

WEATHER AND CLIMATE SERVICE DELIVERY IN THE LAKE VICTORIA REGION

TOWARDS A REGIONAL FRAMEWORK FOR WEATHER AND CLIMATE SERVICES

Lake Victoria is the largest fresh water lake in Africa and it supports the livelihood of over 35 million people living along its shores. Lake Victoria is a critical asset for its contiguous countries Uganda, Tanzania and Kenya. Being the second largest lake in the world, it supports nearly 200,000 fishermen directly, with a fishing fleet of more than 70,000 boats. Furthermore, millions of people depend on the Lake and its resources, as it provides a means of transport and an important source of economic activity in the East African Region. With this dependency growing, the need for accurate weather forecasts and extreme weather warnings for ships to navigate safely is critical. The Lake's unique weather dynamics - strong winds, high occurrence of hailstorms and thunderstorms – has led to loss of life and property and threatens the safety of marine and air navigation over the lake and its basin. Especially among the fishermen, the quickly changing weather conditions have caused many deaths. The boats, which are powered by paddling or small engines, are often overloaded, have no or not adequate safety and security equipment, and buoyancy or life saving equipment is not easily available. Also, most people can't swim and therefore an estimated 5,000 people lose their life by drowning each year. Improving the quality, accuracy and availability of warnings of severe weather events on the Lake could significantly reduce the scale of fatalities amongst the Lake's fishing communities.

Additionally, the region is prone to severe weather impacts, such as floods, droughts, tropical cyclones, sand and dust storms and landslides. They not only threaten peoples' lives directly, but also have a negative impact on all economic sectors, such as agriculture, fisheries, transport, tourism, water resources, energy production, infrastructure and cultural activities. Accurate and timely weather and climate information are therefore vital and a critical part of early warning systems, preparing communities and nations for weather related disasters or adapting to climate change.

The purpose of this project is to support development of a regional framework for weather and climate services, and the application of related products and services in support of food aid, food security, health, and maritime transport safety for the Lake Victoria Region and to pilot new and improved weather and climate products and applications in these sectors and evaluate their impact. It is clear that unless these services can be effectively maintained on a "24 hours – seven days a week" basis, livelihoods, safety of lives and efficiency of travel by air, sea, and land and protection of property are under serious jeopardy.

Alarmingly, many of the National Meteorological and Hydrological Services (NMHSs) in Africa, including those in the Lake Victoria region, are struggling to maintain such services, often even failing to provide the basic services needed. Among other factors, this is largely due to the lack of staff, especially forecasters; poor and aged infrastructure; and poor fiscal allocations in national budgeting processes. They lack the ability to provide meteorological and climatological services to the various socio-economic sectors, even though the demand for these services is growing, especially

from critical end users such as local fishing and farming communities, humanitarian and food relief agencies, the lake transport sector and disaster management.

Recognizing these limitations of the NMHSs in the Lake Victoria Region, there is an urgent need for a strategy for an optimal “end-to-end” climate (and weather) service for the region. This would cover the identification of gaps, engagement of end user sectors and the identification of their needs. To achieve adequate results, this calls for the enhancement of NMHSs operational capacity through human resource development, and improvement of surface observational networks and systems for improved product development as well as, most importantly, service delivery to these key sectors.

The overall Objective of this Programme is therefore to consider the status of the NMHSs of Tanzania, Uganda and Kenya in terms of their capacity to deliver climate and weather services. In this context, as a demonstration project, the activities proposed here will focus on the development and enhancement of applications to improve the delivery of products and services with a focus on agricultural food security, food aid and safety of fishing and transport on the Lake. In effect, to develop the Conceptual Framework for effective Climate and Weather Services in the region and demonstrate the impact of improved services in the above mentioned sectors. Ultimately, the goal of the project is to enhance the security of the livelihoods of farmers and fishermen in and around Lake Victoria.

For a regional framework to be developed, it would be necessary that NMHSs continue to operate and strengthen the Observations and Monitoring component; contribute to and effectively engage in the Research and Modelling component; establish the operational elements of climate information production and delivery systems as part of the Climate Services Information System; and outreach to the users in support of the User Interface Program; and develop capacities in the NMHSs. Some of these aspects such as strengthening the observations and monitoring, research and modelling and a Climate Services Information System are being partially or wholly dealt with under other projects currently underway. This project will focus on developing a clear progression of activities for Climate Services, for which the key user application sectors will be agriculture (covering food security and food aid) and to a lesser extent health. A parallel element will look at improving the regional capacity for severe weather forecasting and delivery of warnings to the fishing community on Lake Victoria.

The project will be implemented by WMO in close collaboration with the beneficiaries Kenya, Tanzania and Uganda; ICPAC, the Nairobi-based Drought Monitoring Centre, various sectoral entities within the countries including the NMHSs, Disaster Management Agencies; and partner organizations. The project will be linked to the ongoing development of the IPCAC Regional Climate Centre and the proposed East Africa Centre for Medium Range Forecasting and will require an iterative process of consultation with the different stakeholders and existing institutions in the region. The existing ongoing activities in the region, such as Regional Climate Outlook Forum, the KOICA ICPAC Development Project, the Govt of Greece Climate Change Adaptation Project for East and Central Africa and the WIFA Project will be appropriately made use of.