program (NOPP) is located in Nkusi Village, Bujumba Sub-county.

The project was mainly affected by inadequate capacity of contractors. The first contractor hired by MAAIF in 2018 abandoned the site, while the second contractor hired in March 2020 also failed to undertake quality works, with the contractor attributing this to the rise in lake water levels, requiring review of the design, and adjustments to the layout plan for the access road and ancillary facilities.



Works at Bugala ferry landing site in Nkusi Village by MAAIF had stalled for more than three years (left) and ongoing construction works by UNRA whereby 90% of loading jetty was complete

By 31st December 2021, the landing site was still abandoned and all the machineries were left on the site. To address the challenge of water transportation, there was ongoing construction of an alternate landing site a few minutes away from the stalled site by the Uganda National Road

Authority (UNRA); the construction commenced in December 2021 with an expected completion of April 2022.

ii.) Ferry landing sites at Kiyindi and Buvuma

The works for design and build of two ferry landing sites at Kiyindi and Buvuma under NOPP commenced in June 2019 with an expected completion of May 2021.



Stalled works at Kiyindi landing site in Buikwe District

Overall, the project was behind schedule with a physical progress of 24.8% against over 100%-time progress. The slow progress was attributed to inadequate financial capacity of the contractor exacerbated by the change in scope from 500 tons to a 604-ton ferry. As at 31st

December 2021, the contractor was not on site at Buvuma landing site with only minor works completed.

Some of the completed works were establishment of the site, leveling and part provision of engineer's facilities, dredging of lake bed, and rock filling to construct the landing platform at Kiyindi landing site. At Buvuma landing, on the other hand the establishment of alternative access road to the existing landing platform to pave way for the construction of new platform was complete.

Challenges

- i) Inadequate financial capacity of contractors to timely complete the works.
- ii) Capacity gap in MAAIF in addition to lack of clear legal mandate to handle infrastructural works especially for roads and ferry landing sites.

Recommendations

- i) The MAAIF contracts committee should enhance due diligence during selection of contractors to ensure that only competent contractors are engaged.
- ii) The MAAIF should collaborate with MoWT/UNRA to handle the technical aspects of construction and supervision.

3.3.5 Equip regional farm centres

The intervention contributes to the Increase agro-processing and value addition objective through provision of specialised equipment.

The planned outputs for the intervention in FY2021/22 included:

- i.) A total of 100 tractors & matching implements procured & equitably distributed all regions of Uganda for agricultural mechanisation in an effort to boost agricultural production towards commercialisation.
- ii.) Spare parts for heavy equipment and additional sets of heavy (earth moving) equipment.
- iii.) Hydraulic excavators, drilling rigs, bulldozers with rippers, chain/wheel loaders, water bowsers, dump trucks, pickups, service vans, tandem rollers, procured
- iv.) 31 tractors procured by NAADS/OWC in the previous FY2020/21 distributed.
- v.) Eight pcs of heavy equipment and accessories and drilling rigs, 285 tractors/implements, Motor vehicles procured.

Monitoring of this intervention focused on distribution of tractors procured using funds for FY2020/21.

i.) Tractors distributed among benefiting districts

The GoU through NAADS delivered 16 tractors to different DLGs by the Engineering Solutions (U) Ltd at a cost of Ug shs 191,314,123 during the period under review (Table 3.10).

The procurement initiated in FY2020/21 was not fully complete with 15 tractors not yet delivered to the beneficiary LGs/Regions. Further analysis revealed regional disparity among the allocated tractors with the Eastern Region not benefiting from the 31 tractors (Table 3.11).

Table 3.11: Beneficiary district, group, and status of delivery

Beneficiary District/Location	Beneficiary Group	No. of Delivered Tractors	No. of tractors not yet delivered	Grand Total
<i>BUNYANGABU DISTRICT</i>	Balema Kweyamba Group, Rwimi Town Council		1	1
	Chris Nyamutale Rugumayo, Kiyombya Sub-County		1	1
	Kaina Mixed Farm, Kibitito Sub-County		1	1
	Kalya Courts Farm Ltd, Busheesi Sub-County		1	1
	Kasaija EDKA Co. Ltd, Kisomoro Sub-County		1	1
<i>CHURCH OF UGANDA</i>	Church of Uganda	3		3
<i>FORTPORTAL</i>	Toro Kingdom	2		2
<i>GULU</i>	Gulu Archdiocese - Cassava Project	3		3
<i>ISINGIRO</i>	Rumuli Dairy Farmers	1		1
<i>ISINGIRO</i>	Sisters of Our Lady of Good Counsel, Kyabirikwa Farm	1		1
<i>KAABONG</i>	Nangeeny Farmers Group	1		1
<i>KAMWENGE</i>	Biguli Dairy Cooperative		1	1

Beneficiary District/Location	Beneficiary Group	No. of Delivered Tractors	No. of tractors not yet delivered	Grand Total
	Society in Biguli Sub-County			
	Biguli/Kirunda Mixed Farmers		1	1
	Bihanga Dairy Farmer Cooperative Society Ltd		1	1
	Kabambiro Progressive Maize Farmers' Cooperative Society in Kabambiro Sub-County		1	1
	Kamwenge district farmers OrganiSation in Kahunge Sub-County		1	1
KAZO	Sanga Meat Co Ltd	1		1
KIRUHURA	Mutanoga Farm	1		1
	Tomosi Farm	1		1
KITAGWENDA	Kakasi Farmers Group in Kakasi Sub-county		1	1
	Kitagwenda Masons Development Association in Kicwamba Ward		1	1
	Kitagwenda United Farmers' Association, Kanara Sub County		1	1
	Nshanju Tweyombeke Group Nyabbani Sub-County		1	1
	The John Charity Foundation Uganda Mahyoro Sub-County		1	1
LIRA	All Saints University, Lira	2		2
Grand Total		16	15	31

Source: NAADS Secretariat 2022

3.3.6 Construct and regularly maintain community access and feeder roads for market access

This intervention supports market access through construction of transport infrastructure. The planned outputs for FY2021/22 included:

- a) Opening up and improving the 25 Farm access roads in selected districts
- b) 85km of farm access roads opened
- c) 150km of farm access roads improved
- d) Construction of 45km of access and farm roads in Buvuma
- e) Maintenance of 60km of farm roads in Buvuma
- f) Survey and design of 50km of access and farm roads in Buvuma
- g) 90 metres of a paved access road constructed at Entebbe Dairy Training School

- h) 40km of farm roads were maintained in Kalangala hub
- i) 1,011.7km of road chokes constructed

The semiannual monitoring focused on the opening and improving of roads to enhance farm and market access implemented by MAAIF under the different sub sub-programmes subsequently presented.

i.) Improving Access and Use of Agricultural Equipment and Mechanisation sub sub-programme

The semi-annual target of opening up and improving the 25 farm access roads¹⁶ in Sironko, Kayunga, Kiruhura, Wakiso, Kumi, Nakasongola, Mukono, Mpigi, Buvuma, Kalangala, Abim, Mayuge, Jinja, Nwoya, Isingiro, Serere, Bulambuli, Sembabule, Kiruhura, Kazo, Rwampara, Lyantonde, Mbarara, Apac, and Dokolo was met. A total of 65km of the 85km annual was completed.



Completed community access road in Mataba Village, Kayunga District under a MAAIF project

The monitoring team visited Kayunga to verify the completed works. Kayunga District confirmed that MAAIF constructed a murram road in Mataba Village, Nsotoka Parish, Kayunga Sub-County in Kayunga District.

The road improved accessibility to farms and markets for farm produce in addition to schools, and health centers.

The key challenge was the limited prioritisation of funding by the districts for routine and periodic maintenance of such centrally constructed roads. Consequently, the farmers occasionally removed weeds from small portions of the road.

i.) National Oil Palm Project- Access road component

As at 31st December 2021, the survey of the roads to be demarcated as farm roads was completed in Buvuma District. Maintenance of 60km of farm roads in Buvuma however was not achieved.

In Kalangala Hub, a total of 16.5km of farm roads were maintained out of the annual targeted 40kms. The low achievement (41%) was attributed to the denial of approval from the IFAD to support the maintenance works of the roads. This led to reduction in scope in line with the GoU allocated funds.

¹⁶ Data expressed in total kms completed was not readily available

ii.) Access road under the Dairy Development Authority constructed

As at 31st December 2021, the Entebbe Dairy Training School under DDA, achieved 89.46 metres out of the targeted 90 metres of a paved access road at a cost of Ug shs 113 million to serve the factory premises.

This was completed in preparation for the incubation in Entebbe Dairy Training School as well as improve environment for handling of milk and milk products.

The beneficiaries were happy with the intervention as it eliminated dust which was a media of microbial carrier and growth.



Completed access road to serve Entebbe Dairy Training School and Factory in Entebbe Municipality in Wakiso District

iii.) Agriculture Cluster Development Project (ACDP)- Road chokes component

As at 31st December 2021, a cumulative 244.3km (24%) of road chokes were either fully complete or substantially complete under the different clusters out of the targeted 1,011.7km aimed at enhancing farm and market access among the 57 benefiting districts (**Table 3.12**).

A total of 353.4km out of the 1,011.7km were at contract signing stage¹⁷ while 414km were at bid evaluation stage.¹⁸

¹⁷ To be undertaken in the districts of Kyotera, Masaka, Bugiri, Namutumba, Gulu, Nwoya, Rukiga, Rubanda, Arua, Maracha, Yumbe, Kumi, Kibaale, Bushenyi, Isingiro, Kabale, Kakumiro, Rakai

¹⁸ To be under taken in the districts of Butaleja, Tororo, Butebo, Pallisa, Kapchorwa, Mbale, Bukwo, Serere, Soroti, Apac, Kwania, Dokolo, Lira, Kole, Oyam, Bunyangabu, Kabarole, Kamwenge, Kitagwenda, Kasese, Kasanda, Mubende, Kyegegwa, Kyenjojo, Hoima, Kagadi, Kikuube, Kiryandongo, Masindi

Table 3.12: Phase I: List of Road Chokes under rehabilitation in the Seven Districts

S/No.	Cluster/Dist Name	Contract Ref:	Road Name	Sub-County(ies)	Road Length (km)	Contractor	Remarks
1	Cluster 1 - Kalungu	KAL 598-ACDP/WRKS/2019-20/00011	Zzawa – Kiggundu Road	Kyamulibwa	2.6	Victoria Construction Ltd	Complete
			Nabutongwa–Kalonsiro-Kyamusoke – Kiranga Road	Kalungu	8.7		
			Lusango – Mitete Road	Bukulula	2.5		
			Kabaale – Buwanida – Kigaaju Road	Lwabenge	8		
			Kijjomanji – Namangome – Bwajo Road	Kalungu	3		
			Kitaabona – Namasavu Road	Bukulula	4.5		
			District Total				
2	Cluster 2 - Iganga	Iganga510-ACDP/WRK/2019-20/00071	Mwendanfuko – Bukoona Road	Namungalwe/Nakalama	7.2	Afro General Builders & Carpentry (U) Ltd	Complete
			Nabitende – Mwiira – Nasuti Road	Nabitende/Nasuti	4.9		
			Nakirulwe – Bukonko – Nawanyingi Road	Nawanyingi	8.7		
			Bwanalira – Bubaka – Mawagala Road	Bulamagi	8.2		
			Butende – Ibulanku -Buyebe-Idudi Road	Buyanga/Ibulanku	12.5		
			Namungalwe – Bukoona Road	Namungalwe/Nakalama	9.7		
			Nabitende-Buwongo Road	Nambale	8.5		
			District Total				

S/No.	Cluster/Dist Name	Contract Ref:	Road Name	Sub-County(ies)	Road Length (km)	Contractor	Remarks
3	Cluster 6 - Amuru	Amuru570-ACDP/WRK/2019-20/00001	Parabongo – Gurguru Road	Lamogi	9.6	Wilen Construction (U) Ltd	95% overall physical Performance
			State Farm-Okalocwan-Okojo - Apar Road	Pabo	35		
			Amoyokuma - Acodo Road	Amuru	8		
			Muruli - Pacilo Road	Atiak	4		
			District Total				
4	Cluster 11 - Ntungamo	598-NTUNGAMO ACDP/WRKS/2019-20/00011	Ruzinga-Rwazina-Igorora Road	Nyakyera	7.2	Shataman Contractors (U) Ltd	90% overall physical Performance
			Kyenjubu-Kakanena-Kikoba-Ekitengye-Kasana-Ekikona-Murambi Stage 2-Ibaare Road	Rugarama	15.4		
			Rwemiriro - Dembe Road	Ruhama East	5.5		
			Nyakariri-Kabanda-Kashenyi Road	Ngoma	7.6		
			Katokye-Kyenjojo Road	Rwikiniro	8.6		
			Omungyenye -Nyamunuka- Ahamuyaga Road	Rubaare	4.8		
			Kikonje-Rwanda HC-Bucence Road	Bwongyera	5		
District Total				54.1			
5	Cluster 12 - Nebbi	Nebbi545-ACDP/WRK/2019-20/00048	Omyer Atyak Road	Nebbi	5.7	Rukooge Enterprises Ltd	87% overall physical Performance
			Parombo - Anyang - Ossi Road	Pabo	8		
			Omyer Koch Road	Nebbi	4.1		
			Kuchwiny - Asili Road	Atiak	12.5		
			Pacego - Pagwaya Road	Panyango	7		
			Akella - Cikithi - Marama Road	Pakwach	7.3		
			District Total				
GRAND TOTAL				244.3			

Source: MAAIF, ACDP Q2 Progress Report FY2021/22

Challenges

- Budget suppressions leading to a scale down of the planned road chokes in the different benefiting districts. The Budget for Mbale was reduced from Ug shs 6.4billion to Ug shs 1billion.
- Procurement delays affecting commencement of works at various sites.

Recommendations

- MAAIF should reprioritise funding to ensure that the farm and market access roads are complete.
- MAAIF ACDP Project Implementation Unit should fast track procurements in addition to adoption of a recommended practice of early initiation of procurements.

3.3.7 Conclusion

Overall performance of storage, Agro-Processing and Value Addition Sub-Programme was fair with 66% of the planned outputs achieved.

Fair performance was attributed to the mixed performance recorded by the sub-programme components. Value addition and processing facilities performed better than the farm and market access components.

The value addition facilities enhanced storage capacity and contributed to reduction of post-harvest losses for priority commodities such as maize, rice, and coffee among others. The agro processing and value addition will spur export trade and increase the percentage of processed agriculture exports to total exports of key items such as cotton, diary and dairy products among the neighbouring countries of Kenya, Democratic Republic Congo (DRC), and South Sudan among other countries engaged international trade.

The farm and market access roads however remains a key challenge with majority not motorable, the planned works remain slow characterised by late initiation of procurement for construction road chokes. The district local governments lack commitment to allocate funds for periodic and routine maintenance of centrally completed projects.

The component of transport infrastructure is also affected by limited coordination between the service delivery entities and the institutions with a legal mandate to develop, maintain, and offer policy guidance. This leads to stalling of projects and or implementation of substandard projects. Access to agriculture mechanisation equipment such as tractors to spar commercialisation remains low.

These constraints if not timely addressed will undo the gains registered from the establishment of storage and value addition facilities.

Recommendations

- i) The MAAIF Accounting officer should prevail on the Project Implementation Units to ensure timely initiation of procurements. The Contracts Committees should ensure due diligence is executed to limit selection of contractors without capacity.
- ii) The MAAIF, URF, and LGs should implement the road access component in a programme mode with clear responsibilities. The MAAIF should in addition have an official hand over of the centrally implemented roads to the LGs to allow for allocation of maintenance budgets for such roads for enhanced. The MAAIF should in addition collaborate with MoWT/UNRA to handle the technical aspects of construction and supervision.

- iii) NAADS/OWC should prioritise acquisition and timely distribution of tractors to the regional districts to spur agriculture commercialisation.

3.4 Agricultural Market Access and Competitiveness Sub-Programme

3.4.1 Introduction

The GoU aims to increase market access and competitiveness of agricultural products in domestic and international markets through five key interventions: i) strengthening enforcement and adherence to product quality requirements; ii) digitalising acquisition and distribution of agricultural market information; iii) improving agricultural market infrastructure in rural and urban areas; iv) improving transportation and logistics facilities for effective product marketing and v) strengthening capacities of public institutions to access international markets.

During the FY2021/22, the sub-programme was allocated Ug shs 78.150 billion¹⁹ representing 4% of the Agro-Industrialisation budget. A total of Ug shs 31.415 billion (40%) was released and Ug shs 28.247 billion (90%) spent as at 31st December 2021.

The monitoring work focused on the three out of the five interventions for which significant investments were made and information was available. Key implementing agencies for this sub-programme included: Uganda National Bureau of Standards (UNBS); Ministry of Local Government (MoLG); MAAIF; UCDA; DDA and CDO.

Performance

The performance of the sub-programme was very good at 93% of outputs achieved.

All the three interventions were on track (Table 3.13). The construction works were either complete or ongoing. The completed infrastructure was gender and equity compliant as they had baby care centres and ramps for easy access to the building.

The completed infrastructure greatly improved the working environment of the vendors in the various parts of the country. *Market development was on course with enforcement of quality standards ongoing and markets handed over for use.*

Promotion of priority agriculture products in the domestic and international markets continued including regulation activities to ensure adherence to quality standards and construction of quality management Laboratories was similarly on course. *(Refer to Annex 4 for details of sub-programme and intervention, and outputs performance.)*

Table 3.13: Performance of the selected interventions of Agricultural Market Access and Competitiveness Sub-Programme

Intervention	Performance	Remark
Improve agricultural market infrastructure in rural and urban	On track	75% of the reviewed markets were complete. 25% of the markets were behind schedule but ongoing.

¹⁹ The value excludes multiyear contracts for establishment of markets in the country under th MATIP-2

Intervention	Performance	Remark
areas		
Strengthen enforcement and adherence to product quality requirements	On track	Establishment lab infrastructure to quality testing were ongoing and enforcements, inspections undertaken.
Strengthen capacities of public institutions in analysis, negotiation and development of international market opportunities particularly for the selected commodities	On track	Dairy and dairy products registered a favorable balance of trade.
Average performance	On track	All interventions on track.

Source: Field findings, Authors' Calculations

Details of performance of the three out of five interventions of Agricultural Market Access and Competitiveness Sub-Programme.

3.4.2 Strengthen enforcement, and adherence to product quality requirements

The intervention composed of four sub interventions of enforcement of product certification; regulation of cross border informal trade in agro-products.; Renovation, construction and equipping certification laboratory facilities in various strategic locations; Training farmers and manufacturers on sanitary and phytosanitary standards. It contributes to the objective of increasing market access and competitiveness of agricultural products in domestic and international markets.

The planned outputs for FY2021/22 included:

- i. National Metrology Laboratory constructed and equipped at UNBS headquarters
- ii. National Dairy Analytical Laboratory (NDAL) rehabilitated at Lugogo
- iii. National Seed Testing and Certification Laboratory constructed and rehabilitated at Kawanda
- iv. Agricultural products including milk and milk products, cotton, coffee regulated and certified
- v. Strengthen the Sanitary, Phytosanitary (SPS) and Quality Infrastructure to meet the export requirements.
- vi. Support Uganda National Bureau of Standards (UNBS) and DDA in ensuring standardisation of quality across commodities
- vii. Calibrated equipment in 4 labs at UCDA, Offices on Jinja Road, Lugogo, Bushenyi and Iganga

Semi-annual monitoring monitored five out of the seven planned outputs for the FY2021/22. The findings are subsequently presented.

i.) National Metrology Laboratory constructed and equipped at UNBS headquarters

As at 10th February 2022, the progress was 65% against the annual target of 90%. Financial progress on the other hand was 93%, against the allocation of Ug shs 2.976 billion.

The works at site located in Butto Village, Kira Municipality in Wakiso District was slightly behind schedule in part due to disruptions of rainfall and COVID-19 pandemic lock down when workers were unable to report on duty.

The laboratory at completion will ensure accurate measurements and calibration of all equipment and packaging used in the certification of agro-products and testing for accuracy of food compositions.



MAAIF financed National Metrology Laboratory was under construction at the UNBS Headquarters in Wakiso District

ii.) National Dairy Analytical Laboratory (NDAL) rehabilitated at Lugogo

As at 31st December 2021, the rehabilitation of the National Dairy Analytical Laboratory (NDAL) located in Lugogo UMA Show Grounds in Nakawa Division Kampala district was completed and functional.

The laboratory was also equipped and provided with reagents to effectively offer testing of milk and milk products for quality and safety and compliance to export standards.

The performance of the NDAL was partly affected by limited maintenance budget for the testing equipment; budget suppression; delayed disbursement of funds for reagents leading to limited testing of samples; and inadequate laboratory technicians especially for the regional mini-labs in Mbarara, Gulu, Soroti and Kiboga.



Equipment procured and under use at NDAL for analysing content of milk and milk products

iii.) National Seed Testing and Certification Laboratory constructed and rehabilitated at Kawanda

The physical progress was estimated at 30%. The contractor was on site located in Kawanda at the NARL premises undertaking construction works.



iv.) Quality regulation and certification of agricultural products

As at 31st December 2021, the DDA inspected a total of 507 targeted milk handling premises and executed the targeted 18 enforcement operations country wide to ensure adherence to food safety and handling standards.

National Seed Testing and Certification Laboratory under construction at NARL in Wakiso District

Inspection and enforcement operations targeted milk transporters using un-recommended milk handling utensils/equipment; milk and milk products adulteration and handling milk in unsuitable premises among other standards.

v.) Importers of agrochemicals and other business licensed

A total of 852 businesses were registered and licensed countrywide. These included: exporters and importers, dairy equipment dealers, milk processors, transporters, milk premises and MCCs. It was however established that informal sector/trade persists thus disrupting the entire value chain.

The MAAIF AVCP supported the UNBS to improve licensing of importers of agro-chemicals and evaluation of agro-chemicals. Among the key activities that were financed were support to activities of seed release, seed policy, field crop inspection of early generation, and certified seed. Other key interventions such as production of agro-chemical manual and collection of seed samples for laboratory testing were not implemented as the funds were not released.

vi.) Enforcement operations conducted

The Ministry, through the Support to Sustainable Fisheries Development sub sub-programme under MAAIF, undertook 1,000 the targeted enforcement operations by 20 Fisheries Protection Force (FPF) to strengthen adherence to fisheries rules and regulations, product quality standards and grades along the major bodies in Uganda.

This was mainly in areas of Dolwe, Jinja, Buvuma, Mukono, Wakiso, Mpigi, Mayuge, Masaka, Kalangala, Masaka Roads/ Landing site, Kasese, Nakasongola, Amolatar, Kwania, Kayunga, Rwenshama and ruburizi. This which led to a reduction in illegal fishing methods and gears.

UCDA inspected the targeted 874 factories, 780 stores, 20 coffee roasters & 15 grading units across the country for purposes of enforcement of coffee quality standards and regulations,

The UCDA taskforce meeting were conducted in Greater Masaka, Elgon, Eastern, and in Western regions to enforce coffee regulations on poor post-harvest handling practices. Consequently, the factories in the districts of Kamuli, Jinja, Bugiri, Namutuba and Iganga were temporarily closed to further prevent harvesting of green leaf.

Relately, DDA inspected 507 milk handling premises in areas of Kiruhura, Kazo, Ibanda, Mbarara, Isingiro, Sembabule, Lyantonde, Mpigi, Butambala, Gomba, Sembabule, Kampala, Wakiso, Tororo, Malaba, Butaleja, Busia, Kiboga, Kyankwanzi and Masindi districts. The enforcements under Dairy Development Authority were not effectively completed due to budget suppression and COVID-19 restriction on movements that affected implementation of activities.

3.4.3 Improve agricultural market infrastructure in rural and urban areas

Introduction

This intervention contributes to the objective of increasing market access and competitiveness of agricultural products in domestic and international markets. This intervention among others seeks to contribute to among others poverty eradication and economic growth of Uganda through commercialisation of agricultural produce and other merchandise.

The planned outputs for FY2021/22 included:

- i) Twelve (12) markets redeveloped including clinics, day care centres, water and sanitation system, installation of high value addition equipment in 12 Urban Councils of Arua, Busia, Entebbe, Kabale, Kases, Kitgum, Lugazi, Masaka, Mbarara, Moroto, Soroti and Tororo.
- ii) Livestock market infrastructure in the project districts developed and established under Regional Pastoral Livelihood Improvement Project.
- iii) Construction of 12 markets, 12 s/sheds/ 3 auction grounds, 3 b/check concluded.
- iv) Procurements initiated for 7 agricultural markets & related value addition infrastructure (i.e Kamwenge central market, two rural agricultural markets in Kasese, katiri market & Bisanga Market in Kasese MC, Rwiamba market in Kabarole, Nyakigumba road side market in Bunyangabu, & warehouse and stores in Rwimi, Businga TC border market in Bundibugyo).

Semi-annual monitoring focused on one of the four planned outs which had verifiable outputs on the ground.

- i) **Twelve (12) markets redeveloped in 12 Urban Councils of Arua, Busia, Entebbe, Kabale, Kases, Kitgum, Lugazi, Masaka, Mbarara, Moroto, Soroti and Tororo**

Overall the project is behind schedule characterised by several requests for extensions at different project sites. As at 1st February 2022 however the construction of nine²⁰ out of the 12

²⁰ Lugazi, Kitoro Entebbe, Tororo, Busia, Kasese, Mbarara, Moroto, Soroti

markets(75%) were completed and operationalised/near operationalisation and the remaining three²¹ were at varying stages of completion.

In the majority of these markets, more than 50% of the market stalls were occupied by vendors trading in fresh and semi-processed agricultural produce and market functionality varied from one facility to another. There were several barriers in the markets that negatively affected the effective use of the facilities as described below.

For example, Kasese Central Market was commissioned in December 2020 and relocation of market vendors was completed in November 2021.

The market functionality was lower as vendors experienced challenges of high losses of perishable foods due to the poor design of the market that allowed in too much sunshine and rains; low sales due to poor accessibility to some stalls by customers as a result of inadequate walkways and stairs to some parts of the market; unhygienic environment due to poor disposal of garbage.

Functionality was further affected by a management gap in the market as three committee members of the Market Vendors Association had left the market due to high stall rental fees, while one had passed on leaving a vacuum in managing the affairs of the market.



Kasese Central Market in Kasese Municipality: umbrellas used as a temporary measure to protect foods from the scorching sunshine (left), and garbage disposal problem in the market (right)

Completion of civil works of Masaka Central Market in Katwe Parish, Nyendo Mukungwe Division Masaka City was two years behind schedule. The original contract period was 14th February 2018 to 14th February 2020. Three time extensions were granted to complete the civil works that expired on 31st December 2021. By 28th January 2022, there was no valid

²¹ Masaka, Kitgum and Kabale

construction contract (as the contract period had expired) but civil works were continuing and at 85% completion; a process to renew the contract was underway.

The time lag in completion of civil works was due to multiple challenges including: delayed transfer of public utility services from the construction site by UMEME and NWSC; delayed approval of a soil disposal from the site by NEMA; and several variations in scope of works by the key stakeholders at site meetings. The Market Vendors Association Committee was composed of nine members (2 females and 6 males; 1 youth).

Construction of Mbarara Central Market was at 99.5% completion by 21st January 2022, having delayed by one year due to cash flow challenges faced by the Contractor ROKO Construction Company and the COVID-19 pandemic that affected importation of key equipment and construction materials.



Construction of Mbarara Central Market in Muti Cell, South Division, Mbarara City was completed and facility was ready for use

The project was also affected by a court case in Mbarara High Court where about 160 people claimed that they were forcefully evicted without compensation from the land where the market was constructed. The case was yet to be concluded. As at 31st January 2022, Mbarara City had registered a total of 1,690 vendors who expressed interest to occupy the market that had a capacity for 900 vendors. This implied that a limited capacity of the constructed market compared to the demand. Allocations had commenced with 180 stalls allocated to sale of agricultural produce.

Civil works for Kabale Central Market in Central Division, Central Ward, Kabale Municipality in Kabale District were planned to be implemented from 20th December, 2019 to 20th December 2021. The works were behind schedule at 88% completion by 1st February 2022. Key challenges to project implementation were: the COVID-19 pandemic and associated lockdowns that affected delivery of materials and availability of workers on site; and heavy rains that weakened parts of the sub-structure and washed away access roads to construction materials.



Kabale Central Market in Kabale Municipality: external view of ongoing construction works (left) and internal view of completed stalls (right)

The GoU also invested in the establishment of Soroti Market. By 9th February 2022, the market was completed and technical hand over done. Category one vendors (those who had constructed own lock ups in the old market) were allocated the market in November 2021 and given a grace period of three months without paying rent. The Soroti City Council had not yet discussed rental dues with the market vendors’ representatives and approved them for implementation.

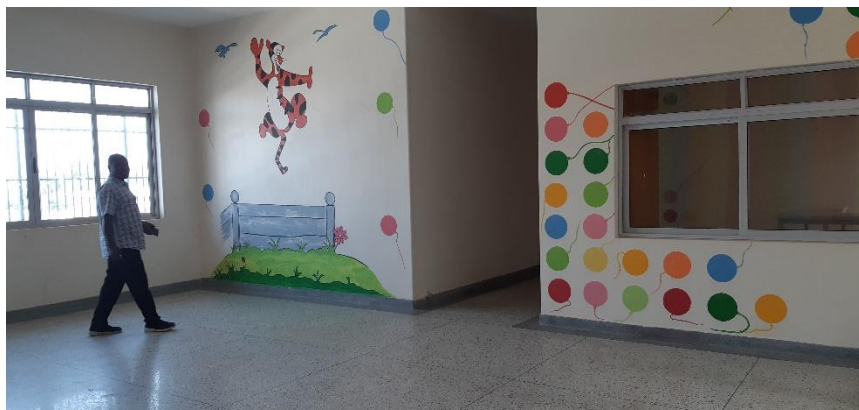
In terms of access and use; the vendors and the community including those with the disabilities could access the market. The vendors were happy with the intervention as it improved their working environment. They were however concerned about the rental rates that Soroti City Council had not approved and the poor management of garbage in the city. All garbage in the city was collected at the market area.

The management of the market identified a number of snags as at 9th February, 2022 that needed rectification including; *CCTV cameras that were not working, some sections had a leaking roof. The market also lacked a standby generator to ensure reliable power supply for the cold rooms to enable preservation of the perishable items.*

Development of Arua Market: As at 31st December 2021, the market had been completed though no official hand over to the Arua City Council was done. The market has a total 2,474 stalls of which 1,900 were allocated in the first lot. As at January 2022, the rental dues had been approved by the Arua City Council and the allocated vendors started payments for the three months’ period which would translate into a five months’ rent including the two-month grace period. As at January 2022 however the snag of reinstallation of the locks for the stalls was not done.

The completed market had provision for a day care centre to address the gender reproductive roles. The facility however was not equipped with beds and play toys for the children.

A ramp was also provided to enhance access to all persons including those with disabilities.



Baby care centre in Arua Market



L-R: Completed stalls in the restaurant area and ramp to cater for PWDs

3.4.4 Strengthen capacity of public institutions in analysis, negotiation and development of domestic, regional and international market opportunities for selected commodities

Introduction

This intervention contributes to the objective of increasing market access and competitiveness of agricultural products in domestic and international markets. It involves Uganda's Bilateral engagements/diplomatic missions to promote Ugandan products abroad.

The planned outputs for FY2021/22 included:

- i.) Dairy products promoted abroad
- ii.) Construct livestock quarantine centres to facilitate quality of beef animals destined for slaughter by the abattoirs for regional and international markets.

Semiannual monitoring focused on one out of the two planned outputs.

i.) Dairy products promoted abroad

As at 31st December 2021, the DDA contributed to the marketing of milk, and facilitated increased international trade of dairy products. Uganda exported more dairy products both in quantity and value than it imported, hence a favorable balance of trade.

In the dairy subsector, the export value of milk products totaled Ug shs 148,119,531,050. The products included milk cream, butter, cheese, UHT and yoghurt. Conversely the import value

totaled Ug shs 2,802,823,303. The imported products included; diary machinery, parts of milking machines, refrigerating equipment among others.

In relation to markets, most of the products were exported to Kenya and South Sudan while imports were mainly from Netherlands, Kenya and United Arab Emirates. The highest value of imports was from Netherlands, while the lowest value was from Nigeria (**Table 3.14**). The COVID-19 pandemic however disrupted the diary global supply chain.

Table 3.14: Dairy imports per product by 31st December 2021

Country of Import Origin	Quantity	Sum of Ug shs	Products Imported
Netherlands	44,202	924,924,582	Milk powder, Cheese, Yoghurt, butter
Kenya	70,236	795,583,969	Milk powder, Cheese, UHT, Yoghurt, butter
United Arab Emirates	23,639	267,390,249	Butter, Cheese, UHT, Milk powder
South Africa	41,029	207,459,382	Milk powder, Cheese
United Kingdom	3,546	84,199,493	Milk powder, Cheese, UHT, Yoghurt
Belgium	7,032	82,869,417	Butter, Cheese, UHT, Yoghurt
Germany	3,759	72,764,881	Butter, Cheese, Milk powder
France	5,107	68,626,897	Cheese, Butter, Milk powder, UHT
Italy	4,423	65,778,374	Cheese
Poland	14,026	60,701,053	Cheese, UHT
Austria	1,810	39,879,982	Cheese
Denmark	1,678	27,797,456	Cheese, Milk powder
China	16,914	27,163,658	Butter, Yoghurt, UHT, Milk powder
South Sudan	966	21,720,771	Milk powder, UHT, Yoghurt
Switzerland	480	21,078,933	Milk powder
US	1,481	11,945,988	Milk powder, Cheese
Ireland	432	8,888,209	Milk powder
India	787	7,887,922	Butter, Cheese, Milk powder
Malaysia	1,506	5,072,083	Milk powder, UHT
Lebanon	85	353,678	Cheese
Thailand	96	307,422	Yoghurt, UHT
Greece	30	174,991	Cheese
Sweden	10	145,568	Milk powder
Nigeria	6	108,345	Milk powder
Grand Total	243,280	2,802,823,303	

Source: DDA

3.4.5 Conclusion

The performance of the sub-programme was very good at 93% of outputs achieved. The completed infrastructure was gender and equity compliant as they had baby care centres and ramps for easy access to the building.

The testing and certification infrastructure and the ancillary efforts of inspections, registration, licensing and enforcement of standards contributed to the improvement of competitiveness of agricultural products in domestic and international markets.

The established markets especially at the border districts improved the working environment of the vendors in the various parts of the country and served to promote domestic and international market. If the efforts are sustained, the favorable balance of trade realized under diary and dairy products can be replicated among other priority agriculture products.

The persistence of informal sector especially among importers and traders of agriculture products however undermines quality control of products. Limited financial capacity of contractors exacerbated by the COVID-19 disruptions affected timely completion of the market infrastructure at the different boarder districts. Its critical to address the binding constraints to the sub programme.

Recommendations

- i.) The MAAIF, MoTIC and UNBS should strengthen regulation, inspection and registration of traders to ensure importation and exportation of quality products.
- ii.) The MAAIF, MoLG and other programme players should enhance due diligence during selection of contractors to ensure that only contractors with the desired financial and technical capacity are contracted. For the ongoing contracts, The MoLG-MATIP-2 should prevail on the contractors to ensure timely completion of the works.
- iii.) The MoLG-MATIP-2 together with urban authorities and vendors should equip the markets with facilities for day care such as Beds, among others.

3.5 Agricultural Financing

3.5.1 Introduction

The Government aims to increase the mobilisation, equitable access, and utilisation of agricultural finance for farmers, agro-processing firms and farmer groups. Six interventions are to be implemented, namely to: i) Develop concessional long-term financing for agricultural infrastructure and capital investments ii) Facilitate organic bottom-up formation of farmer groups (including youth) and cooperatives (production, collective marketing, provision of financial services and savings mobilisation) iii) Finalize and implement the Agricultural Finance and Insurance Policy.

Other interventions are; iv) Review tax levies and other incentives on agricultural insurance products to encourage uptake by farmers v) Strengthen existing agricultural commodity price stabilization mechanisms for commodities that are vulnerable to high price fluctuations particularly grains, cotton and dairy vi) Support women farmers to transition to agro-business, export trade, and more profitable agricultural enterprises, including skilling and financial incentives.

During the FY2021/22, the sub-programme was allocated Ug shs 101.871 billion²² representing 6% of the Agro-Industrialization budget. Absorption was higher for the ACF grant with all the visited beneficiaries acknowledging receipt of the disbursed funds. Agro-processing financing recorded low absorption with only 19% absorbed²³.

Monitoring focused on the intervention for development of concessional long term financing for agricultural infrastructure and capital investments, which had the bulk of the funds.

Performance

The overall performance of the agriculture financing sub-programme fair at 55% of the semi-annual targets achieved. The component for Agriculture financing under the Bank of Uganda (BoU) performed better than Agriculture Financing under the Uganda Development Corporation (UDC) (Table 3.15).

As at 31st December 2021, a total of 232 projects were funded under the Agriculture Credit Facility where farmers accessed medium to long term financing for agricultural related investments.

Access to finance under the UDC by the companies engaged in agro-processing, was low partly due delays in completion of the investment procedures including the registration and incorporation of the Special Purpose Vehicles (SPV). (*Refer to Annex 5 for details of sub-programme and intervention, and outputs performance.*)

Table 3.15: Performance of the selected interventions of Agricultural Financing Sub-programme

Intervention	Performance	Remark
Agriculture financing- Agriculture credit offered to farmers under the Bank of Uganda	Achieved	The loan requirements were met
Agriculture financing- Agro-processing factories financed under the Uganda Development Corporation	On track	Funds disbursed. This intervention nearly went off track due procedural delays in acquisition of equity.

Source: Field findings

Detailed performance of the intervention is subsequently presented. The detailed planned outputs and performance are presented in annex 4 of this report.

²² The allocation excludes any funds associated with the Finalisation and implementation of the Agricultural Finance and insurance Policy under MoFPED which was not reviewed

²³ The UDC funds absorbed totaled to Ug shs 27,318,010,760 against Ug shs 143,589,749,446 released to the UDC including the balance brought forward from FY2019/20

3.5.2 Develop concessional long term financing for agricultural infrastructure and capital investments

The intervention has two main sub-interventions which are:

- i.) Agricultural credit Facility (ACF) to fund all levels of the agriculture value chains
- ii.) Increase the pool of funds available for agricultural lending including women youths and rural populations under the Uganda Development Corporation (UDC).

The planned outputs for FY2021/22 included:

- i.) Farmers supported with agriculture credit
- ii.) Equity/shareholding of 30% acquired in Mutuma Commercial Agencies Ltd
- iii.) Equity/shareholding of 30% acquired in Budadiri Arabica Coffee Ltd
- iv.) Vehicle procured for Mabale Tea Factory
- v.) Supplied and installed additional processing equipment, and fruits procured at Soroti Fruit Factory
- vi.) Equity acquired in Nwoya Fruit factory
- vii.) 1,500 acres of land planted with tea in Kabale and Kisoro under the supervision of UDC for Kabale Tea Growers
- viii.) Acquired 10 acres of titled land for the construction of the cocoa factory in Bundibugyo

Monitoring reviewed all the listed outputs and findings are presented hereafter.

i) Farmers supported with agriculture credit under Agricultural Credit Facility(ACF)

The ACF is a risk sharing public-private partnership that provides medium and long-term financing since 2009 to farmers to undertake agricultural projects, agro-processing and grain trade at subsidised interest rates. The ACF leverages resources of Participating Financial Institutions (PFIs) to bridge the financing gap, interest chargeable being 12% per annum with exception of working capital for grain trade that is chargeable 15% per annum. Block allocations of Ug shs 20 million are provided to micro-borrowers who often lack collateral.

The ACF continues to be one of the key drivers for the transformation of the Agro-Industrialisation Programme. The success of the scheme is attributed to the critical Government intervention and private sector funding, complemented by the oversight of the Bank of Uganda (BoU) in a public-private partnership that is cost-efficient (BoU Progress Report, FY 2021/22).

Cumulatively, between FY 2009/10 and 31st December 2021, a total of 2,215 loan applications amounting to Ug shs 1.01 trillion were received by Bank of Uganda (BoU) of which 1,525 beneficiaries were financed with Ug shs 660.50bn (GoU contribution amounting to Ug shs 335.24bn) against Ug shs 325.26bn contribution from the PFIs. The increase in loan applications received and disbursements made is an indicator that the risk sharing model under the ACF continues to unlock access to credit by the farmers and in particular the smallholder farmers.

A total of 550 individual small holder farmers were funded under the block allocation with alternative collateral arrangements for small holder farmers and enterprises totaling to Ug shs 6.33bn (BoU, December 2021 ACF Progress Report).

Farmers and firms used the bulk of disbursed funds as working capital to purchase grain (37%), on-farm investments (29%), agro-processing (19%) and post-harvest management (15%).

By 31st December 2021, the non-performing loans stood at Ug shs 5.5bn with a non-performing asset (NPA) ratio of 1.6% compared to the aggregate ratio of 5.3% for all commercial banks. The COVID-19 pandemic impacted negatively on the agricultural production and fund recovery for the ACF. In line with the BoU guidelines on credit relief and loan restructuring measures, a total of 107 loans were restructured amounting to Ug shs 31.79bn.

During the quarter ended 31st December, 2021, 164 new beneficiaries accessed funding under the block allocation arrangement. Agro-processing constituted the third-highest financed activity under the ACF after grain trade and on-farm activities. During the period under review, agro-processing accounted for 19 per cent of total financing with 89 projects financed, mostly for the acquisition of agro-processing machinery and equipment for value addition in the dairy, grain, sugar, tea, seed oil and coffee sub-sectors, among others (Table 3.16).

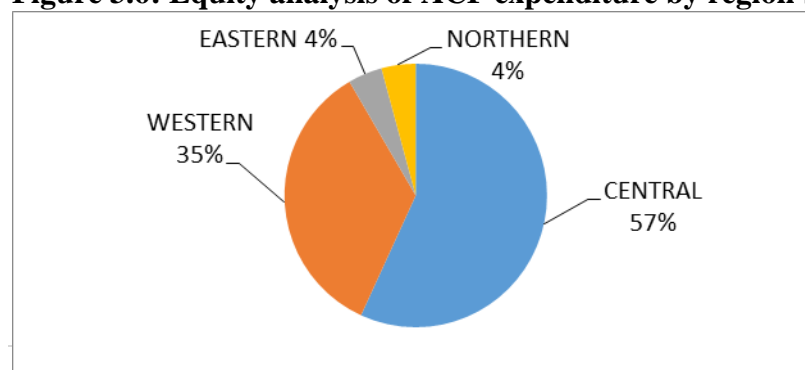
Table 3.16: Areas financed under agro-processing by the ACF as at 31st December, 2021

Enterprise	Number	Total loan	GoU Contribution	% share by enterprise
Dairy processing	18	24,613,927,634	12,272,561,286	20
Grain processing	26	27,788,031,166	13,567,315,583	22
Fruit processing	7	11,162,033,644	5,581,016,822	9
Seed oil processing	7	12,899,562,197	6,449,781,099	10
Tea processing	8	16,679,238,158	8,339,619,079	13
Sugar processing	5	16,000,000,000	8,000,000,000	13
Coffee processing	7	3,845,342,017	1,972,071,009	3
Others (meat, honey, cotton, fish, veterinary drugs)	11	13,085,937,318	6,542,968,659	10
Total	89	126,074,072,13	62,725,333,537	100%

Source: BOU; Field findings

Equity analysis in access to Agriculture Credit Facility revealed regional inequality in access to the ACF during the first half of the FY 2021-22. Access to ACF was highest in Central Uganda and lowest in Eastern and Northern Uganda (Figure 3.6).

Figure 3.6: Equity analysis of ACF expenditure by region by 31st December 2021

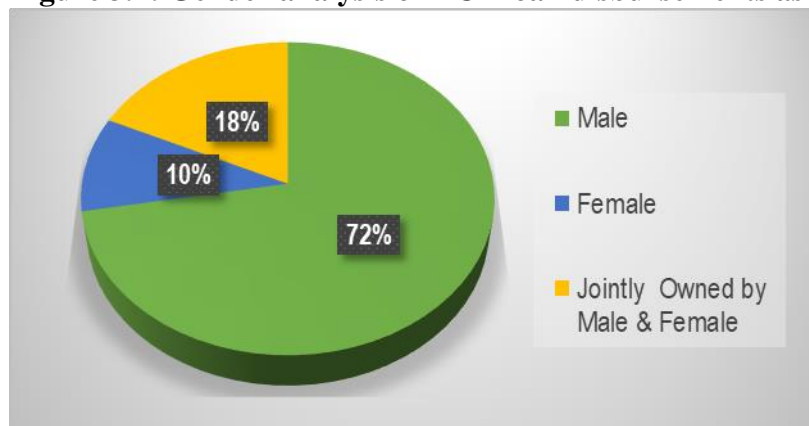


The disparity in Northern and Eastern Uganda was partly due to low awareness within the population about the ACF; low availability of the scheme in the banking sector within these regions; low presence of financial institutions; and lack

Source: Author's analysis of BoU financial data

of collateral as most land is communally owned.

Figure 3.7: Gender analysis of ACF loan disbursements as at 31st December 2021



Gender analysis on the other hand revealed that the males had a higher share of the disbursed loan amount compared to females, and those jointly owned by males and females combined. **(Figure 2)**

Relatedly, most funds were channeled to institutions and least to small holder farmers and female headed enterprises.

Source: Author's analysis of BoU financial data

In terms of beneficiaries statistics, out of 331 beneficiaries/beneficiary farms²⁴, 216(65%) were headed by males; 96(29%) were by females; and 19 (6%) were jointly owned. The limited access to funds among female proprietors was associated with limited information access, lack of collateral, lack of working capital to support capital investments, and few women being currently engaged in commercial farming and value addition.

As part of affirmative action to increase access to small holder farmers, including women and youth, the GoU introduced block allocations to farmers who lack collateral, this enhanced financial inclusion by unlocking access to credit for the micro, small and medium enterprises (MSMEs).

Gender and equity analysis in relation to employment at the ACF projects was conducted at one of the ACF beneficiaries. Mr. Matyama who owns a farm located in Bunama Parish, Nakigo Sub-County, Iganga District was interviewed. The farmer who accessed Ug shs 200million to procure two tractors to transport sugarcane on his farm observed that he only employs men and without disabilities given manual nature of the work.

All the beneficiary farmers monitored confirmed receipt of the funds as reported by Bank of Uganda (BoU). The experiences of the visited projects are presented here after.

²⁴ This is composed of 95 beneficiary farms/enterprises and 236 small holder farmers under the block allocation



ACF financed sugar cane plantation in Kasaana Village, Kayunga District

Mr. Muyomba of Kasaana Village, Busaana Sub-County in Kayunga District accessed Ug shs 250 million and established 130 acres of a new sugar plantation, while adding fertiliser to the existing older plantation of 180 acres.

The farm employed 300 workers of whom 65% were women who were involved in planting and weeding the crop. Being a contract farmer for a large sugar production company SCOUT, the farmer had no challenges with marketing the crop. The main challenge was the low price of produce compared to the high cost of production.

SILGAD Investments Limited located in Mbarara City accessed Ug shs 130million used to procure fertilisers for the 9 acres of a mature banana plantation, grapes gardens, and established 4 additional acres to increase banana supply for wine processing. Fertiliser application to the banana plantation led to increased production and productivity from 120 bunches per month before the intervention to 200 bunches per month.



ACF financed banana wine produced ready for the market in Mbarara City

Similarly, wine production increased from 150 to 300 litres after fertiliser application. Project production and profitability increased significantly as a result of additional investments in agro-processing equipment provided for free through a partnership with the Global Environment Fund and UNIDO.

The key challenges were: high post-harvest losses and lack of markets for the wine during the COVID-19 pandemic period; bureaucracy in processing the loan affecting project execution, funds were disbursed when the planting season had passed; the tax imposed on production at Ug shs 2,000 per litre of wine reduced the profits and competitiveness of the local products; lack of a grace period and the high interest rate.



One of the ACF financed tractors at Mr Matyama's farm in Iganga District

Mr. Matyama Fredrick in Namilari Village, Bunama Parish, Nakigo Sub-County, Iganga District accessed Ug shs 200 million at 12% from Post Bank Iganga through ACF. He used the loan to procure two tractors.

He uses the tractors to transport his sugar cane to the millers/factory and also hires it to other sugarcane farmers at a transportation cost of Ug shs 90,000 per tonne.

The key challenges affecting project implementation were: Difficulty in accessing transportation permits from the sugar factories affecting the potential of the revenues from the tractor to fully pay back the loan, delays in reimbursement of the transport refund for those that deliver sugar canes to Ataik Sugar Factory, some commercial banks exploit consumer ignorance to discourage them from accessing the ACF.

Mr Musitwa Paul in Walugogo Ward, Central Division, Iganga District accessed Ug shs 130 million that was intended to buy a trailer. He however reprioritised the funds to partial investment of Ug shs 20 million into sugar cane and rice production and the rest of the funds to capitalise his petroleum company partly due to delayed access of funds and its inadequacy. He noted that by the time he accessed the funds, the permits to transport the sugar cane to Atiak had been suspended. Project execution was affected by the following challenges: Lengthy procedures for accessing the loan leading to delays in project implementation; and insufficient funds accessed compared to the amount requested, inadequate information disseminated to farmers by commercial banks about the availability of the ACF.

Mr. Okeyamba John of Kitamba Village, Bulembe Town Council, Kitamba Parish, Kazo District requested for Ug shs 200 million to procure high grade milking animals, construct a milking parlor and improve the watering system.

Only Ug shs 80 million was disbursed as the commercial bank indicated that Mr. Okeyamba was not previously banking with them; despite having presented a land title worth Ug shs 2 billion as collateral. There was a six-month delay in processing and disbursing funds from the date when the application for the ACF was submitted to the commercial bank in January 2021.

The project was scaled back and one set of interventions implemented – procured the 20 high grade milking animals. Ten new calves were born from the new herd. The interest rate of 12% was noted to be too high for livestock breeding projects as the profits are realized three to five years later; recommended a reduction to 5%.

Mr. Magezi Sam of Barahija Village, Binundu Parish, Kyarushozi Sub-County, Kyenjojo District accessed Ug shs 200 million and established 50 acres of tea plantation; and undertook gap filling and fertiliser application in the already productive 70 acres of tea shambas. He procured and applied 80 bags of fertiliser at a subsidised rate from Mabale Tea Factory. He was a contract farmer with the factory and had a ready market for the produce.



The key challenges were: 15% of the new crop dried due to drought; low profitability of the enterprise due to the reducing price of green leaf from Ug shs 700 per kg to Ug shs 200 per kg; poor quality tea seedlings affecting production and the low quality tea leaf delivered to the factory due to lack of extension workers and a quality and standards assurance body for the tea industry.

Key recommendations were for the Government to establish a Tea Regulatory Authority, step up tea research to produce high yielding clones and strengthen extension services for the tea crop at the LG level.



ACF financed machine installed in coffee factory in Kizigo village Masaka district

Mr. Wannume Gerald of Kizigo Village, Kyanamukaka Parish, Masaka District requested for Ug shs 300 million but was given Ug shs 150 million despite his factory having adequate collateral.

The planned interventions were partially implemented including procurement and installment of one grinding machine in the existing coffee factory instead of the planned three machines; applied fertiliser in 20 acres of the coffee plantation and engaged in coffee trading.

The key challenge was the low project profitability due to inadequate credit disbursed

from the ACF.

Mr. Bukenya Gerald in Kibanga Village, Kamengo Sub-County, Mpigi District accessed Ug shs 380 million used to establish 40 acres of coffee plantation against a target of 35 acres; procured and installed 12 out of the planned 20 coffee drying beds; and partially established the irrigation system and two poultry houses.



One of the partially completed poultry houses that were destroyed by storms (left) and raised coffee drying beds that were procured in Kibanga Village, Mpigi District with funds from ACF

The poultry houses were however destroyed by heavy winds and storms before they were completed. The planned store construction was not done due to inadequate funds. Key challenges were the low economic viability of the project due to the short (four years) loan period, high interest rate, limited grace period and loss of established assets due to heavy rains.

ii) Uganda Development Corporation

The Uganda Development Corporation (UDC) was re-established under the Uganda Development Corporation Act, 2016 as the investment and development arm of the GoU. Its primary objective is to promote and facilitate industrial and economic development in Uganda. This is to be met through: i) establishment of subsidiary and associated companies, ii) enter into Public Private Partnerships (PPPs) with other enterprises, and iii) promoting and facilitating research into industrial development.

By 31st December 2021, the UDC was at varying stages of capitalising nine companies in the different regions of the country to promote agro-processing industries, namely: Soroti Fruit Factory (Teso); Kigezi Highland Tea Ltd (Kigezi); Mabale Tea Factory (Tooro); Mutuma Commercial Agencies (Eastern); Atiak Sugar Factory (Achoi); Kayonza Tea Factory (Western); Mpanga Tea Growers Factory (Tooro); Bukona Agro-Processors Ltd (Northern); and Kaaro Koffi Ltd (Western). Six additional project investments were in the pipeline to process anti-tick vaccines, coffee, cassava, tea and fruits.

The operationalisation of investment projects was slow and stalled in some cases due to several challenges. Some of the projects had started, while others were not in operation. For example:

Mabale Growers Tea Factory: From March to December 2020²⁵, the UDC disbursed Ug shs 20bn to Mabale Growers Tea Factory Limited in Kabarole District to capitalise the company and improve business processes and tea production and exports. About 72% (Ug shs 14.4bn) of the UDC funds were used to significantly reduce outstanding obligations, while the balance was spent as working capital to re-activate the business, capital expenditures and for machinery repairs.

The UDC investment supported increased production and processing of tea. Production of green leaf increased and the branded tea sales at the Mombasa Auction (more than 99% of sales from this factory are handled through this action) increased modestly from 65,789 tonnes in 2020 to 69,118 tonnes in 2021. Sales almost stalled due to stock-outs of packaging materials and increased requirements for factory repairs. The fair quality raw material (green leaf) translated into poor quality made tea into the market. A backlog of incompletely processed tea filled the factory space, holding back working capital.



Heap of bad quality tea arising from harvesting of branches instead of the recommended leaves (left) and graded bags of made tea ready for sale at Mabale Growers Tea Factory in Kabarole District

Some unresolved issues at Mabale Tea Growers Factory were; the purpose of Ug shs 6bn that was part of the UDC investment was not yet classified, awaiting guidance from the Government Valuer. It was deposited and in use at the company as ordinary shares, which was giving Government a high and undesirable shareholding of more than 50%. It was considered inappropriate practice by the farmers owning the company, for Government to have majority shareholding and taking all the major decisions on their behalf. The fact that Ug shs 6bn remained unclassified posed losses to Government as this resource was used by the company without any interest to Government.

There was gender disparity in access to employment at Mabale Growers Tea Factory. The factory had 472 staff, of whom 296 were male and 176 females. Out of the 98 skilled staff, 76 were males and 22 were females. Two issues were noted to explain this disparity: most work was manual involving loading and off-loading sacks of produce thus requiring men with energy; the

²⁵ Part of the received funds were being spent during the period under review

factory worked for 24 hours. From a cultural perspective, women were not allowed to work in night shifts by their husbands as this disrupted the household chores.

Mutuma Commercial Agencies Limited (MCAL) which is located in Kiyunga Ward, Kiyunga Hospital Zone, Kiyunga Municipality in Luuka District was supported by GoU to resume value addition to raw cotton produced in Uganda to make products like surgical cotton wool, seed oil and cotton seed cake. As 31st December 2021, the plant was producing 35 bales of an average 185kg per day having resumed operations on 10th January 2021.

The company produced 227,075 rolls of cotton wool (assorted sizes) between 1st July and 31st December 2021. *It provided market for the cotton produced by the Busoga farmer groups from the districts of Kaliro, Buyende, and Namutumba among other districts.*

The product of value addition (cotton) had ready market from National Medical Stores and Joint Medical Stores. The company observed the need for additional support to acquire a refinery machine and other ancillary equipment to support production of gauze which is a major input in the mama kits given the reliable market from NMS and JMS.

Yumbe Fruit Factory: Government supported Yumbe Fruit Factory whose new trade name is Nile Ziller Limited. The share distribution is 20% to Aringa Cooperative, 41% to Food and Nutrition Solutions Ltd-FONUS and GoU represented by Uganda Development Cooperation (UDC) at 39%. This new company located in Pani Village, Yumele Parish, Lodonga Sub-County, Yumbe is to add value to locally grown mangoes to produce ready to drink mango juice and concentrate with a capacity of 5MT/hour.

Overall physical progress for the factory construction including variation of works was estimated at 90% physical progress. The contract for external works, and other ancillary structures including materials receiving shade, storage house, paving and fencing works had just commenced. Equipment installation had been complete, and tested in July 2021. The Defects Liability period however was to commence upon commissioning which is expected for July 2022.

The targeted market for pulp included; Coca Cola, Britania and Riham, processors of fresh juice in the country. Absorption of the pulp by these companies may not be achieved if there is no deliberate government decision on ban importation of pulp.

Soroti Fruit Factory (SOFTE): GoU continued to support its subsidiary the Soroti Fruit Factory to add value to oranges and mangoes. As at 31st December 2021, the factory had expanded from two to seven products including Mango Pulp, Orange concentrate, Lemon concentrate, Mango and Orange ready to drink in both plastic bottle (PET) and Spout Pouch. Installation of the automated mango processing line and aseptic filler for the concentrate had been completed.

The SOFTE however lacked capacity to absorb all the fruits grown by the Teso farmers and across the country partly due lack of automated filling line to ensure mass production to meet

market demands and differences in varieties of mangoes and oranges that are grown by the farmers and those that are most appropriate.

Some sections of farmers complained about lack of markets for their oranges and mangoes. In addition, the factory cannot absorb all varieties grown across the country. This implies the need to engage NARO in all agro-processing and value addition industries to ensure that the type of processing machinery that is installed is consistent with the varieties that survive in a given agriculture zone. This will further enhance backward and forward market linkages in the Agro-Industrialisation Programme.

The constraints noted was lack of tax holidays for the factory compared to other value addition industries, inadequate distribution tracks for enhanced marketing and distribution, and unreliable power supply.

Bukona Agro Processors Limited: The GoU supported Bukona Agro Processors Limited which is located in Lapem Village, Coorom Parish, Koch–Goma Sub County in Nwoya District to resume value addition to dry cassava chips. The factory resumed operations in May 2021²⁶ to produce ethanol (95% purity) from cassava chips. It has an input capacity of 100MT/day of dry cassava chips and a production capacity of between 35,000 to 40,000 litres of ethanol per day. The factory uses 80,000kgs of firewood per day and spends between Ug shs 8 and 10 million on fuel.

The ethanol is denatured to produce products like methylated spirit for use in ethanol cook stoves. Bukona Agro Processors Limited signed a master investment agreement with the UDC upon which an investment of Ug shs 11,957,283,275 to acquire equity in the company was executed.

A total of Ug shs 3.75 billion was intended to enable acquisition of machinery however it was agreed that the factory in the interim uses Ug shs 2 billion as working capital for purposes of purchasing inputs such as dry cassava chips from the community among other outstanding but verified creditors, while awaiting the working capital expected from the Uganda Development Bank. The Ug shs 2 billion would be brought back to apply for machinery upon receipt of the working capital from UDB.

As at 31st December 2021, the order for the centrifuge unit including the operationalisation of the line of the company's reinstated ethanol production plant worth Ug shs 1.75 billion had been placed and the equipment was expected by the end of third Quarter FY2021/22.

In terms of production, the company resumed fuel production on the 17th December 2021 to 15th January 2022 producing a total of 350,000 litres of ethanol fuel for cooking.

The high consumption of fuel wood has effects of environmental degradation. The new equipment under importation however may save the environment as it has a provision for the Biogas system

²⁶ Despite the receipt of funds before the FY2021/22, the majority of funds were being spent during the period under review

The value addition is affected by inadequate supply of cassava chips required by the factory to operate at full capacity, limited market for the ethanol fuel due to the limited number of stoves that require this type of fuel for cooking, and lack of electricity connection. The factory continued to use diesel generators despite the presence of a newly extended power line which is not yet energized and transformer installed.

The full dependency on the generator as source of energy was noted to be expensive leading to very high operation costs. The market price for dry cassava chips was Ug shs 1,000 to 1,200 which was higher than the price of Ug shs 600 to 650 at which the factory was purchasing. Any attempt to match the market price for dry cassava chips would only serve to increase the operation costs.

There is therefore need to urgently supply the transformer and energise the power line to contribute to reduction of operating costs with possible resultant effects of increase in the price at which the raw materials are purchased.

Budadiri Arabica Coffee Factory: The GoU earmarked support to Budadiri Arabica Coffee Factory Limited which is located in Bumatofu Cell, Kalawa Ward, Budadiri Town Council, Sironko District to add value to coffee. The factory is indebted to a tune of Ug shs 4.62 billion of which Ug shs 4 billion is for UDBL. It also lacks a proper corporate governance structure. Valuation of the factory was done and the following were found: NPV of Ug shs 4,190,793,845 and IRR of 25%. The UDC intends to restructure the investment through formation of a SPV and acquire 495 shares.

As at 31st December 2021, the restructuring and formation of the SPV had not been achieved and consequently no funds were disbursed to the factory.

Kigezi Highland Tea Limited: Was supported by GoU to promote tea planting by Kigezi Highland Tea Factory in Kabale and Kisoro districts.

For example, the tea factory in Kazigasigye Village Southern Division Kabale Municipality in Kabale District established a 5 CTC processing lines and was producing tea for export.

The UDC support was channeled to expansion of green leaf production at farm

level. Despite the heavy investments, the factory was operating under capacity due to inadequate tea produced. The factory which had capacity to operate 24 hours per day was operating at 8 to 12 hours per day. The factory received on average 25,000 kg of green leaf per day against a target of 40,000kg per day.



UDC supported Made Tea ready for export at Kigezi Highland Tea Factory in Kabale District

The factory lacked funds to provide more tea seedlings to farmers so that they expand production to meet the processing targets. The UDC Management was scheduled to undertake the final verification of the remaining balance of 3,237,277 planted tea seedlings. Key challenges included: fluctuating power and loss of profits when generator is used as it requires 55 litres of fuel per hour of processing tea; and difficulty of collecting all the green leaf from farms as the vehicles were dilapidated.

Kaaro Koffi Limited: Kaaro Agricultural Producers Ltd in Rwamanuma Village, Kazo Central Parish, Kazo Town Council in Kazo District partnered with UDC to commence the process of setting up a factory involved in coffee roasting and grading. The company presented a proposal of Ug shs 11bn to UDC for support to acquire a grading processing coffee roaster. The UDC scaled back the investment to about Ug shs 6bn. By 2nd February 2022, procurement of a coffee processing machine was in progress, with 60% of the value of equipment (US\$ 623,415.12) paid.

The UDC made Kaaro Koffi Ltd the special purpose vehicle for delivering this investment. The Kaaro Agricultural Producers Ltd provided titled land for the project which was transferred to Kaaro Koffi Ltd. Key challenges noted were: the high shareholding of UDC at 49% shares that led to majority representation of UDC on the Board of a private company. The Board had seven members of whom 4 were from UDC and three from the producers organisation. The high representation of Government introduced bureaucracy whereby decision making on project execution was excessively delayed while waiting for UDC response.

Challenges

- i) Bureaucratic processes in finalising investment decisions among the existing companies where UDC requires acquisition of equity exacerbated by Under-capitalisation of the UDC for the ready projects.
- ii) Inadequate collaboration and linkages with agricultural sector institutions to guide in investment packaging and support.
- iii) Manual systems used for planning and budgeting for investments as UDC was not on the Integrated Financial Management System (IFMS). Manual accounting system have loopholes for misuse of GoU funds due to limited audit trails.
- iv) Regional Disparities in accessing ACF.
- v) Disjointed efforts among government financing avenues exemplified by the delayed access of funds to Bukona agro processors leading to the temporary use of funds ear marked for procurement of equipment for operational purposes. In addition, the Uganda Development Bank has no well-articulated MoU between the other GoU financing modalities such as ACF under the Bank of Uganda.
- vi) Limited independence of the UDC in technical decisions on which investment is ready for takeoff to ensure realisation of value for money and reduction in unspent funds at the end of the Financial Year. This was demonstrated by the low spending as available funds were earmarked for specific projects that were not investment ready.

3.5.3 Conclusion

The overall performance of the sub-programme was fair (55.41%) as at least half of the outputs were achieved.

The sub-programme performed better in regards to increasing the mobilisation of agriculture finance. There was however no well documented MoU and synergies of the different financing modalities with each working in silos. Farmers however accessed finance and improved their farms, acquired machinery and key inputs to expand production and agro-processing of agricultural commodities.

An attempt was made through the ACF to reach out to micro-scale borrowers, especially small holder farmers who did not have adequate collateral. The bulk of financing was invested in development of value addition and agro-processing facilities, which were at varying stages of completion and production.

Key dimensions of equity in access were however not met demonstrated by gender and regional disparities. The male dominated the female while central and western dominated the other regions respectively. Utilisation of available finance was poor especially under the UDC financing relative to the ACF funding. Most UDC projects were either in formative stage or at low production levels due to inadequate working capital.

Performance of the sub-programme was affected poor scheduling and sequencing demonstrated by ear marking of funds for specific interventions that were not ready for investment, delays in conclusion of the investment decisions, lack of automated planning and governance systems under UDC, late disbursements from PFIs (Participating Financial Institutions), low production, productivity and sales due to COVID-19 pandemic and lock downs, adverse weather and inadequate operating capital.

A combined effort among the partner players in financing to reduce duplication and enhance impact will go a long way in attainment of agriculture financing objective of increasing the mobilisation, equitable access and utilisation of Agricultural Finance.

Recommendations

- i) The GoU should resolve the mindset of working in silos under the programme approach through creation of a single funding source/avenue. Pooling resources from the different financing avenues yields greater economic impact than management of the different individual funds under separate entities. This saves high operation costs incurred separately by the different entities.
- ii) UDC should fast track finalisation of the investment decisions.
- iii) UDC should be enrolled on the IFMS or other automated systems to enhance transparency.
- iv) The GoU institute affirmative action for the disadvantaged regions to enhance access to agriculture financing.

- v) The investment decisions should be undertaken with the technical input of the UDC.

3.6 Institutional Strengthening and Coordination Sub-Programme

3.6.1 Introduction

The sub-programme aims to strengthen institutional coordination for improved service delivery. It is composed of two interventions namely;

- i) Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security
- ii) Strengthen linkages between public and private sector in agro-industry

During the FY2021/22, the sub-programme was allocated Ug shs 390.121bn representing 21% of the Agro-Industrialisation budget.

The semi-annual monitoring exercise focused on - Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security with the components of the Parish Development Model (PDM) and data collection among district local governments to support policy and coordination.

Performance

Institutional Strengthening and Coordination performed poorly with only 30% of the planned actions achieved. Implementation of the PDM was off-track. Data was however collected with support from MAAIF to support policy and coordination in various LGs (Table 3.17).

Table 3.17: Performance of Institutional Strengthening and Coordination Sub-Programme

Intervention	Performance	Remark
Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security- Parish Model implemented	Off track	Only parish chiefs were recruited in the parishes that did not have chiefs. The implementation awaited guidelines
Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security- Data collected to strengthen policy and coordination	On track	Data was collected to inform policy

Source: Field findings

Detailed performance of intervention is presented below. *Refer to Annex 6 for details of sub-programme and intervention, and outputs performance.)*

3.6.2 Strengthen coordination of public institutions in design and implementation of policies

This intervention contributes to the objective of Strengthening Institutional Coordination for Improved Service Delivery

The planned outputs included:

- i) Parish Development Model implemented
- ii) Data collected to strengthen policy and coordination
- iii) Coordination of agro-processing and value addition initiatives in the agricultural sector, in partnership with other MDAs
- iv) Nucleus farmer model across all ecological zones supported and developed
- v) Promote access to agricultural financing and insurance in partnership and collaboration with other relevant stakeholders e.g. women groups
- vi) Promote youths and women groups in gainful employment in agricultural value chains promotion of sustainable agricultural investment and enterprise development
- vii) Coordinate and supervise formulation and review of policies, laws, regulations, guidelines and standards
- viii) Strengthen coordination and supervision of DLGs extension services

Semi-annual monitoring focused on two outputs as discussed below.

i). Parish Development Model implemented

The GoU disbursed funds to the LGs for implementation of the Parish Development Model. As at 31st December all the districts visited had not commenced implementation of the activities under the programme due to lack of clear implementation guidelines.

Majority of the districts only recruited parish chiefs in the parishes that did not have. There is need for the MDAs and LGs to fast track implementation of the PDM activities following the finalisation and launch of the PDM on the 27th February 2022.

ii). Data collected to strengthen policy and coordination

The MAAIF supported DLGs to collect data intended to support strengthening of policy and coordination.

For example, Hoima District received 20 data collection tablets from MAAIF- ACDP project. Yield data for about 70% of maize farmers was collected by Community Based Facilitators (CBFs) and extension staff. It was observed that there was a 40% increase in the maize yield for the farmers who applied fertilisers.

Extension staff collected data on agricultural infrastructure and agro dealers operating in the district. Though some farmers had no records of crop yields.

Similarly, In Kasese DLG, yield data for about 20%-30% of the maize and coffee farmers respectively was collected by the CBFs supported by parish chiefs. It was observed that there was an increase in the yield for the farmers who applied fertilisers as shown in the table 3.18.

Table 3.18: Yield data for season 2021 A

Commodity	No. of farmers from which data captured	Total production (MT0	Average yield kg/acre of supported acre	Average yield Kg/acre of un supported acre
Maize	1500	2,250	1500	560
Coffee	500	315	630	121

Source: Field findings

3.6.3 Conclusion

Institutional Strengthening and Coordination performed poorly with only 30% of the planned actions achieved. GoU was slow in the implementation of the Parish Development Model as majority of funds remained unutilised by the 31st December 2021.

The slow progress on implementation of Parish Development Model activities was in the most part due to delayed official issuance of the guidelines. The delayed commencement of implementation of the PDM weakens the GoU efforts of Strengthening Institutional Coordination for Improved Service Delivery. The DLG should fast-track implementation of the activities

CHAPTER 4: CONCLUSION AND RECOMMENDATIONS

4.1 Programme Conclusion

The overall performance of the Agro-Industrialisation Programme was fair rated at **62.8%**. In general, the programme was on track, with one sub-programme substantially meeting its semi-annual targets.

Despite the fair performance, there was still weak focus on programme-based planning and execution, and implementing the value chain approach that would promote agro-industrialisation. Most spending agencies were still functioning in the silo mode, with funds spent on discrete interventions and projects that were not contributing fully to the achievement of the program and sub-programme objectives.

The programme performance was largely driven by the Agricultural Market Access and Competitiveness Sub-Programme which had very good performance (93%) explained by the significant multi-year investments and 90% absorption of released funds for FY 2021/22. Underperformance of the Agro-Industrialisation Programme was largely attributed to the poor performance of the Institutional Strengthening and Coordination Sub-Programme that was off track (30%); and Agricultural Financing Sub-Programme (55%).

4.2 Overall Challenges

1. **Low absorption of released funds for the programme (55%) due to:** Delayed releases and disbursements to implementing agencies resulting in late initiation of procurements; stalling of construction works and in some cases, abandonment of sites by contractors; disbursement of funds for projects with low readiness for implementation; COVID-19 pandemic and lack of advisory fund to implementing agencies.
2. **Low performance of four out of the five sub-programmes** due to slow or non-implementation of core activities as a result of the issues raised in 1 above.
3. **Limited translation of the PIAP commitments** into the annual approved budgets and work plans to ensure attainment of programme objectives.
4. **Inadequate staffing** especially extension workers in the lower local governments.
5. **Weak linkages, synergy and collaboration between the implementers** of the different sub-programmes resulting in duplication of effort and wastage of resources; missed opportunities for learning from each other for more effective programme implementation.
6. **Gender disparity in access and use of agricultural services** in the programme, with males dominating.

4.3 Recommendations

1. The MFPED and programme implementing agencies should focus on removing bottlenecks to timely release and absorption of funds to investment ready interventions; initiation of procurements; and hiring of competent contractors.
2. The MAAIF and implementing agencies should review and speed up implementation of actions that contribute to enhancing performance of lagging sub-programmes especially Institutional Strengthening and Coordination; and Agricultural Financing.
3. The MAAIF and implementing agencies should prioritise, align and translate the PIAP commitments into the annual work plans and budgets in line with the NDPIII interventions.
4. The MAAIF and LGs should prioritise recruitment and equipping extension workers with transport and facilitation especially in the newly created Administrative Units (cities, districts and sub-counties).
5. The MAAIF and agencies should strengthen intra-programme collaboration and synergy in resource prioritisation and implementation of the core actions.
6. The MAAIF and implementing agencies should strengthen affirmative action to females to enhance access to agricultural services.

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ANNEXES

ANNEX 1: Interventions monitored for FY 2021-22 under the Agro-Industrialisation Programme

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
008 MFPED	Develop concessional long-term financing for agricultural infrastructure and capital investments	Agricultural Credit Facility	Agricultural credit facility projects	Bank of Uganda, Iganga, Kyenjojo, Kayunga, Masaka, Mbarara, Kazo, Mpigi
152 NAADS	Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades	Agricultural Advisory Services	01 Headquarters	NAADS Secretariat, Nwoya, Kalangala, Jinja, Kasese, Iganga, Hoima, Pader, Amuru, Yumbe, Nebbi, Kalangala, Kikuube, Bushenyi, Ntungamo, Mpigi, Mukono, Hoima
	Equip regional farm service centers		0903 Government purchases	
142 NARO	Strengthen agricultural research and technology development, Strengthen the agricultural extension system	Agricultural Research	01 Headquarters	NARO Secretariat, Serere, Kabarole, Mukono, Kawanda, Namulonge, Kayunga, Arua, Jinja, Lira, Hoima, Mbarara, Kabale, Kawanda
			0382 Support for NARO	
			11 National Semi and Resources Research Institute (NASRRI)	
			16 Mukono ZARDI	
			12 National Research Laboratories (NARL)	
			10 National Livestock Resources Laboratory (NALIRRI)	
			09 National Forestry Resources Research Institute (NAFFORI)	
13 Abi ZARDI				

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
			17 Ngetta ZARDI	
			14 Bulindi ZARDI	
			19 Mbarara ZARDI	
			Kachwekano ZARDI	
			08 National Fisheries Resources Research Institute(NAFRRI)	
			07 National Crop Resources Research Institute (NACRRI)	
			21 Rwebitaba ZARDI	
			27 National Coffee Research Institute (NACORI)	
			27 National Coffee Research Institute (NACORI)	
Vote160 UCDA	Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades	Uganda Coffee Development Authority	01 Head quarters	UCDA Headquarters, Mbale, Iganga,Gulu, Hoima, Kasese, Bushenyi
			1683 Retooling of Uganda Coffee Development Authority	
Vote 155 CDO	Strengthen the agricultural extension system	Cotton Development	01 Headquarters	CDO Headquarters, Lango Region,West Acholi and East Madi, South Eastern/Busoga, Central, Mid-Western and Pader district

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
	Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades		1219 Cotton Production Improvement	
Vote 121 DDA	Strengthen farmer organizations and cooperatives	Dairy Development and Regulation	01 Headquarters	DDA Headquarters, Northern Region, Northern Eastern Region, Entebbe Dairy Training School, South Western region, National Dairy Laboratory
	Strengthen enforcement and adherence to product quality requirements including; food safety, social and environmental standards, grades, etc		1268 Dairy Market Access and Value Addition	
Vote 125 NAGRC	Strengthen agricultural research and technology development	Breeding and Genetic Development	01 Headquarters	Kasolwe stock farm- Kamuli, Maruzi Ranch – Apac, Aswa Ranch – Pader; Livestock Experimental Station (LES) – Wakiso;- Njeru Stock Farm – Buikwe; Nshaara– Kiruhura; Sanga –Kiruhura ;Ruhengyere Field station –Kiruhura; Rubona Field Station –Bunyangabo; Animal Breeding Centre –Entebbe Wakiso;Lusenke-Kayunga, Bull stud-Entebbe,
			02 Dairy Cattle	
			03 Beef cattle	
			04 Poultry	
			05 Small ruminants and non-ruminants	
			06 Pasture and feeds	
			08 National Animal Data Bank	
			09 Fish breeding and production	
			10 ARTs	
1325 NAGRC Strategic Intervention for				

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
			Animal Genetics Improvement Project	
Vote 010 MAAIF	Improve transportation and logistics facilities for effective product marketing and distribution	01 Crop Resources programme	1508 National Oil Palm project	MAAIF, Kalangala, Buvuma, Buikwe
	Strengthen systems for management of pests, vectors and diseases		1386 Crop pests and diseases control phase 2	Amuru, Lira, Nebbi, Yumbe, Buikwe, Jinja, Iganga, Bukedea, Serere
	Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades		1263 Agriculture Cluster Development Project	MAAIF, Nwoya, Amuru, Nebbi, Yumbe, Serere, Lira, Mbale, Iganga, Jinja, Hoima, Kasese, Mpigi, Kikuube
	Strengthen the agricultural extension system	03 Directorate of Agricultural Extension and Skills Management	23 Department of Agricultural Extension and Skills Management	MAAIF,
			24 Department of Agricultural Investment and Enterprise Development (DAIED)	
	Strengthen systems for management of pests, vectors and diseases	02 Directorate of Animal Resources	1330 Livestock Diseases Control Project Phase 2	Amuru, Lira, Nebbi, Yumbe, Buikwe, Jinja, Iganga, Bukedea, Mpigi, Ntungamo, Kasese, Kikkube
		04 Fisheries Resources Programme	1365 Support to Sustainable Fisheries Development Project	MAAIF
Increase access to and use of agricultural mechanization	05 Agriculture Infrastructure, Mechanization	1357 Improving Access and Use of Agricultural Equipment and Mechanization through the use of	MAAIF, Isingiro, Rwampara, Wakiso, Mbale, Amuru, Jinja, Iganga, Kabarole, Mitooma,	

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
		and Water for Agricultural Production	labour saving technologies	Kayunga, Masaka, Ntungamo, Namalere, Mpigi, Mukono
	Increase access and use of water for agricultural production		Uganda Intergovernmental Fiscal Transfers (UgIFT) programme	
	Strengthen the agricultural inputs markets and distribution systems to adhere to quality standards and grades	49 Policy, Planning and Support Services	1444 Agriculture Value Chain Development	MAAIF, Nwoya, Mbale, Bukedea, Bulambuli, NAGRIC-Entebbe, Namalere, UNBS
	Construct and regularly maintain community access & feeder roads for market access	01 Crop Resources programme	1263 Agriculture Cluster Development Project	MAAIF, Nwoya, Amuru, Nebbi, Yumbe, Serere, Lira,, Mbale, Iganga, Jinja, Hoima, Kasese, Mpigi, Kikuube
Vote 011: MoLG	Improve agricultural market infrastructure in rural and urban areas	17 Local Government Administration and Development	1360 Markets and Agricultural Trade Improvements Programme (MATIP 2)	MoLG, Soroti, Arua, Kasese, Masaka, Kabale, Lugazi, Mbarara, Entebbe
Vote 015: MoTIC	Develop concessional long-term financing for agricultural infrastructure and capital investments	Ministry of Trade, Industry and Co-operatives	Commercial and Economic Infrastructure Development (UDC)	UDC headquarters, Nwoya, Soroti, Luuka, Sironko, Yumbe, , Kabale, Kazo Kyenjojo
Vote 019: MWE	Increase access and use of water for agricultural production	03 Water for production	Doho, Mubuku, Rwengaju, Wedali	Butaleja, Kabarole, Kasese, Pakwach

Lead MDA	Interventions selected	Sub Programme	Coverage	Institutions/Locations visited
500 LGs	Strengthen the agricultural extension system	District Production Services	0100 Production Department – Agricultural Extension Grant	Nwoya, Kalangala, Mbale, Jinja, Kasese, Iganga, Hoima, Pader, Nebbi, Yumbe, Buikwe, Kikuube, Bushenyi, Ntungamo, Mpigi, Mukono
			04 Production and Marketing	
	Strengthen coordination of public institutions in design and implementation of policies including access to quality food and food security		Parish Development Model	

Source: Author's Compilation

ANNEX 2: Performance of the Agriculture production and Productivity Sub-Programme

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
Strengthen Agricultural Research and Technology Development	Breeding infrastructure developed	15,899,000,000	39.1	100	30.00	12.00	3.61	Slow progress
	Breeding & multiplication of meat goats done	2,024,000,000	36.8	100	3000.00	1628.00	0.46	Fair progress
	Breeding & multiplication of pigs done	2,685,000,000	33.5	100	550.00	0.00	0.00	Off track(Reversal)
	Beef & dairy cattle breeding done	6,950,000,000	37.3	100	3600.00	1529.00	1.58	On track
	Production and distribution of chicks done	3,095,000,000	48.5	100	1000000.00	523996.00	0.70	On track
	Production, procurement and sale of liquid nitrogen and associated equipment done	3,040,000,000	31.8	100	90000.00	63854.00	0.69	On track
	Crop resources technologies developed (No.)	52,359,000	26.0	100	17.00	11.00	0.01	Only the impact studies on maize and beans were ongoing.
	Technologies delivered to uptake pathways for increased production and productivity	8,000,000	13.0	100	16.00	11.00	0.00	Adoption was estimated at 50% of the varieties promoted.
	Crop resources infrastructure maintained (No)	183,680,000	27.4	100	13.00	6.00	0.04	Five of the sixteen construction projects were in advanced stages of completion.
	Fisheries Resources technologies generated (No. brood stock of fisheries acquired)	40,000,000	36.6	100	16000.00	15000.00	0.01	On track

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Fisheries resources infrastructure maintained (No)	277,535,000	31.5	16	7.00	11.00	0.06	On track
	Livestock resources technologies generated.(Vaccine molecule validated % completion	2,000,000,000	19.2	0	100.00	11.00	0.26	On track
	Livestock resources infrastructure maintained (No)	235,410,000	21.4	100	17.00	16.00	0.05	On track
	Semi-arid technologies developed (% achievement for the technologies under development)	232,000,000	6.3	100	100.00	50.00	0.05	On track
	Coffee research conducted (No. Rooted stem cuttings generated)	500,000,000	67.5	26	400000.00	151827.00	0.06	On track
	Equipment procured to support dairy and beef value chain(AVCP)(% progress)	1,344,148,750	100.0	100	100.00	100.00	0.31	On track
	Enhancing availability of improved dairy and beef cattle germplasm done (% support)	50,000,000	100.0	100	100.00	100.00	0.01	On track
	Bulk semen storage tank established (Solar system for semen value chain)(% progress)	412,000,000	100.0	100	100.00	60.00	0.06	On track
	Consultancy for structural assessment, designs & supervision-semen done (% progress)	113,745,968	100.0	100	100.00	100.00	0.03	On track

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Maize value chain development supported-AVCP(% Achievement)	168,181,250	100.0	100	100.00	100.00	0.04	On track
	NAGRC- Enhancing availability of improved dairy and beef cattle germplasm done(% progress)	199,480,000	100.0	100	100.00	100.00	0.05	On track
	Rice Value chain developed(Activity funded)	70,276,875	100.0	100	100.00	100.00	0.02	On track
	Structures at Namalere assessed and Lab equipment procured, delivered installed and in use(% progress)	2,381,783,517	100.0	100	100.00	60.00	0.32	On track
Strengthen the Agricultural Extension System	Research extension interface promoted and strengthened	4,140,311,000	56.9	75	68.00	18.00	0.44	On track
	Agricultural extension co-ordination strengthened	923,895,000	52.5	46	5.00	1.00	0.08	On track
	Cotton targeted extension services offered	126,500,000	100.0	82	655.00	655.00	0.03	on track
	Extension services at Local and lower level local governments offered. (Quarterly extension services)	1,378,947,675	50.8	77	24.00	12.00	0.31	Partially done
	Increased efficiency in delivery of extension services in 57 ACDP districts supported(No. of districts visited)	32,760,000	100.0	-	57.00	0.00	0.00	Slow progress

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Nucleus estate established in Buvuma (Hectares)	32,760,000	100.0	-	57.00	0.00	0.00	Slow progress
	Extension services with support from AVCP conducted (% Progress of services)	4,097,000,000	73.2	100	2000.00	2000.00	0.93	On track
	Farmers/farmer groups trained (No)	24,850,000	100.0	100	100.00	100.00	0.01	Achieved
	Farmer mobilised and sensitised for increasing production and quality (No. of Demo Plots/No. of field visits/Activities)	779,467,629	59.4	92	153441.00	146224.00	0.18	On track
	Targeted extension services offered (No. of extension workers)	6,160,648,810	57.5	80	5595.00	5541.00	1.40	On track
Strengthen the Agricultural Input Markets and Distribution Systems	Coffee seedlings raised(No.)	1,366,994,000	49.2	63	944.00	854.00	0.31	On track
	E-Vouchers subsidies provided	2,442,913,100	49.9	29	3157772.00	1000000.00	0.35	On track
	Capacity assessment of 400 lower agro-input dealers to participate in subsidy program done	28,597,342,234	100.0	-	250000.00	38056.00	0.99	Slow progress
	Provision of priority agricultural inputs- Oil palm (Seedlings) carried out	140,000,000	100.0	-	400.00	0.00	0.00	Slow progress
	Priority agricultural inputs provided - Cotton (Bags)	800,000,000	31.3	100	150000.00	73601.00	0.18	On track

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Pesticides provided (Units)	1,440,600,000	78.7	100	480200.00	377920.00	0.33	On track
	Pumps - motorized provided(Number)	3,715,250,000	36.4	100	1061500.00	385861.00	0.84	Achieved
	Pumps provided - Matabi (Pieces)	186,558,690	23.5	100	75.00	18.00	0.04	Slow progress
	Seed multiplication - herbicides provided(Litres)	122,000,000	23.9	100	2440.00	584.00	0.03	On track
	Fertilisers provided(kg)	100,000,000	54.4	100	5000.00	2721.00	0.02	On track
	Priority agricultural inputs provided - Bean seeds(kg)	377,220,000	55.3	100	12574.00	6958.00	0.09	On track
	Priority agricultural inputs provided - Maize (kg)	253,228,000	96.8	100	61707.00	59707.00	0.06	On track
	Priority agricultural inputs provided - Banana tissue (Plantlets)	488,955,000	100.0	100	119470.00	119470.00	0.11	Achieved
	Priority agricultural inputs - Cassava cuttings (bags)	82,587,420	100.0	100	28547.00	28547.00	0.02	Achieved
	Fish inputs provided (No. of fingerings)	337,320,000	94.1	100	8433.00	7933.00	0.08	On track
	Fish feeds provided(kg)	23,817,300	74.8	100	2907300.00	69391.00	0.00	Slow progress
	Priority agricultural inputs provided-pineapple (suckers)	22,800,000	100.0	100	4750.00	4750.00	0.01	Achieved

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Priority agricultural inputs provided-pig/piglets (No)	86,062,500	100.0	100	286875.00	286875.00	0.02	Achieved
Increase Access and Use of Water for Agricultural Production	Irrigation infrastructure supported at Acomai under AVCP (% progress)	14,751,516,493	100.0	30	30.00	5.00	0.56	Slow progress
	Mini irrigation systems in Namalere and Namulonge rehabilitated/constructed(% progress)	689,283,507	100.0	100	100.00	100.00	0.16	Achieved
	Farmers supported with Micro scale irrigation equipment (Percentage)	16,594,713,070	67.7	20	1300.00	260.00	1.11	Slow progress
	Atari Irrigation system in Kween and Bulambule commenced (% progress of RAP implementation)	6,470,000,000	67.7	93	100.00	63.00	1.37	Slow progress
	5 Irrigation schemes completed (Complete defects liability period)	76,663,231,000	12.0	64	100.00	80.00	17.40	Four schemes completed one on-going
	23 new irrigation schemes constructed	32,978,000,000	43.7	83	20.00	5.12	4.39	Slow progress
	Sustainable management institutions for effective utilization of the Irrigation schemes and water for production facilities established. (For the 23 schemes above)	32,978,000,000	43.7	83	20.00	5.12	4.39	Not achieved, pending commencement of construction.

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
	Solar powered water supply and small-scale irrigation systems developed.	32,978,000,000	43.7	83	20.00	5.12	4.39	32/95 planned solar powered small scale irrigation systems on-going
	Multi-purpose water development schemes including valley dams, valley tanks developed	32,978,000,000	43.7	83	20.00	5.12	4.39	Works progressing
	National Irrigation Master Plan finalised	32,978,000,000	43.7	83	20.00	5.12	4.39	A draft inception report submitted
	Valley tanks, dams, fish ponds constructed and desilted (No)	14,500,000,000	37.9	45	302.00	112.00	3.22	
Increase Access and Use of Agricultural Mechanisation	Bush clearing done – (Acres)	3,500,000,000	22.9	100	1510.00	4227.00	0.79	On track
	Farm access roads opening and improvement (kms)	5,550,000,000	27.0	100	85.00	65.00	1.26	On track
	Ploughing of bush cleared areas conducted (Acres)	1,800,000,000	30.6	100	6500.00	15000.00	0.41	Slow
	Eight pcs of heavy equipment and accessories and drilling rigs, 285tractors/implements, Motor vehicles procured	15,500,000,000	22.6	84	100.00	23.00	3.52	Slow due to late initiation of procurements
	5 regional units in Bushenyi/Kiruhura, Mbale, Kiryadongo, Agwata and Buwama and Namalere National Referral Agric Mech Center constructed and equipped	5,100,000,000	23.5	71	5.00	4.00	1.16	Mixed performance. Slow at some sites while other sites were ongoing.

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
Strengthen Farmer Organisations and Cooperatives	Small farmer groups strengthened (good governance, increased, enrolment, bulking inputs and outputs) - % of coverage	1,333,981,006	100.0	31	100.00	20.00	0.06	Slow progress
	Farmers/farmer groups registered and profiled (No)	35,782,000	39.9	89	10608.00	5285.00	0.01	On track
Strengthen Systems for Management of Pests, Vectors and Disease	Vaccine doses of Foot and Mouth Diseases procured and issued	12,146,660,000	35.9	63	1039439.00	490000.00	2.76	Slow progress
	Total	439,832,395,793	44.4	62	0.00	0.00	70.97	Output performance

Source: Field Findings, IFMS, Progress Report

ANNEX 3: Performance of the Storage, Value Addition and Value Addition Sub-Programme

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical Performance Score (%)	
Establish post-harvest handling and storage infrastructure	500 Metric Ton Mult Grain Pre-Cleaning, Processing & Storage Complex in Arua under MATIP 2 completed(% progress)	11,531,550,068	100.0	100	100.00	100.00	10.19	Completed all machine installations and full test running conducted
	1000metric Ton Capacity, Pre-Cleaning, Drying and Storage Complex in Soroti under MATIP 2 completed(% progress)	15,597,077,487	100.0	35	100.00	75.00	10.34	Works ongoing.
Establish and rehabilitate existing agro-processing industries	Phase 2 of External Works at the Cotton Seed Processing Plant at Pader completed(% progress)	517,878,571	100.0	-	100.00	10.00	0.05	The Best Evaluated Bidder was selected and contracts due for signature upon Solicitor General approval.
	Spare parts for de-linting machinery and mechanical workshop tools supplied and delivered to Pader (% progress)	205,754,400	100.0	-	100.00	10.00	0.02	
	Solar and Electrical System for the Staff Houses supplied, delivered and installed at Pader (% progress)	68,907,820	100.0	-	100.00	10.00	0.01	Not achieved
	Water Supply, Distribution, and drainage system works for staff houses at Cotton House completed(% progress)	61,099,220	100.0	-	100.00	15.00	0.01	
	supply and delivery of Electrical materials for installation of workshop machinery at the Cotton Seed Processing Plant at Pader retendered(% completion)	45,848,000	100.0	100	100.00	100.00	0.04	

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical Performance Score (%)	
	Assorted Furniture for Cotton house and Cotton Seed Processing Plant at Pader- Imported chairs and tables supplied and delivered(% progress)	41,285,600	100.0	100	100.00	100.00	0.04	Achieved
	Locally Made Furniture for the Cotton Seed Processing Plant supplied and delivered at Pader(% progress)	39,450,000	100.0	-	100.00	15.00	0.01	Partially achieved
	Fire Alarm and Detection System at the Cotton Seed Processing Plant at Pader supplied and installed(% progress)	33,069,500	100.0	-	100.00	100.00	0.03	Achieved
	Assorted Furniture for Cotton house and Cotton Seed Processing Plant at Pader supplied and delivered-steel Cabinets(% progress)	30,690,000	100.0	100	100.00	100.00	0.03	
	Assorted Furniture for Cotton house and Cotton Seed Processing Plant at Pader- Reception Tables supplied and delivered(% progress)	4,000,000	100.0	100	100.00	100.00	0.00	
	One (1) Cottonseed Processing Plant and one (1) mechanical workshop constructed (No. completed)	1,078,000,000	64.4	76	2.00	2.00	0.95	
	Grants to successful grantees provided under ACDP to establish agro processing (No. Grantees supported)	31,700,000,000	100.0	13	38.00	38.00	0.00	

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical Performance Score (%)	
	Capacity building to selected grantees in operations and Maintenance of value addition equipment undertaken(No of grantees trained)	500,625,000	100.0	-	38.00	0.00	0.00	Not achieved
	Milk collection centres rehabilitated under the DDA(% progress of works)	355,650,000	30.0	-	100.00	0.00	0.00	Not achieved due to delays in procurement initiation
Improve the transportation and logistics infrastructure	Infrastructure improved(% completion)	4,097,000,000	73.2	100	100.00	65.00	3.21	Partially achieved
Equip Regional Farm Centres	31 tractors distributed to various regions of the country(No. of tractors distributed)	191,314,123	100.0	100	31.00	16.00	0.09	
Construct and regularly maintain community access and feeder roads	Construction of 3 landing sites in Kalangala,Buvuma, and Buikwe districts, 10km of access roads and 35km farm roads in Buvuma carried out (kms)	16,722,091,000	21.0	100	10.00	10.00	14.78	
	Road constructed and tarmacked around the factory of DDA Training school (Metres)	113,916,774	99.9	100	90.00	89.00	0.10	Achieved
	Certified works paid under road chokes of ACDP % Roads completed and paid for	30,222,360,000	100.0	1	100.00	100.00	26.71	
	Total	113,157,567,563	86.8	29	0.00	0.00	66.59	Output performance

Source: Field findings

ANNEX 4: Performance of Agricultural Market Access and Competitiveness Sub-Programme as at 31st December 2021

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical Performance Score (%)	
Strengthen enforcement and adherence to product quality requirements	UNBS Laboratory constructed and supervised in Wakiso District (number of buildings)	2,976,282,917	92.6	100	1.00	0.65	0.83	On track
	Crop regulation and certification by UNBS undertaken (number of interventions)	143,625,000	20.0	100	6.00	2.00	0.06	On track
	Routine Inspections and enforcement of food safety quality standards, accreditation of NDAL and milk quality assurance (number of interventions)	885,117,600	29.7	100	3.00	1.30	0.35	On track
	Support processes by the MAAIF AVCP for the accreditation of the National Dairy Analytical Laboratory; review of 3 regulations and development of guidelines on food safety and quality management; development of 2 manuals on food safety and quality (number of interventions)	296,652,200	49.0	100	6.00	2.00	0.08	On track
	Lugazi Market constructed and operationalised (number)	14,613,318,174	93.6	100	1.00	0.80	4.97	On track
	Kitoro Entebbe Market constructed and operationalised (number)	25,648,782,788	86.5	100	1.00	0.80	9.44	On track

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical Performance Score (%)	
	Tororo Main Market constructed and operationalised (number)	24,143,702,410	94.9	100	1.00	1.00	9.61	Achieved
	Busia Main Market constructed and operationalised (number)	21,582,513,136	94.8	100	1.00	1.00	8.59	Achieved
	Kasese Central market constructed and operationalised (number)	13,655,410,575	94.4	100	1.00	1.00	5.44	Achieved
	Masaka Central Market, Mbarara Main Market, Moroto-Lopeduru Market, Soroti Main Market and Arua Main Market constructed and operationalised (number)	104,819,120,464	81.2	100	5.00	4.50	37.56	On track
	Kitgum Main Market constructed and operationalised (number)	21,460,429,834	57.0	100	1.00	1.00	8.54	Slow progress
Digitalise acquisition and distribution of agricultural market information	Kabale Central Market constructed and operationalised (number)	20,926,384,369	64.2	100	1.00	1.00	8.33	On track
	Total	251,151,339,467	82.0	100	-		93.82	Output performance

Source: Field findings

ANNEX 5: Performance of the Agriculture Financing Sub-Programme by 31st December 2021

Output	Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Qty	Physical performance Score (%)	
Tractor procured for enhanced agriculture production and productivity at Mr. Matyama Fredrick's farm in Iganga District	200,000,000	100.0	100	2.00	2.00	0.41	Achieved
Working capital into Petroleum products at Mawumo Petroleum Limited of Mr. Musitwa Paul in Iganga District (% of funds invested)	190,000,000	68.4	100	100.00	100.00	0.39	Achieved
300 acres of sugarcane plantation established/maintained on Mr. Ezra Muyomba farm in Kayunga District (acres)	250,000,000	100.0	100	300.00	300.00	0.52	Achieved
Acreage of banana plantation expanded and fertilisers applied to increase wine production on SILGAD Investments Ltd farm in Mbarara District (acres)	130,000,000	100.0	100	13.00	13.00	0.27	Achieved
20 milking animals procured, milking parlour constructed and watering system improved on Mr. Okeyamba's farm in Kazo District (No of interventions)	200,000,000	40.0	100	3.00	1.00	0.35	Achieved
50 acres of tea planted and 70 acres existing tea plantation fertilized on Mr. Magezi's farm in Kyenjojo District (acres)	200,000,000	100.0	100	120.00	107.00	0.37	Achieved
Three machines procured and installed in coffee factory; fertiliser applied in coffee factory and coffee trading (sets of interventions)	300,000,000	50.0	100	5.00	2.50	0.62	Achieved
Coffee plantation expanded, drying beds procured, two	380,000,000	100.0	100	5.00	2.50	0.39	Achieved

Output	Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Qty	Physical performance Score (%)	
poultry houses constructed, irrigation system established and store built (number of interventions)							
Functionality of Mabale Tea Growers factory restored through capitalisation by UDC (number of factories)	246,065,168	100.0	102	1.00	0.70	0.36	On track
Tea planted promoted in Kigezi Highland Tea Factory in Kabale and Kisoro districts by UDC (acreage)	5,000,000,000	64.5	100	1500.00	1500.00	10.35	On track
Kaaro Koffi Ltd supported to procure a coffee processing machine (number of equipment)	3,000,000,000	74.3	100	1.00	0.40	3.35	On track
Equity/shareholding of 30% acquired in Mutuma Commercial Agencies Ltd	2,000,000,000	9.3	100	100.00	50.00	4.14	On track
Equity/shareholding of 30% acquired in Budadiri Arabica Coffee Ltd	4,200,000,000	100.0	-	100.00	20.00	1.74	Off track
Soroti Fruits Factory insured 100% against industrial all risks, 130 staff insured in Medical, GPA and Comprehensive Insurance (Type of risks in No.)	320,000,000	15.0	67	4.00	3.00	0.66	On track
Certificates of adherence to international foods standards at SoFTE % Achievement	398,690,000	23.7	30	100.00	0.00	0.00	On track
Staff trained in Understanding HACCP, Occupational Safety & Health (OSHE), Product Merchandising Standards, ISO 22000:2018 Internal Audit training, Good Manufacturing Practices (GMPs), Good Hygiene Practices (GHPs) among others at SoFTE (% Achievement)	55,000,000	1.5	100	100.00	100.00	0.11	On track

Output	Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Qty	Physical performance Score (%)	
Salaries paid for staff No of months at SoFTE	2,200,000,000	20.8	148	12.00	6.00	4.56	On track
Procured consumables (Fruits-Mangoes and Oranges) - Metric Tonnes at SoFTE	3,772,800,000	5.3	110	5760.00	582.00	7.81	On track
Procured consumables (primary packaging materials- Pouches, PET,) % Materials procured	2,623,992,000	22.8	81	100.00	81.00	5.43	On track
Procured consumables (additives and reagents to aid fruit processing) % materials procured	1,261,790,000	20.9	50	100.00	50.00	2.61	On track
Utility bills paid at SoFTE	3,829,900,000	8.4	206	100.00	100.00	7.93	On track
Marketing and distribution done at SoFTE	1,457,100,000	1.0	553	100.00	50.00	3.02	On track
Equity acquired in Nwoya Fruit factory	5,568,787,000	-	-	100.00	0.00	0.00	On track
Equity acquired in Yumbe mango factory	10,500,941,500	-	-	0.00	0.00	0.00	On track
Total	48,285,065,668	28.2	72	-			
Sub-programme performance at output level (%)						55.41%	Fair performance

Source: Field findings

ANNEX 6: Performance of Institutional Strengthening and Coordination Sub-Programme

Intervention	Output	Financial Performance			Physical Performance			Remark
		Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	
Strengthen Coordination of public institutions in the design and implementation of policies	Data collection done (No. of visits)	40,446,000	69.3	100	28.00	18.00	0.02	Undertaken
	Coordination undertaken (Quarterly meetings)	13,020,000	43.3	100	4.00	2.00	0.01	undertaken
	Recruitments of parish chiefs undertaken (Percentage)	182,500,000,000	66.7	10	100.00	20.00	29.99	Partially done
	Total	182,553,466,000	66.7	10	100	30.02	30.02	Output performance

Source: Field findings