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SEWA INFORMATION SESSION

NOVEMBER 05, 2025

Prepared by the ACMAD Team
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OUTLINE



- 1. Vision, Mission, Mandate
- 2. Institutional setup
- 3. Products and Services
- 4. Capacity Building
- **5. Succes Stories**
- 5. Lessons Learned & Way Foreward





VISION & MISSION

The African Centre of Meteorological Applications Application for Development (ACMAD)

Vision

To be a world-class continental operational Centre of excellence contributing to a prosperous Africa with well-resilient population to extreme events and empowered to reduce weather and climate related hazards

Mission

To act as an African weather and climate watch centre and a centre of excellence for the Applications of meteorology for sustainable development



ACMAD CORES MISSIONS

- Created trough resolution 540 of the UNECA Conference of Ministers in April 1985 following the droughts of the 70s and 80s, ACMAD is established in Niamey-Niger since October 1992
- Continental <u>Weather and Climate Watch Centre</u> for Africa with Monitoring, *forecasting* and *early* warning for droughts, floods, tropical cyclones and other extreme events as functions
 - ✓ The Continental Climate Watch Centre was achieved with ACMAD designated by the WMO
 Congress after a successful demonstration phase as a Regional Climate Centre for Africa in May
 2015;
 - ✓ The Continental Weather Watch Centre was achieved with the Continental Multi-Hazards Advisory Centre inaugurated in November 2022, at ACMAD providing contributions to continental watches and disaster situation reports to the situation room operations at the African Union Commission Headquarter in Addis Ababa
- ➤ <u>Institution of excellence for the Applications</u> of meteorology for sustainable development with capacity building, methods, tools and products development, contribution to global weather and climate programs, database, research and innovation as functions

Since July 2024 ACMAD is a member of the NoE (Africa Network of Excellence for DRR)



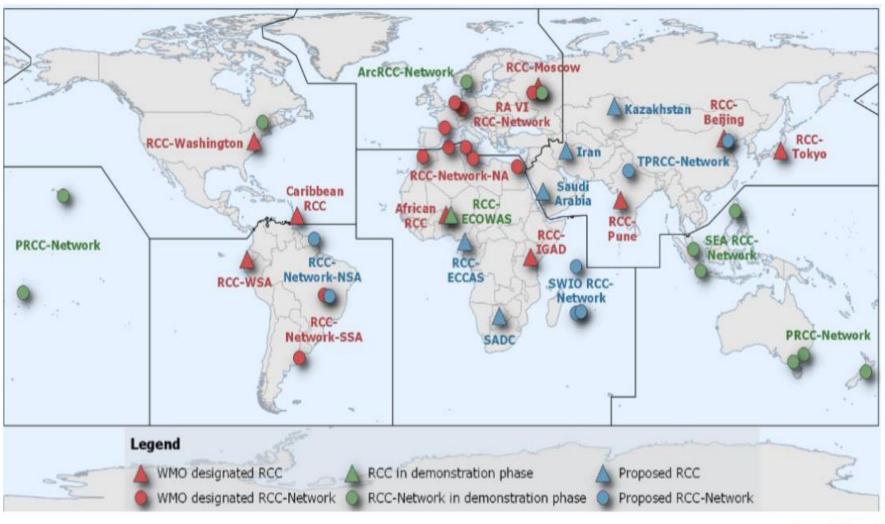
ACMAD'S PRESENTATION

- Enhance African countries / SNMHscapability to understand, anticipate and manage the impacts of weather and climate fluctuations to support the achievement of sustainable development and poverty reduction (provide user oriented information & products);
- Consolidate weather / climate monitoring efforts in Africa, better understand the African weather systems (monsoon) systems and Improve forecasts;
- Facilitate exchange of information, experience and expertise; and strength sustainable institutional mechanisms;
- ➤ Provide advanced notice on potential weather and climate related hazards and information for the implementation of policies for vulnerability reduction and adaptation to climate variability and change





INSTITUTIONAL SETUP



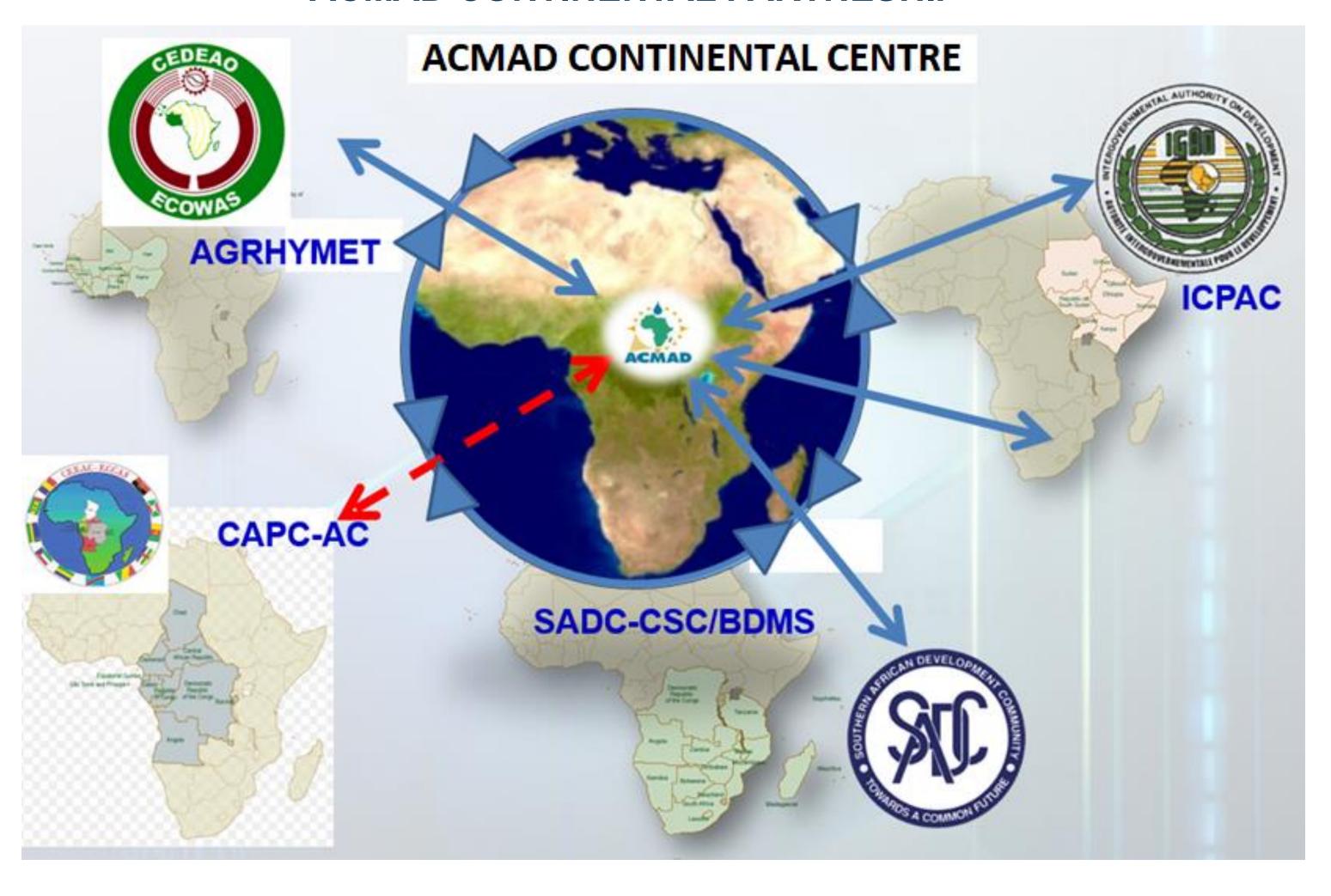
WMO Designated Regional Climate Centre for Africa since May 2015. ACMAD coordinate the 6 African Regional Climate Centres

Continental Multi Hazards Advisory Centre for Africa inaugurated in October 2022 as part of the Institutional Infrastructure of the African Union Multihazards Early Warning and Early Action System (AMHEWAS)





ACMAD CONTINENTAL PARTNESHIP





STRATEGIC PLAN

ACMAD strategic Goals for the next 3 years



Goal 1: Reduce Capacity
Gap in Meteorology
and its Application in
Africa

Goal 2: Provide quality services at regional and national level for EWS, climate change adaptation and sustainable development

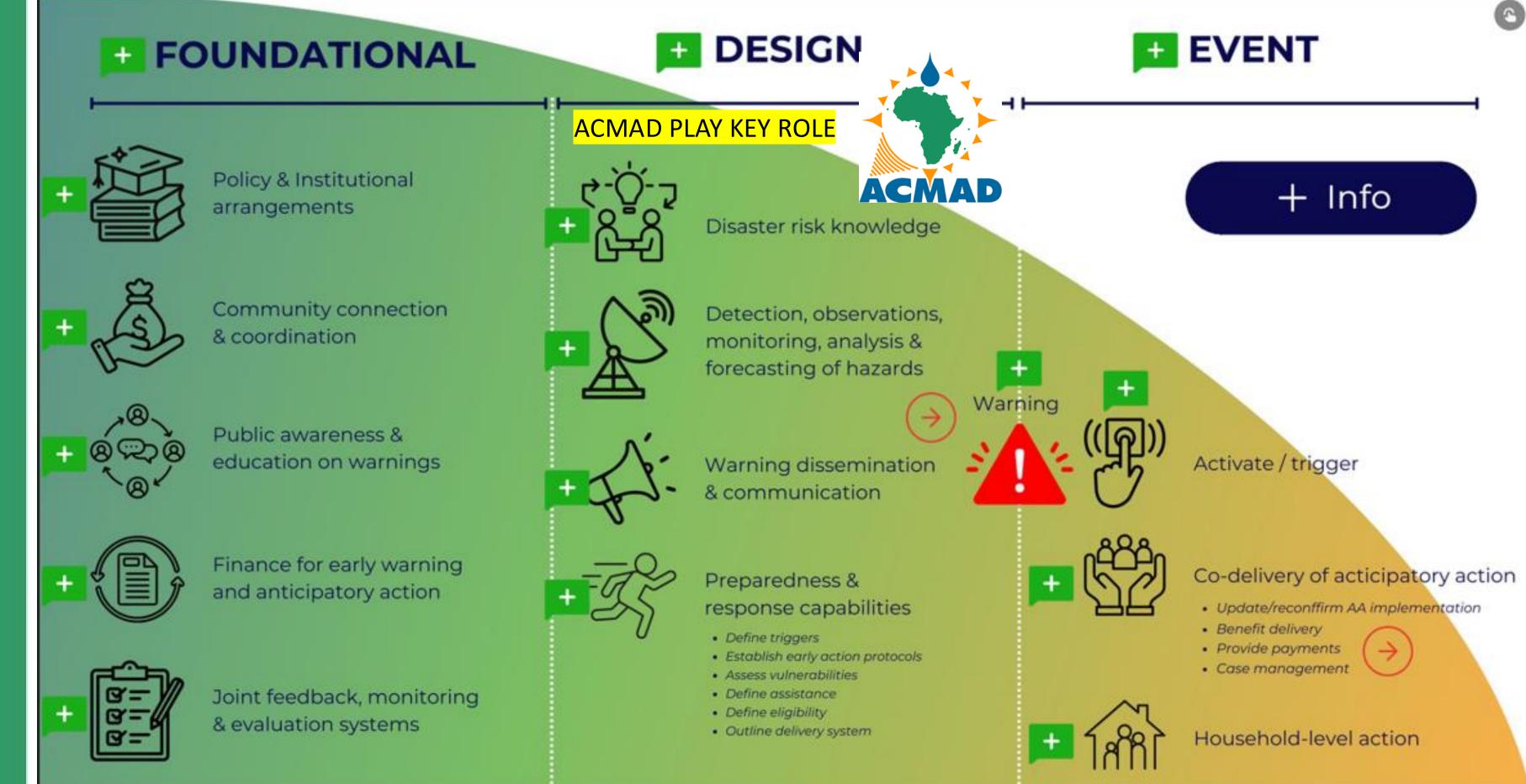
Goal 3: Facilitate better access to data, research and innovation on African weather and climate

Goal 4: Organize governance and Management

ad.org/wp-content/uploads/2019/03/StrategicPlan2025-2027.pdf



Early Warning System & Early Action Scheme

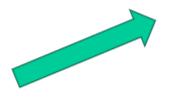




ACMAD'S ROLE in AMHEWAS

AMHEWAS Disaster Situation Room Addis Ababa









ACMAD generates regular continental nazard and disaster situation reports, continental climate trends, and impact-based advisories.

AUC trains Member States and issues advisories through twice weekly "Continental Watch" bulletins and monthly disaster outlooks. Subregional situation rooms feed data to the continental level.

Disaster Operation Centre



Disaster Situation Room Douala



Humanitarian and Emergency Disaster Operations Centre **Operations Centre**





National situation rooms issue national early warnings, coordinate early and anticipatory actions, and feed data to the continental system through the subregional situation rooms



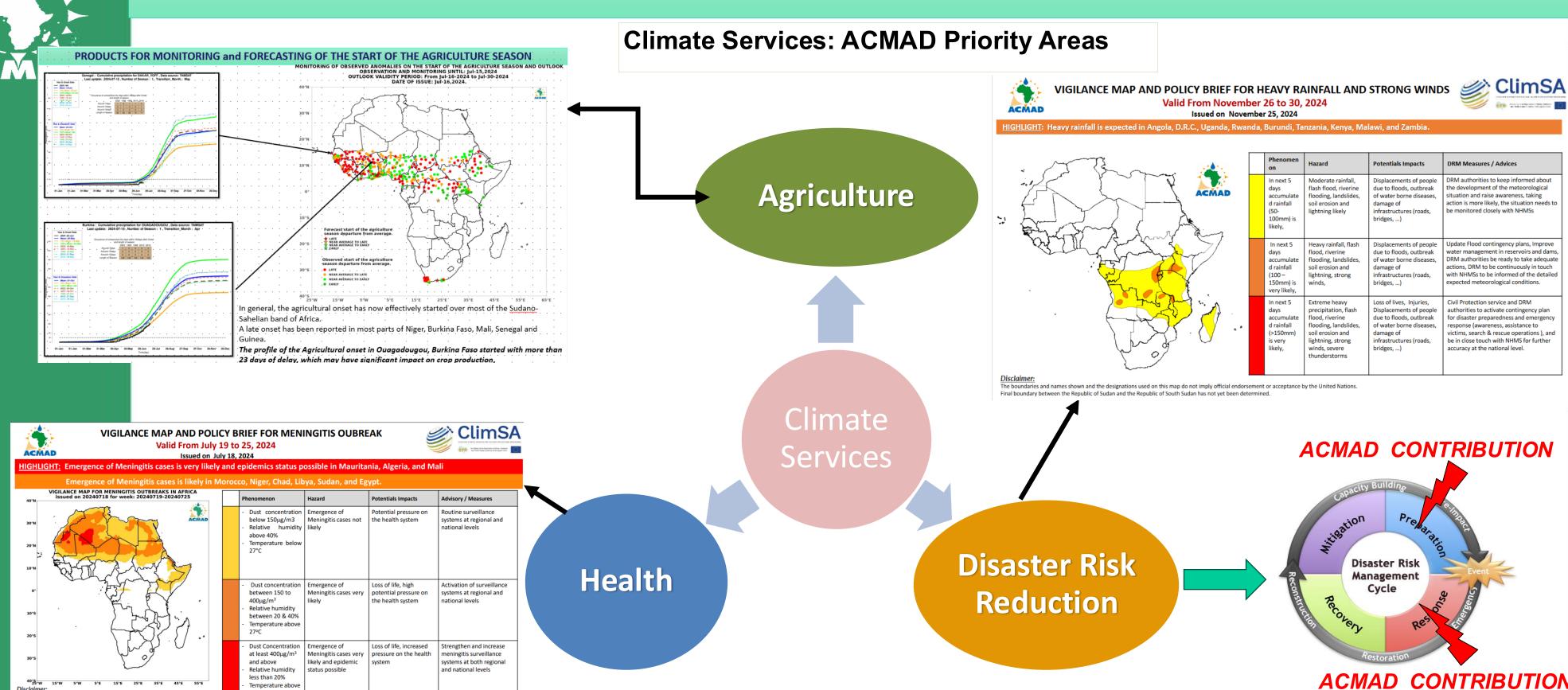
Subregional situation rooms provide hazard information and bulletins as well as capacity support for early warning and anticipatory action to the national situation rooms

ACMAD Support the AMHEWAS program. The ACMAD Sit Room is now operational as part of the African multi-hazard early warning system for rapid action by :

- ✓ Providing information on extreme rainfall, high winds and cyclone tracks (using multi-model approach)twice-weekly (Tuesday and Friday) in Continental Watch;
- ✓ Collaborating with the AUC SitRoom and ICPAC Sit Room in the production of Situation Reports;
- ✓ Contributing in the organisation of ad-hoc briefings for anticipatory action.

Tropical cyclone track forecasts from: 03-February-2025, 00UTC to 08-February-2025, 00UTC Models: ARPEGE, CMC, ECMWF, ICON, GFS and UKMO

Products & services

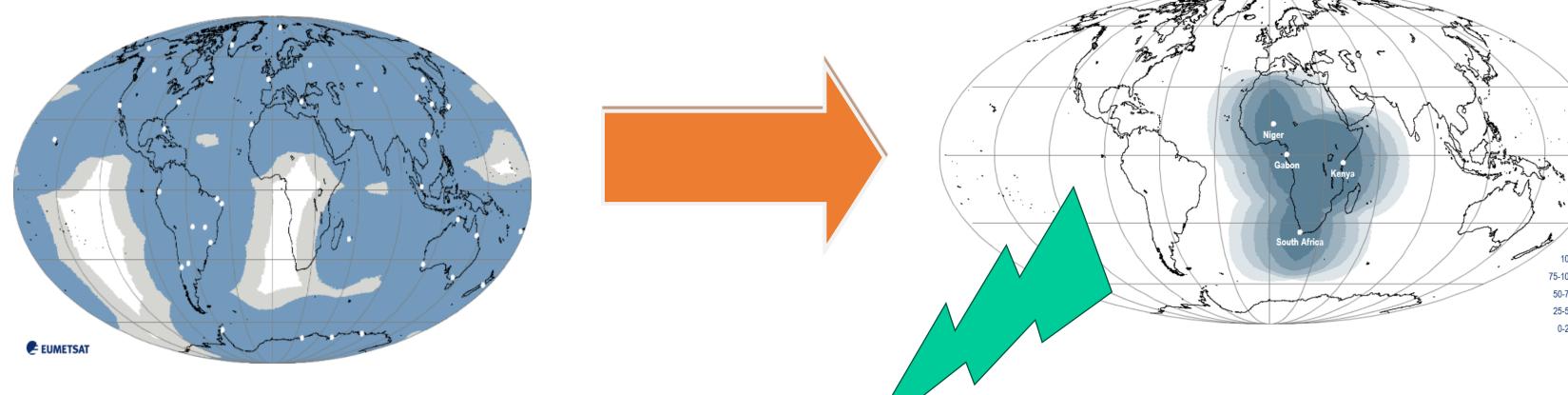


ver on the part of ACMAD concerning the legal status of an

ACMAD provide Climate services tailored with significant weather and climate phenomena, related hazards, potentials impacts, responses measures



ACMAD PRODUCTION PROCESS



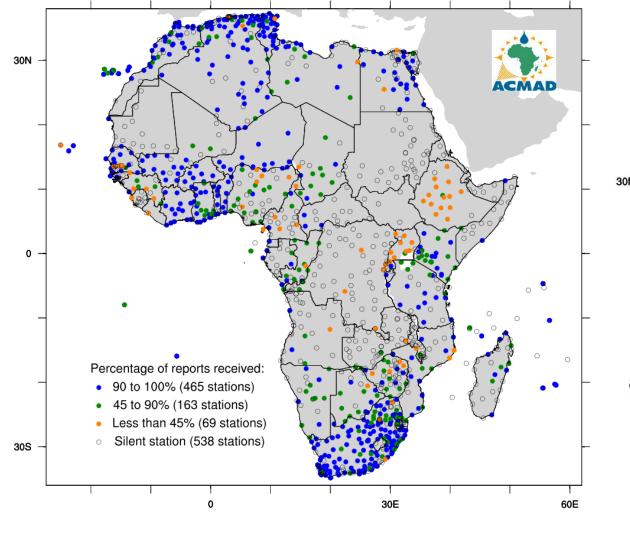
ACMAD coordinates 4 Regional Advanced Retransmission System for low earth orbiting satellite data contributing to implementation of WMO and Africa space strategies and programmes. RARS data may unlock source of predictability in global and limited area models



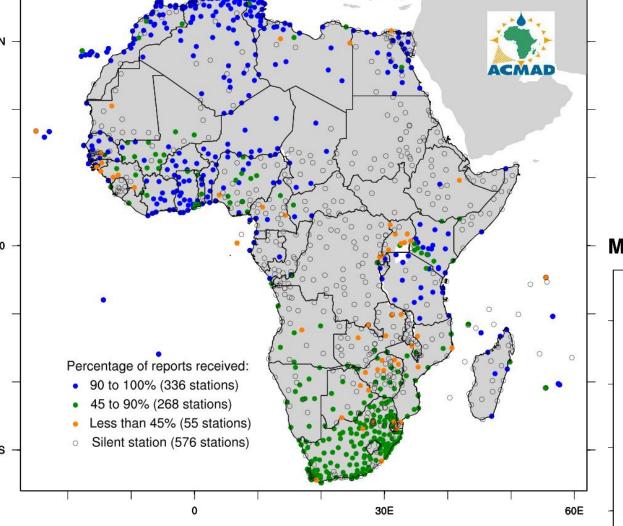


African Synoptic and Climate Stations Monitoring Statistic

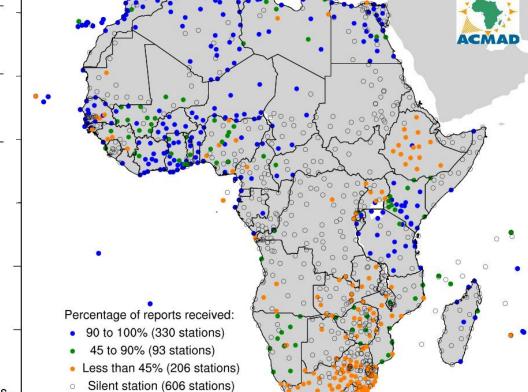
Monthly monitoring of SYNOP reports for September-2024











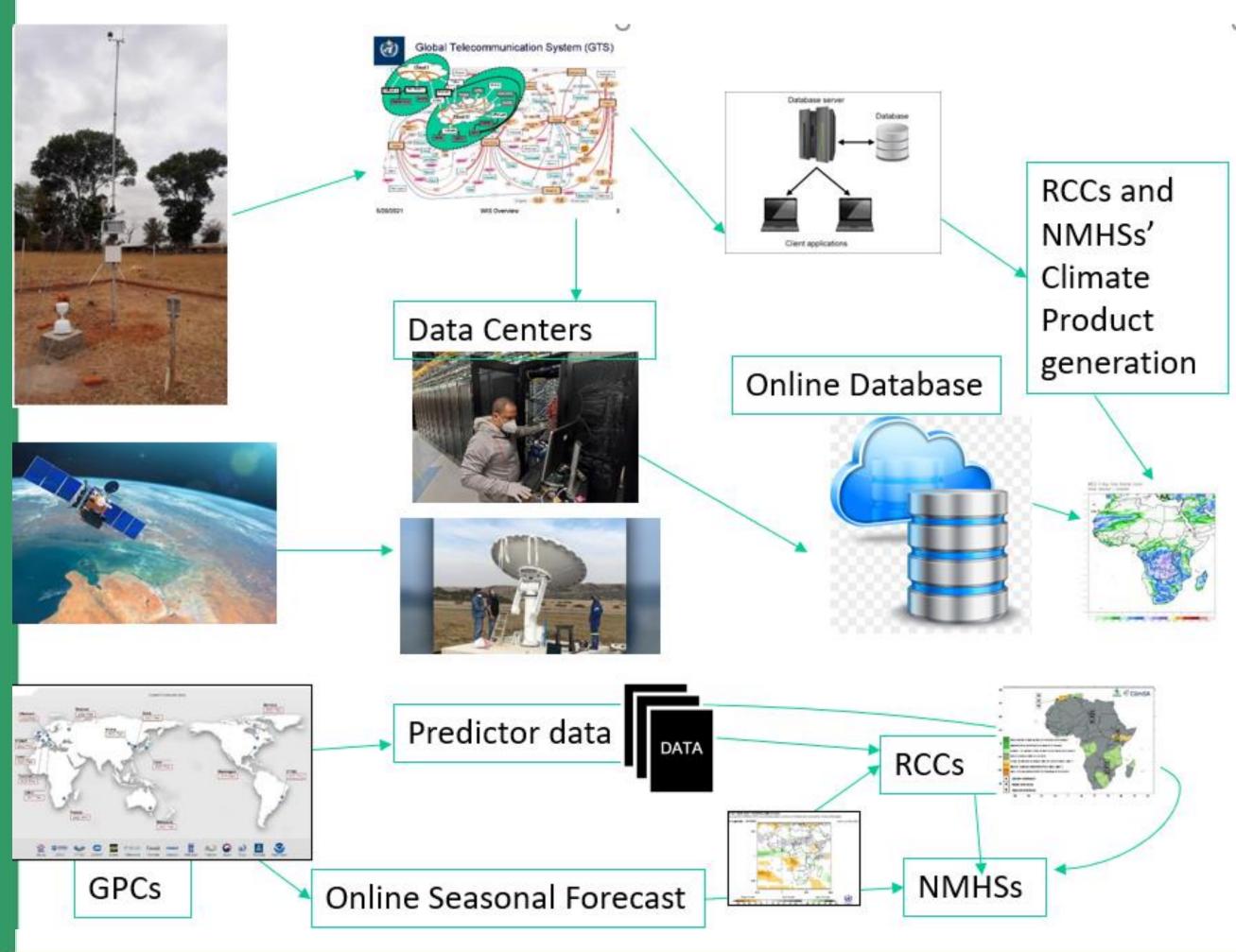
- Monthly monitoring service of the regularity of synoptic observation stations in Africa;
- Evidence for advocacy and resource mobilisation to improve the network.



- ACMAD adopted a cascading communication chain to facilitate the movement of information from its source to the final users;
- Information moves from the global forecast centres on the international scale and national meteorological services on the country scale to regional organisations such as IFRC, OCHA, national civil protection agencies, DRM, UNHCR, WHO as well as other Humanitarian and NGOs; the information finally reaches other national and community level stakeholders;
- > Since it's creation, ACMAD has provided weather watch, prediction, and climate information at different time scales to support humanitarian action and decision-making throughout Africa,
- > All of this climate information is formatted in an accessible way to make it easily understood by users;
- > Different products and services allows humanitarian organisations and civil protection authorities to identify community at risk and to put a community-based joint decision making in place for, operational readiness, community sensitization, and warning,
- ➤ The established the Continental Multi-Hazard Advisory Center operational since October 2022 contribute also to AMHEWS by providing weather and Climate forecast (twice a week) for Anticipatory Actions.



ACMAD PRODUCTION PROCESS



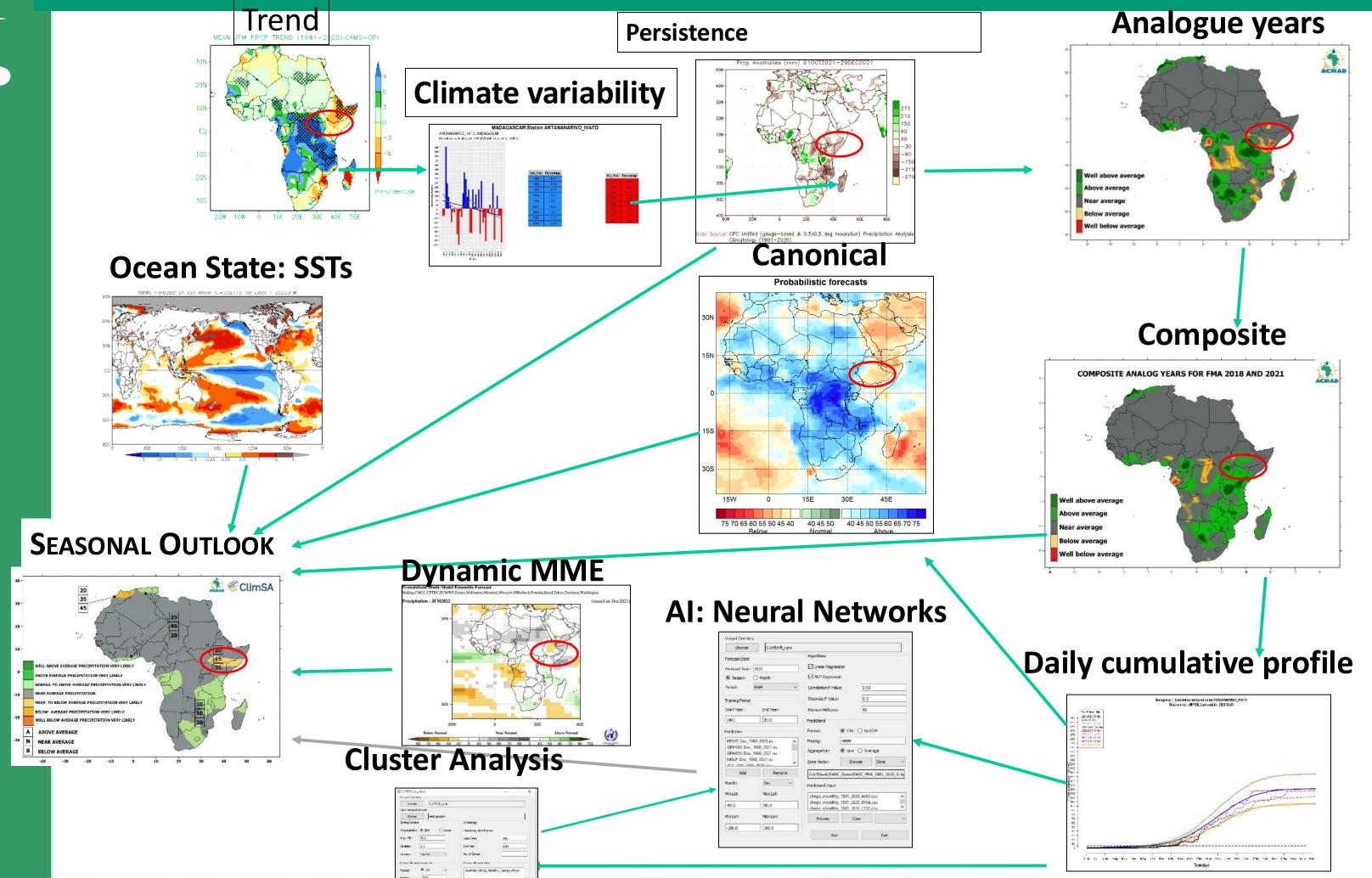
ACMAD adopted a cascading communication chain to facilitate the movement of information from its source to the final users.

Information moves from the global forecast centres on the international scale to national meteorological services.

Information finally reaches other national and community level stakeholders

ACMAD

METHODOLOGICAL APPROACHES FOR SEASONAL FORECAST

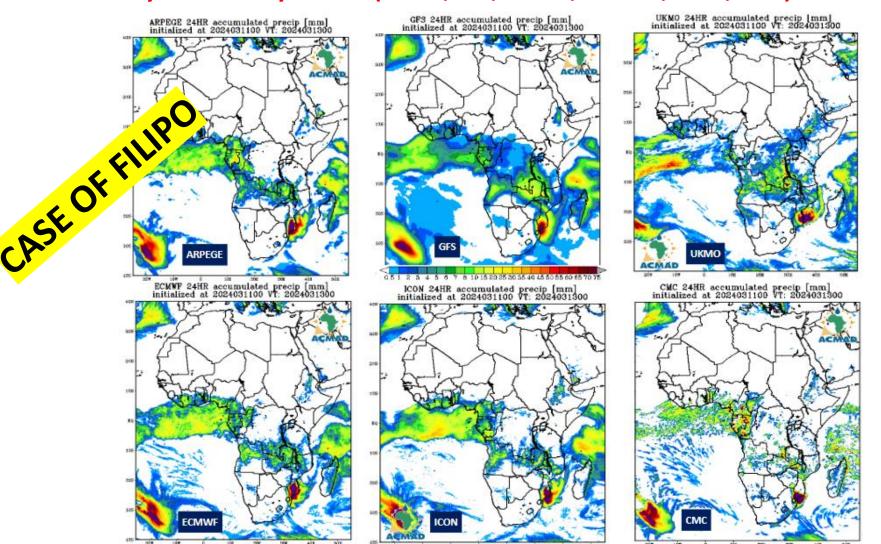




ACMAD PRODUCTION PROCESS

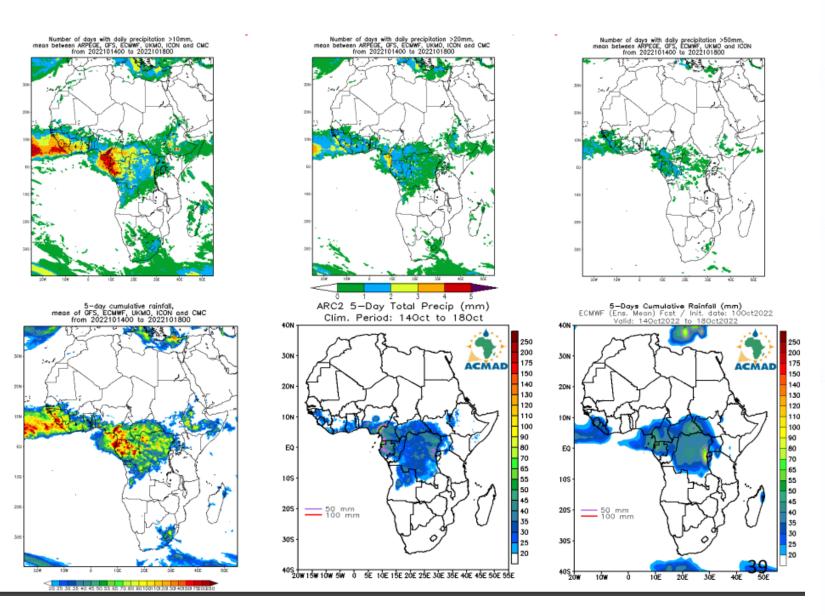
APPROACH

Daily Forecast by Model (ARPG,GFS,UKMO,ECMWF,ICON,CMC)



http://sgbd.acmad.org:8080/thredds/fileServer/FIT/BRIEFING/technote.pdf

Nbre Of Days Computed with Operational Model Ensemble



Poor's Man Ensemble" approach:

A poor man's ensemble is a set of independent numerichttp://sgbd.acmad.org:8080/thredds/fileServer/FIT/BRIEFING/technote.pdfal weather prediction (NWP) model forecasts from multiple operational centers.

A poor man's ensemble is a set of independent

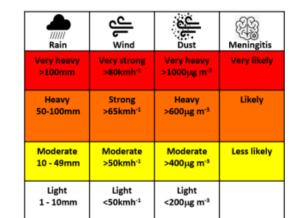
Because it samples uncertainties in both the initial conditions and the model formulation through variation in the input data, analysis, and forecasting methodologies of its component members, it is less prone to the systematic biases and errors that cause under-dispersive behavior in single-model ensemble prediction systems (PSEs).

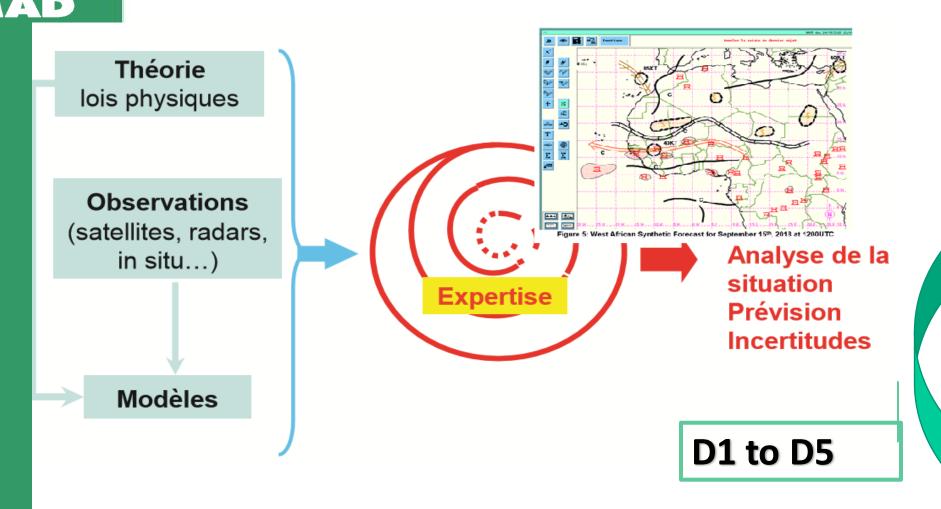
ACMAD PRODUCTION PROCESS

METHODOLOGY

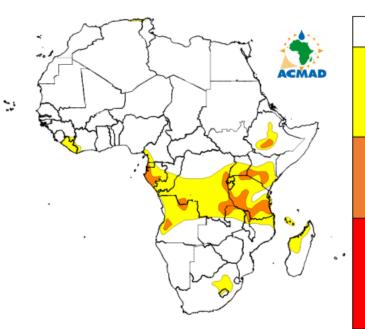
MULTI-HAZARD OUTLOOK

Validity: 2025-03-25





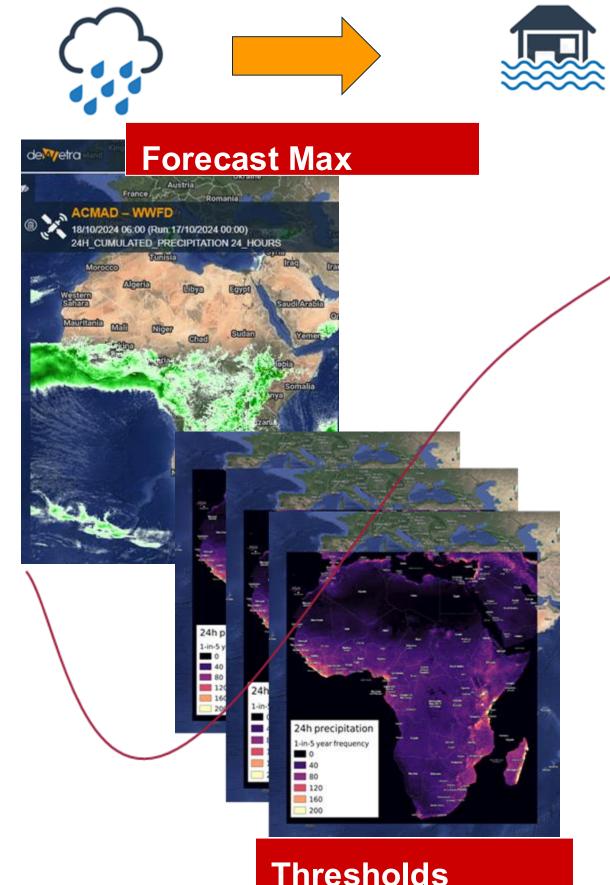
VIGILANCE MAP AND POLICY BRIEF FOR HEAVY RAINFALL AND STRONG WINDS



	Phenomen on	Hazard	Potentials Impacts	DRM Measures / Advices
	In next 5 days accumulate d rainfall (50- 100mm) is likely,	Moderate rainfall, flash flood, riverine flooding, landslides, soil erosion and lightning likely	Displacements of people due to floods, outbreak of water borne diseases, damage of infrastructures (roads, bridges,)	DRM authorities to keep informed abou the development of the meteorological situation and raise awareness, taking action is more likely, the situation needs be monitored closely with NHMSs
	In next 5 days accumulate d rainfall (100 – 150mm) is very likely,	Heavy rainfall, flash flood, riverine flooding, landslides, soil erosion and lightning, strong winds,	Displacements of people due to floods, outbreak of water borne diseases, damage of infrastructures (roads, bridges,)	Update Flood contingency plans, Improv water management in reservoirs and da DRM authorities be ready to take adequ actions, DRM to be continuously in touch with NHMSs to be informed of the detail expected meteorological conditions.
•	In next 5 days accumulate d rainfall (>150mm) is very likely,	Extreme heavy precipitation, flash flood, riverine flooding, landslides, soil erosion and lightning, strong winds, severe thunderstorms	Loss of lives, Injuries, Displacements of people due to floods, outbreak of water borne diseases, damage of infrastructures (roads, bridges,)	Civil Protection service and DRM authorities to activate contingency plan for disaster preparedness and emergen response (awareness, assistance to victims, search & rescue operations), at be in close touch with NHMS for further accuracy at the national level.

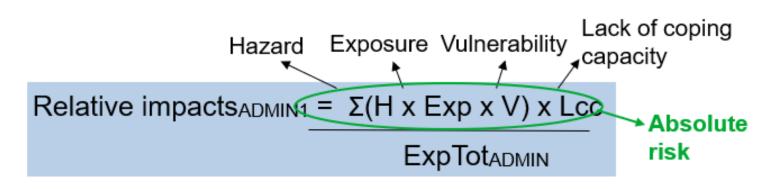
@ACMAD Weather forecasting is developed in three basic steps: Observation, Simulation of the evolution of the atmosphere using numerical models and Analysis of the results by forecasters

From the Forecast to Impact-Based warning level classification









Thresholds Population Affected (PA)	Warning level	Severity
PA<10 people	0	No event
10 < PA < 500	1	Low
500 < PA < 10,000 and PA < 0.5%	2	Medium
10,000 < PA < 50,000 and 0.5% < PA <5%	3	High
PA > 50,000 and PA > 5%	4	Extreme

- * Identification of the thresholds
- Hazard classification
- * Exposure and vulnerability
- * Risk level classification

Warning levels used in Continental Watch





Begin monitoring mid-range and short-range forecasts

Update contingency plans

Train volunteers

Sensitize community

Enable early-warning system

Continue monitoring shorter-time-scale forecasts

Mobilize assessment team

Alert volunteers

Warn community

Local preparation activities

Deploy assessment team

Activate volunteers

Distribute instructions to community, evacuate if needed

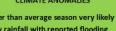
- Seasonal forecasts is used by Humanitarian organisations to advocate for preparedness, manage stocks (supplying and prepositioning), review contingency plans, train personnel, analyse historical data, and take related action using a no regrets approach;
- ➤ Mid-Rage Forecasts is used by Humanitarian to proactively establish strategic, climate-smart planning and organize operational intervention in the face of impending disaster;
- > Short-Range Forecasts is used by Humanitarian or other stakeholders for Anticipatory Actions

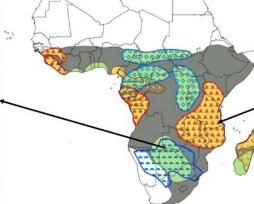


Ready Seasonal **Forecast**

CONTINENTAL CLIMATE OUTLOOK BRIEF FOR POLICY AND DECISION MAKERS BASED ON IGNIFICANT WEATHER AND CLIMATE EVENTS UPDATE. **VALID FOR: MARCH TO JUNE 2025** CMAD

ClimSA





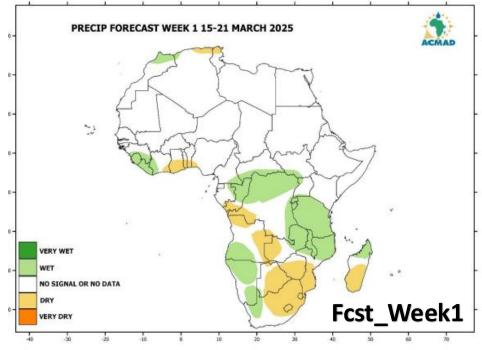
Flooding Hazard Outlook

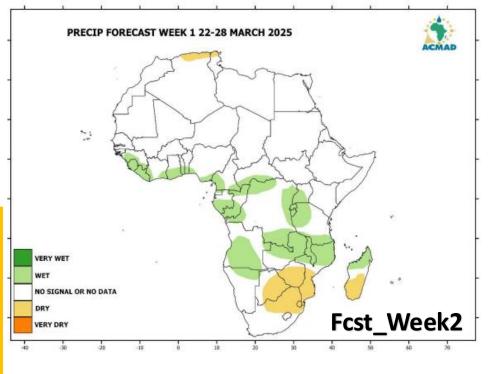
Observed Drought Hazard Observed Flooding Hazard Persistent Drought Hazard



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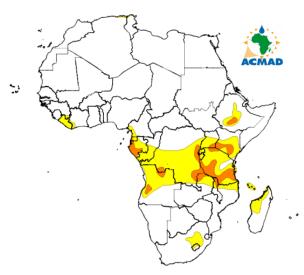






Go! **Short-Range Forecast**





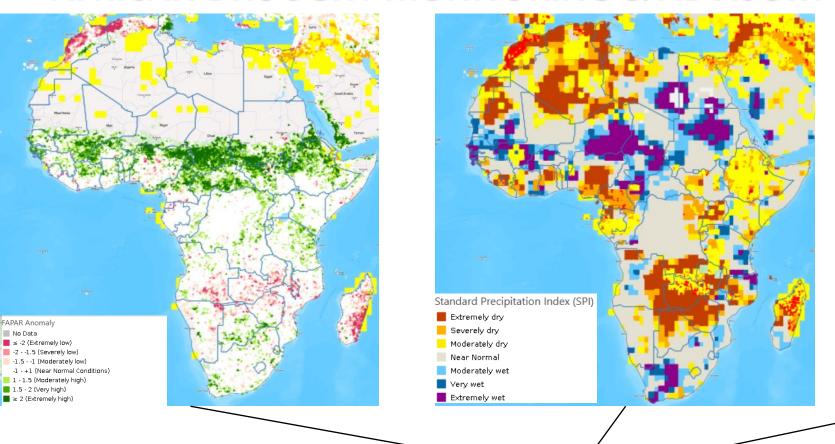
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In next 5 days accumulate d rainfall (100 – 150mm) is very likely,	Heavy rainfall, flash flood, riverine flooding, landslides, soil erosion and lightning, strong winds,	Displacements of people due to floods, outbreak of water borne diseases, damage of infrastructures (roads, bridges,)	Update Flood contingency plans, Improve water management in reservoirs and dam DRM authorities be ready to take adequat actions, DRM to be continuously in touch with NHMSs to be informed of the detailed expected meteorological conditions.
In next 5 days accumulate d rainfall (>150mm) is very likely,	Extreme heavy precipitation, flash flood, riverine flooding, landslides, soil erosion and lightning, strong winds, severe	Loss of lives, Injuries, Displacements of people due to floods, outbreak of water borne diseases, damage of infrastructures (roads, bridges,)	Civil Protection service and DRM authorities to activate contingency plan for disaster preparedness and emergency response (awareness, assistance to victims, search & rescue operations), and be in close touch with NHMS for further accuracy at the national level.

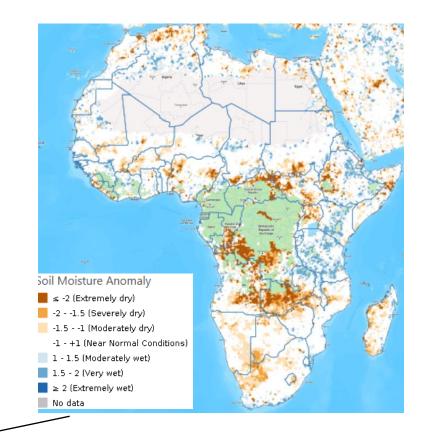
ACMAD adopted **Approach**

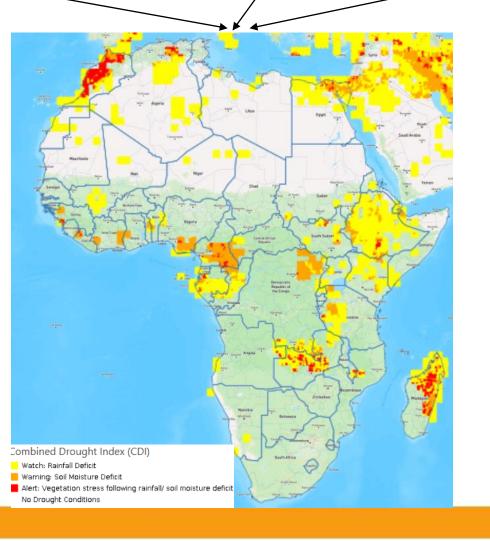
Seamless Forecasting



AFRICAN DROUGHT MONITORING & ADVISORY







Drought Indicator (CDI) is derived from the combination of SPI, SMA and fAPAR, to identify areas with the potential to suffer agricultural drought, areas where the vegetation is already affected by drought conditions, and areas in the recovery process to normal conditions after a drought episode.

Combined Drought Index (CDI)

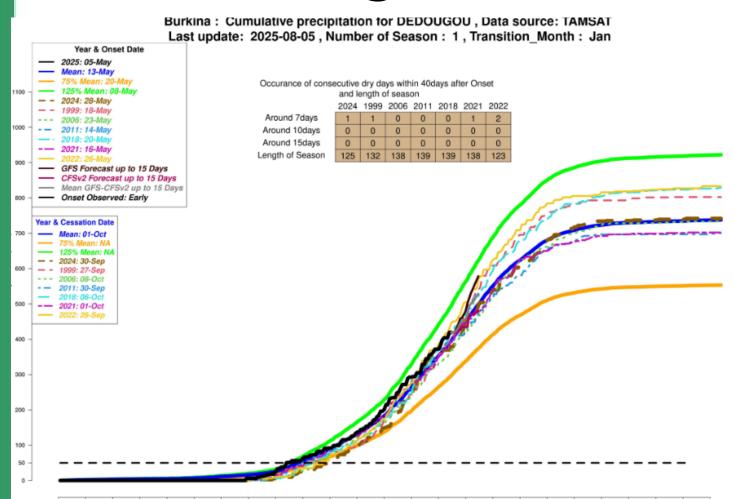
- Watch: Rainfall Deficit
- Warning: Soil Moisture Deficit
- Alert: Vegetation stress following rainfall/ soil moisture deficit No Drought Conditions

https://ada.acmad.org/

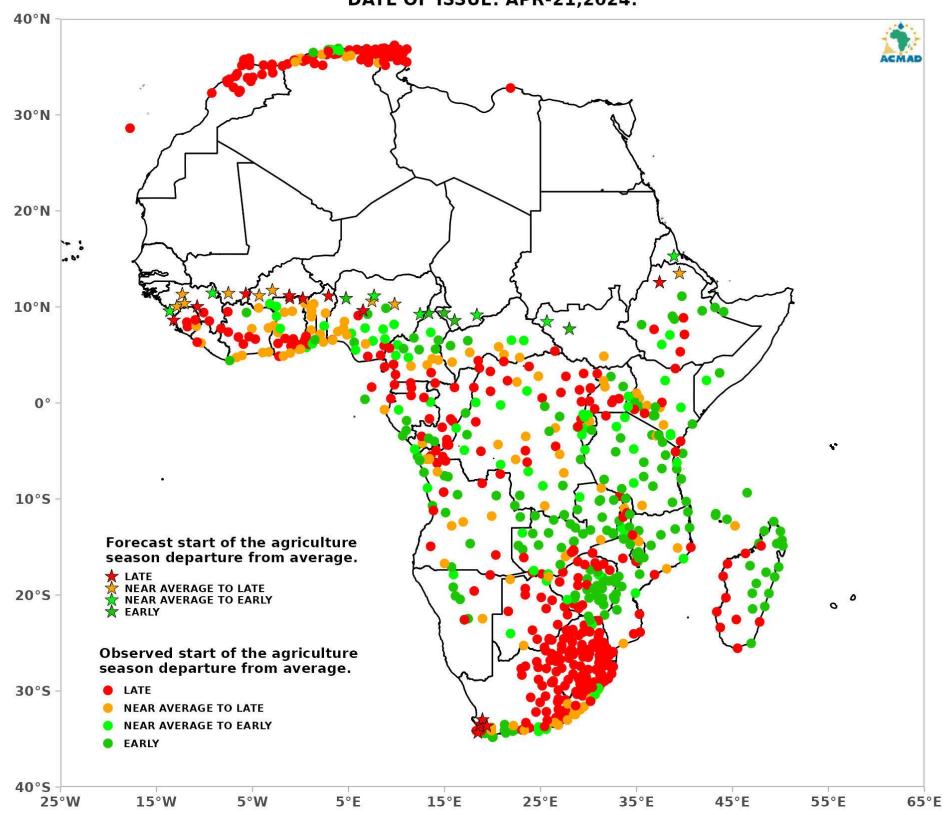


Access to data, products, tools and CIS

- ✓ Onset Monitoring
- ✓ Onset Forecasting
- ✓ Dry / Wet Spells Monitoring & Forecasting









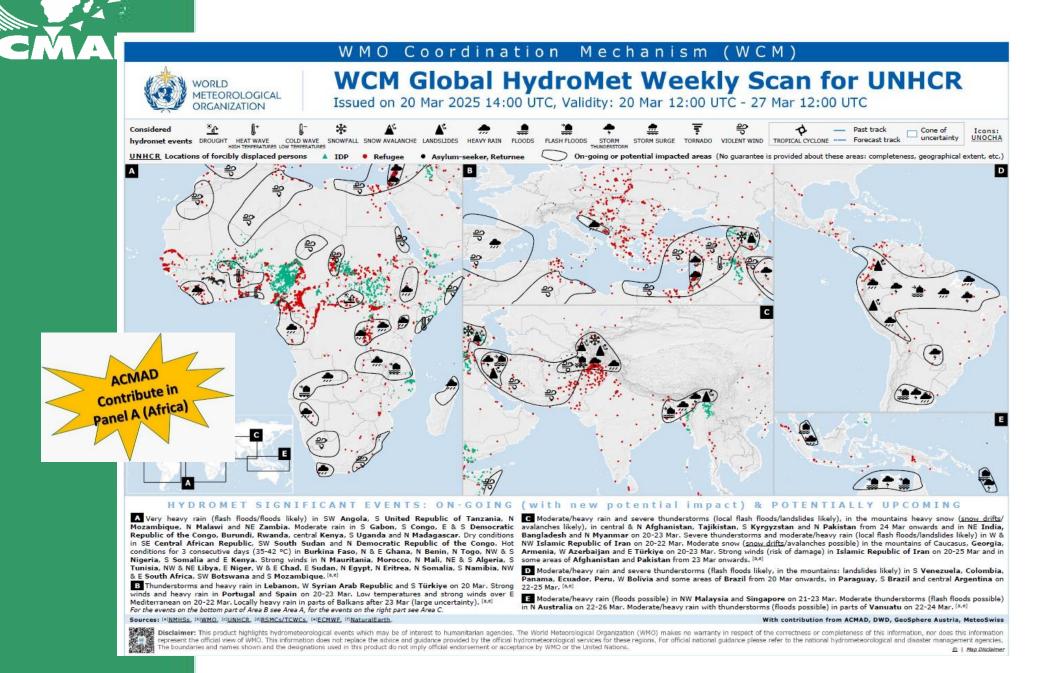
ACMAD INTERACTION WITH WHO on Meningitis Outbreak Outlook/Advisory for WHO-AFRO/Meningitis Surveillance And Control Programme

Climate Service for Health/Meningitis - Verification Meningitis Outbreaks Outlook/Advisory for 02-08 Apr 2024 As reported by WHO/AFRO, on week 14 of 2024 (ie 01st-07th Apr): One district (1) crossed the epidemic threshold in Niger and nine (9) districts crossed the alert threshold in six (6) countries: Benin (2), Central African Republic (1), Chad (1), Mali (2), Niger (2) and Meningitis case distribution by country for 1st - 07th April 2024 (source: WHO AFRO Meningitis Surveillance And Control Programme) between 150 to 400µg/m3 eningitis cases ACMAD vigilance maps of the period from 02nd to 08th April 2024, call for possible meningitis epidemics status over Mali, Niger, Nigeria, and Chad. Potential cases were expected in Senegal, Mauritania, Guinea, Ghana, Benin, Togo Burkina Faso, Mali, Libya, Nigeria, Cameroon, Algeria, and Sudan.

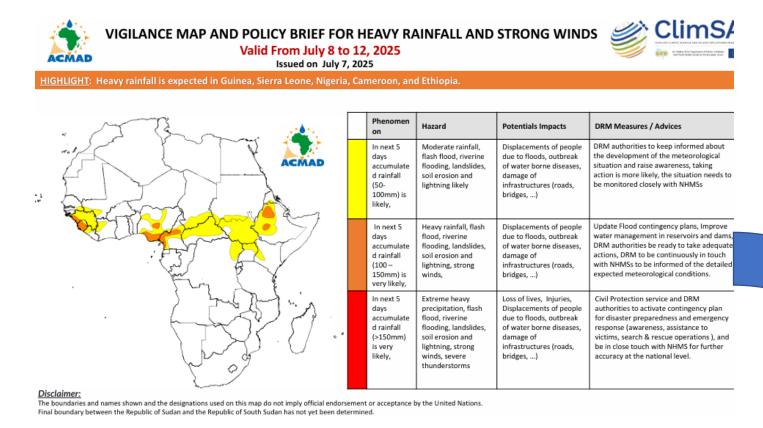
- Proactive collaboration with WHO/AFRO and ClimHealth Network has proven very useful in the uptake of climate information for public health preparedness
- Regular feedback of information help improve the quality of Climate Service
- Increase need for projections and historical analyses of the relationship between climate and health.

Generated with Medium Range Deterministic and S2S data from WMO Global Centres Identification of upcoming favorable climate/weather conditions for emergence of meningitis cases

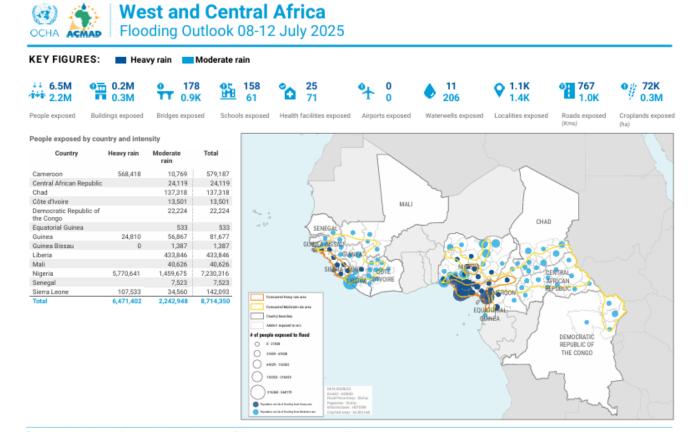
CLIMATE SERVICES FOR HUMANITARIAN ACTION



IMPACT BASED FORECAST provided through WMO Coordination mechanism: Provision of information's on expected impacts and risk for anticipatory action



IMPACT BASED FORECAST Co-Produced with OCHA



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Creation date: 7 July 2025 Sources: ACMAD, OCHA Feedback: ocharowca@un.org www.unocha.org www.reliefweb.int



CAPACITY BUILDING & SUPPORT TO NMHSs

- > Training materials on verifications, climate variability and seasonal forecasting prepared and delivered to RCCs and NMHSs staff at RCOFs (PRESAC, PRESASS, SARCOF), ACCOFs, during On-the-Job Training and Secondment sessions;
- On-the-Job Training and Secondment event have been organized in ACMAD at the benefit of NMHSs;
- ▶11 (05 Women) Internships have been organized with participants from the MATHEMATICAL SCIENCES FOR CLIMATE RESILIENCE INTERNSHIP PROGRAM (MS4CR-IP) of the African Institute for Mathematical Sciences (AIMS). The internship program cover:
 - ✓ Meso Scale Convective system monitoring, detection, forecasting and early warning in Africa
 - ✓ Verification and statistical interpretation of forecast performance of Numerical Weather Prediction (NWP) models.
 - ✓ Climate data analysis for resilient agriculture systems in Africa
 - ✓ Web sites, Geo portal development providing Climate Services for Africa's resilience to extreme events



Testemonial from On Job Training Beneficiary



Service of Cameroon





ON THE JOB TRANNEE / OCT - NOV, 2024

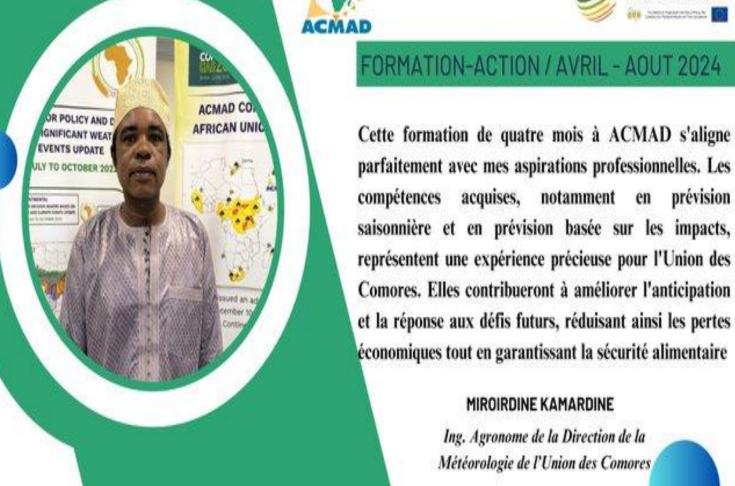
" This combined training in weather prediction and communication gave me the opportunity to sharpen my forecasting skills, especially for extreme events like dust storms, heavy But rainfall, and heatwaves. importantly, I learned how to turn science into actionable and user-friendly information that can truly make a difference "







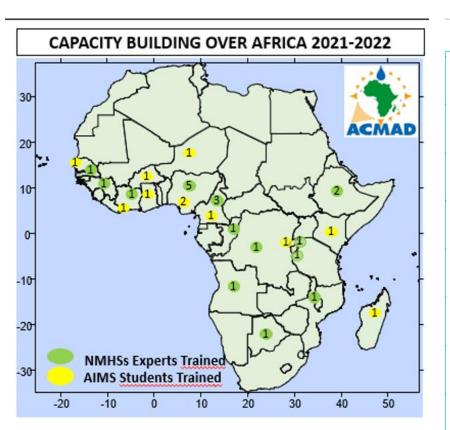
parfaitement avec mes aspirations professionnelles. Les compétences acquises, notamment en prévision saisonnière et en prévision basée sur les impacts, représentent une expérience précieuse pour l'Union des Comores. Elles contribueront à améliorer l'anticipation et la réponse aux défis futurs, réduisant ainsi les pertes économiques tout en garantissant la sécurité alimentaire

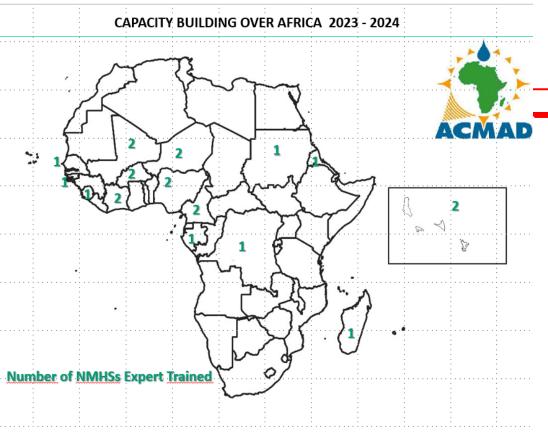




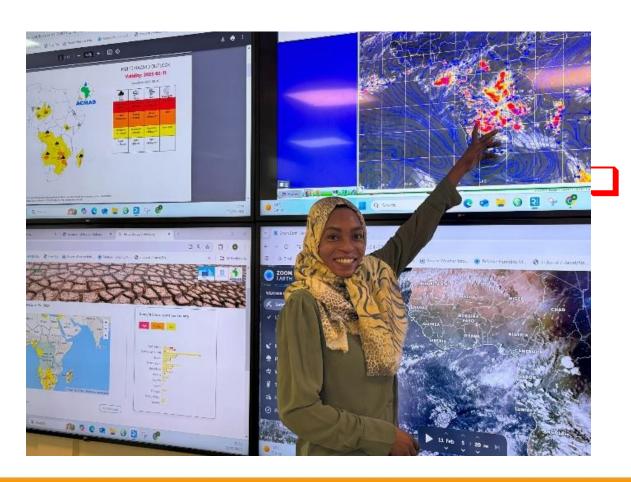


CAPACITY BUILDING: On the Job Training, Secondment, Internship









■ FROM 2021-2024 48 experts from NMHSs across 19 countries trained in areas such as nowcasting; climate monitoring, and assessment; Synoptic and mesoscale forecasting; Longrange forecasting; Developing vigilance and advisory bulletins.; Onset monitoring and seasonal outlooks.

9 master's students (Including 6 Women) from the African Institute for Mathematical Sciences (AIMS),



Capacity building user engagement session

User engagement sessions to share knowledge and best practices and establish a strong feedback mechanism Training on innovative interface for climate information production (Africa Drought Monitoring System, Onset monitoring system)

Pre-RCOF training: Downscale the continental tools at

country level







AGRICULTURAL SEASON ONSET MONITORING IN AFRICA

September 3rd, 2024 09:00 - 11:00 GMT

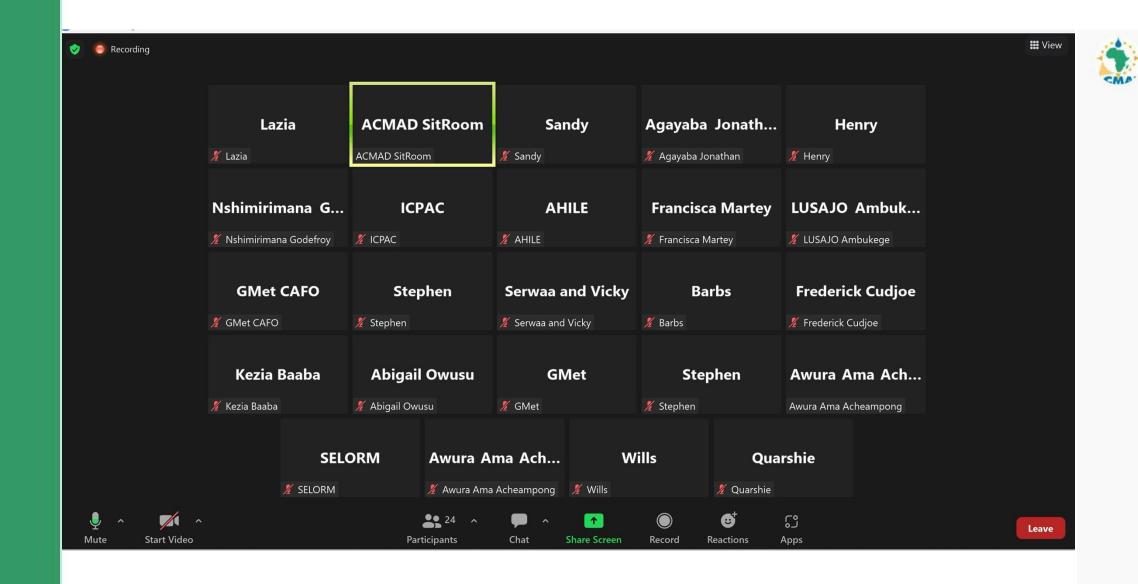






Technical Briefings and Debriefing

A dedicated Information platform/Portal to exchange best practice and knowledge, improve our forecast and early warning and encourage cooperation between countries and region







AFRICAN CONTINENTAL CLIMATE OUTLOOK FORUMS (ACCOFS)

Initiated in 2022, ACCOF is a Mechanism to provide Continental Climate Outlook Services and improve coordination and harmonization on methods, data, tools, products and services for all Africa.

ACCOFs are organized with the collaboration of the 6 Africa Regional Climate Centres





AFRICAN CONTINENTAL CLIMATE OUTLOOK FORUMs (ACCOFs)

- □Consensus Continental Climate
 Outlook Developed for target season.
- □ Harmonized Road Map for Forecasting

 Techniques Adopted by Climate Experts

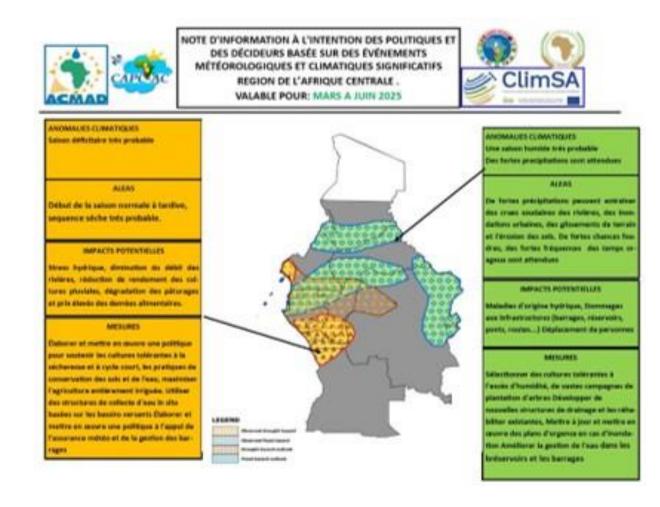
 in the RCCs and other Partners.
- □ Harmonized data, tools and methods for the continental drought bulletin.

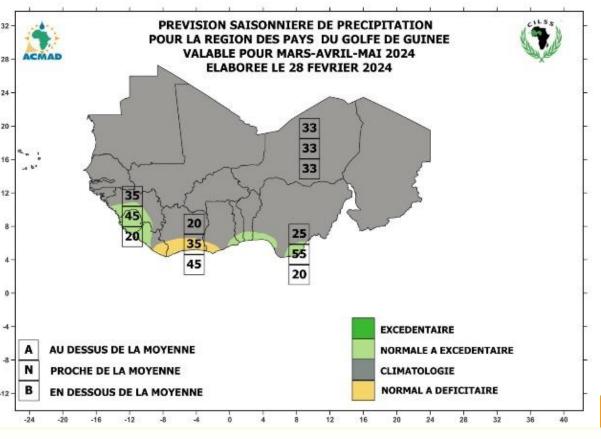
- □Co-Produced Products Outputs from Climate Outlooks for REC and other key Partners.
- □ Enhanced Impact/Risk Based Seasonal Climate Outlook Statements for improved climate-smart decision making
- □Capacity among Climate Experts built on Benefits of the integrated and harmonized products



ACMAD SUPPORT TO REGIONAL CLIMATE OUTLOOK FORUMs (RCOFs) AND RCCs DEMONSTRATION

- **✓ Contribute** to IGAD, SADC, IOC, MEDCOF/PRESANORD Climate outlooks Forums with continental perspective
- ✓ Prepare the technical notes, statements and organize briefings
- **✓ Provide technical support to ECOWAS and ECCAS Regional climate outlooks**
- **✓ Provide Technical Support to ECOWAS, ECCAS demonstration process**







SUCCESS STORIES: SUPPORT TO REGIONAL AND NATIONAL USER INTERFACE PLATFORMS

Support to ECCAS REGION to ESTABLISH UIP for DRR, Health and AGRICULTURE

Support to CAMEROON National Meteorology to Organize their First National Climate Outlook Forum

Support to CAMEROON National to establish and Operationalize UIP DRR and Agriculture











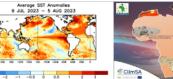
POLICY AWARENESS

- > Side events at CCDA, COPs, DRR platforms, **Humani**tarian Dialogue platform
- Contribution to the technical Note of the **Africa S**tate of Climate
- > High level statement at COPs
- > High level policy dialogue Meeting
- > Supports for formulation of resolutions, recommendations and regulations to accelerate open and free exchange of data and products from advanced Global Centres



OR IMMEDIATE RELEASE

TICIPATING SIGNIFICANT IMPACTS: EL NIÑO'S ARRIVAL IN AFRIC







LESSONS LEARNED AND WAY FOREWARD

·Promote Data Exchange and peer to peer learning

Facilitate the regular exchange of local impact data among communities, national, regional, and continental stakeholders. This will accelerate impact-based forecasting and enhance the production of the *State of the Climate in Africa* report.

Strengthen Capacity Development

Training of trainers, forecasters and DRR experts in the use of tools and climate information products. Training for performance assessment of different tools and the RCOF products

Enhance Strategic Partnerships

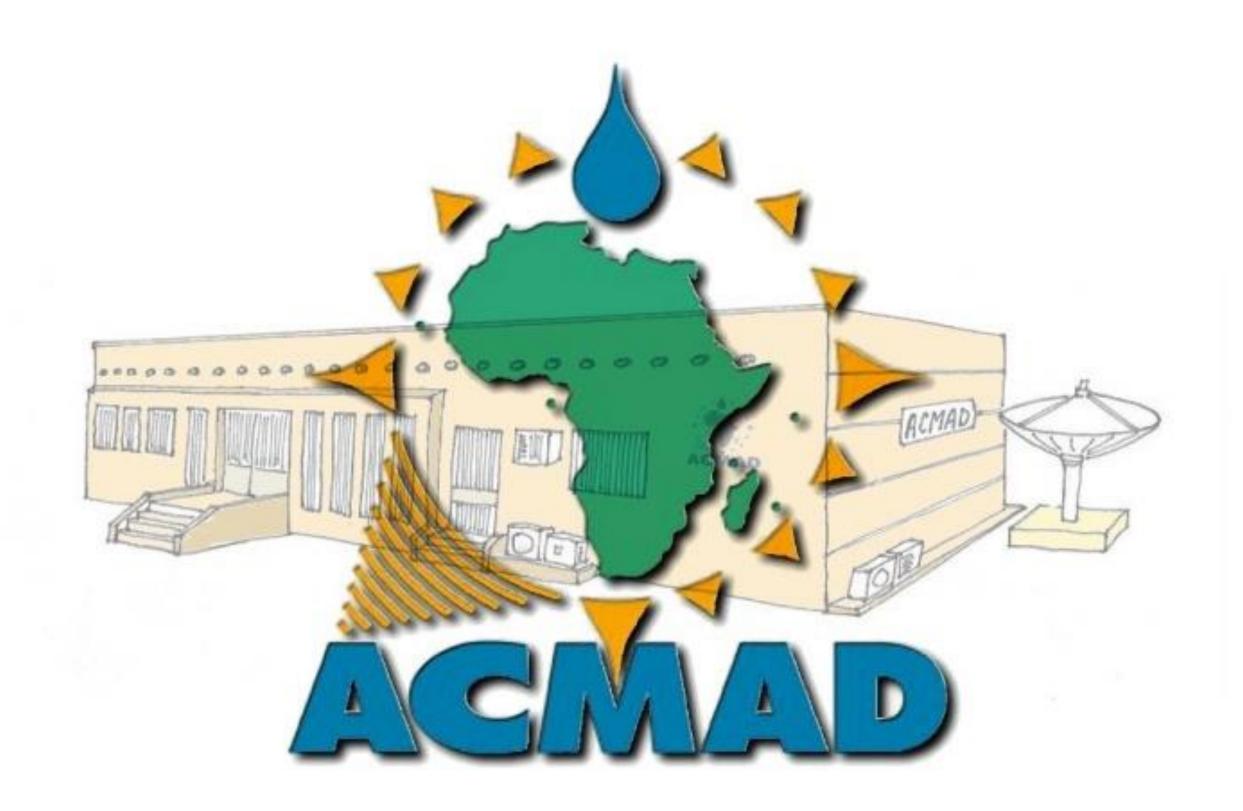
Collaborate with initiatives like SEWA, ClimSA, CREWS,, HYDROMET, and others to ensure coordinated action.

·Support National Early Warning Systems

Assist countries in establishing and operating robust national early warning information systems and centers.



THANK YOU



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