



WATER AND ENVIRONMENT SECTOR

ANNUAL BUDGET MONITORING REPORT

FINANCIAL YEAR 2020/21

October 2021

Ministry of Finance, Planning and Economic Development
P.O. Box 8147, Kampala
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MOFPED
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ABBREVIATIONS

ADB /AfDB	African Development Bank
AIA	Appropriation in Aid
AMCEN	African Ministerial Conference on the Environment
AMCOMET	African Ministerial Conference on Meteorology
ASGM	Artisanal and Small Scale Gold Mining
ATC	Appropriate Technology Center
AWS	Automatic Weather Station
BPT	Break Pressure Tank
CBD	Convention on Biological Diversity
CBOs	Community Based Organisations
CDM	Clean Development Mechanisms
CFM	Collaborative Forest Management
CFR	Central Forest Reserve
CMP	Catchment Management Plan
CTPP	Community Tree Planting Project
COVID 19	Corona Virus Disease of 2019
CSOs	Civil Society Organizations
DLGs	District Local Governments
DWOs	District Water Office / Officers
EAC	East African Community
EPF	Environment Protection Force / Environmental Police Force
EIA	Environmental Impact Assessment
ENR	Environment and Natural Resources
EPR	Extended Producer Responsibility
ESIAs	Environmental and Social Impact Assessments
FAO	Food and Agricultural Organization
FBMO	Farmer Based Management Organisations
FFS	Farmer Field Schools
FIEFOC	Farm Income Enhancement and Forestry Conservation
FSM	Fecal Sludge Management
FY	Financial Year
GEF	Global Environment Facility
GFS	Gravity Flow Scheme
GIS	Geographical Information System
GKMA	Greater Kampala Metropolitan Area
GMOs	Genetically Modified Organisms
GoU	Government of Uganda
Ha	Hectares
HIV/AIDS	Human Immune Virus / Acquired Immune Deficiency Syndrome



ICAO	International Civil Aviation Organisation
ICT	Information Communications Technologies
IEC	Information, Education and Communication
IFMS	Integrated Financial Management System
IGAD	Intergovernmental Authority for Development
IPC	Interim Payment Certificate
ISO	International Organisation for Standardization
IWUA	Irrigation Water User Association
IWUS	Irrigation Water User Committees
KCCA	Kampala Capital City Authority
Km	Kilo Meter
LAN	Local Area Network
LGs	Local Governments
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MC	Municipal Council
MCM	Million Cubic Meters
MDAs	Ministries Departments and Agencies
MDGs	Millennium Development Goals
MFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MoLHUD	Ministry of Lands, Housing and Urban Development
MoU	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework
MWE	Ministry of Water and Environment
NBSAP	National Biodiversity Strategy Action Plan
NDF	Nordic Development Fund
NDP II	Second National Development Plan
NDP2	Second National Development Plan
NEF	National Environment Fund
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NGOs	Non-Government Organizations
NMTS	National Meteorological Training School
NOSCP	National Oil Spill Contingency Plan
NSSF	National Social Security Fund
NTSC	National Tree Seed Center
NWSC	National Water and Sewerage Corporation
NWWTP	Nakivubo Waste Water Treatment Plant
O&M	Operation and Maintenance
PAPs	Project Affected Persons



PSP	Public Stand Post
PWDs	Persons with Disabilities
Q4	Quarter Four
RAP	Resettlement Action Plans
RGCs	Rural Growth Centers
RWSS	Rural Water Supply and Sanitation
SCAP	Water Services Acceleration Project
SDG	Sustainable Development Goal
SDP	Sector Development Plan
SOPs	Standard Operating Procedures
SRWSSP	Support to Rural Water Supply and Sanitation Programme
STs	Small Towns
SWC	South Western Cluster
TC	Town Council
TSU	Technical Support Units
TV	Television
UBC TV	Uganda Broadcasting Corporation Television
UBOS	Uganda Bureau of Statistics
Ug Shs	Uganda Shillings
UNEA	United Nations Environment Assembly
UNFCCC	United Nations Framework Convention on Climate Change
UNMA	Uganda National Meteorological Authority
UNRA	Uganda National Roads Authority
URA	Uganda Revenue Authority
USD	United States Dollars
VAT	Value Added Tax
VTs	Valley Tanks
WASH	Water Sanitation and Hygiene
WES	Water and Environment Sector
WfP	Water for Production
WfPRC-N	Water for Production Regional Centre North
WfPRC-W	Water for Production Regional Centre West
WMO	World Meteorological Organisation
WQ	Water Quality
WSDF	Water and Sanitation Development Facility
WSDF SWB	Water and Sanitation Facility South Western Branch
WSDF-C	Water and Sanitation Development Facility Central
WSDF-E	Water Supply Development Facility East
WSS	Water Supply System
WTP	Water Treatment Plant



FOREWORD

In the Financial Year 2020/21, the programmes and projects implemented by the various Ministries, Departments and Agencies (MDAs), Local Governments (LGs) and the private sector sought to, “**Stimulate the Economy to Safeguard Livelihoods, Jobs, Businesses and Industrial Recovery**’ as was the theme for this year’s National Budget.

The progress towards achieving this goal was hampered majorly by the COVID-19 pandemic. However, the pandemic gave us some lessons and opportunities pointing to the need to be more frugal in our public expenditures, and accountable to the people we serve.

There is need to use monitoring findings such as these from the Budget Monitoring and Accountability Unit (BMAU) to reinforce our commitment to enforce accountability, and alignment of our programming to meet the goals of the third National Development Plan.

I urge all entities to adopt the programmatic approach, and use these findings to inform our plans and policies, in order to build the resilience to recover and thrive in both the public and private sectors.

Ramathan Ggoobi

Permanent Secretary/Secretary to the Treasury



EXECUTIVE SUMMARY

Introduction

This report presents findings of an assessment conducted on selected key Votes within the Water and Environment Sector (WES) based on approved Work plans and budget allocations to the Votes, programmes and sub-programmes between 1st July 2020 and 30th June 2021. Emphasis was placed on programmes with large development expenditures. This was mainly considered with the view that they greatly impact on the output/outcome sector targets.

Sub-programmes selected for monitoring were based on regional representation, level of capital investment, planned annual outputs, amount of money released and government commitments in the Financial Year (FY) 2020/21. The methodology adopted for monitoring included literature review of annual progress and specific project performance reports (monthly review reports); interviews with the respective responsible project officers or representatives at both central and regional government levels; the users/beneficiaries of the project and onsite observations/verification of reported outputs in the field.

Financial Performance

The sector budget allocation for the FY2020/21 was Ug shs 1,721.44bn (tax arrears exclusive). The sector National budget share has been approximately 3% for over five years with limited increase or at time decline in intermediate levels. The total sector release in the FY was Ug shs 1,064.38bn (61.83% of the budget) which was fair and good expenditure (80%). However, there were cases of over expenditure due to reallocations mainly from development to recurrent domestic budget. Under expenditure cases were caused by delayed procurements, Non-payment of bank charges and Government of Uganda (GoU) commitments to donor funding among others. The lower donor fund release was in tandem with the sector absorption capacity (41.9% under Ministry of Water and Environment only).

Overall Performance

The WES overall performance was good at 77.9%, with a good number of targeted indicators achieved though most of them had not yet been aligned to third National Development Plan (NDP III). The very good performers were: Rural Water Supply and Sanitation at 99.3%, Environmental Management (NEMA) 95.6%, National Meteorological Services (UNMA) 84%. Forestry Management (NFA) was at 80%, Urban Water Supply and Sanitation (UWSS) 79.9% while Water for Production scored 66.4% and Natural Resources Management (NRM) performed poorly at 40.2%. However, the Vote/programmes performance may differ from its general state since this is only based on achievement of annual planned outputs/intermediate outcomes and the budget releases in the FY.

Highlights of Sector Performance

The Water and Environment Sector provides key services for the attainment of the overall targets in the Third National Development Plan (NDP III). Thus provides water for domestic and production functions; compliance enforcement to environmental and natural resources policies; legislation and standards at all levels that will assure the integrity and functionality of natural ecosystems to offer valuable services to other sectors of the economy. In the Financial Year (FY) 2020/21 the sector was allocated Ug shs 1,721.444bn (On budget) with average Votes releases at 61%. The total financing to the Sector including on-budget and off-budget resources was approximately Ug shs 2,379.93bn, out of which Ug shs 620bn was Appropriation in Aid and Ug shs 13,58bn was Off-budget.



Rural Water Supply and Sanitation Programme

The Rural Water Supply and Sanitation Programme objective is to ensure availability and access to safe and clean water as well as hygienic sanitation facilities for both men and women in rural areas countrywide. The outcome of this would be increased access to safe Water Supply and Sanitation (WSS) facilities in rural areas. The programme performance was very good at 99%. Its approved budget was Ug shs 146.57bn, of which Ug shs 87.33bn (59.6%) was released and Ug shs 79.44bn (89.8%) spent reflecting a fair release and good expenditure. However, less expenditure was under Administration and Management Services (56%).

The percentage of people accessing safe water supply within 1,000m was 69% of the planned 75.4%; 19.5% of the planned 23% had access to improved sanitation facilities in rural areas and 33% of the planned 44.7% had hand washing facilities with soap and water. Lukalu-Kabasanda piped system in Butambala was 85% complete. Contract variations and delayed payments led to three contract extensions. The Kahama II Gravity Flow Scheme (GFS) in Ntungamo was 62% complete over 92%-time progress. The six month's contract extension was due to delayed certificate payments and land wrangles. The Nyabuhikye-Kikyenkye GFS works in Ibanda stalled at 67% for close to two years due to insufficient financial and technical capacity of the contractor plus land conflicts for project components. Construction of Mpungu-Nyakazinga in Kasese, rehabilitation of Ayara WSS and Upper Sipi GFS extension did not commence owing to budgetary constraints.

During the FY, 40 solar powered mini piped schemes were under construction in Karamoja, Northern, Eastern, Central, South West, and Midwest regions of the country. The overall physical progress was 77%. The expected outputs for each system are: Pump house, guard house, solar system, pump installation, reservoir tank, transmission and distribution mains, and PSPs. Works for Mutir (Pakwach) and Awach (Gulu) solar powered mini-piped water systems waited for pumps delivery in the country. Katonya in Kiboga was completed while Ngando had defects at the meters and pump heads.

The highway sanitation facility in Kiruhura was 90% complete at 80% payment rate. The facility has a toilet of 11 stances for male, female, children and disabled plus three washrooms and 10 urinals; an attendant's house, a mini supermarket, a restaurant and a kitchen. The contract was extended for six months with a cost variation of Ug shs 341,489,921.

Urban Water Supply and Sanitation Programme

The programme performance was good at 79%. It is responsible for provision of viable and sustainable urban water supply and sewerage/ sanitation systems for domestic, industrial and public hygiene uses in small towns, large towns, municipalities and cities of Uganda. The outcome is increased access to safe water supply and sanitation facilities for both men and women in urban areas. The approved budget of the programme was Ug shs 929.27bn, of which Ug shs 528.09bn (56%) was released and Ug shs 508.54bn (96%) spent. The progress of planned systems' works included:

The percentage of people accessing safe water supply within 200M was 80% of the planned 79.2% and 89 % people with access to an improved sanitation facility in Urban Areas was as planned. However, the sanitation outcome indicator was not disaggregated as planned in the NDP III. The design, build and operation of the 45,000m³/day Nakivubo Waste Water Treatment Plant (WWTP) was 99% complete. The waste water component was fully operational and the plant handed over to NWSC without digesters as sludge loading of the tanks pending pre-commissioning checks. Delays resulted into claims by contractor to a tune Euros 5million. The Nakivubo and Kinawataka sewers were complete with a debt of Euro.5. million.



Other completed systems included: Kakunyu-Kiyindi in Buikwe with 554-yard tap connections, 30 PSPs, and 3 public toilets (one at Kiyindi market and 2 at schools); Kikandwa in Kasanda with 200 connections, 10 PSPs and 2 public toilets and Kasambya in Mubende with 600 private consumer connections, 10 PSPs and 2 public water borne toilets. Kampala Water Lake Victoria Water and Sanitation was substantially complete with claims of Ug shs 632,296.113m. Kapeeka WSS upgrade in Nakaseke was 82% complete. Padibe WSS in Lamwo was 94% complete.

Kashaka-Bubare (II) in Mbarara was 100% complete with 25 connections. Butenga-Kawoko WSS in Bukomansimbi was 100% complete. The users at the PSPs were charged Ug shs 150-200 per 20litre jerry can above the recommended Ug shs 100. The system has 500 private connections, 20 PSPs and 2 Public water borne toilets. The Butenga toilet was not in use due to management disagreements between the Umbrella and the church. Butemba and Kyankwanzi WSS was 79% complete at 50% payment. Improvement of Igorora Town Council WSS was 95% complete at 35% payment. Works comprised of 5 PSPs. Lwemiyaga WSS in Sembabule was 86% complete. Low cash inflow affected works progress.

Water for Production Programme

The programme performance was fair at 64%. This programme is a driver for socio-economic development, modernisation of agriculture and mitigation of climate change effects for benefit of both men and women. The annual approved budget was Ug shs 213.57bn, of which Ug shs 114.14bn (53%) was released and Ug shs 113.03bn (99% of the release) was spent. The release was quite low and yet the programme was only GoU funded. The program works progress included:

Overall, 52.165 (ha) area was created under formal irrigation of the planned 19,776 (ha) and Cumulative WfP Storage Capacity (52.165 million m³), of the planned 54.32 (ha). Works for construction of twenty-three (23) Small Scale Irrigation schemes (SSIs) in the South Western districts were at different completion levels. Construction of four (04) valley tanks in the districts of Kibaale, Kiruhura, Isingiro and Sembabule was at 80% completion level.

Rwengaju Irrigation Scheme in Kabarole District was substantially complete and technically commissioned. Kyamate, Mabira and Ntungamo SSIs were yet to be commissioned. Establishment of Sustainable Water for Production Management Systems was ongoing in the completed schemes. Support for best agronomic practices, agribusiness and capacity development had commenced. A private operator was contracted for one year to operate and maintain Rwengaju until a proper management system is established. Ngugu Multipurpose WSS was at 93% completion. The system had 42 operational PSPs. Extension of water to the 5-acre demonstration gardens waited for installation of irrigation kits.

Natural Resources Management Programme

This programme is responsible for promotion of efficient use and management of environment and natural resources for sustainable development. The performance was poor at 40%. The program budget for the FY 2020/21 was Ug shs 124.53bn, of which Ug shs 74.98bn (60%) was released and Ug shs 76.90bn spent. Irrigation schemes had progressed as follows:

The percentage area of wetlands cover restored and maintained was 8.92% of the planned 9.18%. Percentage area of forest cover restored and maintained was 12% as planned; the planned 6% area of river banks, lakeshores, mountains and rangelands restored and maintained was not reported on as NDP III outcome indicator. Five Gravity fed irrigation schemes infrastructure and facilities for Wadelai (1000 ha), Mubuku II (480 ha), Doho II (1178ha), Tochi (500 ha), and Ngenge (880 ha) average construction level was 96%. Farmer-Based Management Organizations/Water User Associations (FBMO/WUAs) for



sustainable management of these schemes were established. Mobuku Irrigation Scheme in Kasese and Tochi in Oyam, were substantially complete and technically commissioned though vandalism had cropped up in Tochi. A private operator was contracted for each system for a period of one year to oversee operation and security of the systems. Wadelai Irrigation Scheme in Pakwach was at 82% completion level.

A total of 330 titles in wetlands were cancelled in Kampala, Mukono, Wakiso and a wetland inventory set up for Nwoya. Nine (9) soil and water storage and retention facilities were constructed to enhance infiltration in wetland systems in Western and Eastern Uganda. A total of 10,038.8ha of degraded wetlands were restored in 30 districts across the country. Cumulatively 531km of critical wetlands were demarcated in Western, Central and Eastern Uganda. Seven community gender responsive wetland management plans were developed in six districts of Central and Eastern Uganda. Out of the planned 200km of critical wetland boundaries, 53.5km were demarcated and 320.7ha restored out of the planned 500ha in North and Central Uganda.

Uganda National Meteorological Authority (UNMA)

The programme objective is to provide data and information to all on weather, climate and climate change to support sustainable social and economic development of the economy. The outcome is increased access to real time meteorological information by the public including the disabled, youth children and elderly. The programme performance was good at 84% with a 71% budget release and 93% utilisation. By end of the FY2020/21, UNMA's achievements included:

Level of accuracy of seasonal weather forecasts issued for all categories of people including the female, male, children, youth, and elderly per climatological zone was 70% of the planned 85%. The functionality of 4 DAVIS Automatic Weather Stations of Agoro, Geremech, Goma, and Kakira was improved and 80 rainfall stations maintained (26-Eastern, 18-central, 23-western and 13-northern regions). The 68 ADCON Automatic Weather Stations was maintained through provision of airtime and Adcons. A total of 20 Automatic Weather Stations, 100 Manual Rain gauges, 35 Digital Evaporation Pans and 300 Measuring cylinders were procured but not installed. A total 6,543 Flight folders, 120 SIGMETs were issued for Entebbe and 1,873 Terminal Aerodrome Forecasts for Entebbe and Soroti, and 100,248 METARs for synoptic stations. The number of terminal aerodrome forecasts and flight folders reduced due to closure of the airport during the COVID-19 lockdown.

Daily forecasts were disseminated to three media houses of UBC, Star and Bukedde 1 TVs. Seasonal forecasts were issued at Uganda Media Centre covering all climatological zones. Countywide regional radio talk shows were conducted in Bushenyi, Mbarara, Mbale, and Soroti to disseminate and get feedback on the seasonal forecasts issued. Operation of Lira and Rwampara radars pended power connection in Lira. An assessment of weather and climate information dissemination and related feedback was conducted in Mubende, Kyenjojo, Kabarole and Kasese to improve UNMA visibility. Three radio programs and three television talk shows were conducted on seasonal forecasts, severe weather alerts and monthly updates to increase awareness on weather and climate issues.

National Environment Management Authority

The NEMA aims to promote and ensure sound environment management and prudent use of environment and natural resources for improved livelihood and betterment of all men and women. By the end of FY2020/21, Ug shs 18.81 (73.6%) of the annual budget (Ug shs 25.556) was released and Ug shs 18.496 (98.3%) spent.



The programme performance was very good at 95%. However, the overall state of environment which is highly degraded, outmatches this performance. The percentage level of environmental compliance by projects and facilities was 80% of the planned 85%. The planned percentage area of degraded catchment areas protected was achieved (35%). A review and analysis of data regarding the status of various aquatic ecosystems in Uganda was conducted. There were 205 enforcement undertakings by the Environmental Police Force (EPF) to address the issues of noise pollution, wetland/lakeshore degradation, and compliance support in terms of community policing and restorations orders.

A total of 224 violations/incidences were handled and 1,320 audit inspections undertaken. Out of the targeted 100 permits, 82 were received, reviewed and 62 approved. Two field assessments were done on the rising lake levels in Masaka and Kalangala districts and 160 spatial maps produced out of the planned 300. Fragile degraded ecosystems were restored targeting critical sections and related catchments (230 ha in Kyenjonjo, Sheema, Ntungamo, Isingiro, Otuke, Kamuli and Jinja among others). Extended Producer Responsibility (EPR) guidelines were developed and shared with 40 inspected factories in Kampala, Wakiso and Mukono urban areas and to strengthen the Management of plastics and Plastic products.

National Forestry Authority

The National Forestry Authority's performance was good at 80%. The NFA manages 506 Central Forest Reserves covering an area of 1,265,742 hectares to ensure equitable supply of forest and non-forest products and services to Government, local communities and private sector. The NFA realized Ug shs 32.074bn (75.3%) of the annual budget (Ug shs 42.582bn) of which Ug shs 31.305bn (97.6%) was spent. Physical performance was good as the following was achieved:

Percentage of Central Forest Reserves boundary length resurveyed and marked with concrete pillars was 31% of the planned 98%; Percentage of natural forest cover on Central Forest Reserves was 52% of the planned 74%, while all planned industrial plantations on Central Forest Reserves were achieved. A total of 895ha of natural forest were maintained and 895ha freed from encroachment. Contracts for consultancy services for preparation of four Forest Management Plans (FMPs) out of the planned 10 were awarded. Boundary survey and marking with pillars of 370km in 16 management areas and 1,817ha of forest plantations were established. About 16,368ha were weeded 1,032ha, pruned and thinned, in various management areas. A total of 3,422ha were demarcated and mapped for licensed tree planters and 630km of fire lines/roads maintained for fire prevention

A total 7,923,450 assorted seedlings were sold to the public and supplied for NFA own planting from various management areas and 11,445,681 assorted seedlings were supplied under National Community Tree Planting Project (NCTPP) and NFA planting from various nurseries. A total of 194,110kg of assorted tree seeds were processed and supplied/sold from the National Tree Seed Center in Namanve.

Key sector challenges

- i) The low government disbursements affected the progress of works leading to cost variations and contract extensions. Case in point was Kahama and Lukalu-Kabasanda water schemes.
- ii) Encroachment on ecosystems due to population pressure on land resulting into illegal titling of forestland/wetlands. This coupled with negative political interventions hinder lawful eviction and cause illegal demarcations. In Achwa Forest Reserve, politicians organised the locals to chase away Forest Rangers while in Amuru people were allotted forest land.



- iii) Acquisition of land for sector infrastructure investments leads to delays in implementation. Land owners reject the Chief government Valuer's (CGV) rates demand for higher compensation costs. Absent landlord's position may differ from that of the sitting tenants causing more delays.
- iv) Low financial/technical capacity of local contractors delayed works resulting into extensions like the case of Nyabuhikye GFS.
- v) Procurement delays especially where No Objection is required. The third parties to the implementation process prolong approvals. The procedure is lengthened by higher threshold values that cannot be handled by the Regional Procurement Units.
- vi) The COVID-19 pandemic and the subsequent lockdown affected progress of works and achievement of targets where the number of workforce and local revenue (NTR) reduced due to the limited number of tourists. The closure of the passenger aircraft affected project expatriate movements, importation of materials and the demand of the Terminal Aerodrome Forecasts and Flight folders.
- vii) There is vandalism of GI pipes solar panels and generators for purposes of selling them as steel scrap is becoming a common vice. This has consequently affected the supply of water to communities as the distribution pipes and taps are targeted resulting to consumption unsafe water.

Recommendations

- i) The MFPED should ensure that the annual cash flow plan for the different Votes gives priority to the importance of projects/existing projects and ensure adherence to achievement of the targeted outputs/outcomes.
- ii) The MLHUD/MWE should vigilantly mobilise and sensitise the masses and political leadership on proper land ownership, encroachment activities, environmental degradation and lawful evictions.
- iii) The MWE should engage Local Governments in land acquisition before project investments are made and initiate works in places without disputes.
- iv) The MFPED should institute penalties on Accounting Officers for non-adherence to the procurement plans reflected in the work plans with no clear reason for doing so.
- v) The PPDA/MWE should build capacities of the contractors and request them to submit details of all ongoing engagements while bidding for works to gauge their ability to take on more contracts.



CHAPTER 1: BACKGROUND

1.1 Introduction

The mission of the Ministry of Finance, Planning and Economic Development (MFPED) is, “To formulate sound economic policies, maximise revenue mobilisation, and ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development”. It is in this regard that the ministry gradually enhanced resource mobilization efforts and stepped up funds disbursement to Ministries, Departments, Agencies and Local Governments (LGs) in the past years to improve service delivery.

Although some improvements have been registered in citizens’ access to basic services, their quantity and quality remains unsatisfactory, particularly in the sectors of health, education, water and environment, agriculture and roads. The services being delivered are not commensurate to the resources that have been disbursed, signifying accountability and transparency problems in the user entities.

The Budget Monitoring and Accountability Unit (BMAU) was established in FY2008/09 in MFPED to provide comprehensive information for removing key implementation bottlenecks. The BMAU is charged with tracking implementation of selected government programmes or projects and observing how values of different financial and physical indicators change over time against stated goals and targets (how things are working). This is achieved through semi-annual and annual field monitoring exercises to verify receipt and application of funds by the user entities. Where applicable, beneficiaries are sampled to establish their level of satisfaction with the public service.

The BMAU prepares semi-annual and annual monitoring reports of selected government programmes and projects. The monitoring is confined to levels of inputs, outputs and intermediate outcomes in the following areas: Accountability, Agriculture, Infrastructure (Energy and Roads); Industrialisation; Information and Communication Technology; Science, Technology and Innovation, Social Services (Education, Health, and Water and Environment); and Public Sector Management. This report presents field findings of the Water and Environment Sector for the semi-annual budget execution for FY2020/21. The monitoring exercise was conducted between July and August 2021.

1.2 Sector Objectives and Priorities

In order to meet the NDP III objectives, the Water and Environment Sector identified priorities that constitute the strategic direction towards addressing national challenges. These are in line with the Sustainable development goals (SDGs) and the strategic investment plan 2018-2030. These 6 key sector priority areas are:

- i) Investments to secure the integrity of water resources at local, regional and national levels with involvement of communities.
- ii) Investment in safe water supply systems and sanitation facilities in rural (including Rural Growth Centers) and Urban areas as well as providing for industrial needs and wildlife in national game parks.
- iii) Promotion of irrigation systems in liaison with the agricultural sector.



- iv) Investment and Strengthening the protection and management of ecosystems and refugee response.
- v) Strengthening the weather, climate and climate change response.
- vi) Capacity and partnership development of both public and private sectors in water and environment resources management.

1.3 Sector Outcomes

In order to ensure effective service delivery, the sector has three specific outcome indicators that guide its contribution in realization of the overall national objectives. These are i) Improved access to safe water and sanitation facilities for rural, urban and water for production uses for both men and women; ii) Improved availability of good quality and adequate Water Resources to support socio-economic transformation for both men and women; iii) Improved weather, Climate and Climate Change Management, Protection and Restoration of Environment and Natural Resources.

Gender Considerations: The sector committed itself to promote gender and equity considerations through the sector programmes.

The sector institutional framework consists of the Ministry of Water and Environment (MWE) which oversees operations of Local Governments (Districts and Town Councils). De-concentrated structures including the Water and Sanitation Development Facilities (WSDFs), Technical Support Units (TSUs), Water Management Zones, Water for Production Regional Centers and Umbrella Organisations, National Environment Management Authority (NEMA), National Forestry Authority (NFA), National Water and Sewerage Corporation (NWSC), Uganda National Meteorological Authority (UNMA), Kampala Capital City Authority (KCCA), Development Partners, Private Sector and the Civil Society Organizations (CSO).

To achieve the set objectives and priorities the sector works through six Votes namely: Ministry of Water and Environment (Vote 19); National Forestry Authority (Vote 157); National Environment Management Authority (Vote 150); Uganda National Meteorological Authority (Vote 302); Kampala Capital City Authority (Vote 122); and Local Governments (LGs) - Vote 501-850.



CHAPTER 2: METHODOLOGY

2.1 Scope

This report highlights financial and physical performance of selected programmes in the Water and Environment Sector (WES) by 30th June 2021. The programmes monitored were selected from Vote 019 - MWE, Vote 150 - NEMA, Vote 302 - UNMA, and Vote 157 – NFA. This covered seven out of ten (70%) Programmes, and 22 out of 65 (33.8%) Sub-programmes (both recurrent and development)

2.2 Methodology

Physical performance of sub-programme was assessed through monitoring a range of outputs, linking the progress to reported expenditure and outcome indicators achieved. The key variables assessed included: performance objectives and targets; inputs and outputs, and intermediate outcomes.

2.2.1 Sampling

A combination of random and purposive sampling methods was used in selecting projects from the Ministerial Policy Statements and progress reports of the respective Votes. Priority was given to monitoring outputs that were physically verifiable. In some instances, multi-stage sampling was undertaken at three levels: i) Sector programmes, and Sub-programmes, ii) Local governments, and iii) Project beneficiaries. The selection process placed more emphasis on development expenditures of the sub-programmes and the districts were sampled to effectively cover regional representation.

2.2.2 Data Collection

Data was collected from various sources using a combination of approaches:

- i. Review of secondary data sources including: Ministerial Policy Statements for FY2020/21; National and Sector Budget Framework Papers; Sector project documents and performance reports in the Programme Budgeting System (PBS); Sector Quarterly Progress Reports and work plans; Budget Speech; Public Investment Plans; Approved Estimates of Revenue and Expenditure; and data from the Budget Website.
- ii. Review and analysis of data from the Integrated Financial Management System (IFMS).
- iii. Consultations and key informant interviews with project managers in implementing agencies both at the Central and Local Government level.
- iv. Field visits to project areas for primary data collection, observation and photography.

2.2.3 Data Analysis

The data was analysed using both qualitative and quantitative approaches. 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 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 weights of the output and percentage achievement for each output were multiplied to derive the weighted physical performance. The overall sector performance is an average of individual programme performances monitored. The performance was rated on the basis of the criterion in Table 2.1.

**Table 2.1: Assessment guide to measure performance of sub-programmes monitored in FY2020/21**

SCORE	COMMENT
90% and above	Very Good (Achieved at least 90% of both outputs and outcomes)
70%-89%	Good (Achieved at least 70% of both outputs and outcome)
50%- 69%	Fair (Achieved at least 50% of both outputs and outcomes)
49% and below	Poor (Achieved below 50% of both outputs and outcomes)

2.3 Limitations

1. Uncoordinated sub-programmes/outputs which do not contribute to the major project objectives/ programme outcomes. The outputs are lumped together under projects for budgeting purposes which is a reflection of poor planning.
2. Some output activities are qualitative, without specific target figures and costs and the sector performs based on the availability of funds, this makes it challenging to measure performance for analysis.
3. Limited information to analyze the sector outcome target indicators which makes the available data unauthentic to determine achievements. Some indicators were stated differently from what is in the NDP III.
4. Inability to track donor funds and LG expenditures, and since these are not on the system it depends on what individual entities give and the figures keep changing with different reasons.
5. The scope of work monitored is sometimes not enough to make conclusive remarks because of limited personnel and time to carry out fieldwork.
6. The good performance of a programme may not necessarily mean the vote is doing well given the limited resource allocation and low output targets.
7. Limited information from beneficiaries to measure social change especially for software activities.
8. Budget aggregation of outputs and sub outputs makes it difficult to know their specific allocations thus complicating their analysis.



CHAPTER 3: SECTOR PERFORMANCE

3.1 Overall Sector Performance

Overall Financial Performance

The sector budget allocation for the FY2020/21 was Ug shs 1,721.44bn (tax arrears exclusive), as reflected in table 3.1.

Table 3.1: Overall Sector Financial Performance by 30th June 2021 (in Billion Ug shs)

Vote	Budget	Release	Expenditure	% Budget Released	% Release Spent
MWE	1,514.56	887.93	855.77	58.63	96.38
UNMA	26.61	18.96	17.71	71.25	93.41
NFA	42.58	32.10	31.31	75.39	97.54
NEMA	26.61	18.81	18.50	73.59	98.35
KCCA (Sanitation and Environmental Services Programme)	17.23	17.48	17.29	101.45	98.9
DLG (Water and Environment)	94.90	89.1	78.437	93.9	92*
Total	1,721.44	1,064.38		61.83	80.76

*Source: Approved Budget Estimates, IFMIS Data and Votes' Q4 Performance Reports; *DLGs with Q4 Reports*

Overall Sector Performance

The Water and Environment Sector performance was good at 77.9%, as five out of the seven monitored programmes exhibited good performance above 70% of the annual planned outputs and outcome target achievement. The RWSS and NEMA performance was very good, while the rest performed well (UWSS, UNMA and NFA) apart from WFP and NRM whose performance was fair and poor respectively (Table 3.2). Performance measurement was based on achievement of annual planned outputs that may not necessarily reflect the general state of the programme. This may be a reflection of inadequate planning where key outputs affecting a programme or contributing to the outcome are not planned/ budgeted for.

The sector started on new/rehabilitation or continued with the construction of multiyear piped water systems in both rural and urban areas and protection or rehabilitation of point water sources. A number of schemes were completed. More point water sources were constructed and rehabilitated than had been planned to provide water to communities during the COVID 19 pandemic. Politics interfered with the plans in the election period.

**Table 3.2: Overall Sector Performance by 30th June 2021**

Programme	Weighted Score (%)	Remark
Rural Water Supply and Sanitation	99.3	Very good performance
Urban Water Supply and Sanitation	79.9	Good Performance
Water For Production	66.4	Fair performance
Natural Resources Management	40.2	Poor
Environmental Management (NEMA)	95.6	Very good performance
Forestry Management (NFA)	80.1	Good performance
National Meteorological Services (UNMA)	84.0	Good performance
Average Overall Performance	77.9	Good Sector Performance

Source: Authors' Compilation

3.2 Ministry of Water and Environment

The Ministry of Water and Environment (MWE) is responsible for sound management and sustainable utilisation of water and environment resources for the present and future generations. The MWE is guided by the following sector strategic objectives in the implementation of the policies and programmes;

1. To protect and manage the quantity and quality of water resources to ensure maximum benefits for production and guarantee water resources access and security for all sectors of the economy.
2. To increase households access to basic safe and affordable water supply in rural areas from 69% to 80% by 2025 while ensuring availability of at least one source per village and promote improved sanitation paying special attention to the needs of women and girls and those in vulnerable situations in order to reduce the number of deaths and illness related to poor water supply and sanitation.
3. To increase overall access to safe and affordable water supply in urban areas from 78% to 88% by 2025 in order to progressively fast track achievement of coverage for all by 2040.
4. To increase cumulative Water for Production (WfP) storage capacity from 41.12 Million Cubic Meters (MCM) to 60.3 MCM by 2025 to support irrigation development and utilization for sustainable agriculture and increase incomes and employment opportunities.
5. Enhance the contribution of forestry to GDP to reach 4% by the end of FY 2024/25.
6. Increase the wetland ecosystem coverage to reach 11.5% of the total land area by end of end 2024/25 and promote sustainable use of the resource for private sector development.
7. Ensure sustainable management of the environment for production, livelihood, improvement and sustainable development.
8. Ensure regulation, compliance and monitoring of all aspects of the environment for sustainable economic growth.
9. Enhance control and management of chemicals, pollution and related environmental disasters for a clean, healthy, and productive environment.



10. Enhance public environmental awareness, literacy and access to information for improved and sustainable environment management.
11. To improve the accuracy, timeliness and responsiveness of meteorological data and products for sustainable socio-economic transformation.
12. To enhance coherence among institutions and actors and strengthen capacity for implementation, transparency monitoring and reporting on climate change both for national and international levels.
13. To develop sector capacity throughout all the institutions and support other stakeholders in the sector.
14. To review, develop and reform institutional frameworks, laws, policies and regulations to ensure fast and effective delivery of services.
15. To promote gender and equity considerations and increase the fight against HIV/AIDS through the sector programmes.

3.2.1 Rural Water Supply and Sanitation Programme

The Rural Water Supply and Sanitation (RWSS) programme is responsible for the provision of safe water supply and sanitation facilities to rural communities. The objective is to ensure availability and access to safe and clean water as well as hygienic sanitation facilities in rural areas countrywide. The programme outcome is ‘increased access to safe water supply and sanitation facilities in rural areas.’

In FY 2020/21, the approved budget of the programme was Ug shs 146.57bn, of which Ug shs 87.33bn (59.77%) was released and Ug shs 78.39bn (89.76%) spent by end of June 2021. The GoU release was very good (95.5%) whereas only 32.2% external financing was received. The programme implemented four developments sub-programmes in the financial year, out of which two were monitored. Findings from the assessment exercise are highlighted below:

3.2.1.1 Solar Powered Mini-Piped Water Schemes in Rural Areas Sub-Programme

It's estimated that over 80% of Uganda's population resides in rural areas (UBOS) that are characterised by Rural Growth Centers (RGCs) with populations ranging from 1,500 to 5,000 persons. The predominant safe water supply technology in there is the hand pump borehole which can only extract approximately 700 liters per hour. This causes delays, conflicts and time wasting thus unreliable for RGCs. Due to the population increase and large numbers of RGCs in the country, it is recommended that high yielding boreholes are powered with solar energy to supply multiple stand posts, in order to reduce on the challenges associated with hand pumps. The powered boreholes are designed to serve an estimated population of 3,500 – 6,000 persons for a period of 15 years. This approach requires relatively higher initial capital investment at the start but with accrued benefits from reduced costs of operation and maintenance over the life of the systems. The technology entails development of small-piped water schemes consisting typically a high yielding borehole equipped with a solar powered submersible pump, storage tank and limited distribution pipe network, to a few public service points.

The sub-programme commenced in July 2015 and ends in June 2022. Its main objective is to upgrade the service levels of safe water supply in rural communities thereby reducing on risks related to water borne disease and improve livelihood of the rural communities. The annual approved budget in FY 2020/21 was Ug shs 39.43bn, of which Ug shs 36.63bn (92.9%) was released, and Ug shs 37.14bn (101.4%) spent by end of June 2021. Both release and expenditure performances were very good.



The key planned outputs under this sub-programme included: i) Back up support for operation and maintenance of rural water provided through sensitization activities, formation of community based water management structures, and quarterly review meetings conducted; ii) Sanitation and hygiene education promoted; iii) Progress on construction works monitored; iv) Land for construction of water works acquired; v) Water supply systems constructed (40 mini solar powered piped systems constructed to 70% in two lots of 20 mini systems each; Mpungu-Nyakazinga WSS in Kasese District to 50%; Kanyabwanga in Mitooma District to 60%; Kabuyanda in Isingiro district to 100%; Lirima II in Manafwa district to 100%); and vi) Point Water Sources constructed (100 production wells, 70 large diameter wells and 200 chronically broken down boreholes rehabilitated countrywide).

Physical Performance

By 30th June 2021, achievements under the sub-programme on the outputs above were as follows: Sensitisation meetings were conducted at the 40 solar powered water sites, Kabuyanda WSS, Kanyabwanga WSS, and the point water sources i.e. 300 newly drilled and 466 rehabilitated boreholes. Focus was on operation and maintenance, ownership of the system, gender based violence, HIV/AIDS, and the inclusion of women in the management of water and sanitation facilities. The National Framework for Operation and Maintenance of Rural Water Infrastructure, and the design manual for solar powered systems were launched during the Joint Sector Review meeting held in September 2020. The framework was disseminated to all District Water Officers in Karamoja, West Nile, Lango, Acholi Central and Rwenzori sub Region regions. Virtual quarterly Operation and Maintenance (O&M) review meetings with Water Sanitation and Hygiene stakeholders were conducted (WASH).

Sanitation and hygiene sensitization activities were conducted for the point water sources, the 40 solar sites, Kanyabwanga and Kabuyanda for fulfillment of critical sanitation requirements. Site visits were made for the proposed water sources of Mbunga-Nyakazinga GFS to establish sufficiency. Site visits were also made to the 40 solar sites, Kabuyanda WSS, and a contract management meeting held for Kanyabwanga WSS. Lirima was constructed to 100% completion; Kabuyanda WSS in Isingiro 87% complete; Kanyabwanga WSS in Mitooma 75% complete; Mbunga-Nyakazinga GFS under design review (70% completed); overall physical performance of the 40 solar-mini systems was 77% complete, 466 boreholes rehabilitated across the country; and 300 new point water sources drilled (242 Hand pumped wells and 58 production wells).

Field findings

The monitoring team conducted field verifications at various sites and the findings are as presented hereafter:

i) Awach Solar Mini Powered Water Scheme in Gulu District

At Awach Solar Powered Mini Scheme components constructed were: office block, pump houses and the reservoir tank base. Pending works included laying of transmission and distribution pipes, pump and solar system installation, reservoir tank, and the five (5) planned public stand posts. Works halted in August waiting for importation of pumps in the country. However, site maintenance was poor as the structures were in the bush.



Water office



Pump house and guard house

ii) Katonya Solar Mini Powered Water Scheme in Kiboga District

The scheme was completed and serving two villages of Nabuzaana and Kitonya Local Council (LCI). The scheme has four (4) PSPs and it was functional at the time of visitation. Kitonya LCI had three (3) PSPs, while Nabuzaana had one (1). It is managed by a committee on behalf of the beneficiaries. The community had not contributed anything yet towards maintenance of the scheme. They had experienced leakages at the tap heads but no major repairs were done and the community was happy with the system.



L-R: A tap stand and solar panels at Kitonya SSI in Kiboga District

iii) Mutir Solar Mini Powered Water Scheme in Pakwach District

At Mutir Solar Powered Mini-Piped Water System: The pump house, guardhouse, reservoir tank and transmission mains were constructed. Pending works included solar installation, pump installation, construction of distribution mains and the four (4) planned public stand posts. By August 2021, the contractor had shifted his team to Eastern Uganda waiting for pumps importation.



Production well



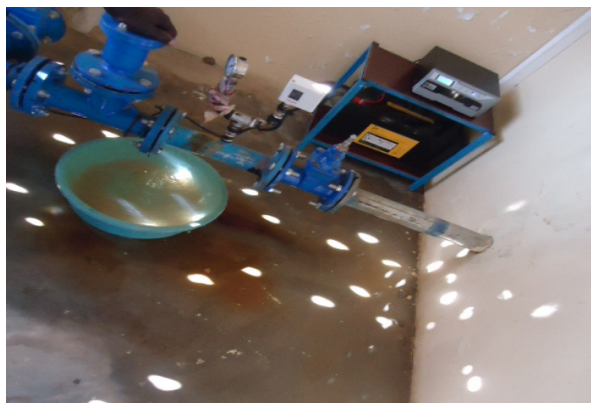
Pump house



Reservoir tank

iv) Ngando Solar Mini Powered Water Scheme in Butambala District

This scheme was substantially complete awaiting commissioning, however, due to the high pressure, the meter connections were leaking and required spares. Four replacements were made save for the three PSPs which remained leaking. A break pressure tank was constructed and access provided by the landowners who was given a yard tap in exchange. The system has seven PSPs and 10 yard taps but the demand was still quite high. The ministry should consider expanding the service area since the quantity of water was enough.



Leaking pipe at the pump house



Leakage at the meter

v) Sembwa Solar Powered Mini Piped Water System in Nakaseke District

The system was 100% completed and serves two villages of Sembwa and Kifumbe. The water system has three public stand posts and five yard taps. The source is a borehole and uses 14 solar panels. The system functions well though the rainy season affects the sunshine hours, and thus the water flow. The system was pending commissioning.

Implementation challenges of the sub-programme

- i) There is increased demand for access to safe water but in most cases, the resource envelope or the quantity of water at the source limits this.
- ii) There are delays in completing the ongoing piped systems, partly due to the high number of GoU projects placing a burden on GoU funds. For example, Kabuyanda WSS which should have attained 100% completion was at 87%.
- iii) Slow progress on community mobilisation activities for Mbunga-Nyakazinga due to the COVID-19, and associated lockdown restrictions.
- iv) Delays in importation of materials from China due to the COVID-19 pandemic. The pumps for Mutir and Awach solar mini systems had delayed.

Conclusion

The annual sub-programme budget release was very good at 92.9%. The planned community mobilization and sensitisation activities slowed down due to COVID-19 restrictions on gatherings. The construction of 40 solar mini schemes progressed to 77% (overall) with 18 sites completed. The Highway Public Sanitation and Hygiene Facility in Kiruhura District was 68% complete. Inadequate funds delayed works. Kabuyanda was at 87% completion, Kanyabwanga (75%), and construction of Mbugu-Nyakazinga did not commence due to delayed design review. More boreholes were drilled and rehabilitated during the election period. Delayed importation of pumps for solar mini schemes affected the works' progress.



Recommendations

- i) The MWE should consider bulk water supplies in order to meet the increased water demand. This too addresses the reducing water quantities of production boreholes.
- ii) The MWE should prioritise completion of ongoing systems, and in order for the new systems to commence, it should be within the available resource envelope.

3.2.1.2 Piped Water in Rural Areas Sub-Programme

This sub-programme addresses water supply and sanitation challenges in communities that deserve interventions, but are without specific donor support. The sub-programme also focuses on water supply improvements in water stressed areas of the country, fast tracking implementation of governments manifesto pronouncements and presidential pledges. It develops and promotes appropriate technologies for water and sanitation in the rural areas such as development of solar water supply installations on high yielding deep boreholes to serve bigger populations with the same source, increasing uptake of rainwater harvesting, large gravity flow water supply systems and large scale rural water pumped water supplies. The project period is from July 2015 to June 2022. The sub-programme objectives are to:

- Increase access to piped safe water through powered motorization of high yield production wells.
- Contribute to capacity building efforts especially amongst districts and sub-district level staff, administrators, leaders, CBOs and civil society. This will especially be towards improvements in planning/management and technical skills to support sustaining interventions.
- Provide water supply systems that will achieve economy of scale, require least cost energy, and sustainably operated and maintained by the community themselves through the Sub-county.
- Promote better health through improved hygiene, excreta disposal and environmental management practices.
- Reduce the time spent walking long distances in search of safe water supply and improve enrolment in schools as time spent collecting water is substantially reduced.
- Improve the water supply service levels in rural area to enable rural the population in the project areas to increase their economic income through incorporating back yard or mini irrigation system.
- Innovate and promote appropriate technology for water and sanitation in rural areas especially in difficult situations where conventional technologies are not appropriate.
- Promote Rain Water Harvesting in water stressed areas through construction of demonstration system and training of artisans and village groups on the construction and maintenance of the facilities.

The annual approved budget in FY 2020/21 was Ug shs 55.54bn, of which Ug shs 33.26bn (59.9%) was released and Ug shs 29.53bn (88.8% of the release) spent by 30th June 2021. This was a fair release with good expenditure performance.

The key planned outputs were: i) Backup support for Operation and Maintenance (O&M) of rural water supplies provided, ii) Sanitation and hygiene education promoted in towns where WSS are constructed, iii) Appropriate water and sanitation technologies researched and developed, and iv) Piped water supply systems constructed. The achievements of the sub programme by end of June 2021 against the planned outputs are hereby presented below:



Physical Performance

Advocacy meetings were held with the community members under Lukalu-Kabasanda WSS, Orom GFS, and Kahama II GFS. Water management structures formed in three project areas of Longor, Pudo and Kalabong in Orom. Sensitisations on sanitation and hygiene conducted in Katooma, Butinde, Nyabubaare, Nyakisa, Rwere West, Ekibare, Ruyanja, Kigarama, Kabonero, Kirama and Ruhanga South in Kahama. Assessment of households for water connections in Kahama, and Lukalu-Kabasanda was ongoing. Site meetings were held for Orom GFS in Kitgum, Kahama II in Ntungamo, and Lukalu Kabasanda water supply system in Butambala to discuss works progress and other technical issues.

An assessment was conducted in communities of 15 districts around the major water bodies of Kyoga, Victoria, Albert and River Aswa affected by the rising water levels. Distributed 354 fabricated peddle assisted hand washing facilities in seven districts. Assessment of two point of use water purification technologies i.e. the LADIS UV based and Spout filter was done. A systematic community construction manual for a 100,000-liter rainwater harvesting tank developed; A basic laboratory for testing the quality of drinking water was established at the Appropriate Technology Centre (ATC) offices to aid technology profiling and certification. A mobile training and technology promotion facility with fully fledged equipment was installed.

A community group of 25 members in Busaana Sub-county, Kayunga district was trained on construction, O&M of a low cost Fossa Alterna and Bio gas ecosan toilets. Technology mapping research was carried in five regions of Ankole, Mid-central, Bukedi, Lango and Busoga covering 65 districts. Construction of Orom Water Supply system was at 85%.

Field findings

The BMAU monitoring team conducted field verification assessments on the following:

i) Construction of Kahama II Water Supply and Sanitation System

The planned completion of Kahama II Gravity Flow Scheme (GFS) in Ntungamo district was at 73% against the time lapse of 100% and payment of 49%. The contract was extended for six months due to delayed certificate payments and land wrangles at the source. The private connections target 200 tap stands with 10 PSPs and 2 VIP latrines at Katooma and Ruhanga primary schools. The source works at Ruhanga treatment system were completed while for Kaborogota were ongoing. Reservoir Tanks (150m³) and Break Pressure Tanks, Sedimentation and collection tank, Chlorine House, Pump and Generator house, Guard House & Attendants House, Office Block, Community Protected Spring, were complete. Pending was installation of the chlorination unit and connecting the unit to the transmission pipeline, the pumping mains connection with the transmission pipeline to the pump house and to the reservoir tank, electro mechanicals (at 30%), Distribution Network (77%), Intensification Networks (0%) and Fencing of the tank site and construction of storm drain are the pending works.

Implementation Challenges

- (i) Delayed advance and payments to contractor's certificates slowed works. This affected the financial commitments of the contractor especially as the bank requirements were violated.
- (ii) Land acquisition involved long negotiations with several people including the district chairperson, Resident District Commissioner, and 13 landlords.

- (iii) Heavy rains caused floods thus the source and retention wall for the reservoir collapsed delaying works for over a month. This is yet to be constructed
- (iv) The COVID-19 pandemic affected progress of works most especially during the lockdowns. The shipment of tank components from Malaysia was delayed.
- (v) Overwhelming demand for water. Under Kahama phases II only 200 tap stands were planned for the two sub-counties of Nyabiho and Nyabushenyi but about 1,355 applications were received. This makes it difficult to choose whom to serve.

Recommendations

- (i) The MWE should prioritise ongoing projects in planning and budgeting to reduce on the payment shortfalls of certified works in case of limited resources.
- (ii) The MWE should ensure all land clearance processes are done before project commencement to avoid delays.

ii) Construction of Lukalu-Kabasanda Gravity Flow Scheme in Butambala District

The WSS was at 90% completion. The private connections target is 550 yard taps with 3 Public Stand Posts (PSPs) and 3 water borne toilets. Contract variations and delayed payments led to three contract extensions. The project has two transmission lines. Line one was constructed for phase I from the spring which was completed. Variation works for Line II (the GFS line) were in progress. The two boreholes sources at Lukalu and another at Kabasanda were completed. The sedimentation and collection tanks were complete; 100m³ main Reservoir in Lukalu and two steel 30m³ tanks on elevated towers at Nambeya and Nsozi hills were installed. The construction of three sanitation facilities in Kabasanda TC, Kalamba S/C and Mirembe TC was completed remaining with final paint coat and plumbing works. The WSS has three kiosks at Seeta, Kabasanda and Mirembe town councils (TCs) with a target of 550 connections. The two pump houses with a chlorine house at Lukalu were complete but the supplied pumps were not yet installed.



L-R: Un-installed pump and solar panels at Lukalu in Butambala District

Challenges

- i) Delays in securing land for the infrastructure development.
- ii) The COVID-19 pandemic slowed works as movement of workers was difficult.

iii) Construction of a Highway Public Sanitation and Hygiene Facility in Kiruhura District

The plan is composed of the sanitation, lockups and restaurant, an attendant's house and a pharmacy that were at different completion levels. The site works were at 68%, toilet/sanitation facility 78%, lock ups and restaurant 75%, attendant's house 78% at a time lapse of 85.45% and overall physical progress of 90%. All roofing works were done, door and window frames fixed. The tiles were on site pending fixing and other finishing works. The upper and lower compounds were leveled remaining with planting grass on upper side and pavers on the lower part. The payments were at 70.94%.



L-R: Attendant's house, sanitation facility, block with restaurant and lock up shops in Sanga Town Council, Kiruhura District

Challenges

- i) Acquisition of land took long thus delayed commencement of works for four months and site location had to be changed. The first sight at the junction of Kaguta and Mbarara roads was overpriced. This significantly affected progress of works and led to price revisions.
- ii) Site conditions at the alternative site affected works progress. Several earthworks at the new site had not been anticipated like water diversion trenching. This delayed works for over one and a half months.
- iii) Heavy rains delayed works for over a month.
- iv) The COVID-19 pandemic affected progress of works.

Overall Performance

The overall programme performance by end of FY was very good at 99.3% as summarised in Table 3.3. Substantial achievement of planned outputs was observed especially the construction of point water sources. More boreholes were drilled than what was planned. The COVID-19 pandemic and political pressure during the election period led to provision of more water sources to communities. Community sensitisations, promotion of hygiene and sanitation activities were affected by the lockdown, but advocacy



meetings were held with community members of benefiting systems. Community management structures were formed in some completed solar mini sites. Progress on construction works was at different levels of completion. Some planned water systems didn't commence such as the rehabilitation of Ayara WSS, Mpungu-Nyakazinga WSS, and Upper Sipi WSS. Nyabuhikye-Kikyenkye has stalled for almost two years mainly due to low technical and financial capacity of the contractor and delayed compensation of landowners that interrupted works progress. Plans are underway to procure another contractor.

Table 3.3: Performance of Rural Water Supply and Sanitation Programme by 30th June 2021

Output	Annual Budget (000 Ug shs)	Cum. Release (000 Ug shs)	Annual Target (%)	Achieved Quantity (%)	Weighted Score (%)
Back up support for O&M of Rural Water	2,178,236	1,578,000	100	63	2.01
Promotion of Sanitation and hygiene education	1,157,000	657,000	100	84	1.22
Research and development of appropriate water and sanitation technologies	400,000	400,000	100	90	0.38
Monitoring and capacity building of LGs, NGOs and CBOs	1,762,000	762,000	100	70	1.86
Acquisition of land by government	500,000	500,000	100	80	0.42
Construction of Piped Water Supply Systems (Rural)	58,968,245	38,788,941	100	65	61.36
Point Water Sources constructed	30,000,000	27,200,000	100	100	31.59
Programme Performance (Outputs)					98.83
Outcome Indicator			Annual Target	Achieved	Score (%)
% of people accessing safe water supply within 1000m			75.4	69	92
% people with access to an improved sanitation facilities in rural areas			23	19.5	85
% population with hand washing facilities with soap and water			36	44.7	124
Programme Performance (Outcomes)					100
Overall Programme Performance					99.3

Source: MWE and Field findings

Key programme challenges

- High land acquisition costs for all system components coupled with the lengthy acquisition process causes delays of works, e.g. Nyabuhikye-Kikyenkye.
- Low financial capacity of local contractors. They have to rely on money paid out on the certificates. In case of any delayed payments, then works cannot proceed.
- The reduced staffing capacities of 10-20% to combat the spread of Covid 19, interrupted inter district movements for implementation of activities.
- Interruption on the importation of system components such as pumps due to lockdown restrictions meant to combat spread of Covid 19.
- Heavy rains from October to December 2019 delayed works and some cases caused floods.



Recommendations

- i) There is need to raise the budget for land acquisition to match the number of systems under construction each year. The sector should also acquire land a year earlier before starting construction works.
- ii) The sector needs to conduct due diligence checks on the contractors' capacity before award of contracts.

Conclusion

The programme has many projects whose contracts were extended with works progress slower than planned much as performance was rated at 99%. The major cause of delays was nonpayment of certified works and land conflicts that delayed project initiations. Sometimes work halted because of unresolved conflicts case of Nyabuhikye-Kikyenyke. Verification protocols of documentation with absent landlords, and hiked land prices compared to the Chief Government Valuer's estimates affected works' progress. The payment requests for the drilling and construction works were received at the end of the quarter thus could not be captured before the works were verified.

By June 2021, the national safe water coverage target of 72% in rural areas was estimated at 69% though this was a slight increase from previous year which was 68% (SPR 2020). Sanitation coverage was 80% though the target was 81%. The population having hand washing facilities with soap and water target was over achieved (124%). This could have been influenced by the prevailing circumstances of the COVID-19 pandemic which necessitated hand washing with soap for hygienic improvement as a preventive measure.

3.2.2 Urban Water Supply and Sanitation Programme

This programme is responsible for provision of viable and sustainable urban water supply and sewerage/sanitation systems for domestic, industrial and public hygiene uses in small and large towns of Uganda. Programme objective is "To provide safe water and improved sanitation facilities in Small Towns, large towns, Municipalities and the cities through MWE and NWSC."

In FY 2020/21, the approved budget of the programme was Ug shs 929.27bn, of which Ug shs 520.72bn (56%) was released and Ug shs 508.54bn (97.7% of funds released) spent by end of June 2021. The lower donor fund release is in tandem with the absorption capacity of the sector. The programme implemented 14 development sub-programmes in the FY, of which seven (7) were assessed. Their performance is as detailed hereafter:

3.2.2.1 Protection of Lake Victoria-Kampala Sanitation Sub-Programme

The protection of Lake Victoria is part of a broader Kampala Sanitation Programme implemented by National Water and Sewerage Corporation (NWSC) in a phased approach. The first phase entails construction of three decentralised satellite sewage treatment plants with associated sewer networks located as follows: i) Nakivubo Wetland to serve the central business district of Kampala; ii) Kinawataka Wetland to serve the eastern parts of Kampala particularly Nakawa industrial area, Naguru, Kyambogo and neighboring areas; and iii) Lubigi Wetland to serve the north and north western parts of the greater Kampala namely Mulago, Katanga, parts of Makerere and Kawempe, Nansana, Namungona Bwaise among others. To date Lubigi and Kinawataka sewage treatment projects (a treatment plant and associated sewer networks) were completed. The Nakivubo Waste Water Treatment Plant is at substantially complete.

The project implementation period is from 31st March 2010 to 30th June 2022. The end period has been extended due to untimely completion. The project objectives are: 1) To provide improved urban hygiene, sanitation as well as protection of Kampala's natural environment through expansion of sewer network coverage within the metropolitan Kampala; 2) To provide improved management of sludge from onsite sanitation facilities; 3) To provide hygiene education in informal settlements within Kampala.

The approved annual budget of the sub programme for the FY 2020/21 was Ug shs 35.09bn, Ug shs 52.57bn (149.8%) was released and spent by end of June 2021. Donor funds were released after the GoU planning process. The release and expenditure performance was very good. The planned outputs in the FY were to complete the construction of the Nakivubo Wastewater Treatment Plant to 100%. These included: road works, landscaping, digester equipment installation, commissioning and testing, monitoring and evaluation of plant performance, and project closure. The waste water treatment plant monitoring findings are detailed below:

Field findings of schemes monitored

By end of June 2021, the overall progress of the Nakivubo Waste Water Treatment Plant was at 99% completion. The Plant has two components: i) waste water treatment component (liquid section), and ii) sludge generation component. The waste water treatment component was completed, and handed over to the NWSC. Performance monitoring was ongoing under the defects liability period. Sewerage from the Kampala business areas (town) and that collected from the Kinawataka pre-treatment plant was being treated. The structures under performance monitoring included the inlet structure, pump station, screens and aerated grit chambers, primary sedimentation tank, aerated trickling filter unit, clarifiers, bio filters, and the associated fittings and electro-mechanicals. There were no major operational issues yet. For road works, 1.68km out of 1.7km was completed. Landscaping was 98% complete. The sludge generation component mainly consists of the bio digesters. Its purpose is to produce biogas (energy source) at the plant. Sludge had been introduced into the biogas digesters and functionality testing had begun.



Back:
The bio digesters;

Front:
The power generation house



Challenges

- i) Unpaid contractors' certificates. The outstanding amount on the sewer lines is Euros 5.1 million. This is partly due to low disbursement of GoU counterpart funding.
- ii) Costly land compensation claims. The contested cost for the sewer lines was about Ug shs 255bn, whereas the CGV's value was about Ug shs 90m.
- iii) Works progress was affected by the COVID-19 pandemic that led to repatriation of international experts hence could not physically supervise works.

Recommendations

- i) The MFPED should prioritise counterpart funding in resource allocation because this has a bearing on external financing and overall project implementation and related accrued costs.
- ii) The MLHUD should frequently carry out land valuations for different places to reduce contestation of the compensation costs by the landowners; additionally, the GoU should encourage and enforce cross-sectoral infrastructure planning to avoid major delays.

3.2.2.2 Kampala Water Lake Victoria Water and Sanitation Sub-Programme

The Kampala Water Lake Victoria Water and Sanitation Sub-programme is aimed at promoting sustainable socio-economic growth and improved health through enhanced access to safe water, thereby contributing to the poverty eradication efforts of Government. The project targets to provide safe water to a population of over four million within the Greater Kampala Metropolitan Area (GKMA) up to the year 2035. The project period was from 7th January 2011 to 30th June 2019, but extended to 2024. The project objective is to increase coverage, reliability and access of clean, affordable and economically viable water supply services for the population of metropolitan Kampala, in particular the urban poor, for sustainable growth until 2035.

The approved annual budget for the FY 2020/21 was Ug Shs 280.34bn, of which Ug Shs 252bn (89.9%) was released and spent by end of June 2021. The release and expenditure performance was good. The planned outputs were: i) Katosi Drinking Water Treatment Plant (WTP) constructed up to 100% completion; ii) Katosi-Kampala drinking water transmission main completed to 100%; iii) Water and Sanitation Infrastructure for the Informal Settlements constructed. The water treatment plant was visited to assess progress of works. Findings are as follows:

Physical Performance

By September 2021, the progress of works for the Katosi Water Treatment Plant was complete. The plant was under the defects liability period, whereby monitoring of system performance and snags handling was ongoing. The transmissions mains were completed including pressure testing. The works for construction of water and sanitation infrastructure for the informal settlements were at tendering stage.

Field findings of schemes monitored

i) Katosi Water Treatment Plant

The civil and electromechanical works at the treatment plant were completed. The plant was tested, commissioned and handed over to the NWSC from July 2021. The contractor was still on site to handle snags within the defects liability period which ends in March 2022. The system was functional at the time of monitoring. The ultimate capacity is 240m³/hr, but the available current capacity is 160m³/hr. A provision for future expansion of 80m³/hr is available. The existing water distribution pipe network is currently insufficient to absorb all the water produced from the water treatment plant. Landscaping was substantially completed. The staff houses were occupied by the plant staff in July 2020. The environmental restoration through tree planting had not commenced. The NWSC and National Forestry Authority (NFA) were in talks for the same.



L-R: Sedimentation tanks; Filtration tanks of the Katosi Water Treatment Plant in Mukono District

ii) Katosi drinking water reservoirs and pumping main

All pipe works to the reservoir tanks were completed and pressure tested for tightness. The four reservoir tanks of capacity 10,000m³ each at Nsumba Hill in Mukono were completed and holding water. Pending was painting and landscape works. The reservoir tank at Sonde hill of capacity 15,000litres was completed. The booster pump station in Namugongo was completed and pumps functional. Pending works at the booster station were landscaping and painting.



L-R: A section of the 15,000-liter tank on Sonde hill; Mechanical installations at the Namugongo Booster Station in Kampala District



Implementation challenges

- i) Interest claim of Euros 1,050,113 majorly arising from redundant equipment and workmanship delays and additional costs incurred for the importation of materials and equipment during the lockdown period, due to COVID-19.
- ii) Low disbursement rate of counterpart funds from GoU. Of the Euros 66.34 million, counterpart funding committed by GoU, only Euros 50.92 million (76.75%) has so far been disbursed, and yet the donor funding for KW LV WATSAN I was 100% disbursed.
- iii) The existing capacity of the distribution pipe network is inadequate to absorb all the water produced from the treatment plant.
- iv) Prolonged procedures in obtaining approvals from all authorities. Many approvals are required at each stage of implementation i.e. NWSC Contracts Committee, Solicitor General, Development Partners which are all necessary but all this contribute to delays.
- v) Interruption of procurement processes by whistle blowers and unsuccessful bidders causing delays in implementation. The procurement process for the Katosi water works was halted for almost a year due to complaints from a disgruntled bidder which necessitated investigations and checks on the process. In the end, it turned out that the bidder had no evidence and the claims were baseless.

Recommendations

- i) The MFPED negotiations for donor funds should ensure fully funded projects or a lesser commitment such that government is able to meet its obligation with the counterpart funding.
- ii) The NWSC should fast track the proposed project of expanding the Kampala and surrounding areas distribution pipe network.
- iii) The MWE should acquire land for installations before commencement of project works.
- iv) The NWSC, office of the Solicitor General, and development partners should devise mechanisms of addressing bottlenecks within the approval processes to avoid delays.

3.2.2.3 Water Services Acceleration Project/ Sub-Programme

The 100% Service Coverage Acceleration Project (SCAP 100) is in line with the Government policy direction of ensuring 100% service coverage in all villages across the country. The project aims to ensure that 10,609 villages and 7.7 million people living within the National Water and Sewerage Corporation (NWSC) Services Areas countrywide have access to reliable and safe drinking water by 2020. The project period is 1st July 2017 to 30th June 2022. The project objective is to: Construct cost effective safe water supply schemes and ensuring 100% system functionality; Installation of 140,000 new water connections and 20,000 Public Stand Posts (PSPs) by 2020; at least two PSPs per village.

The approved annual budget for the FY 2020/21 was Ug shs 50bn, of which Ug shs 51bn (102%) was released and all spent by 30th June 2021. The release and expenditure performances were very good. The planned outputs were: i) 2,493,006 meters of pipes and respective fittings procured and laid in all NWSC service areas countrywide. ii) A water treatment plant in Kapeeka, Nakaseke District substantially completed. The Kapeeka Water Treatment Plant was monitored and presented below are the findings:

Field findings of schemes monitored

i) Upgrading of Kapeeka Water Supply System in Nakaseke District

The water treatment plant of Kapeeka WSS had progressed to 82%. The construction of the intake works was substantially complete, with pumps installed. Pending works included landscaping, painting of the pump house, and gabion works on the river Mayanja banks at the source. Civil works were completed for the aerator, flocculators, clarifiers/sedimentation tanks, rapid sand filters, clear water tank, backwash tank, pump house, and staff houses. Pending works included installation of the alum dosing equipment, installation of lamella plates in the sedimentation tanks, placing of sand in the rapid sand filters, landscaping, painting, and technical commissioning.

The project will provide additional 5,000,000liters/day (5,000m³/day) of water intended to serve Kapeeka Industrial Park and villages in the sub-counties of; Kapeeka, Semuto, and Semuto Town Council in Nakaseke district, and Bukomero and Bukomero Town Council in Kiboga District. In terms of population, the project will serve additional 160,000 people after completion. About 7,000,000ltrs/day will be extracted from River Mayanja (one surface water source). In addition, two boreholes were drilled with a total safe yield of 50m³/h (1,200,000ltrs/day).

Implementation challenges

- i) Bursting of River Mayanja banks that caused work delays at the intake.
- ii) The COVID-19 and associated lockdown caused delays in transportation of materials and workers to site, importation of pumps, lamella plates, and procurement of sand etc.



L-R: Weir/low head dam at R. Mayanja; Raw Water Pumps for the Kapeeka WSS, Kapeeka Sub-county, Nakaseke District



L-R: Sedimentation tank; Filtration tank of the Kapeeka WSS, Kapeeka Sub-county Nakaseke District

3.2.2.4 Water and Sanitation Development Facility - South Western-Phase II Sub-Programme

The Water and Sanitation Development Facility–South Western (WSDF-SW) Phase II is a successor project of the phase I implemented from July 2008 to June 2019. The rapid increase in urbanisation and urban populations is attributed to: 1) gazettement of new urban areas, 2) high fertility rate and 3) rural-urban migration. These have led to the current identification of over 300 Small Towns and Rural Growth Centers (STs/RGCs) with over two (2) million people that are in dire need of Government intervention in provision of piped water and sanitation in the South Western region of Uganda. Some of the existing Water Supply Systems have exceeded their design horizon and are in need of redevelopment to meet the prevailing and future safe water demand. The phase II implementation period is July 2019 to June 2024.

The key project objectives are to ensure: i) Development of piped water supply systems in the targeted STs/RGCs that are safe, adequate, reliable and accessible, and ii) Improved general health conditions through reduction of water borne diseases and promotion of good practices of hygiene and sanitation in the while targeting 100% toilet coverage (basic sanitation).

The approved annual budget for the FY 2020/21 was Ug shs 11.523bn, of which Ug shs 11.457bn (99%) was released and spent by 30th June 2021. The release and expenditure performance was very good. The key planned outputs during the FY were: Backup support for operation and maintenance of piped water systems; Sanitation and hygiene improved in the implementation towns; piped water supply systems constructed. The achievements of the sub programme against the planned outputs are presented below:

Physical Performance

By 30th June 2021, the WSDF-SW office in Mbarara District was operational. Utilities and staff salaries were paid. The Quarterly progress reports were submitted, and quarterly progress meetings held. Community sensitisations were carried out in Igorora, Bigando, Nyakatonzi, and Karago where construction of piped systems was ongoing. Hygiene and environmental sanitation promotional campaigns conducted in Karago I and Kasese mini solar (Bigando and Nyakatonzi), and Igorora towns. Seven Environmental Impact Assessments were completed¹. A land title for the WSDF-SW regional office was secured.

¹ Kashaka - Bubaare, Kyakatwire-Kyembogo (Kyenjojo district), Nyakashaka, Bethlehem - Nabigasa, Nyakatonzi, Bigando and Igorora

The process of securing titles for other sites: Kambuga, Lwemiyaga, Buyamba, Kasese (Bigando, Nyakatozi), and Karago were underway. Land for Kashaka-Bubaare hosting the 2nd production borehole was fully paid. Buyamba WSS, Karago I WSS, and Kambuga WSS were completed. Other WSS were at varying completion levels: Bigando was substantially complete, Nyakatonzi (55%). Karago II WSS did not commence as planned due to insufficient funds. The design of piped water system for Nabigasa was at 80%, Rubanda bulk water transfer (20%) and 25 STs/RGCs (85%) completion levels. The field visit findings are detailed below:

Field findings of schemes monitored

i) Construction of Kashaka-Bubaare RGC Piped Water Supply Scheme -Phase II in Mbarara District

The system was 100% complete and handed over to NWSC for management although it was still under DLP and no snags realised. This was an extension of Kashaka Phase I. The Phase II works involved increasing the capacity of the system from 60m³ to 100m³ with an additional Reservoir Tank. Only 25 connections were made to cater for people who had missed on Phase I. There was no sanitation component attached to this phase. Despite the scheme completion only Ug shs 1.222bn was paid (71%) of the certified works worth Ug shs 1.716bn.

ii) Construction of Lwemiyaga RGC Piped Water Supply and Sanitation Scheme– Sembabule District

The system will serve Lwemiyaga and Kyeera Sub-counties. It was at 86% physical progress by August 2021. The twin tanks (100m³ each) were at completion level. The office block, guard house, pump house remained with final painting. The chlorine house was complete. The household ecosan toilets that were converted into three institutional lined VIP latrines at primary schools were partially complete. The project planned 13 PSPs and 450 yard taps but only 308 applicants had paid connection fees. The service line was laid to 340 No. consumers. The 10 months contract ending on 31st May 2019 was extended to 30th October 2021.



L-R: Chlorine house, the 100m³ Twin water tanks and water born toilet at the office in Lwemiyaga sub-county in Sembabule District

Implementation challenges

- i) Slow progress of works by the contractor due to delayed payments (83% payment of certified works). Progress achieved was 79% against 413% time spent.
- ii) The outbreak of COVID-19 pandemic affected progress of works by limiting the movement, number of workforce and delays in material delivery.

Recommendations

- i) The contractor should put more effort on the structures so that he can be able to complete the project within the remaining contract time.
- ii) The MWE should prioritise payment of outstanding certified certificates to enable progress of works.

iii) Construction improvement of Igorora Town Council Piped Water Supply and Sanitation Scheme-Ibanda District

Improvement works for Igorora Town Council Piped Water Supply and Sanitation System were 80% complete level at 150%-time lapse. The system serves Igorora Town Council. Major works included protection of 14.4m³/hr spring at Ki bare village, Twin Tanks (150m³ each) with a chlorine dosing unit which was at completion levels. The original five kiosks were converted into Public Stand Posts serving 17,152 people. No sanitation facility was provided by the project for lack of land. Pending was installation of dosing equipment (though water was flowing), paving the compound, replacement of the old transmission section and construction of a Break Pressure Tank. By the end of the quarter, the works certified for payment were worth Ug shs 1,054,593,140 but only Ug shs 369,376,580 (35%) had been paid.



L-R: Twin Tanks 150m³ each and a public stand post at Igorora Town Council in Ibanda District

Challenges

- i) The scheme is operational but with limited storage capacity due to exiting old transmission section of the pipeline yet to be replaced.
- ii) Lack of land to provide a public toilet facility in Igorora Town /Council.



iv) Construction of 2nd Block for MWE-SW Regional Office in Mbarara District

The Water Development Facility-SW Office Block extension was at 35% completion and Un-paid certificates affected the construction progress. Major works progress include: Substructure (100%), Superstructure (35%), Fountain pond (15%), Incinerator (0%), Generator house (0%), Water bone toilet (0%), and Electrical works (0%). The contractor had mobilized some resources and kept minimal staff onsite to keep works moving. Ongoing was the casting of the fountain and on the office block works on the third floor. The one-year contract ended in February 2021 but this was adjusted to February 2022.



L-R: A completed fountain substructure and the office extension block works ongoing

Challenges

- i) The COVID-19 restrictions on movement and delayed water resources investigations affected the timely completion of scheme designs.
- ii) Limited resources to pay the contractor for certified works. This has dragged the project works because only an advance of Ug shs 720,200,950 was paid. Certificate No.1 of Ug shs 607,357,139 had not been paid and works progress was at 35%.

Challenges of the sub-programme

- i) Limited financial resources since the sub-programme is only GoU funded with an annual allocation of only Ug shs 10.023bn and a short fall of 1,335,501,901 (12%) of the approved budget (11,523,930,000). The donor component is yet to be realised.
- ii) The construction of Karago - phase II couldn't take off because of non-commitment of NWSC to the joint funding of the project
- iii) Access to land for project components for example in Kashaka-Bubaare; production boreholes, the reservoir tank and its access road, Buyamba Reservoir and, and its access road, Lwemiyaga Reservoir Tank, and its access road, Igorora Reservoir Tank and its access road all had claims.
- iv) The COVID-19 restrictions and water resources investigations affected the timely completion of internal designs of the piped water systems in 11 urban centers

Recommendations

- i) The MFPED should follow-up/fast-track completion of the external funding processes, and increase the annual allocation of GoU funds to WSDF-SW.
- ii) The MWE should fast track land clearance of all encumbrances before any project initiations.



Conclusion

The sub-programme managed to commission two WSSs for Buyamba (in Rakai) and Kashaka-Bubaare (in Mbarara district) serving a total of 58 villages (Buyamba: 24, Kashaka-Bubaare: 34), with a design population of 33,823. Buyamba has 7,227 people and Kashaka-Bubare 26,596 benefiting from the two projects. The proposed budget for the sub-programme funding is Ug shs 264bn (with an external funding of Ug shs 169bn). However, this was funded with an annual allocation of only Ug shs 10.023bn (GoU) which is not enough to fund all the planned outputs in order to make meaningful impact. This together with the COVID-19 pandemic affected the implementation of all planned outputs thus achievement of the Sub-programme outcomes.

3.2.2.5 South Western Cluster Project Sub-Programme

In an effort to comply with expectations of the Sustainable Development Goals (SDGs), NDPIII, Vision 2040, and NRM Manifesto 2016-2021, NWSC's strategic focus for the period 2016-2021 is on infrastructure development in order to achieve 100% service coverage in urban areas and rural growth centers under NWSC jurisdiction. The project period is from July 2019 – June 2024. The expected outputs after project completion are: the current water treatment works in Masaka, Mbarara, refurbished and upgraded; Sustainable long term water sources, and associated water treatment and transmission systems for Mbarara, Masaka and surrounding towns developed. The project objective is to improve the health, living standards and productivity of the population in the project areas, regardless of their social status or income, through equitable provision of adequate and good quality water supply and improved sanitation services at acceptable cost and on a sustainable basis.

The approved annual budget for the FY 2020/21 was Ug shs 142.76bn, of which Ug shs 15.19bn (10.64%) was released and spent by end of June 2021. The release performance was poor because the actual construction works that require huge finances had not yet commenced. The sub-programme planned to award contracts, set up site, deliver materials and commence foundation works for Keera water works, Mbarara water works, and Masaka water works. The performance was as presented below:

Physical Performance

The planned contracts award, site setup and earth works had not commenced. Progress by 30th June 2021 was as follows: **Package 1:** Keera; Final tender documents prepared; detailed design report for Isingiro rural water supply and sanitation project prepared and approved; pre-qualified contractors had been requested to bid for the project. **Package 2:** Mbarara; The Final Detailed Design Report and Tender Documents were under review. The ESIA and RAP studies were in the final Stages of implementation. **Package 3:** In Masaka a comparative study for the source of water supply was on-going. Detailed designs for other invariant works components not affected by the source of Raw water (Water Treatment Plant Rehabilitation, Wastewater Treatment Plant and sewers) is on-going and are in their final stages of implementation.

Challenges

- i) Delayed completion of detailed designs due to restricted international and local travels of consultants and sub-contractors to collect field data.
- ii) Change of water source from boreholes to Lake Victoria, for the Masaka water works led to delayed completion of the detailed design report since the consultant had to undertake a detailed study of the raw water source on Lake Victoria.



Recommendation

The NWSC should fast track detailed design and tender document reviews for the works.

3.2.2.6 Water and Sanitation Development Facility Central – Phase II Sub-Programme

Through the Water and Sanitation Development Facility (WSDF) framework, the Ministry of Water and Environment implements water supply and sanitation interventions in an effort to increase coverage in urban centers, with financing from different development partners. The WSDF-Central operates in the Central and Mid-western regions. The WSDF Central contributes to the commitment by the GOU to achieve the Sustainable Development Goals (SDGs) which aim to end poverty, fight inequality and injustice and tackle climate change by 2030. One of the targets of the SDGs is to ensure availability and sustainable management of water and sanitation for all. In line with this global target, Uganda's water supply and sanitation sector set a goal of increasing access to water supply and sanitation services from 65% in 2010 to 100% by 2035 (PIP FY 2021-22). The sub-programme objective is to increase water supply service coverage and improve sanitation and hygiene services for STs/RGCs. The implementation period of the WSDF-Central is July 2019 to June 2025.

The approved annual budget for the FY 2020/21 was Ug Shs 31.21bn, of which Ug Shs 27.08bn (86.8%) was released and Ug Shs 30.73bn (113.5%) spent by 30th June 2021. The higher expenditure than release is because of the funds carried over from previous FY which were released as the FY was winding up. The key planned outputs during the FY were: i) Sanitation services and hygiene improved in the implementation towns through trainings, monitoring and evaluation; ii) piped water supply systems constructed, and iii) sanitation facilities constructed. Findings are presented hereafter:

Physical Performance

The WSDF-C office was operational. Staff salaries and office utilities paid. Two review meetings on annual work plans and budgets conducted. Staff training on procurement and contract management conducted. Environmental and Social Safeguard Implementation conducted; workers onsite were sensitized on occupational safety; tree planting done at all component sites in Bamunanika town as well as supervision and monitoring of tree nursery. A Water and Sanitation Committee formed and Leaders in Ngoma town sensitised on environmental awareness, gender and HIV/AIDS. Environmental and Social Management Plan (ESMP) for Kasambya and Kikandwa was carried out.

Communities were sensitised on sanitation and hygiene practices including hand washing in towns of Kakunyu-Kiyindi, Bamunanika, Butenga-Kawoko, Kagadi, Muhoro, Ruteete and Kyezige. Land titling process was ongoing in towns of Ngoma, Kiwoko, Butalangu, Busiika and Kakunyu-Kiyindi, Kasambya, Kagadi, Butemba, Kyankwanzi, Kikandwa, and Kagadi. Land valuation was carried out in Bamunanika and Butenga-Kawoko, pending issuance of valuation report by the office of CGV.

Construction of stores at regional office progressed to 95% completion. Construction of piped water supply systems were completed in the towns Lwamata, Bamunanika, Kayunga-Busaana and Kangulumira and Nazigo; and at varying levels in the towns of Butemba/Nalukonge (72%), Kagadi, Muhoro, Ruteete and Kyezige (89%). Drilling of 26 production boreholes was done in selected project towns. Design for new piped systems was ongoing. Construction of sanitation facilities completed the towns and at varying completion levels in Butemba (72%), Nalukonge (72%) and Kagadi (89%). Faecal Sludge Management Facilities for Buliisa and Kagadi districts were under design. The WSSs listed below were visited to establish progress on ground:

Findings of schemes monitored:

i) Kikandwa-Kasambya Piped Water Supply Systems

Kasambya Piped Water Supply Systems in Mubende District

The system was completed, commissioned and handed over to management of the Mid-Western Umbrella. It serves 32 villages. In Kasambya Town Council, it serves a population of 21,266 people. The system consists of 600 private consumer connections, 30 institutional and 10 PSPs, a furnished water office, 2 public water borne toilets (One is in the park and the other one is at the market), 2 mobile testing laboratories (under the management of the Mid-Western Umbrella and Central). It also has 2 guard houses, 2 online disinfection units, a high Reservoir tank of 200m³ and a low Reservoir tank of 100m³ booster stations. The system has two sources (boreholes) in Kamusenene and Kanyawawa villages. These sources were in the road reserve and swamp which required a lot of fill and road diversion. Transmission mains of 8,017m were laid of the 8,000m planned. One steel tank of 200m³ on dwarf walls in Kingishu village, 1 steel tank of 100m³ on a steel tower of 15m high were installed. A 100m³ concrete sump was constructed in Kamusesene village.



Mobile laboratory vehicle provided by the project to Midwestern Umbrella, surface water pumps for Kasambya WSS in Mubende District

Kikandwa Piped Water Supply Systems

Kikandwa Water System was completed and technically handed over. The system was under the DLP and no major snags were realised yet. The system is under the management of Mid-Western Umbrella. The system has 180 connections, 10 PSPs and 20 institutional connections serving 5,279 people and 2 public toilets (one in Kikandwa town and another one at a school).

Implementation Challenges

- i) COVID 19 related challenges especially on staffing levels.
- ii) Land issues at the project sites and issues related to wayleaves.
- iii) Additional demands during implementation which was not part of the design.
- iv) All the sites were in swamps so too much filling was done.
- v) Bore holes were drilled in the roads for the case in Kasambya which led to road diversion.



Conclusion

The project is substantially complete, but during implementation many issues were identified which were to a greater extent resolved. These included the land conflicts at the project sites, borehole casing challenges, delays or nonpayment of subsidised fee for connection, additional demands during implementation which was not part of the design. All the sites were in swamps so they required too much filling, which was done. The boreholes in Kasambya were drilled in the road which had to be diverted. However, the system was completed, commissioned and is under DLP.

i) Kakunyu-Kiyindi Piped Water Supply in Buikwe District

Construction works were completed, the system commissioned with 64% payment of certified works. It was undergoing defects liability monitoring. A concrete reservoir (twin tank of 200m³) tank and another one which is 100m³ tank (BPTs/Sump) were constructed. The scheme has 554-yard tap connections, 30 PSPs, and 3 public toilets one at Kiyindi Market and two schools.

Implementation challenges

- i) The COVID-19 lockdown and attendant restrictions affected movement of both staff and materials to sites.
- ii) Water levels along the lake shores rose after the project initiation and the site area had to be extended a few meters away from the submerged land.
- iii) Poverty leading to delays or nonpayment of the promotion connection fee during project implementation.
- iv) Additional demands during implementation which were not part of the original design.
- v) The rocky site for office and tanks increased costs for the contractor during construction.
- vi) Issues related to way leaves leading to compensations and change in location of some project components in the UNRA road reserves.

Recommendations

- i) Ongoing and future projects should adopt the COVID-19 standard operating procedures (SOPs) and continue operating to avoid time losses.
- ii) The MWE should ensure easy access to material requirements when need arises since the people claimed to be poor. So as the project undergoes the Defects Liability Period, more connections can be made.
- iii) The clear way leaves should be cleared before projects initiation.

ii) Butenga-Kawoko Piped Water Supply in Bukomansimbi District

The construction of Butenga-Kawoko Piped Water Supply System in Bukomansimbi District was 100% complete and commissioned in January 2021 with 95% payment of the certified works. It was operational with a few defects including pipe bursts possibly caused by the water pressure and solar system failure to push water to the reservoir tank. The operator pumped only at off peak hours in the night to cut costs, resulting into water shortages. The system has 500 private connections and 20 Public Stand Posts serving a population of 11,995 people in Butenga Sub-county and Butenga Town Council. The system has two public water borne toilets in each of the towns of Butenga and Kawoko. The toilet at the church in Butenga Town Council was closed due to management disagreements between the Umbrella and the church.



L-R: Guard house, pump house and a public stand post in Kawoko Trading Center, Bukomansimbi District

Challenges

- i) The Private Operators of PSPs overcharged consumers between Ug shs 150-200 per 20litre jerry can above the recommended Ug shs 100 by the Central Umbrella Organisation.
- ii) The Private Operator experienced some pump bursts because the pressure was too high in certain places.
- iii) The uncompensated landlords where a consultant was engaged to value the plots of land in question and the report was yet to be approved by the CGV.

Recommendations

- i) The Central Umbrella Organisation should fast track sensitisation of the Private Operator of different tap stands together with the beneficiaries on the recommended water tariff rates.
- ii) The Umbrella Organisation should follow up with the Private Operators to ensure the size of the pipes is changed in cases where pipe bursts are experienced.
- iii) The Resettlement Action Plans should be carried out before the commencement of the contractor's works to avoid project delays.

iii) Butemba-Kyankwanzi Piped Water Supply

Butemba and Kyankwanzi Water Supply and Sanitation System was at 79% completion level. The project service area is Butemba Town and Lusozi-Kyankwanzi Town in Kyankwanzi district. Major works include protection of sources (Two in Kyenda-Butemba and Two in Kyankwanzi), construction of 2 Public water borne public toilets and 4 institutional toilets (male and female); and 2 reservoir tanks of 300m³ and 200m³ capacity. The yard tap connections will be 350 for Butemba and 150 for Kyankwanzi whereas the PSPs will be 15 in Butemba and 5 in Kyankwanzi. The project works progress was 79% over the construction period of 22 months ending 19th September 2021. Only Ug shs 4,112,220,796 had been paid (50% payment over the works progress of 79%) by end of June 2021.



L-R: A toilet for females with an incinerator; and a reservoir tank in Lusozi Town, Kyankwanzi District

Implementation challenges

- i) The water resource challenge. All the boreholes that had been identified for equipping were test pumped and the results turned out to be low contrary to the reports. Therefore, more investigations were carried and two of the four identified ones were incorporated in the system.
- ii) Additional boreholes especially the 13m³/hr in Kyenda came with extra transmission length than previously provided for in the contract thus an 8.5km OD 110 mm upvc was laid compared to a 63mm pipe contract provision for a 5km length.
- iii) The second COVID-19 lockdown had effects on the reduction of the workforce which affected works progress.
- iv) A major trading center in (Katanabira) which is 6km from Butemba had not been included and through optimisation and tradeoffs water was extended there.

Sub-programme Challenges

- i) Incomplete land acquisition due to a lengthy land valuation processes, deviation from agreed positions by landowners, absentee landlords, and inability of LGs to compensate land owners. Some of these have led to threats of litigation.
- ii) Environmental degradation that leads to contamination of water sources for future planning, coupled with inadequate water resources in some schemes particularly Kabembe Kalagi, Zigoti, Busiika, Namulonge and Kiwenda poses a threat to the sustainability of water schemes.
- iii) Theft of newly installed fittings and GI pipelines and air valves that are very marketable especially in town water supply systems near Kampala. A case in point was the Kiwoko Butalangu Piped Water Supply System in Nakaseke that was vandalised twice.
- iv) The rate of urbanisation in the central region is rapidly increasing. This results in a huge demand for water systems, but the current funding level is unable to meet this demand.
- v) The COVID-19 restrictions delayed implementation of several activities, and scaled down the rate of implementation of construction works. Additionally, mobilisation activities became costly and the big crowd approach of organising (meetings, trainings, drama shows) was affected by COVID-19 restriction guidelines.



Recommendations

- i) The office of the Chief Government Valuer should address bottlenecks causing delays in the valuation process.
- ii) A multi stakeholder approach is necessary to desist from surface water contamination and compliance enforcement measures undertaken by NEMA.
- iii) Adopt innovative approaches like use of ductile Iron pipes which can be buried underground, instead of the Galvanised Iron pipes (GI) that are prone to theft.
- iv) The sector should fast track planning for bulk water transfers in order to be able to meet the high water supply demand. Though this requires more resources thus lobbying for the same from various stakeholders.

3.2.2.7 Water and Sanitation Development Facility North – Phase II Sub-Programme

The Northern region of Uganda still lags behind overall sector targets. While the region has received a lot of support in the past, the population growth rate has remained way higher than the level of investments. There are still many centers that rely on point water sources most of which were constructed during insurgency rather than on piped water supply schemes being the standard for Urban Centers and RGCs and key for socio-economic development of urban and rural settlements. The project period is from July 2019 to June 2025. The objective of the project is to improve the socio-economic situation and the opportunities for people living in the Small Towns (STs) and Rural Growth Centers (RGCs) through provision of safe, adequate, reliable, sustainable and accessible water supply and promotion of improved practices of hygiene and sanitation.

The approved annual budget for the FY 2020/21 was Ug shs 28.90bn, of which Ug shs 17.12bn (59.2%) was released and Ug shs 16.38bn (95.7% of the release) spent by end of June 2021. The release was fair, while expenditure was good. The key planned outputs during the FY were: Backup support for operation and maintenance of piped water systems; Sanitation services and hygiene improved in the implementation towns; piped water supply systems constructed; and sanitation facilities constructed. The findings are presented hereafter:

Physical Performance

The WSDF-N office was operational. Staff salaries and utilities paid. Four planning meetings and one staff training on design of solar powered water supply system conducted. Supervision and monitoring for Environment and Social Management Plan (ESMP) was undertaken in Moyo TC and Padibe TC. Establishment of O&M structures for piped water supply systems in the towns of Moyo TC and Padibe TC completed.

Sanitation and hygiene activities promoted by training of masons in Padibe TC, radio talk shows in Moyo TC. Land for one of the pumping stations in Padibe TC secured and documented. The construction of Moyo TC piped water supply was 98% complete. Designs for piped water systems in new towns of Keri-Oraba, Okokoro, Atiak, Ngai, Iceme, Otwal, Omoro, Kati, Zeu, Parabongo, Amuru TC, Bala, Kole, Apala, Alebtong, Aloji, Amugu and Abako was ongoing. Construction of sanitation facilities in Moyo TC was 100% complete. The Yumbe TC faecal sludge facility was at detailed design stage. Contractor for construction of sanitation facility in Bibia/Elegu procured. The Padibe TC WSS was visited to establish progress on ground:

Findings of monitored scheme

i) Padibe TC Piped Water Supply System and Sanitation Facilities – Lamwo District

The system progress was 93% complete. It is planned to serve Padibe Town Council in the Parishes of Atwol, Mura, Gangdyang, Kamama, Kuluyee Abakadyak. The scheme has two pumping stations (sources). The structures at the pump stations including pump house, generator house, guard house, and an ecosan toilet were completed. Pending were pumps installation, and landscaping. The water office was constructed, pending electrical and plumbing installations, and landscaping. The transmission and distribution mains were laid. There was extra pipework extensions laid on the distribution network to cover areas not originally on design, but with high demand. A 300m³ reservoir tank was installed. Out of the 400 yard taps planned, 352 were paid up, and 132 service lines were made. Locations to place 5PSPs and 25 institutional connections were yet to be identified. A water disinfection equipment (dosatrone) was yet to be installed. Institutional VIP lined latrines were also constructed (10 stances for boys, 10 stances for girls, 4 stances for teachers, and bath shelter for girls).



L-R: Solar panels; reservoir tank (at the back), guard house, water office, pump house.



L-R: Stances of institutional toilets; Production Borehole at Padibe Town Council, Lamwo District



Challenges

- i) Delayed acquisition of site for one of the pump station sites due to several claims of land ownership and varying compensation expectations.
- ii) Works variations i.e. especially demand for pipe extensions to areas not originally in the design caused delays.
- iii) Travel restrictions arising from the COVID-19 pandemic impeded movement of materials and workers to sites.

Recommendations

- i) The MWE should continuously engage land owners together with the district and Town Council/Local Government to acquire land in advance before project commencement.
- ii) The MWE should endeavor to come up with inclusive designs that cater for upcoming areas.

Overall Performance

Table 3.4 provides a summary of the programme performance. The overall physical performance was good at 79.9%. Some systems were completed and commissioned. These included Butenga Kiwoko, Kikandwa-Kasambya Piped Water Supply System, Kashaka-Bubaare RGC Piped Water Supply Scheme, Katosi water treatment plant, and the liquid component of the Nakivubo waste water treatment plant. The completed schemes were under the defects liability period and no major snags were realized yet.

Table 3.4: Performance of the Urban Water Supply and Sanitation Programme by 31st June 2021

Outputs	Annual Budget (000 Ug shs)	Cum. Receipt (000 Ugshs)	Annual Target	Cum. Achieved Quantity	Weighted Score (%)
Administration and Management Support	5,690,190	5,544,050	100	81.8	0.84
Policies, Plans, standards and regulations developed	836,600	736,598	100	80.0	0.13
Backup support for Operation and Maintenance	583,775	583,775	100	56.5	0.06
Improved sanitation services and hygiene	1,745,000	1,780,925	100	62.8	0.19
Monitoring, Supervision, Capacity building for Urban Authorities and Private Operators	2,669,300	2,569,300	100	64.3	0.31
Acquisition of Land by Government	920,000	920,000	100	80.0	0.13
Government Buildings and Administrative Infrastructure	1,200,000	1,200,000	100	70.0	0.15
Purchase of Office and ICT Equipment, including Software	130,000	130,000	100	49.3	0.01
Purchase of Specialized Machinery & Equipment	100,000	100,000	100	100.0	0.02
Purchase of Office and Residential Furniture and Fittings	200,102	200,102	100	95.0	0.03
Construction of Piped Water Supply Systems	547,931,328	407,166,004	100	51.0	66.32



Outputs	Annual Budget (000 Ug shs)	Cum. Receipt (000 Ugshs)	Annual Target	Cum. Achieved Quantity	Weighted Score (%)
Energy installation for pumped water supply schemes	60,000	60,000	100	70.0	0.01
Construction of Sanitation Facilities	4,961,230	3,874,425	100	46.0	0.52
Programme Performance (Outputs)					68.72
Programme outcome Indicator			Annual Target	Achieved	Score
% of people accessing safe water supply within 200M			79.2	80.0	101
% people with access to an improved sanitation facility in Urban Areas			89	89.1	100
Programme Performance (Outcomes)					101
Overall Programme Performance					79.9

Source: MWE and Field findings

Key programme challenges

- Delayed completion of designs, and subsequent delays to commence planned construction of water systems leads to low absorption of donor funds and consequently low disbursements. Hence the programme realized only 56% of the approved budget.
- Delays in land acquisition due to lengthy negotiation processes, contested land ownership, and in some cases refusal of Chief Government Valuer's estimates leads to delays in implementation.
- The COVID-19 pandemic that resulted in travel restrictions affected movement of workers and materials to sites, including importation of essential equipment like pumps.

Conclusion

The programme performance was good at 79.9%. During the FY, the programme engaged in the construction of piped water supply systems, and sanitation facilities. Some systems such as the Katosi drinking water treatment plant were completed. But also quite a number of schemes had not commenced due to delayed completion of designs. Implementations were generally slow due to the COVID-19 pandemic that resulted in restricted movements and gatherings. This affected both software and hardware activities since there was difficulty in delivering materials and personnel on site. Gatherings for meetings and trainings in software activities could not be ably implemented.

Recommendations

- The MWE should fast-track design completion to allow for the procurement and commencement of construction works.
- The MWE should continuously engage land owners in collaboration with LGs together with the Chief Government Valuer's office.



3.2.3 Water for Production Programme

This programme is mandated to develop and promote development and construction of water for production facilities as a driver for socio-economic development, modernise agriculture as well as mitigate effects of climate change. The programme objective is to provide and ensure functionality of multi-purpose water for production facilities in order to enhance production and productivity thereby contributing to socio-economic transformation as well as mitigation of the effects of climate change and disaster risks.

In FY 2020/21, the approved budget of the programme was Ug shs 213.57bn, of which Ug shs 114.14bn (53.4%) was released and Ug shs 113.03bn (99%) spent by 30th June 2021. This was a fair release and very good expenditure performance. The WfP programme was implementing seven development sub-programmes in the FY, of which two sub programmes namely: Water for Production Regional Centre West, and Water for Production phase II were monitored. Findings are presented hereafter:

3.2.3.1 Water for Production Regional Center-West Sub-Programme

The Water for Production Regional Centre West (WfPRC-W) is one of the decentralised regional centers of MWE with offices located in Mbarara District. Its function is to closely supervise ongoing donor and GoU funded projects, design new projects in close consultation with beneficiary districts and communities and offer immediate backup technical assistance to districts and beneficiary communities in use of water to enhance production in the lower central and Western Uganda.

The key expected outputs are constructed irrigation schemes (acreage of land under irrigation), valley tanks and earth dams (cumulative increment in storage capacity), water user committees or associations on water for production facilities. The project period is 1st July 2016 to 30th June 2022. The overall development objective is to improve the quality of life of the population through provision of water for productive use in livestock, aquaculture and mitigate effects of climate change through modern irrigation technology. The annual approved budget was Ug Shs 27.85bn, of which all was released and spent by 30th June 2021. The key planned outputs included: Activities supervised and monitored; Sustainable water for production management systems established; and Water surface reservoirs constructed.

Physical Performance

By 30th June 2021, works were as follows: Four valley tanks were constructed in the districts of Kibaale, Kiruhura, Isingiro and Sembabule. The construction of 23² small scale irrigation schemes was ongoing at varying levels of completion; Kyenshama and Rushozi earth dams in Mbarara District did not commence due to delayed designs, and land contentions. Procurement for construction of Kyenshama earth dam in Mbarara District was at evaluation stage. For the support of sustainable management structures in western region, support to operation, maintenance and management of the off farm infrastructure at Mubuku I, II and Rwengaju irrigation schemes were done. Continuous agronomic support in best agronomic practices and agribusiness was being provided although the consultant had challenges of some absentee farmers. The IEC (Information Education and Communication) materials were not produced as procuring of consultant was still ongoing. Inter district coordination meeting was not held due to inadequate funding. The region has five sets of equipment but only one set is kept functional. About 60% of the equipment is too old and very costly to maintain.

2 Hoima (1), Kibaale (1), Rakai (1), Mpigi (1), Kalangala (1), Buvuma (1), Kanungu (1), Rukungiri (1), Lwengo (2), Kasanda (1), Buhweju (1), Isingiro (1), Ntungamo (1), Mbarara (1), Rwampara (1), Masaka (1), Rukungiri (1), Kiruhura (1), Kyenjojo (1), Butambala (1), Lyantonde (1) and Rubirizi (1).

Findings of schemes monitored

i) Kyamate Small Scale Irrigation Scheme in Ntungamo District

The area under the scheme is 20ha and it belongs to Kyamate Church of Uganda. The goal is to irrigate this land for production of vegetables and fruits, coffee and bananas. The water source is Kyamate swamp and has potential to serve the project water demand. The community planted half an acre of water melons and got Ug shs 1.3m in the sales.

The scheme was completed and ready for commissioning. Major works included: Construction of the store and office block with three rooms (2 storage rooms and a project office). Installation of transmission line, construction of the security and pump control block; installation of the fence and gate; a 60m³ reservoir tank, an abstraction system and 20 acres of land were installed with a distribution network.



L-R: Control valve and a Greenhouse nursery bed of Tomatoes and Cabbages at Kyamate SSI Ntungamo District

Implementation Challenges

- i) The COVID-19 pandemic greatly affected the work progress in aspects of time scope.
- ii) Some suppliers delayed supplies and this delayed work progress.

ii) The Mabira Small Scale Irrigation Scheme in Mbarara District

The scheme was 100% complete. Only 5% of the contract sum (Ug shs 36,671,605) for supply and installation of kits for construction of the SSI scheme had been paid. The construction works included: A pit latrine at the irrigation site, the road through irrigation, culverts, the main gate land clearing and preparation, fencing of the irrigation area and creation of a drainage channel. Two acres of drip and 13 acres of sprinkler and pipe network of about 50 acres were installed. The 12 acres were free offer by a member to the community for a period of five years. Some of the crops that had been grown include tomatoes, cabbage, watermelon, avocado, eggplants, carrots, cucumber, and green pepper.

iii) Ngugo Multi-Purpose Water Supply System in Rwampara District

The scheme is in Rwampara District and covers the three villages of Ngugo I, Ngugo II, and Rukuzi. The scheme was substantially complete (93%). Major works included the 25m³ concrete Tank, Sedimentation tank, source protection, 41 No public stand posts and supply of tools for operation and maintenance. The supply and installation of irrigation kits for six acres was ongoing.



L-R: A tap stand; collection tank and clear water tank in Ngugo Multipurpose Scheme in Ntungamo district

Challenges

- i) There was delayed supply and installation of kits due to limited funds to the project
- ii) Unregulated use of tap water leading to water wastage and failure to receive water in some areas
- iii) Vandalism of taps and pipes by the community
- iv) The COVID-19 lockdown affected activities and progress of works.

Recommendations

- i) Payment of the supply and installation of irrigation kits should be prioritised so that works progress may improve
- ii) Every tap stand should have a caretaker to regulate water usage thus avoid dry areas
- iii) Community policing and vigilance should be encouraged to report people carrying out vandalism so that they are punished

3.2.3.2 Water for Production Phase II Sub-Programme

The demand for water for production has continued to rise on account of the increasing population pressure. As effects of climate change continue to escalate, the available water resource for agricultural production is constantly decreasing. Provision of water for production is therefore one of the responses to the adverse effects of climate change in the agricultural sector.



The objective of this sub programme is to develop and promote development and utilization of water for production facilities as a driver for socio-economic development, modernize agriculture as well as mitigate effects of climate change. The sub programme period is July 2019 to June 2024.

The annual approved budget is Ug shs 24.78bn, of which Ug shs 24.26bn (98%) was released and spent by 30th June 2021. The release and expenditure performances were very good. The key planned outputs included: Activities supervised and monitored; Sustainable water for production management systems established; specialised machinery and equipment purchased; Bulk water supply schemes constructed; and Water surface reservoirs constructed.

Physical Performance

Construction of Nakayonza livestock watering facility in Nakasongola progressed to 15%; Rwengaaaju Irrigation Scheme was at substantial completion; the design of Kawumu Irrigation Scheme in Luwero District was completed. The feasibility studies for several water for production facilities were at different levels as follows: Keera corridor (75%), Mega irrigation scheme of Nabigaga in Kamuli District (50%), Rwimi Mega irrigation scheme in Kabarole District (60%), Purongo and Palyec Irrigation Schemes in Amuru and Nwoya districts (75%), Lopei Bulk Water System and Irrigation scheme in Napak District (75%), Lumbuye in Luuka/Kaliro districts (50%), Nyabanja in Tororo District (50%), and Nakasongola Bulk Water Transfer system in Nakasongola District 20%. Formulation of a National Irrigation Masterplan for Uganda was at 40% progress, and preparation of design manual for Water for Production infrastructure was at 50% progress.

Under sustainable management systems, farmer field schools were established in Andibo, Longoromit, Ongole and Arechek earth dams; Mabira, Kakinga, Kagamba and Kagango dams, Obwongyerero, Kyabal and Kabingo valley tanks; and Rwengaaaju Irrigation Scheme.

Findings of schemes monitored

i) Rwengaaaju Model Village Irrigation Schemes in Kabarole district

The irrigation scheme was 100% completed and technically commissioned. It was operational and benefitted both individual farmers and institutions. It provided water for cattle, poultry and irrigation of vegetables in homes and institutions. A private operator contracted by the MWE for one year as the setup of the proper scheme management system takes shape operated the system.

Payment to the contractor was Ug shs 12,024,106,746 (38.32%) of the contract (Ug shs 31,374,639,322). It had a contract variation of Ug shs 4,073,452,930 from original contract of Ug shs 27,301,186,392. The reason for this was: i) lack of availability of steel pipes thus adopting the usage of Glass Fiber Reinforced plastic pipes (GRP) as an alternative for Steel pipes DN 350 mm, PN 16 and Steel pipes DN 350 mm PN 25. ii) Design Modification of the Weir - Construction of gabion boxes to form a raft on which the foundation for the weir could be constructed. iii) Construction of additional storage tank of 750m³ capacity at the source. This was a 24 months' contract with an eight-month extension.

Challenges

- i) Vandalism of the HDPE pipe connections caused losses to the contractor.
- ii) Some community members have connected themselves to the system causing inefficiency and leakages.



Recommendation

The MWE should carry out intensive sensitisation of the project benefits to the communities in order to minimise interferences before implementation of the scheme.

Overall Performance

The programme performance was fair at 66.4% (table 3.5). The fair performance was because many outputs did not attain the planned targets. The status of achievements by 30th June 2021 included: Completion of Rwengaju Irrigation Scheme; were construction of four valley tanks in the districts of Kibaale, Kiruhura, Isingiro and Sembabule, and ongoing construction of 23 small scale irrigation schemes. Nakayonza livestock watering facility in Nakasongola progressed to 15% completion. Feasibility studies for various new upcoming facilities were at different levels: Keera corridor (75%), Mega irrigation scheme of Nabigaga (50%), Rwimi Mega irrigation scheme (60%), Purongo and Palyec irrigation schemes (75%), Lopei Bulk Water System (75%), Lumbuye (50%), Nyabanja (50%), and Nakasongola Bulk Water Transfer system (20%). Formulation of a National Irrigation Masterplan for Uganda was at 40% progress, and preparation of design manual for Water for Production infrastructure was at 50% progress.

Table 3.5: Performance of Water for Production Programme by 30th June 2021

Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target %	Cum. Achieved Quantity %	Weighted Score (%)
Supervision and monitoring of WfP activities	2,117,467,000	2,117,467,478	100	62.0	2.49
Administration and Management Support	2,303,709,000	2,303,709,027	100	95.0	4.16
Sustainable Water for Production management systems established	4,751,248,000	4,472,248,159	100	65.0	6.23
Acquisition of Land by Government	234,000,000	234,000,000	100	75.0	0.33
Purchase of Office and ICT Equipment, including Software	315,000,000	315,000,000	100	72.5	0.43
Purchase of Specialized Machinery & Equipment	3,813,520,000	3,813,520,000	100	95.0	6.88
Purchase of Office and Residential Furniture and Fittings	100,000,000	100,000,000	100	95.0	0.18
Construction of Bulk Water Supply Schemes	14,749,541,000	14,232,254,311	100	59.0	17.13
Construction of Water Surface Reservoirs	24,248,114,000	24,248,114,060	100	19.0	8.75
Programme Performance (Outputs)					46.61
Outcome Indicator			Annual Target	Achieved	Score (%)
% of functional WfP facilities			87.7	87.9	100
Area under formal irrigation (ha)			19,776	22,504	114
Cumulative WfP Storage Capacity created (million m ³)			54.32	52.165	96
Programme Performance (Outcomes)					103
Overall Programme Performance					66.4

Source: MWE and Field findings



Key challenges

- i) The demand for facilities is very high as compared to the available financial resources.
- ii) Land acquisition for construction of WfP facilities continues to persist as the process is lengthy and, some land owners exaggerate the rates compensation compared to the Chief Government Valuer's rates.
- iii) Costly repair and maintenance of earth moving equipment. About 60% of the equipment at the regional center west are beyond their useful life.
- iv) Staffing gap of 40% at the water for production regional centre west.
- v) The COVID-19 restrictions affected progress on feasibility studies and other activities done by foreign experts as they could not come into the country for field activities.

Conclusion

By end of the FY, the programme performance was fair at 66.4%, although it achieved two out the three outcome targets. Four valley tanks were completed, and 23 small scale irrigation schemes were ongoing. Rwengaaju Irrigation Scheme was completed. These outputs have a higher contribution to the outcome indicators. However, many annual output targets were not achieved. These include construction of Nakayonza livestock watering facility, Kyenshama, Rushozi, and Kaumu irrigation schemes. Feasibility studies of Mega, Purongo and Palyec, and Lopei were not completed. The National Irrigation Master Plan and the design manual development were ongoing. The software activities and completion of feasibility studies were derailed by COVID-19 lockdown restrictions.

Recommendations

- i) The MFPED should increase the budget ceiling to the programme to be able to realise the increase in land acreage for irrigation and water storage capacity for multipurpose use as priority areas for NDP III.
- ii) Continuous engagement of communities on land related issues, and Government should review land values countrywide to reduce contentions on the rates.
- iii) The Ministry of Works should assess the earth moving equipment and provide guidance on their status usage.
- iv) The Ministry of Finance should raise the wage bill for recruitment of the necessary staff.

3.2.4 Natural Resources Management Programme

This programme is responsible for promotion of efficient use and management of environment and natural resources for sustainable development. The programme objective is to coordinate rational and sustainable utilization, development and effective management of environment and natural resources for socio-economic development of the country.

In FY 2020/21, the approved budget of the programme was Ug shs 124.53bn, of which Ug shs 74.98bn (60.2%) was released and Ug shs 76.90bn (102.6% of the release) was spent by end of FY. The release performance was good, while expenditure was very good. Of the four development sub-programmes implemented, three were monitored: i) The Farm Income Enhancement and Forestry Conservation Project Phase II - FIEFOC II; ii) Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda; and iii) Natural Wetlands Restoration Project. The findings are presented below:



3.2.4.1 Farm Income Enhancement and Forestry Conservation Project Phase II - FIEFOC II Sub-Programme

The FIEFOC II sub-programme seeks to consolidate and expand achievements of FIEFOC I that was completed in December 2012, and to address gaps through the development of irrigation schemes and Integrated Natural Resources Management. The FIEFOC II had a five-year implementation period (1st July 2016 to 30th June 2021, but was extended to 30th June 2023 due to unfinished works). Five large irrigation schemes of Tochi in Oyam district, Mobuku II in Kasese district, Doho II in Butaleja district, Ngenge in Kween district and Wadelai in Pakwach district, under the Agricultural Infrastructure Development Component were under construction. The main objective of the sub-programme is to improve household income, food security and climate resilience through sustainable natural resources management and agricultural enterprises development. The annual approved budget in FY 2020/21, was Ug shs 111.25bn, of which Ug shs 61.10bn (54.9%) was released, and Ug shs 63.32bn (103.6% of the release) spent by end of June 2021.

The key planned outputs in FY 2020/21 included: i) Knowledge of environment and natural resources promoted through production of e-newsletters, radio talk shows and awareness creation to farmers; ii) Degraded ecosystems restored and protected through restoration of farmlands and wetlands; iii) Capacity building and technical backstopping to farmers in climate smart agriculture, agribusiness skills, seedling production; and iv) Rehabilitation and construction of irrigation schemes (Agoro in Lamwo district, Tochi in Oyam district, Mobuku in Kasese district, Ngenge in Kween district, Doho II in Butaleja district, and Wadelai in Pakwach district. Other schemes are Unyama in Pabbo district, Namalu in Nakapiripirit District, Siipi in Bulambuli district, and Namatala in Budaka district). The 96 small scale irrigation schemes constructed.

Physical Performance

Knowledge promotion on environment and natural resources was done through production of e-newsletters, newspaper and magazine articles, IEC materials, and radio talk shows. Awareness on soil and water conservation techniques, agroforestry and conservation farming, was created among farmers in the five irrigation scheme catchments. Procurement was ongoing for soil and water conservation civil structures, meant for restoration and protection of degraded ecosystems.

Capacity building and technical backstopping of farmers was conducted through training in irrigated agronomy, soil and land improvement practices. Youth and women entrepreneurs were skilled and supported in agro-enterprise businesses. Farmers' capacity was built in horticultural/seedling production, post-harvest handling and food processing technologies, phytosanitary and product standardization; Commodity bulking and collective marketing, climate smart agriculture, and financial accessibility and management. The construction (civil works) of the irrigation schemes of Doho II and Ngenge was completed.

Several planned outputs were not achieved due to inadequate funding. These include: Small scale irrigation schemes (96) constructed; Environmental and Social Impact Assessment Certificates for Sipi, Unyama and Namalu irrigation schemes; Resettlement Action Plans (RAPs) for Namatala, Sipi, Unyama and Namalu Large scale irrigation schemes acquired; Environment and Social safeguards protocols for the construction of Sipi, Unyama and Namalu irrigation schemes established; Detailed design for Unyama (Pabbo), Siipi (Bulambuli) and Namalu (Nakapiripirit) done; Remedial works for Mubuku I and Hydraulic Improvement works at Agoro Irrigation Scheme completed; Land compensation for PAPs in Unyama (Pabbo), Siipi (Bulambuli), Namalu (Nakapiripirit) and Namatala in Mbale and Budaka etc completed.



Findings of schemes monitored:

i) Doho II Irrigation Scheme in Butaleja District

The overall physical progress of Doho II Irrigation Scheme was 98% at 67.6% payment level. All civil works were completed. The completed main structures were the headworks along river Manafwa, canals (main, secondary and tertiary), 29 farm pit latrines, scheme access roads, scheme buildings (store, residences, office and produce drying bed), scheme shade and guard houses. The scheme was under test running. Some portions of the scheme were already being utilized by farmers. Masula Farmer Field School members had received training in nursery making, fertilizer application, line planting etc. The seasonal weather changes affect water levels in the river, and subsequently in the canals. The lower levels cause rationing during the dry spells.



L-R: Scheme shade, secondary canal; and farm latrine of Doho II irrigation scheme in Butaleja District

The MWE contracted an Irrigation Service Operator (ISO) – a private company to operate and manage the scheme. Training of farmers, District and Municipality stakeholders in O&M was ongoing. The Irrigation Water User Committees (IWUC) and Irrigation Water User Association (IWUA) Executives were formed.

Implementation challenges

- i) The Project Affected Persons (PAPs) hindered the contractor from accessing some site locations due to delayed compensation. This affected progress of works.
- ii) Vandalism of scheme infrastructure by the community.
- iii) Heavy rainfall in 2020 led to extreme flooding along River Manafwa, which disrupted progress especially at the headworks.
- iv) The lockdown restrictions on movement due to COVID-19, affected smooth progress of works.

Recommendations

- i) The MWE should prioritise compensation of PAPs prior to construction works.
- ii) The private operator should work closely with the established structures (Irrigation Water User Committees (IWUC) and Irrigation Water User Association (IWUA) Executives) in community awareness creation to protect the scheme infrastructure.

ii) Wadelai irrigation scheme in Pakwach District

Wadelai Irrigation Scheme in Pakwach District had progressed to 82% at 75.6% payment. Land compensation for all major structures was made except for the additional piece of land that replaced the prisons farmland (Ragem prison) in the original design. Structures on ground included earth dam embankment, spillway, canals (main, secondary and tertiary), scheme buildings, and scheme roads. Pending were sanitation facilities, cattle troughs, farm clearing, and additional works on the site that replaced the prison land. The Scheme was not functional awaiting completion of the embankment and spillway works. Capacity building of farmers, District and Municipality stakeholders in operation and maintenance of the scheme was ongoing.



L-R: Scheme buildings (store, office, residence); spillway of Wadelai Irrigation Scheme in Pakwach District

Implementation challenges

- i) Delayed compensation of the PAPs, so they hindered the contractor from accessing parts of the site. This affected progress of work.
- ii) Low level of community awareness, understanding and cooperation on the project implementation.
- iii) The lockdown restrictions due to COVID-19 affected works progress because the contractor had to scale down on personnel.

Recommendations

- i) The MWE should prioritise compensation of PAPs prior to construction.
- ii) The MWE should prioritise sensitisation on the project benefit and values prior to implementation of schemes.

iii. Tochi and Mobuku irrigation schemes

Both schemes were substantially complete, technically commissioned and under the Defects Liability monitoring. Establishment of Farmer Based Management Organisations/Water User Associations (FBMOs/WUAs) was completed. Capacity building of farmers was ongoing. A private operator was contracted for each scheme for a period of one year before establishing sustainable management systems. Training in aquaculture and horticultural/seedling production value chain systems enhancement, agribusiness skills, commodity bulking and collective marketing, climate smart agriculture was slowed down by COVID-19.



Implementation challenges

- i) The formation of IWUC and Farmer Field School for part of Mubuku II command area comprising 102ha stalled due to a pending decision by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) on modalities for use of the farmland. This will pave way for the district guided selection and allocation of plots to prospective farmers who expressed interest and applied.
- ii) Flooding of rivers (Nyamwamba in Mubuku, Tochi and Ngenge) caused extra works and some delays.

Recommendation

The MAAIF should fast track review and resolve the underlying issues in Mubuku-II on the modalities for utilisation and allocation of land for irrigation.

Gender and equity considerations

All the five schemes implemented the same model for gender and equity issues. This was incorporated in allocation of land i.e. youth (30%), Women (40%), People with Disabilities (5%), Men (20%) and Veterans (5%); Establishment of a gender disaggregated register to monitor participation of the different groups. Sensitisation and affirmative actions to encourage participation of all groups in leadership positions under the water associations and committees and sensitizations for prevention of gender based violence were carried out. This was done through radio talk shows, drama shows, IEC materials etc.

3.2.4.2 Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda Sub-Programme

The loss of wetlands could exacerbate the impact of climate change as they provide fundamental services that contribute to mitigation of such impacts. This project therefore focuses on supporting communities that are dependent on the wetlands in the targeted areas to introduce new livelihood practices and business opportunities that would use wetland resources sustainably. The sub-programme objectives are: to restore wetland hydrology and associated catchment; to promote improved agricultural practices and alternative livelihood options in areas surrounding wetlands; and to help farmers to access climate information. The project period July 2018 to June 2023.

The annual approved budget in FY 2020/21 was Ug shs 4.506bn, of which Ug shs 4.267bn (99.9%) was released and Ug shs 4.262bn (91.1%) spent by end of FY. External financing amounted to Ug shs 6.2bn, of which Ug shs 3.8bn was released and spent by end of FY. The release and expenditure performance was good.

The key planned outputs in FY 2020/21 included: i) Knowledge of environment and natural resources promoted through linking five districts to the National Wetlands Information System, cancellation of titles in wetlands in Mukono district, production of wetland maps for 33 districts; ii) Degraded ecosystems restored and protected through construction of infiltration facilities, restoration of wetlands across the country, demarcation of wetland boundaries, demarcation of 25km along river Nile; iii) Capacity building and technical backstopping provided, Monitoring, inspection and supervision conducted through training of district officers.



Physical Performance

A communication strategy for the cancellation of titles in wetlands was developed. Technical teams from stakeholder institutions were set up to undertake sensitisation on the cancellation of titles in wetlands. Sensitisation was completed in Wakiso and 330 titles in wetlands were cancelled in Kampala, Mukono and Wakiso. There were 59 wetland maps produced in the four wetlands regional centers (North, East, Central, West). Sensitisation materials were developed for the different stakeholders. Shape files for wetlands were compiled and handed over to the Ministry of Lands, Housing and Urban Development (MLHUD), to be overlaid on the cadastral maps. The Wetland inventory for Nwoya was done while Kitgum was ongoing and Omoro was not undertaken. The four (4) regional offices (East, Central, Northern and Western) were not linked to due to budget constraints and COVID-19 related challenges.

A total of nine (9) out of the planned 12 soil and water storage retention facilities were constructed to enhance infiltration in wetland systems in Rufuha wetland (Ntungamo), Kabanyonyi wetland (Kabale), Agu Wetland (Ngora), Nyakambu (Sheema) and Papaya Wetland (Pallisa). Additionally, 10,038.8 ha of degraded wetlands were restored during the FY and Seven (7) community gender responsive Wetlands Management Plans developed to guide wetland wise use practices by communities living adjacent to the wetland ecosystems. A total of total of 531km out of the planned 700km of critical wetlands were demarcated during the FY.

The 11 Environmental Impact Assessments and project briefs on proposed development in or near wetland were reviewed and evaluated for compliance in the areas. A total of 50 staff from newly created District Local Governments (DLGs) were trained in specialized wetland management. A total of 14 off road motor cycles (10 for Environment Protection Police Unit (EPPU) and four (4) for local governments (Rukiga, Rubanda, Kumi and Butebo) and five (5) Laptops to support EPPU activities five (5) tents (5-man tents) were procured to support EPPU activities. In addition, 10 Laptops and six (6) printers, one (1) computer and software for wetlands Management and four (4) Laptops for the Department of Environmental Support Services were procured and delivered.

Field findings:

Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and Related Resources in Uganda (EURECCCA Project) was implemented in Ntungamo District. It worked towards restoration of Rufuuha wetland in Rweikiniro Sub-county and Kabasheshe Wetland in Kayonza Sub-county. Soil and water storage retention facilities were constructed to enhance infiltration in wetland systems in Western Uganda (Rufuha wetland in Ntungamo and Kabanyonyi wetland in Kabale). A community gender responsive wetland managements for Rufuuha Wetland in Ntungamo District was developed. The management plan was developed to guide wetland wise use practices including boundary demarcations.

Implementation Challenges

- i) Resistance of communities to the ecological activities and demarcations in the wetland e.g. bee keeping, fish farming was resisted by the communities.
- ii) Working in groups was a challenging situation since people come as individuals with different plans and operation motives.
- iii) The community blocked access to Rweikiniro wetland thus materials like thatching grass from the wetland could not easily be fetched.
- iv) Staffing gaps in the Environment and Natural Resources Department. Only three (3) out of nine (9)



substantive staff were in office making it difficult to work effectively.

- v) Inadequate means of transport for staff to carry out their duties. There is only one motorcycle at the office.

Recommendations

- i) The District Environment Office should carry out continuous mobilization and sensitisation of the communities of the benefits of EURECCCA Project to avoid resistance to implementation.
- ii) The MWE should advocate for increased wage bill for the Environment and Natural Resources Sub-programme

3.2.4.3 Natural Wetlands Restoration Project

Over the last 23 years, wetlands coverage has declined from 3,757,540Ha (15.6%) in 1994 to 2,630,770ha (10.9%) in 2008 and now estimated at 2,029,090ha (8.4%) by 2016, indicating a loss of over 1,728,450ha, representing 44% (WMD Joint Sector Review Report 2015-2016). At this present rate of wetlands degradation at 75,210ha (2-2.5%) per year, it is projected that by 2040 the country will remain with only 374,470ha (1.6%) of wetlands if no radical measures are put in place to restore their integrity.

The National Wetlands Restoration Project therefore is designed to contribute to the wetland restoration target estimated at 861,320ha from the current baseline of 2,029,090ha to 2,890,415ha (12%) wetland coverage under NDPII, Sustainable Development Goal and Vision 2040 by the year 2030. The approved annual sub-programme budget for FY2020/21 was Ug shs 0.70bn which was 100% released and spent which was a very good financial performance.

The planned outputs for the FY2020/21 were: i) Construction of wetlands education centers, ii) Strengthened wetland institutional and technical capacity, iii) Trained LGs from project area on wetlands restoration, and demarcation, iv) Purchased 54 Computers and accessories for the project districts and Regional Technical Support Units, v) Establishment and operational wetlands management information system and linking all the 50 project districts, vi) updated wetland inventories in the project districts and vii) Established Community Based Wetlands Organisation.

Physical performance

A total of 53.5km out of the planned 200km critical wetland boundaries were demarcated in the Northern (Lamogi wetland in Lamogi sub-county and Tochi wetland in Amuru district.) and Central Uganda (Nakayiba wetland in Masaka City Council). In addition, 320.7ha out of planned 500ha of critical wetlands were restored in North Uganda (Kwania, Pakwach, Nakapiripirit, Gulu, Kole) and Central Uganda (Masaka, Kyotera, Kayunga, Lwengo, Butambala, Rakai, Lutembe bay ramsar site in Wakiso district) and Lugala wetland section in Lugala, Lubaga North Kampala district.

The development of four (4) Wetland Management Plans for the restored wetlands in Northern, Central, Western and Eastern Uganda was not achieved since it required stakeholder engagement that was restricted by the COVID-19 pandemic SOPs. Other planned activities were constrained by the poor budget release.

Overall performance

The Natural Resources Management performance was poor 40.2% (refer to table 3.6). The large irrigation schemes of Mobuku II, Doho II, and Tochi were substantially complete under operations testing within the DLP. Wadelai Irrigation Scheme was 82% complete. Several works under the FIEFOC Project such as the



construction of the 96 small scale irrigation schemes; the large irrigation schemes of Unyama, Namalu, Sipi, and Namatala; and remedial works in Mobuku I were not done due to insufficient funds.

Under the Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda Sub-Programme, 330 titles in wetlands were cancelled in Kampala, Mukono and Wakiso. Storage and retention facilities were constructed to enhance infiltration in wetland systems. The project procured transport equipment, laptops and tents for the EPPU in Rukiga, Rubanda, Kumi and Butebo.

Under the Natural Wetlands Restoration Project, 53.5km of critical wetland boundaries were demarcated and 320.7ha restored in the project implementation area. The four (4) Wetland Management Plans for the restored of wetlands in Northern, Central, Western and Eastern Uganda were not done. The implementation of these projects was affected by resistance from communities that derive their livelihood from these ecological areas and political interference in implementation of restoration activities.

Table 3.6: Performance of Natural Resources Management Programme by 30th June 2021

Outputs	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)
Promotion of Knowledge of Environment and Natural Resources	3,156,554,000	2,512,749,700	100	99.6	2.7
Restoration of degraded and Protection of ecosystems	2,146,970,000	2,077,554,436	100	26.1	0.5
Policy, Planning, Legal and Institutional Framework.	5,787,051,000	3,543,812,200	100	10.1	0.8
Coordination, Monitoring, Inspection, Mobilization and Supervision.	8,901,142,000	5,571,839,000	100	36.3	4.4
Capacity building and Technical back-stopping.	14,989,611,000	10,425,562,000	100	97.9	12.9
Administration and Management Support	4,689,456,000	2,735,053,000	100	100.0	4.0
Operational support to private institutions	1,350,000,000	1,215,000,000	100	100.0	1.2
Government Buildings and Administrative Infrastructure	46,825,342,000	33,267,326,500	100	1.4	0.8
Purchase of Motor Vehicles and Other Transport Equipment	636,586,000	225,864,000	100	100.0	0.5
Purchase of Office and ICT Equipment, including Software	196,000,000	196,000,000	100	100.0	0.2
Purchase of Specialized Machinery & Equipment	17,811,446,000	994,446,900	100	100.0	15.3
Purchase of Office and Residential Furniture and Fittings	41,999,000	20,000,000	100	100.0	0.0
Acquisition of Other Capital Assets	9,919,316,000	5,461,206,000	100	80.0	8.5
Programme Performance (Outputs)					51.9
Outcome Indicator			Annual Target	Achieved	Score (%)
Percentage area of wetlands cover restored and maintained			9.18	8.92	97
Percentage area of forest cover restored and maintained			12.5	12.5	100
Percentage area of river banks, lakeshores, mountains and rangelands restored and maintained			6	0	0
Programme Performance (Outcomes)					66
Overall Programme Performance					40.2

Source: MWE and Field Findings



Key programme challenges

- i) There is continued environmental degradation and declining ecosystems integrity despite strong environmental policy and accompanying laws and regulations.
- ii) Political interference by Lower Local Governments who mobilise wetland illegal occupants against officials from MWE and other agencies. This delayed the completion of restoring Kyetinda in Makindye and Namiro wetland in Entebbe Municipality.
- iii) Inadequate funding provided for the evictions and restoration of wetlands across the country yet this process requires funds to educate and mobilise the stakeholders, undertake detailed assessment for validation, eviction as well as physical restoration.

Conclusion

Programme performance was poor at 40.2%. Considering the programme outcome indicators, some outputs like construction of irrigation schemes are misplaced yet take the biggest chunk of money in the programme but do not directly contribute to it. Percentage area of river banks, lakeshores, mountains and rangelands restored and maintained indicator was not reported on. Some planned outputs under the FIEFOC sub-programme were not implemented such as the 96 small scale irrigation schemes, large scale irrigation schemes of Unyama, Namalu, Sipi and Namata and also remedial works for Mobuku I. The natural wetland restoration project allocation could not enable it execute the planned outputs. This was further exacerbated by the resistance from political leaders and communities that threaten the integrity of the fragile ecosystems through uncontrolled and illegal human activities in these areas.

The poor performance is attributed to the confusion in outcome indicator performance where costly outputs contribute to a different programme (Water for Production). Only one out of the three targeted indicators was achieved. The percentage area of riverbanks, lakeshores, mountains and rangelands restored and maintained was not scored at all yet it is one of the key objectives of the programme.

Recommendations

- i) The MFPED should fast track the Programme Based Budgeting to avoid duplication of outputs/outcomes and minimise costs.
- ii) The MWE should continue to engage various stakeholders on sustainable environmental management since it is multi-sectoral in nature.
- iii) The MLHUD should sensitise leaders at all levels about economic development and environmental sustainability. Individual political actors who interfere with environmental laws should be legally liable and charged in courts of law.
- iv) The MWE should continuously lobby and mobilise resources within both government and development partners, to increase funding to wetlands management and Environment and Natural Resources generally.
- v) The sub-programme outputs/indicators targets should be properly aligned to the NDP III to guide planning and implementation in order to achieve the programme objectives/outcomes.



Gender Analysis

The sub-programme developed a gender responsive community-based wetland management plan; a gender responsive resource user guideline and a grievance redress manual, to guide users in sustainable wetlands management. The EURRECCA project trained 30 UNMA technical staff (both women and men) in use of data analysis software (Python, CDO, GRADs) and 30 hydrological observers/staff in Operation and Maintenance and data processing and analysis.

The programme also trained 200 community members and extension workers in sustainable land management techniques and constituted one gender responsive wetland user committee. Additionally, 60 farmer groups and cooperatives targeting at least 30% women and 20% youth were established and trained in crop diversification and resilient agricultural practices (60 in East and 60 in West Uganda) in line with selected enterprises and technologies. Gender responsive small scale infrastructures established were 20, including 100 fishponds, 20 irrigation schemes, 50 livestock watering infrastructures, canals, among others. ENABLE Youth Concept, specifically empowers women and youth, in various capacities such as financial management and accessibility. Youth and women agro-entrepreneurs were skilled and supported with Ug shs 2.523b. Beneficiaries were 103 in total i.e. Kasese (20), Butaleja (16), Kween (26), Tochi (24) and Wadelai (17).

3.3 National Environment Management Authority

The National Environment Management Authority's (NEMA) mission is to promote and ensure sound environment management practices for sustainable development. The strategic objective is "An efficient agency, with people in Uganda living in a clean, healthy, productive and sustainable environment".

The approved budget in the FY was Ug shs 25.556bn, of which Ug shs 18.81bn (73.6%) was released and Ug shs 18.49bn (98.3%) spent. This was good release and very good expenditure. The NEMA implements one programme - Environmental Management, which constitutes of two sub-programmes: i) Administration and ii) Retooling of National Environment Management Authority. The findings after an assessment of the programme and sub-programmes performance are shown below:

3.3.1 Environmental Management Programme

The programme objective is "To promote and ensure sound environment management and prudent use of environment and natural resources in Uganda for improved livelihoods and betterment of all women and men". The Programme Outcome is "Environmental Compliance and Enforcement Strengthened" which contributes to the sector outcome of "Improved Weather, Climate and Climate Change Management, Protection and Restoration of Environment and Natural Resources".

3.3.1.1 Administration Sub-Programme

The sub-programme objective is to "Ensure that male and female people in Uganda live in a clean, healthy, productive and sustainable environment". The sub-programme's approved budget in FY 2020/21 was Ug shs 24.57bn, of which Ug shs 18.16bn (73.9%) was released and Ug shs 17.84bn (98.3 %) expended by end of the FY. The sub-programme planned outputs in FY 2020/21 were: Environment and Natural Resources (ENR) Management Integrated at National and Local Government levels; Environmental compliance and enforcement of the law, regulations and standards enhanced; Access to environmental information/education and public participation increased; The institutional capacity of NEMA and its partners enhanced, and the national, regional and international partnerships and networking strengthened.



Physical performance

By end of the FY, achievements were as illustrated below:

i) Environment and Natural Resources Management integrated at National and Local Government levels

Out of the planned 28 LGs, the NEMA reported³ supporting and mentoring 19⁴ including Municipal Councils (MCs), Cities and TCs in technical aspects of environmental management. It involved review and assessment of relevant documentation such as action plans, reports and other relevant documents to ascertain the level and effectiveness of environment integration and implementation of mitigation measures, and management of selected critical fragile ecosystems.

The NEMA reported organizing a follow up engagement with lead agencies on issuance of certificates of compliance and subsequently, a new harmonized assessment tool was under development and yet to be pretested on some agencies.

The key charges in the environmental law (fees, fines and penalties) were reviewed in a bid to effectively manage the environmental components of water, land, and Air. A review and analysis of data regarding the status of aquatic ecosystems in Uganda was conducted to assess the status of the various aquatic ecosystems. These included four (4) lakes, five (5) rivers and one (1) wetland. The results demonstrated in the study are consistent with the respective human-induced activities which might cripple the integrity of these ecosystems.

To strengthen the management of plastics and plastic products, Extended Producer Responsibility (EPR) guidelines were developed to guide the manufacturers of those products. In addition, the NEMA also reported inspection of 40 factories in Kampala, Wakiso and Mukono urban areas for compliance and a chemical database was developed. The NEMA found that only 45% of facilities producing *kaveera* had recycling units. However, no clear evidence of the factories visited and support were provided.

Implementation of the National Biodiversity Strategy Action Plan (NBSAPII) was ongoing through the restoration of degraded ecosystems to reduce loss of natural habitat including forests. The NEMA applied for accreditation for the Green Climate Fund (Status).

ii) Environmental compliance and enforcement of the law, regulations and standards enhanced

The NEMA reported handling 49 court cases, 9 more than the planned 40 by end of the FY of which 17 were ongoing. Civil cases dropped by 29% during the period under review and this was attributed to quick response to complaints, notices of intention to sue and compliance assistance measures. Reported violations/incidences handled were 224 from the planned 200. Compliance audits and Inspections undertaken were 1,320 from the planned 1,500 and 893 baseline verification inspections were undertaken from planned 800. A total of 84 permit submissions were reviewed and 62 (72%) of the reviewed permits were approved by end of the FY. Submissions reviewed and inspected included food processes, pharmaceuticals, concrete batching, plastic recycling, wood treatment, beverage and alcohol manufacture, shoe making and synthetic hair making, galvanizing processes and effluent treatment plants.

³ The NEMA did not provide most of the activity reports.

⁴ Kasese and Kitagwenda, Hoima and Fort Portal Cities, and Kasese Municipal Council and Hima Town Council, Mitooma, Kyegegwa, Rwampara, Isingiro, Kitgum, Amuru, Lamwo and Pader, Bukuya, Myanzi, Kasanda, Kasanda Town Council, Manyogaseka, Naluttutu and Kikandwa Lower Local Governments in Kasanda district, Kilaki, Amuria, Serere districts and Soroti City.



In support of policy and legal framework development four (4) regulations were concluded. These were: i) The Air Quality Regulation 2020, ii) Oil Spill Preparedness and Emergency Response, iii) The National Environment (Environmental Impact and Social Assessment) Regulations 2020 and iv) The National Environment (Standards for discharge of effluent into water or on land) Regulations 2020. Drafting of the national guidelines on biodiversity and social offsets and development of guidelines for Genetically Modified Organisms (GMOs) was ongoing. The support to develop and formulate ordinances and byelaws for waste management in Jinja, Masaka and Mbarara was done.

The Environmental Police Force (EPF) reported to have handled 1,233 operations. They included activities related to: noise pollution, wetland/lakeshore degradation, community policing, enforcement of restorations orders, violations of EIA conditions of approval, and regulation of environmentally violating activities such as music functions and events among others.

Support for voluntary compliance and physical restoration exercise for the protection of Kakerere, Nyamirima, Kamiira wetland systems that directly recharge R. Rwizi in Sheema Municipality was initiated with formulation of an MoU between NEMA and SINZA Co Ltd. Consequently, over 200ha (approx. 6kms) of degraded land was restored. In addition, 300ha of degraded ecosystems targeting critical sections of R. Muzizi and its catchments were restored through mapping and physical restoration through removal of illegal structures.

A total of 20 meetings out of the planned 24 were reportedly held with MDAs and oil companies to handle the environmental aspects of oil and gas. The planned training of 100 stakeholders and delegation of 30 sub counties in Kibuku and Pallisa was not done due to the COVID-19 pandemic restrictions on gatherings.

The NEMA supported the protection of fragile ecosystem of Kiretwa Peninsula, Lake Nakivale shores in Isingiro and Ntungamo districts, Otuke district, Jinja city and district, Kayunga and Kamuli districts. Community sensitisations on ecosystem management, buffer zone demarcation and protection including removal of illegal structures in the buffer zones, and tree planting in the buffer zones to create a live fence were carried out.

iii) Access to environmental information/education and public participation increased

Out of the planned eight (8) informal education and awareness programs, six (6) programs were reported done. The six (6) out of the planned 10 formal education programs were organised in Teso, Karamoja, Tororo districts and some of the Greater Masaka districts (covering 17 schools). Evaluation of Established Resource Centres and distribution of EIA Reports, IEC Materials and pamphlet boxes in 17 districts of Lango and Bunyoro Regions were reported carried out.

Procurement of e-books and materials was undertaken for use through the E-board. The E-board is to be used as a springboard to develop e-library and upgrade to national environmental information resource centre. An evaluation of 80 districts resource centers, and procurement of 100 books and 20 shelves were reported. Five media campaigns including “*Taasa Obutonde*” on plastics was conducted on various radios and TV stations. Some were done through framework contracts for media engagements and environmental publicity. Two out of the planned four field assessments were done on the rising lake levels in Masaka and Kalangala districts. The surrounding communities were engaged on sustainable use of the lake and its surroundings.

The NEMA developed and produced IEC materials that included: Three newsletters were produced and disseminated, one calendar was designed and produced, a NEMA Research Strategy developed and 160 spatial maps produced.



Two partnership meetings with the DLGs and the non-governmental organisations in the districts of Masaka, Kalungu, Lwengo, Bukomasimbi and Kalangala were reported held and aimed at building capacity of the DLGs and the non-governmental organisations working with environment. The NEMA in collaboration with Tororo DLG undertook monitoring of the greening initiatives in the 10⁵ supported primary schools in Tororo on greening initiatives.

iv) The institutional capacity of NEMA and its partners enhanced

The new Board of Directors after inauguration and induction held eight technical meetings to guide and promote corporate governance. Three board field visits were undertaken to monitor and assess the state of environment in Uganda, performance of NEMA and other partners; and provide guidance to management on areas for improvement.

The newly established cities of Mbale, Mbarara, Soroti, Lira, Gulu, Masaka, Arua, and Fort Portal were visited to guide on building sustainable cities that will provide sustainable jobs/employment, safe housing, access to clean and safe water, manage waste and pollution as well as have a mind-set change/positive attitude to those adopting to new settings. An engagement between NEMA staff and UBOS was undertaken to review and ensure alignment of the NEMA-SPS to the NDPIII under the guidance of UBOS, for better and relevant data collection and production within the institution.

The NEMA initiated the procurement of a Local Area Network (LAN) for NEMA Mbale regional office and approvals were done waiting for implementation. Licenses for both anti-virus and cyber roam firewall were procured and installed. Security was provided at NEMA House and the regional offices of Mbarara, Mbale, Lira and Masindi through engagement of Environment Protection Force (EPF). Utility bills (e.g. water and electricity) were paid. Support to regional offices of Mbarara and Masindi were provided through mentoring support to respective districts on issues of massive tree cutting and deforestation, wetland degradation, solid waste management and over grazing among others. During the period, training and development activities for enhancing staff skills and organization effectiveness were not done due to the COVID-19 pandemic that limited staff travel and gathering.

v) The National, regional and international partnerships and networking strengthened

The ENR platform was established launched and three meetings to engage all stakeholders with respect to environment, natural resources, and climate change were held. The Virtual meetings to develop the financial statement for the regional project on development of National Action Plans for Artisanal and Small-Scale Gold mining in Africa took place in May 2021. Supervision of data collection by IMPACT (an international NGO contracted by UNEP) under the GEF GOLD+Program took place in Busia, Namayingo and Amudat districts.

The five (5) UN and regional conferences; four (4) meetings in AMCEN, AU, IGAD, EAC; six (6) COP and technical meetings were not done due to limited funding. Other national, regional and international meetings and engagements were virtually attended due to the COVID-19 pandemic the restricted movement and gatherings.

Field findings:

The major planned outputs were: NEMA Regional Offices facilitated and Under institutional capacity of NEMA and its partners enhanced.

5 Molo, Achilet, Pagoya, Rubongi, UTRO, ST. Jude Malaba, Papol, Tororo Army, Kainja and Namwaya primary schools.

NEMA Regional Office - Mbale

In FY2020/21, office planned to carry out compliance and enforcement activities in the regions. The office was able to conduct compliance activities in Mayuge, Kaberamaido and Amudat through sensitization of the degraders.

Enforcement activities were carried out in Musobo community, Eastern ward in Mbale City to clean up river Nyashibisyo. The area had been affected by the local community that engages in making local brew-“waragi”. The community was discharging molasses into River Nyashibisyo. This had blocked the river and generated a stench that was affecting the habitation of the Mbale Industrial Park and surrounding communities. Some of the existing investors had halted operations while potential ones were not being attracted to the park because of the stench coming from the contaminated river that passes through the Park. The community was sensitized on alternative livelihoods and advised to find alternative ways of handling molasses. Environmental police officers were deployed in the community to enforce proper discharge of molasses and other pollutants.

The office also received office furniture including one conference table and ten (10) conference chairs. The planned baseline activities were not done due to limited funds. The restoration activities continue to suffer political interference for example Limoto wetland had been re-occupied by the community on the advice based on the presidential directive and other political leaders halting the eviction of illegal wetland occupants.



Left: River Nyashibisyo in Mbale contaminated with molasses. Centre: Clear water flowing in the river after NEMA reclaimed it. Right: Conference table and chairs for the Mbale NEMA office

The planned outputs were affected by inadequate and delayed releases, population growth accentuated by poor mindset of communities about environment. There is manpower shortage (11 officers including EPF) covering 45 districts, and limited Knowledge of environmental law by the population and some magistrates who do not sufficiently prosecute environment degraders that are aligned in courts of law.

Jinja District NEMA Office

The NEMA Jinja office screened 50 Projects for Environmental and Social Compliance and prioritized climate change aspects in all its development plans and projects in the FY. All Roads under rehabilitation, construction and minor repairs in the district were inspected for environmental compliance. An average of 60 Industries in both Jinja City and Jinja district were routinely inspected for both environmental and social compliance in partnership with NEMA and the Ministry of Water and Environment. Findings indicated that many were found with traces of Water, Land and Air pollution. Over 50% were found to have the required clearances and their permits and certificates of approval were still valid.



The 100m buffer zone of the Nile River on both the Eastern and Western banks were fully demarcated and the 200m buffer zone of the approximately 10km range of Lake Victoria within the boundaries of Jinja from Bugembe Town Council towards Wairaka in Kakira Town Council, Kirinya, Budhumbuli and Masese Wetlands were demarcated with pillars. The activity was done with the support of the Environment Police and sensitisation was only done for the district personnel and local councils. Issues of high level Pollution of Lake Victoria and River Nile, increased deforestation, sand mining, wetland degradation and political interference at all levels still exist.

3.3.1.2 Retooling of National Environment Management Authority Sub-Programme

The specific objectives of the sub-programme are: i) To enable NEMA procure specialised equipment for the effective compliance monitoring and enforcement of all environmental aspects including high impact areas in oil and gas sector; ii) To replace old and outdated environment management tools; and iii) To equip and skill NEMA staff in application and use of acquired environmental compliance, monitoring and enforcement tools.

The approved budget of the sub programme in FY 2020/21 was Ug shs 0.99bn, of which Ug shs 0.65bn (66%) was released and spent by end of FY. The release performance was fair whereas expenditure was very good.

The sub-programme planned outputs in FY 2020/21 were: Environmental compliance and enforcement of the law, regulations and standards enhanced; Office and Information Communication Technology (ICT) Equipment, including Software purchased; Specialised Machinery and Equipment purchased; and Office and Residential Furniture and Fittings purchased.

Physical performance

By end of FY2020/21, the NEMA had achieved the following: A total of 23ha were restored in Kyenjonjo, Sheema, Ntungamo, Isingiro, Otuke, Kamuli and Jinja. An E-waste collection centre was established in Bugolobi with a Memorandum of Understanding (MoU) between NEMA and Luwero Industries signed to undertake joint management of the facility. The NEMA procured equipment for handling of E-waste including assorted PPEs, Safety equipment (Including fire extinguishers), and dismantling tools among others.

Overall Performance

The overall performance of the Environment Management Programme was good at 95.6% (Table 3.7) despite receiving 73.6% of the approved budget. The LGs were reported supported in technical aspects of environmental management, the status of aquatic ecosystems in Uganda conducted to assess the status of the various aquatic ecosystems. The Extended Producer Responsibility (EPR) guidelines were developed to guide the manufacturers especially of plastics and plastic products. Four (4) environmental related regulations were developed and the Environmental Police Force (EPF) handled 1,233 operations relating to noise pollution, wetland/lakeshore degradation, community policing and enforcement of restorations orders among others. Protection and restoration of fragile ecosystems was carried and support to regional offices to effectively deliver on the NEMA mandate was done.

It should however be noted that the budget cuts affected the execution of some planned outputs such as training and development for enhancing staff skills and organization effectiveness.


Table 3.7: Performance of the Environmental Management Programme FY2020/21

Outputs	Annual Budget (Ug shs'000)	Cum. Receipt (Ug shs'000)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)
Environment and Natural Resources Management integrated at National and Local Government levels	1,400,000	810,500	100	87	5.5
Environmental compliance and enforcement of the law, regulations and standards enhanced	4,271,832	2,479,752	100	70	16.7
Access to environmental information/education and public participation increased	2,220,000	976,500	100	70	8.7
The institutional capacity of NEMA and its partners enhanced	16,273,823	14,150,297	100	80	58.6
The National, regional and international partnerships and networking strengthened.	820,000	85,000	100	21	3.2
Office and ICT equipment including software purchased	250,000	202,750	100	85	1.0
Purchase of Specialised Machinery & Equipment	270,000	55,000	100	30	1.1
Office and Residential Furniture and Fittings purchase	49,999	49,999	100	10	0.0
Programme Performance (Outputs)					94.7
Outcome Indicator			Annual Target	Achieved	Score (%)
Percentage level of environmental Compliance by Projects and Facilities			85	80	94
Percentage area of degraded catchment areas protected by location			35	35.2	101
Programme Performance (Outcomes)					97
Overall Programme Performance					95.6

Source: NEMA, IFMS and Field Findings

Challenges

- Continued Environmental degradation with impunity by communities surrounding the ecosystems and purported “developers and investors”.
- Continued political interference in the environment protection activities at all levels. This has frustrated the efforts of NEMA in managing the environment. Some communities have resumed destruction of restored wetlands for example Limoto in Pallisa DLG following political pronouncements halting eviction of wetland encroachers.
- Limited staffing and funding to DLGs and NEMA regional offices compared to the restoration needs and ever-increasing cost of implementing environmental enforcement and compliance work. This is worsened by the non-functional environment committees particularly at Lower Local Governments.
- Inadequate integration/ Main streaming of ENR/Climate change into district development plans especially at lower local governments resulting into low levels of planning, budgeting and



implementation of ENR and climate change intervention.

- v) Slowed activity implementations due to the COVID-19 pandemic. Some staff worked in shifts while those that fell sick were hospitalized and their contacts isolated for 14 days which stalled works.
- vi) Reduced participation of stakeholders in meeting/barazas organised by NEMA since the authority had to limit face-to-face meetings in adherence to the SOPs from the Ministry of Health.

Conclusion

The NEMA spearheads the development of environmental policies, laws, regulations, standards and guidelines; and guides Government on sound environment management in Uganda. However, the NEMA has continued to participate in wetland restoration activities, which is outside their mandate. Whereas the NEMA outcome indicators seemingly relate to the NDP III, there is need to clearly align them with its Mandate and the strategic objective. The NEMA's efforts to manage the environment have been frustrated by a number of factors such as inadequate technical manpower and EPF at both regional and LG levels, and mismanaged prosecution of encroachers by most magistrates with limited knowledge on environmental laws and regulation.

Recommendations

- i) The MWE and partners should intensify community sensitisation and increase community participation in environmental restoration activities.
- ii) The political leadership at all levels should desist from interfering in eviction of encroachers and encouraging communities to occupy and use wetlands.
- iii) The MFPED should support MWE regional staff recruitment by increasing the wage bill to enable NEMA efficiently execute its mandate.
- iv) The MWE/MFPED should devise means of increasing the resource allocation to the ENR sub-sector generally but more specifically under compliance and enforcement in order to curb down encroachment on wetlands and other fragile eco-systems.
- v) The MWE should reallocate more money from institutional capacity of NEMA and its partners to Environment and Natural Resources Management integration in LGs where critical work is.
- vi) The MFPED/MWE should ensure that LG plans and budgets are not passed without ensuring the inclusion of critical ENR management outputs since it is a delegated function.

3.4 National Forestry Authority

The National Forestry Authority's mission is to: "Sustainably manage 506 Central Forest Reserves (CFRs) covering an area of 1,265,742 hectares and ensure equitable supply of forest and non-forest products and services to Government, local communities and private sector". The NFA's strategic objective is improved management of the CFRs, expand and promote partnership arrangements, ensure equitable supply of forest and non-forest products and services and enhance organizational sustainability.



The approved budget of NFA in FY 2020/21 was Ug shs 42.58bn of which Ug shs 32.07bn (75.3%) was released and Ug shs 31.30bn (97.6%) spent by end of FY. The release was good and expenditure was very good. In the FY 2020/21, the NFA implemented its planned outputs through one programme - Forestry Management. The program has 2 sub-programmes; i) Forestry Management Programme and ii) Support to National Forestry Authority Sub-Programme. Detailed performance is discussed hereafter:

3.4.1 Forestry Management Programme

The programme objective is to conserve natural forests and improve management of central forest reserves; promote partnerships for increasing forest cover and mitigate climate change; ensure equitable supply of forest and non-forest products and services; economic, social and environmental benefits especially to the poor and vulnerable; and enhance organisational sustainability. This programme has two sub-programmes: i) Headquarters; and ii) Support to National Forestry Authority. The programme annual performance is assessed through the two subprograms hereafter:

3.4.1.1 Headquarters Sub-Programme

The sub-programme objectives are: i) To sustainably manage 506 CFRs through survey and demarcation of forest boundaries with pillars; forest protection against illegal activities; professional forestry law enforcement; removal of encroachments; cancellation of illegal land titles on gazette forest reserves; restoration planting of degraded forest areas; investment in commercial plantations establishment and maintenance; increased production and supply of seedlings from verifiable seed sources and nurseries. ii) To support massive tree planting in Uganda and develop modern forestry applications and infrastructure and support other forestry dependent sectors especially biomass energy, housing and construction, climate change disaster preparedness for sustainable national development with balanced livelihood and conservation priorities.

The sub-programme annual approved budget for FY2020/21 was Ug shs 29.70bn, of which Ug shs 22.35bn (75.4%) was released and Ug shs 21.58bn (96.6%) expended by end of FY. The release was good and expenditure very good. The annual planned outputs were: i) Central Forest Reserves managed; ii) Plantations managed; iii) Seeds and seedlings supplied; iv) Human resource services managed; and v) Records services managed. The NFA achievements against the planned outputs were as follows:

Physical performance

Management of Central Forest Reserves

Out of the planned 10 Forest FMPs, four (4) were achieved (Kaabong, Mwenge, Jinja-Bunya and Mafuga). Consultancy services for preparation of four (4) FMP for Buvuma Islands, Mpanga, Matiri and Kasana Kasambya sectors in Lakeshores and Muzizi River Ranges (with 71 Central Forest Reserves) was contracted to Zion Integrated Investments Ltd. A total of 895ha were freed from encroachment in various management areas⁶ and are under regeneration. Additionally, 18,189ha were demarcated and mapped for collaborative management with local communities in Budongo System Range-10ha. A total of 919 people were involved in Collaborative Forest Management (CFM) meetings in Budongo System Range and Muzizi River Range. Additionally 370km⁷ out of a planned 559km of forest boundaries were re-surveyed and marked with pillars.

⁶ Nyakunyu, Kandanda-Ngobya, Kanaga, Bugoma, Akur, Kadam, Bukaleba, Luwawa, Kijogolo, Wabitembe, Lukalu and lakeshore 5. Nawandagi (2) Lwamunda

⁷ Kyahi (18.5) km, Kandanda-Ngobya(20)km, Angutawere -(9.5)km, and Kumi-(3) km, Lwamunda CFR (13) km, Kyewaga CFR (6.8)km, Kojja CFR (3) km (No pillars in Kojja), 04.8km resurveyed and marked with pillars (Budongo System Range-(23) Km ; Kaduku CFR-(11), Nyabyeya CFR-(4)Km & Rwensama -(9), Km, Kyoga range-(11) Km - Bukaleeba CFR, Lakeshore Range -(56)km in Bajo, (3.8)km-Koko and Wankweyo-(10)km



Plantations Management

A total of 16,368ha of tree plantations were weeded in various management areas; and 1,032ha of tree plantations pruned and thinned in various management areas⁸. A total of 3,422ha were demarcated and mapped for licensed tree planters whereas 630km of fire lines/roads were maintained for fire prevention as follows: The 93km in plantation areas;-16km-Mwenge, 23km-Mbarara, 24km-Opit, 30km-South Busoga and 45.8km in Ranges ;-Achwa- 27.3km, 3km- Kachung, 1km-Ongom, 2km -Onekokeo, 2km -Olidiro CFR , 1km -Aminteng, 6km-Ogom CFR, 1.3 Km - Pajimu CFR, 2 Km -Amuka, 5 Km- Keyo CFR and 3 Km - Lagute CFR; Kyoga Range plantations -18.5km , Lendu (90km) Mwenge (65 km) Mbarara (80 km) and Katuugo (35km).

Supply of seeds and seedlings

Out of the planned 16,814,400, a total of 7,923,450 assorted seedlings were sold to the public and some supplied for NFA's own planting from various management areas e.g. Mwenge (98,000), South Busoga (211,463); NTSC (395,668) and Katuugo (300,530). A total of 10,000 seedlings of eucalyptus grandis were supplied to Lendu Plantation Unit for own planting purpose. 2,665 seedlings were sold from Moroto and 5,150 were sold from Kaabong nursery and 2,500 seedlings for beating up 20ha in Namafuma CFR.

Human Resource Management Services

The NFA reported 349⁹ staff members in the 13 management areas in the country were equipped with safety and protective gear. Contract staff salaries, NSSF contributions and gratuity were paid and staff contracts renewed by end of FY. The 16 Forest supervisors (4 females & 12 males) were trained in forest monitoring systems while 28 students (15 males, 13 females) on internship were attached to different management areas. The staff members were trained over zoom on how to access the online Human Resource Management System to manage leave application and pay slips. A workshop to review NFA job descriptions per directorate was conducted and attended by a team of selected staff. A total of 364 Gumboots were procured and supplied to the various ranges and sectors across the country as safety equipment to NFA staff.

Records Management

The SUN Accounting System subscription was renewed and ICT hardware repairs done. Licenses for Enterprise Anti-Virus software and Enterprise Anti-spam software for protection of information assets and Email or communication security were procured. Afield trip to improve regional office ICT connectivity was undertaken and assorted office and ICT equipment procured. Routine network checks and integration of field offices were conducted.

3.4.1.2 Support to National Forestry Authority Sub-Programme

The sub-programme objective is woodlot establishment and increased tree cover; Sustained supply of assorted high quality cheap seedlings; Demonstration of best practice in tree growing on key roads; Restoration of degraded and environmentally sensitive areas.

⁸ Mafuga (190.7 ha) Mwenge (50ha) Mbarara (100ha) and Opit/Abera (25 ha), WNR-164Ha (Lul.Kayonga-10ha of Tectona grandis, Omier- 10Ha of T. grandis, Laura-10Ha of T.grandis, Eria-50Ha of T. grandis

⁹ The NFA was not able to share reports on such activities making it difficult to validate the information given



The programme annual approved budget for FY 2020/21 is Ug shs 12.88bn, of which Ug shs 9.72bn (75.5%) was released and all spent by end of FY. Release was good and expenditure was very good. The sub-programme outputs in FY 2020/21 were: i) Central Forest Reserves managed; ii) New tree plantations established; iii) Seeds and seedlings supplied; iv) Motor vehicles and other transport equipment purchased. The sub-programme achievements against the planned outputs during the half year period were as follows:

Physical Performance

A total of 895ha of natural forest were maintained in partnership with all stakeholders in various parts of the country and 370km of forest boundary were surveyed and marked with pillars in 16 management areas in the country. A total of 1,817ha out of a planned 2,000ha of commercial tree plantations including bamboo were established by NFA involving local contractors in various management areas of Katugo, Lendu, Mafuga, South Busoga, Mwenge, Opit, Abera, Mbarara, and Kyoga among others.

A total of 11,445,681 assorted seedlings were supplied to communities under National Community Tree Planting Project (NCTPP) and to NFA for its planting in the various management areas from various nurseries. Additionally, 22,530kg of assorted tree seeds were supplied from the NTSC to different NFA sites across the country. The NFA procured six (06) single-cabin cars, three (03) double cabins cars, one (01) station wagon and one (01) lorry.

Field findings:

i) Budongo System Range-Masindi

The range covers eight (8) districts with most of them adjacent to L. Albert. The Budongo range has four (4) sectors (Hills reserve, Budongo, Kisindi and Kagadi sectors) and 25 beats/units. The Range's approved budget for the FY2020/21 was Ug shs 1.47bn of which Ug shs 0.65bn (44.2%) was released and all spent by end of FY. The NTR projections in the same period were Ug shs 1.2bn. However, Ug shs 0.862bn was collected due to the effects of COVID-19 that limited movement and tourism activities. The overall performance for the Budongo system range was 65% which was fair.

The planned 500ha of CFRs were freed from encroachers and restored while 11km out of the planned 70 km of forest boundaries in Katuku Forest Reserve were re-surveyed and marked with pillars. A total of 1,026ha out of a planned 960ha of natural forest were restored and maintained in partnership with all stakeholders. The two (2) Forest Management Plans (Hills and Kagadi reserves) were not prepared and the 400ha increased CFM access-benefits for local communities (under the Budongo systems range) was not done due to lack of funds.

A total of 24km of fire line roads were maintained for fire prevention in liaison with community fire gangs. An assessment of 2,000ha private tree farmers out of a planned 5,000ha for compliance was done in the range and 2,000ha out of the planned 5,000ha demarcated. There was no budget provision for tree plantations pruning, thinning and weeding.

A total of 1,014,761 seedlings out of a planned 600,000 seedlings and 540kg of assorted seeds were supplied within the range. This was attributed to an increased demand for the seedlings from the stakeholders during the period under review. Protective wear (100 pairs of gumboots), HIV/AIDs, Gender and Equity mainstreaming, staff medical and GPA insurance, staff salaries/wage, NSSF and gratuity payment were made.



Challenges

- i) Budget cuts and non-allocation of funds to some activities affected implementation boundary opening and meetings with private tree farmers.
- ii) The COVID-19 pandemic hindered movement of farmers to purchase seedlings but also revenue collection from the tourist sites and this affected the cash flow.
- iii) Encroachment and claims on forest land for example Bunyoro Kingdom claiming part of the forest reserve and Hoima sugar that encroached on 8,600ha of Bugoma forest reserve.
- iv) Transport challenges, as the fleet of vehicles is old worsened by inadequate allocation of fuel funds. This hinders monitoring and supervision activities of the range.
- v) Political interference and hostile communities affected boundary opening and evictions.

Recommendations

- i) The MFPED should avoid blanket budget cuts, which affect critical activities of NFA such as boundary opening.
- ii) The NFA should adapt with the changing ways of work in the wake of COVID-19 such as virtual/scientific meetings to be able execute some of the outputs especially those that do not involve community engagement.
- iii) The Ministry of Tourism should promote local tourism to compensate for such times when international tourists cannot travel.
- iv) The MWE and NFA should fund the boundary opening, demarcation, eviction and protection of forest reserves to deal with encroachers.
- v) The NFA should intensify sensitization about the merits of forestry to ensure political buy-in into forest conservation activities. The political leaders should also restrain from interfering in activities of forestry conservation for selfish gains.

ii) The Achwa River Range-Gulu

The Range covers forests (natural forests and plantations) mainly in the Acholi and Lango sub region covering 17 districts. The ranges had four sectors; Kilak, Agoro, Apac, and Kachun ranges. Planned activities included plantation management, restoration, boundary opening, community engagement and forest protection. The approved budget for the range was Ug shs 0.325bn of which Ug shs 0.94bn was released and Ug shs 0.94bn spent by end of FY. The NTR projections were Ug shs 0.285bn and actual collections were 0.308bn (109%).

A total of 10ha of degraded CFRs were restored and 50ha were slash weeded (Kachung CFR, Ayer Bala Road and Kilak sector); 79.5ha were spot weeded in Ongom, Kacung, lagute CFRs, and 80ha were sprayed in Abera, Opit, Lagute and Ongom CFR. A total of 190ha of restoration planting were maintained in Ongom CFR. Out of a planned 70km of forest boundaries, 13.96km were re-surveyed and marked with pillars in Amuka forest.

The one Forest Management Plan was not prepared and the planned 400ha increased CFM access-benefits for local communities was not done due to inadequate funding. 27.3km¹⁰ of fire line roads were maintained for fire prevention in liaison with community fire gangs. A total of 400ha out 1980ha of tree farmers were demarcated in Maruzi in Apar range. Additionally, 25ha of tree plantations were pruned and thinned. A total of 133ha were protected from fires in the plantations of Onekokeo, Olidiro, Ongom, Kachung CFRs, Aminteng, Acet and Ayer-bala road CFR, Ogom CFR, and Pajimu CFR. The 270ha natural forest restoration maintenance in partnership with all stakeholders was not done.

The 200ha of forest plantations were established by involving local contractors. A total of 89ha (10ha in Opit CFR, 74ha in Loro, and 5ha in Aduku North) of commercial tree plantations were established on CFRs by licensed tree planters. The target of 23394.7ha was not achieved because most of the land was no accessible. A total of 420,885¹¹ out of a planned 1,000,000 seedlings were supplied under the Community Tree Planting Project (CTPP). In addition, bamboo seedlings were supplied to Gulu Nursery (11,000), Lamwo (3,000), Lira (3,000), and Apac (3,000). One (1) motor vehicle-land cruiser single cabin was delivered to the Achwa Range System during the period under review.



L-R: A new double cabin car supplied Achwa range, Part of the 270ha maintained through chemical weeding and Restoration planting of 100ha of Opit Forest reserve in Omoro District

Challenges

- i) Encroachment on forest land for example the people encroached on the Gulu Forest Reserve during the LRA war in northern Uganda have continued to illegally occupy and use the forest land.
- ii) Issuance of illegal titles on forest by the Ministry of lands and district land offices intensifies the encroachment. This happened in Amuka and Aber minor Forest Reserve.
- iii) Political interference that has affected boundary opening and evictions. In Achwa Forest Reserve, the politicians organised the locals to chase away rangers in November 2020. In Amuru all the people who were allotted forest land for private planting could not access it because they got chased away.
- iv) Unpaid claims for example; The Range demands about Ug shs 300m from Gulu University from ground rent. The private tree planters were also not paying license fees. The NWSC facilities (lagoons, water pumps) do not want to pay their bills too.

¹⁰ 3km in Kachung, 1km in Ongom, 2km in Onekokeo, 2km in Olidiro CFRs, 1km in Aminteng, 1Km in Aminteng, 6km in Gom CFR, 1.3 km in Pajimu CFR, 2 km Amuka, 5 km in Keyo CFR and 3 km in Lagute CFR

¹¹ Male 160,929, Female 12,930; SOS 10, Ker Kal Kears Acholi 3,105, OWC 7,641, MWE 18,000, Uganda Prison 3,100, Dioces of Northern Uganda 500, Karin 599, UPDF 4th Division 8,710, Seminary 25,000, Koro SS 1,130, Gulu University 40 and NFA Planting 222,000, NWSC 7,000



iii) Lake shore forest range- Lwankima Sector

The lakeshore range is headquartered at Namanve and covers areas surrounding Lake Victoria. It has four sectors (Lwankima, Buvuma, Mpanga and Zirimiti) and nine beats/units. The annual monitoring focused on the Lwankima sector covering Mabira forest among others and activities at the Kalagala offset project. The key planned outputs in the FY for the sector were Plantation management, Management of Central Forest Reserves, Supply of seeds and seedlings among others. Key activities included Raising seedlings, restoration and protection activities.

The total area of the Mabira Forest is 29,974ha. There were restoration activities in Buwoola and Maligita beats covering 50ha with Mahogany, Prunus, and Tamneria. The NFA conducted forest protection activities in conjunction with Uganda Peoples Defence Forces, Environmental Police and Communities surrounding the forest through the CFM. A total of 190 people (100 men and 90 females) were arrested for carrying out illegal activities in the beats of Nakalanga, Zirimiti, Mabira, Olamusa, Bukaibale, Kojja, Kalandazi, Nawandagi, Navugulu, Mugomba, and Kitubulu. The FMP for Buvuma and Mpanga is still ongoing being prepared by Zion consulted ltd.

The Kalagala offset project was spearheaded by the Ministry of Water and Environment. The key project outputs carried out in the FYs that included; Management plan for Mabira forest updated, boundary (306km) opened with pillars planted, ecological studies, restoration planting and sensitisation activities carried out.

The eco-tourism site (Najjembe Tourism Site) generates revenue from nature/forest walks, birding/bird watching, environmental education and biking. There are two (2) private lodges; Rain Forest Lodge and Griffin Forest Camp. The NFA tourism site had a dilapidated office structure and works for the construction of office accommodation and cottages stalled in 2017 and the site was abandoned by the contractor. The NFA was in the process of having an MoU with a private developer to complete the abandoned structure.

The sector has faced a challenge of hostile communities that encroach on the reserve, political interference, inadequate funds and inadequate quarterly fuel allocations.



L-R: Restoration planting of 50ha in Maligita beat; Abandoned office and accommodation structure, and a dilapidated office at Najjembe Eco-Tourism Site in Mabira Forest Buikwe District



Challenges

- i. The COVID-19 restrictions limited people's movements to nurseries to pick the seedlings including visits to the eco-tourism site.
- ii. The forest boundaries were not well defined which is a challenge to management. There is not enough money to open up these boundaries.

Overall Performance

The overall programme performance was good at 80.1% by end of the FY2020/21. Table 3.8 highlights the program performance by output. Key achievements included; development of four (4) forest management plans, selling of 7,923,450 assorted seedlings to the public and supply for NFA's own planting and supply of 11,445,681 assorted seedlings under National Community Tree Planting Project (NCTPP). Additionally, 171,580kg of assorted quality tree seeds were processed and sold from NTSC. A total of 895ha of natural forest were maintained whereas 1,817ha of commercial tree plantations including bamboo were established. Despite these achievements, the NFA's performance was affected by the budget cuts and the COVID-19 pandemic and lockdown measures.

Table 3.8: Performance of the Forestry Management Programme FY 2020/21

Outputs	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)
Management of Central Forest Reserves	15,990,982,570	9,006,708,843	100	76	37.55
Establishment of new tree plantations	1,000,000,000	1,000,000,000	100	90	2.11
Plantation Management	3,087,483,780	2,161,871,500	100	72	7.25
Supply of seeds and seedlings	7,333,745,285	5,452,623,599	100	47	10.89
Human Resource Management Services	11,277,423,490	11,095,123,124	100	95	25.57
Records Management Services	462,000,000	452,623,480	100	98	1.08
Purchase of Motor Vehicles and Other Transport Equipment	3,430,000,000	2,905,000,000	100	28	2.62
Programme Performance (Outputs)					87.08
Outcome Indicator			Annual target	Achieved	Score (%)
Percentage of Central Forest Reserves boundary length resurveyed and marked with concrete pillars			98	31	32
Percentage of natural forest cover on Central Forest Reserves			74.85	52	69
Percentage of industrial plantations on Central Forest Reserves			100	100	100
Programme Performance (Outcomes)					67
Overall Programme Performance					80.1

Source: NFA, IFMS and Field findings



Programme Challenges

- i. Political interference into operations of the NFA by local leaders and representatives at various levels hinders the management of CFRs including lawful eviction of encroachers, survey and demarcation of forest boundaries.
- ii. The fleet old; Some acquired in 2004 that breaks down regularly resulting into high maintenance costs thus affecting movement of staff.
- iii. Inadequate and dilapidated infrastructure. Forest roads and most of the Range and Plantation field staff accommodation is in derelict state while office blocks are inadequate and far from forest reserves in some areas.
- iv. Continued issuance of illegal Land titles in CFRs by the MLHUD, and District Land Boards contrary to the 1995 Constitution, and Section 44 of the Land Act, 1998. This creates a lot of litigation and related costs to NFA (Government).
- v. The effects of COVID-19 pandemic including the subsequent lockdown led to a significant decrease in the number of tourists (both local and foreign) to NFA's ecotourism sites and decrease in Non-Tax Revenue.
- vi. The mismatch between tree planting activities and irregular budget releases led to wastage in tree nurseries and subsequent loss of non-tax revenue.
- vii. Degradation of natural forests due to encroachment and illegal timber/tree extraction to forests in protected areas.
- viii. Unclear forest boundaries which has given encroachers opportunity to illegally claim and use forest land.

Conclusion

The NFA achieved targeted industrial plantations levels in the FY. However, boundary length resurveyed and marked with concrete pillars; and natural forest cover on Central Forest Reserves targets were not achieved. The NFA's efforts have been frustrated by persistent political interference into its operations at various levels; degradation of natural forests due to encroachment and illegal timber/tree extraction, unclear forest boundaries and inadequate funding to open up forest boundaries among others. There is therefore a need for concerted efforts by all stakeholders in the forestry sector to appreciate the role of forests in broad terms but most importantly the effects of forest encroachment on the climate change and global warming threats. This will go a long way in ensuring sustainable use of the forests and environment in general and achievement of the NDP III targets.

Recommendations

- i) The MLHUD and NFA district environment and natural resources department should sensitize political leadership on sustainable forest management and use within the confines of the law.
- ii) The NFA should be supported by MFPED to invest in fleet, offices and accommodation for regional staff to improve efficiency and effectiveness in service delivery.
- iii) The MLHUD and the District Land Boards should desist from issuance of illegal titles on forest land. The specific officers in the MLHUD and District Land Board should be personally held liable to such acts.



- iv) The NFA should invest in development of a business model that targets post COVID-19 economic recovery.
- v) The MFPED should release all funds for tree planting activities and raising of nurseries in the first quarter of the financial year. This will help alleviate the mismatch between the timing of releases a planting seasons.
- vi) This should include strengthening stakeholder partnerships for forest conservation and livelihood improvement.
- vii) The NFA should strengthen coordination for Forest Law Enforcement and governance such as establishment of armed wing of Forest Rangers and professional investigators and prosecutors of environmental and forestry crimes. This will reduce on forest illegalities such as encroachment and illegal product harvesting through public awareness.
- viii) The NFA should be supported to continue re-opening and demarcating forest boundaries and cancel titles to address encroachment on forest land.

3.5 Uganda National Meteorological Authority

The UNMA's mission is: 'To contribute to the overall national development through provision of quality, customer focused, cost effective and timely information for weather and climate services to all users'. The strategic objectives of UNMA are: i) To improve the quantity and quality of meteorological services to customers by strengthening the observation network, National Meteorological Center, Data and information exchange according to World Meteorological Organization (WMO) and International Civil Aviation Organization standards. iii) To build a skilled and motivated workforce through good human resource management practices. iv) To promote greater awareness of the benefits of using meteorological services, information and products for public safety and socio-economic planning. v) To improve the accuracy and reliability of forecasts and advisory services through the development of climate prediction and short term weather forecasting capability.

The approved budget of UNMA in FY 2020/21 is Ug shs 26.614bn, of which Ug shs 19.02bn (71.3%) was released and Ug shs 17.77bn (93.4%) was spent by end of FY. The release and expenditure was good.

3.5.1 National Meteorological Services Programme

The programme objective is to provide data and information on weather, climate, and climate change to support sustainable social and economic development of the economy. The programme outcome is "Increased access to real-time meteorological information by the public including the disabled, youth, children and elderly." There are four sub-programmes implemented under the programme which are: i) Headquarters, ii) Finance and Administration, iii) Training and Research, and iv) Retooling of UNMA. These were assessed as below:

3.5.1.1 Finance and Administration Sub-Programme

The objectives of this sub-programme are: i) To manage the authority's resources in conformity with applicable rules and regulations and provide reliable and accurate reports to stakeholders. ii) Coordinate the planning process, resource mobilisation and development of the annual work plan and budget, iii) supervise all the human resources functions so as to create industrial harmony at the workplace and adherence to the rules and regulations.

The annual planned outputs of the finance and administration sub-programme were: Administration and



management supported; Human resource management services enhanced; Records management services enhanced. The annual approved budget for the subprogram in FY2020/21 was Ug shs 9.99bn of which Ug shs 9.08bn (91.1%) was released and Ug shs 8.9bn (90.2%) spent by end of the FY. The release and expenditure performance was very good. The performance of the sub programme outputs are presented hereafter:

Physical performance

Three monthly media breakfast meetings were conducted to improve rebranding and visibility of UNMA. The UNMA also assessed weather and climate information dissemination and related feedback for media houses in Mubende, Kyenjojo, Kabarole and Kasese to improve UNMA visibility. Three radio programs and 3 Television talk shows were conducted on Star FM, Bukedde FM, Delta FM and Baba TV, NBS TV, and UBC TV on seasonal forecasts, severe weather alerts and monthly updates to increase awareness on weather and climate issues. The World Meteorological day celebrations were conducted in Jinja.

Performance monitoring of UNMA's decentralised offices in Kabale, Kasese, Mbarara, Bushenyi, Kabale, Kasese, Kyembogo, Jinja, Kamuli, Kiige, Buginyanya, Tororo, Bududa, Soroti and Serere was conducted. A healthy work force was maintained and statutory obligations for staff paid during the period under review.

The UNMA streamlined and strengthened records management systems in Jinja, Kiige, Tororo, Soroti, Kotido, Lira, Kitgum, Serere and Gulu stations. This was done by ensuring that five (5) files were introduced; (Incoming, Outgoing, internal correspondences, monthly progress reports and staff duty rosters).

3.5.1.2 Training and Research Sub-Programme

The sub-programme objectives are to: Continuously develop staff professional skills; upgrade staff careers through acquiring higher qualifications; ensure staff participate in specialised training for acquisition of new skills; and promote staff skills exchange programmes. The sub-programme planned output was: Administration and management supported. The sub-programme's approved budget for FY2020/21 was Ug shs 1.41bn, of which Ug shs 1.24bn (87.6%) was released and Ug shs 0.99bn (79.8%) expended by end of the FY. The Release and expenditure were good. The output's performance is discussed below:

Physical performance

Administration and Management Support

The capacity of seven (7) staff members was built in Meteorology with training in Master of Science in applied Meteorology. The UNMA draft gender strategy was edited and awaited the final strategy document. Preliminary analysis of the State of the Climate of Uganda 2020 was completed and the report was in its final stages. Data analysis for the research on "Future State of Climate of Uganda (2030-2040)" in support of Uganda's vision 2040 was completed and report writing was on-going. State of Climate of Uganda 2019 Report was completed and published. An online webinar on popularization of meteorology on usability of weather and climate products and use of meteorological instruments and observations with emphasis on Automatic Weather Stations was carried out.

3.5.2.3 Retooling of Uganda National Meteorological Authority Sub-Programme

The sub-programme objectives are to: Develop meteorological communication infrastructure network; Develop and standardise national weather and climate products; Improve the work environment for 53 major field stations; Improve working environment and service delivery of the National Meteorological Training School (NMTS). The approved annual budget was Ug shs 14.20bn of which Ug shs 7.88bn



(55.5%) was released and Ughs 7.78 (98.7%) spent by end of the FY. The release performance was poor, whereas the absorption was very good.

The planned outputs of the sub-programme were: i) Weather and climate services enhanced; ii) Administration and management supported; iii) Human resource management services enhanced; iv) Government buildings and administrative infrastructure maintained; v) Motor vehicles and other transport equipment purchased; vi) Office and ICT equipment, including software purchased; vii) Specialised machinery and equipment purchased; viii) Office and residential furniture and fittings purchased. The sub-programme performance against each output was as follows:

Physical performance

Weather and Climate Services: The Functionality of four (4) DAVIS Automatic Weather Stations (Agoro, Geremech, Goma and Kakira), 80 rainfall stations across the country and 68 ADCON Automatic Weather Stations were maintained through provision of airtime and ADCONs. The ADCONs in Kisoro, Kachwekano, Lukone East, Bushenyi, Kasese, Kyembogo, Kyenjojo, Mubende, Ntusi were repaired. A total of 1,873 terminal aerodrome forecasts were issued for Entebbe and Soroti, 6,543 flight folders were issued for Entebbe, 120 SIGMETs issued for Entebbe and 100,248 METARs were issued from synoptic stations of Entebbe, Makerere, Jinja, Tororo, Soroti, Lira, Gulu, Arua, Masindi, Kasese, Mbarara and Kabale. Radar operations were maintained.

Daily forecasts were disseminated to three (3) media houses of UBC TV, Star TV AND Bukedde 1 TV after the newscasts in Luganda, Swahili and English. Seasonal forecasts were issued at the media center covering all climatological zones. Seasonal rainfall performance evaluations and impacts studies were undertaken in Lira, Pader, Gulu, Omolo, Amuru, Tororo, Soroti and Moroto. Enhanced climate change impacts awareness was conducted in Nakapripit, Kotido, Moroto, Luweero, Nakaseke and Nakasongola. Climate change and vulnerability mapping was conducted in Kyotera, Lwengo, Lyantonde, Kalungu, Bukomansimbi, Gomba, Kiruhura, Ibanda, Buhweju, Kamwenge, Kasese, and Bunyangabo.

Regional talk shows were conducted in Mitooma, Rubirizi, Ntungamo, Ibanda, Lira, Dokolo, Oyam, Wakiso, Mpigi, Butambala, Gomba Bushenyi, Mbarara, Mbale, and Soroti to disseminate and get feedback on the seasonal forecasts issued. Mapping of stakeholders was done in Mubende, Kasanda, Kyankwanzi, Kiboga, Iganga, Kaliro, Budaka and Bukedea to undertake seasonal rainfall performance evaluations of the seasonal forecasts issued. Climate change and vulnerability mapping was conducted in Mpigi, Butambala, Gomba, Sembabule, Sheema, Bushenyi, Rubirizi, Kamuli, Buyende, Bulambuli and Kween. Farmers and agricultural extension officers in Albetong, Amolator, Kalakai, Kabelebyong, Katakwi and Namisindwa were engaged to enhance their capacity on utilisation of weather and climate information at farm level.

The coverage of rainfall stations was not increased by 150 Stations as planned since the delivery of the 100 rain gauges was made in the last month of the quarter and installation could not be undertaken. The Revival of Weather Observations at Airfields of Kisoro, Kihhi, Mbarara, Pakuba, Kidepo was not done as the funds received were not sufficient. The 52 Barometers, 208 Air Thermometers, 52 Anemometers, 52 Sunshine recorders, 300 Rain gauges, 52 Evaporation pans, 208 Soil thermometers were not calibrated due to lack of funds.

Quarterly performance reports were prepared and submitted to the relevant authorities. The UNMA fixed asset register was updated and assets engraved. The capacity of internal audit, accounts, procurement and legal staff was enhanced through attending Continuous Professional Development trainings organised by the Professional Bodies.



Land acquisition, boundaries were opened, boundary marks fixed and title processing was ongoing for Gulu plot 14. Deed plans for Mbarara were given pending issuing of the title. Formal letters authorizing allocation of land to UNMA were issued by the Town Council in Bududa. The cost recovery regulations development process on provision of aeronautical services was affected by restriction of movement to COVID prone countries like South Africa where the benchmarking was meant to be carried out.

Eight (8) senior staff members were recruited and one (1) staff contract renewed. Recruitment for other vacant positions was at shortlisting level. There were delays in commencement of construction of the Radar Operation Centers because of insufficient funds received hence delaying the process however, the weather radars at Lira and Mbarara-Rwampara were substantially complete. Entebbe International Airport Meteorological Station and upper air station were not renovated due to inadequate releases.

By end of the financial year, 2 double cabins were procured however; the 10 motorcycles were not procured. Assorted ICT equipment including Nine (9) laptops, 33 desktops, 2 High Performance computers, one (1) heavy duty printer, 14 multifunctional printers and 10 Ups were procured. Additionally, 170 stations were equipped with smart phones to improve data transmission to the center. A total of 10 solar panels, 10 batteries and 10 inverters were procured. Ten (10) Air conditioners were procured and installed at the Entebbe International Airport Meteorological Station, forecasting and briefing office.

A total of 20 Automatic Weather Stations, 100 Manual Rain gauges, 35 Digital Evaporation Pans and 300 Measuring cylinders and Two (2) Transformers were procured for the weather radars in Lira and Mbarara-Rwampara. However, 8 Air pollution Monitoring Stations and a Pilot briefing system were not procured due inadequate funds.

Field findings:

i) Jinja Station-Kimaka Airstrip

The station planned to produce four (4) synops per day, 24 metars per day, transmit data daily and ensure functionality of the station. These were achieved as planned. The station received one printer, one desk computer, one rain gauge and other office consumables. The internet was supplied and anti-virus was updated.

However, it lacks transport (at least a motorcycle). The office space cannot accommodate all the equipment and the three staff, two trainees. They lack an attendant. Equipment like the slide ruler and the minimum thermometer are too old and the Stevenson's Screen is broken. The inverter battery needs replacement. Some equipment needs calibration for quality data.



Left: An old slide ruler with sole tape. Right: A new rain gauge at the Jinja UNMA Station-Kimaka Airstrip

ii) Kayunga Station

Maintenance works were done at the station including slashing, cleaning of equipment, sim card replacement, dusting greasing and general replacement of spare parts. There is limited communication with the centre to provide backup support and yet the station's management was not handed over to the district. The station caretaker reported late payment of facilitation.

iii) Lira Radar

The weather radar was established on the premises of Lira University. The radar installation with all its components was complete at the time of monitoring. A transformer and a 20KVA standby generator had been procured and underground power evacuated to the radar site. Testing was done and the equipment was functional.

Pending works included power connection, final wall painting and landscaping. It should be noted that there was an addendum to the original contract with works such as construction of two (2) office blocks and a guard house. These works were ongoing.



Left: A Radar installed at Lira University. Right: Electro-mechanical and ICT equipment installed at the Radar centre at Lira University



iv) Mbarara radar

The radar was installed in Rwampara in Mwizi hills. Installation works were completed and its functionality awaited electrical connections for the Lira Radar since the two are to function together. The transformer was procured and installed at the site. The contract was extended to construct staff quarters and an office block on the site and works were ongoing.



L-R: A Radar and structural construction works at Mwizi Rwampara Hill, Mbarara district

Overall Performance

The performance of the National Meteorological Services Programme was good at 84%. Table 3.9 highlights the performance per output. Some of the achieved outputs included: weather stations were maintained and weather forecasts and terminal aerodrome forecasts issued. Installation of two weather radars at Lira and Mbarara-Rwampara was nearing completion. Acquisition of land for Gulu plot 14 was completed. However, the revival of weather observations at airfields of Kisoro, Kihhihi, Mbarara, Pakuba, Kidepo was not undertaken and The 52 Barometers, 208 Air Thermometers, 52 Anemometers, 52 Sunshine recorders, 300 Rain gauges, 52 Evaporation pans, 208 Soil thermometers were not calibrated due to insufficient funds.

Table 3.9: Performance of the National Meteorological Services Programme in FY 2020/21

Outputs	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)
Weather and Climate services	3,479,010,000	1,417,672,500	100	50	13.04
Administration and management support	2,861,602,728	1,816,763,627	100	64	10.73
Strategic Management Services	693,680,000	619,680,000	100	70	2.04
Human Resource Management Services	10,871,618,986	9,831,941,678	100	90	40.56
Records Management Services	38,300,000	18,400,000	100	50	0.14
National Meteorological Training School (NMTS)	120,000,000	57,000,000	100	47	0.45
Purchase of Office and ICT Equipment, including Software	463,749,026	401,092,231	100	11	0.22



Outputs	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)
Purchase of Specialised Machinery & Equipment	4,565,000,000	3,046,270,757	100	70	17.11
Purchase of Office and Residential Furniture and Fittings	147,000,000	29,400,000	100	72	0.55
Purchase of Motor Vehicles and Other Transport Equipment	523,761,948	467,566,948	100	20	0.44
Government Buildings and Administrative Infrastructure	2,850,000,000	1,252,240,441	100	42	10.21
Arrears	61,882,187	67,905,974	100	100	0.21
Total	26,675,604,875	19,025,934,156			67.17
Outcome Indicator			Annual Target	Achieved	Score (%)
Level of Accuracy of Seasonal weather forecasts issued for all categories of people including the female, male, children, youth, and elderly per climatological zone			85	70	82
Programme Performance (Outcomes)					82
Overall Programme Performance					84.0

Source: UNMA, IFMS and Field Findings

Implementation Challenges

- Only 55% of the budget was released. This hindered the execution of planned activities in the FY such as calibration of equipment and procurement of other weather equipment.
- Limited work force especially at the meteorological stations which affects data quantity and quality. Majority of the synoptic stations are manned by two or three staff instead of the recommended seven, while the agro-met and hydro-met stations are manned by one staff instead of the recommended four under Quality Management Standards of International Civil Aviation Organisation and World Meteorological Organisation. Some of the stations were closed due to lack of staff. The UNMA approved structure is 218 staff yet those that are in post are 118 due to the inadequate wage ceiling.
- Transport constraints as the UNMA had few vehicles and motorcycles which affected field activities that inform the functionality and maintenance of weather stations.
- Reduced number of terminal aerodrome forecasts and flight folders issued due to the COVID-19 outbreak which led to closure of the passenger aircraft thereby affecting the demand for these products.
- The COVID-19 pandemic affected the timely delivery of outputs as staff had to work in shifts.
- The closure of schools during the COVID-19 lockdown stopped awareness programs on the importance and use of meteorological services implementation in both primary and secondary sections.



Conclusion

The performance of the Meteorological Services Programme was good at 84%. A number of the planned outputs were achieved, however, the UNMA has consistently presented outputs that are not quantified in the Ministerial Policy Statement (MPS). This makes it difficult to assess the achievement of targets. The NDP III indicators “Increase percentage automation of weather and climate network” and ‘Increasing accuracy of meteorological information’ were reflected nowhere which makes measuring UNMA NDP III targets difficult.

Additionally, the use of non-calibrated equipment and the limited work force especially at synoptic stations affects the accuracy of weather forecasts. It should be noted that the overall achievement of targets was affected by the blanket budget cut and the COVID-19 pandemic.

Recommendations

- i) The MFPED should limit the blanket budget cuts across sectors because some of the affected outputs are critical in the delivery of the UNMA's mandate and achievement of the program objectives.
- ii) The Ministry of Public Service (MoPS) should lift the wage ceiling to enable UNMA recruit staff in key position to deliver on its mandate.
- iii) The MFPED should allow UNMA to procure transport means to ease monitoring of field activities for effective and efficient services delivery.
- iv) The UNMA staff should adjust to the changing working methods such as online working trends.



CHAPTER 4: CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

The overall sector performance was good at 77.9%. The release was fair and expenditure good. Cases of reallocations occurred from development to recurrent expenditures (especially under Natural Resources Management and Policy Planning and Support Services Programmes). Very low expenditures were under Integrated Water Resources, Management and Development Project. Of the seven programmes monitored, five exhibited good performance. The two programmes - Water for Production and Natural Resources Management performance was fair and poor respectively. Construction of new and rehabilitation of WSSs and water points, irrigation systems (small and large), were completed. There was an effort to put into consideration of gender and equity matters for example serving the less served; the ramps for disabled on buildings, male and female toilets stances; washrooms and incinerators on some toilet facilities.

The percentage of people accessing safe water supply within 1,000m increased to 69%, while 19.5% of the planned 23% had access to improved sanitation facilities in rural areas. The percentage of people accessing safe water supply within 200M was 80% of the planned 79.2% and 89 % people with access to an improved sanitation facility in Urban Areas as planned. Sanitation facilities including Fecal Sludge Management Facilities were constructed, capacity development done for the Water User committees/Managers and management systems put in place. Overall, 52.165 (ha) area was created under formal irrigation of the planned 19,776 (ha) and Cumulative WfP Storage Capacity (52.165 million m³), of the planned 54.32 (ha). Demarcation of boundaries and restoration of fragile ecosystems was done. Some challenges have persisted over time in the sector which affected achievement of planned outputs/ outcome indicators.

4.2 Recommendations

- i) The MWE/MFPED should emphasize the programme approach to planning to minimise on revenue losses thus budgeting/funding of sub-programmes that make meaningful contribution to the programme outcome.
- ii) The MHLUD should expeditiously review the land acquisition policy for development of government projects. In the meantime, only projects with clear Row should be planned and implemented to avoid delays.
- iii) An efficient collaboration of key sector players led by MWE including the NEMA, NFA, and MHLUD should streamline the land eviction processes to ensure forests and wetlands are protected and helped to regenerate. All illegal titles should be cancelled and officers involved held accountable.
- iv) The UNMA should prioritise procurement of modern equipment for effective and efficient data capturing and processing in order to cope with the climatic changes and customer service satisfaction.
- v) The government should negotiate for reduced counterpart funding instead of overcommitting itself and failing to fulfill its obligation.
- vi) Accounting officers should ensure that the project procurement plans are adhered to, and be held accountable to non-adherence. Penalties should be instituted for non-adherence.



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ANNEX

Annex 1.1: WES Programmes monitored for Annual Performance FY 2020/21

Vote / Programme	Sub Programme / Output and Location (District)
Vote 019 MWE	
Programme 0901: Rural Water Supply and Sanitation	<p>Sub Programme 1347: Solar Powered Mini-Piped Water Schemes in rural Areas</p> <ul style="list-style-type: none"> - Construction of Awach WSS in Gulu district - Construction of Katonya WSS in Kiboga district - Construction of Mutir WSS in Pakwach district. - Construction of Ngando WSS in Butambala district. - Construction of Sembwa WSS in Nakaseke district. <p>Sub Programme 1359: Piped Water in Rural Areas</p> <ul style="list-style-type: none"> - Construction of Kahama II WSS in Ntungamo district. - Construction of Lukalu-Kabasanda WSS in Butambala district. - Construction of a Highway Sanitation Project in Kiruhura district.
Programme 0902: Urban Water Supply and Sanitation	<p>Sub Programme 1188: Protection of Lake Victoria-Kampala Sanitation Program</p> <ul style="list-style-type: none"> - Construction of Nakivubo Waste Water Treatment Plant in Kampala district <p>Sub Programme 1193: Kampala Water Lake Victoria Water and Sanitation Project</p> <ul style="list-style-type: none"> - Construction of Katosi drinking water treatment plant in Mukono district. - Construction of Katosi transmission mains, Reservoir tanks, and pumping main Mukono and Kampala districts. <p>Sub Programme 1438: Water Services Coverage Acceleration Project (SCAP 100)</p> <ul style="list-style-type: none"> - Construction of Kapeeka WSS in Nakaseke district. <p>Sub Programme 1525: WSDF South Western phase II</p> <ul style="list-style-type: none"> - Construction of Kashaka-Bubare WSS in Mbarara district - Construction of Igorora WSS in Ibanda district. - Construction of Lwemiyaga WSS in Sembabule district - Construction of WSDF SWB Office block in Mbarara district <p>Sub Programme 1531: South Western Cluster (SWC) Project</p> <p>Sub Programme 1533: WSDF central phase II</p> <ul style="list-style-type: none"> - Construction of Kakunyu-Kiyindi WSS in Buikwe district - Construction of Kasambya-Kikandwa WSS in Mubende district - Construction of Butenga-Kawoko in Bukomansimbi district - Construction of Butemba-Kyankwanzi in Kyankwanzi district <p>Sub Programme 1534: WSDF North phase II</p> <ul style="list-style-type: none"> - Construction of Padibe Town Council WSS in Lamwo district



Vote / Programme	Sub Programme / Output and Location (District)
Vote 019 MWE	
Programme 0903: Water for Production	Sub Programme 1398: Water for Production Regional Centre West <ul style="list-style-type: none"> - Construction of Kyamate small scale irrigation scheme in Ntungamo district - Construction of Mabira small scale irrigation in Mbarara district - Construction of Ngugo multipurpose WSS in Rwampara district Sub Programme 1523: Water for Production phase II <ul style="list-style-type: none"> - Construction of Rwengaju irrigation scheme in Kabarole district.
Programme 0905: Natural Resources Management	Sub Programme 1417: Farm Income Enhancement and Forestry Conservation Project Phase II <ul style="list-style-type: none"> - Construction of Doho II irrigation scheme in Butaleja district - Construction of Wadelai irrigation scheme in Pakwach district - Construction of Tochi irrigation scheme Oyam district Sub Programme 1520: Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda Sub Programme 1697: Natural Wetlands Restoration Project
Vote 150 NEMA	
Programme 0951: Environmental Management	Sub Programme 01: Administration Sub Programme 1304: Support to NEMA Phase II
Vote 157 NFA	
Programme 0952: Forestry Management	Sub Programme 01: Headquarters Sub Programme 0161: Support to National Forestry Authority
Vote 302 UNMA	
Programme 0953: National Meteorological Services	Sub Programme 01: Headquarters Sub Programme 02: Finance and Administration Sub Programme 03: Training and Research Sub Programme 1371: Uganda National Meteorological Authority

Source: Authors' Compilation





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