

**AFRIMET 5th CONFERENCE OF DIRECTORS OF THE WEST AFRICAN NMHSs
(Nouakchott, Mauritania – 19 to 21 April 2016)**

I. Opening session

The opening ceremony of the conference was presided over by the Minister of Equipment and Transport of the Islamic Republic of Mauritania, Mr Abdou Selam Ould Abderraouf, in the company of Mr. Lemina Mint El Kotob Ould Moma, Minister for Agriculture, Ms Fatma Vall Mint Souenae, Minister overseeing the Ministry of Environment and Rural Development, the Ambassador of Spain to Mauritania, Mr Antonio Torres-Dulce, the PR of Mauritania with WMO, Mr. Mohamed Batta Cheikh Mohamed El Mamy, the Director of Planning, Strategy and Commercial Development, Ms. Carmen Rus, representing the Permanent Representative of Spain with WMO, and Mr Robert Masters, representing the Secretary General of WMO.

In his opening remarks the Minister responsible for Meteorology welcomed all participants and assured them of a happy stay in Mauritania, noting that if Africa is to achieve the envisaged development objectives in Agenda 2063 of the African Union, governments are compelled to support NMHSs, which serve as the pillars for sustainable development.

Mr Robert Masters pointed out that since the 5th Conference, held in 2012, many new initiatives have been launched and all of them require significant contributions from NMHSs for the attainment of the envisaged goals. He therefore called on heads of NMHSs to align their strategies with these new initiatives in order to be relevant to the needs of society.

Ms Carmen Rus highlighted the benefits that the investment in strengthening the National Meteorological Services produces in the society. This has been the objective of the West African Cooperation Programme established by Spain in 2007 in collaboration with WMO. Throughout these years, with an investment of 3 million euros, some important projects have been developed and consolidated in the region such as MetAgri, MarineMet and HealthMet. In this 6th Conference the continuation of these projects and the feasibility of initiating others are going to be analyzed and will be elaborated in an action plan for the coming years with the aim of improving the services provided to users.

Conduct of the meeting

The meeting was conducted in four sessions, each with a chairperson and rapporteur.

Session 2: AFRIMET/Invited Institutions

Chairperson: Mauritania
Rapporteur: Ghana

The opening presentation, described the origin of the cooperation between Spain and WMO on the one hand and NMHSs in West Africa on the other. It provided the objectives of the Conference: Strengthen the capacities of the NMHSs, through the completion of ongoing projects and the design of new ones, enabling the NMHSs to provide users with the best possible services, in areas of interest according to the needs of the region. Review the contents of the Boadilla del Monte Action Plan, the expected formulation of the Nouakchott Action Plan and the need for resource mobilization for the implementation of activities to meet the expectations in the various countries.

Global Situation of West Africa: Needs of the region

The presentation sought to bring participants up to speed with issues in the region with a view to overcoming the various challenges and to improving the productivity of NMHSs in the region. Hence the presenter gave an overview of the status of development and the various shocks affecting the region. Ongoing initiatives, including the various challenges faced and some of the actions that can translate these into opportunities were presented.

ECOWAS Meteorology Programme

The presentation brought out the importance of the Meteorology Programme to communities in the ECOWAS region where the overwhelming majority of livelihoods depend on the bounty of the climate system and as such are highly vulnerable to climate variability and climate change. The Programme is aligned to the global and regional development initiatives and its implementation would enhance both climate risk management and livelihood support in the region. The Programme will enhance the relevance of NMHSs to the development and socioeconomic wellbeing of the region.

ACMAD General Activities

The presentation identified the activities conducted at ACMAD which include short- and long-term weather and climate forecasting, climate research, IT development, resource mobilization, supporting NMHSs with on-the-job training opportunities, supervising students taking advanced degrees in weather and climate. In undertaking the above, ACMAD partners with several international and regional actors in the

weather and climate sector. A major constraint facing ACMAD is the non-payment of national contributions which is directly affecting execution of planned programs.

AGRHYMET General Activities

The presentation recalled the objective for the creation of the AGRHYMET Centre as being to provide information to ensure food security in member countries. To achieve this AGRHYMET partners with several international, regional and national institutions and plans are on the way to establish the Regional Climate Centre for West Africa in AGRHYMET.

Report and summary of the PRs Survey

The survey results indicated the following programmes in terms of priority for the region: 1) MetAgri, 2) MarineMet, 3) Climate database, 4) EUMETSAT SAF products, 5) HealthMet, 6) Severe Weather Forecasting Demonstration Project, 7) Consultancy and AFRIMET website.

Nigeria MarineMet Activities

The Nigeria Meteorological Agency (NiMet) made a presentation on their installations and activities in Marine Meteorology, which is a joint collaboration with the UK Met Office in support of marine operators in Nigeria. He further expressed willingness to share their experience and skills in the sector with NMHSs in the region, with the requests following due procedure for such cooperation.

Recommendation 1:

The conference noted with appreciation the good work undertaken by both ACMAD and AGRHYMET and that for NMHSs to benefit from these products there is an urgent need for improved flow of information from the Centres to NMHSs.

Session 3: AFRIMET Projects/Action Plan 2016-2018

Chair: Guinea
Rapporteur: Sierra Leone

In reviewing the Boadilla Action Plan, it was noted that although significant gains were made, some activities in the Plan were not implemented. Since the programme operates on a rolling basis, activities that were not implemented during the period would be considered in the new plan, depending on their relevance to the beneficiary

countries. On the budgetary issues, it was noted that the balance of funds at 31 December 2015 stood at €394,134.

MarineMet Project

The presentations gave insights on the achievements of the project in Cabo Verde, Gambia, Mauritania and Senegal, where the interventions improved monitoring of the marine environment and provision of marine services, through the installation of tide gauges and AWS and the development numerical prediction models, and transferred technology and knowledge. Moreover it was highlighted how the new marine bulletins delivered by Dakar Center have a big impact in the artisanal fisheries sector.

The conference held a ceremony to handover over the management and ownership of the equipment installed under phase I of the Marinemet project to the PRs of the beneficiary countries, and agreed on the activities for completion for the transfer of all remaining responsibilities to the RSMC Dakar and to consider a phase 2 of the project for a marine services operational system in West Africa including the Gulf of Guinea.

MetAgri Review

The presentation emphasized the need to improve roving seminars and technical skills, monitoring and evaluation, improving quality of service, partnership with other stakeholders, such as the Ministry of Agriculture and the need to target women, given their prominent role in agriculture in the region. Issues of functional early warning system, Agromet Atlas, crop-weather forecast, 1-9 days forecast for agriculture, sand and dust alerts, remote sensing precipitation monitoring tools, communication and technical training of staff were also mentioned as key necessities for the next phase.

Given the need to upscale this programme, improve current activities and develop new areas such as Early Warning Systems and gender issues, more resources need to be mobilized to meet expectations as indicated at the MetAgri Operational closing workshop held in Abidjan from 23 to 27 November 2015.

MetAgri Services

From the workshops the need for a new project called MetAgri Services arose specifically to focus on service delivery for a wide range of users (agriculture, livestock, artisanal fisheries, among others) and to develop partnerships with governmental and non-governmental institutions and private users at country level and with regional and international institutions such as AGRHYMET, ACMAD, FAO and WFP.

Development of more efficient Roving Seminars and other interactive forums with intermediaries of final users, including traditional knowledge practices, improved

raingauges and climate smart agriculture practices would be explored. Needs for training in crop modelling and remote sensing, development of links with the media (national and community level), gender focused activities and development of Climate and Weather Hazard Early Warning Systems would also be main components of the project.

Specific activities to show the value and impacts of the use of climate and weather information on agricultural practices would be continued and improved upon with yearly evaluation of the activities and a final evaluation.

This project would be continuously aligned with other WMO programmes and initiatives in particular with GFCS regional and national projects, SWFDP and CREWS (Climate Risk and Early Warning Systems) projects.

The presentation on **HealthMet** reviewed the consultations, construction and lessons learnt with the plan of activities. The programme conducted a series of training events and has seen an expansion in the number of participating countries. National Climate and Health Working Groups have already been launched in Mauritania and Burkina Faso. A plan for the development of operational Early Warning Systems' tools that address climate-sensitive impacts on public health was presented. Mauritania presented a review of the project and plans at national level, and Burkina Faso presented a detailed national plan for the development of such EWS. It was proposed to the Conference to consolidate the links with the Clim-Health Africa initiative; to take advantage of the ACMAD expertise on Climate-Health bulletin; to support Mauritania and Burkina Faso plans; to support initial steps in other countries; and to continue collaboration with the SDS-WAS, strengthening training over the region in satellite and ground observation and modelling of atmospheric dust.

MarineMet Second Phase was presented and key among the actions required was to actually finalize the data information flow exchange through the incorporation of a remote data downloading mechanism, inclusion of data on the GTS and WIS to enable data dissemination from the Dakar Regional Centre to the other Centres. The need for the phase two to include capacity building on the provision of marine forecasting products and equipment maintenance and the provision of spare parts was called for.

The participants expressed gratitude to Spain and WMO for the progress realized in in the various projects implemented during the period, noting that these have significant socio-economic impacts with the beneficiary communities and as such called for continuity and the extension to other AFRIMET countries.

Recommendation 2:

The Conference noted that for an increasing number of Members, marine meteorological services are provided by the NMHSs although without consideration for cost recovery for maritime service provision. In view of the high cost of maintenance of marine meteorological equipment, coupled with the insufficient

government budgetary allocations to NMHSs, the conference recalls the request during the WMO-Cg 17 that cost recovery be considered under risk management, and the need to consider this matter, taking into consideration other cost recovery processes such as with aviation services, in order to provide guidance to the Members concerned.

The conference requested WMO and AEMET to explore ways to ensure the provision of meteorological services to the marine sector, and to support the countries to sustain the investments made in the sector.

Recommendation 3:

Considering the impressive achievements in Marine Meteorology by the Nigerian Meteorological Agency, the Conference proposed to explore ways of greater cooperation between this and other interventions in the Gulf of Guinea during the second phase of MarineMet, and calls on the need to formulate a plan for a system of operational marine services in West Africa including the Gulf of Guinea. The conference encouraged Members to consider opportunities to improve marine products and services through the development of such operational systems.

Recommendation 4:

With many of the NMHSs' skilled personnel nearing retirement, the conference called on WMO to assist countries with opportunities for training of younger personnel to maintain current service levels.

SESSION 4: AFRIMET NEW PROJECTS/ ACTION PLAN 2016 - 2018

Chair: Mali
Rapporteur: Nigeria

Climate Data base

The Meteorological, Climatological and Hydrological (MCH) database management system is an open source software package. It was developed in Mexico and adapted and financially supported by the Conference of Directors of Ibero-American Meteorological and Hydrological Services. The package was donated to WMO at 16th Congress by Spain and Mexico in 2011. The software is available in Spanish, English and French and may be obtained through a formal request to WMO.

Products for Nowcasting from Satellite Application Facilities (SAF)

Satellite products for nowcasting are available from the EUMETSAT's NWC SAF, led by AEMET, in collaboration with MeteoFrance, Swedish and Austrian Met Services. Their characteristics include near real time, high resolution images, options for image

frequency and region selection, which are ideal for forecasting cloud development and thunderstorms. Users can generate selected products for areas of interest. NMHSs meeting the minimum requirements to run the software were encouraged to do so, taking advantage of ACMAD's expertise for the training of personnel.

Severe Weather Forecasting Demonstration Project (SWFDP)

The presentation of the WMO SWFDP showed that the goals include: the improvement in the skill of products from WMO operational centres, through feedback and forecast verification; improved lead-time for warnings; improved interaction of NMHSs with their users; identification of areas for improvement and requirements for the WMO Basic Systems. For the West African region, a SWFDP project with Dakar RSMC as main regional centre is in preparation. The areas of focus are on strong winds, heavy rains/dry spells, dust/sand storm events and hazardous sea waves. The challenge in West Africa is related to the large area under the responsibility of Dakar RSMC, with many countries speaking French, English or Portuguese and with varying capacities of the NHMSs.

Marine Meteorology and Oceanography Programme

The presentation underscored the importance of meteorological information as part of the SOLAS Convention on safety of life and property at sea. It also emphasized the need to reduce the vulnerability of coastal settlements to various meteorological and ocean related hazards, the need for effective forecasting and warning services as well as policy and management decisions to curb the negative impacts of coastal flooding. The presentation considered the opportunity to improve services in an efficient and effective manner, to ensure the systems developed in SWFDP (e.g. cascading prediction framework) effectively enable the operational delivery of improved marine weather services including coastal inundation predictions.

AFRIMET Website

The AFRIMET website operates in 3 domains and in 3 languages (Spanish, English and French). The website hosts four sections with three sub-sections each, as well as a discussion forum, an open file archive, and a private area. A newsletter is published on a quarterly interval. A dynamic, up-to-date webpage for the Gambia NMHS was presented and found to be very informative. It was proposed to the conference to continue with the general maintenance and development of the website as well as the development of new static or dynamic pages for more countries.

The conference noted the great potential that the new projects could have in enhancing the development of NMHSs in West Africa to better serve their users and called on AEMET and WMO to assist in resource mobilization to support the implementation of the projects in interested countries.

Recommendation 5:

In view of the usefulness of the NWC SAF products to forecasting significant weather events in the region, the conference recommended the dissemination of rain and thunderstorms products through Eumetcast Africa, ACMAD or RSMC Dakar websites.

SESSION 5: AFRIMET ACTION PLAN 2016 - 2018

The Conference issued the following statement and the Nouakchott Action Plan 2016 – 2018 and a motion of thanks as follows:

The Statement

We, the Directors of NMHSs in West Africa, meeting in Nouakchott, Mauritania during 19 – 21 April 2016,

Recognizing the contribution of the Government of Spain to the development of the NMHSs in West Africa in support of sustainable development, climate risk management and livelihood support, to address weather and climate related challenges faced by Africa, and building capacity in the region,

Recognizing the support of WMO to the process,

Recognizing the improvement in the communication and sharing of experiences between the NMHSs thanks to the AFRIMET Conference,

Recognizing the progress made in the implementation of the Boadilla del Monte Action Plan,

Recognizing the AFRIMET pilot projects are successful cases and there is a great demand for their extension to other countries according to the priorities expressed in the survey,

Recognizing the contribution to the Global Framework for Climate Services,

Recognizing that long term sustainability will only be achieved through the availability of skilled personnel to maintain the investments in equipment and tools, and resource mobilization,

Recognizing the importance and advantages of mutual cooperation to accomplish the mission of NMHSs,

Decided

1. That the Conference of Directors of NMHSs in West Africa shall play a key role in the RA I region and contribute actively to the achievement of the Sustainable Development Goals, the AU Agenda 2063 and other initiatives.
2. To implement the Nouakchott Action Plan using as main source of financing the Trust Fund created in the WMO Secretariat by Spain and to look for additional financial resources and partners to complement the plan and its execution.
3. To continue promoting cooperation in meteorology and hydrology within the region with the purpose of increasing multilateral cooperation taking advantage of the existing regional initiatives as appropriate.
4. To submit these conclusions to relevant Authorities in each participating country as well as to WMO.
5. To approve the Nouakchott Action Plan as follows:

Nouakchott Action Plan (expected results)

Metagri Services

1. Roving seminars' methodology is improved.
2. Farmers have access to modern, updated and effective decision-making tools based on reliable remote sensing products and tested crop models.
3. Media, especially rural radios, play an active role in disseminating climate-related information to producers.
4. Feedback systems and validated methods for information and evaluation are introduced and operated.
5. Institutional and non-institutional cooperation frameworks are established with partner institutions and decision-makers.
6. Doubling the number of women that have access to climate and weather information for decision making in rural areas.
7. Specific tools for farmers, horticulturists, fisherfolks, herders and forest/rangeland managers.
8. Multi-hazard Early Warning Systems are established, including drought and sand and dust alerts, with special emphasis on food production and food security, and coordinated by national Multidisciplinary Working Groups.

MarineMet Project

1. Data from the maritime observation network are transmitted through GTS and GLOSS through Dakar Regional Centre.
2. Marine services delivered from the countries to their maritime users in the framework of Severe Weather Forecasting Demonstration Project (SWFDP).
3. Demonstrate the success of the pilot project and a proposal for the extension of the project to the Gulf of Guinea countries in West Africa is presented for funding.

HealthMet Project

1. Identification of health targeted areas and diseases and related meteorological and climatological parameters.
2. Creation of a climate and health database and analyses of data.
3. Identification of data gaps and proposals for completion.
4. Alert threshold identified by regions on the respective countries.
5. Issue and dissemination of a pre-operational bulletin to be tested.
6. Integration of the alert system into the national health policy and response plans.

New Projects:

1. Climate Database: Improved user access to climate data in AFRIMET countries.
2. Nowcasting SAF: Improved nowcasting and very short range forecasting by using Nowcasting SAF products.
3. Severe Weather Forecasting Systems: Improved Severe Weather Forecasting Systems by applying the "Cascading Forecasting Process".
4. AFRIMET Website: Visibility increased of AFRIMET Members.
5. Sand and Dust Storm Forecasting: Improved dust forecast.
6. Data Transmission (on GTS): Improved data availability on GTS.

These expected results of the Action Plan are contained in a more detailed document.

Motion of thanks to the Government of the Islamic Republic of Mauritania

The participants in the 6th Conference of Directors of the West African National Meteorological and Hydrological Services (AFRIMET), held in Nouakchott from 19 to 21 April, 2016, wish to express their deep appreciation and sincere gratitude to the Government and people of the Islamic Republic of Mauritania for the warm welcome provided to all the participants and for the excellent facilities placed at their disposal that has ensured the successful conduct of the Conference.

Done in Nouakchott, 21 April 2016

The Conference

Seventh Conference of AFRIMET Directors

Niger, Guinea and Senegal expressed their willingness to host the next conference, subject to confirmation at a later date.