

EXECUTIVE SUMMARY

Most activities done by people, particularly outdoor activities, have to be done with weather in mind and therefore it is critical to provide meteorological services that support relevant national needs, such as: protection of life and property, safeguarding the environment and contributing to sustainable development. In the recent past, the impacts of climate change, such as: unreliable rains, increased frequency of floods, landslides, drought as well as disease outbreaks and epidemics like malaria and cholera, among others, have been rampant.

In Uganda, meteorological services are provided by Uganda National Meteorological Authority (UNMA) which is a semi-autonomous government institution and a Government's authoritative voice on weather and climate.

UNMA is mandated to promote, monitor weather and climate as well as provide weather predictions and advisories to Government and other stakeholders for use in the sustainable development of the country and these services are guided by the World Meteorological Organization (WMO) standards, International Civil Aviation Organization (ICAO) standards, the National Climate Change Policy 2015, and UNMA Act 2012.

The Office of the Auditor General undertook a value for money audit to assess the measures put in place by the Uganda National Meteorological Authority (UNMA) to produce and disseminate accurate, timely and comprehensive meteorological information that meets the information needs of users. In order to achieve this, the audit assessed the procedures used by UNMA to carry out weather observations and whether they were in a manner prescribed by World Meteorological Organization standards; the process of data processing, analysis and storage and whether it was in accordance with the recommended best practices; and the appropriateness of the dissemination mechanisms employed by UNMA to ensure that weather and climate products and services are received by the different stakeholders in a timely manner.

The study covered two financial years 2016/17 and 2017/18 and focused on functioning manual and automatic weather stations.

KEY AUDIT FINDINGS

1. At the time of the audit, only Entebbe synoptic station was observing and reporting meteorological data every hour as required by WMO.

The other synoptic stations were only operating 12 hours during daytime and thus failed to observe the main standard hours of times of 3 am (0000z) and 9 pm (1800z).

2. UNMA has not had a governing board since February 2017. This Board is responsible for recruiting and appointing staff and formulation of Meteorology Regulations.¹⁷

3. Except for the weather equipment at Entebbe synoptic station that was calibrated in January 2017, none of the equipment in all the other sampled stations had been calibrated in the two year period (FY 16/17 and FY 17/18).

4. Most weather parameters were being observed and reported on by synoptic stations as required by WMO. However, both Agromet and Hydromet stations were not observing and reporting on some key parameters required by WMO.

For the Agromet stations, the parameters not observed and reported on included soil temperature, soil moisture and evaporation; all the Hydromet stations inspected lacked data on river water level, river discharge, suspended sediment in river and water quality.

5. Except for Entebbe aerodrome station that reported aerodrome warnings and wind shear warnings as required by ICAO, all the other four aerodrome stations that is Soroti, Gulu, Kasese and Arua did not observe and report on these parameters.

6. By audit time, no weather radars had been installed, only 29 (56%) of the 52 manual weather stations installed were functional, 43 automatic weather stations had been installed and were functional though not reporting on a regular basis.

7. By audit time, UNMA did not have a data backup system as required by WMO and of the required weather parameters, only records for 2 parameters, namely: rainfall, and temperature, had been partially digitalized at 80% and 40%, respectively.

In addition, less than 10% of the original manual weather records had been scanned.

8. Seasonal climate outlooks were not being received by the farmers on a quarterly basis. In addition, the fishermen, especially on Lake Victoria, were not receiving weather alerts.

KEY RECOMMENDATIONS

a) UNMA should liaise with the relevant authorities to ensure that the appointment of the board members is fast-tracked to facilitate recruitment of substantive staff at all levels.

b) UNMA should prioritize calibration of its key equipment by setting aside a budget for this purpose, pursuing regional collaborative arrangements with neighbouring states for possible partnerships and also in the long run set up calibration laboratories.

c) UNMA Management should continue to plan and budget for the required equipment and instruments and also liaise with relevant authorities to ensure that stations are equipped with essential equipment and instruments.

d) UNMA should develop maintenance and replacement plans for the existing weather stations, especially rainfall stations, and ensure that regular maintenance is carried out.

e) Staff in the data processing unit need more specialised training on the use of the CLIMSOFT so

that they can be in position to perform troubleshooting and regular maintenance of the software instead of relying on hired experts.

f) UNMA should prioritize digitisation and scanning of original weather records by planning and budgeting for scanners, staff and data backup systems.

g) UNMA should develop and implement a robust dissemination mechanism that will ensure all District production officers and other users receive weather and climate information in time.

For instance, UNMA needs to work directly with farmer associations and fishermen groups to ensure that meteorological information is received by the individual persons in time.

OVERALL AUDIT CONCLUSION

Whereas meteorological services remain important in the sustainable development of the country and in reducing the environmental hazards that Uganda is currently facing, UNMA still faces challenges of inadequate essential equipment, uncalibrated equipment, limited coverage and functionality of stations and lack of high speed processing facilities, among others.

The measures put in place by UNMA to produce and disseminate accurate, timely and comprehensive meteorological information are still inadequate and, therefore, UNMA's strategic objectives are likely not to be achieved.