Side Meeting on Regional Climate Disaster Risk Financing (DRF) and Outbreaks and Epidemics Management Approaches

“ Promoting Risk Transfer Instruments for Emergency Response”

By:

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Climate Services Applications Expert

ClimSA
INTRA-ACP CLIMATE SERVICES AND RELATED APPLICATIONS PROGRAMME

An initiative of the Organisation of African, Caribbean and Pacific States funded by the European Union

ACCRA – GHANA : 20 JULY 2024

BRIEF ON ACMAD MISSION

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 Weather and Climate Watch Centre for Africa with Monitoring, *forecasting* and *early warning for* droughts, floods, tropical cyclones and other extreme events as functions .
ACMAD is a WMO designated RCC since Congress in May 2015 and a Continental MultiHazards Advisory Centre since October 2022 for the AUC situation room of the AMHEWAS

Institution of excellence for the Applications of meteorology for sustainable development with capacity building, methods, tools and products development, contribution to global weather and climate programs, promotion of database , research and innovation as functions

ACMAD Continental Multi-Hazard Advisory Centre operational since October 2022

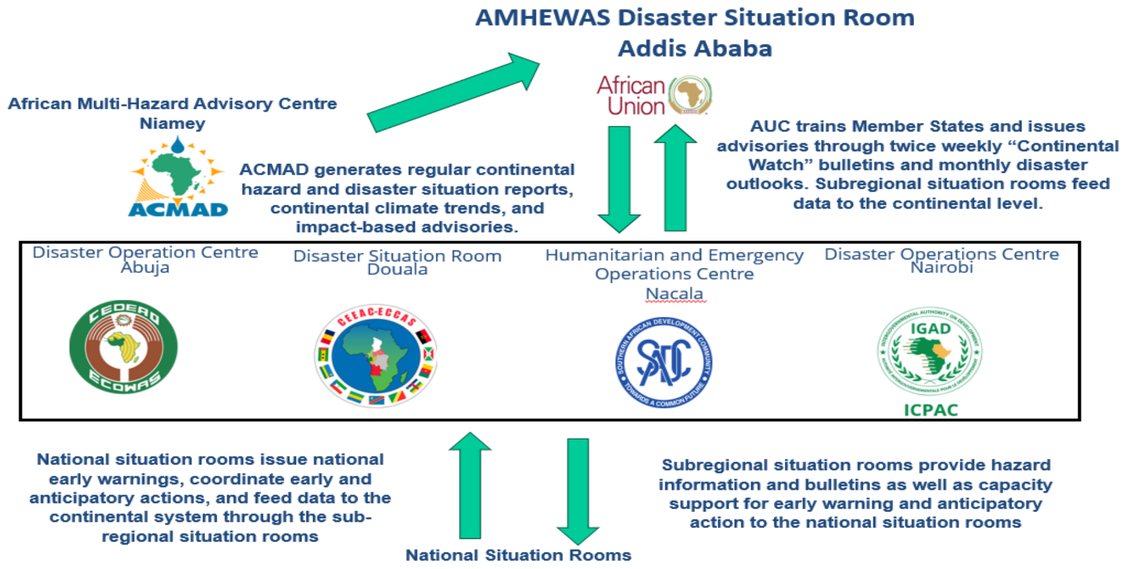
ACMAD Role and Responsabilities in AMHEWAS

ACMAD contributes mainly in 2 components :

- **Disaster Risk Knowledge :** Collect, aggregate, and disseminate continental risk information and mapping, and collaboration with other continental facilities
  Facilitate joint training and capacity building initiatives

- **Detection, Monitoring, Analysis: and Forecasting of the Hazards**

Monitoring, analysis, and forecasting systems for identified hazards at the continental level (Heavy Rainfall, Strong winds, Cyclone Track, and Drought)

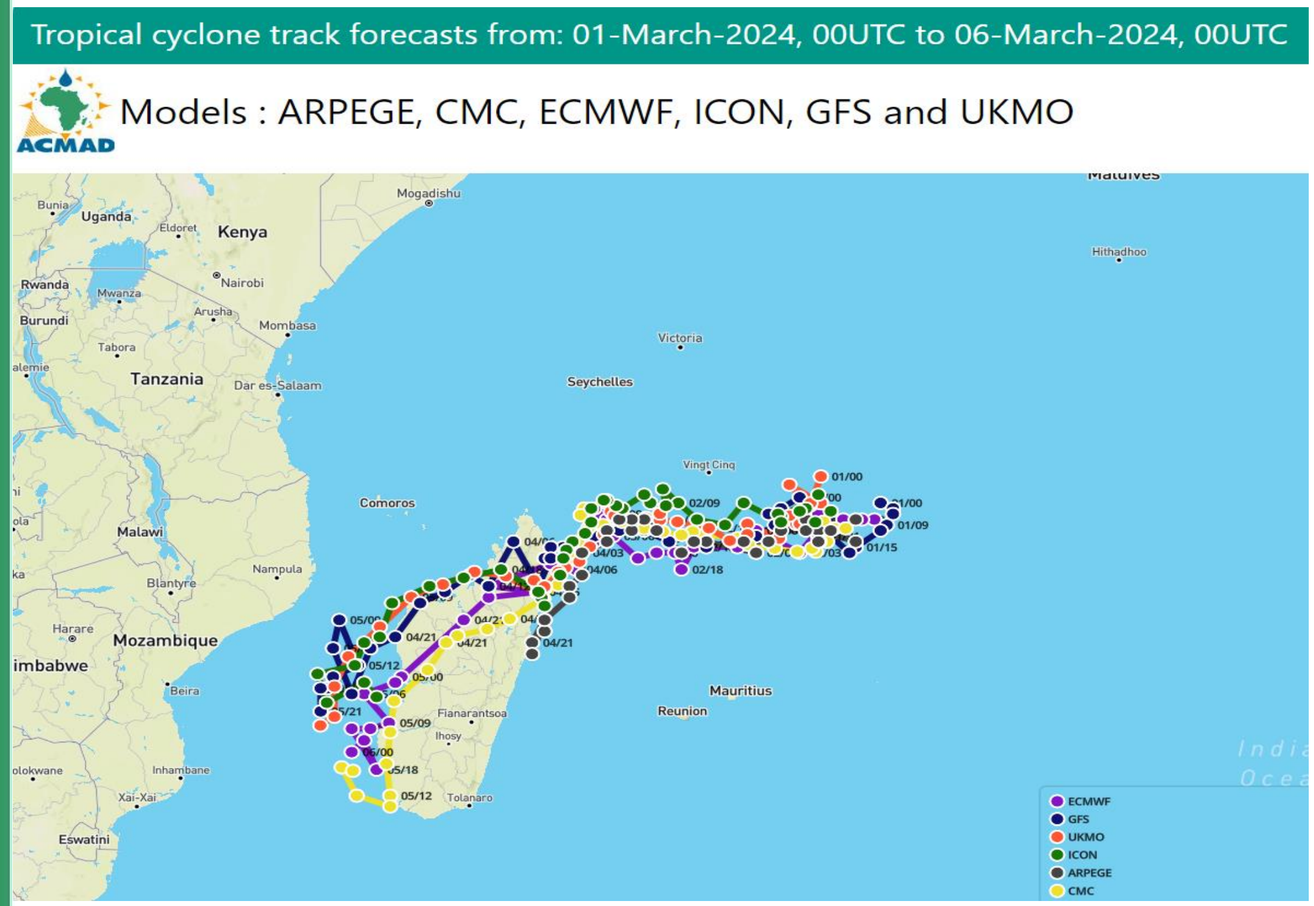


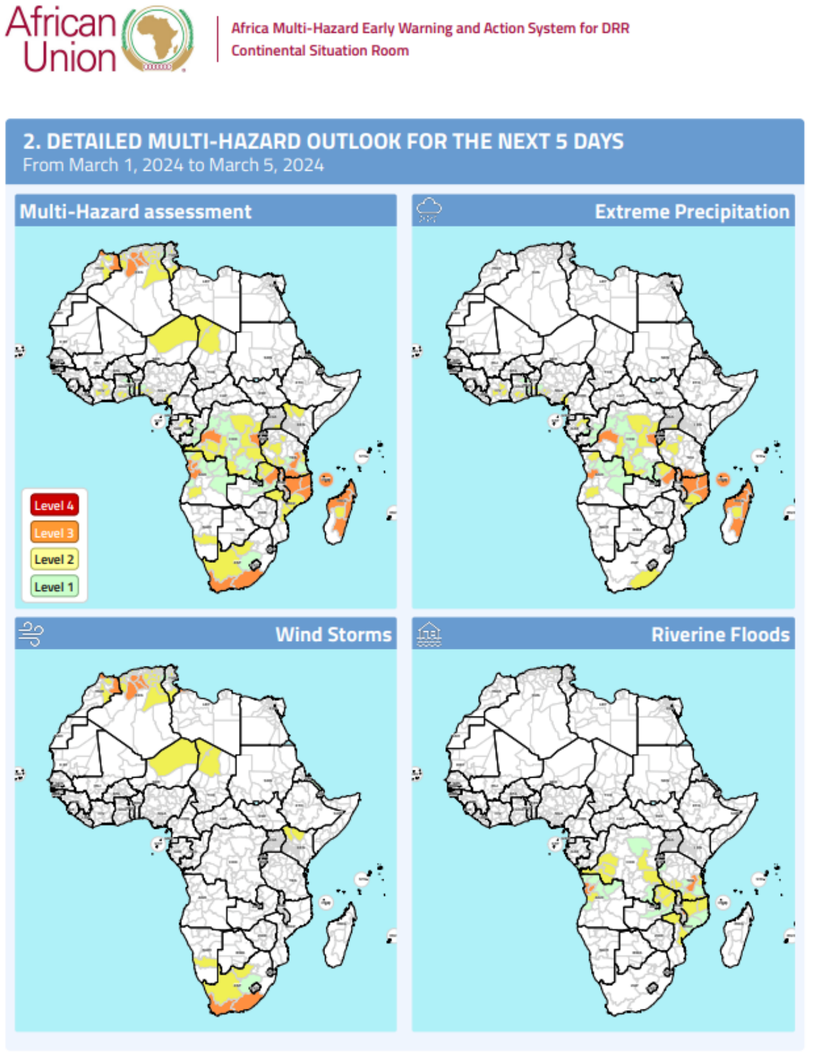
The ACMAD Sit Room is now operational as part of the African multi-hazard early warning system for rapid action and provides twice-weekly Continental Watch, information on extreme rainfall, strong winds and cyclone tracks, as well as collaborating with the AUC SitRoom and Sit Room ICPAC in the production of Situation Reports.
The centre also contributes to the organisation of ad-hoc briefings for anticipatory action.

ACMAD CONTRIBUTION TO AUC SITUATION ROOM

PRODUCTS TO SUPPORT AUC SitRoom In AMHEWAS

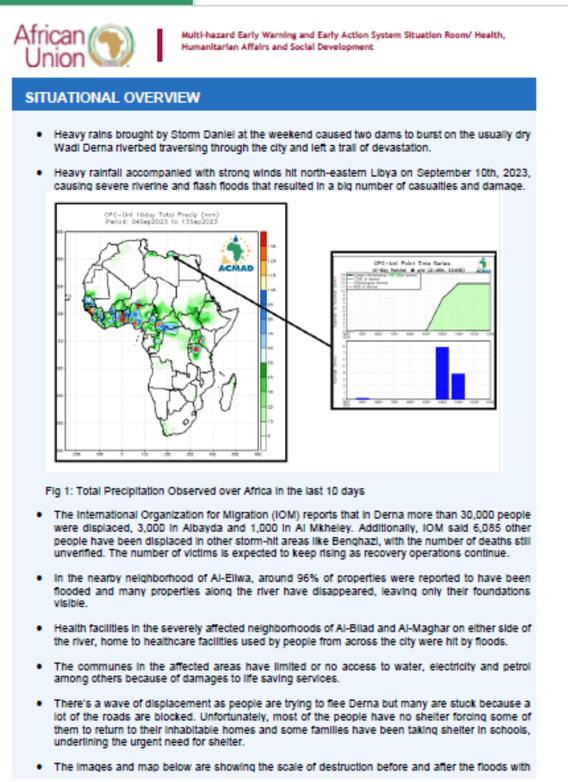
Contribution in Continental Watch





ACMAD CONTRIBUTION TO AUC SITUATION ROOM

- ✓ ACMAD participated in elaboration of the SOPs on Sit Report document
- ✓ ACMAD Contribute in generation of the Situation Report in collaboration with AUC sitRoom
- ✓ Collect and disseminate continental risk information and mapping through the State of Climate of Africa



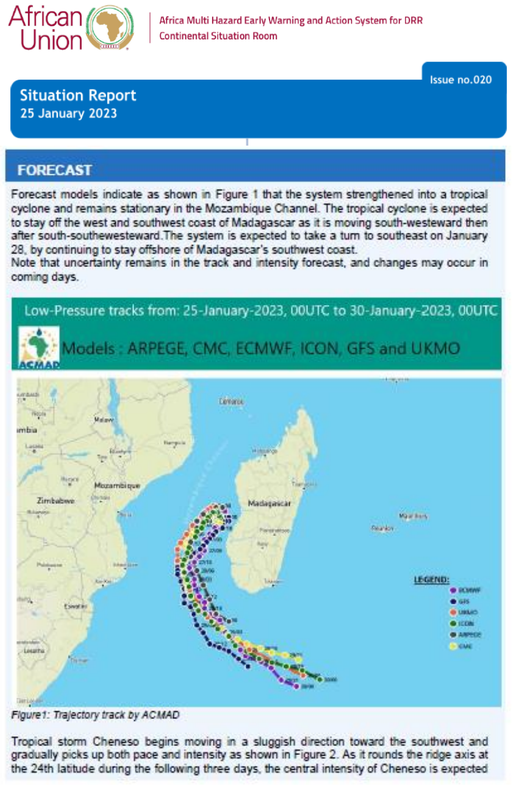
African Union | Multi-hazard Early Warning and Early Action System Situation Room/ Health, Humanitarian Affairs and Social Development

SITUATIONAL OVERVIEW

- Heavy rains brought by Storm Daniel at the weekend caused two dams to burst on the usually dry Wadi Derna riverbed traversing through the city and left a trail of devastation.
- Heavy rainfall accompanied with strong winds hit north-eastern Libya on September 10th, 2023, causing severe riverine and flash floods that resulted in a big number of casualties and damage.

Fig 1: Total Precipitation Observed over Africa in the last 10 days

- The International Organization for Migration (IOM) reports that in Derna more than 30,000 people were displaced, 3,000 in Albayda and 1,000 in Al Mkheley. Additionally, IOM said 6,085 other people have been displaced in other storm-hit areas like Benghazi, with the number of deaths still unverified. The number of victims is expected to keep rising as recovery operations continue.
- In the nearby neighborhood of Al-Ellwa, around 96% of properties were reported to have been flooded and many properties along the river have disappeared, leaving only their foundations visible.
- Health facilities in the severely affected neighborhoods of Al-Bilad and Al-Maghar on either side of the river, home to healthcare facilities used by people from across the city were hit by floods.
- The communes in the affected areas have limited or no access to water, electricity and petrol among others because of damages to life saving services.
- There's a wave of displacement as people are trying to flee Derna but many are stuck because a lot of the roads are blocked. Unfortunately, most of the people have no shelter forcing some of them to return to their inhabitable homes and some families have been taking shelter in schools, underlining the urgent need for shelter.
- The images and map below are showing the scale of destruction before and after the floods with



African Union | Africa Multi Hazard Early Warning and Action System for DRR Continental Situation Room

Issue no.020

Situation Report
25 January 2023

FORECAST

Forecast models indicate as shown in Figure 1 that the system strengthened into a tropical cyclone and remains stationary in the Mozambique Channel. The tropical cyclone is expected to stay off the west and southwest coast of Madagascar as it is moving south-westeward then after south-southewesteward.The system is expected to take a turn to southeast on January 28, by continuing to stay offshore of Madagascar's southwest coast.
Note that uncertainty remains in the track and intensity forecast, and changes may occur in coming days.

Low-Pressure tracks from: 25-January-2023, 00UTC to 30-January-2023, 00UTC
Models : ARPEGE, CMC, ECMWF, ICON, GFS and UKMO

Figure1: Trajectory track by ACMAD

Tropical storm Cheneso begins moving in a sluggish direction toward the southwest and gradually picks up both pace and intensity as shown in Figure 2. As it rounds the ridge axis at the 24th latitude during the following three days, the central intensity of Cheneso is expected

Contribution in Situation Report

High-Impact Hydrometeorological Disasters State of Climate in Africa 2022

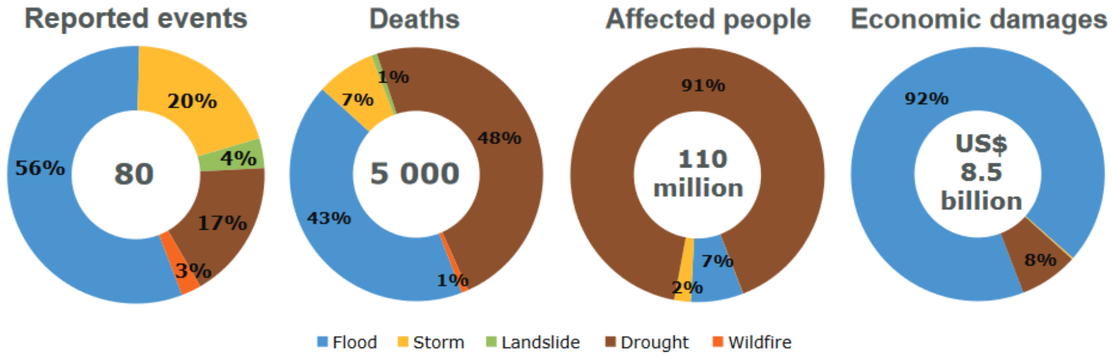
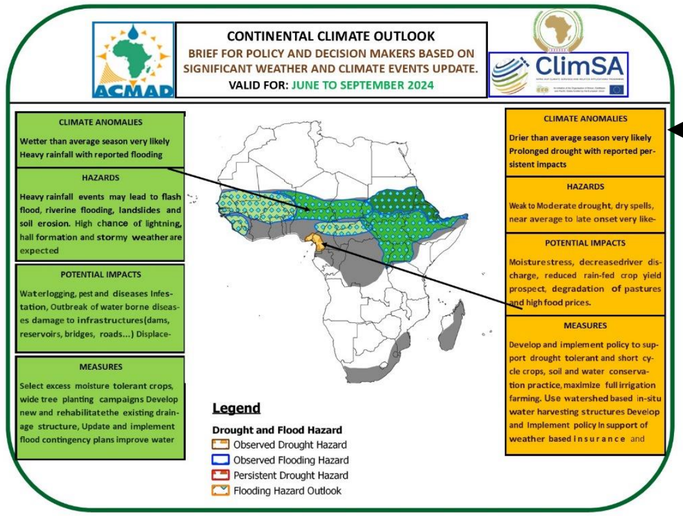


Figure 11. Weather-, climate- and water-related disasters in Africa in 2022. Note: The economic damages of some disaster occurrences are not presented in the figure due to data unavailability.
Source: Data as of June 2023 from EM-DAT

In process of the élaboration of the State of Climate, a **Chapter of Climate-related risks and socioeconomic impacts** was integrated in the documents and ACMAD is in charge to collect major extrêmes events with socio economic impacts

Use of Climate Services and Tools for Climate Risk, Epidemics

Climate Services: ACMAD Priority Areas

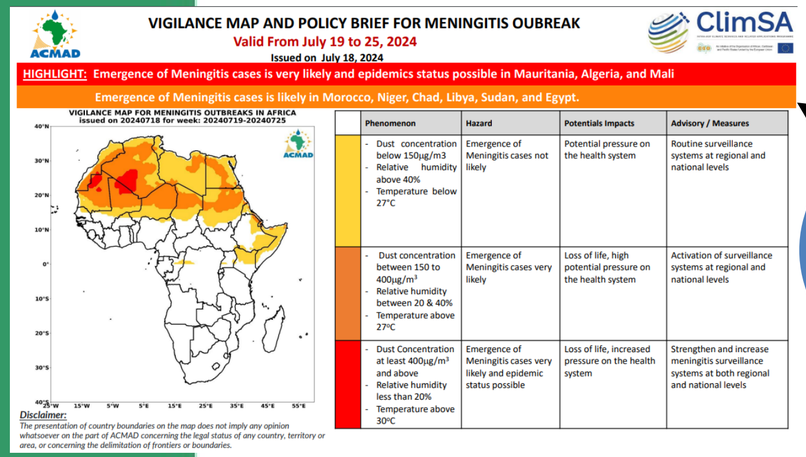


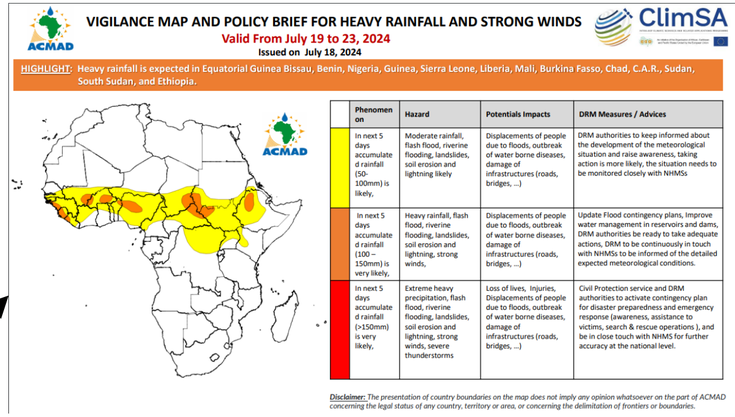
Agriculture

Climate Services

Health

Disaster Risk Reduction

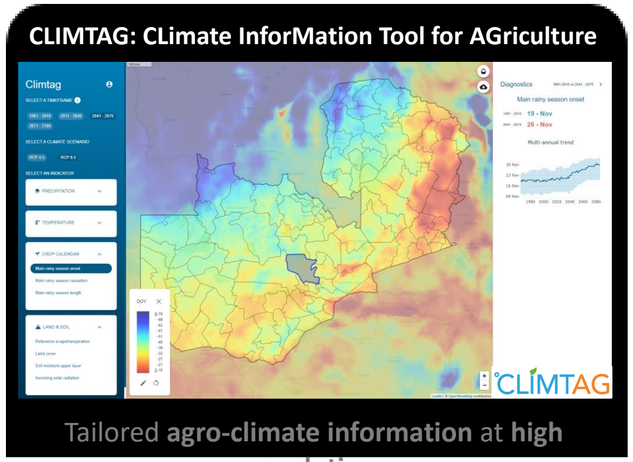




ACMAD provide Climate services tailored with significant weather and climate phenomena, related hazards, potentials impacts , responses measures

Use of Climate Services and Tools for Climate Risk: To update Agriculture Calendar

CLIMTAG



- **Web-based** climate service:
  - agro-climate indicators, e.g.
    onset rainy season
    occurrence drought spell
    …
  - **past** and **future** time horizons
    1981-2010 → **2040-'70-'100**

- High **resolution**:
  - **1km x 1km** maps
  - aggregated at **district** level

- Operating at country level for **22 countries**

- Targeted **stakeholders:** National Met Services, policy makers, researchers, extension workers


```
56 x agro-climate indicators
 3 x climate scenarios
15 x climate models
 4 x time horizons
23 x countries

@ 1km resolution
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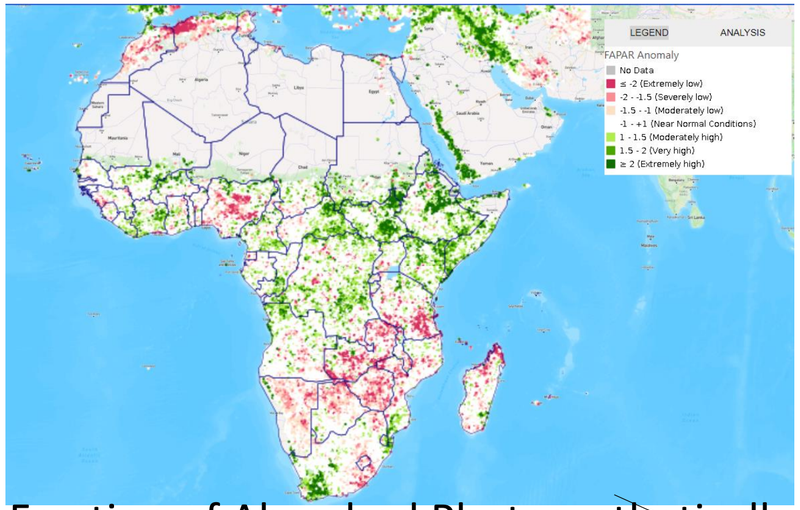
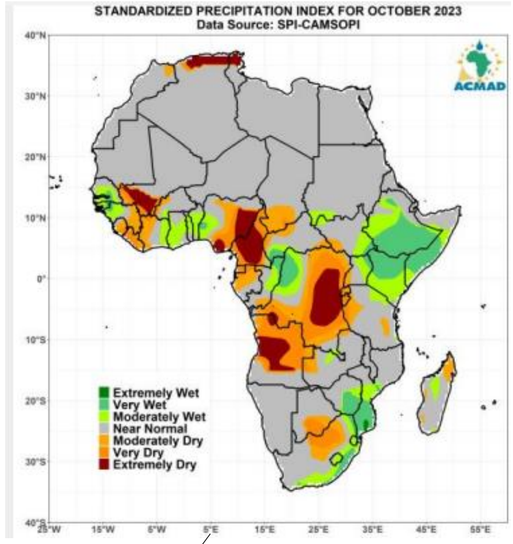
AVailable NOW for national Met Services, policy makers, researchers, extension workers, NGO's …in 23 Countries

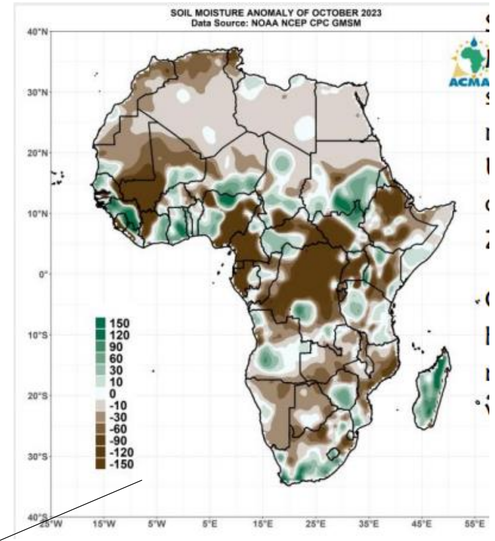
Use of Climate Services and Tools for Climate Risk : Drought Monitoring



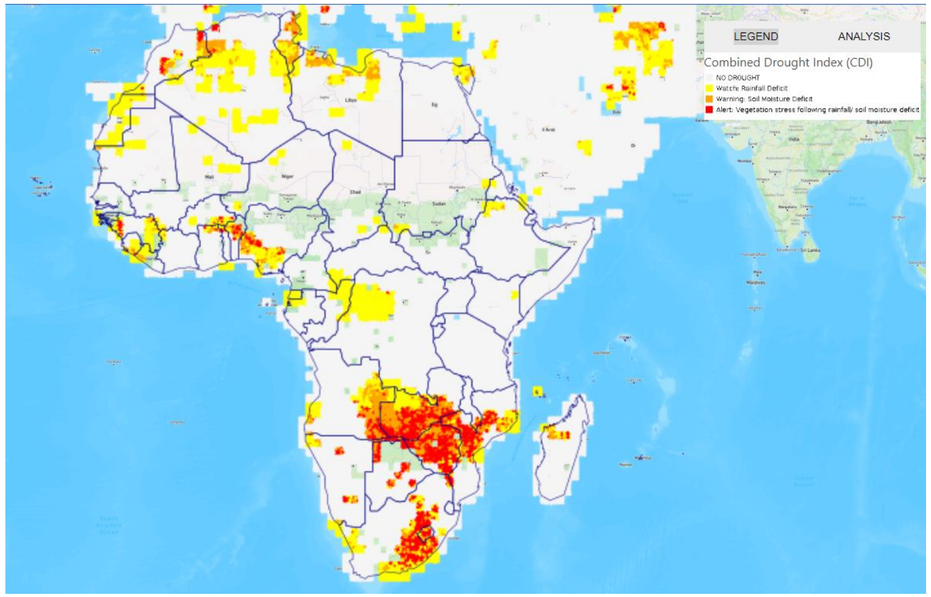
Fraction of Absorbed Photosynthetically Active Radiation (**fAPAR)**



Standard precipitation Index **(SPI)**

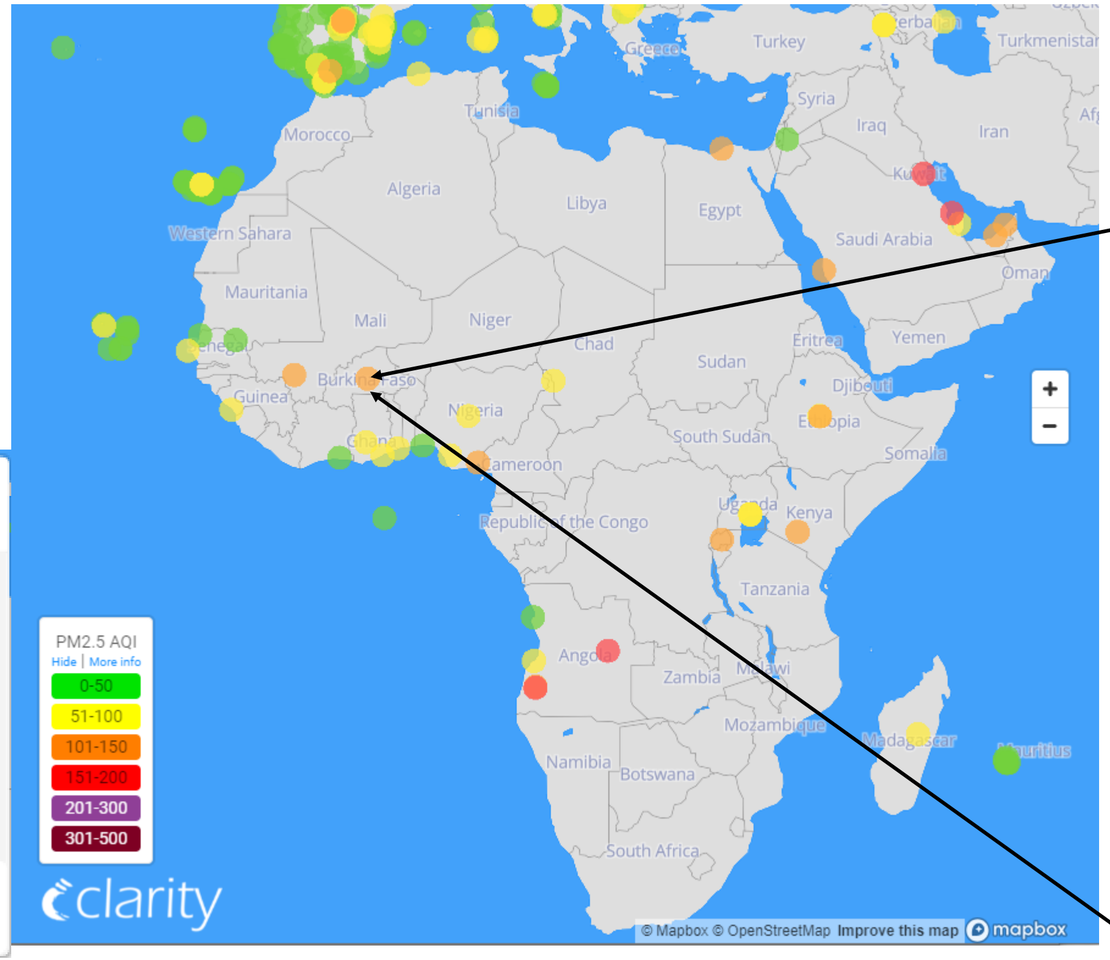


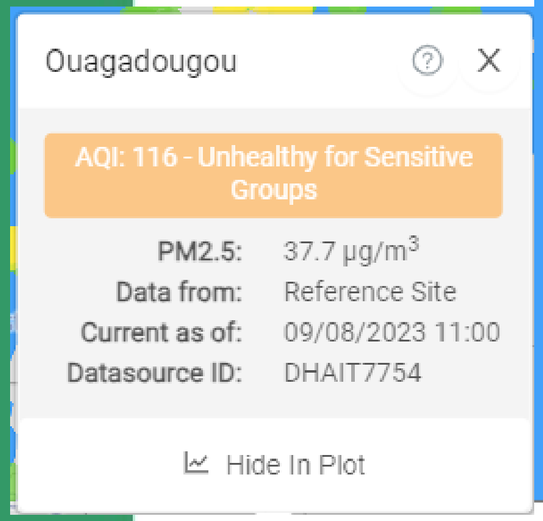
Soil Moisture Anomaly **(SMA)**

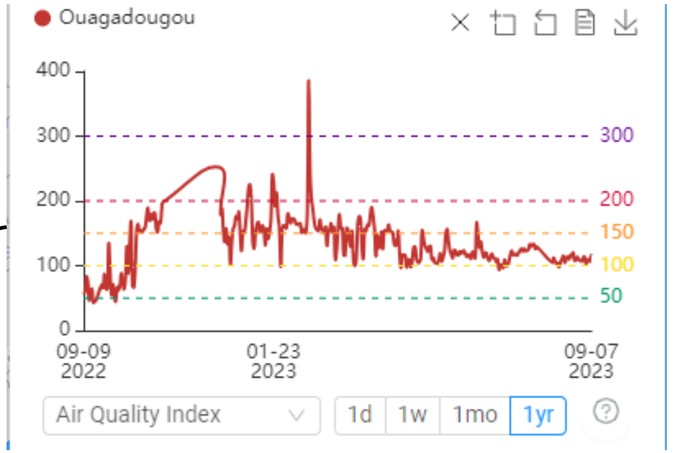


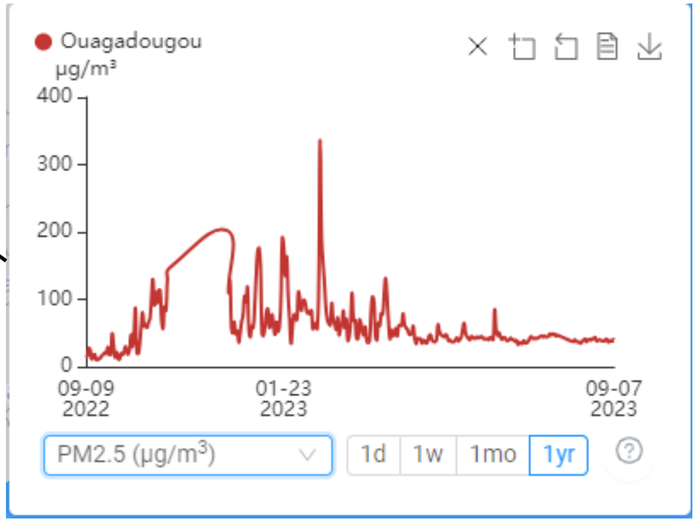
Drought Indicator (CDI) is derived from the combination of SPI, SMA and fAPAR, to identify areas with the potential to suffer agricultural drought, areas where the vegetation is already affected by drought conditions, and areas in the recovery process to normal conditions after a drought episode.
https://ada.acmad.org/

Use of Climate Services and Tools for Climate Risk: Air Quality Pollution









Air Quality Monitoring in collaboration with Pen. State University

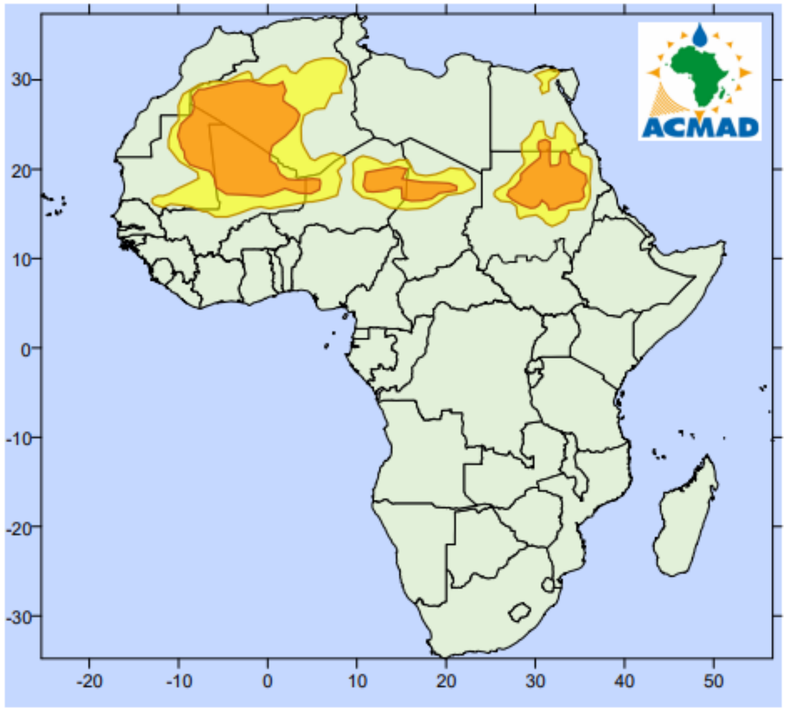
Use of Climate Services and Tools for Climate Risk: Heat Wave

VIGILANCE MAP AND POLICY BRIEF FOR HEAT WAVE

Valid From July 19 to 23, 2024

Issued on July 18, 2024

HIGHLIGHT: Moderate heat wave is expected in Mauritania, Mali, Algeria, Niger, Chad, Sudan, and Egypt.



	Phenomenon	Hazard	Potentials Impacts	DRM Measures / Advices
	In next 5 days apparent temperature >40ºC to 44ºC are expected for two days	Heat wave Conditions persists on 2days	Moderate temperature heat is tolerable for general public but moderate health concern for vulnerable people(people chronic diseases, infants and elderly)	Civil Protection Services to monitor closely the heat wave situation with NHMSs.
	apparent temperature 40ºC to 44ºC are expected for more than 2 days	Moderate heat wave conditions are likely to persist for 3days ore more with varied severity	High temperature Increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work High health concern for vulnerable people	Civil Protection services to take adaptive and preventive measures to the heat wave situation with NHMSs.
	Apparent temperatures >45ºC are expected for more than 2 days	Severe heat wave is very likely to persist for more than 2 days,	Very high likelihood of developing heat illness and heat stroke in all ages	Civil Protection services to take adaptive and preventive measures to the strong heat wave situation with NHMSs.

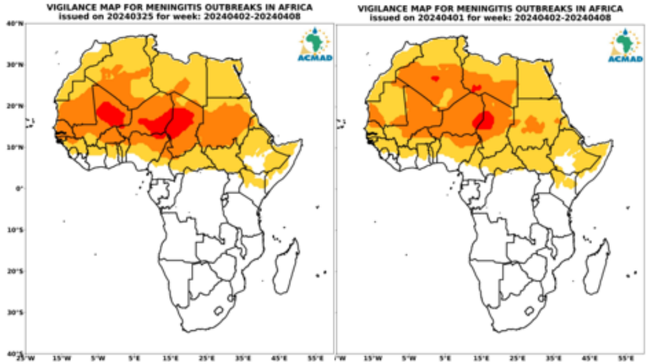
Disclaimer:

The presentation of country boundaries on the map does not imply any opinion whatsoever on the part of ACMAD concerning the legal status of any country, territory or area, or concerning the delimitation of frontiers or boundaries.

Use of Climate Servics and Tools for Epidemics: MENINGITIS

Climate Service for Health/Meningitis - *Verification*

Meningitis Outbreaks Outlook/Advisory for 02-08 Apr 2024



	Phenomenon	Hazard	Potentials Impacts	Advisory / Measures
	•Dust concentration below 150µg/m³ •Relative humidity above 40% •Temperature below 27°C	Emergence of Meningitis cases not likely	Potential pressure on the health system	Routine surveillance systems at regional and national levels
	•Dust concentration between 150 to 400µg/m3 •Relative humidity between 20 & 40% •Temperature above 27°C	Emergence of Meningitis cases very likely	Loss of life, pressure on the health system	Activation of surveillance systems at regional and national levels
	•Dust Concentration at least 400µg/m3 and above •Relative humidity less than 20% •Temperature above 30°C	Emergence of Meningitis cases very likely and epidemic status possible	Loss of life, increased pressure on the health system	Strengthen and increase meningitis surveillance systems at both regional and national levels

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.*

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 Senegal (1).*

Meningitis case distribution by country for 1st – 07th April 2024
(*source: WHO AFRO Meningitis Surveillance And Control Programme*)

Continental Climate Services User Interface Platforms (UIPs)

CONTINENTAL USER INTERFACE PLATFORMS ESTABLISHED AND OPERATIONALIZE

African Continental User Interface Platform

Agriculture UIP | Health UIP | Water UIP | DRR UIP

African Continental User Interface

- Term of reference
- Rules of procedure
- Composition of the platform
- Meetings and Workshops
- Programmes, Products and Services

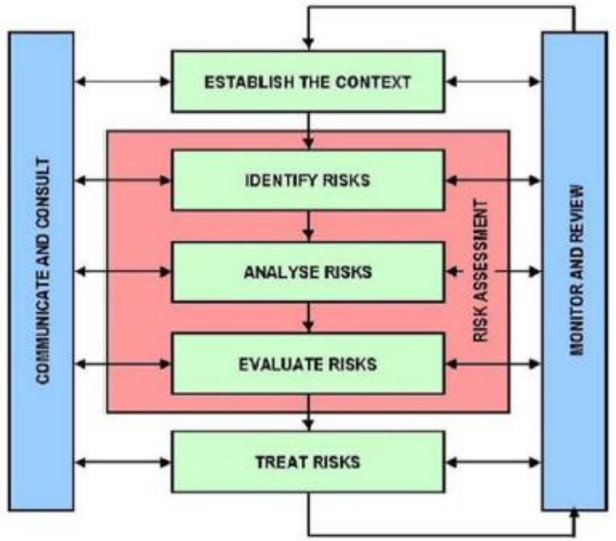
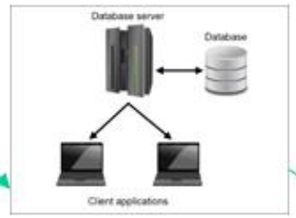


Figure 2. ISO 31000.

Best practices in usage and Integrating Multi Hazard Early Warning Systems (MHEWS) products and services

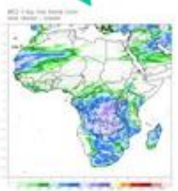
ACMAD Tools and Approach to support in MHEWS : Detection, Monitoring, Analysis and Forecasting Hazards



RCCs and NMHSs' Climate Product generation

Data Centers

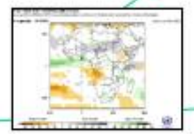
Online Database



Predictor data

DATA

RCCs



GPCs

Online Seasonal Forecast

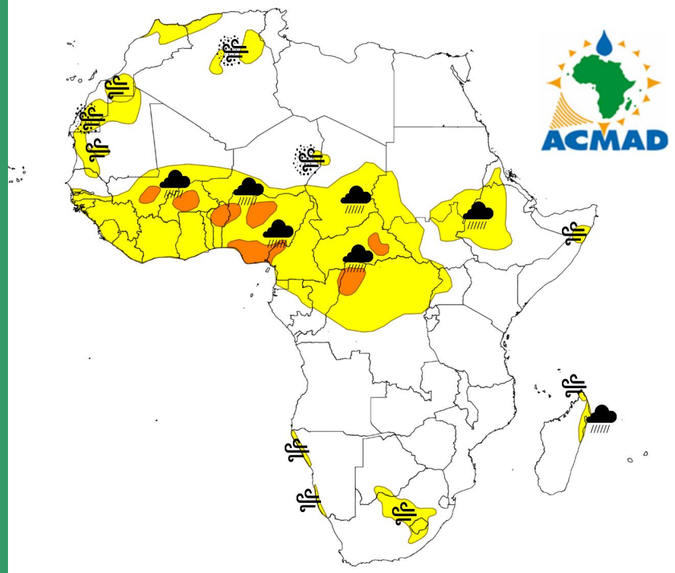
NMHSs

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

MHEWS PRODUCTS AND SERVICES: Case of Heavy Rainfall in Algeria



MULTI-HAZARD OUTLOOK

Validity: 2023-09-02

issued on 2023-08-31

Rain	Wind	Dust	Meningitis
Very heavy >100mm	Very strong >80kmh^{-1}	Very heavy >1000µg m^{-3}	Very likely
Heavy 50-100mm	Strong >65kmh^{-1}	Heavy >600µg m^{-3}	Likely
Moderate 10 - 49mm	Moderate >50kmh^{-1}	Moderate >400µg m^{-3}	Less likely
Light 1 - 10mm	Light <50kmh^{-1}	Light <200µg m^{-3}	

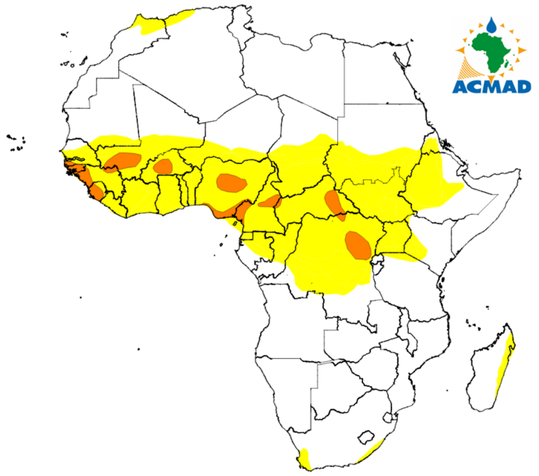
Best Practices

VIGILANCE MAP AND POLICY BRIEF FOR HEAVY RAINFALL AND STRONG WINDS

Valid From September 1 to 5, 2023

Issued on August 31, 2023

HIGHLIGHT: Heavy rainfall is expected in Senegal, Guinea Bissau, Guinea, Sierra Leone, Mali, Burkina Faso, Nigeria, Cameroon, C.A.R and D.R.C



	Phenomenon	Hazard	Potentials Impacts	DRM Measures / Advices
	In next 5 days accumulated 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 about the development of the meteorological situation and raise awareness, taking action is more likely, the situation needs to be monitored closely with NHMSs
	In next 5 days accumulated 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 dams, DRM authorities be ready to take adequate actions, DRM to be continuously in touch with NHMSs to be informed of the detailed expected meteorological conditions.
	In next 5 days accumulated 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 emergency response (awareness, assistance to victims, search & rescue operations), and be in close touch with NHMS for further accuracy at the national level.

Disclaimer: The presentation of country boundaries on the map does not imply any opinion whatsoever on the part of ACMAD concerning the legal status of any country, territory or area, or concerning the delimitation of frontiers or boundaries.

Algeria – Deadly Flash Floods Following Heavy Rain in North West

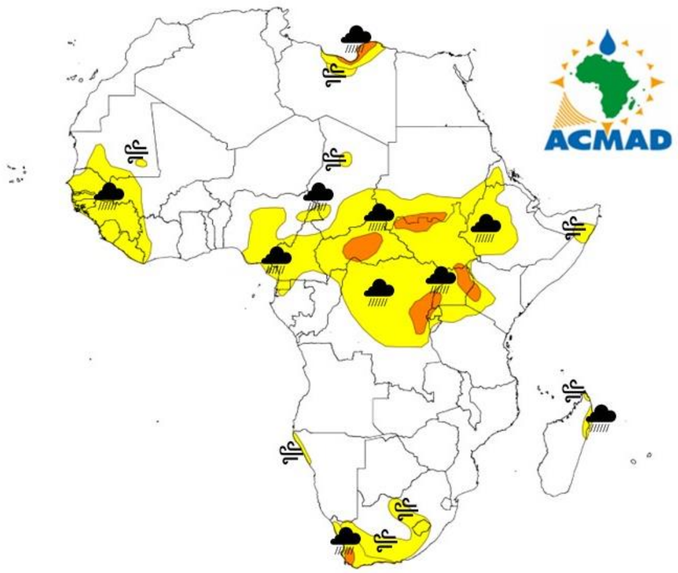
4 SEPTEMBER, 2023

Severe flash flooding swept through areas of northwester Algeria after heavy rainfall from 02 to 03 September 2023. Authorities report at least 8 people have lost their lives as a…

https://floodlist.com/africa

VIGILANCE FOR HEAVY PRECIPITATION AND OTHER HAZARDS UP TO 5 DAYS AHEAD SUPPORTING PREPARATION AND EARLY RESPONSE TO DISASTERS

MHEWS PRODUCTS AND SERVICES: Case of Daniel Cyclone over Libya : Daniel Cyclone from 04 to 10 September 2023



MULTI-HAZARD OUTLOOK

Validity: 2023-09-10

issued on 2023-09-07

Rain	Wind	Dust	Meningitis
Very heavy >100mm	Very strong >80kmh^{-1}	Very heavy >1000µg m^{-3}	Very likely
Heavy 50-100mm	Strong >65kmh^{-1}	Heavy >600µg m^{-3}	Likely
Moderate 10 - 49mm	Moderate >50kmh^{-1}	Moderate >400µg m^{-3}	Less likely
Light 1 - 10mm	Light <50kmh^{-1}	Light <200µg m^{-3}	

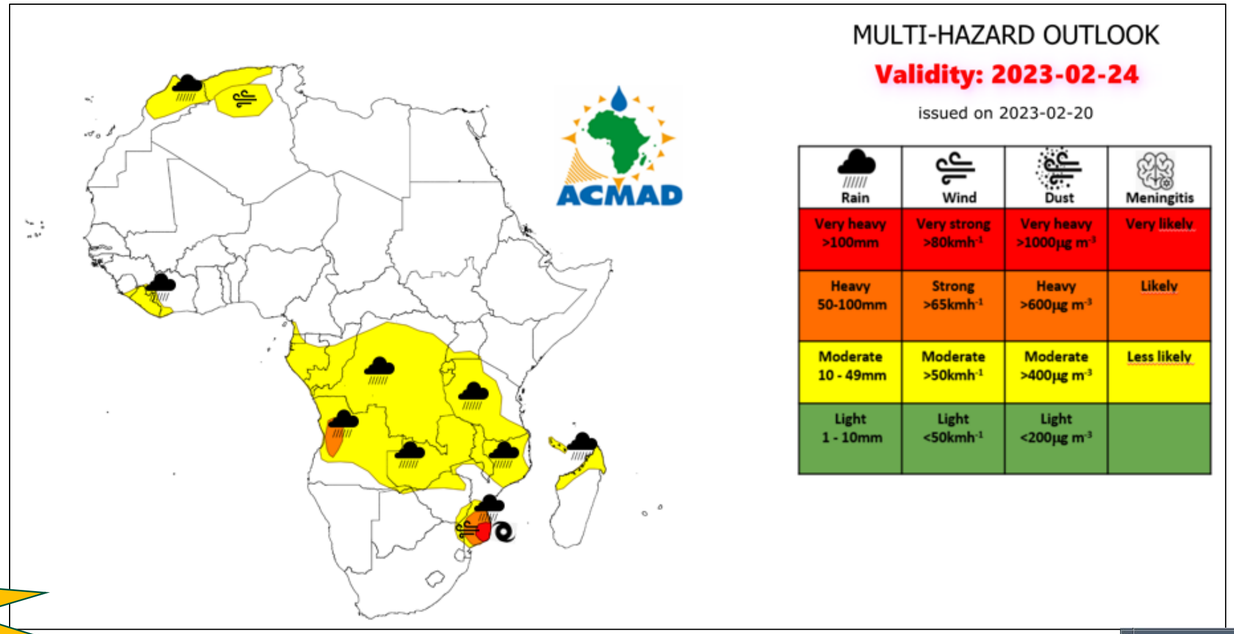
Best Practices

VIGILANCE FOR HEAVY PRECIPITATION AND OTHER HAZARDS UP TO 5 DAYS AHEAD SUPPORTING PREPARATION AND EARLY RESPONSE TO DISASTERS

La ville de Derna a en partie été détruite par les eaux après le passage du cyclone Daniel, en Libye, le 12 septembre 2023. ESAM OMRAN AL-FETORI / REUTERS

MHEWS PRODUCTS AND SERVICES: Case of FREDDY Cyclone: February 2023

ACMAD ADVISORY VERIFICATION FOR D+4 FROM 20 FEBRUARY 2023

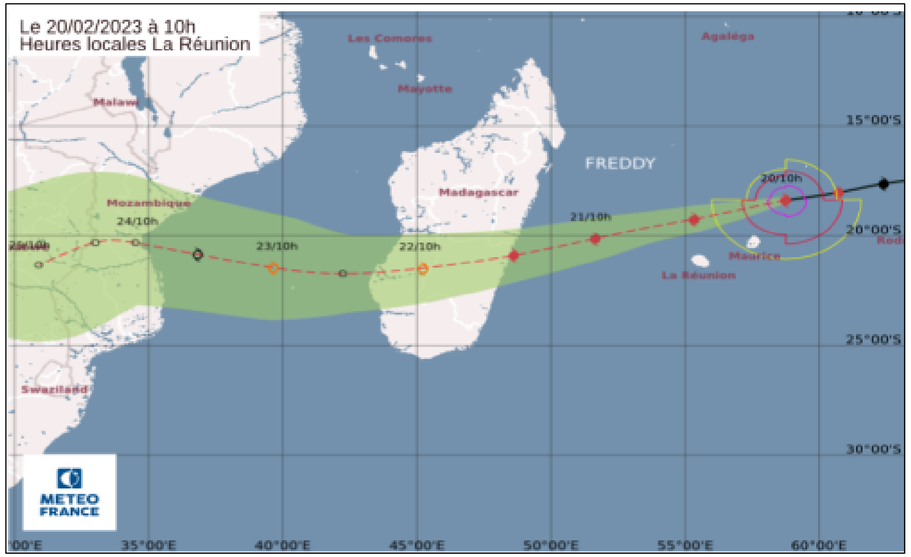


MULTI-HAZARD OUTLOOK

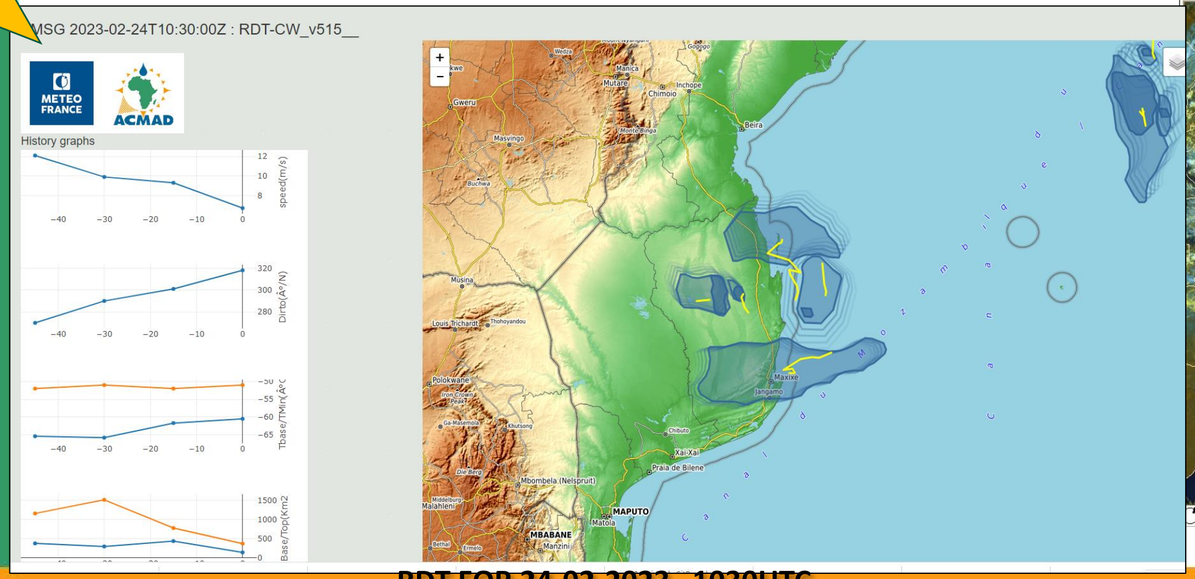
Validity: 2023-02-24

issued on 2023-02-20

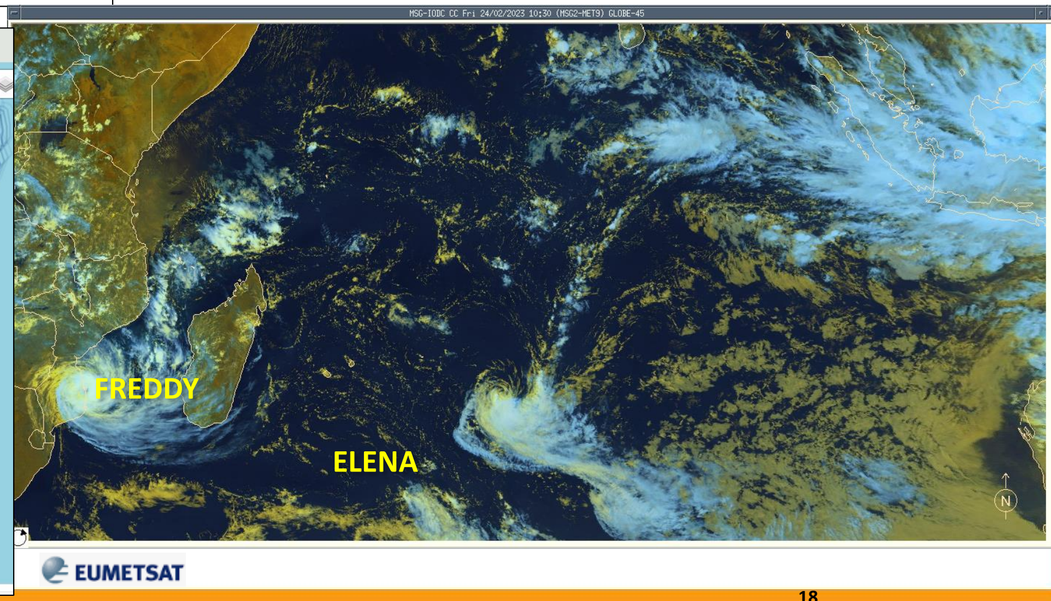
Rain	Wind	Dust	Meningitis
Very heavy >100mm	Very strong >80kmh^{-1}	Very heavy >1000µg m^{-3}	Very likely
Heavy 50-100mm	Strong >65kmh^{-1}	Heavy >600µg m^{-3}	Likely
Moderate 10 - 49mm	Moderate >50kmh^{-1}	Moderate >400µg m^{-3}	Less likely
Light 1 - 10mm	Light <50kmh^{-1}	Light <200µg m^{-3}	



Best Practices



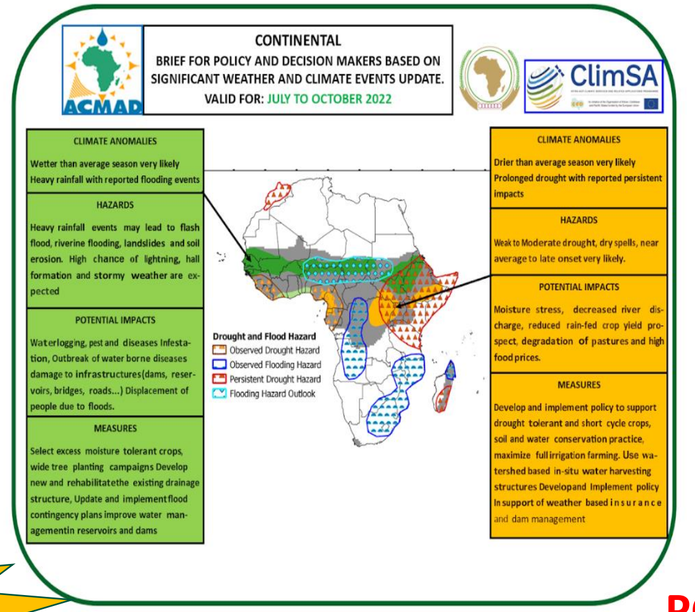
RDT FOR 24-02-2023 , 1030UTC



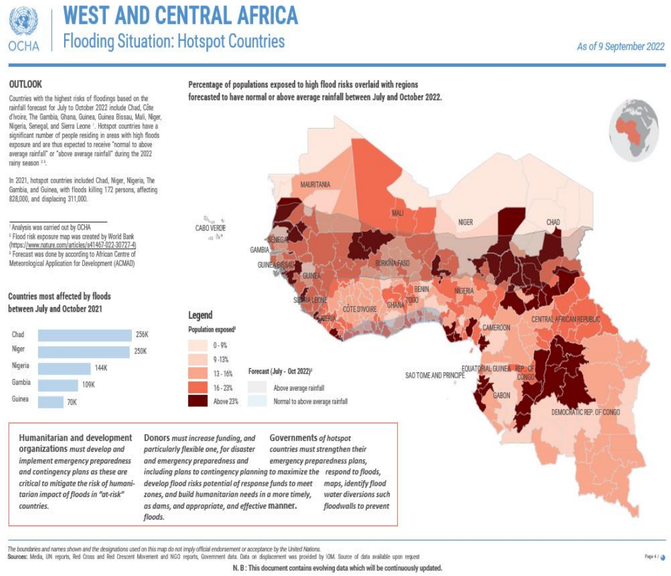
24-02-2023 , 1030UTC

INTERACTION WITH HUMANITARIAN FOR ANTICIPATORY ACTIONS

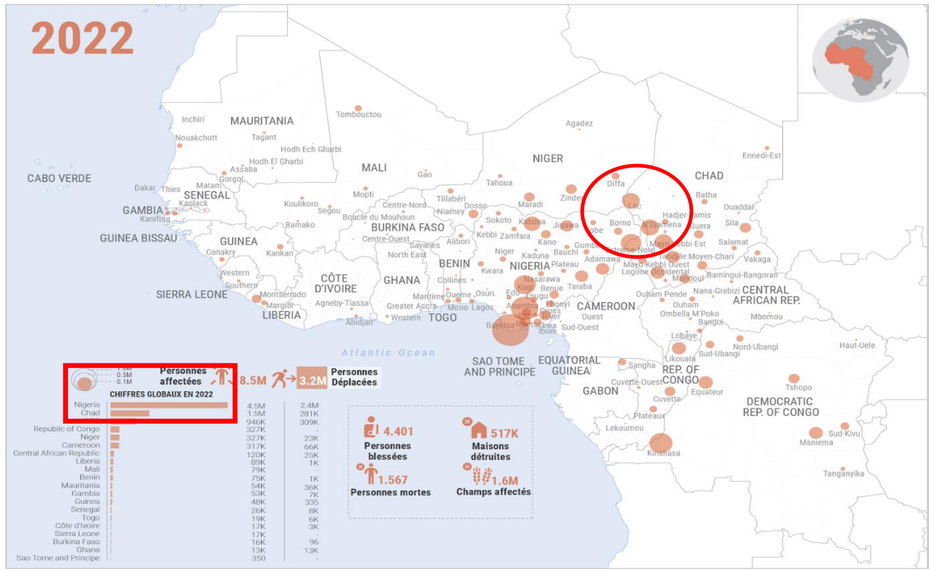
IMPACT BASED FORECAST



PREDICTION % OF POPULATION TO BE EXPOSED TO FLOOD



REPORTED NUMBER OF POPULATION AFFECTED BY FLOOD



Best Practices

This Service was co-developed with OCHA with the percentage of population expected to be affected by flood provided at sub-national scale for preparation/emergency planning and budgeting well ahead of flood events and seasons.

Best Practices

POLICY DIALOGUE DAY FOR ANTICIPATORY ACTION

CONCEPT NOTE

THEME: *"THE LOOMING EL NINO IS HERE AND THE EXPECTED IMPACTS ACROSS AFRICA COULD BECOME SIGNIFICANT"*

DATE: August 24, 2023 AT 10:00 AM GMT

VENUE: ONLINE ON ZOOM

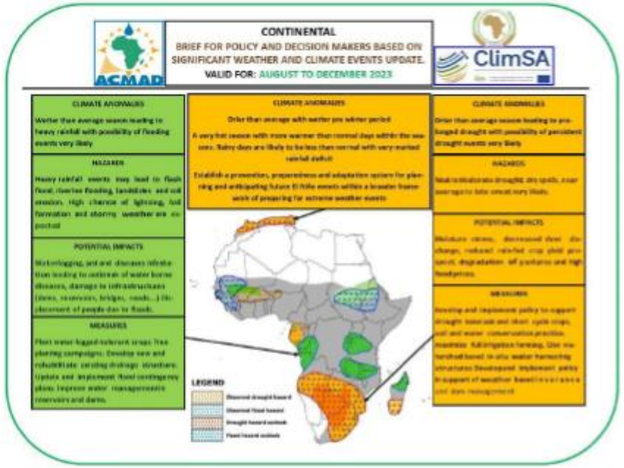
ORGANIZERS AND PARTNERS: ACMAD, AUC, UNDRR

EXPEXTED PARTICPANTS: STAKEHOLDERS OF THE ANTICIPATORY ACTION DIALOGUE PLATFORM FOR AFRICA

EXPECTED RESULTS:

AWARENESS RAISED AND ANTICIPATORY ACTION COORDINATED THROUGH INTERAGENCY AND INTER INSTITUTIONAL DIALOGUE

ClimSA
INTRA-ACP CLIMATE SERVICES AND RELATED APPLICATIONS PROGRAMME

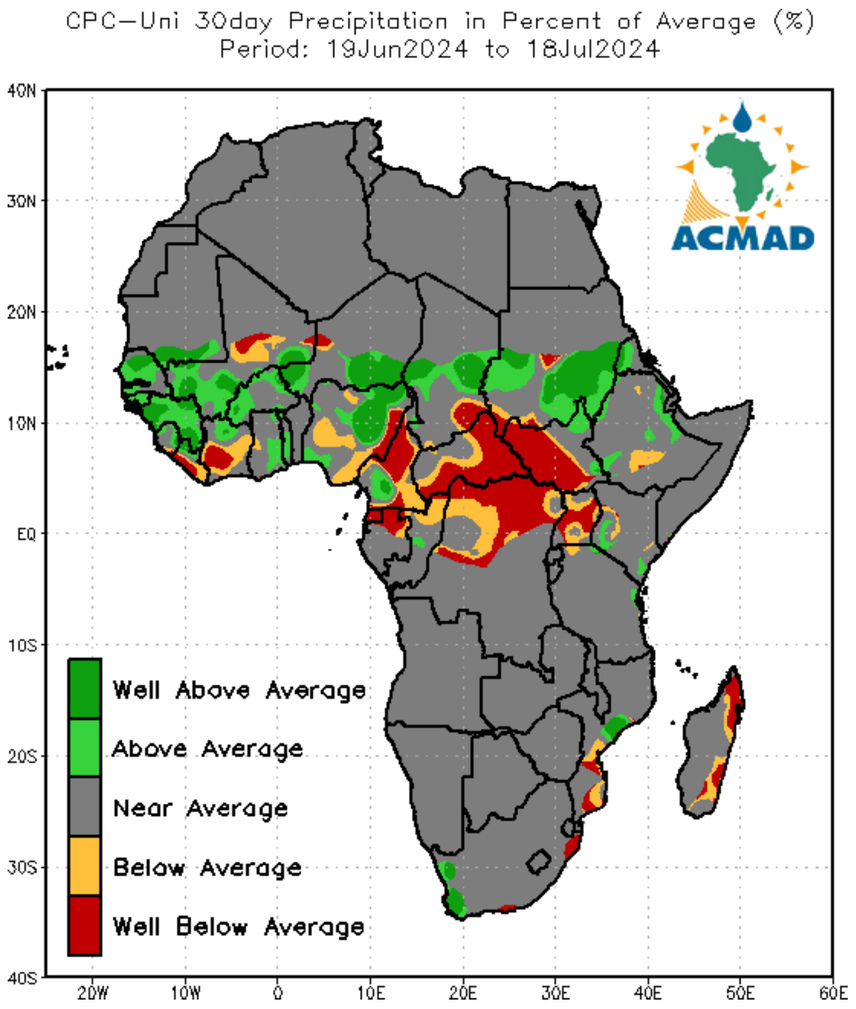


- The question is no longer whether El Niño will happen, but what we must do to mitigate its impacts in Africa knowing floods in the east and drought in the south are key El Nino related hazards in the continent.

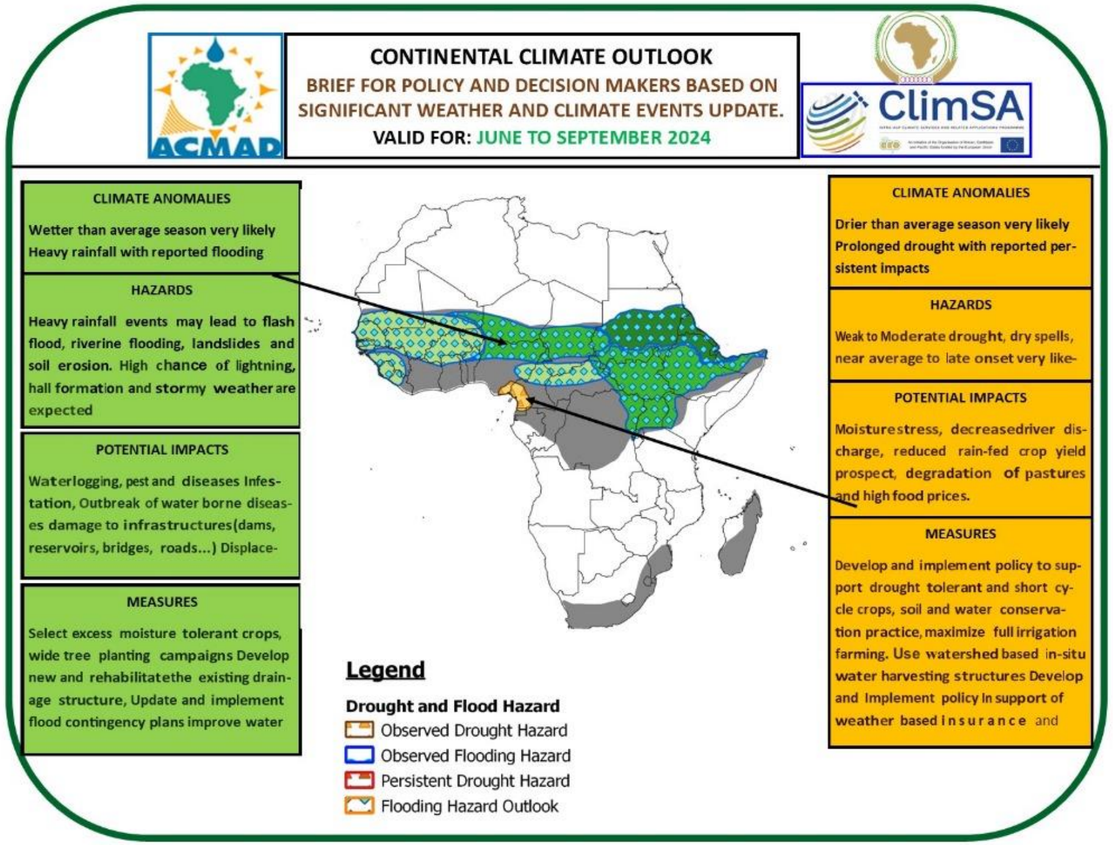
ACMAD organized a Policy Dialogue in which provided the Continental Climate Outlook with potentials impacts of the El Nino Phenomena over Africa for an Anticipatory and Preparedness Actions

MHEWS PRODUCTS and SERVICES

PRODUCTS FOR CLIMATE MONITORING



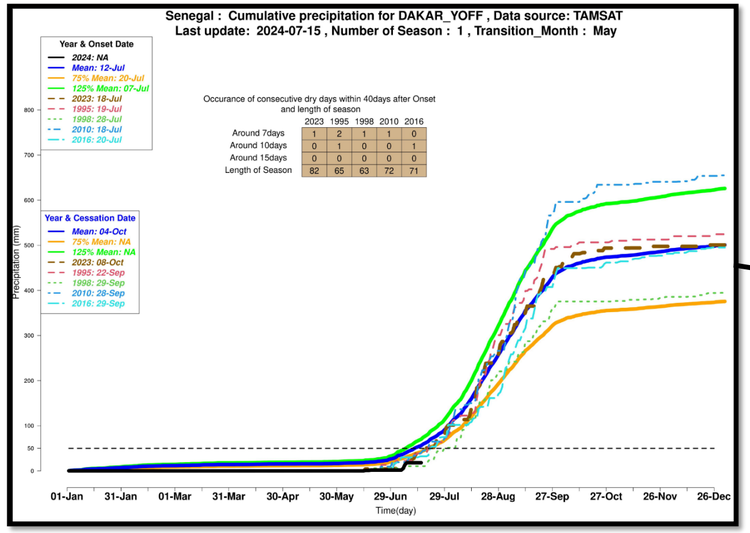
PRODUCTS FOR DICISION MAKERS

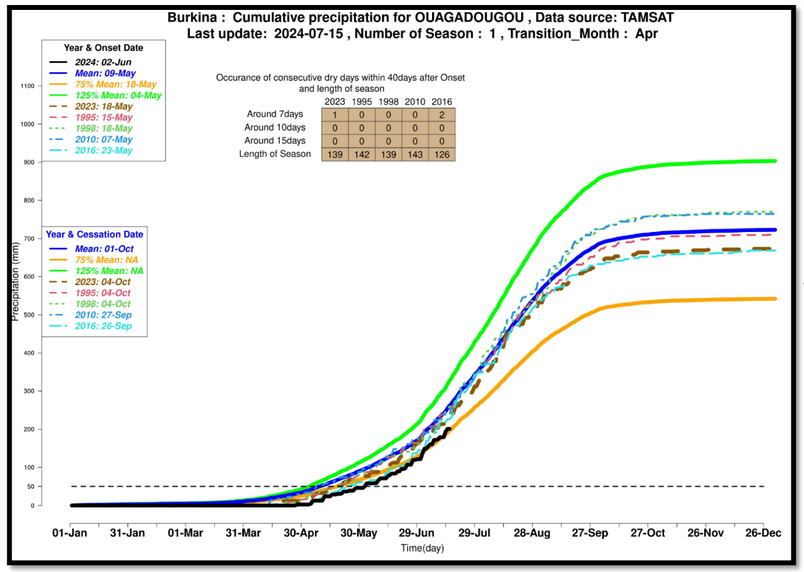


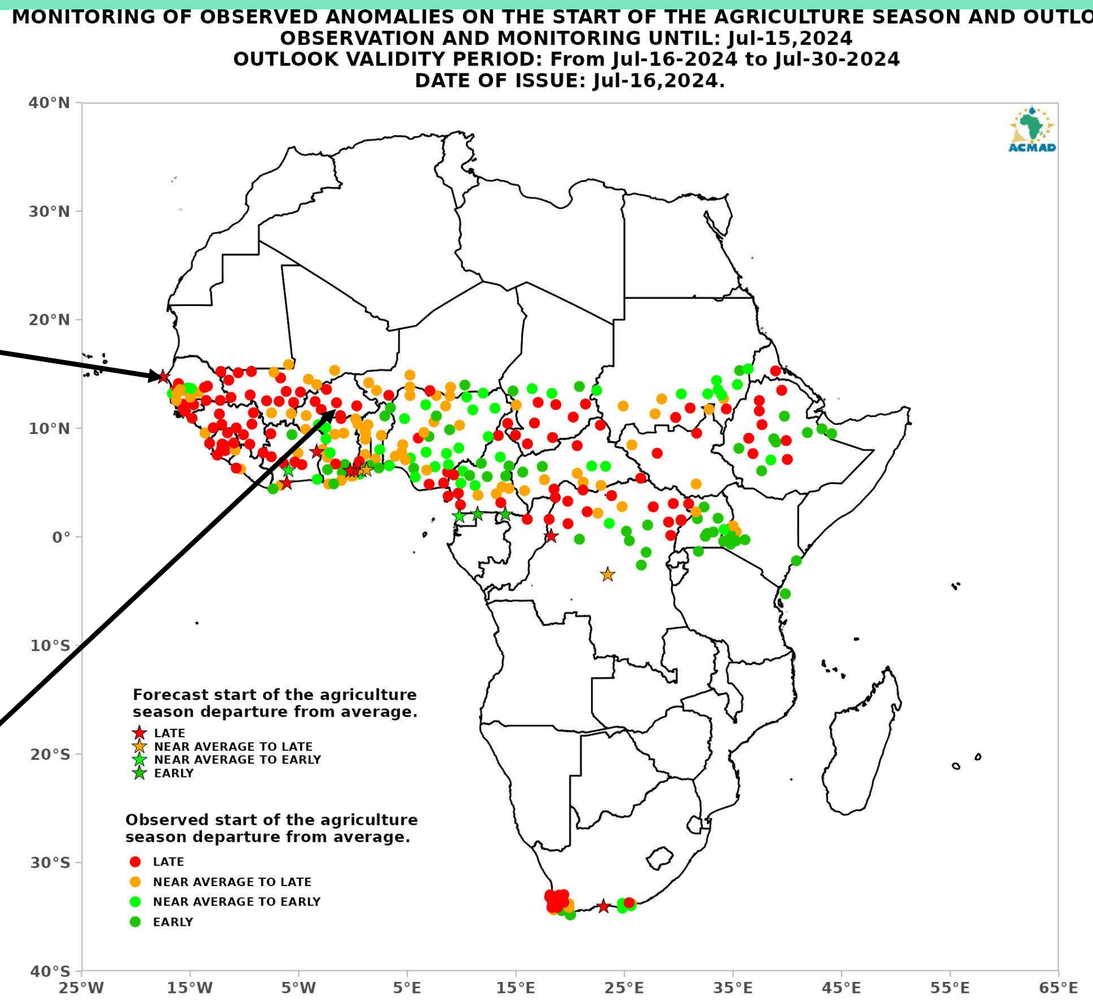
This product is the outcome of the ACCOF mechanism which involve all RCCs over Africa

MHEWS PRODUCTS and SERVICES

PRODUCTS FOR MONITORING and FORECASTING OF THE START OF THE AGRICULTURE SEASON







In general, the agricultural onset has now effectively started over most of the Sudano-Sahelian band of Africa.

A late onset has been reported in most parts of Niger, Burkina Faso, Mali, Senegal and Guinea.

The profile of the Agricultural onset in Ouagadougou, Burkina Faso started with more than 23 days of delay, which may have significant impact on crop production,

ACTIONABLE RECOMMENDATIONS

Conduct capacity assessment of coordination mechanisms and needs at Continental, Regional and National levels.

Raise awareness among political decision-makers of the availability of impact-based forecasts;

Strengthen observation and forecasting capacities at national levels to improve accuracy and reliability **;**

Support disaster managers **from continental to local levels to receive and give feedbacks on *impact information* for strong winds, heavy rains, dust storm, high temperatures outlooks, drought ...**

Advocate for increased investment in response capacities;

Prioritize training and operation of impact forecasting, warning, decision making and action as well as benefits assessments;

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