

*Uganda National Meteorological Authority
(UNMA)*

*Strategic Plan
July 2017 – June 2021*





FOREWORD

The Comprehensive National Development Planning Framework (CNDPF) towards implementation of the Uganda Vision 2040 is aimed at propelling equitable distribution of socioeconomic development, which is expected to lead to a transformed Ugandan society from a peasant to a modern and prosperous country. This started in 2010 and is to run over a period of 30 years, which are subdivided into six 5-year national development planning cycles. National Development Plan-II is the current planning cycle, whose goal is to propel the country towards middle income status by 2020 through strengthening the country's competitiveness for sustainable wealth creation, employment and inclusive growth. Under the Environment and Natural Resources Sector, the NDP-II targets to strengthen the meteorological infrastructure and delivery systems to support the 5 priority investment areas (Agriculture; Tourism; Minerals, oil and gas; Infrastructure development; and Human capital development).

The Uganda National Meteorological Authority's 4-year Strategic Plan (2017/18-2020/21) is therefore the guiding document of an improved planning, management and delivery system of the Authority. It also sets the overall goals for the authority and its plan to meet the requirements for delivery of a broader range of environmental information services. The Plan focuses on what the UNMA needs to "execute" its mission.

UNMA's planning, programming, budgeting and execution cycle links program and annual operating plans to the Water and Environment Sector contribution to the Second National Development Plan investment priorities and goal. This UNMA plan identifies internal and external forces for change and the main focus of UNMA's response. It also addresses the specifics of the Directorates' roles within the structure of UNMA towards the achievement of the overall goals.

The Plan also conforms to the Meteorology policy, which is the anchor for all national weather services, programs and budgets.

UNMA plays an important role in the Water and Environment Sector goals and cross-cutting priorities and hence all members of the UNMA workforce should understand their roles in meeting these Authority priorities and focus areas.

The UNMA Strategic Plan contains two goals for organizing activities of the entire institution. The plan also adopts four cross-cutting priorities to describe thematic substructures, which will facilitate UNMA's delivery of services, enable effective operations, and promote creativity throughout the Authority.

PREFACE

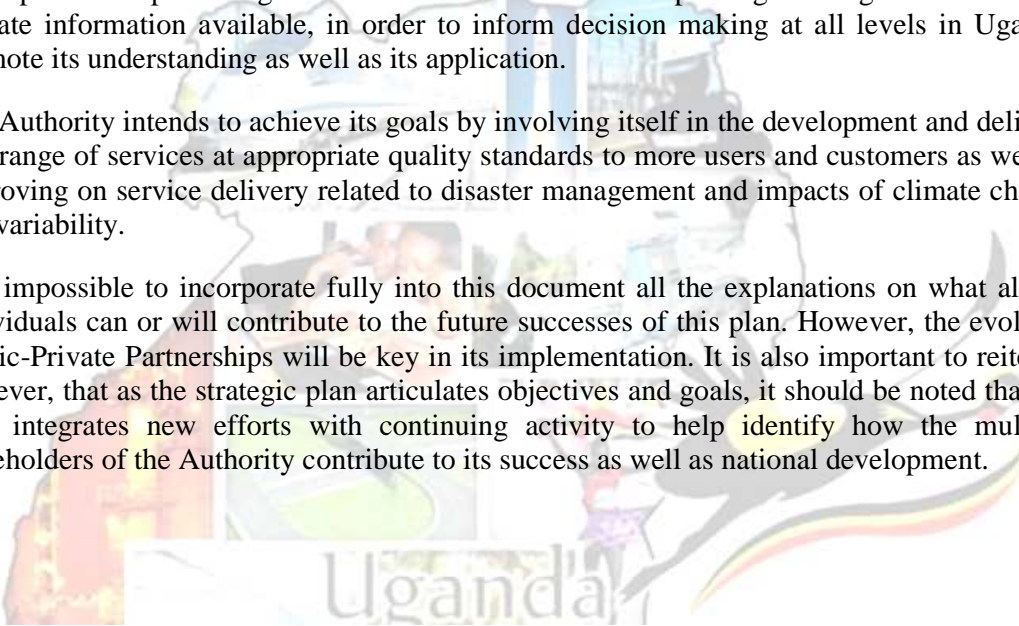
This strategic plan is the outcome of a process of gathering information from internal and external stakeholders of the Uganda National Meteorological Authority. The intent of the plan is to help guide future decision making and actions. It also identifies some of the ways information will be collected to inform decisions and assess progress towards particular objectives and actions. It outlines the mission and vision of the Uganda National Meteorological Authority, along with specific steps the Authority intends to take over the next four years to improve itself.

The Uganda National Meteorological Authority comprises of quality directorates and departments as well as dedicated and qualified administration and technical staff. What follows next intends to improve upon the progress the Authority has so far achieved.

Outlined are a number of goals, accompanied by objectives, action steps and assessment metrics. All of the goals are important and have been embraced by the stakeholders involved in the process of producing this document with an aim of improving the range of weather and climate information available, in order to inform decision making at all levels in Uganda, promote its understanding as well as its application.

The Authority intends to achieve its goals by involving itself in the development and delivery of a range of services at appropriate quality standards to more users and customers as well as improving on service delivery related to disaster management and impacts of climate change and variability.

It is impossible to incorporate fully into this document all the explanations on what all the individuals can or will contribute to the future successes of this plan. However, the evolving Public-Private Partnerships will be key in its implementation. It is also important to reiterate however, that as the strategic plan articulates objectives and goals, it should be noted that the plan integrates new efforts with continuing activity to help identify how the multiple stakeholders of the Authority contribute to its success as well as national development.



ACRONYMS AND ABBREVIATIONS

Acronym	Definition
MWE	Ministry of Water and Environment
PS	Permanent Secretary
ED	Executive Director
UNMA	Uganda National Meteorological Authority
DSNO	Directorate of Station Networks and Observations
DTR	Directorate of Training and Research
DFA	Directorate of Finance and Administration
DFS	Directorate of Forecasting Services
DADCS	Directorate of Applied Meteorology, Data and Climate Services
KPI	Key Performance Indicator
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
DoM	Department of Meteorology
EAC	East African Community
EAMD	East African Meteorological Department
PPRO	Principal Public Relations Officer
QMS	Quality Management System
WISER	Weather and Climate Information Services for Africa
DFID	Department for International Development
NMHS	National Meteorological and Hydrological Service
CAA	Civil Aviation Authority
ISO	International Standardization Organization
MHEWS	Multi-Hazard Early Warning Systems

EXECUTIVE SUMMARY

With an increasing acknowledgement of the vital role of weather, water and climate services to human safety and socio-economic development, the Uganda National Meteorological Authority is at an exciting and expansive stage of development.

To guide this next stage of growth, a major planning process was conducted to solicit input from a range of concerned parties, including a broad array of internal and external stakeholders in order to collect information and review performance.

Based on this process, a methodical long-term approach has been developed to expand the scope and impact of our work and contribution to Uganda's Second National Development Plan (NDP-II) efforts, VISION2040, as well as to better inform decision-makers and environmental leaders at regional and international levels.

This strategic plan provides a clear blueprint for the Uganda National Meteorological Authority's future. At its core, the plan shows the way towards building on our strengths as well as strengthening the capacities of UNMA towards providing weather, and climate services that satisfy the needs of all users.

Moving forward, the Authority remains committed to putting the contributed ideas and suggestions into actions with a view to contribute to the efforts of solving Uganda's weather, climate and environmental challenges.

We appreciate the generous support of the WMO and DFID funding without which this strategic planning process would have not been possible.

Executive Director

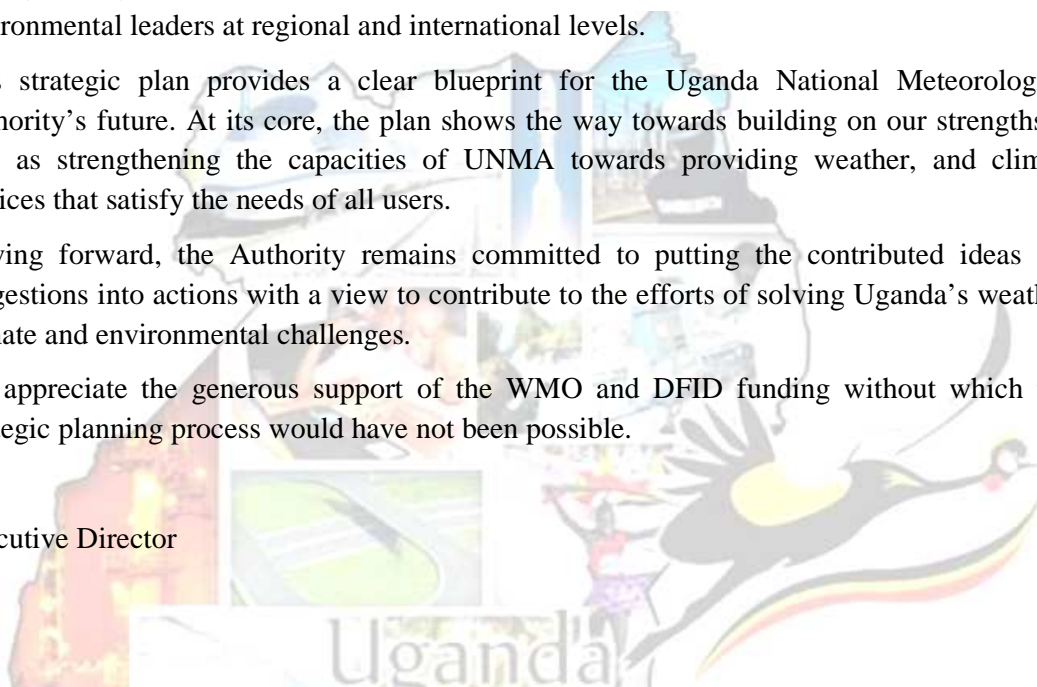


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1. INTRODUCTION

1.1. Purpose of Strategic Plan

The overall purpose of the strategic plan is to correctly position Weather Services as an essential component in Uganda's National Development framework, to aid socio-economic development - particularly in poverty reduction efforts, climate change adaptation and disaster risk reduction in support of the priority investment areas.

The objective of the Strategy is to identify areas the Authority needs to improve in order to enhance its contribution and services toward the overall national objectives of Vision 2040 and NDP-II theme (strengthening the country's competitiveness for sustainable wealth creation, employment and inclusive growth).

The strategy is also intended to serve as a framework for integrated and coordinated mechanisms, which provide strategic direction to the Uganda National Meteorological Authority and other stakeholders in streamlining policies that address challenges and opportunities associated with the development of adequate weather and climate services at the national and regional levels.

1.2. Strategic Planning Methodology

The methodology selected for the UNMA Strategic Planning process relies mainly on the "Theory of Change" model. Reasons for selecting this is that it uses the Logical Framework approach as the main planning tool, which is well-suited to cooperative development, especially by open discussion and drafting in meetings. It articulates explicitly how projects, programs and initiatives are intended to achieve outcomes through actions while taking into account the contexts.

This approach emphasises the importance of monitoring and evaluation through identification of a limited number of Key Performance Indicators (KPIs). These KPIs in turn link well to Results Based Management techniques. There is much current work being undertaken by the World Bank with Governments in East Africa to implement Results Based Budgeting in place of current systems of activity budgeting.

This UNMA Strategic Plan was developed with funding from the DFID WISER Project by Prof Charles Basalirwa (Consultant, Makerere University) supported by Mr Steve Palmer (NMHS Capacity Development Consultant, UK Met Office). This was done over the period starting 5th July 2016 until finalisation. In particular, the Logical Framework was developed during a meeting with the UNMA Management Team on 4th August 2016, and presentation

of the draft Strategic Plan to the same Team made on 22nd September 2016. The tireless assistance throughout this process by Mr Hubertus Roth, Project Manager CIM-IF UG, GIZ, Simon Muwafu, a volunteer consultant in UNMA, and Godwin Ayesiga, a Principal Meteorologist in UNMA is gratefully acknowledged.



2. BACKGROUND

2.1. Organization History

The Uganda National Meteorological Authority (UNMA) was established by an Act of Parliament, the Uganda National Meteorological Authority Act, 2012, which came into force on the 24th January 2014. UNMA is the successor of the Department of Meteorology (DoM), which originated from the Uganda regional office of the East African Meteorological Department (EAMD) established by the East African common services in 1948, in the three East African States of Kenya, Tanzania and Uganda, headquartered in Nairobi, Kenya.

The Uganda regional meteorological office of EAMD, the predecessor of DoM, was charged with the collection of weather data, monitoring of performance of weather stations in Uganda and producing both public and aviation forecasts from data released by EAMD headquarters until the collapse of the 1st East African Community (EAC) in 1977.

After the collapse of the 1st EAC in 1977 the Uganda Government took over responsibility for running the meteorological services and established DoM as a specialized Department of Government responsible for the implementation of national and international policies for the provision of meteorological services that included weather and climate data collection and storage, weather services for Transport (mainly Aviation), Defence, Agriculture, Disaster Preparedness, Environmental and Water Resources Management, Tourism and Construction Industry. DoM was to carry out these responsibilities in collaboration with the World Meteorological Organization (WMO) with its member states and other Global and Regional Meteorological Centres.

However, DoM as a government department faced many challenges including the facts that:

- Meteorological services in Uganda were new to the Uganda Public Service and their role and importance were not clearly understood.
- In 1995, DoM was put on line for divestiture, a situation that worsened its capacity to run meteorological services since no developmental activities could be allowed in an institution lined up for divestiture.
- There was, therefore, reduction in DoM staff numbers due to retirement, staff dying or leaving as no recruitment was carried out to fill such posts which undermined staff morale.
- There was limited Human Resource Development especially in training of meteorology staff and recruitment and training of new staff at diploma, degree and postgraduate levels to man crucial DoM operations.
- DoM was also faced with chronic underfunding by government for its operations as government funding is based on the context of the performance of the economy, and is, therefore, subject to national budgetary priorities and limitations.

- The absence of an adequate Observational Station Network representative enough to cater for the spatial variability of the weather elements meant an urgent need to increase observing stations around the country; which also called for increase in the number of staff that collect and process these data.
- Limited financial resources hindered the improvement and modernization in the equipment (both hard and software) used in the data transfer and processing; thus, DoM had out of date Information Transfer communications and technology facilities at the National Meteorological Centre; these being very old, very slow and expensive to maintain.

The challenges listed above among many others which needed addressing led DoM staff and many stakeholders and well-wishers to propose a transformation of DoM from a Department to an Agency or Authority as early as in 1997. However, these proposals did not materialize until 2012 when the DoM proposals for an Authority status were accepted by Parliament and a UNMA Act was promulgated and assented to by the President of Uganda in October, 2012.

Under the UNMA Act, 2012, UNMA was established to provide for the Meteorological Board, for the functions of the Board; to give effect to the Convention on the World Meteorological Organization; the United Nations Framework Convention on Climate Change and other Related Conventions, Protocols and Memoranda of Understanding to which Uganda is a party; to provide for the control and development of technically sound and scientific meteorological services and to provide for other related matters.

2.2. Review of Key Achievements

UNMA's key achievements since 2012 include:

- Enactment of an enabling law, the establishment of UNMA Act; the appointment of the UNMA Board and recruitment of UNMA Management and staff.
- Relocation of National Meteorological Training School from the Ministry of Education and Sports to UNMA
- Provision of aeronautical services to the Civil Aviation Authority (CAA)
- Attainment of financial Vote status at the Ministry of Finance
- Automation of meteorological data exchange system nationally and internationally from weather stations to National Meteorological Centre
- Compliance with WMO requirement of upgrading staff from class IV to class III.
- Improvement on quality of seasonal climate forecasts,
- Recruited skilled staff both administrative, technical and support staff
- Development of the Human Resource Operations Manual (HROM)
- Improved visibility in National Development Plan II
- Increased funding from development partners
- Good Progress to attain ISO 9001 certification

- Increase in the number of automatic weather stations installed and functional from 10% to 24%

Lessons learned/Challenges?

- The need to partner with stakeholders
- Delay in operationalizing some of the provisions in the UNMA Act.
- Limited standardization of weather observation equipment
- A need for prioritization of UNMA's stakeholders and customers as every sector of the economy is a potential client of UNMA.
- The need for improvement of in-house communication
- The need for research on products and services as well as customer needs.
- The need to acquire land for UNMA infrastructure
- Need continuous capacity development
- Training of staff needs to be strengthened in skills outside meteorological science, e.g. for using the QMS, service delivery, customer relations, marketing and management.
- Monitoring and evaluation of performance needs to be strengthened at all levels, including the Authority as a whole, teams and individuals, with a focus on outputs and outcomes, not activities.

2.3. Organization Structure

The UNMA organization structure set up under implementation of the Meteorological Authority is headed by an Executive Director with five Directorates.

The **Executive Director** is head of Meteorological Services and by virtue of that office is also the Permanent Representative (PR) with the WMO under the WMO Convention. S/He is also in charge of policy formulation, institutional development, liaison with WMO and its Member States and advising the Permanent Secretary, Ministry of Water and Environment (the parent ministry) on weather and climate related issues; and also advises the Permanent Secretary Ministry of Foreign Affairs on matters related to the WMO. S/He provides guidance and direction to the directorates to ensure smooth functioning of the Authority. The Office of the Executive Director coordinates with other technical institutions such as Water, Agriculture and Forestry on all matters related to meteorology.

The **five Directorates** under the Executive Director each headed by a **Director** are namely:

- a) **Networks and Observations:** - responsible for the design, development and maintenance of optimal observations network system, implementation and monitoring of the networks to ensure sustained flow of quality data to the collecting centres;
- b) **Training and Research:** - responsible for the development of training and research programmes. The Directorate also liaises with other regional centres, WMO and its Members States;

- c) **Forecasting Services** - responsible for collection and distribution of real-time data collected within Uganda to other world users and analyzing and producing daily public and aviation forecasts for all flights leaving or flying over Ugandan air space. The Directorate is also charged with maritime forecasting and lightning warnings;
- d) **Applied Meteorology, Data and Climate Services** - responsible for quality control, processing and archiving all the data observed in Uganda. The Directorate generates various climate products including; climatological statistics and scenarios/trends, seasonal forecasts and updates as well as bulletins. The Agro meteorological bulletins are specifically designed to meet the concerns and needs of the farming community and provide useful information for planning and marketing purposes and hydrological matters;
- e) **Finance and Administration** - responsible for budget and accounts, procurement and supplies, Human Resource development, personnel management, international relations, public relations and marketing;

Current Management Structure of UNMA (Below Executive Director)

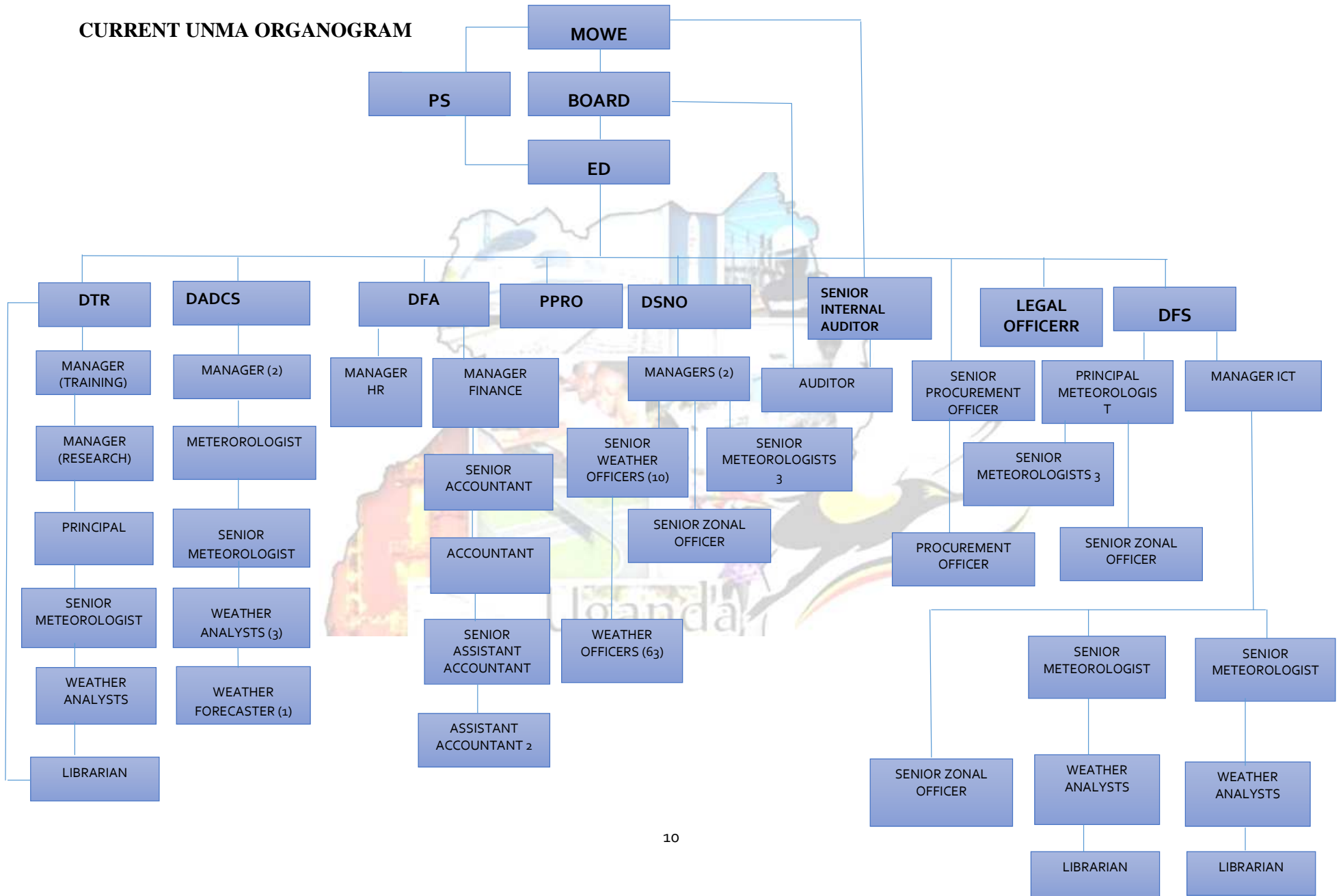
Directorate Networks & Observations	Directorate of Forecasting Services	Directorate of Training and Research	Directorate of Applied Meteorology, Data and Climate Services	Directorate of Finance and Administration	Legal Officer* Internal Auditors* Principal Public Relations Officer*
Manager Network Operations Manager Installations and Maintenance	Manager Forecasting Services NWP Public Weather Service AVMET Manager, Engineering & ICT - Engineering - ICT	Manager Training -National Met Training School -Training of all relevant staff of UNMA	Manager, Data Centre Data Processing & Archiving. Production of climate products (Agro & hydro meteorological products & Seasonal climate forecasts and advisories) Manager Climate Services <ul style="list-style-type: none"> • Adaptation • Mitigation • CDM • Projects 	<ul style="list-style-type: none"> • Accounting • HR Personnel & Administration - Recruitment - Human Resource Development - Personnel Management • Senior Procurement Officer • Transport Officer 	

* Under the Executive Director UNMA

UNMA intends to maintain the current structure as more consultations are being carried out to come up with suitable organisational structure that can lead to the growth and excellent service delivery of UNMA in line with Uganda Vision2040, National Development Plan II, and Water and Environment Sector Development Plans



CURRENT UNMA ORGANOGRAM



3. ENVIRONMENTAL SCAN

3.1. SWOT ANALYSIS: Assessment and Analysis of Organizations Strengths, Weakness, Opportunities and Threats

Table 1: UNMA SWOT Analysis

INTERNAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ UNMA is in the Ministry of Water and Environment and has the sole mandate by the UNMA Act of Parliament of 2012 to provide weather and climate services in the country. ▪ UNMA has the basic national operational weather observation network across the country. ▪ UNMA has a critical mass of skilled well trained human resource. ▪ Availability of a National climate data bank. ▪ Sustainable/ISO 9001 Certified?? Aeronautical meteorological services to support the aviation sector in Uganda. ▪ Variety of meteorological products. ▪ Membership of WMO, ICAO, IOC/ UNESCO, UNDP ACMAD, ICPAC, SWFDP (severe weather forecasting Development), GFCS (Global Framework for Climate Services) among others. 	<ul style="list-style-type: none"> ▪ Understaffing at all levels including at field weather stations. ▪ Limited participation of the private sector. ▪ UNMA’s succession plan not adequate. ▪ Inadequate physical facilities such as buildings, vehicles. ▪ Inadequate meteorological infrastructure weather network observation, telecommunication network, data management and processing and their dissemination. ▪ Limited land for meteorological infrastructure. ▪ UNMA visibility limited. ▪ More incentives for research and development activities are required. ▪ Low levels of adapting to change due to insufficient public awareness. ▪ Limited computing facilities to run operational weather and climate models ▪ Limited library resources. ▪ Limited data archiving capability.

EXTERNAL

Opportunities	Threats
<ul style="list-style-type: none"> ▪ Lead weather and climate related natural disaster management strategies to government and local communities. ▪ Growing goodwill from Government, Civil Society and Development partners, private sector and NGO. ▪ Evidence of Climate Change/Variability creating increased demand for information and climate data. ▪ Government's investment in Agriculture (UNMA's) major stakeholders. ▪ Increased support from Policy Makers ▪ Evolution of agriculture insurance ▪ Meteorological support to the emerging oil and gas industry. ▪ Social media to disseminate weather and climate products and feedback. ▪ Use of local languages. ▪ Complementary Projects which give positive Assistance (High weather, Farmer workshops, etc.) ▪ Seasonal Climate Forecasts. ▪ Urbanization. ▪ EAC Meteorological Strategy. ▪ GIZ, WISER. 	<ul style="list-style-type: none"> ▪ Insufficient government and society awareness about the importance of weather and climate information. ▪ Rapidly changing Technology in weather monitoring equipment. ▪ Succession plan is not adequate. ▪ Limited confidence in UNMA's products ▪ Competition excluding UNMA's role in the climate change programmes of the country. ▪ Institutional duplication of roles of Government Departments/Agencies e.g. Climate Change Department ▪ Advancement of technology which has made access to weather and climate information much easier from global centres (e.g. Google weather). ▪ Fierce competition in weather and climate service provision and a likelihood of losing some clients. ▪ Limited funding from Government. ▪ Vandalism of meteorological equipment which increases the cost of doing business ▪ Liabilities that accrue from uncertainties in the forecasts (to discuss). ▪ Some products are highly perishable (Lack of a robust dissemination mechanism). ▪ Potential loss of Meteorological Training School land. ▪ Loss of Weather Forecasting Space at CAA Control Tower. ▪ Famine Early Warning System Network (FEWSNET).

3.2. Pestle Analysis

Table 2: UNMA PESTLE Analysis

PESTLE ANALYSIS	
<p>Political Factors</p> <ul style="list-style-type: none"> • Limited awareness by Government of the role of meteorology in national development which leads to inadequate funding from Government. • Diverse interest of Government with and changing manifestos limit prioritization of meteorological issues. • Frequent restructuring of Ministries, Departments, Agencies (MDAs) which disrupts the implementation of medium to long-term plans. • Government’s participation in the EAC integration leading to a need for harmonization of meteorological services. • Low levels of ratification and domestication of international and conventions and treaties limiting participation and implementation of regional and international decision making process. • Prevailing peace and security enhances the diversification and increased demand for meteorological service delivery. • Existence of relevant parliamentary committees and fora means many lobby groups for more funding for UNMA. 	<p>Economic Factors</p> <ul style="list-style-type: none"> • Low level of Government funding lead to incomplete implementation of work plans. • Slow growth of Uganda’s economy leads to difficulties in procurement of meteorological equipment. • Taxation policy increases the cost of meteorological equipment and delivery of meteorological services. • Investment in Commercial Agriculture provides a need for Meteorological services. • Food Security Insurance will increase demand for Meteorological Services. • Economic zoning means a need to tailor meteorological services basing on economic zones. • Subsistence livelihood leads to a low demand for meteorological services.
<p>Socio-cultural Factors</p> <ul style="list-style-type: none"> • Accelerated urbanization has led to loss of suitable sites for meteorological observations. • High population growth has led to increased demand for meteorological services. • Limited awareness of the importance of meteorological services leads to a poor utilization of meteorological services and vandalism on met equipment. 	<p>Technological Factors</p> <ul style="list-style-type: none"> • Increase of innovation in electronic gadgets has improved communication and meteorological data exchange. • Staff coping with the changing technologies (shift from obsolete technology) requires continuous training.

<ul style="list-style-type: none"> • Diverse languages in the country means that there is no common language of communication and limits the understanding of weather and climate information. • Rigid cultural beliefs Limited consumption of weather and climate information and reliance on Indigenous knowledge (IK). • Gender disparities limit access to weather and climate information. • Low Literacy levels compromises interpretation of meteorological information. • Universal Education needs formulating of a policy to disseminate meteorological information. 	<ul style="list-style-type: none"> • Increased costs of new technology are limiting access to new technologies. • Affordable IT technology and Global IT villages means that weather and climate messages can be easily accessed but the accuracy still doubtful.
<p>Legal Factors</p>	<p>Environmental (ecological) Factors</p>
<ul style="list-style-type: none"> • UNMA established by Law; is a corporate body and has a mandate to operate as an authority in weather and climate in Uganda • Weather and Climate is recognized in the Constitution as a valuable natural resource. • Uganda is a signatory to some international treaties and convention and UNMA must meet the obligations under these treaties 	<ul style="list-style-type: none"> • Climate Change/variability means that UNMA needs to strengthen research and innovation. • Ecological/climatological variability in Uganda requires downscaling the weather information to fine details which is difficult due to varied micro-climates and advanced computing facilities and; therefore a need for a denser observation network with specialized equipment. • Environmental degradation <ul style="list-style-type: none"> - Creates a need for research in changing weather patterns - Also increases uncertainties in forecasts - Increased natural disasters has created needs to: <ul style="list-style-type: none"> - Enhance early warning services - Increase in skills and the capacity of forecasters • Emerging environmental issues from the oil and gas sector; industrialization and pollution <ul style="list-style-type: none"> - Creates need for specialized equipment for monitoring and forecasting air quality - Need for capacity building and outreach programmes.

3.3. Stakeholders Analysis

Table 3: Stakeholder Analysis Matrix

STAKEHOLDER	INTERESTS	ROLES & RESPONSIBILITIES	Contributions to UNMA
<p>AGRICULTURAL SECTOR</p> <p>Ministry of Agriculture, Animal Industry and Fisheries</p> <p>Agricultural extension workers.</p> <p><i>Other national institutions including:</i></p> <ul style="list-style-type: none"> • National Agricultural Research Organization (NARO). • Insurance companies. <p><i>International Organizations including</i></p> <ul style="list-style-type: none"> • International Fund for Agricultural Development (IFAD) and its projects. • CGIAR and its centres and projects e.g. International Centre for Tropical Agriculture (CIAT). 	<ul style="list-style-type: none"> • Food security • Agricultural intensification programmes • Post-harvest losses • Pests and diseases • Commercial agriculture • Access to markets transport • Market sensitivities/ vulnerabilities • Intermediaries • Community engagement • Communications • Insurance 	<p>In the Long Term:</p> <p>Planning e.g. Crops, seeds, locations, agricultural calendar, prevalence of pests and disease, risk analysis, productivity analysis, insurance against losses, post-harvest losses, infrastructure (buildings, irrigation, washing stations, storage) etc. and the impact of climate change/ seasonal forecast on all of this</p> <p>In the short Term:</p> <p>Local decision making e.g. planting, harvesting needs local observations, downscaled forecast (especially rainfall and temperature but also wind speed/ direction the latter especially with respect to pests/disease/spraying appropriate communication (content, quality, format, language, timeliness, frequency).</p> <p>Soil Moisture Deficit and Leaf Area Index observations /forecast. Irrigation requirements.</p> <p>Events:</p> <p>Early Warnings of flood, drought/ famine, strong winds.</p>	<ul style="list-style-type: none"> • Data Collection recovery costs. • Management of weather networks in the areas of their operations. • Partnership and collaboration in research and development.

		Services that reach farmers e.g. MS, radio. Observations-satellite and terrestrial (especially rain gauges).	
<p>WORKS & TRANSPORT SECTOR</p> <p>Ministry of Works and Transport Civil Aviation Authority (RCCA)</p> <p><i>Other aviation organizations:</i></p> <ul style="list-style-type: none"> Uganda Airways and other international carriers <p><i>Other aircraft operators:</i></p> <ul style="list-style-type: none"> UNHCR Traffic Police EAC Railway Kampala City Council Authority <p><i>Other District Government and local authorities.</i></p>	<ul style="list-style-type: none"> Roads Buildings Urban environment 	<p>In the Long Term:</p> <p>Planning/ design/ construction Planning, risk analysis Climate Change impacts.</p> <p>In the Short Term:</p> <p>Operation/ management/ maintenance</p> <p>Events:</p> <p>Early warnings e.g. floods (fluvial/ pluvial), landslides and responses to accidents (including consultancy)</p>	<ul style="list-style-type: none"> Payment in return for UNMA Data and Information
	<ul style="list-style-type: none"> Construction Industry 	<p><i>As above and:</i></p> <p>Working time penalty Traffic ability</p>	
	<ul style="list-style-type: none"> Aviation 	<p><i>As above and:</i></p> <p>Good quality (and good continuity) aviation weather service (observations, forecast etc.)</p> <p>ICAO</p> <p>Specialist services for particular operators, e.g. helicopters.</p>	
	<ul style="list-style-type: none"> Air quality 	<p>Monitoring by Kampala City Council Authority (KCCA) and National Environment Management Authority</p>	

		(NEMA)	
ENERGY SECTOR Ministry of Energy and Mineral Development UMEME	<ul style="list-style-type: none"> Energy 	In the Long Term: Planning, risk analysis Climate Change impacts. In the Short Term: Operation/ management/ maintenance Events: (Early) warnings e.g. floods (fluvial/ pluvial), landslides and responses to accidents (including consultancy) <i>As above and:</i>	<ul style="list-style-type: none"> Payment for data and research information
Local Hydropower Plants		Hydropower – operation, capacity (water volume and temperature) Lightning Light levels/ temperature for demand	
Local Renewable energy projects e.g.	<ul style="list-style-type: none"> Renewables 	Solar power / wind power	
Oil & Gas extraction e.g. Tullow oil, Total	<ul style="list-style-type: none"> Civil Engineering Operations 	<i>As above and:</i> Pollution risk and response to incidents.	<ul style="list-style-type: none"> Play their role in the development of UNMA
Oil & gas retail e.g. Shell	<ul style="list-style-type: none"> Transportation and storage of fuels. 	<i>As above and:</i> Pollution incident management Efficient operations	
WATER / SEWERAGE SECTOR Ministry of Water and Environment	<ul style="list-style-type: none"> Integrated Water Resource Management (IWRM) 	In the Long Term: Planning/ design/ construction of	<ul style="list-style-type: none"> Partnership, consultation in the collection of data in their

<p>National Water and Sewerage Corporation (NWSC)</p> <p>NGOs e.g. Water Aid</p> <p>Ministry of Health (MoH)</p> <p>Fishermen/ fishing cooperatives</p>	<ul style="list-style-type: none"> • Floods • Droughts • Water security • Ground water/ boreholes • Water pollution • Sanitation • Sewerage • Land use planning • Infrastructure-dams, watercourses, pumping stations, community water pumps, pipes, septic tanks, reverse-osmosis (RO) plants • Transportation of water by road 	<p>infrastructure etc. plans in relation to expected future demand (impacts of climate change in terms of water security, water balance and migration for demand)</p> <p>Short Term: Operation/ management/ maintenance – water levels (affected by rainfall and temperature of air/ water), water quality (pH and contaminants), water balance – demand/ supply</p> <p>Events: (Early) warnings e.g. floods (fluvial/ pluvial) and droughts as well as responses to accidents (including consultancy) e.g. water pollution</p> <p><i>As above and:</i></p> <ul style="list-style-type: none"> • Water balance (water resources, supply/ demand) • Potable water • Water pollution Inundation of sewerage facilities. 	<p>areas of operation.</p> <ul style="list-style-type: none"> • Share their research findings related to meteorology • Collaborate in research
<p>TOURISM - SECTOR</p> <p>Ministry for Tourism, Wildlife and Antiquities</p> <p>Tour operators (local, national, regional and international)</p> <p>Hotels and guesthouses</p> <p>Nile Conference Centre</p> <p>National Parks e.g. Queen Elizabeth,</p>	<ul style="list-style-type: none"> • Availability/ accessibility of tourism activities, especially those sensitive to weather and climate • Ecosystems/ environmental management 	<p>Long Term: Planning/ design/ construction/ product development – feasibility of tourism activities in terms of weather/ climate and projected climate change</p> <p>Short Term: Operation/ management/ maintenance –</p>	<ul style="list-style-type: none"> • Feedback to UNMA the quality and timeliness of UNMA information • As a platform for advertising UNMA • Contract UNMA to contribute weather and climate information to their advertisements

<p>Bwindi, Kibale, Kidepo, Mburo, Mgahinga, Mount Elgon, Murchison Falls, Rwenzori, etc. Entebbe Botanical Gardens Entebbe Zoo Museums Tea/ coffee plantations Ministry of Sports Stadiums & other sports facilities Sports Teams Festivals Music/ dancing/ drumming groups NGOs e.g. Diane Fossey etc.</p>	<ul style="list-style-type: none"> • National security • Transport (international, regional, national and local) • Disease prevalence (e.g. yellow fever, malaria, cholera) • Development planning • Private sector investment 	<p>feasibility of tourism activities in prevailing/ forecast weather conditions in terms of areas of interest</p> <p>Events: Effective warnings and response</p>	
<p>DISASTER (RISK) MANAGEMENT/ REDUCTION (DRM/DRR) -SECTOR</p> <p>Office of the Prime Minister; Directorate of Disasters. Ministry of Disaster Preparedness & Refugees. Ministry of Health UN High Commissioner for Refugees (UNHCR) Police Army (NRA) Ministry of Local Government. KCCA International/ NGOs e.g. International Red Cross. Ministry of Agriculture, Animal Industry and Fisheries. Ministry of Internal Affairs.</p>	<ul style="list-style-type: none"> • Food security • Water security • Disease • Flood • Drought • Other high impact weather events e.g. strong winds, lightning. • Logistics • Transport – access to facilities; travel of refugees etc. • Fishermen 	<p>Long Term: Future projections on climate to inform expectations with respect to natural disasters, migration, food security, water security, disease etc.</p> <p>Short Term: Forecasts relating to areas of interest and for operation of refugee camps etc.</p> <p>Events: Early warnings e.g. floods, droughts, famine, strong winds, landslides, earthquakes Mobile Weather Alerts Project.</p>	<p>Increased Government funding to enable efficiency of UNMA operations.</p>

<p>DEFENCE/ SECURITY - SECTOR</p> <p>Ministry of Defence UPDF Police Ministry of Internal Affairs Ministry of Foreign Affairs</p>	<ul style="list-style-type: none"> • Local weather/ climate • Regional weather/ climate • International weather/ climate (for areas of active operations) • Military Aviation • Disaster management/ response • Outdoor operations (land/ air/ marine)– feasibility, traffic ability, lake conditions • Logistics • Effective operation of sensors and weapons 	<p>Long Term:</p> <p>Future projections on climate to inform expectations with respect to defence/ security e.g. food/ water security issues, migration, conflict over natural resources, hot spots</p> <p>Short Term:</p> <p>Forecasts relating to areas of interest linked to operations, especially land, air (including helicopter) and marine (boats on lakes) operations</p> <p>Events:</p> <p>(Early) warnings e.g. floods, droughts, famine, strong winds, landslides, earthquakes.</p>	<p>Attract increased Government funding to UNMA</p>
<p>HEALTH - SECTOR</p> <p>Ministry of Health Public hospitals Private hospitals Independent clinics Pharmacies NGOs e.g. Red Cross Health education programmes e.g. Human Network International Development partners e.g. GIZ, DFID,</p>	<ul style="list-style-type: none"> • Food security • Water security • Malnutrition • Disease – type, prevalence, epidemics (local, national, regional, global) • Admissions • Disasters/ high impact weather events e.g. flood, drought, strong 	<p>Long Term:</p> <p>Future projections on climate to inform expectations with respect to health in relation to natural disasters, migration, food security, water security, disease etc.</p> <p>Short Term:</p> <p>Forecasts relating to areas of interest and for operation of health facilities and programmes for health improvement, disease awareness (especially malaria, cholera, and yellow fever), vaccinations etc.</p>	<p>Effective use of UNMA information in their operations</p>

<p>USAID</p> <p>Ministry of Gender Labour and Social Development.</p>	<p>winds</p> <ul style="list-style-type: none"> • Logistics – access to services and movement of resources (into and around Uganda) • Transport – access to facilities; travel of refugees etc. • Women’s health • Hygiene 	<p>Events:</p> <p>(Early) warnings e.g. floods, droughts, famine, strong winds, landslides, earthquakes</p>	
<p>MEDIA & COMMUNICATIONS – SECTOR</p> <p>Ministry of Information & National Guidance</p> <p>UBC</p> <p>Uganda Communications Authority</p> <p>Independent (private sector) TV</p> <p>National radio</p> <p>Community radio</p> <p>Independent (private sector) radio</p> <p>Online media</p> <p>Print media</p> <p>Social media</p> <p>Telecoms</p> <p>Members of the public</p>	<ul style="list-style-type: none"> • Weather forecasts • Warnings of severe events • Information about weather/ climate (e.g. El Nino, future climate) • Performance of communications networks (affected by moisture in the air) • Communication requirements – language, format, content, timeliness, frequency, editorial line 	<p>Long Term:</p> <p>Information/ projections relating to climate change to inform investment decisions (infrastructure for communications and media houses) and for audiences, seasonal forecasts.</p> <p>Short Term:</p> <p>Forecasts and warnings to inform local decision making e.g. planting, harvesting – needs local observations, downscaled forecast (especially rainfall and temperature but also wind speed/ direction ;the latter especially with respect to pests/ disease, appropriate communication (content, quality, format, language, timeliness, frequency) – can be routine or reactive (and also interactive e.g. call in on radio, chat show on TV)</p> <p>Events:</p>	<p>(a) Contribution to cost of meteorological information</p> <p>(b) Timely Dissemination of Meteorological information to the public</p> <p>(c) Fair coverage of UNMA affairs</p>

		(Early) Warnings of flood, drought/ famine, strong winds, landslide.	
EDUCATION - SECTOR Ministry of Education and Sports Public Universities (6), including Makerere Private universities, including: <ul style="list-style-type: none"> • UCU • Kampala International U • Kabale University • IUIU Publically funded schools Private schools British Council Nurseries	National curriculum – information and training resources relating to weather and climate Data for research Collaboration in the Meteorological Training programmes Infrastructure – buildings, services (including internet) Logistics – especially transport connections and roads	Long Term: Future areas of education and research in the context of climate change e.g. new academic programmes, changes to national curriculum. Short Term: Forecasts and warnings to inform local decision making relating to safe operation of education facilities, including access to sites Events: (Early) Warnings of severe weather events that could affect operations and safety of staff/ students	(a) Training of UNMA staff (b) Provide Research Results to UNMA (c) Explore Joint Research opportunities (d) Provision of technical software Innovations
ENVIRONMENT - SECTOR Ministry of Water and Environment UNEMA Uganda National Environment Management Authority. Uganda Climate Centre	Overlapping responsibilities <ul style="list-style-type: none"> • Flood • Drought/ famine • Other severe weather events e.g. strong winds • Food security • Water security • IWRM • Environmental Management Systems (EMS) • Environmental Impact 	Long Term: Future projections on climate to inform expectations with respect to natural disasters, migration, food security, water security, disease etc. to inform future policies and regulations and the implementation of specific plans, including the Green Growth and Climate Resilience: National Strategy for Climate Change and Low Carbon Development and associated Programmes of Action Short Term:	(a) Funding of research activities related to environmental issues (b) Increased funding for UNMA development

	<p>Assessments (EIA)</p> <ul style="list-style-type: none"> • UN Framework – Convention on Climate Change (UNFCCC) submissions • National Adaptation Programmes of Action (NAPA) • Land use planning (especially relating to flood plains) <p>Policy regulation e.g. pollution</p> <p>Pollution control – including air/ water quality</p> <p>Mining and Quarrying</p>	<p>Forecasts relating to areas of interest and related information to inform implementation of existing policies and regulations e.g. EIA, EMS, pollution etc.</p> <p>Events: (Early) warnings e.g. floods, droughts, famine, strong winds, landslides, earthquakes.</p> <p><i>As above and:</i></p> <ul style="list-style-type: none"> • Specific forecasts relating to: <ul style="list-style-type: none"> - Heavy rainfall and landslides which could affect mining/ quarrying operations, especially in terms of water pollution into watercourses (from seepage, tailings etc.) - Strong winds in relation to air pollution 	
<p>INDUSTRY & RETAIL - SECTOR</p> <p>Ministry of Trade, Industry and Cooperatives</p> <p>Ministry of East African Community Affairs.</p> <p>Ministry of Finance and Economic Planning</p> <p>Construction companies</p> <p>Manufacturing companies</p> <p>Retail companies</p> <p>Cooperatives e.g. craft, carpentry, sewing/ knitting</p>	<ul style="list-style-type: none"> • Logistics/ transport – access to markets and resources • Availability of (natural) resources (now and in the future) • Water availability • Supply/ demand/ competition (local, national, regional and global) 	<p>Long Term:</p> <p>Information/ projections relating to climate change to inform investment decisions (infrastructure/ urban environment), industrial strategy and markets</p> <p>Short Term:</p> <p>Forecasts and warnings to inform local decision making relating to operations, supply chain management, supply/ demand</p> <p>Events:</p> <p>(Early) Warnings of flood, drought/ famine, strong winds, landslide affecting logistics, access to market, availability of resources (including human resources)</p>	

3.4. Conclusions from Environmental Scan

The Authority has made significant progress since the last strategic reform was adopted. Initial reforms focused on creating an improved organizational structure comprised of training, research and support services departments, each composed of programmatic or operational subdivisions, resulting in clearer lines of authority and accountability.

Moving forward with a number of additional reforms required a clear understanding of the Authority's degree of autonomy given its place in the National Development agenda. A far reaching, consolidated opinion of the National Development Plan recognized UNMA's autonomy level, and this recognition has been crucial to pave the way towards a more modern organization with authority to develop policies compatible with the specific nature and orientation of the Authority's unique mandate. Some key areas the Authority has worked well within so far, but also needs to keep on improving include:

Strengthened human capital



The Authority to a large extent identified, developed and retained qualified and motivated employees at all levels and in all categories to deliver on its mandate. With a current overall workforce at 190, UNMA has placed emphasis on enhancing its diversity, quality and gender equality remaining at the heart of its operations and programming. In short, UNMA has become an attractive employer. The number of job applicants has increased for all advertised posts, and senior management has pursued change management vigorously, requiring a new, results-oriented approach, to be further developed and internalized in a performance-based business culture.

Impressive growth with new donor support



Financially, the Authority has demonstrated considerable growth; predictions on budget growth have been surpassed, from an expected 15 per cent increase to a 19 per cent increase actually achieved. This growth has resulted from a new strategic orientation placed on mobilizing both earmarked and non-earmarked voluntary contributions from existing donors, and identifying new strategic partners, including an array of organizations and public and

private entities.

Research and Training



Parallel to achievements related to human and financial capital, the Authority intends to strengthen its institutional capacity for training and research, notably by establishing systems responsible for identifying and advocating the need for training staff in order to attain necessary qualifications and tools that are conducive to modern day meteorological approaches.

In relation to quality assurance, the Authority has implemented strategies to comply with international quality standards for staff qualifications and established an eminent advisory board to review and approve a process to facilitate certified training in view of ultimately adding value to beneficiaries.

4. ORGANIZATIONAL VISION, MISSION AND CORE VALUES

4.1. UNMA Vision

To be a centre of excellence on weather and climate services for sustainable development of Uganda.

4.2. UNMA Mission

To contribute to overall national development through provision of quality, customer-focused, cost-effective and timely information for weather and climate services to all users.

4.3. UNMA Mandate

To promote, monitor weather and climate, maintain a climate database, provide regular advisories on the state of weather and climate, and provide accurate and timely climate and weather information to various stake holders.

4.4. UNMA Core Values

Efficiency, Professionalism, Integrity, Partnership Building and Innovation

5. STRATEGIC FRAMEWORK

5.1. Strategic Goals, Objectives and Strategies

5.1.1. UNMA Goals

To increase the range and quality of services to more users and customers.

- As UNMA aims at improving its capacity to increase the reach and penetration of its services and respond to societal changes, it is important to further diversify products and services. This is to be achieved by improvement of existing services and by developing and implementing new innovative services. It will also be important to anchor them on quality assurance mechanisms that enable the delivery of quality certified products, which have the potential to add substantial value to stakeholders particularly in the area of socio-economic development.

To develop and deliver services related to Disaster Management and impacts of Climate Change and variability.

- By recognizing the increasing need for effective warning services for the mitigation of disasters and other high impact weather events UNMA aims at covering risks analysis, increasing probabilistic forecasting and warning services delivered to disaster managers and the public through all suitable routes especially at community level.

5.1.2. UNMA Objectives

1. To improve the quantity and quality of meteorological services to customers by strengthening the observing network, National Meteorological Centre (NMC), data and information exchange according to WMO and International Civil Aviation Organization (ICAO) standards and enhancing appropriate systems to ensure continuous improved service delivery.
 - a. **Rationale:** Implementation and continuing certification of ISO 9001 for UNMA and the associated implementation of the WMO Service delivery strategy, will enable UNMA to implement effective management of the production processes for delivery of services, both routine and event driven.
2. To promote and improve user access/awareness of the benefits of using meteorological services, climate information for public safety and social-economic planning in order to widen the market for weather and climate products.
 - a. **Rationale:** This objective means that UNMA should identify its highest priority market sectors, (CAA, DRR, UNRA) customers and users and concentrate on delivering agreed services on time and in full as expected by the customers.
3. To improve on the understanding and knowledge base on meteorology and climate services in order to build a skilled and motivated work force, promote UNMA's role as a trusted research partner that informs decision making in the country and protect its unique position as the authorised Government body providing weather and climate warnings and advice.
 - a. **Rationale:** Delivering weather and climate services requires input from people who are competent with the knowledge and skills to provide the services. The current understanding of weather, meteorology and climate issues is limited, there is need for UNMA to engage more resources in promoting in house research and increase the knowledge base required. This implies continuing professional development, within a competency-based framework, with regular research, training and skills auditing and competency assessment.
4. To strengthen the resource mobilization strategy and achieve a sustained increase in revenue generation besides earnings from services for public good to facilitate implementation of other strategic objectives.
 - a. **Rationale:** In order to achieve its mission, the Authority requires sufficient funding and contribution. The principle source of funds is currently the Public Weather Service delivered by the Government. Additionally, there are many development aid funds for projects in weather and climate sector which the Authority can utilize.

5.1.3 UNMA Strategies

Obj: To improve the quantity and quality of meteorological services to customers by strengthening the observing network, National Meteorological Centre (NMC), data and information exchange according to WMO and International Civil Aviation Organization (ICAO) standards and enhancing appropriate systems to ensure continuous improved service delivery.

Strategies

- a) Implementation of Quality Management Systems (QMS) for Aeronautical Meteorological Services. Certification audit by UNBS completed and ISO 9001:2008 Certification expected by end of March, 2017.
- b) Maintenance of Global Meteorological data exchange in support of Global Climate Services.
- c) Increased functionality of major meteorological installations (Synoptic, Agro met and Hydromet stations)
- d) Expand the network of Automatic Weather Stations (AWS) to 200 and increase Functionality of Rain gauge stations increased from 100 to 200
- e) Enhance Public Weather Services (PWS) through multi-channel broadcasts for protection of citizens against weather hazards.
- f) Digitize all historical climate data and archive it on easily accessible formats;
- g) Enhance the accuracy of seasonal climate forecasts;
- h) Timely issuance seasonal climate outlooks on quarterly basis for entire country.
- i) Acquire land for installation of Meteorological Equipment

Obj: To promote and improve user access/awareness of the benefits of using meteorological services, climate information for public safety and social-economic planning in order to widen the market for weather and climate products.

Strategies

- a) Awareness program on weather and climate for stake holders developed and implemented.
- b) Early Warning System on weather and climate under development to be implemented in collaboration with Office of the Prime Minister (OPM) - National Emergency Coordination and Operations Centre (NECOC).
- c) UNMA Communication Strategy to improve dissemination of climate information to be developed and implemented.
- d) Popularisation of meteorology in schools through increasing awareness about weather and climate among the youth and students.
- e) Enhance downscaling and packaging of climate information and advisories into simple formats and in local languages;

Obj: To improve on the understanding and knowledge base on meteorology and climate services in order to build a skilled and motivated work force, promote UNMA's role as a trusted research partner that informs decision making in the country and protect its unique position as the authorized Government body providing weather and climate warnings and advice.

Strategies

- a) Review of the UNMA HR structure to incorporate critical core areas of Climate services and Research as well as Marketing and Publicity.
- b) Develop a comprehensive research programme for UNMA and operationalize research partnerships.
- c) Conduct target research and publish research results.
- d) Complete the repatriation of the National Meteorological Training School from Ministry of Education to UNMA
- e) Establish a priority volunteer Weather Observers programme to enhance UNMA's ability to collect climate data from the field.
- f) Reviving and strengthening the Uganda Meteorological Society with a view of promoting professionalism in the field of meteorology and general Climate Sciences.

Obj: To strengthen the resource mobilization strategy and achieve a sustained increase in revenue generation besides earnings from services for public good to facilitate implementation of other strategic objectives.

Strategies

- a) Establish a robust financial Management system as a baseline for diversification of revenue base.
- b) Involve deliberate investment in the creation and use of critical meteorological information and products in order to stimulate national and international demand.

5.1.4. UNMA Logical Framework

<i>Narrative</i>	<i>Objectively Verifiable Indicators</i>	<i>Means Of Verification</i>	<i>Assumptions</i>
MISSION			
To contribute to overall national development through provision of quality, customer-focused, cost-effective and timely information for weather and climate services to all users.	<ul style="list-style-type: none"> - All the key performance targets. - Collaboration and partnerships. - Negotiating public weather services requirements). 	<ul style="list-style-type: none"> -Maintaining the number of collaborators and partners and getting new partnerships. -The number of MOUs developed and signed. 	<ul style="list-style-type: none"> a. Availability of resources b. Cooperation from collaborators and partners. c. Prioritization of meteorological services by Government.
OUTCOMES			
UNMA delivering an increased range of quality services to more users and customers	<p>Forecast skills index</p> <ul style="list-style-type: none"> - Forecasting skill - Critical success index for warnings - On-time in-full delivery especially for DRR and CCA <p>Service delivery on time and in full.</p> <p>Accuracy for routine forecast</p> <p>Number of users reached, penetration.</p> <p>Number of products and (market services addressed)</p>	<ul style="list-style-type: none"> - Forecast delivered on time. - Critical success index close to 1. - Feedback from users - Counting users and customers, and products/services. - Self-assessment (Log book). - Monitoring and reporting targets. 	<p>There is public interest and confidence in meteorological services.</p> <p>UNMA has capacity to respond to the needs of stakeholders.</p> <p>Willingness of the users to offer feedback.</p>

<p>UNMA is fully engaged in developing and delivering services related to disaster management and impacts of climate change and variability.</p>	<p>Forecast skills index:</p> <ul style="list-style-type: none"> i. Forecasting skill. ii. Critical success index. <p>Increase in number of accurate forecasts for disaster events.</p>	<p>Forecast delivered on time.</p> <p>Critical success index close to 1.</p> <p>Accuracy of forecast index.</p>	<p>Adequate budget support available.</p> <p>Skilled forecasters and weather observers available</p> <p>Availability of functional tools</p>
<p>OBJECTIVES</p>			
<p>To improve the quantity and quality of meteorological services for all stakeholders and enhancing appropriate systems to ensure continuous improved service delivery.</p>	<p>ISO certification attained</p>	<p>Internal and External Audit reports.</p> <p>Customer feedback reports.</p> <p>ISO certificate.</p>	<p>Financial and human resources available.</p>
	<p>Number of publications and research reports</p> <p>Increased number of functional weather stations</p> <p>Increase in budgetary allocation</p>	<p>Research and Training policy and agenda.</p> <p>Number of weather stations.</p> <p>Budgetary framework report.</p>	<p>Allocation of funds to support research</p> <p>Allocation of funds for training.</p> <p>Funding for weather station infrastructure development.</p> <p>Willingness to allocate budget.</p>

<p>To promote and improve user access/awareness of the benefits of using meteorological services, climate information for public safety and social-economic planning in order to widen the market for weather and climate products.</p>	<p>Number of weather and climate products available on the market.</p> <p>Increase in UNMA generated revenue.</p>	<p>Financial statements.</p> <p>Marketing strategy documents.</p> <p>Customer feedback survey reports.</p>	<p>Availability of markets.</p> <p>Availability of motivated human resource.</p>
	<p>Number of users accessing weather and climate information.</p> <p>Number of Information Education and Communication materials produced and distributed.</p>	<p>Communication strategy.</p> <p>Outreach reports.</p> <p>Customer feedback survey.</p>	<p>Availability of relevant of weather and climate information.</p> <p>Availability of funds.</p> <p>Communication strategy operationalized.</p>
<p>To improve on the understanding and knowledge base on meteorology and climate services through research in order to build a skilled and motivated work force, promote its role as a trusted partner that informs decision making in the country and protect its position as the authorized Government body providing weather and climate and advice.</p>	<p>Critical skill index.</p> <p>Number of Early Warning Alerts (EWA) issued.</p> <p>Number of meetings/seminars held at different levels.</p>	<p>Reports on critical skill index.</p> <p>Reports and feedback surveys.</p>	<p>Cooperation of partners in Multi-Hazard Early Warning Service.</p> <p>Availability of funds.</p>
	<p>Increased number of staff trained in meteorological related hazards and early warning systems.</p> <p>Number of reliable and timely severe weather forecasts issued.</p> <p>Increased density of weather monitoring network in the country.</p>	<p>Training reports</p> <p>Records of severe weather forecasts issued.</p> <p>Increase in numbers of skilled staff.</p> <p>Weather station Installation report.</p>	<p>Availability of staff for training.</p> <p>Availability of funds.</p> <p>Staff willingness to change working practices.</p>

<p>To strengthen the resource mobilization strategy and achieve a sustained increase in revenue generation besides earnings from services for public good to facilitate implementation of other strategic objectives.</p>	<p>Increased funding from Gov't. Number of development partner supporting UNMA</p>	<p>Project Proposals Signed funding agreements/contracts.</p>	<p>Government's willingness to pay for the PWS. Willingness of partners to pay. Resource mobilisation unit in place.</p>
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5.1.5. Activities

1. Operationalize QMS.

The ISO 9001 QMS needs to be implemented, including both internal and external auditing. Once certified, it needs to be audited at intervals to keep the certification current.

2. Survey of users and customers.

This should include developing a product catalogue of existing products and services, as well as identifying current users and customers. Surveying users and customers will identify issues that will need to be addressed in order to improve service delivery.

3. Evaluate and improve the existing monitoring network.

This should not just be based on the traditional networks and systems but include the use of new monitoring methods and opportunities including citizen science and crowd-sourcing, 3rd party observing systems and improved access to and use of remote sensing.

4. Develop marketing plans for selected market sectors.

UNMA should identify its highest-priority market sectors, customers and users, and concentrate on delivering agreed services on time and in full as expected by the customers and users, by evaluation and improvement of existing services and by developing and implementing new and innovative services.

5. Develop Public Weather Service concept and communication strategy.

The Public Weather Service covers services for safety of life and property and national socio-economic development, so improving this Government knowledge and understanding is key to ensuring sustainable funding for the core UNMA activities. At the same time, developing a specification of the PWS gives a platform for developing and implementing new and improved services.

6. Evaluate and improve the forecasting system, research as well as access to information/data sources.

The technical capability of NWP modelling at all timescales, of remote sensing and of IT and communications are increasing ever more rapidly. There is a need for UNMA to ensure that it has access to those information sources, tools and techniques, and has the appropriate skills to use them

7. Implement competency assessment and training plan.

Training, skills and competency assessment are all necessary to ensure that staff is equipped and motivated to deliver improvements in customer satisfaction and organisational excellence.

8. Build a reasonable knowledge base and conduct targeted research to support the relevant decision making tools and policy makers.

Build a knowledge base to support policy and decision making at all levels.

5.2. Financing the Strategic Plan

Four Year Budgeted Income and Expenditure Streams

The implementation of UNMA strategic objectives largely requires significant financial and human investments to ensure sustainability and to increase future income and support to other organizations.

UNMA Revenue and Expenditure Projections

While the Government of Uganda is expected to continue with its commitment to provide funds for meteorological services provided on her behalf, the UNMA will collect funds as cost recovery from other users to cover part of operational costs in addition to donations, grants and loans among other revenue sources.

UNMA's development expenditure budget for the first year of the strategic plan is projected to be 21.3 billion and is assumed to grow at the rate of at least fifteen percent annually for the next four years.

UNMA's Revenue Projections: 2017-2021 (UGX '000)

Cost in '000 UGX	YEAR 1	YEAR 2	YEAR 3	YEAR 4
GOVERNMENT	15,577,000	18,026,700	19,624,830	23,681,804
DONOR	200,000	200,000	200,000	200,000
SELF	5,531,000	6,277,500	8,355,000	8,525,000
TOTAL	21,308,000	24,504,200	28,179,830	32,406,804

Primary and Secondary Sources of Income

UNMA is expected to earn its income to sustain itself based on the following assumptions:

- The Government is expected to continue meeting the cost of the public good provided by the Meteorological Services, while additional resource requirements will be met by way of fees and charges for services rendered.
- Government organizations requiring specific meteorological services will enter service level agreements with UNMA.
- A Policy, Legal and Institutional Framework will be put in place and under such a framework, institutions which will by mandate require the use of weather and Climate information will be listed in a specific Schedule.
- The UNMA will also deliver services such as advice, training, information on a contracted basis, and develop stronger links with other environmental and socio-economic organizations.

UNMA Expenditure Projections

Objective 1 : To improve the quantity and quality of meteorological services to customers by strengthening the observing network, National Meteorological Centre (NMC), data and information exchange according to WMO and International Civil Aviation Organization (ICAO) standards and enhancing appropriate systems to ensure continuous improved service delivery

Key Actions

Activity	Year 1	Year 2	Year 3	Year 4
Implementation of Quality Management Systems (QMS) for Aeronautical meteorological services				
Maintenance of Global Meteorological data exchange in support of Global Climate Services				
Expand the network of Automatic Weather Stations (AWS) to 200 and increase Functionality of Rain gauge stations increased from 100 to 200.				
Enhance Public Weather Services (PWS) through multi-channel broadcasts for protection of citizens against weather hazards.				
Timely issuance seasonal climate outlooks on quarterly basis for entire country.				
Total				

Objective 2: To promote and improve user access/awareness of the benefits of using meteorological services, climate information for public safety and social-economic planning in order to widen the market for weather and climate products.

Key Actions

Activity	Year 1	Year 2	Year 3	Year 4
Awareness program on weather and climate for stake holders to be developed and implemented				
Early Warning System on weather and climate under development to be implemented in collaboration with Office of the Prime Minister (OPM)				
UNMA Communication Strategy to improve dissemination of climate information to be developed and implemented				
Popularisation of meteorology in schools through increasing awareness about weather and climate among the youth and students				
Total				

Objective 3: To improve on the understanding and knowledge base on meteorology and climate services in order to build a skilled and motivated work force, promote its role as a trusted research partner that informs decision making in the country and protect its unique position as the authorized Government body providing weather and climate warnings and advice.

Key Actions

Activity	Year 1	Year 2	Year 3	Year 4
Review of the UNMA HR structure to incorporate critical core areas of Climate services and Research as well as Marketing and Publicity				
Develop a comprehensive research programme for UNMA and operationalize research partnerships				
Installation of national wide lightning detection system to provide early warning data that can prevent disasters resulting from lightning				
Conduct targeted research and publish research results.				
Complete the repatriation of the National Meteorological Training School from Ministry of Education to UNMA.				
Establish a priority volunteer Weather Observers programme to enhance UNMA's ability to collect climate data from the field.				
Reviving and strengthening the Uganda Meteorological Society with a view of promoting professionalism in the field of meteorology and general Climate Sciences.				
Total				

6. MONITORING AND EVALUATION

6.1. UNMA Monitoring

The first step in the monitoring process will be to define the results that need to be measured and the metrics for measuring them. Those responsible for collection will select methods and tools for data gathering and methods for checking data, recording, collating and analysis. The information collected is then analyzed and results communicated.

Every six months, progress against deliverables/outputs that contribute to the achievement of the key outcomes associated with expected results will be monitored to ensure timeliness, quality and cost efficiency.

The system is based on planned, costed activities having been set for each deliverable/output. Monitoring of these deliverables is carried out within directorates and the data is used by the monitoring and planning office to compile a progress report. The system allows comprehensive progress reports to be produced and progress to be shown against deliverables/outputs and the associated key outcomes and expected results.

6.2. UNMA Evaluation

The evaluation system will consist of two types of evaluation

- Authority Evaluations: To be conducted across the Authority and field offices.
- Directorate Evaluations: To be undertaken at directorate level.

Both Authority and Directorate evaluations will be conducted periodically. In the case of any discrepancies during the implementation of some of the programs laid out in the strategic and operating plans, in-depth reviews to support decision making would be taken into consideration.

A review could be triggered when:

- There is a divergence between planned and actual performance;
- The links between implementation and expected results is unclear;
- Making resource allocation decisions;
- There is conflicting evidence of results;
- There is a need to validate results information or provide an impartial assessment programme;

At the beginning of each financial period the UNMA field offices and the Headquarter directorates will establish their respective evaluation approach as part of their contribution the UNMA Operating Plan. They will include a description of self-evaluations to be conducted on a biennial basis. Self-evaluations should address issues of relevance, effectiveness, efficiency and sustainability of the achievement of deliverables and expected results. Particularly, they should look into:

The achievement of deliverables and expected results compared to baselines;

- Unintended outcomes.
- The satisfaction of stakeholders.
- External factors that have affected implementation.
- Challenges encountered during implementation.
- Corrective actions taken and eventual adjustment of strategies.
- What worked well and why?
- Lessons learned.

To produce objective and exact information, evaluation uses more scrupulous research methodologies, such as representative surveys and comprehensive quantitative analyses.

Reviews of UNMA outputs, outcomes and impact are conducted on the back of well recognized trends in the surrounding environment.

The achievement of expected results is the ultimate benchmark for UNMA's performance. Therefore, the responsibility for the assessment process of whether expected result has been achieved will ultimately reside with the Board and Ministry of Water and Environment.

6.3. UNMA Reporting

To enable reporting of monitoring and evaluation performance information, a reporting template is to be developed by the Authority which will be used by the regional offices (field stations) and the headquarters directorates.

Self-evaluations by UNMA field offices and the HQ directorates need to coincide with the preparation of input into the UNMA Performance Evaluation Report at midterm, and at the end of each financial period.

A summary of the results of the independent evaluations will be prepared by the headquarters and included in the UNMA performance evaluation reports. Such reports are to be compiled at midterm and at the end of each financial period.

These evaluations will be presented to the Ministry of Water and Environment and the Authority's Board on a quarterly basis as well as to the Prime minister's Office on an annual basis.

ANNEX 1: STRATEGIC PLANNING METHODOLOGY & SCHEDULE

Methodology

The methodology selected for the UNMA Strategic planning process relies mainly on the “Theory of Change” model. Reasons for selecting this is that it uses the Logical Framework approach as the main planning tool, which is well-suited to cooperative development, especially by open discussion and drafting in meetings. It articulates explicitly how projects, programs and initiatives are intended to achieve to achieve outcomes through actions while taking into account the contexts. The activities which have taken place so far in the preparation of this plan are summarized in table below.

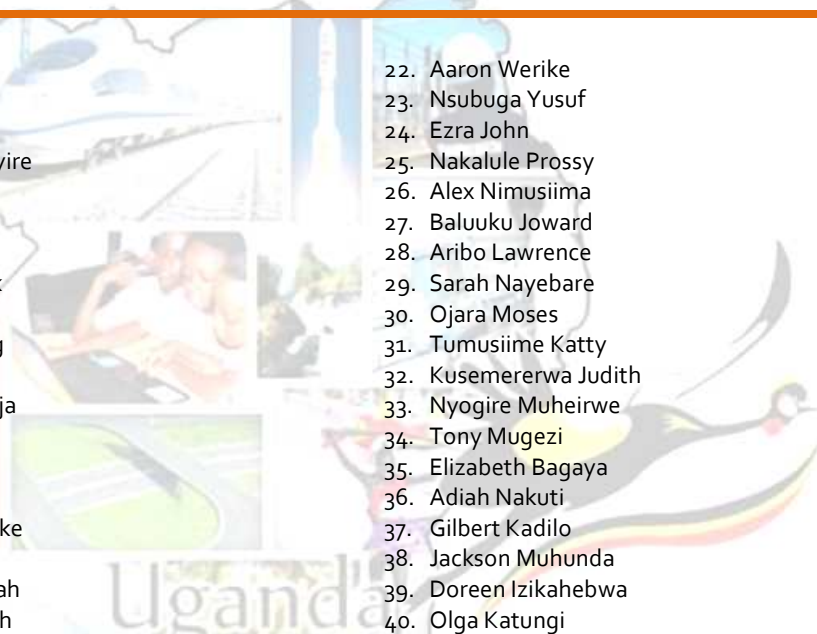
Activities in the Preparation of the Strategic Plan

DATE	ACTIVITY
5 July to 26 July	Preliminary Preparations, Familiarization with Strategic Template and relevant Documents
27 July 2016	Inception Internal UNMA Workshop to deal with Development of Vision, Mission, SWOT analysis, Pestle, and Stake_Holder Analysis
1 st and 2 nd September 2016	Reviewing GHACOF Documents
28 July to 12 August	Consultant to incorporate outputs of Workshop into draft report UNMA Internal Workshop included Mr. Steve Palmer
17 August to 30 August	Consultant to make corrections after UNMA Internal workshop and compile First Draft
5 th , 6 th , 7 th September 2016	Preparing for National Workshop
12, 13, 16 September 2016	Documenting National workshop documents
19, 20, 21 September 2016	Continuation of Review of workshop documents Consulting with Mr. Palmer, Mr. Hubertus and ED
22 September 2016	Presentation at Silver Springs
23, 26, September	22 September Workshop Outcomes
28 September 2016	Receipt of 22 nd September Workshop report
2 December	Discussion with ED on progress of strategic Plan
12 December	Discussion with UNMA staff about UNMA internal Workshops
15 December	Discussion with ED on Draft Program of Internal UNMA workshop
22 and 23 December	UNMA internal Workshop

ANNEX 2: MEMBERS OF THE STRATEGIC PLANNING TEAM

1. Prof. C.K Basalirwa
2. Mr. Festus Luboyera
3. Mr. Godwin Ayesiga
4. Mr. Simon Muwafu
5. Mr. Steve Palmer
6. Mr. Hubertus Roth

ANNEX 3: LIST OF PERSONS/ORGANIZATIONS CONSULTED

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1. Robert Rutaagi
 2. Festus Luboyera
 3. Paul Isabirye
 4. Teddy Tindamanyire
 5. Elweru David
 6. Muwembe Khalid
 7. Deus Bamanya
 8. Musinguzi Patrick
 9. Waiswa Milton
 10. Bob Alex Ogwang
 11. Lillian Nkwenge
 12. Margaret Serwanja
 13. Albert Mwesigwa
 14. Godwin Ayesiga
 15. Mark Arinaitwe
 16. Nuludin Tebusweke
 17. Moses Serwanga
 18. Kahuuga Anabellah
 19. Bamutaaze Yoziyah
 20. Bataze Julius
 21. Solomon Mangeni
 22. Aaron Werike
 23. Nsubuga Yusuf
 24. Ezra John
 25. Nakalule Prossy
 26. Alex Nimusiima
 27. Baluuku Joward
 28. Aribo Lawrence
 29. Sarah Nayebare
 30. Ojara Moses
 31. Tumusiime Katty
 32. Kusemererwa Judith
 33. Nyogire Muheirwe
 34. Tony Mugezi
 35. Elizabeth Bagaya
 36. Adiah Nakuti
 37. Gilbert Kadilo
 38. Jackson Muhunda
 39. Doreen Izikahebwa
 40. Olga Katungi
 41. Winninie Nanteza
 42. Nambi Joyce

ANNEX 4: REFERENCES

Uganda Vision 2040

EAC Five Years Meteorological Development Plan and Investment Strategy (2013 – 2018)

Kenya Meteorological Department Strategic Plan

Second National Development plan NDP-2

