



# **EXECUTIVE SUMMARY**

## **INTEGRATED AFRICAN STRATEGY ON METEOROLOGY**

**(WEATHER AND CLIMATE SERVICES)**



**AMCOMET**

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## INTRODUCTION

Despite covering a fifth of the world's total land area, Africa has the least developed weather and climate land-based observation network of all continents, and one that is in a deteriorating state, amounting to only 1/8 of the minimum density required by the World Meteorological Organization (WMO). Most services have a stagnant pool of human and financial resources, and obsolete technologies limiting their capabilities to produce the best services needed by policy makers and other decision-makers.

In April 2010, the Nairobi Ministerial Declaration from the First Conference of Ministers Responsible for Meteorology in Africa established the African Ministerial Conference on Meteorology (AMCOMET) as a high level mechanism for the development of meteorology and its applications in Africa. African Ministers recognized that weather and climate services are central to the socio-economic development of any country, and as such deserve strong support at the highest possible level of government. Ministers further recognize that sound governance of the science of meteorology and its related applications must be streamlined in national development agendas to promote cooperation, security, socio-economic development and poverty eradication on a pan-African level. By establishing AMCOMET, the Ministers committed themselves to:

- Strengthen and sustain National Meteorological and Hydrological Services by providing them with the resources and appropriate institutional frameworks to enable them to execute their functions, particularly in observations, forecasting and applications;

- Recognise the role of meteorological services as a fundamental component of the national development infrastructure and ensure that meteorological information is a permanent parameter and feature in national current and future plans, programmes and policies in the key sectors of the country's economy;
- Regard national meteorological services as strategic national assets which contribute to national security, principal of which are transport, food, water, energy and health in addition to being vital to sustainable development particularly poverty reduction efforts, climate change mitigation and adaptation and disaster risk reduction; and
- Ensure that all sub regions of the continent are active and are adequately resourced.

Furthermore, they agreed to develop an African Strategy on Meteorology (Weather and Climate Services). This Strategy was developed in partnership with the World Meteorological Organization (WMO), which was engaged in the preparation of the Strategy through consultations with the African Union Commission (AUC), Regional Economic Communities (RECs), Member States, Regional Climate Centres, and other relevant stakeholders. Several consultations, iterations and inputs from relevant WMO scientific and technical departments led to a draft strategy which was discussed and finalised by the Expert Segment of the Second Session of AMCOMET held in October 2012 in Victoria Falls, Zimbabwe.

Building on a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis and stakeholder analysis, this Strategy focuses on five (5) interrelated strategic pillars:

- Increase Political Support and Recognition of NMHSs and related WMO Regional Climate Centres
- Enhance the Production and Delivery of Weather and Climate Services for Sustainable Development
- Improve Access to Meteorological Services in particular for the Marine and Aviation Sectors
- Support the Provision of Weather and Climate Services for Climate Change Adaptation and Mitigation
- Strengthen Partnerships with Relevant Institutions and Funding Mechanisms

Priority areas of focus of the strategic pillars are identified with a view to promoting the production and incorporation of science based weather and climate information and services into Africa development policy, planning and programmes. For purposes of commitment and deliverables, the Strategy has a time window of 2013 – 2017. It is envisaged that the implementation plan will be approved by the Third Session of AMCOMET in 2014, and be immediately operational. In the same vein, resource mobilisation should commence immediately.

## STAKEHOLDER ANALYSIS

The stakeholder analysis identifies the key partners that are directly or indirectly essential to the implementation of concrete activities of the Integrated African Strategy on Meteorology (Weather and Climate Services). Those partners also have important roles to play at the level of formulation of appropriate policies that are relevant to the goals and aspirations of Members. Partners are also critical at the level of facilitating the delivery of weather-, climate-, and water-related products and services. These partners include Regional bodies, Sub-Regional Economic Communities, research, training and policy related institutions, non-governmental organizations, academia, media and communications, parliamentarians and United Nations agencies operating in the Region. Resources partners are also important given that resource mobilization for implementing the Strategy remains a key requirement for the implementation plan.

In order for weather and climate services in Africa to be effective and developed, there are important and critical players that must work together, including at national, regional and international levels.

## PURPOSE AND OBJECTIVE OF THE STRATEGY

The overall purpose of the strategy is to correctly position weather and climate services as an essential component in national and regional development framework and sustainable development in Africa, particularly in poverty reduction efforts, climate change adaptation and disaster risk reduction.

The objective of the Strategy is to enhance cooperation between African countries and to strengthen the capabilities of their National Meteorological and Hydrological Services.

The Strategy further aims to serve as a framework for integrated and coordinated mechanisms, which provides strategic direction to Member States 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.

### Guiding Principles of the Strategy

The Strategy should:

- Be collectively owned by Africa;
- Be programme-oriented as per identified regional and continental priorities;
- Be focused on actionable policies with measurable outcomes and positive impacts on national economies as well as addresses societal and sectoral needs and challenges at regional, national and community levels; and
- Concentrate on benefiting Africa while contributing to global efforts.

## INTENDED STRATEGY OUTCOMES

The expected outcomes of the Strategy are as follows:

- Increased recognition of NMHSs role at political level;
- Improved climate risk management for the protection of life and property;
- Increased safety on land, on water and in the air;
- Enhanced quality of life; and
- Enhanced cooperation among African countries.

## STRATEGIC PILLARS

The Strategy is a collective endeavour designed to address challenges and problems faced by Africa as identified by regional and continental organs and stakeholders. It focuses on five (5) Strategic Pillars (SP):

### **SP1: Increase Political Support and Recognition of NMHSs and related WMO Regional Climate Centres**

In many African countries, the Ministers responsible for meteorology have a virtually hands-off approach to and have little interaction with their NMHSs. This is one of the main reasons for the low level of visibility and funding of NMHSs.

This pillar aims to increase the recognition of the role of National Meteorological and Hydrological Services (NMHS) within the political decision-making arena through the integration of meteorological services' contribution to various economic sectors and in national development programmes.

Below are the areas of action:

- Formulate policies and provide the necessary legislation to ensure that National Meteorological Services become more semi-autonomous and are adequately financed to fulfil their mandates and able to embark on, and benefit from, cost recovery beginning with aeronautical and where applicable, maritime services;
- Ensure that NMHSs develop strategic plans and service charters aligned with their governments' development agenda and priorities;
- Facilitate regular meetings with policy makers to inform them of NMHS activities and plans as well as demonstrate the relevance of their services to socio-economic development;
- Facilitate close cooperation from Regional Economic Communities (RECs) and other relevant African institutions to support the production and delivery of weather and climate services;
- Organise study tours of African countries with advanced NMHSs, beginning with AMCOMET Bureau and Task Force members.

### **SP2: Enhance the Production and Delivery of Weather and Climate Services for Sustainable Development**

Acknowledging that NMHSs are the main providers of weather and climate services in Africa, this pillar aims to improve the effectiveness and efficiency of the production and delivery of such services enabling

appropriate responses to the changing needs of government, society and sectoral users through suitable structures and working mechanisms.

Presently, Africa is utilising numerical weather prediction and satellite derived products provided from outside the continent with limited involvement in the design of these products. The continent should not only be a consumer of these products, but also an owner and an operator.

Below are the areas of action:

- Invest more in weather and climate monitoring infrastructure (observation networks), such as automatic weather stations, meteorological radars, and rain and water gauges;
- Collectively engage manufacturers of meteorological equipment, accessories and consumables for the lowering of costs, rendering the equipment more affordable in an effort to improve station density and sustainability;
- Enhance telecommunications systems, within and among the countries, including through the regional WMO Information Systems (WIS);
- Enable human capacity development necessary for Climate Research, Modelling and Prediction
- Improve Service Delivery Mechanisms, particularly early warning and awareness systems, Climate Services Information Systems (CSIS) and Climate User Interface Programme (CUIP);
- Ensure that funding needed is provided to sustain and develop NMHSs and sub-regional climate centres through appropriate national and regional mechanisms, including their possible transition into semi-autonomous entities, where and when appropriate;
- Ensure that all sub-regions of Africa are equitably considered, including the establishment of a sub-regional climate monitoring institution for sustainable development in Central Africa;
- Improve channels of communication to enable prompt and informed decision making, taking into consideration the highly perishable nature of most weather products such as forecasts, warnings and advisories;
- Create national and regional fora that facilitate and encourage continuous interaction among meteorological experts, national meteorological advisers, sectoral stakeholders and government policy makers at the appropriate governmental levels;



- Engage with international partners on the design of numerical weather prediction and satellite derived products to better address African requirements;
- Ensure that the African meteorological weather requirements on satellite derived products are channelled through the regional WMO Integrated Global Observing System (WIGOS) and the WMO Space programme, in addition to the Communication Satellite (RASCOM) which is; and
- Explore the feasibility of launching an African Meteorology Space Programme taking note, and advantage, of the progress already being made by some African countries on this aspect as well as the already existing telecommunications satellite (RASCOM).
- Facilitate to the extent possible, the availing of funds to ensure that the countries meet these deadlines and comply with ICAO requirements;
- Facilitate the deployment of buoys, where necessary, particularly in the Indian Ocean; and
- Facilitate the sustained provision of global and regional coverage of observational data, products and services to address the continued and expanding requirements of the maritime user community for met-ocean information and services.

### **SP3: Improve Access to Meteorological Services in particular for the Marine and Aviation Sectors**

The International Civil Aviation Organisation (ICAO) requires that meteorological authorities should supply operators, flight crew members, air traffic service units, search and rescue service units, airport management and related aviation stakeholders with meteorological information that meets the needs of international air navigation. The latest is the deadline for meteorological services to be certified by November 2012 leading to ISO-9000 certification. In addition, competences of personnel for these services should meet international standards by 2016. The equipment should also have calibration certificates and readings be regularly verified. AMCOMET is urgently required to facilitate the availing of national funds to ensure that the countries meet these deadlines and comply with ICAO requirements.

National Meteorological and Hydrological Services should further provide meteorological forecasts and warnings which are critical for safety of life and property at sea, integrated coastal management and societal impacts.

Below are the areas of action:

- Develop Quality Management Framework leading to ISO certification for certain sectors like aviation.
- Support the certification of NMHSs by November 2012, or soon after, leading to ISO-9000 certification;
- Ensure that competencies of relevant personnel meet international standards by 2013 and qualifications for the 2016 deadline;
- Ensure relevant equipment have calibration certificates and regularly verified readings for continuous compliance;

### **SP4: Support the Provision of Weather and Climate Services for Climate Change Adaptation and Mitigation**

Africa is one of the most vulnerable regions of the world to the impacts of climate change. The majority of the continent's disasters are meteorological and hydrological related. These disasters pose a serious threat to the continent's ability to attain the Millennium Development Goals and sustainable development.

Below are the areas of focus :

- Ensure that, at the national level, at least 5% of budgets allocated to National Meteorological Services and associated research institutions are for research and development;
- Formulate legislation designating the national meteorological services as the leading authority on climate change science-based projections. This is meant to ensure that country's climate –sensitive sectors do not use climate change scenarios that come from different sources with different projects and so creating confusion;
- Involve mainstream economic, trade and finance ministries and the development community,; comprising donors, research institutions and a broader range of stakeholders than environmental interests is essential. Thus, AMCOMET should galvanise greater engagement between the climate communities and the development community;
- Liaise with African Ministerial Conference on Environment (AMCEN), Conference of African Heads of States and Government on Climate Change (CAHOSCC), African Ministerial Council on Water (AMCOW), the African Ministerial Conference on Science and Technology (AMCOST), the African Climate Policy Centre (ACPC) and the African Group of Negotiators on climate change to craft a new African agenda and position on climate change. This enables Africa to articulate its position at international for such as the United Nations Framework Convention

on Climate Change (UNFCCC)), the G77 and China and the African Group of Negotiators and the Intergovernmental Panel on Climate Change (IPCC);

- Ensure the implementation of a structured GFCS at regional (i.e. continental) level, based on the input provided in the Addis Ababa Declaration in Support of the Implementation of the Global Framework for Climate Service (GFCS) in Africa, as well as WMO's Implementation Plan of the Global Framework for Climate Services<sup>1</sup>, on the understanding that the regional GFCS implementation will facilitate links between national and global GFCS implementation activities; and
- Ensure that AMCOMET and the NMHSs actively participate in international negotiations such as the Conference of Parties (COP) to UNFCCC, UNCBD, UNCCD and the IPCC.

#### **SP5: Strengthen Partnerships with Relevant Institutions and Funding Mechanisms**

The success of the Strategy is highly dependent on the strength of the partnerships AMCOMET is able to forge, both with existing institutions able to support its mandate as well as funding mechanisms able to provide the necessary financial resources to meet its goals. To be effective, the Strategy must be clearly linked with the work of other government departments and agencies, technical partners, the private sector, and other relevant stakeholders, and work in concerted effort with other global and regional frameworks. AMCOMET plays a vital role in harnessing and developing these relationships.

Below are the areas of action :

- Cultivate long-term partnerships with traditional financing mechanisms, such as development banks and aid agencies to ensure their involvement in the AMCOMET process paving the way for institutional and financial support;
- Remain abreast of the emergence of bilateral and multilateral funding mechanisms established to support developing and least developed countries in their development efforts including through improvement of meteorological infrastructure and services;
- Actively involve the private sector, especially within the agricultural, insurance, transport and tourism sectors, who represent a sustainable customer base for NMHSs and potential long term collaborators for the implementation of the Strategy;

- Strengthen partnership with international scientific and technical partners in order to ensure that African NMHS and RCCs can access and exchange scientific and technical information with these partners;
- Collaborate with existing Initiatives, such as ClimDev-Africa and the Monitoring of Environment and Security in Africa (MESA) programme as well as relevant African institutions, such as ACPC, ACMAD, RCCs, WMO Centre of Excellence on training, to ensure the convergence and complementarities of initiatives and programmes.

### **IMPLEMENTATION**

The thrust of AMCOMET will hinge on the need to acknowledge the strategic nature of National Meteorological and Hydrological Services, and the critical and inevitable role they play in national security, national stability and in the socio-economic development of any country. NMHSs are now more than ever, being called upon to urgently respond to the ever-increasing and varied needs of our societies, effects of climate variability and change as well as new opportunities arising from technological advances.

Once approved, the modalities of implementation for the Strategy need to be crafted in accordance with the priorities of AMCOMET as well the availability of financial resources. There are associated risks (R) and assumptions (A) which should be taken note of and considered.

Among these are the following:

- Political disturbances in African countries (R);
- National resource allocations to national meteorological services are sufficient (A);
- Political realignment with the development partners (R) as some donor aid comes with political strings as pre-requisites;
- HIV/ Aids and epidemics like malaria, typhoid and cholera (R);
- High staff turnover, en-mass retirement and frequent staff changes (R);
- Appropriate skilled human resource is available (A), particularly in weather forecasting, data warehousing and data mining as well as quality control and climate modelling; and
- Environment for recruitment of women is conducive (A), more so in the context of adaptation and mitigation to climate change.

1 [https://www.wmo.int/pages/gfcs/documents/2012.09.07GFCSImplementationPlan\\_FinalOrder.pdf](https://www.wmo.int/pages/gfcs/documents/2012.09.07GFCSImplementationPlan_FinalOrder.pdf)



Second session of the African Ministerial Conference on Meteorology, in Zimbabwe, 15-19 October 2012

## INSTITUTIONAL ARRANGEMENTS

Related institutions and structures are already in place to support the implementation of the Strategy. The development of the Strategy has involved the participation of the African Union Commission, Regional Economic Communities, national authorities and development partners through a consultative process. This participatory approach will continue throughout the implementation of the Strategy. Specific roles and responsibilities will be defined in the Implementation Plan for the implementation of the Strategy at the continental, regional and national levels by key stakeholders (AUC, RECs and Member States).

The Strategy complements the Climate for Development in Africa Program (ClimDev-Africa) which is a joint initiative of the African Development Bank, the Commission of the African Union (AUC) and the United Nations Economic Commission for Africa (UNECA) that seeks ways of overcoming the lack of necessary climate information, analysis and options required by policy and decision-makers at all levels.

Other African stakeholders, including the private sector and civil society organisations should also be consulted and involved. International stakeholders, as partners, should participate in the implementation of the Strategy and align their support with the Strategic Pillars and identified needs of key stakeholders.

## RESOURCE MOBILIZATION

To ensure a smooth implementation of the Integrated African Strategy on Meteorology (Weather and Climate Services), a resource mobilization efforts are needed in alignment with the institutional arrangements and coordination modalities established in the Strategy.

Resource mobilization for the Strategy will mainly focus on:

- Aligning the Strategy's needs and requirements on available and potential financing sources;
- Partnering and coordinating with various resource partners, including multilateral funding mechanisms, bilateral development agencies and multilateral development banks, among others;

- Closely working with partners that already include the Strategy in their priority areas of focus, in particular Japan through the Fifth Tokyo International Conference on African Development (TICAD V), and other potential resource partners such as the African Development Bank (AfDB), the World Bank, the European Union, the Africa-Caribbean-Pacific (ACP) Secretariat, to name a few;
- Identify funding trends and sources, as well as resource mobilization scenarios, in considering the challenges posed by the current global financial and economic crisis;
- Further considering mobilizing resources from African countries and institutions.

## MONITORING, EVALUATION AND REPORTING

The implementation of the Strategy shall be reviewed in accordance with the planning cycle of AMCOMET. An appropriate Monitoring and Evaluation tool will be developed to ensure periodic reporting from focal points and stakeholders. It is expected that AMCOMET, the African Union Commission, Regional Economic Communities and National Governments will have key roles in the process.

To monitor the progress towards achieving the objectives of the Strategy, data and information will be collected from the following indicators:

- Enhanced cooperation among African countries;
- Increased involvement of NMHSs in relevant government agenda;
- Enhanced capacity of NMHSs and regional climate centres in providing sector-specific weather and climate services;
- Increased number of ICAO certified NMHSs; and
- Increased resources invested in the strengthening of NMHSs.



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