



**FORUM  
HYDROMÉTÉOROLOGIQUE  
DE LA CEEAC**

## **PROCEEDINGS**

# Of the Second Central Africa Hydromet Forum

4-6 May 2021



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# PROCEEDINGS Of the Second Central Africa Hydromet Forum

4-6 May 2021

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## FOREWORD

As the Commission of the Economic Community of Central African States (ECCAS) prepares to assume its functions, replacing the General Secretariat of the Community, in accordance with the Decision of the IX Special Session of Heads of State and Government, convened on December 18, 2019 at Libreville (Republic of Gabon) to address the institutional and organizational reform of our regional integration institution, I take this opportunity to convey the Community's appreciation to all our Technical and Financial Partners (TFP) for their engagement and support to ECCAS and its Member States in all areas of regional integration, especially the environment, agriculture, and rural development.

The establishment of the Department of the Environment, Natural Resources, Agriculture and Rural Development, which I have the honor to lead, will serve to further strengthen our collaboration within the framework of an innovative institutional and organizational structure that is better able to meet the expectations and needs of Member States, the private sector, and the general public. Against this background, our aim is to implement a development process that is endogenous and shared by all, and that can be embraced on a sustainable basis by all stakeholders, while helping to advance programs, projects, and initiatives already under way or to come, at the local, national, subregional, and continental levels.

In my capacity as Commissioner of a new department, I feel particularly gratified by the activities that have taken place since I assumed office. I refer here to the many activities implemented jointly with TFPs in different areas of the environment, including the fight against climate change in general, and in hydrometeorology, in particular, despite the challenges that we have faced for almost two years now as a result of the COVID-19 pandemic.

Indeed, hydrometeorological and climate-related hazards and the recurring natural disasters that accompany them are a source of considerable damage and destruction in the subregion and have thus become a major challenge to sustainable development in Central Africa because of their devastating socioeconomic impacts on people's livelihoods and on our sustainable development achievements. At present, over two-thirds of the natural disasters affecting the subregion can be traced to hydrometeorological factors. This is reflected in the increasing number and severity of floods and droughts that destroy property and equipment, damage economies, and cause loss of life. This unfortunate state of affairs is exacerbated by the intensification and occurrence of extreme weather events, as well as by the very weak capacity of our States to prepare for and manage such events. Against the background of a changing climate, where largely unreliable and obsolete seasonal indicators that are based on historical knowledge are becoming increasingly arbitrary, the vulnerability of rural communities that depend mainly on agriculture and seasonal weather patterns for their livelihoods is growing.

In light of the foregoing, climate and extreme weather forecasting in Central Africa must be seen henceforth as a timely strategy for dealing with climate change adaptation. As a result, by preparing and disseminating information that more accurately predicts the characteristics of the rainy season before it even starts, farmers, water resources managers, decision makers and the wide range of other actors who use this kind of information will be well placed to optimize their choices as they take decisions on how best to approach the seasons. As our subregion grapples with extreme climate-related events, seasonal forecasts of precipitation levels and water flows in the main basins are among the climate services most in demand by communities as well as by policy and decision makers. These stakeholders use these services to improve the planning process and to produce plans that are consistent with the economic development goals of Member States, thereby underlining the need for building the kind of management capacity in Central Africa's national and regional services that would enable them to better characterize

agro-hydro-climate risks and disaster risk management and place them in a better position to respond to the concerns of businesses and the general public.

Building on the adoption in 2007 of the Regional Environment and Natural Resource Management Policy, the 2009 Regional Water Policy, and the 2015 Central African Strategy for Risk Prevention, Disaster Management, and Climate Change Adaptation (SPRGC), as well as on the operationalization of the Green Economy System in Central Africa (SEVAC), the ECCAS Commission has leveraged climate change as a leitmotif and a crosscutting tool to be taken into account in the subregion's development, in accordance with the United Nations 2030 Agenda, Agenda 2063 of the African Union, and the Paris Agreement. Against this background, a plan of action for the implementation of the African Program of Action and the 2015-2030 Sendai Framework for Disaster Risk Reduction in Central Africa was adopted in accordance with the SPRGC, the Global Framework for Climate Services, and the Paris Agreement. In the same vein, ECCAS Heads of State and Government, at their 16th Ordinary Conference in N'Djamena, Chad, established, by virtue of Decision No.72/CEEAC/CCEG/XVI/15 of May 25, 2015, the Central African Climate Prediction and Application Center (CAPC-AC) based in Douala, Republic of Cameroon.

Established as a specialized institution of ECCAS by Decision No.11/CEEAC/CCEG/XIX/21 of July 30, 2021 and still in the process of being set up, the aim of the subregional CAPC-AC is to provide substantial support to National Meteorological and Hydrological Services to enable them to integrate effectively and efficiently into the meteorological sector, and especially to strengthen their capacity to provide climate predictions to Member States and other partners. This approach is fully consistent with the Community's strategy on disaster risk management and climate change adaptation. It is also part of the preparatory activities for the demonstration by the CAPC-AC of its capacity to fulfill the mandatory functions of a Regional Climate Center (RCC) required by the World Meteorological Organization (WMO), while, at the same time, contributing to the implementation of the Global Framework for Climate Services.

In recognition of the need to fill the gaps in meteorology, climatology, and hydrology, the ECCAS Commission proceeded to organize, in collaboration with the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR), the Second Central Africa Hydromet Forum, in the context of the ACP-EU project to support ECCAS and its Member States to strengthen their capacity for coordination, planning, and advocacy.

The Forum enabled participants from the private sector, academia, civil society, the media, and regional and subregional meteorological and hydrological institutions to learn about best practices and share their ideas, with a view to the preparation of a plan of action for the community that outlines a common vision and mission for the modernization of national hydrometeorological services in ECCAS Member States.

The meteorological, hydrological, and climate-related services provided by NMHSs, including early warnings, advisories, and advice on climate change adaptation, are of critical importance to the range of sectors that stimulate the economies of Central Africa, and that directly support (i) smart agriculture; (ii) water resources for irrigation, hydroelectricity, renewable energies, and water supply; (iii) better planning for health services; (iv) improved access to safe air, maritime, and road transport; and (v) the reduction of the socioeconomic impacts from floods, droughts, and other natural risks. Climate services also provide support for disaster and climate risk mapping as well as for disaster and climate risk financing and insurance solutions. In addition, they help reduce fragility and encourage peace building, by promoting sustainable natural resources management and growth and by boosting the tourism and travel sectors that play such a key role in economic development and employment.

Based on the results of this forum and the expectations and needs of States, private sector companies, and the general public, a permanent program for the economic development of the Community's hydrometeorological sector in Central Africa is now being prepared to enable the subregion to attain its objectives in this area. The program will be presented for adoption and will be included in the list of the Community's sector programs to be submitted at the XX Conference of Heads of State and Government for adoption. ECCAS thanks the World Bank and all partners who participated in one way or another in this venture. We are fully confident that it will help sow the seeds for the establishment of hydrometeorological and meteorological services that are equipped to address the challenges that will have to be met by our subregion.

**H.E. Dr. Honoré TABUNA**  
**Commissioner for the Environment, Natural Resources, Agriculture and Sustainable Development**  
**Commission of the Economic Community of Central African States (ECCAS), Libreville, Gabon**

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## ABBREVIATIONS AND ACRONYMS

<b>ACMAD</b>	African Center of Meteorological Applications for Development
<b>AfDB</b>	African Development Bank
<b>AGEOS</b>	Agence gabonaise d'études et d'observations spatiales (Gabonese Agency for Space Studies and Observation)
<b>AGRHYMET</b>	AGRrometeorology, HYdrology, METeorology Center
<b>AMCOMET</b>	African Ministerial Conference on Meteorology
<b>ASECNA</b>	Agency for Air Navigation Safety in Africa and Madagascar
<b>AUC</b>	African Union Commission
<b>CAPC-AC</b>	Central Africa Climate Prediction and Application Center
<b>CEFDHAC</b>	Conference on Dense and Humid Forest Ecosystems of Central Africa
<b>CICOS</b>	International Commission of Congo-Oubangui-Sangha
<b>CILSS</b>	Permanent Interstate Committee for Drought Control in the Sahel
<b>ClimDev</b>	Climate for Development
<b>COMIFAC</b>	Central Africa Forest Commission
<b>CREWS</b>	Climate Risk Early Warning System
<b>DRM</b>	Disaster Risk Management
<b>ECCAS</b>	Economic Community of Central African States
<b>EU</b>	European Union
<b>EWS</b>	Early Warning System
<b>GBON</b>	Global Basic Observing Network
<b>ICPAC</b>	IGAD Climate Prediction and Applications Center
<b>IFRC</b>	International Federation of Red Cross and Red Crescent Societies
<b>METTELSAT</b>	National Agency of Meteorology by Satellite
<b>NMHS</b>	National Meteorological and Hydrological Services
<b>NWP</b>	Numerical Weather Prediction
<b>OACPS</b>	Organization of African, Caribbean and Pacific States
<b>ONACC</b>	National Climate Change Observatory
<b>RCC</b>	Regional Climate Center
<b>REFADD</b>	African Women's Network for Sustainable Development
<b>REPARC</b>	Parliamentary Network for Disaster Resilience
<b>RSMC</b>	Regional Specialized Meteorological Center
<b>SAWIDRA</b>	Satellite and Weather Information for Disaster Resilience in Africa
<b>SOFF</b>	Systematic Observations Financing Facility
<b>UNDRR</b>	United Nations Office for Disaster Risk Reduction
<b>WB</b>	World Bank
<b>WIGOS</b>	WMO Integrated Global Observing System
<b>WMO</b>	World Meteorological Organization



As in many regions across the globe, climate change is expected to worsen extreme weather events in Central Africa and increase the impact of shocks associated with the range of disasters that various governments and populations will have to face. In Central Africa, more than 70 percent of natural disasters are hydrometeorological in nature. Extreme weather events often cause flooding and landslides in ECCAS States. Lack of rainfall causes episodes of chronic drought, especially in the North-East. It should also be noted that the poorest countries and populations are disproportionately affected by the impact of disasters and climate change, with women and children being the most vulnerable.

Furthermore, the weak capacity to adapt to climate change is exacerbated by the fact that many ECCAS Member States are low-income countries. In addition, governments often have to deal with competing priorities for investment, to the detriment of National Meteorological and Hydrological Services (NMHS) that are rarely at the top of the list. Such inadequate levels of financing also hinder NMHSs from providing critical services for disaster risk reduction, adaptation to climate change, and development planning in general.

Against this background, meteorological, water and climate information services, including early warnings, advisories and advice on climate change adaptation, are without doubt the backbone of efforts to ramp up climate resilience. But most importantly, these services are critical to a wide range of economic sectors, such as agriculture and food security, water resource management, especially irrigation, hydroelectricity, renewable energy and water supply, as well as health. Climate services also provide support for disaster and climate risk mapping, and for disaster and climate risk financing and insurance solutions. The benefit-cost ratio of investments in hydro-meteorological services has been calculated at between 3 to 1 and up to 15 to 1. Yet these services continue to be underfunded, while the maintenance of existing infrastructure leaves much to be desired and human resources are insufficient in number and deficient in training. One is therefore faced with the classic development challenge: Hydromet services are critical for growth, development and resilience; the modernization of these services ensures a guaranteed return on investment, and yet, end-users do not currently enjoy the full extent of the benefits they provide.

The Hydrometeorological Forum (Hydromet Forum) held in May 2021 was the second event of its kind, after the Forum held in 2018, in Libreville, Gabon. Participants at that meeting had agreed that climate variability and climate change, along with changing weather patterns, were jeopardizing some development gains. They noted the increased frequency of climate-related natural disasters. These developments will have significant repercussions for the economic development of the subregion and the continent and will inevitably undermine Africa's efforts to achieve the Sustainable Development Goals (SDGs) and the Aspirations contained in the African Union's Agenda 2063.

The First Hydromet Forum noted that the meteorological sector had a major responsibility to contribute to Africa's social and economic development. The discussions and recommendations highlighted the Forum's strong commitment to promoting the development of hydrological and meteorological services in Central Africa, as reflected in the recommendation for ECCAS to develop a plan of action and support national mechanisms, mobilize partnerships, and design coordination mechanisms between various stakeholders.

This First Forum was considered the "Inaugural Forum" and was designed to become an annual or biennial event, with the Second Forum initially slated to be held in May 2020 in Kigali, Rwanda. In view of the health situation associated with the COVID-19 epidemic, ECCAS and its partners decided to hold the Second Hydromet Forum in May 2021 by video conference.

Since the First Forum, progress has been made at the regional and national levels in relation to the implementation and completion of the recommended actions. Within the framework of the program to strengthen African regional communities, which is part of the initiative for “Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities,” launched in 2015 by the Organization of African, Caribbean, and Pacific States (OACPS) and the European Union (EU), the following are the key achievements of ECCAS in 2019 and 2020:

- The holding of periodic Conferences of Central African Ministers with responsibility for meteorology and of officials in charge of disaster risk reduction at the political level, as well as regular meetings of the Regional Disaster Risk Reduction Platform at the technical level;
- The active work of the DRR/CCA unit of ECCAS, despite the constraints associated with COVID-19, culminating in the holding in 2020 of two regional workshops on building capacity in disaster risk management and reduction and climate change adaptation, and the preparation of the national Disaster Risk Reduction (DRR) Strategy and Plan of Action for four countries of the region (Cameroon, Central African Republic, Chad, and São Tomé and Príncipe);
- The preparation of the status report of hydrological and meteorological services for four ECCAS States (Angola, Burundi, Equatorial Guinea, and Rwanda), as well as a regional summary;
- The completion of a guide on ways to improve hydrometeorological services and early warning systems in Central Africa;
- The development of a regional framework and plan of action on hydrometeorological services in Central Africa;
- The development of the regional data base for the evaluation of hazards, vulnerabilities, and risks, as well as the publication of a regional atlas;
- The establishment within ECCAS of the Water Information System as part of the institutional reform establishing the ECCAS Commission;
- The commissioning of the Africa Climate Prediction and Application Center (CAPC-AC), through the Satellite and Weather Information for Disaster Resilience in Africa - Central Africa (SAWIDRA-AC) project of the AfDB;
- The almost 95 percent completion rate of SAWIDRA-AC project activities, including, notably, the installation of cutting-edge Numerical Weather Prediction (NWP) equipment at the CAPC-AC, as well as the holding last November of training sessions on using this equipment;
- The production by the CAPC-AC of scores of NWP bulletins for NMHSs.

The Forum is part of the activities of Result Area 2 of the Program entitled “Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities,” financed by the European Union and managed by the Global Facility for Disaster Reduction and Recovery (GFDRR). The objective of the Second Hydromet Forum was to consolidate the gains made at the regional level and to leverage this progress to promote the modernization of hydrometeorological services in ECCAS Member States.

In this regard, the objective was to enlighten all stakeholders and to get them involved in completing the work undertaken since the First Forum to strengthen climate change and disaster resilience in Central Africa, as well as in supporting integrated approaches to disaster and climate risk management at the national and regional levels through financial contributions and coordinated technical solutions.

Another objective of the Second Forum was to promote the participation of new actors that actually use hydrometeorological services, especially in the agricultural sector. It is clear that agriculture is highly sensitive to weather and climate conditions, as these have a direct or indirect impact on production and harvests, as well as on food and nutrition insecurity. Similarly, the environment is yet another example that demonstrates the extent to which different sectors share a common interest in hydrometeorological services.

The objectives of the Second Central Africa HYDROMET Forum were to:

- a) Develop subregional leadership for strengthening hydromet and climate services in their global public good function for climate risk management and climate adaptation;
- b) Serve as a platform for exchanging knowledge, information, and ideas, and evaluating progress since 2018 in modernizing hydromet services in Central Africa;
- c) Become a listening post for development partners on the needs of sectors and user groups to ensure ownership and customization of programs and investments;
- d) Build consensus and awareness among stakeholders about the benefits of investment in meteorological, hydrological, and climate services, along with early warning systems;
- e) Enhance countries’ and stakeholders’ ownership of programs and the results of meteorological, hydrological and climate services to ensure sustainability;
- f) Consolidate a multistakeholder platform for governments, regional organizations, donors, the private sector, civil society, academia, the technical community, along with youth and gender groups, to discuss and design the future course of hydromet service modernization in Central Africa;
- g) Develop a framework for collaboration between National Meteorological and Hydrological Services (NMHS) and actors from the agrosilvopastoral and fisheries sectors and the environment;
- h) Raise awareness of producer organizations, agricultural companies, and political actors about the importance of meteorological services for climate smart sustainable agriculture;
- i) Adopt a regional framework to support the modernization of National Meteorological and Hydrological Services (NMHS) and the EWSs of the countries of the region.

### 3 • PARTICIPANTS

The Forum was organized jointly by the Department of the Environment, Natural Resources, Agriculture, and Rural Development of the Commission of the Economic Community of Central African States (ECCAS), the World Bank (WB) in partnership with the European Union (EU), the Global Facility for Disaster Reduction and Recovery (GFDRR), the World Meteorological Organization (WMO), and other development partners, such as the African Development Bank (AfDB), UNDRR, etc.

The Forum brought together high-level representatives of ECCAS Member States, the national focal points from the relevant sectors (disaster risk management, climate, meteorology, agriculture, gender, and the environment), transboundary basin organizations in Central Africa, civil society, including academia, the media, parliamentarians from the subregion, the private sector, subregional institutions, and development partners. With over 200 participants registered on the platform of the Forum and 71 speakers and moderators (including 14 women), the event was a resounding success as a vehicle for exchanging information and identifying the priority actions required by NMHSs to enable them to better contribute to the development of the subregion and its Member States.



**SECOND CENTRAL AFRICA HYDROMET FORUM**  
**VIRTUAL**  
**AGENDA**

Day 1: Tuesday, May 4, 2021	
9:00 a.m. – 10:30 a.m. (GMT+1)	Regional framework and plan of action for the modernization of Hydromet services in Central Africa (by invitation only)
10:30 a.m.	<b>Opening of platform to participants</b>
10:45 a.m.– 11:15 a.m.	<p><b>SESSION 0</b>  <b>OPENING SPEECH AND WELCOME REMARKS</b></p> <p><b>Introductory remarks:</b></p> <ul style="list-style-type: none"> <li>● Simeon EHUI, World Bank Regional Director for Western and Central Africa</li> <li>● Her Excellency Ambassador Rosário Bento Pais, European Union Delegation in Gabon</li> <li>● Dr. Amos Makarau, Director, Regional Office for Africa, World Meteorological Organization</li> <li>● H.E. Ambassador Gilberto Da Piedade VERISSIMO, President of the ECCAS Commission</li> </ul> <p>Moderator: ECCAS</p>
11:15 a.m.– 12:30 p.m.	<p><b>SESSION 1</b>  <b>STATUS OF HYDROMET SERVICES IN ECCAS COUNTRIES:</b>  <i><b>Achievements Since the First Forum</b></i></p> <p><b>Presentations:</b></p> <ul style="list-style-type: none"> <li>● Status of meteorological and hydrological services in Central Africa – <i>Désiré NDEMAZAGOA, ECCAS</i></li> <li>● Regional framework and plan of action for the modernization of Hydromet services - <i>Désiré NDEMAZAGOA, ECCAS</i></li> </ul> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Nestor NIANGA NKUFI, Director General of METTELSAT, DRC  <i>“Achievements since the First Forum”</i></li> <li>● Aimable GAHIGI, National Director General for Meteorology, Rwanda  <i>“Achievements since the First Forum”</i></li> <li>● Bernard Gomez, WMO  <i>“Progress in Hydromet Early Warning Systems”</i></li> <li>● Lars Peter Riishojgaard (WMO)  <i>“The Global Basic Observing Network”</i></li> </ul> <p><b>Question &amp; Answer Session</b>  Moderator: Marianne Diop Kane (WMO)</p>
12:30 p.m. – 1:30 p.m.	<i>Break</i>

Day 1: Tuesday, May 4, 2021	
1:30 p.m. – 2:45 p.m.	<p><b>SESSION 2</b>  <b>IMPLEMENTATION OF THE SENDAI FRAMEWORK IN ECCAS MEMBER STATES:</b>  <i><b>Achievements since the First Forum</b></i></p> <p><b>Presentations:</b></p> <ul style="list-style-type: none"> <li>● Assessment of hazards, vulnerabilities, and risks in Central Africa: presentation of the risk atlas - Sémingar Ngaryamngaye, DRM Regional Coordinator, ECCAS, Camille Pinet (IGN FI)</li> <li>● Current status of risk prevention strategies and plans of action <ul style="list-style-type: none"> <li>• Michel Mbarga, Minister with responsibility for DRM in Cameroon  <i>“The new national DRR Strategy and Plan of Action: implementation challenges and constraints, recommendations”</i></li> <li>• Tesse Mbia Mabilo, Director for Civil Protection of Chad  <i>“The new national DRR Strategy and Plan of Action”</i></li> </ul> </li> </ul> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Gilles Martin, Head of Risk Mapping Project, IGN FI  <i>“GIS database - Disaster Risk Management”</i></li> <li>● Damien Brunel, Hydrologist, BRLi  <i>“Hydrological and hydraulic modeling for inland flood hazards in ECCAS Member States”</i></li> <li>● Diane Aboubakar, AUC  <i>“Status of Risk Prevention Management at the continental level”</i></li> </ul> <p><b>Question &amp; Answer Session</b>  Moderator: Hortense TOGO (Minister of the Interior of Gabon)</p>
2:45 p.m. – 3:45 p.m.	<p><b>SESSION 3</b>  <b>REGIONAL OPERATIONAL HYDROMETEOROLOGICAL SERVICES:</b>  <i><b>Regional climate centers, policy tools for subregional integration</b></i></p> <p><b>Presentation:</b></p> <ul style="list-style-type: none"> <li>● “CAPC: Tools to guide policy decisions in Central Africa” - Pascal MOUDI IGRI (CAPC)</li> </ul> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Godefroid NSHIMIRIMANA (ACMAD)  <i>“The role of ACMAD in capacity building in African countries”</i></li> <li>● Pierre BALOMOG (CAPC-AC)  <i>“Understanding Process Monitoring: Monitoring of achievements and results for effective implementation of Hydromet projects”</i></li> <li>● Ghislain Claude NKOMBE (NMHS, Gabon)  <i>“Integration of regional predictions into national predictions: benefits of such an approach”</i></li> <li>● Dr. Abubakr BABIKER (ICPAC)  <i>“Climate services developed at ICPAC. What added value to economic development in IGAD?”</i></li> <li>● Dr. Rabia Merrouchi, Directorate General for Meteorology of Morocco, Sadibou Ba, Department of Meteorology of Senegal  <i>“WMO Centers (RCC, RSMC, WIS and WIGOS centers) of the region: Outlook for CAPC”</i></li> </ul> <p><b>Question &amp; Answer Session</b>  Moderator: Dr. André KAMGA F. (DG ACMAD)</p>
3:45 p.m.	<b>End of Day 1</b>

## Day 2: Wednesday, May 5, 2021

9:00 a.m. – 10:00 a.m.	<p><b>SESSION 4</b></p> <p><b>RESEARCH &amp; DEVELOPMENT IN SUPPORT OF HYDROMETEOROLOGICAL SERVICES IN CENTRAL AFRICA:</b>  <i>Using Fundamental Research Results for the Development of Reliable Hydrometeorological Services in a Context of Climate Variability</i></p> <p><b>Presentation:</b>          Status of Hydrometeorological Research in Central Africa: Climatology and Climate projections - Dr. POKAM Wilfried (University of Yaoundé 1)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Dr. Médard OBIANG EBANEGA (Omar Bongo University)  <i>“Meteorology, PM2.5 and population health in Libreville”</i></li> <li>● Prof. VONDOU Dernetini (University of Yaoundé I)  <i>“Atmospheric Research Program in Central Africa: Pillars and Results”</i></li> <li>● Prof. Fils MAKANZU IMWANGANA (University of Kinshasa)  <i>“Characteristics of rain and gully erosion in the city of Kinshasa from 1961 to 2010”</i></li> <li>● Prof. Ahmed Adedoyin BALOGUN (Federal University of Technology, Akure, Nigeria)  <i>“Variability of Evapotranspiration in Akure, Nigeria using the Bowen-Ratio Energy Balance method”</i></li> <li>● Patricia Trambauer, DELTARES  <i>“Next Generation Drought Index (NGDI) to enable detection of sector-specific drought impacts in Africa”</i></li> </ul> <p><b>Question &amp; Answer Session</b>          Moderator: Pascal MOUDI IGRI (CAPC-AC)</p>
10:00 a.m. – 11:10 a.m.	<p><b>SESSION 5</b></p> <p><b>ROLE OF METEOROLOGY IN THE DEVELOPMENT OF THE AGROSILVOPASTORAL AND FISHERIES SECTORS:</b>  <i>Toward greater collaboration of actors for the benefit of producers and their organizations for more effective use of meteorological services and products</i></p> <p><b>Presentation:</b>          The role of meteorology in the development of the agrosilvopastoral and fisheries sectors, Vincent GABAGLIO (EUMETSAT)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Johan Lain IVALA, Head of Maritime Surveillance, AGEOS  <i>“Using meteorological data for surveillance of fisheries resources: case of the Maritime Surveillance Service of Gabon with AGEOS”</i></li> <li>● Dr. Erwann FILLLOL (Action Against Hunger)  <i>“Information on biomass, surface water, pastoral surveillance and multisectoral monitoring - case of the Sahel”</i></li> <li>● Dr. Pascal MOUDI (CAPC-AC)  <i>“Climate monitoring in agricultural production and management of economic activities in Central Africa”</i></li> <li>● Dr. Florence PALLA (OFAC), Quentin JUNGERS (RIOFAC Project)  <i>“Status of challenges of transhumance in Central Africa and establishment of a regional observatory”</i></li> <li>● José Camacho (WMO)  <i>“Agricultural component of CREWS project in Western Africa: Technical support to NMHSs, Workshops and Interactive Activities, assessment of socioeconomic benefits”</i></li> </ul> <p><b>Question &amp; Answer Session</b>          Moderator: Mohammed ABAKAR (CEEAC)</p>

Day 2: Wednesday, May 5, 2021	
11:10 a.m. – 11:30 a.m.	<i>Break</i>
11:30 a.m. – 12:30 p.m.	<p><b>SESSION 6</b>  <b>WATER RESOURCES MANAGEMENT, INLAND NAVIGATION AND HYDROELECTRICITY: <i>Hydromet services and needs</i></b></p> <p><b>Presentation:</b>  Hydroelectricity and the stakes of sustainable water resources management in the Republic of Congo, Dr. Bienvenu DINGA (Head of National Hydrological Service of the Republic of Congo)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Secundino NDONG NGUEMA, Director General for Energy and Industry of Equatorial Guinea  <i>“Future of the Continental Region”</i></li> <li>● Narcisse ODOUA (ECCAS)  <i>“Water Information System for sustainable water resources management”</i></li> <li>● Stéphane Delichère (BRLi)  <i>“Integrated Flood and Water Transfer Management (PICTO), a dynamic tool for managing drinking water reservoirs on the territory of la Vendée”</i></li> <li>● Georges GULEMVUGA, Director of Water Resources, CICOS  <i>“The contribution of new technologies to the improvement of navigational safety and the development of hydroelectricity”</i></li> </ul> <p><b>Question &amp; Answer Session</b>  Moderator: Désiré NDEMAZAGOA (ECCAS)</p>
12:30 p.m. – 1:30 p.m.	<i>Break</i>
1:30 p.m. – 2:45 p.m.	<p><b>SESSION 7</b>  <b>TRAINING AND CAPACITY-BUILDING PROGRAMS TO SUPPORT NATIONAL HYDROMET SERVICES</b></p> <p><b>Presentation:</b>  Training supply and needs in relation to hydrometeorology in Central Africa – Désiré NDEMAZAGOA (ECCAS)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Simplicie TCHINDA TAZO, National Director of Meteorology of Cameroon  <i>“Experience of the National Meteorological Service of Cameroon”</i></li> <li>● Enoch NZAU, Monitoring and Evaluation Expert for the DRC-HYDROMET Project (METTELSAT, DRC)  <i>“METTELSAT Training Plan, with support from the DRC-HYDROMET Project”</i></li> <li>● Hong Fan, WMO  <i>“WMO Fellowships Programme in RA I (Africa)”</i></li> <li>● Mohamed, Hamatan (AGRHYMET)  <i>“Opportunities for training in professions in the fields of meteorology and hydrology, provided by the AGRHYMET Center”</i></li> </ul> <p><b>Question &amp; Answer Session</b>  Moderator: Koffi HOUNKPE (WB)</p>



Day 2: Wednesday, May 5, 2021	
2:45 p.m. – 3:45 p.m.	<p><b>SESSION 8</b></p> <p><b>TRANSBOUNDARY BASIN ORGANIZATIONS:</b> <i>A major role in regional hydromet monitoring and early warning systems</i></p> <p><b>Presentations</b> “Transboundary Basin Organizations: a major role in regional Hydromet monitoring and early warning systems - case of the Lake Chad Basin Commission (CBLT),” Abdoulaye ALIO (CBLT)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Didier CADELLI, Project Manager, Lake Tanganyika Water Management Project, Lake Tanganyika Authority (LTA) <i>“Lake Tanganyika Water Management Project - Implementation of the Lake Tanganyika Environmental Monitoring Program”</i></li> <li>● Didier Sèyivè ZINSOU, Niger Basin Authority (NBA) <i>“The leading role of NBA in regional Hydromet monitoring and early warning systems”</i></li> <li>● Dr. Bienvenu DINGA, Head of the National Hydrological Service of the Republic of Congo <i>“Synergies between TBOs and NMHSs for optimal hydrometeorological monitoring”</i></li> <li>● Georges GULEMVUGA, Director of Water Resources, CICOS <i>“The contribution of space technology to the improvement of regional Hydromet monitoring and early warning systems, case of the Congo Basin”</i></li> </ul> <p><b>Question &amp; Answer Session</b> Moderator: Dr. Jean-Claude NTONGA (Head of the Hydrological Research Center of Cameroon)</p>
3:45 p.m.	<b>End of day 2</b>

Day 3 Thursday, May 6, 2021	
9:00 a.m. – 10:00 a.m.	<p><b>SESSION 9</b></p> <p><b>PUBLIC-PRIVATE PARTNERSHIPS, INNOVATION AND THE PRIVATE SECTOR: Challenges and opportunities</b></p> <p><b>Presentation:</b> Public-Private Partnerships (PPP): Stakes and Opportunities in Central Africa, Léa-Elizabeth SICKOUT (ECCAS)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Jean Brice MVOA NGUEMA (Autonomous Port of Kribi) <i>“Resilience of Ports: challenges and expectations”</i></li> <li>● Vincent ASSO’O, Bois et Scieries de l’Ogooué (Ogooué Lumber and Sawmills) -(BSO) <i>“Partnership with the Timber Sector”</i></li> <li>● Guillaume LAHACHE (PREDICT) <i>“COSPARIN: Contribution of Space Technology to Flood Risk Analysis”</i></li> <li>● Christine David (Weather Force) <i>“PPP Examples in Western and Central Africa”</i></li> <li>● Dimitar Ivanov (WMO) <i>“Public-Private Engagement in support of WMO Vision 2030”</i></li> </ul> <p><b>Question &amp; Answer Session</b> Moderator: Dieudonné GOUDOU (AfDB)</p>
10:00 a.m. – 11:00 a.m.	<p><b>SESSION 10</b></p> <p><b>RISK PREPAREDNESS AND EARLY WARNING SYSTEMS</b></p> <p><b>Presentation:</b> <i>Status of risk preparedness mechanisms and EWS, Sémingar Ngaryamngaye, ECCAS</i></p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Benjamin Laroquette, UNDP <i>“Early Warning Systems and climate information: the case of São Tomé and Príncipe”</i></li> <li>● Thierry Balloy (IFRC) <i>“From early warnings to early action to prepare communities”</i></li> <li>● Alix Roumagnac (PREDICT) <i>“Covid Index, based on climate data”</i></li> <li>● Luis MORATINOS (European Union) <i>“Relevance and Complexity of an Early Warning System: the example of MARAC”</i></li> </ul> <p><b>Question &amp; Answer Session</b> Moderator: Hyacinth Banseka, Coordinator for the Global Water Partnership - Central Africa</p>
11:00 a.m. – 11:15 a.m.	<i>Break</i>

Day 3 Thursday, May 6, 2021	
11:15 a.m. – 12:15 p.m.	<p><b>SESSION 11</b></p> <p><b>COMMUNITIES, VULNERABLE GROUPS: <i>Good practices and civil society needs in hydromet services</i></b></p> <p><b>Presentation:</b> Mainstreaming gender into the Plan of Action of the Regional Strategy for Risk Prevention, Disaster Management and Climate Change Adaptation, Isabelle Boukinda (ECCAS)</p> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Honourable Adonis MOUDOUUMA (REPARC) <i>“Extent to which DRR is integrated into national legislation”</i></li> <li>● Brahim Ousman Adoum (SAHKAL) <i>“Good practices and civil society needs in Hydromet services”</i></li> <li>● Monique BISSECK Epse YIGBEDEK (REFADD) <i>“Good practices and civil society needs in Hydromet services”</i></li> <li>● Tamoifo Nkom (REJEFAC) <i>“Involvement of CSOs and Youth Networks in Disaster Risk Prevention and Climate Change Adaptation in the Congo Basin”</i></li> <li>● Christiana George (ARC) <i>“Good practices and civil society needs in Hydromet services”</i></li> </ul> <p><b>Question &amp; Answer Session</b> Moderator: Isabelle BOUKINDA (ECCAS)</p>
12:15 p.m. – 1:00 p.m.	<i>Break</i>
1:00 p.m. – 2:15 p.m.	<p><b>SESSION 12</b></p> <p><b>FINANCING METEOROLOGICAL, CLIMATE, WATER AND EARLY WARNING SERVICES IN CENTRAL AFRICA</b></p> <p><b>Presentations:</b></p> <ul style="list-style-type: none"> <li>● Overview of the ECCAS Climate Services and Related Applications (ClimSA) Project, Jolly Wasambo (AUC)</li> <li>● The Green Fund, Joseph Intsiful (Green Climate Fund)</li> </ul> <p><b>Panel discussion:</b></p> <ul style="list-style-type: none"> <li>● Makoto Suwa (WB)</li> <li>● John Harding (CREWS Secretariat/WMO)</li> <li>● Dieudonné Goudou (AfDB)</li> <li>● Markus Repnik (WMO)</li> <li>● Mamadi Sidibe (ARC) <i>“Innovative Disaster Risk Management and Financing Mechanism”</i></li> </ul> <p><b>Question &amp; Answer Session</b> Moderator: Prashant Singh (WB)</p>

Day 3 Thursday, May 6, 2021	
2:15 p.m. – 2:45 p.m.	<p><b>(SESSION 13)</b> <b>CLOSING CEREMONY</b></p> <p><b>Adoption of Communiqué, ECCAS Secretariat</b></p> <p><b>Closing remarks:</b></p> <ul style="list-style-type: none"><li>● Sylvie Debomy, Practice Manager for Western and Central Africa, World Bank</li><li>● Efstratios PEGIDIS, Head of Cooperation, Delegation of the European Union to Gabon</li><li>● Bernard Gomez, WMO Regional Representative for West and Central Africa</li></ul> <p><b>Closing address:</b> H.E. Dr. TABUNA Honoré, ECCAS Commissioner for the Environment, Natural Resources, Agriculture and Sustainable Development</p> <p>Moderator: ECCAS</p>

## 5 • CRITICAL PROBLEM AREAS AND CHALLENGES

Based on the critical problem areas identified in the analyses conducted since the 2018 Forum and confirmed at this Forum, the following is a list of the main challenges

CHALLENGES		
Financial	Institutional and legislative	Technical
Managing in the face of inadequate or nonexistent budgetary allocations to NMHSs	Address the continued low levels of awareness among decision makers by increasing sensitization in this area	Provide for the insufficient observational networks and inadequate tools for processing and managing data
Reducing the dependence of NMHSs on external support	Addressing the weaknesses of the legislative and institutional frameworks (e.g., plethora of actors, overlapping or gaps in roles and responsibilities, lack of coordination between NMSs and NHTs)	Increase the very limited number of interactions with end-users and expand the supply of products that meet the specific needs of specific users
	Human resources: take steps to address the shortage of managers and qualified staff, ensure the replacement of staff proceeding on retirement, and upgrade salaries	Supporting the sharing of tools, such as geographical data access portals
	Training: increase the number of training courses	
	Strengthening collaboration with research institutions	
	Encouraging information sharing and coordination between information management services	

## 6 • OPPORTUNITIES

### Within ECCAS

- The existence of transboundary basin organizations and regional cooperation on the management of transboundary water resources
- Extend such cooperation to prediction and early warning systems
- The establishment of the Africa Climate Prediction and Application Center (CAPC-AC) in Douala and the existence of other regional centers
- The existence of a Convention for the prevention and peaceful resolution of conflicts related to the management of shared water resources in Central Africa, adopted in July 2020
- The wide variety of research and training programs in Central Africa: universities of Bangui, of Buea with Periperi U, of Kinshasa, Libreville and Yaoundé, plus AGRHYMET and others
- The significant number of community initiatives managed by women in the areas of disaster risk reduction and use of meteorological and climate services

### Within ECCAS Member States

- The preparation of National Development Plans, Sector Plans, National Climate Change Action Plans (NCCAP), in accordance with UNFCCC (United Nations Framework Convention on Climate Change) guidelines, etc.
  - Include NMHSs
- The existence of national committees and/or platforms for coordinating DRR activities or activities in other sectors (e.g., agriculture, health)
  - strengthen collaboration with users of climate services in these sectors
- The existence of other data providers (ASECNA, energy companies, drinking water and inland navigation sectors/SCEVN (Common Maintenance Service of Waterways))
  - strengthen cooperation with these organizations
- The existence of potential users of climate services
  - develop specific services for new users to generate additional funds (e.g., energy companies)

### At the International Level:

- With the private sector: there are a number of possible initiatives, such as with cell phone companies or equipment providers, among others
- The Global Framework for Climate Services (GFCS) providing services required by NMHSs
- Development partners, including the AfDB and World Bank, that are prepared to help governments finance the modernization of meteorological, water, and disaster management services.

The Forum was organized around 12 sessions, with participation from 71 speakers and moderators, and produced a number of recommendations from speakers and participants, as follows:

### Session 1

#### **STATUS OF HYDROMET SERVICES IN ECCAS COUNTRIES: Achievements since the First Forum**

The first session focused on a presentation by ECCAS on the status of meteorological and hydrological services in 11 ECCAS Member States, including Angola, Burundi, Equatorial Guinea, and Rwanda. It also focused on presenting the regional synthesis including remaining ECCAS Member states updated from 2014 studies: Cameroon, the Central African Republic, Chad, the Democratic Republic of Congo, Gabon, the Republic of Congo, and São Tomé and Príncipe. An evaluation matrix was developed along with recommendations and a guide on ways to improve each Hydromet service.

A Regional Framework, broken down into 4 objectives and an 18-point Plan of Action for the modernization of Hydromet services, was also validated by the focal points of ECCAS Member States at a session held prior to the Forum.

The discussion panel that followed this presentation was composed of the relevant authorities of Member States, who provided reports on their respective services, as well as of WMO representatives, who shared information on advancements in early warning systems and observational networks. Initiatives to strengthen the capacity of ECCAS Member States were also mentioned, including the ClimSA project financed by the EU, the HYDROMET project<sup>2222s</sup> financed by the World Bank in the Democratic Republic of Congo, the projects under the CREWS (Climate Risks and Early Warning Systems) program, and the highway project in Rwanda. Four other initiatives are currently being developed: (i) The Systematic Observations Financing Facility (SOFF) with the Global Basic Observing Network (GBON); (ii) WMO HydroSOS and HydroHub; (iii) Upgrading the ClimDev Special Fund of the African Development Bank; and (iv) the Water and Climate Coalition.

The following recommendations were made at this session:

- (i) Considering the current increase in climate disasters, it is key for ECCAS Member States to strengthen national frameworks of their respective climate services;
- (ii) Considering that the lack of financing is, for most countries of the region, the main constraint to building strong national frameworks, it is recommended that ECCAS allocate budgetary resources to enable interested countries to finance this initiative, following the example of ECOWAS in this area;
- (iii) Recognizing the progress made in this area by AMCOMET, it is recommended that the Ministerial Conference step up its efforts to promote recognition by Heads of State of the overriding importance of national hydrometeorological services;
- (iv) Recognizing the importance of a regional approach to climate risk prevention, given the prevalence of shared water resources in the region, it is recommended that Member States adopt coordinated efforts to build the capacity of their national hydrometeorological services;
- (v) It is recommended that NMHSs take account of the entire value chain of climate services, refrain from focusing exclusively or predominantly on observational and data processing equipment, and assign due importance to relations with the end-users of data services;

(vi) In this regard, it is recommended that partnerships be established between NMHSs and third parties that use data.

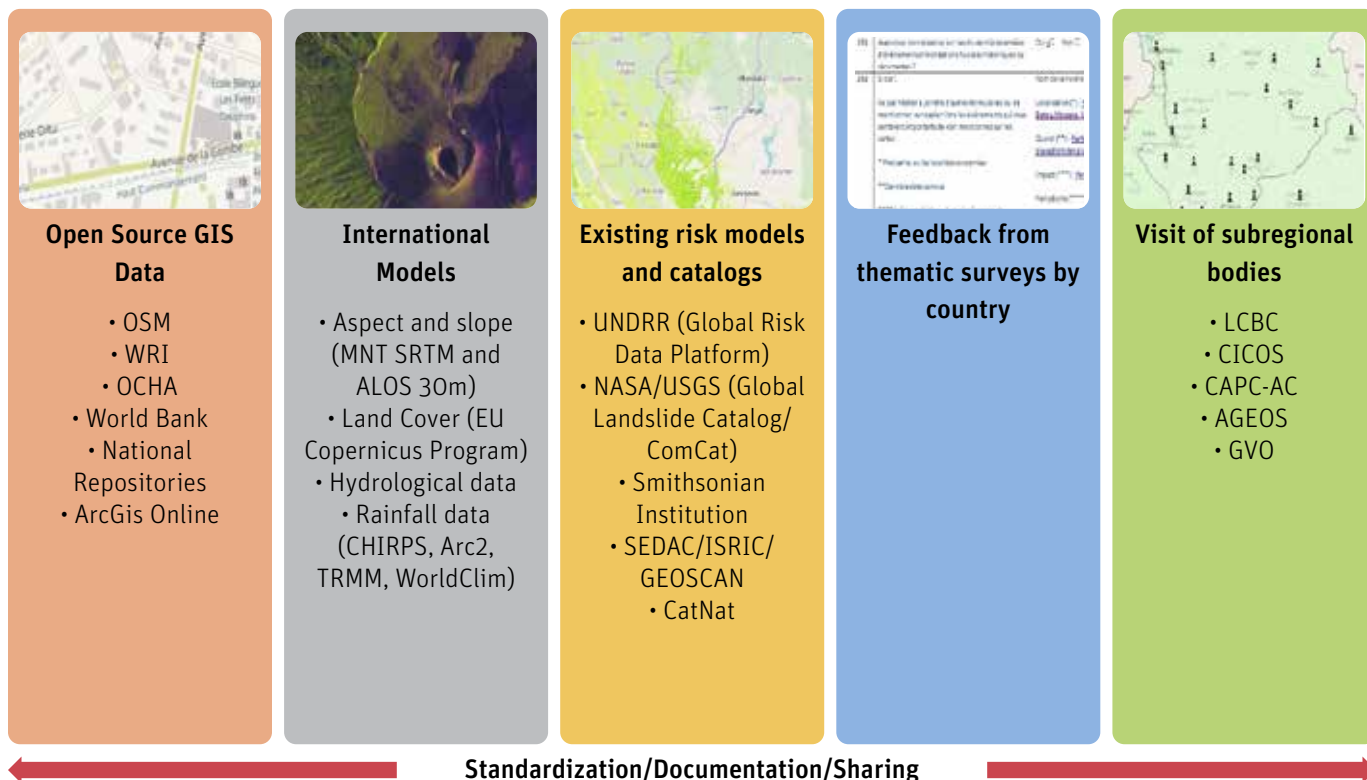
**Session 2**

**IMPLEMENTATION OF THE SENDAI FRAMEWORK IN ECCAS MEMBER STATES: Achievements since the First Forum**

The hazard, vulnerability, and risk assessment for Central Africa were presented at the second session, along with the risk atlas that was prepared from this analysis. This was followed by a presentation of the new national strategies for disaster risk prevention and the plans of action that had, in accordance with the four priorities of the Sendai Framework, been developed and/or updated, since the 2018 Forum, for Cameroon, Central African Republic, Chad, the Republic of Congo, and São Tomé and Príncipe.

The discussion panel provided an opportunity for the representatives of some Member States to outline the process used to develop their new disaster risk prevention strategies. The experts who had developed the GIS-DRM/ECCAS database and atlas were able to outline their applied methodologies and report on hydrological and hydraulic modeling for inland flood hazards in ECCAS Member States. The panel also provided an opportunity for the AUC representative to present a status report on the implementation of the Sendai Framework for Disaster Risk Reduction in Africa.

**Inventory of existing and accessible data**





The following are the conclusions of the analysis of the institutional capacity of ECCAS:

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. All States have, over the years, prepared different types of documents dealing with strategy and the fight against poverty</li> <li>2. The existence of laws, decrees, and orders that address different aspects of DRR</li> <li>3. The existence of a general policy on the environment and natural resource management that takes account of DRM issues</li> <li>4. The existence of a Strategy for Risk Prevention, Disaster Management, and Climate Change Adaptation (SPRGC) approved by decision-making bodies</li> <li>5. The existence of operational plans on emergency preparedness and response, as well as on risk prevention activities</li> <li>6. The existence of mechanisms for coordination and dialogue that have been established with the support of various partners, including: <ul style="list-style-type: none"> <li>• The regional platform for coordination, exchange and dialogue between all national and subregional stakeholders on DRR</li> <li>• The annual regional consultations on disaster preparedness and response</li> <li>• The annual subregional Forum on the application of climate predictions to DRR, established in partnership with the African Center of Meteorological Applications for Development (ACMAD), in the context of the Forum on Seasonal Climate Forecasts (PRESAC);</li> <li>• The Parliamentary Network for Disaster Resilience in Central Africa (REPARC);</li> <li>• The Ministerial Conferences.</li> </ul> </li> <li>7. The existence of an annual schedule of activities and financing plan for the sector that are based on the multiannual operational plans of action</li> <li>8. Adherence to the principles governing the project management cycle: Planning - Scheduling - Budgeting - Monitoring and Evaluation</li> </ol>	<p>In general, these weaknesses relate to the 9 points identified and validated at the meeting, held at Pointe Denis from March 29–31, 2016, to prepare the framework for Result Area 2 of the ACP-EU Program.</p> <ol style="list-style-type: none"> <li>1. Little knowledge of disaster risks</li> <li>2. Weak disaster prevention mechanisms</li> <li>3. Limited integration of DRR management across sectors</li> <li>4. Ineffective advocacy and lack of coordination</li> <li>5. Weak institutional and operational capacity</li> <li>6. Inadequate legal framework</li> <li>7. Weak political involvement in DRR</li> <li>8. Lack of adequate financial resources for DRR/CCA</li> <li>9. Lack of dissemination and communication of strategies, frameworks, and global and regional action programs</li> </ol>

Opportunities	Threats
<ol style="list-style-type: none"> <li>1. Major priority accorded by the international community to DRR, which helps drive awareness of the need to adapt regional and national action frameworks</li> <li>2. The establishment of international, continental, regional, and national networks that help galvanize support for even stronger DRR commitments by States</li> <li>3. The availability of a number of different sources of financing from bilateral and multilateral partners for the acquisition of equipment, the buildout of infrastructure, and the strengthening of DRM capacity</li> <li>4. Support and guidance from development and humanitarian partners, including the World Bank, UNDRR, UNOCHA, UNDP/BCPR, WMO, AUC, AfDB, OIF, etc.</li> <li>5. Public and media attention to a number of disasters affecting the region (Mpila explosion), Lake Nyos gas burst, floods in northern Cameroon, volcanic activity to the east of DRC, the impact of activities of groups such as LRA, Boko Haram, etc.</li> <li>6. Formalization of partnership agreements with <ul style="list-style-type: none"> <li>• UNDRR</li> <li>• The UNOCHA Regional Office; The adoption in 2015 of the Sendai Framework for Disaster Reduction 2015–2030</li> <li>• IFRC</li> </ul> </li> <li>7. The adoption of new instruments at the global level, including: <ul style="list-style-type: none"> <li>• The Sendai Framework for DRR 2015–2030;</li> <li>• The 2030 Agenda for Sustainable Development: Transforming our World</li> <li>• The Paris Accord</li> <li>• The resolutions of the First World Humanitarian Summit</li> </ul> </li> <li>8. The ACP-EU ClimSa Program</li> <li>9. The setting-up of the DRR/CCA service in the new ECCAS Commissio</li> </ol>	<ol style="list-style-type: none"> <li>1. Recurring natural disasters as well as other emergency situations in the region</li> <li>2. Sociopolitical instability in some States of the subregion;</li> <li>3. The non-applicability of CEMAC strategies on the ground (free movement of goods and people), which hampers rapid responses to emergencies in countries.</li> </ol>

**Session 3****REGIONAL HYDROMETEOROLOGICAL OPERATIONS AND SERVICES: regional climate centers, policy tools for subregional integration**

The objective of Session 3 was to introduce the new Africa Climate Prediction and Application Center (CAPC-AC) based in Douala and to outline the extent to which Regional Climate Centers (RCC) serve as effective policy tools for subregional integration, including through the role they play to integrate regional forecasts into national forecasts.

The CAPC-AC worked within the framework of the Satellite and Weather Information for Disaster Resilience in Africa (SAWIDRA-AC) project to prepare and disseminate 642 regional meteorological forecasts among the 11 ECCAS NMHSs, as well as 50 monthly climate monitoring bulletins highlighting the most important developments over the period. The CAPC-AC was also able to provide advice on ways to improve planning for various socioeconomic activities and support the revitalization/rehabilitation of seven NMHS/National Civil Protection Institutions/DRM exchange platforms in the 11 ECCAS Member States.

Thereafter, representatives of ACMAD and ICPAC participated in the panel discussion and outlined the full range of the services provided and the products developed by their institutions in different spheres of activity, including ACMAD's technical assistance to NMHSs and to the CAPC-AC, and ICPAC's efforts to add value to IGAD's overall economic development.

Lastly, the representatives of the Casablanca and Dakar regional centers made presentations on the WMO WIS (WMO Information System) and WIGOS (Integrated Global Observing System). They highlighted the role of the Casablanca center (Global Information System Centers (GISC)) as a regional platform for enhancing data exchanges and recovery, and the Dakar center as a Regional Specialized Meteorological Center (RSMC) with the capacity to predict extreme weather events.

The following recommendations emanated from Session 3:

- Strengthen interactions at the regional level (ACMAD, ICPAC, Maroc Météo, RSMC Dakar) to better anchor the CAPC in the organizational structure of ECCAS, given the former's role as a provider of services in areas managed by different ECCAS commissioners, including civil protection, humanitarian action, risk evaluations for peace and security, agriculture, regional economic development, resilient infrastructure for electricity, water and food security.
- Come to a common understanding of the need to examine the current makeup of the CAPC, with a view to restructuring the center along the lines of other operational institutions, with a governing board comprised of NMHS directors and with a managing director overseeing various departments/divisions and operational services.
- Support the partnership arrangements with Maroc Météo in the areas of data instrumentation, observation, and exchange, in order to promote the implementation of WIGOS (Integrated Global Observing System) and WIS (WMO Information System) in the ECCAS region.
- Reach a common understanding among all stakeholders on the optimal sustainable options for financing the operations of the center using country contributions and on the need for the CAPC-AC management team to step up efforts to mobilize cooperation funds for climate and development and to improve the management of these resources.
- Reach a common understanding on priority actions and the way forward, as well as on the technical assistance necessary to allow NMHSs to be better placed within the WMO framework and to bene-

fit from more effective coordination between WMO, ACMAD, the CAPC-AC and the NMHSs of ECCAS Member States.

- Strengthen collaboration with NMHSs on the identification of end-users/customers in Member States as well as on the preparation of a detailed list of user needs for the development of the appropriate services

#### Session 4

##### **RESEARCH AND DEVELOPMENT IN SUPPORT OF HYDROMETEOROLOGICAL SERVICES IN CENTRAL AFRICA: Using fundamental research results for the development of reliable hydrometeorological services in a context of climate variability**

The session on Research and Development in support of hydrometeorological services in Central Africa focused on reviewing the Meteorological and Climatological research results from the following Universities: Omar Bongo (Gabon), Yaoundé I (Cameroon), and Kinshasa (DRC). A researcher from the Federal University of Technology Akure (Nigeria) also intervened at the session. One presentation examined the linkages between meteorology, air pollution, and population health, and reported that more studies were needed on the linkages between meteorological variables and fine particulate matter concentrations.

The major constraints identified by speakers at this session included the lack of observation data or inaccessible data, the lack of financing, and the need for capacity building (funding for students). The following needs were identified at this session:

- Closer collaboration with operational services
- The establishment of mechanisms to implement research results
- The provision of research results to operational services.

#### Session 5

##### **THE ROLE OF METEOROLOGY IN THE DEVELOPMENT OF THE AGROSILVOPASTORAL AND FISHERIES SECTORS: Toward greater collaboration of actors for the benefit of producers and their organizations for more effective use of meteorological services and products**

This session opened with a presentation by an EUMETSAT representative on the importance of meteorology and the benefits of satellite data in the development of the agrosilvopastoral and fisheries sectors. The applications of meteorology at the national level were then addressed by the experts on the panel. Some of the advice given included the need for care in selecting the appropriate measures to preserve crops during extreme weather events, the provision of information on crop planning, the selection of varieties, the selection of seeds, proper harvesting at the most opportune time, the need for proper placement and special practices that are adapted to particular agroclimatic zones when cultivating certain varieties, and fire forecasts in areas prone to forest fires. Issues related to the monitoring of marine pollution and marine traffic were also addressed at the session.

This session noted the need to sensitize producers and their organizations as well as economic operators and heads of agricultural companies about the key role of meteorological services and products, and emphasized that this was particularly necessary in the agrosilvopastoral and fisheries sectors. The aim

is to enable stakeholders to carry out their activities, while reducing the long-term risks associated with climate variability that pose a major challenge to agriculture and food and nutrition security. Raising the awareness of stakeholders in this area will allow them to gain a better understanding of the importance of meteorology and will help ensure that meteorological services are extended to the strategic agrosilvopastoral and fisheries sectors, while promoting greater collaboration at the local, national and regional levels. The establishment of a platform to promote collaboration between stakeholders in the agrosilvopastoral and fisheries sector and the meteorological services in Central Africa should help strengthen these linkages at the local, national and regional levels.

### Session 6

#### **WATER RESOURCES MANAGEMENT, INLAND NAVIGATION AND HYDROELECTRICITY: Hydromet services and needs**

This session dealt with the challenges of sustainably managing water resources and hydroelectricity, with interventions from the representatives of ECCAS Member States. The panelists then made a presentation on the ECCAS Water Information System. They highlighted the importance of this tool for monitoring the evolution of the water needs of users as well as for managing extreme hydrological events, floods and droughts, in the context of climate change.

This session found that, in the context of climate change, water should no longer be considered an inexhaustible resource and that the significant volumes of water flowing through turbines to produce electricity at power plants should be subject to more rigorous hydrological monitoring. The negative impacts of climate change are a stark reminder of the challenges involved in sustainably managing this essential resource in the production of hydroelectricity.

### Session 7

#### **TRAINING AND CAPACITY-BUILDING PROGRAMS TO SUPPORT NATIONAL HYDROMET SERVICES**

The region's training priorities were updated following a presentation on training supply and needs in the area of hydrometeorology in Central Africa. This presentation was based on the status report of NMHSs conducted by ECCAS in 2020.

Two Member States (Cameroon and DRC) then took the floor to share their experiences with training plans for professions in the fields of meteorology and hydrology. The panel discussion then heard a presentation on opportunities for training provided by WMO and AGRHYMET. The objective of the WMO scholarship program is to support education and training for qualified candidates, especially those from least developed countries and small island developing states, in meteorology, climatology, hydrology, and environmental science. AGRHYMET provided information on its innovative Master's training programs (Food and Nutrition Security; Natural Resource Management/CC; Water Management and Control) that are now being offered by the institution in conjunction with its more traditional training courses for senior technicians and engineers.

Participants reiterated the extensive needs of the NMHSs of ECCAS Member States for degree courses, continuing education, and action learning, and pointed to the fact that the dearth of training plans is hampering their capacity to provide the services and products within their remit over the short, medium, and long terms.

### Session 8

#### **TRANSBOUNDARY BASIN ORGANIZATIONS: A major role in regional Hydromet monitoring and early warning systems**

Session 8 was devoted to an examination of the potential synergies between Transboundary Basin Organizations (TBO), given the role of National Meteorological and Hydrological Services to conduct hydromet monitoring and provide data, as well as to update their national networks. The representatives of four TBOs (Lake Chad Basin Commission, Lake Tanganyika Authority, Niger Basin Authority, International Commission of Congo-Oubangui-Sangha) also shared their experiences, with special emphasis on the contribution of space technology to the improvement of regional hydrometeorological monitoring and early warning systems. These technologies are instrumental in the development of new innovative products, such as the issue of warnings on water levels for navigation; the construction of rating curves; the calculation of the longitudinal profiles of waterways; the identification of stretches suitable for hydroelectricity; and the measurement of river discharge using satellite altimetry data.

The following are the main points that emanated from this session: (i) greater cooperation and pooling of efforts and resources should be encouraged; (ii) knowledge of water resources, integrating climate change considerations, should be deepened; (iii) constraints to data collection should be removed; (iv) the non-application of the Memorandum of Understanding on data exchanges between Member States is a major constraint; and (v) it is impossible to monitor parts of territories that have become inaccessible owing to conditions of insecurity.

### Session 9

#### **PUBLIC-PRIVATE PARTNERSHIPS, INNOVATION AND THE PRIVATE SECTOR: Challenges and opportunities**

The objective of this session was to identify development pathways for public-private partnerships (PPP) and innovative sources of financing. Following the presentation of the challenges and the processes to be put in place to form public-private partnerships in Central Africa, the panelists outlined their experiences in this area and cited examples of public-private partnerships in the port sector. They also made reference to public-private partnerships that had been implemented between meteorological services and operational sectors, such as agriculture. In this particular case, the aim is to provide weather-smart solutions to workers in the agricultural sector through the application of a profitable, effective, and sustainable business model and develop innovative solutions.

Participants in this session recognized the importance of meteorological services and the need for local weather information that is both accurate and timely, and accessible by end-users, especially in the agricultural, forestry, and port sectors in Central Africa. They also underscored the importance of building the capacity of meteorological personnel working at ports, particularly in relation to the processing and handling of marine weather forecasts through public-private partnerships. The need to establish a regional reference framework for PPPs in Central Africa was also strongly recommended.

### Session 10

#### RISK PREPAREDNESS AND EARLY WARNING SYSTEMS

This session opened with a presentation on the status of risk preparedness mechanisms and EWS in Central Africa and was based on an analysis conducted by ECCAS in 2020. It emerged that almost all ECCAS countries lack institutional bodies with the capacity to provide early warning services, with the exception of Rwanda and, to a lesser extent, Congo, which have functional early warning systems in place at present.

A number of speakers pointed to other experiences in this area, such as the work of the Red Cross and Red Crescent Movement, especially in Cameroon; UNDP in São Tomé and Príncipe in relation to flood warnings; and the Early Warning System (MARAC) established by ECCAS for the prevention of conflicts. The aim is to establish an effective people-centered early warning system that takes account of the multiple risks that can occur simultaneously or cascade over time.

### Session 11

#### COMMUNITIES, VULNERABLE GROUPS: Good practices and civil society needs in hydromet services

The session opened with a presentation of the ECCAS report on Mainstreaming Gender into the Plan of Action of the Regional Strategy for Risk Prevention, Disaster Management and Climate Change Adaptation. This report had been completed after the First Forum. Representatives of civil society and the President of REPARC (Parliamentarians Network for DRM in Central Africa) then outlined their experiences and needs in relation to Hydromet services.

This session found that communities, especially youth and women, are key stakeholders to be taken into account and to be sensitized and trained in innovative techniques. In this regard, communities should be involved in data collection, whenever necessary. Furthermore, rural women must have access to technical information, as this is a key factor in building their agricultural productive capacity. It is also essential that they become users of meteorological services. The provision of training and the adoption of a participatory approach to the collection and systematization of information that involves communities and women, in particular, should be strengthened.

### Session 12

#### FINANCING METEOROLOGICAL, CLIMATE, WATER AND EARLY WARNING SERVICES IN CENTRAL AFRICA

The final session focused on existing financing mechanisms, including those that could be mobilized at the international level, as well as on cooperation programs already under way.

The objectives of the ClimSA (Climate Services and Related Applications) project, implemented by the AUC and financed by the 11th European Development Fund, are to enhance the capacity of CAPC-AC and NMHSs to produce, supply, and improve climate services, by 2025, and to establish information systems on climate services and climate data management. Representatives of the Green Climate Fund, CREWS, the World Bank, the African Development Bank, WMO, and ARC then outlined their respective

mechanisms for the promotion of NMHS modernization, their projects under way in the region, and opportunities for future collaboration.

This session found that development partners, including the World Bank, WMO, European Union, African Development Bank and others, can help national governments and regional organizations boost their support for the modernization of hydroelectric systems, by focusing on their needs and priorities for capacity building, technology upgrades, and the provision of hydrometeorological services. They should also facilitate efforts to promote the exchange of information and develop south-south and north-south capacity, including voluntary twinning arrangements between national and regional hydrometeorological services.



**A**lthough this second Forum was conducted in virtual format, its success is indicative of the great importance of Hydromet services for climate change adaptation and disaster risk prevention in Central Africa. Over the three days of the Forum, participants pointed to the region's vulnerability in all of the critical sectors for economic development.

Since the first Forum held in 2018, significant progress has been made in terms of the understanding of disaster hazards and risks, as well as in relation to the status of the NMHSs of Member States and their training needs. A regional framework for the modernization of NMHSs and an action plan were prepared and validated by Member States, etc.

This second Forum has helped strengthen the “Hydromet” community, unveil new tools and mechanisms, and also create new opportunities for future collaboration and exchange, both within ECCAS and with the international community.

In this regard, the Commission of the Economic Community of Central African States (ECCAS) has a major role to play, as part of its regional integration mission, to monitor the implementation of the regional framework and plan of action for NMHS modernization and to support national institutions.

### COMMUNIQUÉ

#### ***Adoption of the Final Communiqué of the ECCAS Hydromet Forum and Closing Ceremony***

Following the reading and adoption of the Final Communiqué, there were closing remarks by the World Bank, the European Union Delegation in Gabon, and the WMO Regional Representative for West and Central Africa. H.E Dr. Honoré TABUNA, ECCAS Commissioner for the Environment, Natural Resources, Agriculture and Sustainable Development, then gave the closing address.

The members of the panel agreed that despite the unusual format of the conference, held virtually because of the COVID-19 pandemic, the second Forum was a resounding success, both in terms of the number of participants and the outstanding quality of the presentations.

## Final communiqué

The Second Hydrometeorological Forum of Central African States (ECCAS Hydromet) was held virtually from May 4–6, 2021, with remarks at the opening ceremony from the following three representatives: World Bank Regional Director; the Ambassador and Head of Mission of the European Delegation; and the Director of the Africa Office of the World Meteorological Organization (WMO). The ECCAS Commissioner for the Environment, Natural Resources, Agriculture and Rural Development (CENRARD) delivered the opening address on behalf of the President of the ECCAS Commission.

The main theme of the Hydromet Forum was ***Consolidating regional gains and leveraging these achievements to modernize hydrometeorological services in ECCAS Member States***. It was organized jointly by ECCAS, the World Bank (WB) in partnership with the European Union (EU), the Global Facility for Disaster Prevention and Recovery (GFDRR), the World Meteorological Organization (WMO), and other development partners, including the African Development Bank (AfDB).

Participants included representatives from the institutions of ECCAS Member States, national experts in charge of meteorological and hydrological services, Focal Points from the Comprehensive Africa Agricultural Development Program (CAADP), members of the Network of Parliamentarians for the Promotion of Disaster Resilience and Climate Change Adaptation (REPARC), as well as the following national, regional, continental, and international meteorological and hydrological bodies: National Meteorological and Hydrological Services (NMHS), Action against Hunger (AAH), the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), the Central Africa Forest Observatory (OFAC), the Gabonese Agency for Space Studies and Observation (AGEOS), the African Center of Meteorological Applications for Development (ACMAD), the Central Africa Climate Application and Forecasting Center (CAPC-AC), and other stakeholders involved in building resilience to disasters and climate change, representing practitioners in the meteorological and hydrological sectors, as well as in risk and disaster management in Central Africa.

In the course of three (3) days of discussions, 12 main thematic areas were explored, namely:

- Status of Hydromet services in ECCAS member states: *achievements since the First Forum*;
- Implementation of the Sendai Framework in ECCAS Member States: *achievements since the First Forum*;
- Regional hydrometeorological operations and services: *Regional Climate Centers, institutions that provide technical and scientific assistance to support policy decisions on climate for sustainable development in Central Africa*;
- Research and Development in support of hydrometeorological services in Central Africa: *using fundamental research results for the development of reliable hydrometeorological services in a context of climate variability*;
- The role of meteorology in the development of the agrosilvopastoral and fisheries sectors: *Toward greater collaboration of actors for the benefit of producers and their organizations for more effective use of meteorological services and products*;
- Water resources management, inland navigation and hydroelectricity: *Hydromet service delivery and needs*;
- Training and capacity-building programs to support national Hydromet services;

- Transboundary basin organizations: *a major role in regional hydrometeorological monitoring and early warning systems;*
- Public-private partnerships (PPP), innovation and the private sector: *challenges and opportunities;*
- Risk preparedness and early warning systems;
- Communities, vulnerable groups: *good practices and civil society needs for Hydromet services;*
- Financing meteorological, climate, water and early warning services in Central Africa.

Following fruitful discussions around the main themes of the Forum, We, the Participants at the Second ECCAS Hydromet Forum, hereby submit the following recommendations:

**Considering** that there are institutions in Central Africa with the capacity to process, analyze, and produce meteorological and satellite data at the regional level, namely the CAPC-AC, AGEOS, and OFAC; and that there exist, at the national level, a number of Universities and Research Centers specializing in Atmospheric Physics, Climate Science and Remote Sensing, as well as National Meteorological and Hydrological Services in ECCAS Member States;

**Considering** that women are stakeholders and active users of hydrometeorological services, and are directly or indirectly involved in the agrosilvopastoral and fisheries sectors that are themselves subject to high-impact meteorological events;

Clearly **recognizing** that the (abovementioned) sectors are subject to meteorological and climatic conditions that impact harvests and production, as well as food and nutritional security, thus having a direct impact on vulnerable populations;

**Acknowledging** the importance of meteorological, climate, and hydrological services, the availability of meteorological data and their access to users, especially stakeholders in the hydroelectricity, inland navigation, water resources management, health, forestry and the agrosilvopastoral sectors in Central Africa;

**Recognizing** the great need within ECCAS Member States for basic and continuing training in national hydrometeorological services;

**Considering** the major role and added value of closer collaboration among the other Regional Climate Centers in African, Caribbean, and Pacific countries, as well as among Central African Universities and Operations Centers (CAPC-AC, AGEOS, OFAC, etc.);

**Noting** the recommendations emanating from the first Hydromet Forum held in November 2018 in Libreville, Gabon, as well as from the Integrated African Strategy on Meteorology, updated in 2021 at the African Ministerial Conference on Meteorology (AMCOMET), as well as global and regional initiatives, such as the Global Framework for Climate Services (GFCS), the Systematic Observations Financing Facility (SOFF), the Global Multi-Hazard Alert System (GMAS) of the WMO, and the Alliance for Hydromet Development;

**Considering** that financing the modernization of hydrometeorological and early warning services to promote sustainable development, growth, and job creation essentially constitutes basic infrastructure investment that will help improve the performance of multiple and disparate socioeconomic sectors, ranging from health to hydroelectricity, and including civil aviation, inland navigation and agriculture, water resources management, and tourism;

**Considering** the requirements of the private sector in terms of training and reliable meteorological data for more efficient planning of their activities;

**Considering** that the majority of NMHSs lack the capacity to respond adequately to the needs of the general public or private sector companies for access to detailed and accurate forecasts on meteorological conditions;

**Recognizing** the importance of meteorological services and the availability of accurate and timely information on local weather and possible impacts and of making such information and services available to end-users, especially in the agricultural, forestry, and port sectors in Central Africa.

**Considering** the capacity of private sector providers of meteorological services to develop innovative and improved products;

**Considering** the current upsurge in weather-related disasters;

**Considering** that, for most countries within the region, the lack of financing has so far been the main obstacle hampering the development and strengthening of national frameworks for climate services;

**Acknowledging** the advances already made in the context of AMCOMET;

**Recognizing**, in view of the fact that water resources are predominantly shared among the countries of the region, the importance of adopting a regional approach in the prevention of climate-related risks;

**Considering** that NMHSs should be the primary providers of the data needed by Transboundary Basin Organizations (TBOs) to monitor and manage transboundary water resources;

**Considering** the existing interdependence among various TBOs, some of which are closely interlinked (for example: Lake Tanganyika and CICOS);

**Recognizing** the importance of TBOs receiving near real-time quality forecasts of extreme weather events;

#### **We urge NMHSs to:**

- Develop strategic plans in line with the Integrated African Strategy on Meteorology that will enable them to strengthen and modernize their services and fulfill their mandate
- Focus in particular on the generation and exchange of observation data, the primary raw material for high-quality products in the value chain of operational meteorology and hydrology;
- Prepare training plans that will help develop capacity to provide the services and products within their remit in the short, medium, and long terms, and avail themselves of the existing training opportunities at the regional centers (e.g., AGRHYMET, or the centers in Nigeria and Angola) or within the countries of the region (e.g., in Cameroon), as well as of available scholarships (e.g., from WMO);
- Draw on the experience of other institutions, such as ASECNA, and projects like SAWIDRA, the CAPC-AC, which have highly qualified experts for providing on-the-job training for their officers, and encourage the development of distance training in training centers;
- Provide improved access to technical information on Hydromet services, as this is indispensable for building the productive capacity of women and vulnerable individuals in various sectors, and for enabling them to become the main users of meteorological services;

- Collaborate with civil society platforms that work to protect vulnerable persons and develop collaborative frameworks between Meteorological Services and platforms in various sectors;
- Establish partnerships among NMHSs and with transboundary basin organizations, as well as with regional and international bodies, for the purpose of sharing hydrological and meteorological information;
- Take into consideration the entire climate service value chain, refraining from focusing exclusively or primarily on observational or data processing equipment, but rather according due importance to developing links with the users of data;
- Establish partnerships between NMHSs and third-party users of data services;
- Develop disaster response measures, including action plans;
- Organize awareness-raising and public education campaigns on climate risks, as well as on methods of prevention and recovery;
- Evaluate, test, and assess awareness-raising and disaster response measures.

**We urge Member States to:**

- Help NMHS providers transform into semi-autonomous agencies, by implementing a certification procedure for the provision of established services;
- Include training courses that pertain more specifically to hydrology and meteorology in university curricula and raise the level of technical training institutions to conform to international standards;
- Encourage public-private partnerships in order to create holistic value and “win-win” solutions, and ensure the long-term sustainability of hydrometeorological networks and services through cost and revenue-sharing arrangements implemented over time;
- Develop national and local early warning systems, first and foremost in the most risk-prone areas;
- Identify and train end-users, especially company focal points, in the use of meteorological products;
- With the help of the services of the CAPC-AC, provide companies with the reliable meteorological data they need to plan their operations;
- Enter into public-private partnership arrangements to fill some of the gaps in the areas of new technologies, the development of decision-making tools, and marketing, in order to respond to the needs of end-users with minimal use of public funds;
- Conclude direct agreements with private sector meteorological service providers in order to jointly expand the business market.

**We urge ECCAS to:**

- Establish a regional platform for collaboration among stakeholders from the agrosilvopastoral, fisheries, and hydrological (TBOs) sectors, as well as among various institutions and meteorological and satellite services, including the CAPC-AC. This platform could take the form of a multisectoral and multiparty working group, comprising institutional, technical, and operational organizations in order to receive reliable data in real time;

- Facilitate the link between the regional platform and the corresponding national multisectoral bodies (Multidisciplinary Working Group);
- Ensure a smooth transition toward the new generations of meteorological satellites (Third Generation Meteosat, Second Generation Polar System from EUMETSAT), and build the capacity of NMHSs and the CAPC-AC in order to secure access to satellite data and products and ensure their effective use. This is consistent with the Abidjan Declaration of September 2018 on the new generations of meteorological satellites, signed by ECCAS, as well as with the Integrated African Strategy on Meteorology (as revised in 2021);
- Identify, in partnership with the meteorological and satellite organizations and services in Central Africa, including regional structures such as the CAPC-AC, AGEOS, OFAC and TBOs, as well as with Universities and NMHSs in Member States, ACMAD, the Specialized Regional Meteorological Center in Dakar, and other Regional Climate Centers in Africa, the appropriate tools for sharing and disseminating continental, regional, national, and local data. These tools should be easy for policy makers, producers, and producer organizations to use and interpret in order to ensure more informed decision-making that will help prevent and reduce direct and indirect impacts on agrosilvopastoral and fisheries production, as well as on livelihoods, pasture reserves, water security, land use and vegetation, marketing and storage systems, among others;
- Develop a harmonized strategy for the provision of meteorological, hydrological, and climate-related services;
- Operationalize the CAPC-AC Regional Climatology Center as a matter of urgency, through a common commitment to examine its current constitution, with a view to restructuring the center along the lines of other operational institutions, with a governing body comprised of the NMHSs, and with a managing director overseeing various departments/divisions and operational services, in accordance with the provisions of the ECCAS Revised Treaty;
- Establish subregional cooperation, especially for forecasting extreme weather events (SWFP- Severe Weather Forecasting Program), calibrating observation instruments (RIC- Regional Instrument Centers), and predicting floods;
- Make efforts to generate and exchange data with the rest of the world;
- Take steps to implement the Severe Weather Forecasting Demonstration Project (SWFP);
- Prepare for the launch of the WMO Global Multihazard Alert system (GMAS);
- Allocate budgetary resources to allow those member states that wish to do so to finance this undertaking, as has been done in ECOWAS;
- Provide support to member states for the modernization of their NMHSs, and help them diversify the products they provide;
- Foster collaboration between the CAPC-AC, the NMHSs, and private sector companies with the capacity to develop the decision-making tools necessary for the public and private sectors, and to take decisions on new concepts. NMHSs would gradually become more autonomous and better able to respond in a reliable and coherent manner to users' needs (the general public and the private sector) with reliable, timely, and coherent information; this initiative could be undertaken in collaboration with the COSPARIN (Spatial Contribution to Flood Risk Analysis) project, or the Weather Force start-up, which has already worked with the meteorological services in Côte d'Ivoire to develop innovative products;

- Sensitize member states to the need to include the business and marketing dimensions in order to optimize communication with end-users, especially through digital solutions;
- Create a regional reference framework for PPPs in Central Africa;
- Extend CAPC-AC services to TBOs, and develop close ties of cooperation between the CAPC-AC and TBOs;
- Step up efforts to encourage Heads of State to recognize the vital importance of national hydrometeorological services.

**We call on** Technical and Financial Partners to:

- Mobilize the necessary resources to provide the equipment needed by the meteorological and satellite services in Central Africa, especially the CAPC-AC, AGEOS, and OFAC at the regional level, and the NMHSs of Member States.
- Strengthen the institutional, organizational, and training capacity of meteorological and satellite bodies and services in Central Africa, particularly the CAPC-AC, AGEOS, and OFAC at the regional level, and the NMHSs in Member States.
- Request policy makers to encourage countries to put in place sustainable financing arrangements for training and for building the capacity of their senior technical personnel;
- Assist national governments and regional organizations to step up their support for the modernization of hydrometeorological systems and to facilitate the promotion of information exchanges and south-south and north-south capacity building, including the conclusion of voluntary twinning arrangements between national and regional hydrometeorological services;
- Mobilize resources for the early establishment of the Systematic Observations Financing Facility (SOFF) at the COP26 Conference of the United Nations Framework Convention on Climate Change (UNFCCC). SOFF will play a key role as a financing mechanism for the implementation of the Global Basic Observing Network (GBON), within the framework of the ECCAS Hydromet initiative;
- Develop policies to promote the engagement of private partners capable of adding significant value;
- Establish an appropriate institutional, legal, and regulatory framework for the creation and implementation of PPPs;
- Play a more consistent and systematic role in improving the services provided by the NMHSs of Member States (by, for example, assisting with practical training of staff, maintenance of observation and/or data processing equipment, joint procurement of peripheral equipment, etc.);
- Strengthen or even institutionalize coordination and cooperation between TBOs, with a view to streamlining their activities and actions.

**We Reaffirm** our commitment to ensuring that the modernization of hydrometeorological services is treated as a development priority at the national and regional levels and that the necessary resources are provided;

**We Request** that the ECCAS Commission submit this Communiqué to the Council of Ministers and bring it to the attention of the ECCAS Heads of State and Government for action;

**We Request** that the Commission of the African Union bring this Communiqué to the attention of the decision-making bodies of the African Union for endorsement and action;

We unanimously **adopt** this Communiqué to show our strong collective commitment to the development of sustainable meteorology, hydrology, and climate services, and to strengthen these services in their mission to serve all users, protect the population of the region, and support the economic sectors of Central Africa.

**May 6, 2021**



