



# Intra-ACP Climate Services and Related Applications Programme

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## ESTABLISHMENT AND OPERATIONALIZATION OF USER INTERFACES AT CONTINENTAL LEVEL: ANTICIPATORY ACTION PLANNING AND IMPLEMENTATION



Presented by Andre KAMGA FOAMOUHOUE  
For ACMAD/ClimSA  
Jan 31 2024



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





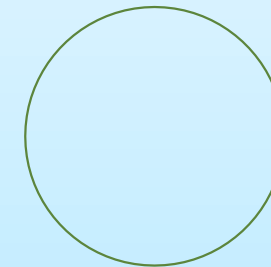


# OUTLINE OF PRESENTATION



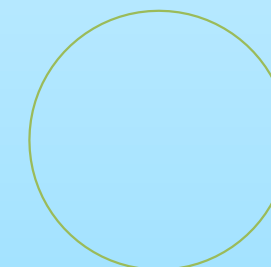
**01**

**BRIEF ON ACMAD**



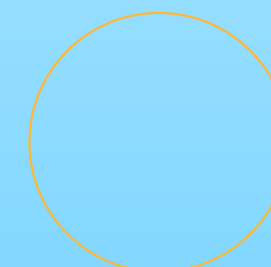
**02**

**ESTABLISHMENT OF UIPs**



**03**

**OPERTAIONALIZATION OF  
UIPs AND REMARKS**





2

## BRIEF ON ACMAD MISSION



**Created through** 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**

1- 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

2- 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**





# 02 ESTABLISHMENT OF UIPs

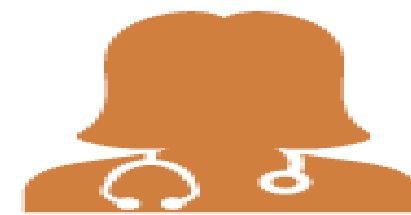




# THE FUNCTIONS OF USER INTERFACE PLATFORMS

UIPs provide knowledge management frameworks, engage users and strengthen partnerships with specific user sectors

-intermediation – Internalization –Externalization -Cognition



WHAT ARE THE USERS' NEEDS?

## Multiple Interfaces for User Engagement and Informing Decisions

- Bespoke services
- More intense interaction
- Highly iterative
- Directly usable data
- One-to-one contact
- In-depth understanding

- Multi-way communications
- Build trust
- Co-learning
- Co-producing
- Capacity-building
- Regular interaction

- One-stop shop window
- Up-to-date
- Wide range of products
- Easy to use
- User guided design
- Intuitive



Focused Relationships

Tailored & Targeted



Interactive Group Activities

Dialogue Based



Websites & Web Tools

Information Provision

PASSIVE ENGAGEMENT

ACTIVE ENGAGEMENT



## African Continental User Interface Platform

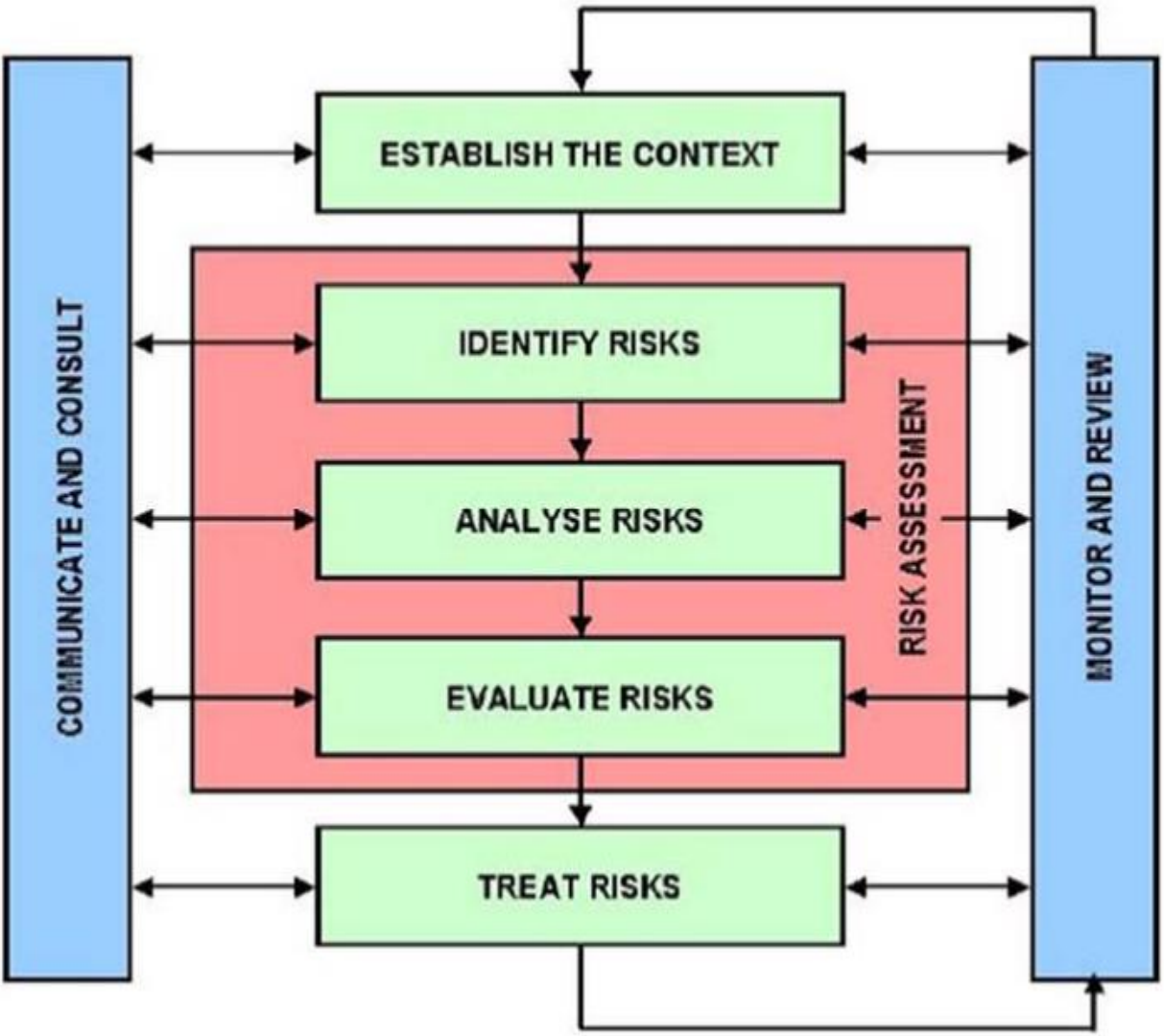
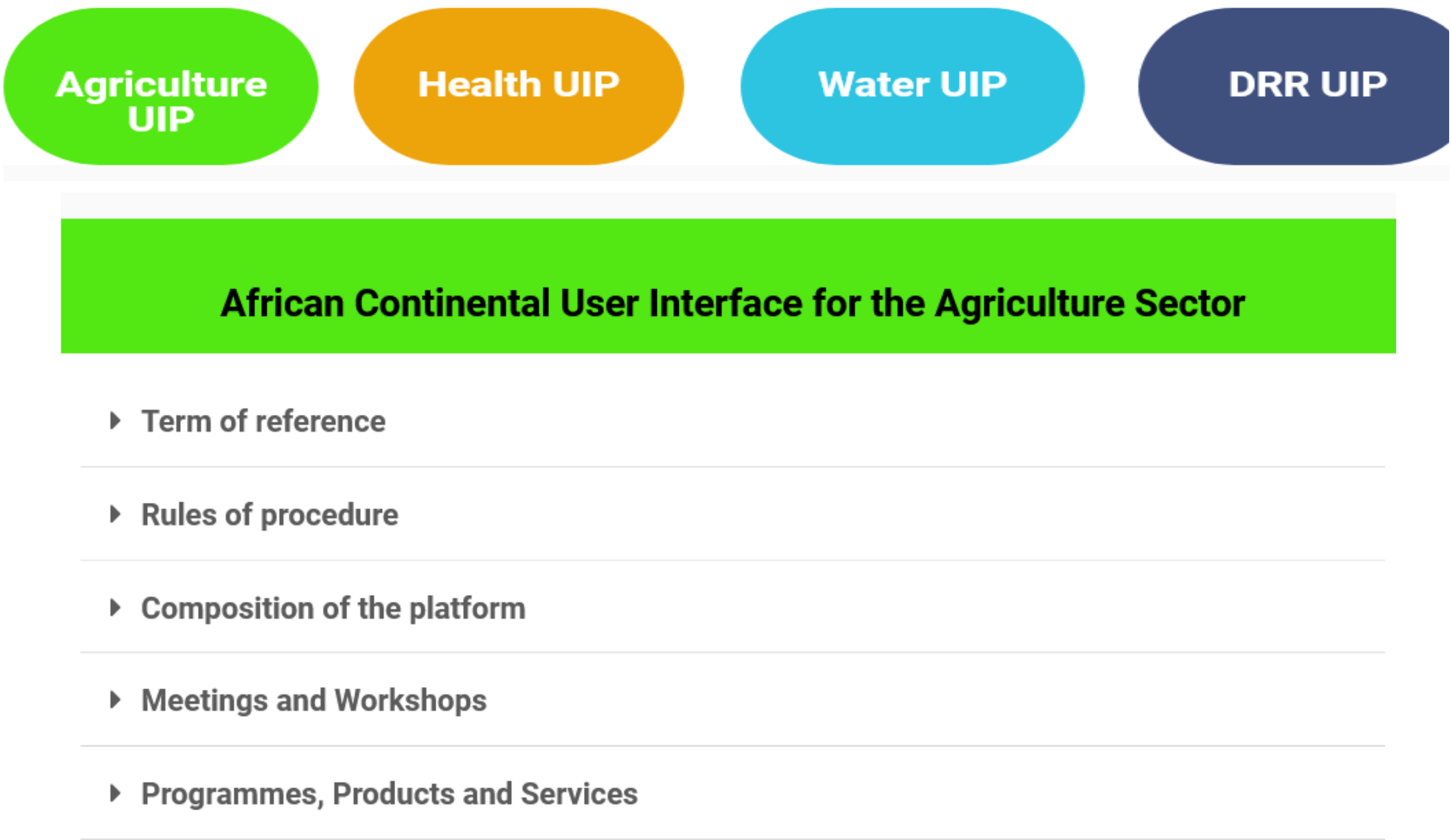


Figure 2. ISO 31000.



# UIP AGRICULTURE



## -AGRICULTURE SECTOR

### Risk causes:

Floods, drought, High and low temperature, spells, disruptions of start and end of season, strong winds and thunderstorms, hailstorms

### Products and services

Seasonal total precipitation and temperature outlooks

Start and end of season, dry and wet spells monitoring and outlooks

Advices for land preparation, sowing, fertilizer spray, weed control and management, harvesting, crop conservation, optimal crop varieties for agro climatic zones

Warnings and Alerts for pests and diseases

### Activities

- Analysis climate information needs along the agriculture value chain, share bespoke impact based climate monitoring and forecasting information, advices, Climate risk assessment along the value chain for each commodity
- Prepare advices for farmers , herders, fishermen and other stakeholders of the value chain;
- Estimation of food production and advices for agriculture products conservation
- Estimation of demand and supply in agriculture commodity markets
- Management of agriculture commodity conservation and market prices
- Update , tailor and share bespoke climate information among agriculture stakeholders, monitoring and evaluation of activities

### Rules of procedures

Chair Elected from the PAFO members: Secretariat: ACMAD, frequency of meetings: twice a year ahead of major agriculture seasons and ad hoc

Risk Event	Risk Cause(s)	Example Impacts	Significant Consequences?	Plausible by 2050?
caused by 0.5 m of SLR by 2050)				
<b>Ocean acidification</b> (Scenario: 0.15 reduction in pH by 2050)	<ul style="list-style-type: none"><li>• Higher temperatures</li><li>• Higher atmospheric carbon dioxide concentrations</li></ul>	<ul style="list-style-type: none"><li>• Reduced shellfish productivity</li></ul>	<ul style="list-style-type: none"><li>✓ Psychological impacts</li><li>✓ Natural resources</li><li>✓ Economic vitality</li><li>✓ Cost to provincial government</li></ul>	Y
<b>Increase in invasive species</b> (Scenario: Expansion of knotweed by 2050)	<ul style="list-style-type: none"><li>• Multiple causes (temperature and precipitation changes)</li></ul>	<ul style="list-style-type: none"><li>• Ecosystem disruption</li><li>• Increased control costs</li><li>• Disruption to infrastructure services</li></ul>	<ul style="list-style-type: none"><li>✓ Natural resources</li><li>✓ Economic vitality</li><li>✓ Infrastructure services</li><li>✓ Cost to provincial government</li></ul>	Y
<b>Reduction in ecosystem connectivity</b> (Scenario: Reduction in ecosystem connectivity in the Okanagan-Kettle region by 2050)	<ul style="list-style-type: none"><li>• Multiple causes including wildfires, flooding, and ecosystem shifts</li></ul>	<ul style="list-style-type: none"><li>• Loss of natural resources, ecological integrity</li><li>• Reduction in species resiliency to adapt</li><li>• Loss of species altogether</li></ul>	<ul style="list-style-type: none"><li>✓ Natural resources</li><li>✓ Economic vitality</li></ul>	Y
<b>Loss of forest resources</b> (Scenario: 25% decline in timber growing stock by 2050)	<ul style="list-style-type: none"><li>• Multiple causes (temperature and precipitation changes)</li></ul>	<ul style="list-style-type: none"><li>• Ecosystem disruption</li><li>• Economic disruption and loss of livelihoods</li></ul>	<ul style="list-style-type: none"><li>✓ Cultural resources</li><li>✓ Natural resources</li><li>✓ Economic vitality</li></ul>	Y
<b>Glacier mass loss</b> (Scenario: 25% decline in glacier area by 2050)	<ul style="list-style-type: none"><li>• Higher temperatures</li></ul>	<ul style="list-style-type: none"><li>• Water shortages</li><li>• Changes in aquatic ecosystems and species</li></ul>	<ul style="list-style-type: none"><li>✓ Natural resources</li><li>✓ Economic vitality</li></ul>	Y
<b>Long-term water shortages</b> (Scenario: Multi-year water shortage in at least one region by 2050)	<ul style="list-style-type: none"><li>• Change in seasonal precipitation patterns year on year (or multi-year)</li></ul>	<ul style="list-style-type: none"><li>• Decline in drinking water quality and quantity</li><li>• Crop stress</li><li>• Economic shifts</li></ul>	<ul style="list-style-type: none"><li>✓ Psychological impacts</li><li>✓ Social cohesion</li><li>✓ Economic vitality (agriculture)</li><li>✓ Infrastructure services</li><li>✓ Cost to provincial government</li></ul>	Y





# UIP DRR WITH A SUB-SECTOR ON INFRASTRUCTURE



## -DRR SECTOR

### Risk causes:

Floods, drought, Heat waves, spells, strong winds and storms, disruptions of start and end of season, landslide

### Products and services

Impact based Forecasts for Anticipatory Action formulation

Outlooks, Advisories, Watches and **Warning (at national level)**

Risk based warnings, alerts

### Activities

- Risk assessments , awareness raising on hazards, impacts, risks and mitigation measures
- Support for Establishment of MHEWS
- Update of emergency preparedness and responses measures
- Meteorological assistance for post disaster needs assessments
- Meteorological assistance for early response and rehabilitation
- Share advisories, watches, outlooks, warnings and alerts
- Train DRR experts on interpretation and use of climate services, train climate services providers for understanding of DRR decision systems and related climate information needs
- Monitor and evaluate activities above

### Rules of procedures

Chair AUC: Secretariat: ACMAD frequency of meetings: twice a year if possible back to back with the African WG on DRR

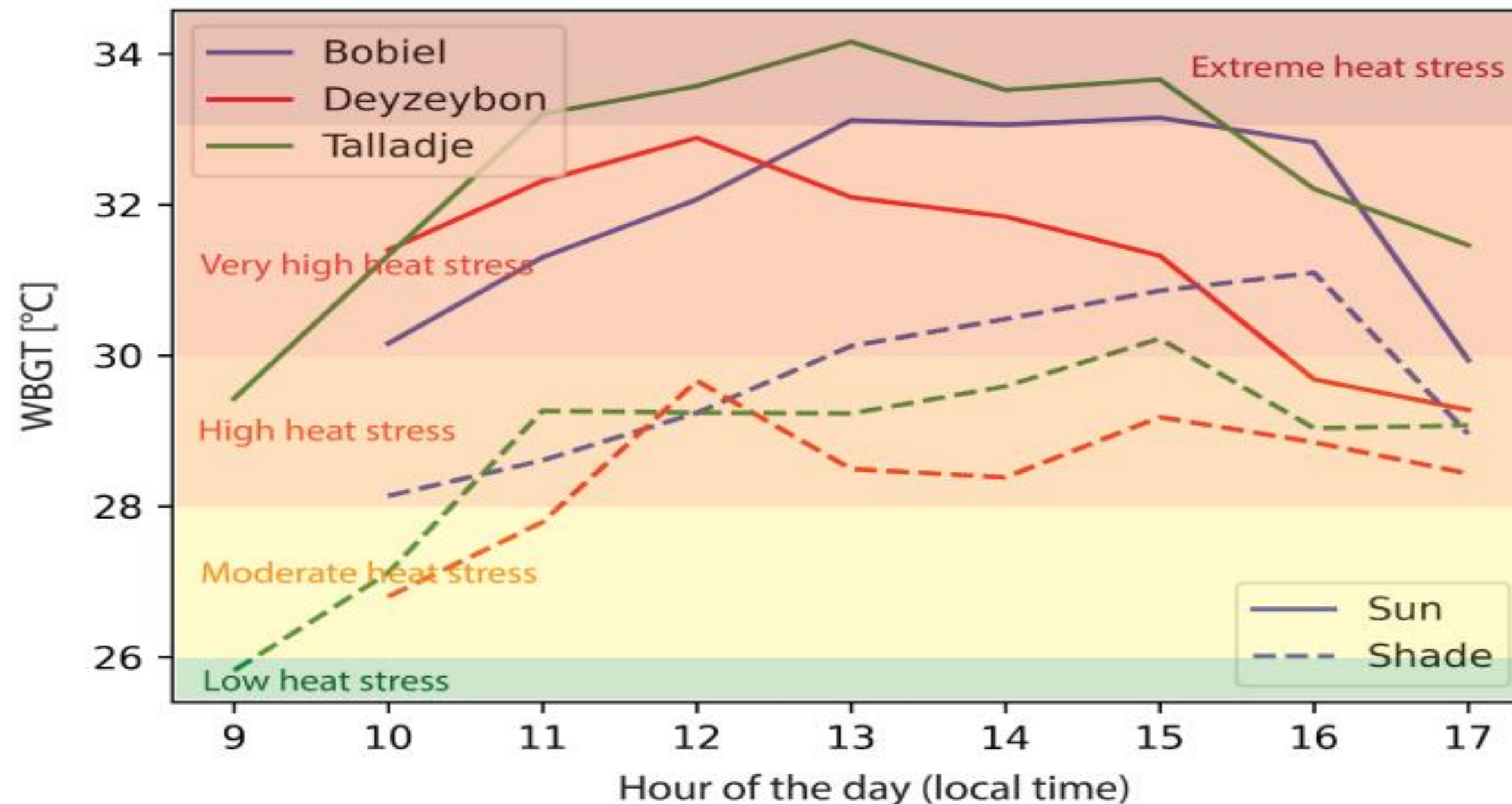


# African Climate User Interface Platform for CITY INFRASTRUCTURE PLANNING

*Climate Services for city resilience and adaptation to heat related disasters*

**OBSERVED HEAT STRESS INDEX IN THE SUN AND UNDER THE SHADE WITH TREES ON MAY 19 2022.**

**TALLADJE HAS A HIGH NUMBER OF HOURS DURING THE DAY WITH EXTREME HEAT STRESS ON THE SUN . IT NEEDS MORE TREE PLANTING PROJECTS**





# African Climate User Interface Platform for the Health Sector

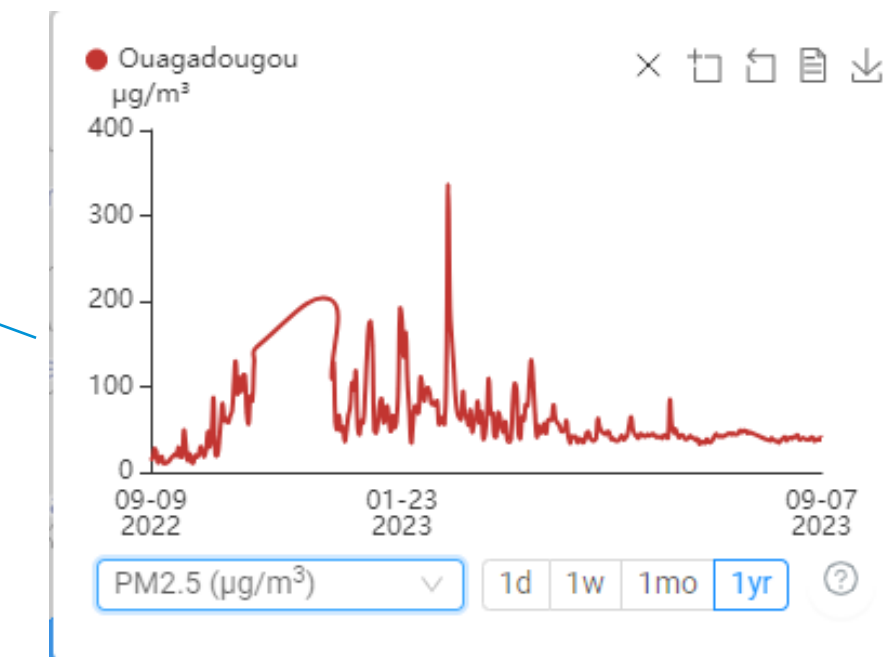
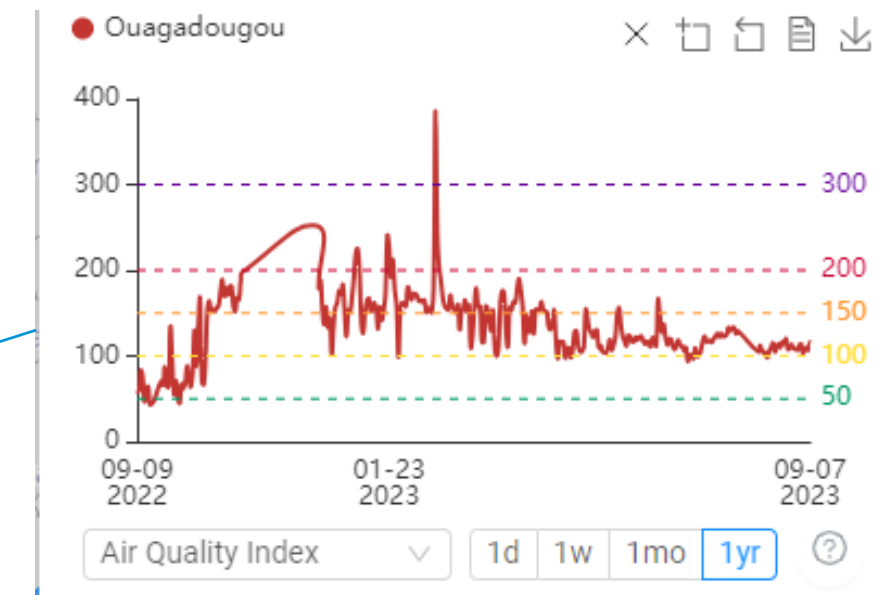
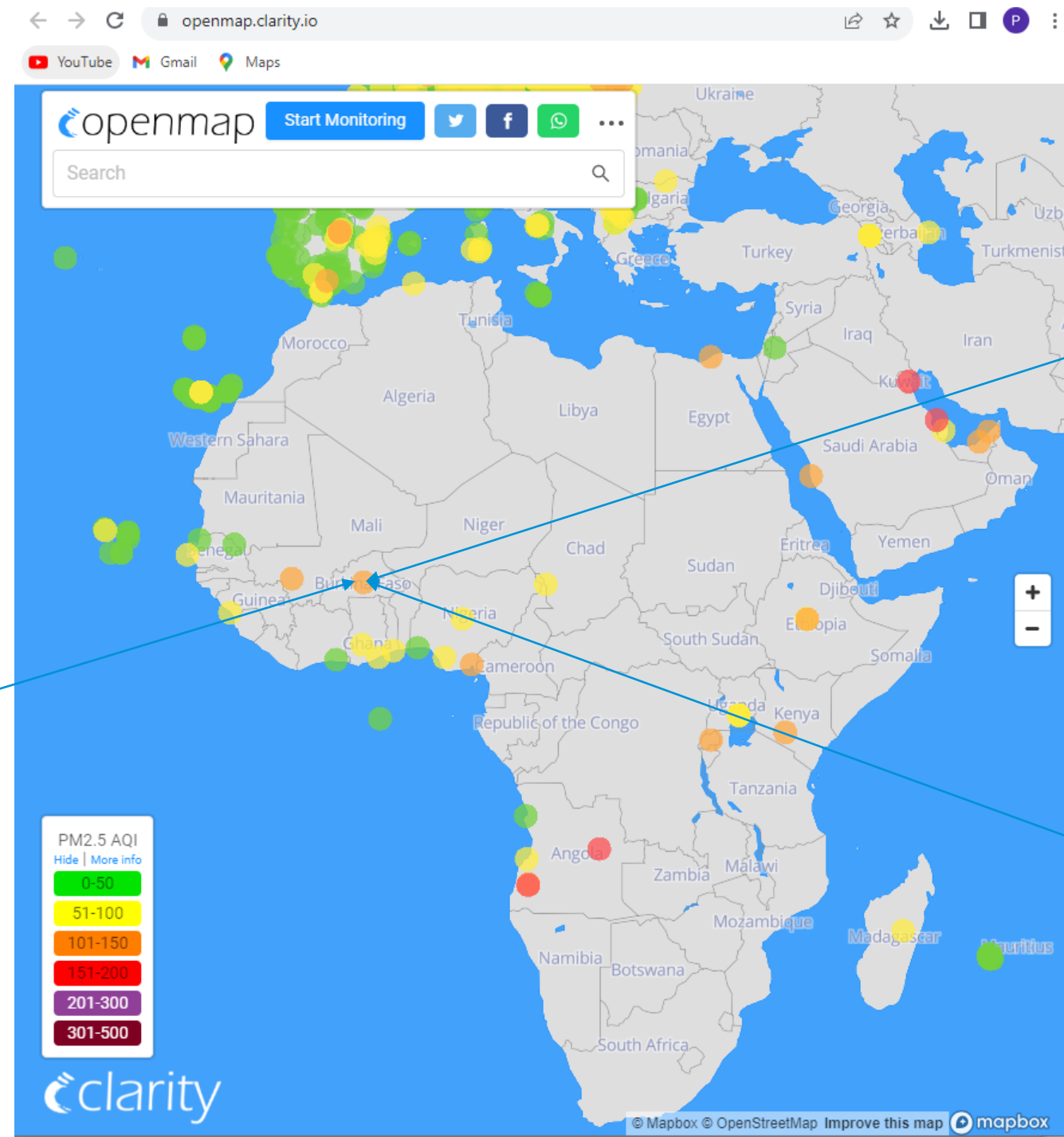
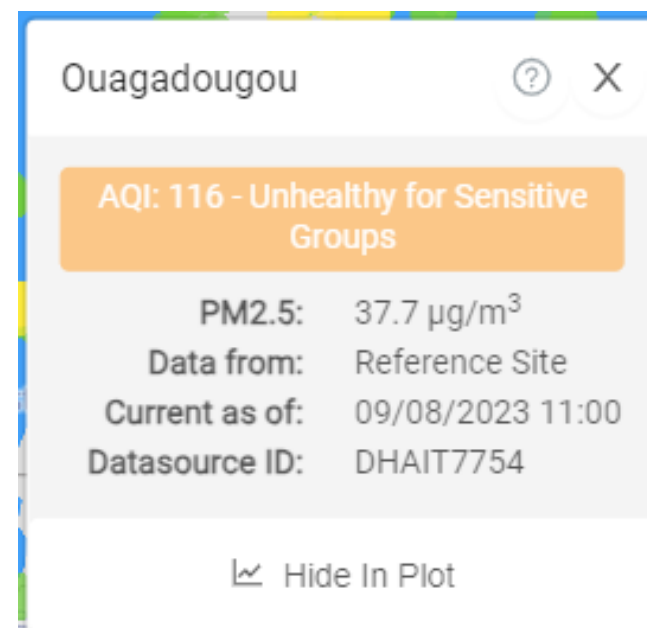
## Air quality Service



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Air Quality Monitoring in  
collaboration with Pen.  
State University

<https://openmap.clarity.io/>







# CLIMATE SERVICE FOR HEALTH UIP



IMPACT FORECASTING AND MEASURES FOR MENINGITIS DISEASE CONTROL BY WHO IN AFRICA WITH WMO  
GLOBAL MEDIUM RANGE DETERMINISTIC AND S2S PRODUCTS CENTRES



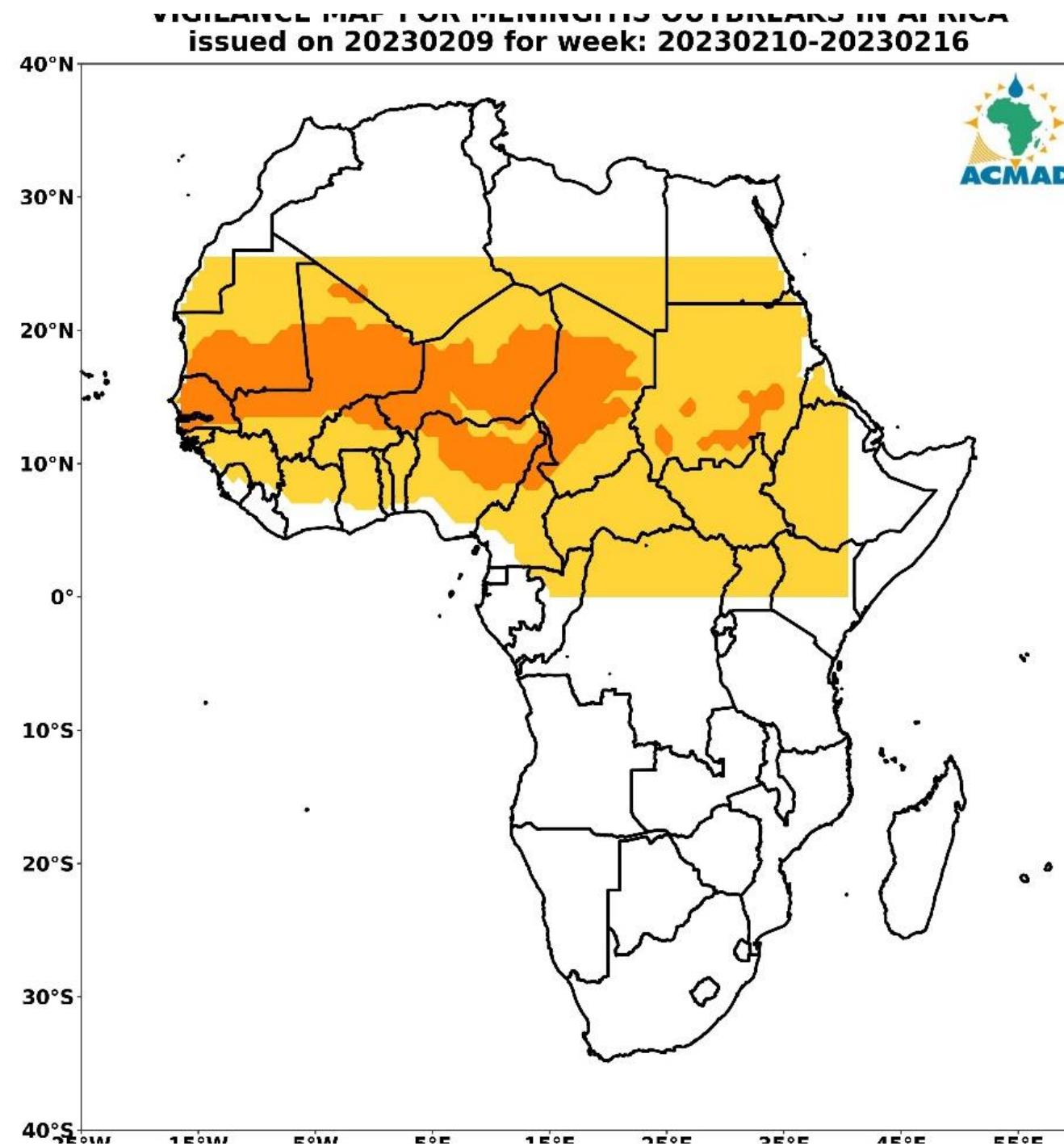
## VIGILANCE MAP FOR MENINGITIS OUTBREAK

Valid From 10 to 16 February 2023

Issued on February 09, 2023



**HIGHLIGHT:** Meningitis cases likely in Mauritania, Senegal, Mali, Algeria, Niger, Burkina Faso, Nigeria, Cameroon and Sudan.



	Phenomenon	Hazard	Potentials Impacts	Advisory / Measures
Yellow	<ul style="list-style-type: none"><li>- Dust concentration below <math>150\mu\text{g}/\text{m}^3</math></li><li>- Relative humidity above 40%</li><li>- Temperature below <math>27^\circ\text{C}</math></li></ul>	Emergence of Meningitis cases not likely	Potential pressure on the health system	Routine surveillance systems at regional and national levels
Green	<ul style="list-style-type: none"><li>- Dust concentration between 150 to <math>400\mu\text{g}/\text{m}^3</math></li><li>- Relative humidity between 20 &amp; 40%</li><li>- Temperature above <math>27^\circ\text{C}</math></li></ul>	Emergence of Meningitis cases very likely	Loss of life, pressure on the health system	Activation of surveillance systems at regional and national levels
Red	<ul style="list-style-type: none"><li>- Dust Concentration at least <math>400\mu\text{g}/\text{m}^3</math> and above</li><li>- Relative humidity less than 20%</li><li>- Temperature above <math>30^\circ\text{C}</math></li></ul>	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

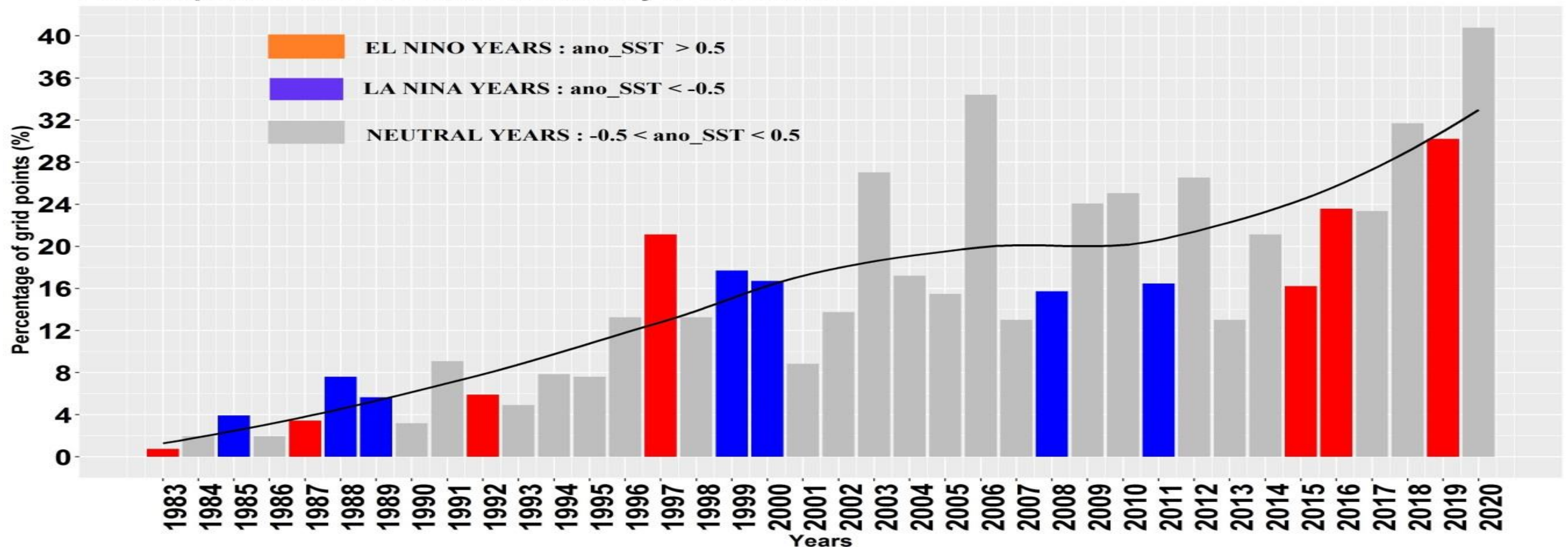


# USER INTERFACE PLATFORM SERVICES FOR CLIMATE NEGOTIATORS

## State of Climate Report for Africa

Trends on the land surface hit by heavy rainfall. Heavy rains and floods are additional priority hazards for NDCs updates in Africa

**Percentage of grid points over African land masses with daily rainfall above the 90th percentile  
For the period 1981-2020, from January to December**

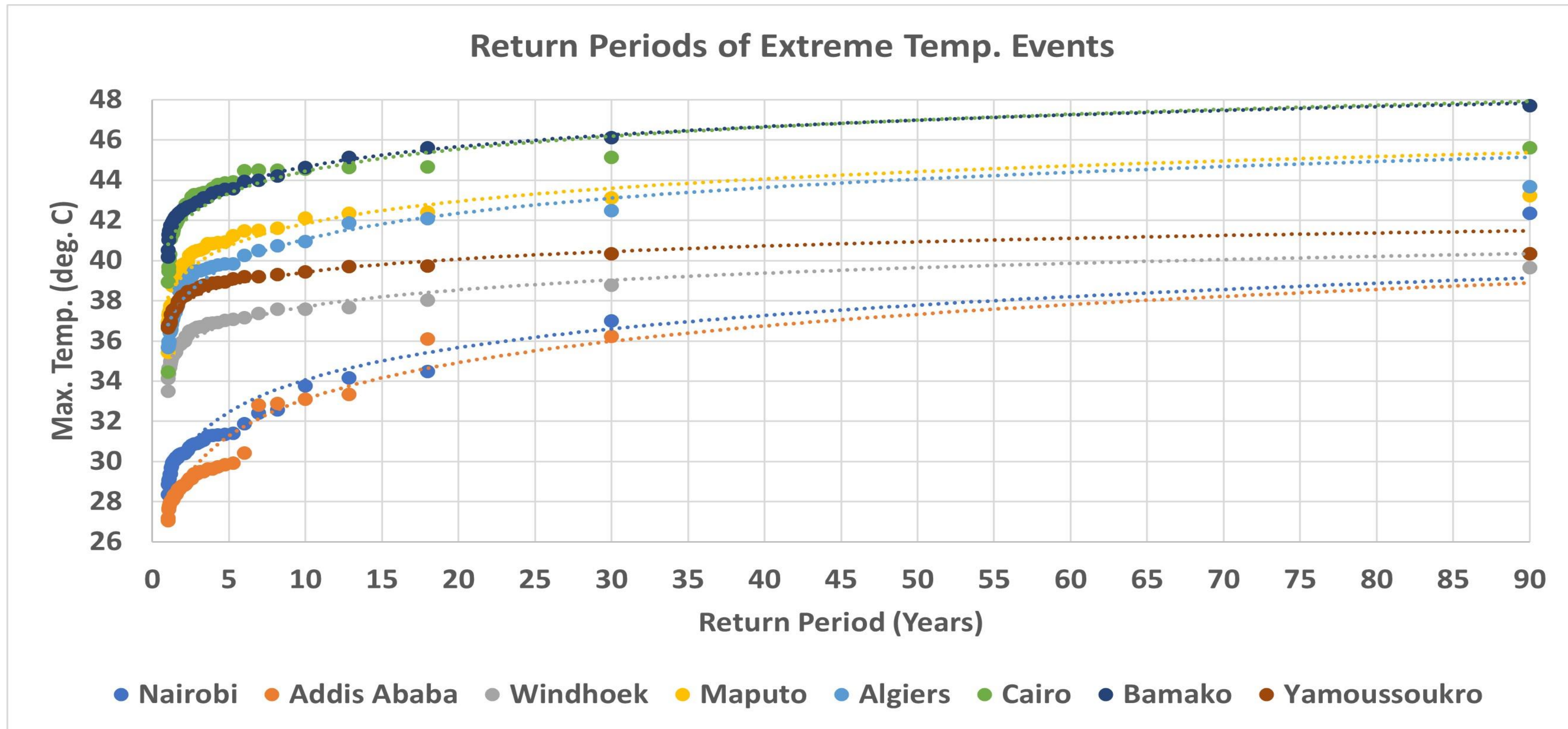




# USER INTERFACE PLATFORM FOR INFRASTRUCTURE

## – Actionable Climate indicators for resilient infrastructure design

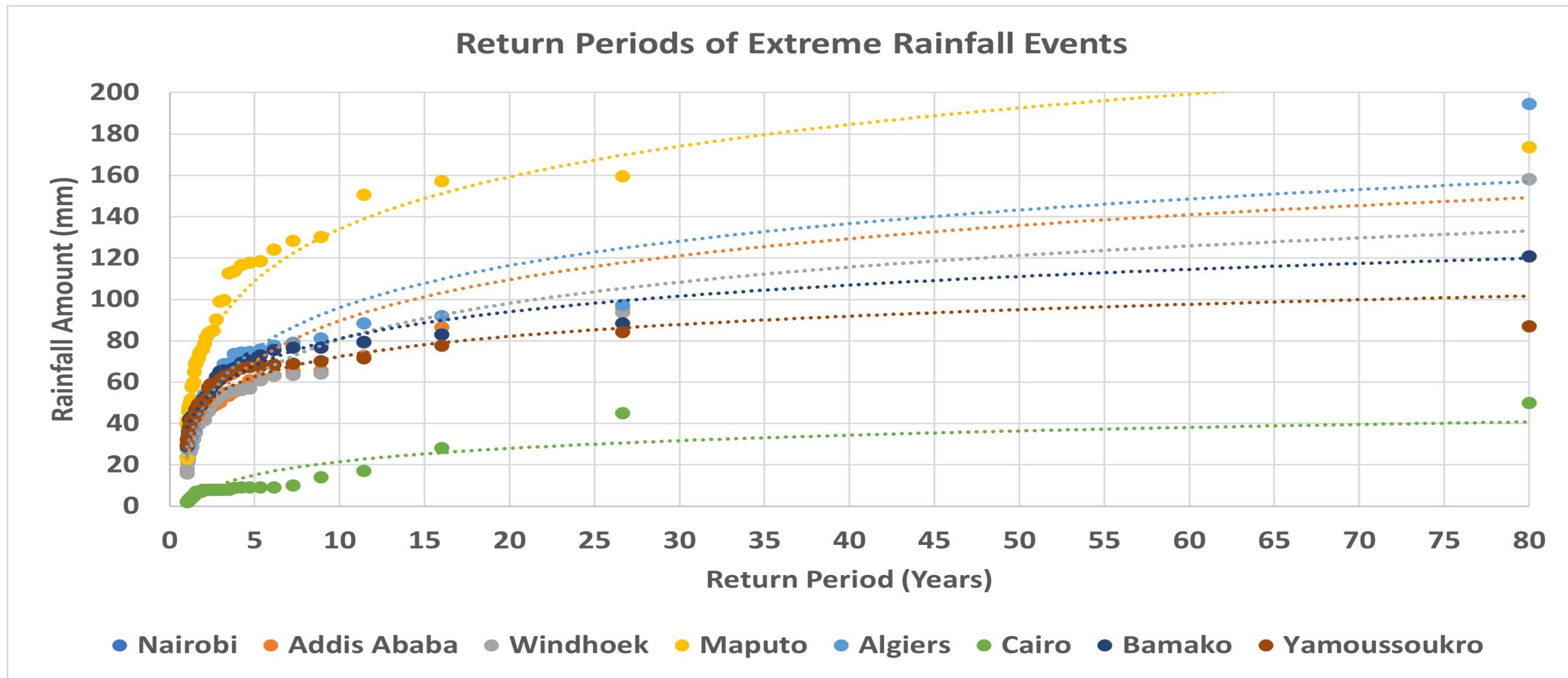
Early warning for high temperatures, and wildfires urgent in North Africa (Cairo) and Sahel ( Bamako)





# FLOODS RESILIENT INFRASTRUCTURE NEEDED IN NDC UPDATES FOR MAPUTO

Only Cairo is not highly vulnerable to heavy rains and floods





# USER INTERFACE PLATFORM (UIP) FOR DRR

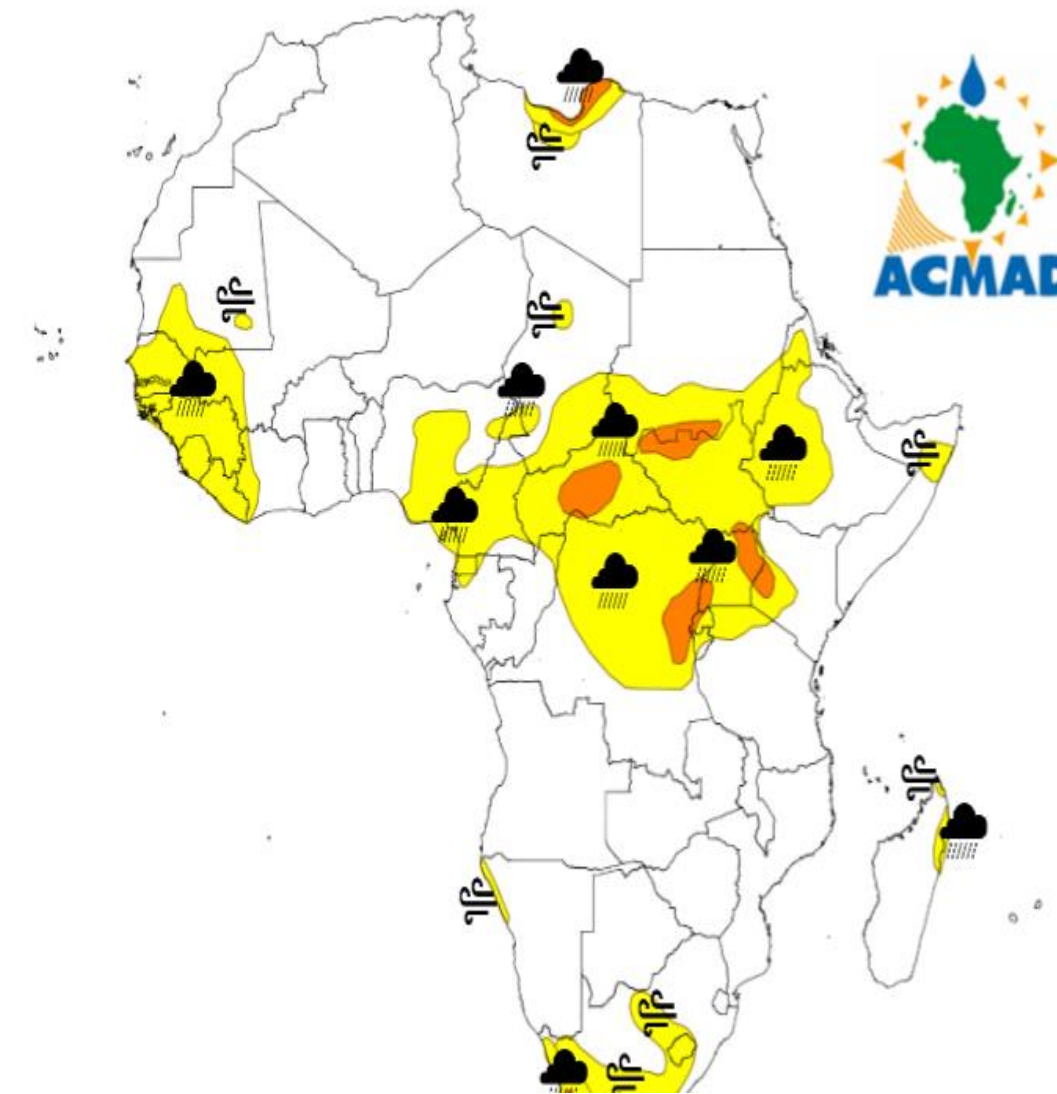


1- Libya's National Meteorological Centre said the **storm peaked** in north-eastern Libya on **10 September, 2023** with **strong winds of 70 - 80 km/h**.

**2- Impacts:** Communications interruption, the fall of electricity towers and trees.

3- Torrential **rains** of between **150 - 240 mm caused flash floods** in several cities, including Al-Bayda, which recorded 414.1 mm (from 10 Sep 8am to 11 Sep 8am, a new rainfall record).





- Storm Daniel caused **record-breaking rainfall in Greece** on **5-6 September**, with a reported **50 mm falling in 24 hours** at a station in the village of Zagora. This is the equivalent of **about 3 months of rainfall**

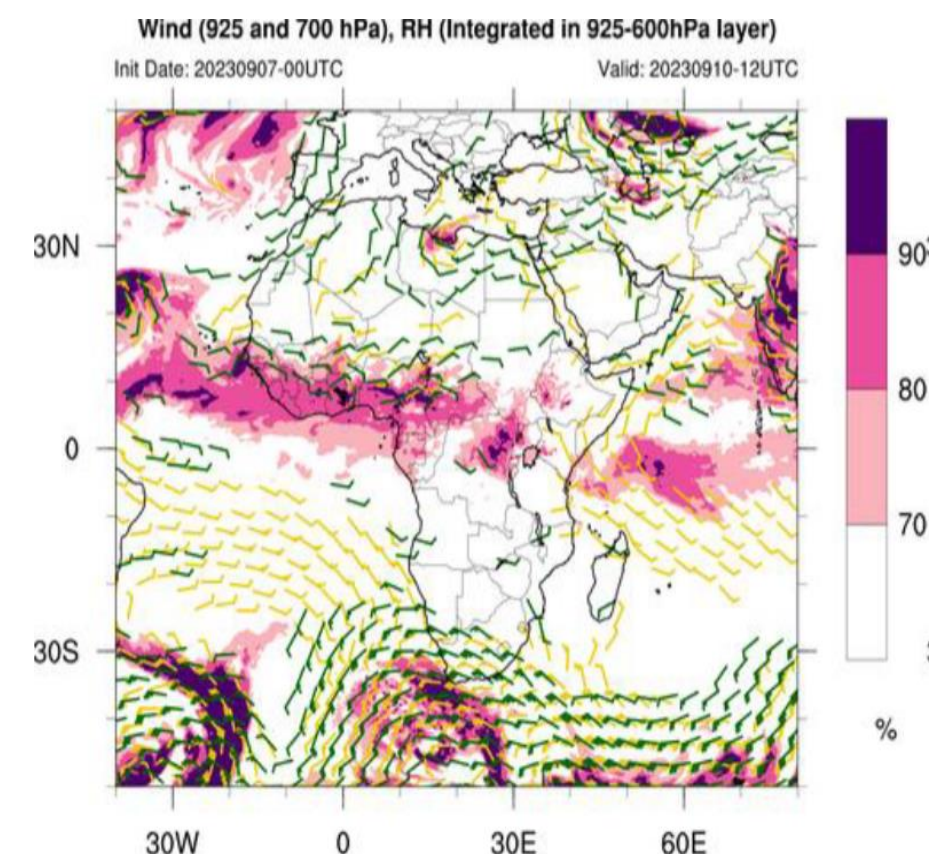


## MULTI-HAZARD OUTLOOK

**Validity: 2023-09-10**

issued on 2023-09-07

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

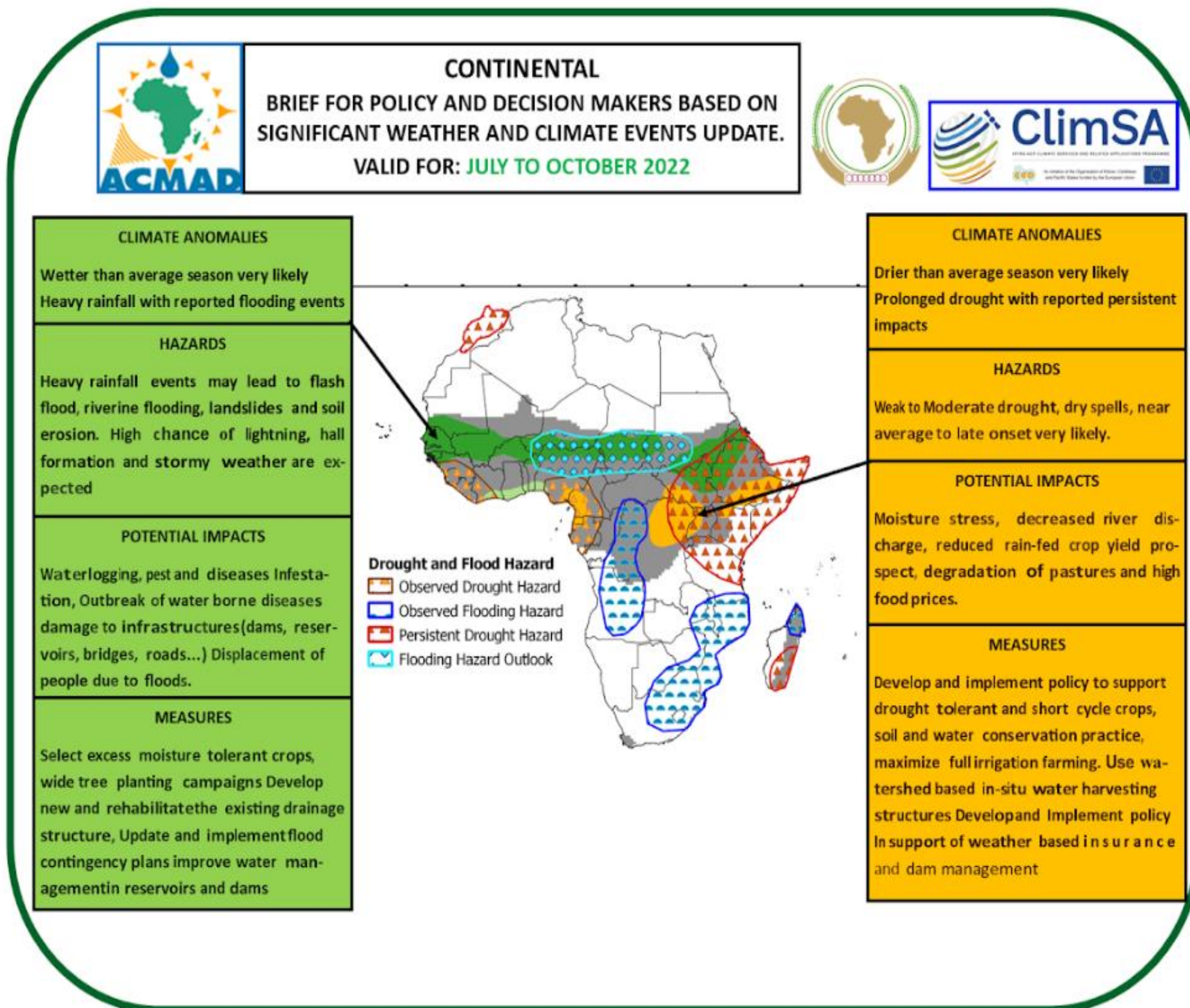




# USER INTERFACE PLATFORM (UIP) FOR DRR

## PRODUCTS TO OPERATE USER INTERFACE PLATFORM

### DRR USER INTERFACE OPERATIONAL SERVICE FOR UNOCHA EMERGENCY RESPONSE AND ANTICIPATORY ACTION PLANNING



## WEST AND CENTRAL AFRICA Flooding Situation: Hotspot Countries

As of 9 September 2022

### OUTLOOK

Countries with the highest risks of floodings based on the rainfall forecast for July to October 2022 include Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal, and Sierra Leone<sup>1</sup>. Hotspot countries have a significant number of people residing in areas with high floods exposure and are thus expected to receive "normal to above average rainfall" or "above average rainfall" during the 2022 rainy season<sup>2,3</sup>.

In 2021, hotspot countries included Chad, Niger, Nigeria, The Gambia, and Guinea, with floods killing 172 persons, affecting 828,000, and displacing 311,000.

<sup>1</sup> Analysis was carried out by OCHA

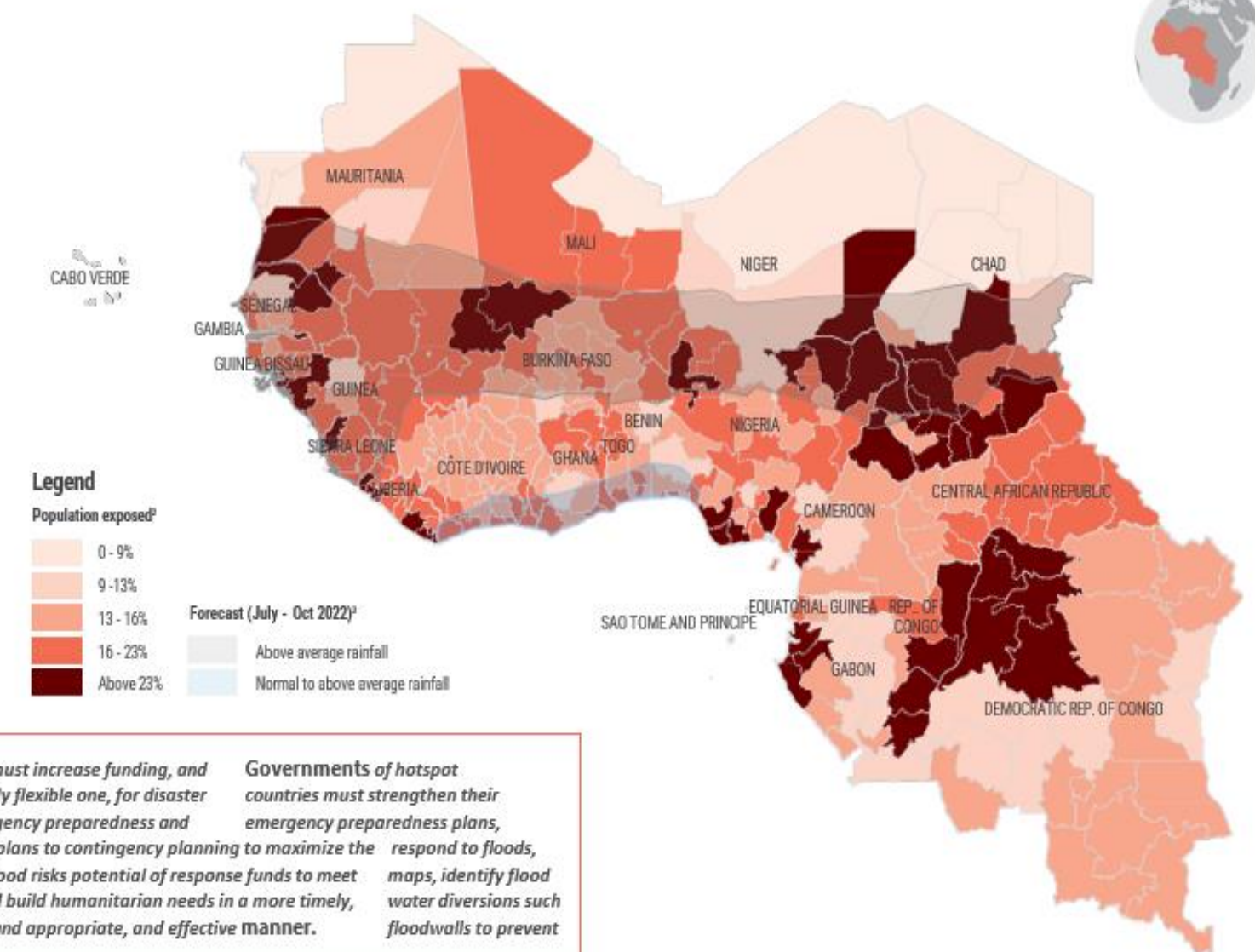
<sup>2</sup> Flood risk exposure map was created by World Bank (<https://www.nature.com/articles/s41467-022-30727-4>)

<sup>3</sup> Forecast was done by according to African Centre of Meteorological Application for Development (ACMAD)

### Countries most affected by floods between July and October 2021

Chad	256K
Niger	250K
Nigeria	144K
Gambia	109K
Guinea	70K

Percentage of populations exposed to high flood risks overlaid with regions forecasted to have normal or above average rainfall between July and October 2022.



Humanitarian and development organizations must develop and implement emergency preparedness and contingency plans as these are critical to mitigate the risk of humanitarian impact of floods in "at-risk" countries.

Donors must increase funding, and particularly flexible one, for disaster and emergency preparedness and including plans to contingency planning to maximize the respond to floods, develop flood risks potential of response funds to meet zones, and build humanitarian needs in a more timely, as dams, and appropriate, and effective manner.

Governments of hotspot countries must strengthen their emergency preparedness plans, maps, identify flood water diversions such floodwalls to prevent floods.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.  
Sources: Media, UN reports, Red Cross and Red Crescent Movement and NGO reports, Government data. Data on displacement was provided by IOM. Source of data available upon request

N.B : This document contains evolving data which will be continuously updated.

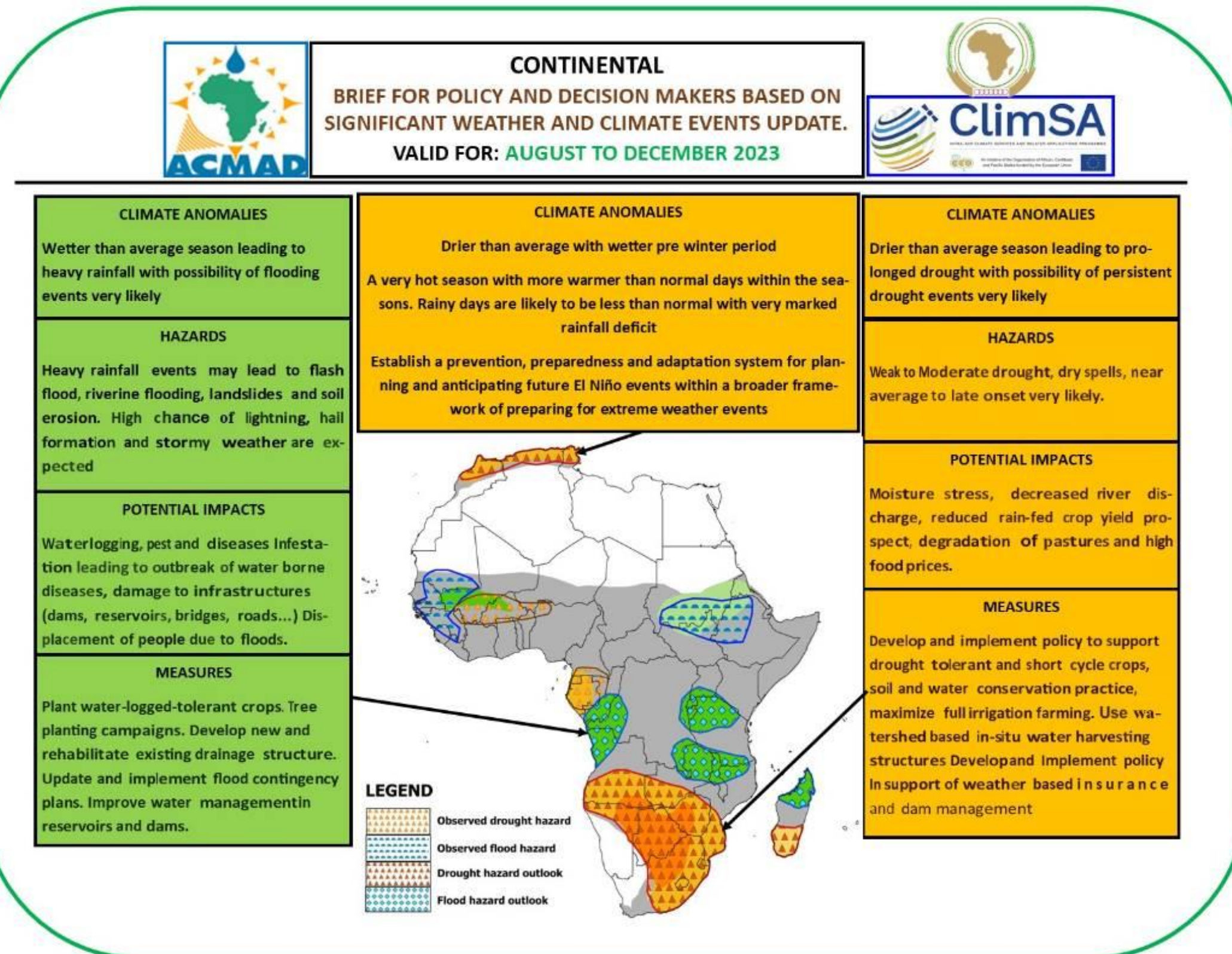




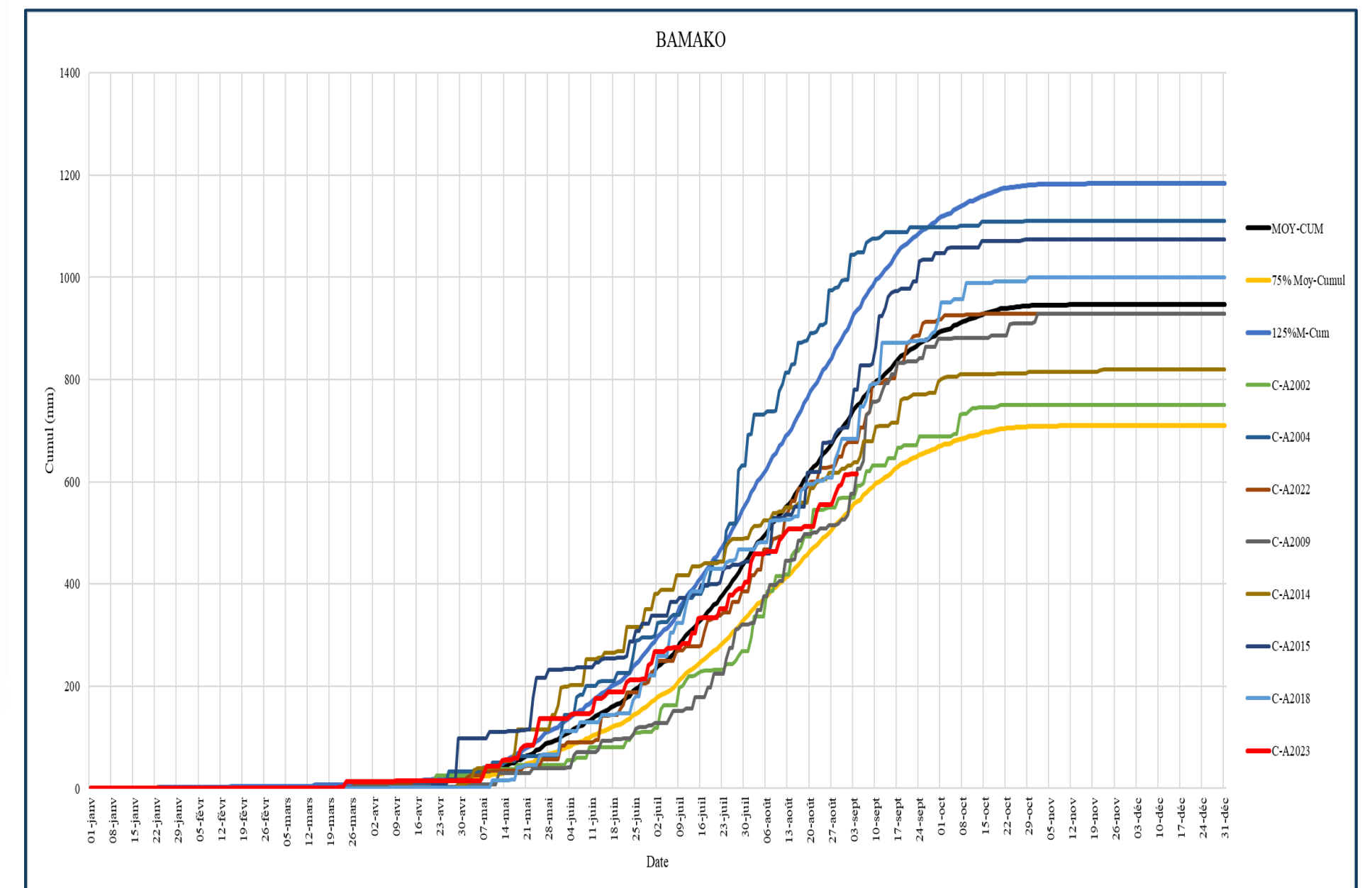
# SERVICES FOR MULTIPLE USER INTERFACE PLATFORMS



## BRIEF FOR POLICY AND DECISION MAKERS



- ✓ Harmonize and consolidate methods, tools and products ;
- ✓ Provide monthly continental hazards outlooks, potential impacts and proposed Anticipatory Actions





# Adaptation or Anticipatory Actions from interactions In the UIP Agriculture

Adaptation addressing agriculture sector impacts takes a wide range of forms that include:

- planting drought-tolerant crops (need drought monitoring and outlook information);
- early/late planting (need monitoring and forecasts of disruptions on the start of agriculture season);
- crop diversification (need climate outlook for total seasonal rainfall above given threshold for crop type);
- rainwater harvesting ( monitoring and forecasting of drought and/or high temperatures);
- market responses such as income diversification and credit schemes ( climate monitoring and outlook for extremes) ;
- developing meteorological forecasting capability ( Hazards and impact outlooks ) ;
- improving livelihoods ( hazards and impacts outlooks)

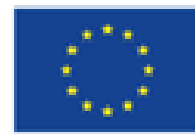


## Concluding Remarks and Expectations

- A **major barrier in the provision of effective climate services** is the **lack** of effective **user and climate service provider interaction** at continental, regional, national and local levels
- User Interface Platform is a mechanism to break this barrier
- Perception of Users of current and future climate related risk events is to be documented
- **Actionable indicators** which ***are causes of the risk are to be*** identified peer sector
- The impacts/consequences of risk to continue to be documented from exchanges and interviews with users during the workshop
- mitigation/management measures (Existing and Actual measures using forecasts and/or projections) and implementation details are essential
- Tors and rules of procedure for the User Interface ( climate –Health, Climate-water, Climate-agriculture and climate-DRR) are available and should be regularly updated ( flexibility)
- Information and knowledge management systems for each sector will be implemented as short to medium term objective



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