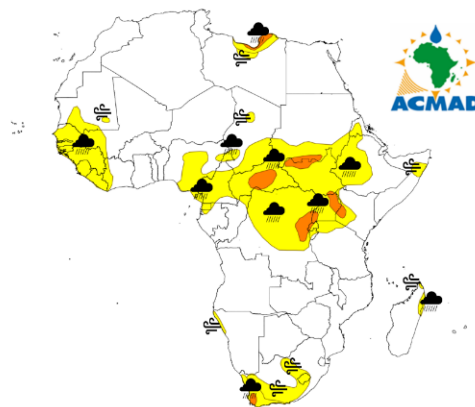


23rd Ordinary Session of the ACMAD Board of Governors – Addis Ababa, Ethiopia,
May 29-30, 2024



MULTI-HAZARD OUTLOOK

Validity: 2023-09-10

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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	

Predictability of the September 2023 flood in Lybia

DOCUMENT N° ACMAD/BoG23/DOC 2.2

REPORT BY THE ACMAD DIRECTOR GENERAL

May 2024

Action required.

The Board is invited to take note and adopt the report.

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REPORT BY THE DIRECTOR GENERAL OF ACMAD

This report covers the period January to December 2023. It contains the status of implementation of the last Board meeting resolutions and recommendations with a summary of the activities implemented during the year.

1. Status of implementation of last Board meeting recommendations and resolutions

RECOMMENDATIONS	STATUS OF IMPLEMENTATION
1. ACMAD Secretariat to work with countries toward renewal of the MoU with EUMETSAT.	Based on the satellite-based weather and climate products required in Africa, Results of EUMETSAT fora and expectations from MTG and AMSAF, ACMAD contributed to the MTG-AMSAF programme preparation meeting in March 30-31, 2023, in Brussels.
2. PRs to work with ACMAD towards the establishment of Countries' situation rooms	A series of visits and meetings with AU, UNDRR, CIMA and Italian Development Cooperation was organized for the formulation and budgeting establishment of situations rooms at national level. Commitments of the Italian Government to support situation rooms have been made.
3. Countries are encouraged to consider engaging more in the National Hydrological Services through the HYDROSOS platform.	In collaboration with the WMO hydrology programme and NORCAP, ACMAD engaged the RA I Hydrological advisers through online meetings. The African Continental Climate Outlook Forum (ACCOF) is a monthly mechanism for climate updates with the involvement of the hydrology community. ACMAD, JRC and ICPAC are collaborating to develop the continental Drought monitoring and outlook online platform.
4. ACMAD to prepare ToRs of countries' focal points with the support of the Chairman and submit to countries	ToRs prepared and submitted to countries. Designation of focal points is ongoing. Up to 24 countries designated focal points.

<p>including awareness-raising sections on the availability, validation and use of ACMAD products</p>	<p>ACMAD is promoting the use of these contacts to request for ad hoc briefings prior to high-impact events and debriefings post events.</p>
<p>5. ACMAD and partners are requested to prioritize the formulation of the 2024/27 strategic plan to support resource mobilization.</p>	<p>Based on the four long-term goals for 2030 and the recent WMO strategic plan including RA I priorities, the 2024/27 ACMAD strategy was developed. It will be presented as agenda item 3 of this meeting. Project proposals for the AfDB Climate Action Window, Belgium, Sweden and Norway Development cooperation, collaboration and implementation agreements with WMO, EU, grants, donations and staff deployment with AUC, Italy, NORWAY and UNDRR are mobilized for implementation.</p>
<p>6. Acknowledging that early warning is the way forward, the board appreciated impact-based forecasting at ACMAD as a pre-alert product and encouraged ACMAD to continue support for the development of more localized information at the country level. Morocco is committed to supporting these developments which involve high-resolution Numerical Weather Prediction.</p>	<p>ACMAD accelerated collaboration with Morocco on the integration of Climate Outlooks for Africa with monthly updates (ACCOFs), acceleration of data collection and exchange through WIS and provision of continental watches and vigilance products based on the most recent products from World Meteorological Centres (WMCs) under the WMO open data resolution. ACMAD with WMO and RTC Niamey at EAMAC organized a refresher course on impact-based forecasting and warning for NMHSs. Lectures were collected and made available online for future events.</p>
<p>7. The board noted efforts on the governance issue and urged ACMAD to accelerate the implementation of activities supporting the governance reform with emphasis on recommendations of the AMCOMET.</p>	<p>The formalization of ACMAD as the technical arm of AUC on climate matters requested in the 4th AMCOMET Session declaration in 2019 is ongoing. The Secretariat organized meetings and exchanges with UNECA as a follow-up to the Board Chairman's letter to the ECA Executive Secretariat. The ECA representative at this board session will inform members on steps to sign the tripartite relationship agreement.</p>

8. ACMAD to continue consultations on roles for effective early warning for all in Africa by sharing the discussion paper to participants and following up with Permanent Representatives and WMO to support the required early warning information communication reform.

ACMAD continued exchanges with countries, AUC and WMO. Ad hoc briefings are organized with NMHSs for countries expected to be affected by high-impact weather and climate events. ACCOF is a regular monthly mechanism to harmonize and integrate hazards and potential impacts information at a continental level for situation rooms and emergency operations centres.

RESOLUTIONS	STATUS OF IMPLEMENTATION
<p>1. The Board adopted the 2023 operating plan and budget, encouraged the secretariat to include indicators in the plan and put emphasis on capacity development, visibility at a country level and governance reform.</p>	<p>Indicators to assess the performance of the 2023 operating plan was prepared and shared with members. The Centre revised the ClimSA project budget putting more resources into Job Training, secondment, internships, training workshops and fora. The centre's strategy puts emphasis on pilot interventions at country's request (e.g Maintenance and repair of PUMA stations on sites and online at the request of NMHSs). On the governance reform, ACMAD attended COP 28 side events and the UNECA conference of Ministers online highlighting the formalization of the relationship agreement with AUC, joint ACMAD/UNECA work initiated on the monitoring SDG 13 and the transition to green economy in Africa, organization of the Africa regional forum on sustainable development and Africa Climate week.</p>

Table 1: Implementation of resolutions and recommendations

2. Highlights of 2023 activities and achievements

ACMAD implemented activities of 2023 continuing to **bring about its vision to become a world-class operational continental weather and climate Centre supporting African countries' resilience to extremes with increased ability to reduce climate change impacts.**

2.1 Capacity Development

Capacity building for NMHSs and stakeholders promoting digital platforms for transformation of NMHSs (e.g. MyDEWETRA, CLIMTAG, UCLIP, MUKAU for drought monitoring), training materials (FOCUS-Africa), supporting capacity gap analysis and planning for Regional Climate Centres demonstration in ECOWAS and ECCAS regions, operationalization of User interface Platforms, experts from 10 countries trained on the job, training events including refresher course organized for strengthening forecasters competencies for early warning and climate change adaptation, side events and high-level sessions organized or attended at Africa Climate week and summit as well as COP 28 to raise awareness of policymakers for climate negotiations. In-kind contributions to capacity development in 2023 included NORCAP deployees and UNDRR consultants provided to ACMAD on hydrology, communication and Information technology.

2.2 Quality Services

Continental watches twice a week, situation reports post disasters contributing to operations of the AUC situation room, and synoptic technical notes supporting briefings and debriefings in cases of high-impact weather are essential deliverables of the operations at the African Continental Multi-Hazard Advisory Centre (ACMHAC). Vigilance and special products for UNHCR, UNOCHA and IFRC for anticipatory action formulation and implementation are provided upon request.

Technical notes on long-range forecasting for monthly climate briefings at national and regional levels, preparation of regional and continental climate outlook statements and impact-based climate watches are delivered to UNOCHA and other stakeholders of the anticipation hub platform. The technical note supporting the state of Africa's climate for 2022 was prepared and published. Monitoring and sub-seasonal forecasting of disruptions on the start of the agriculture season in 2023 highlighted significant delays in North and parts of southern Africa. Vigilance services for health with WHO and participation to ClimHealth Africa Network efforts for health resilience are key elements of the operationalization of the User Interface Platform on Climate Services for Health. Workshops and working group meetings to operationalize user interfaces for agriculture and water, DRR and infrastructure were organized. Catalogues of products for each interface are available and under development at different stages of development.

2.3 Data, research and innovation

Copernicus and the World Meteorological Centres datasets were discussed to accelerate their use by ClimSA regional centres and pilot countries under a capacity development programme with ECMWF. ACMAD and OACPS are collaborating on formulating specific agreements with ECMWF on the implementation of WMO Congress resolution 1 on open data. ACMAD is operating with six (6) Global centres digital outputs in addition to graphics. Publication in the UK Royal Meteorological Society International Journal of Climatology of research findings on the **heat stresses current and future socio-economic impacts in a Sahelian city** supported the development of a proposal to accelerate updates of NDCs with city, urban or rural settlements level adaptation actions known as priorities articulated at the African Climate Summit prior to COP 28 in Nairobi.

2.4 Modernization of governance and management

ACMAD board sessions, projects steering, and coordination meetings were attended or organized. The high-level statement was delivered at COP 28 on Extreme events and impacts in 2023 in Africa and ACMAD's achievements on building resilience and adaptation in Africa (https://unfccc.int/sites/default/files/resource/ACMAD_cop28cmp18cma5_HLS_EN.pdf).

ACMAD audit for 2022 and ClimSA expenditure verification until December 2023 was completed in 2024. Strategic and operating plan for 2024/27 formulated for review and adoption by the Board. Project reports and work plans completed following individual project schedules. Three (3) concept notes for climate resilience and adaptation projects were designed and submitted to the African Development Bank, Norwegian, German and Belgian Development cooperation. The HYDROMET projects in Mali and Burkina Faso as well as in the IOC regions are supporting trainings on weather and climate forecasting as well as the development and delivery of impact-based forecasting and climate information services. **ACMAD's role in the implementation of the project under the HYDROMET alliance is expanding.**

3. Reporting based on performance indicators.

3.1 Capacity Development for the digital transformation of NMHSs

Infrastructure, capacity/training, partnerships, advanced methods, tools and products were focus areas of work under the leadership of the WMO/RA I Committee on Capacity Development. **Indicators of performance** include curricula, training materials, dialogues, interns, fellows, staff trained or seconded and twinning exercises, workshops, training, fora, schools, seminars, courses, conferences, briefings, and debriefings.

3.1 Infrastructure

Four Regional Advanced Retransmission Systems (RARS) for Low Earth orbiting satellite data, a High-Performance Computing system, a data server and a power generator to stabilize energy supply were operational. The RARS stations are contributing to the WMO space programme and WIS through the Digital Direct Broadcast Network. RARS stations Operations Transfer Agreements (OTAs) are under negotiation with RARS stations hosting sites. Operating and investment cost estimates are under review with WMO expert team to explore sustainability of stations operations options. PUMA and ClimSA stations have been well maintained and updated with strong collaboration with EU/JRC leading to the **most advanced version of the ClimSA station operating at ACMAD**. Countries' stations have been repaired and maintained upon request. ACMAD web portal has been operational with new pages for new products. Based on modern technology, the IT deployee from NORCAP is in the design phase of a new web portal. The Regional Climate Centre Web portal was operational.

3.2 Capacity - Training

As part of the collaboration with WMO Education and Training Programme and the Regional Training Centre EAMAC-Niamey, ACMAD organized a four (4) weeks refresher course to build forecasters competency in support of Early warning for all in Africa. ACMAD developed and used training materials during the refresher course organized from July 03 to 29, 2023.

https://extranet.wmo.int/edistrib_exped/grp_Semicircular/fr/11218-2023-MS-ETR-FEL.pdf

http://sgbd.acmad.org:8080/thredds/catalog/ACMAD/WWFD/trainingservice/EAMAC_202307/catalog.html

To improve the use of high-resolution Numerical Weather Prediction (NWP) systems for early warning, ACMAD participated in WMO training on NWP at DWD in early 2023 (March 26 to 31, 2023). The infrastructure to operate NWP with ICON-LAM for Africa includes 128 cores on the AMAZON cloud for processing, a license to operate the LAM and installation of the LAM with DWD support.

https://www.dwd.de/EN/specialusers/research_education/seminar/2023/nwp_training_2023/training_2023_en_node.html

As part of ACMAD's training programme, on the job trainings, secondments and internships were organized on climate data management, climate monitoring, weather nowcasting and synoptic/mesoscale forecasting, sub-seasonal and seasonal forecasting as well as analysis of climate change projections for climate scenario generation. Trainings were held through four Regional Climate Outlooks (RCOFs) in the RECs (ECOWAS, ECCAS, SADC, IOC). Participation to RCOFs in the IGAD and Mediterranean regions have facilitated exchanges on methods, tools and products. The Climate Outlook Forum for all Africa (ACCOF) continued

as a mechanism to coordinate and harmonize methods, tools and products at the continental level in collaboration with RCCs and NMHSs.

A training workshop was organized from October 9 to 11, 2023 in Lilongwe-Malawi on the CLIMTAG tool for monitoring and prediction of indicators of the agriculture calendar.

Training materials and guides were developed during the year and published with ACMAD contributions. On nowcasting, ACMAD has been a member of the group of university lecturers and operational forecasters which delivered the guidelines for satellite-based Nowcasting for Africa (WMO-No.1309) available at https://library.wmo.int/index.php?lvl=notice_display&id=22213.

A guide for the production of the state of climate report produced under the leadership of the WMO is available at:

https://library.wmo.int/viewer/66285/download?file=1298_en.pdf&type=pdf&navigator=1

As lead of the capacity development work package of the Focus-Africa project funded by Horizon 2020 programme of the EU Research and innovation initiative, ACMAD developed training materials on drivers of climate variability, seasonal forecasting methods, tools and products interpretation, verification of seasonal forecasts for the SADC region. These materials together with those developed by the project's partners are being compiled to facilitate extensive (up to one month) training for experts in the SARCOF countries during the first half of 2024.

Name of training Materials	Brief description of the training/ tool	Links to web-based tool and/or downloadable application	Link to training manual if available online
1-Vignette for calibration and verification of seasonal forecasts	A vignette which provides an example of code written in R that can be used to calibrate seasonal forecasts using several calibration methods. For each calibration method, different skill scores are calculated, compared to the ones obtained by using a non-calibrated forecast and finally displayed	https://earth.bsc.es/gitlab/focus-africa-bsc/vignette	https://earth.bsc.es/gitlab/focus-africa-bsc/vignette

<p>2-AquaBEHER: an R package for estimation of the wet-season calendar and soil-water balance for Agriculture</p>	<p>Computes and integrates daily potential evapotranspiration (PET) into a soil-water balance model to estimate wet-season calendar</p>	<p>https://github.com/RobelTakele/AquaBEHER</p> <p>https://github.com/RobelTakele/AquaBEHER/releases/download/v0.1.0/AquaBEHER_0.1.0.tar.gz</p>	<p>https://robeltakele.github.io/AquaBEHER/</p>
<p>3- Teal tool: Web-based interface for rainy season historical and forecast indicators</p>	<p>Teal¹ is a web-based tool designed with a user-friendly interface to facilitate access to climate data, allowing easy visualization through maps and plots, and functions to download images and data</p>	<p>https://tealtool.earth</p>	<p>https://tealtool.earth</p>
<p>4- Climate of Southern Africa, its variability and related drivers</p>	<p>Provides understanding of climate and its variability in southern Africa, supports identification and analysis of climate variability and extremes in southern Africa</p>	<p>Not Applicable</p>	<p>https://docs.google.com/presentation/d/1kIgYpCG-9v4cBC9h3Ub9Mz1jSEFiU28i/edit?usp=sharing&oid=1178779109611372146&rtpof=true&sd=true</p>
<p>5- Statistical and dynamical seasonal forecasting for Southern Africa</p>	<p>Supports identification and interpretation of the climate teleconnections and interactions driving climate variability, presents forecasting methods and tools, facilitates interpretation of climate products to deliver reliable climate information</p>	<p>Not applicable</p>	<p>https://docs.google.com/presentation/d/1o1Tun6ry0l2ZX_RNTRwUi1j05TyOimx/edit?usp=sharing&oid=117877910961137214646&rtpof=true&sd=true</p>

Table 2: Training materials developed for SARCOF through FOCUS-Africa funded by EU Research and Innovation Initiative Horizon 2020.

¹ <https://tealtool.earth>

Addition training materials regularly used in fora include methodologies, tools (PyCPT, CFT, CLIMTAG, U-CLIP, Climate station, Climsoft, INSTAT, MyDewetra, Mukau), lectures and practical materials, products prototypes, validation study reports, technical notes, bulletins, reports, advisories, outlooks, briefs and statements.

ACMAD has organized six (6) on-the-job training supported by ACMAD and ClimSA, four (4) on-the-job training supported by ACMAD and HYDROMET programme of Burkina Faso and Mali, (2) secondments supported by ClimSA. **A total of twelve (12) experts from ten (10) countries benefited from these programmes in 2023. Five (5) interns from four (4) countries** were supervised by ACMAD experts.

During the 2022/23 and 2023/24 cyclone season **twinning exercises with NMHSs, RSMC la Reunion, ACMAD and World Meteorological Centres** further demonstrated the value of operational cascading process delivering cyclones tracks up to five days ahead, advisories and watches supporting anticipatory action and briefings with countries forecasters supporting delivery of national warnings.

4. Partnerships

Given the limited human resources, partnerships have contributed to manpower with the Norwegian Refugee Council (three (3) deployees) in 2023. The UN Disaster Risk Reduction Regional Office for Africa contributed with 2 consultants to support the MultiHazards Advisory Centre. Consortia of institutions have implemented major projects including FOCUS-AFRICA, U-CLIP, KIMPALA and GSTIC. Partnerships with EUMETSAT, the African Institute for Mathematical Studies (AIMS) and Pennsylvania State University have continued to support research and related training as well as access to data.

5. Institutions

Indicators on frameworks for optimal operations of Regional Centres, RCCs and NMHSs available, NMHSs supported towards higher category and their capacity assessed:

ACMAD through implementation agreements with WMO, administered and analyzed a survey questionnaire for gaps analysis for Regional Centres in ECOWAS and ECCAS regions. A literature review on regional climate information available in these regions was added to the questionnaire analysis supporting **implementation plans preparation for the Regional Climate Centres (RCCs) demonstration phase for ECOWAS and ECCAS RCCs.**

Following the establishment of the User Interfaces platform at the continental level on climate services for agriculture and water, Disaster Risk Reduction and infrastructure as well as health, a series of workshops and events were organized to operationalize these interfaces. An online workshop on UIP water with WMO RA I hydrological advisers in December 2022 and a

meeting to review progress of the WMO Hydrology coordination panel from February 7 to 9 2023 was attended to raise awareness on continental UIP on climate services for integrated water management. **3 UIPs (Agriculture, DRR, Health) and 2 sub UIPs (infrastructure and water) started operationalization in 2023.** Collaboration with WHO under the Clim Health Africa network of pan-African institutes and international partners is operational contributing to sharing expertise and knowledge for health resilience. The 4th annual **meeting of ClimHealth Africa was held from July 26 to 28, 2023 in Libreville-Gabon** as a further step towards operationalization of the Climate Service for Health User Interface attended by ACMAD.

Indicators on policy and other user organizations trained

Side events organized or attended, and a high-level statement delivered at UNFCCC COP 28, Africa Climate Week attended including the launch of the state of climate for Africa and the ClimDEV Africa programme phase 2. The Africa Working Group and Platforms for DRR meetings were attended sharing **hazard situation reports and continental hazards watches** generated by the African Continental Multi hazard Advisory Centre at ACMAD. Guidance is provided to high-level officials visiting the situation room in Addis Ababa.

6. Quality Services

Weather and Climate Services supporting Early Warning for all, Climate resilience and adaptation have been delivered during the year.

Synoptic technical notes twice a week supported **briefings at continental and national** levels. Southwest Indian Ocean and Mediterranean Sea cyclones, strong winds, dusts and low visibility, high temperatures, heavy rains and floods are key hazards for which technical notes, vigilance, advisories and watches were issued. The Continental MultiHazards Advisory Centre regularly delivered **two (2) continental watches and disaster situation reports each week** as operational products for the AUC situation room. In cases of high-impact weather expected requests for ad hoc briefings with NMHSs are submitted to ensure harmonization, integration and consensus building on the location, severity, tracks and expected impacts of the events. Sub-seasonal forecasts from relevant WMO Centres are progressively integrated into synoptic briefings to better derive the expected severity and impacts of events.

<http://sgbd.acmad.org:8080/thredds/fileServer/FIT/BRIEFING/briefing.pdf>

- **Products from monthly forecasts of intra-seasonal oscillations are shown to be essential in anticipating the severity level of cyclones and heavy monsoon precipitation events.**

- Short-range forecast errors are used to correct medium-range intensity forecasts to effectively support expected impacts analysis and related anticipatory actions definition and specification.
- The best dynamical model is also derived from recent performances and intercomparisons of members of the poor man's ensemble.

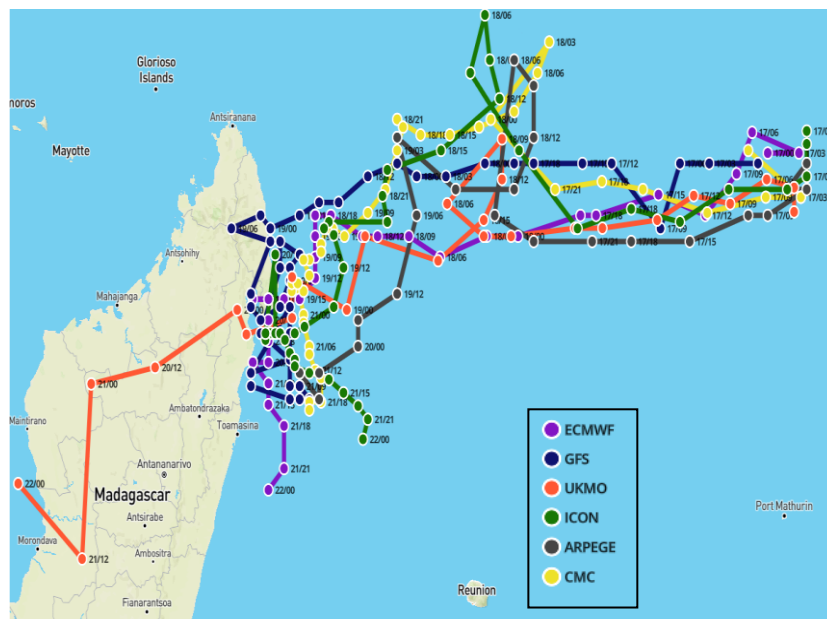


Figure 1: Cyclone CHENESO track forecasts and related uncertainties from six WMO World Meteorological Centres products post-processed by ACMAD up to 5 days ahead from January 17 to 22 at 00UTC.

It provides continental coordination and harmonization of methods, tools and products with RSMCs, RCCs and NMHSs. The optimal institutional framework on the monitoring and forecasting pillar of the early warning system in Africa is available to support the early warning for all initiatives. ACMAD received a letter of appreciation (<https://acmad.org/wp-content/uploads/2019/03/12899-2023-S-DPS.pdf>) for services delivered to UNHCR on June 06, 2023.

The four mandatory functions of the **Regional Climate Centre of Africa at ACMAD** have been operational delivering Climate monitoring, long-range forecasting, data and training services to the NMHSs of countries and Regional Centres under Regional Economic Communities.

The **Long-range forecasting technical notes for briefings** with hazards outlooks, potential impacts and proposed anticipation/response measures were delivered each month. The state of Africa's climate in 2022 technical note and report were prepared and published. A report on climate change detection and indices was delivered with special emphasis on support to resilient infrastructure design, construction, operation and maintenance. **African major cities' infrastructure resilience are intercompared using extreme events thresholds and return periods.**

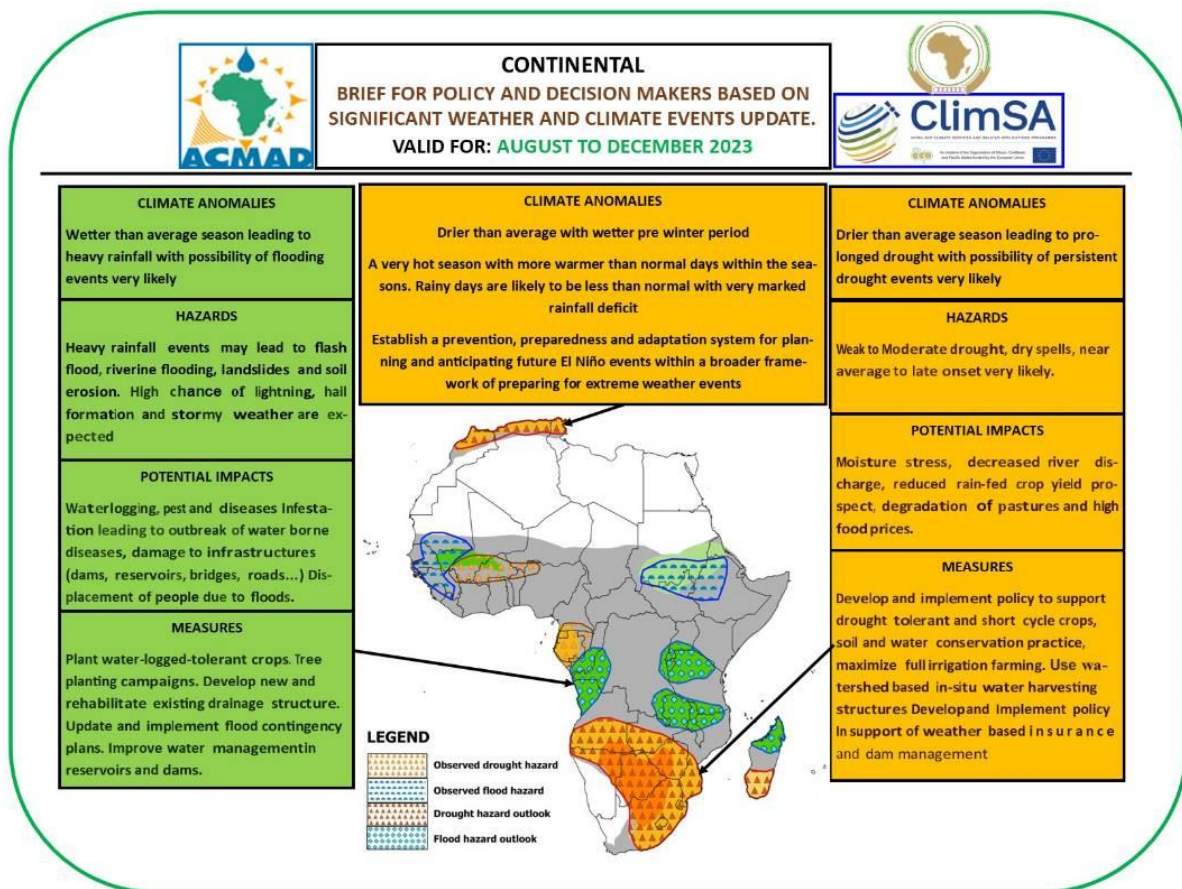


Figure 2: Continental watch with dry winter in north and southern Africa, persistent drought during the second half of summer monsoon in parts of the Sahel and mostly drier than average expected over southern Africa for the first half of the rainy season.

The state of climate report for 2022 was released in Nairobi during the Africa Climate Week prior to COP 28.

ACMAD/RCC provided regular continental outlooks supporting GHACOF, SARCOF, PRESASS, PRESAC, MEDCOF/PRESANORD and PRESAGG. The Centre organized twelve (12) African Continental Climate Outlook Fora to harmonize and integrate climate outlooks across the African continent. ACMAD continued to contribute to the El Nino/La Nina update published by the WMO.

ACMAD participated in the meetings of **Task team ENSO** leading to the revised content of ENSO update information and the modalities for operational generation of ENSO and global seasonal climate updates.

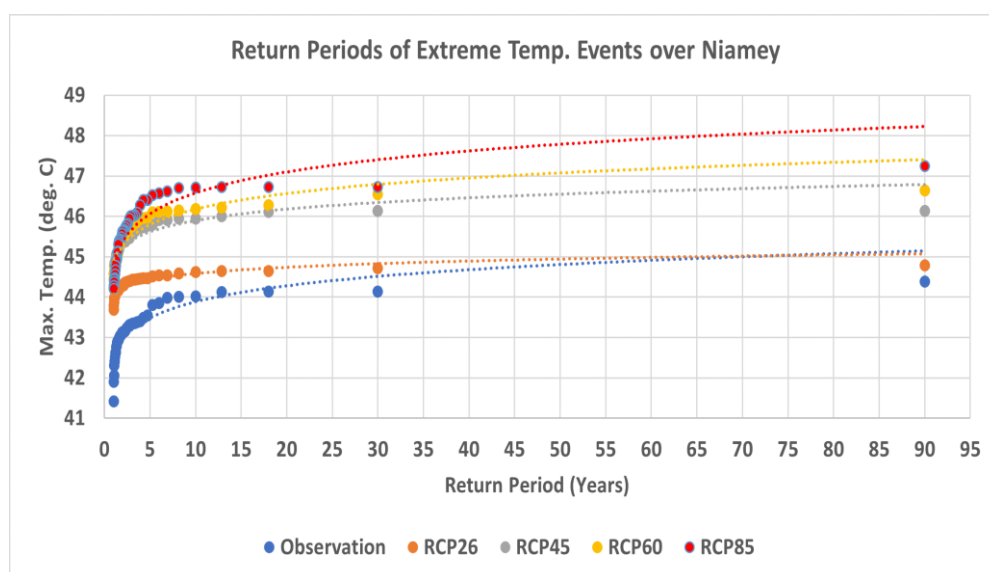


Figure 3: High-temperature returns periods on the present-day climate (blue) and future climate (other colours). **An event occurring every 10 years in the present-day climate is expected to become almost an annual event in the future climate of Niamey-Niger.**

7. Access to data and Strengthening of Research

ACMAD and VITO completed the Urban Climate Information Platform (UCLIP) project with the publication in the UK Royal Meteorological Society's International Journal of the Climatology of the **paper entitled "High-resolution Heat Stress over a Sahelian City: Present and Future Impact Assessment and Urban Green effectiveness"** funded by the Belgium Agency for Development Cooperation (ENABEL). Socio-economic impacts of heat stress for mid-century are quantified, noting **increases in heat-related mortality of several percentages compared to present-day values**. Moreover, negative economic impacts of several percentages of the Gross Domestic Product are projected as heat stress will prohibit performance during the hottest hours of the day. This pilot effort is expected to be upscaled

over other cities in Africa supporting **updates of Nationally Determined Contributions to the Paris Agreement expected at COP 30.**

Four (4) internship research reports on agriculture calendar indicators, composite analysis of weather and climate patterns, cloud processing solutions and artificial intelligence applications in weather and climate prediction studies are initiated through the NORCAP and AIMS collaboration.

A stronger collaboration with EUMETSAT has been developed with the joint formulation of the upcoming MTG and AMSAF programme concept note during a meeting held in Brussels from March 30 to 31 2023. The **European Severe Storm Laboratory** was identified as a partner for ACMAD to **undertake research on impact-based forecasting**. The capacities project submitted to NORAD is research on adaptation planning for African cities.

ClimSA programme and ACMAD are engaged with ECMWF and WMO to accelerate the implementation of open data policy value demonstration. ACMAD provided a presentation in this regard at INFCOM on April 03 and 04 2024. World Meteorological Centres and the Copernicus programme are key targeted data providers for research and innovation.

8. Governance

8.1 Congress, steering, board or executive council meetings

The ACMAD board meeting was held online from January 10 to 11 2023. Eleven (11) members countries attended. The meeting was also held in the presence of representatives of the WMO Regional Office for Africa, EUMETSAT, WHO Regional Office for Africa, UNECA and ICPAC. Three (3) resolutions and eight (8) recommendations were adopted on 2022 report, work plan and budget for 2023, ACMAD focal points in countries, and ACMAD as the technical arm of AUC on climate matters.

UNFCCC COP in Dubai was a major high-level event in 2023. ACMAD attended with up to side events with ClimSA at the Africa Pavilion, Islands States Pavilion, WMO Pavilion with Focus Africa project and a high-level statement of observer organization at the UNFCCC. In partnership with WMO, ACMAD supported the participation of NMHSs to COP.

ACMAD contributed as **organizer** of the second round of the 4th edition of the Africa Climate talks (February 26 to 27, 2023) in Niamey-Niger on the theme: ***Enhancing climate resilience for better human security in the Sahel region.*** ACMAD specifically contributed to programme preparation and moderated a session on **ensuring better climate information services for enhanced resilience and improved livelihoods in the Sahel.** These talks were followed by **the 9th Regional Forum for Sustainable Development in Africa** organized under the UNECA leadership. ACMAD contributed in the report to the forum on the **progress of implementation of SDG 13 on combating climate change.** Acceleration of UNECA and ACMAD technical

collaboration led to the first ACMAD participation as a **panellist** (highlining extreme events and urgency of climate resilience mainstreaming in greening development sectors) to the preparatory meeting of Director Generals of planning of ECOWAS countries as a contribution to the deliberations of the **UNECA Conference of Ministers in Lusaka-Zambia** in early 2024. The theme of the conference is related to the acceleration of the transition toward a green economy in Africa.

ACMAD participated in the **Africa Climate Week and summit** online from September 04 to 08, 2023 with a contribution as speaker at the side event to launch the second phase of the ClimDEV Africa programme. Heads of State and policymakers exchanged from September 04 to 06, 2023 on climate solutions of interest to Africa, barriers to overcome and opportunities in Africa. This event contributed to the identification of **areas in need of climate services** for adaptation action including **energy systems and industry, cities, urban and rural settlements, infrastructure and transport, health, society, livelihoods and economies**. The **ACMAD 2024/27 strategic plan** will put **emphasis on innovative climate services for these areas**.

ACMAD participated online and in person in the World Meteorological Organization Executive councils (EC-76, January 2023; EC-77, June 2023) and Congress (Cg-19 May-June 2023) to exchange information on ACMAD's achievements for Early warning for all and adaptation action supporting the Paris Agreement and Sustainable Development Goals. The WMO strategic plan presented has been a basis for the preparation of ACMAD's 2024/27 strategic plan.

8.2 Steering committees and high-level visits

Preparation of visits of high-level officials including ambassadors of Italy and Algeria (planned for January 2024) contributed to the visibility of ACMAD and resource mobilization.

The AUC/ClimSA steering, advisory and technical experts' meetings were organized with the participation of ACMAD to review and approve 2022 reports and 2023 work plan and budget. ACMAD/CLIMSA achievements and future plan were presented as a grant in the AUC/ClimSA collaboration agreement.

ACMAD organized its ClimSA project steering committee in April 2023 in Abidjan and attended the ECCAS/ClimSA steering committee in Ndjamena- Chad. The global ClimSA forum on building bridges for climate services was organized from September 10 to 13, 2023 in Mahe-Seychelles with progress discussed, products used and feedback collected for product upgrade. The global ClimSA steering committee meeting was organized back-to-back with the forum. The steering committee supported no-cost extensions and promoted budgets reallocations to accelerate implementation. The committee urged OACPS and ACMAD to collaborate towards a collaboration agreement with ECMWF under the capacity building programme of ClimSA with a focus on RCCs and pilot countries. Methods, data, tools, training

materials and products required for generation of Climate Services for OACPS countries and regions are expected in the agreement.

9. Management

9.1 Accounting and Audits

Preparation and publication of tenders for audits of ACMAD and ClimSA projects were undertaken. ACMAD audit report for 2022 and the second ClimSA accounts verification report until December 2023 are available.

The final audit for the ISACIP project was carried out with funding from AfDB. ACMAD contributed to the review of the call for tender and was responsible for providing documentation and contacts of implementing partners to the selected auditor who submitted a report to AfDB in March 2023.

9.2 Resource mobilization, planning and reporting.

The 2024/27 strategic and operating plans as well as budget have been drafted for review and adoption by the Board. The draft 2024 operating plan and budget are prepared for review and adoption by the board.

UCLIP, FOCUS-Africa, GISTIC, KIMPALA, WMO/ClimSA, ACMAD/ClimSA (**six projects**) annual reports and quarterly reports for 2023, work plans and budgets for 2023 were prepared and shared with partners and stakeholders. Quarterly and biannual ClimSA reports were regularly provided to AUC and OACPS during 2023.

A meeting organized at the EU headquarters in Brussels from March 30 to 31, 2023 with EUMETSAT and ACMAD participation facilitated the review of the **MTG and AMSAF concept note** towards the formulation of the next phase of the EU development cooperation programme with Africa.

ACMAD contributed to the Capacity development report and review of the second periodic report under the Focus Africa project. ACMAD participated in **planning meetings of the WMO RA I committees** on Infrastructure, Services, Research and capacity building as well as tropical cyclones. The centre's operating plan for 2024/27 is developed to contribute toward the implementation of activities of these committees' work plans. The ACMAD/ClimSA budget was reallocated to key sectors in need including on-the-job training and secondment given the high demand from countries.

10. *Human resources*

Vacancies and recruitments of staff were organized for short and fix term project positions. Reports and staff assessments were prepared supporting contract renewal. NORCAP deployees (3) and UNDRR-supported experts on DRR and Information Technology were supervised to operate the Multi Hazards Advisory Centre and the Regional Climate Centre. Twenty-six (25) staff are on permanent or project positions.

11. *Financial Resources mobilization*

Following the COP 28 side event by *AfBD* with the launch of its *Climate Action Window (CAW)*, ACMAD developed and submitted a concept note in response to the CAW call. In collaboration with NORCAP, ACMAD developed and submitted a concept note for the *international climate initiative of the German government*. ACMAD and VITO built a consortium and submitted a proposal to the *Norwegian Development Cooperation Agency (NORAD)* following the successful completion of UCLIP on Climate Services for adaptation planning in more African Cities.

12. *Communication and outreach*

ACMAD attended COP 28 including side events and a high-level session, technical and scientific meetings for collaboration, projects and programme formulation, steering and coordination. To support the improvement of the visibility of ACMAD, a paper with an executive summary on Heat stress over a Sahelian city was published in the Royal Meteorological Society's International Journal of Climatology.

As part of the growing collaboration with UNECA, ACMAD participated inside events organized by ECA at COP 28 at the Africa Pavilion on climate resilience for African economies and societies. African Climate talks from February 26 to 27, 2023 was organized as a joint effort with UNECA in Niamey-Niger. These talks were pre-events followed by the 9th session of the Africa Regional forum on Sustainable Development which **saw the participation of ACMAD with a contribution to the report on the progress made in delivering SDG 13 in Africa**. ACMAD has become a regular contributor to the SDG 13 implementation monitoring report submitted by UNECA to the sustainable development forum in Africa.

13. *Coordination/Management meetings*

Focus-Africa executive committee and review meetings were attended by ACMAD as a Work Page on capacity development leader. The executive committee meetings provide updates on work packages and case studies progress, information from the EU project Office on project management, future governing board or advisory committee meetings of EU projects and publications in scientific journals. UCLIP coordination meeting and final project event were



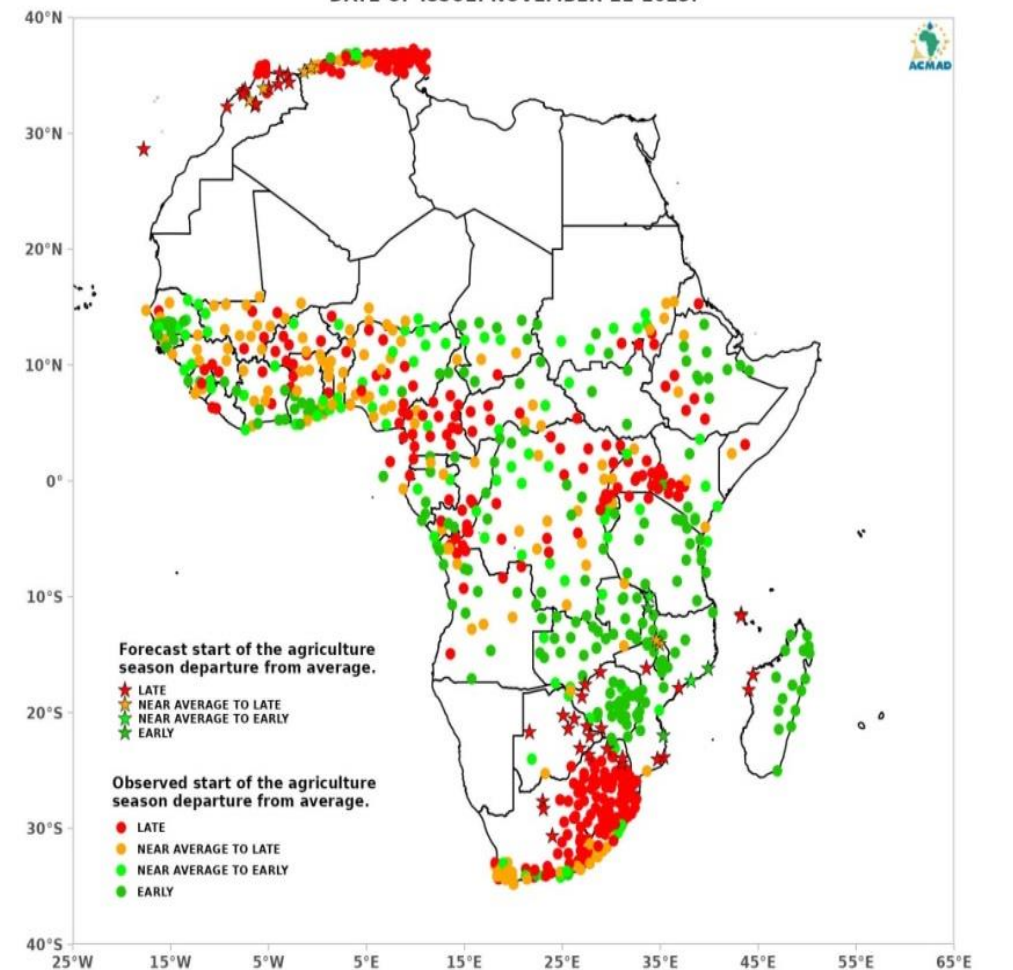
organized with VITO. KIMPALA, ClimSA, MUKAU, and GISTIC are additional projects with coordination meetings organized throughout the year.

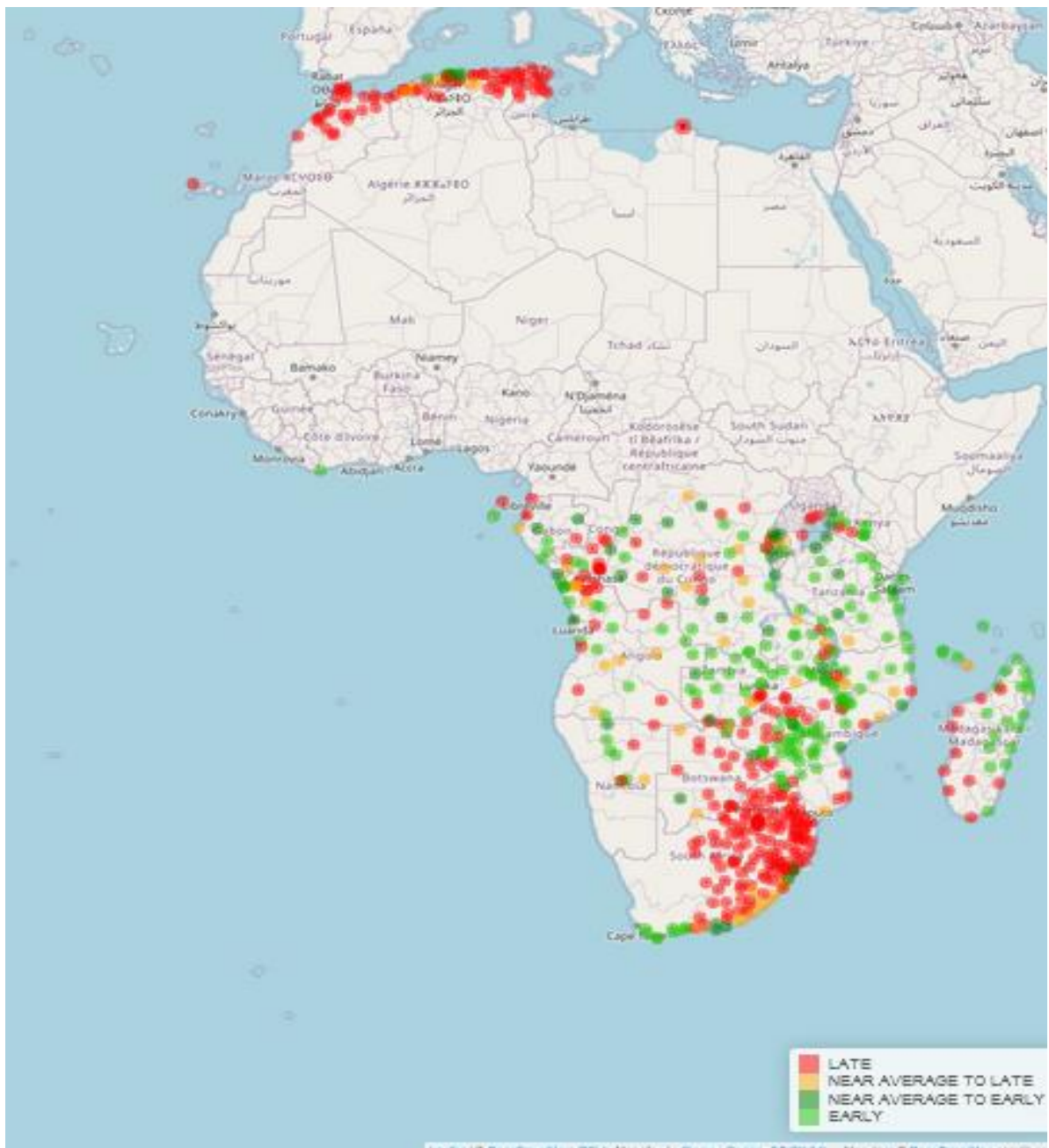
14. Partnerships

VITO, UNDRR, CIMA, UNOCHA, UNHCR, CIMA, WMO, AUC, USTDA, ENABEL, NORAD, AfDB, EU/JRC, EUMESAT, ECMWF were key implementing partners. EU Horizon 2020, EDF, Belgium, Norwegian and Italian Development Cooperations are the main financial partners.

15. ANNEXES: PRODUCTS AND SERVICES AT ACMAD

MONITORING OF OBSERVED ANOMALIES ON THE START OF THE AGRICULTURE SEASON AND OUTLOOK.
MONITORING PERIOD: JANUARY-NOVEMBER 2023.
OUTLOOK VALIDITY PERIOD: NOVEMBER 21 TO DECEMBER 05 2023 .
DATE OF ISSUE: NOVEMBER-21-2023.



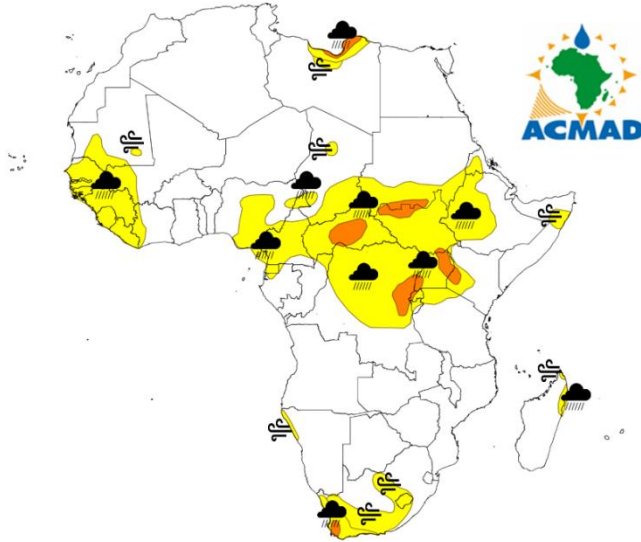






Red dots locate areas with observed delays on the start of the agricultural season in Africa.
Data Source : TAMSAT précipitation data processes at ACMAD.

MULTI-HAZARD OUTLOOK

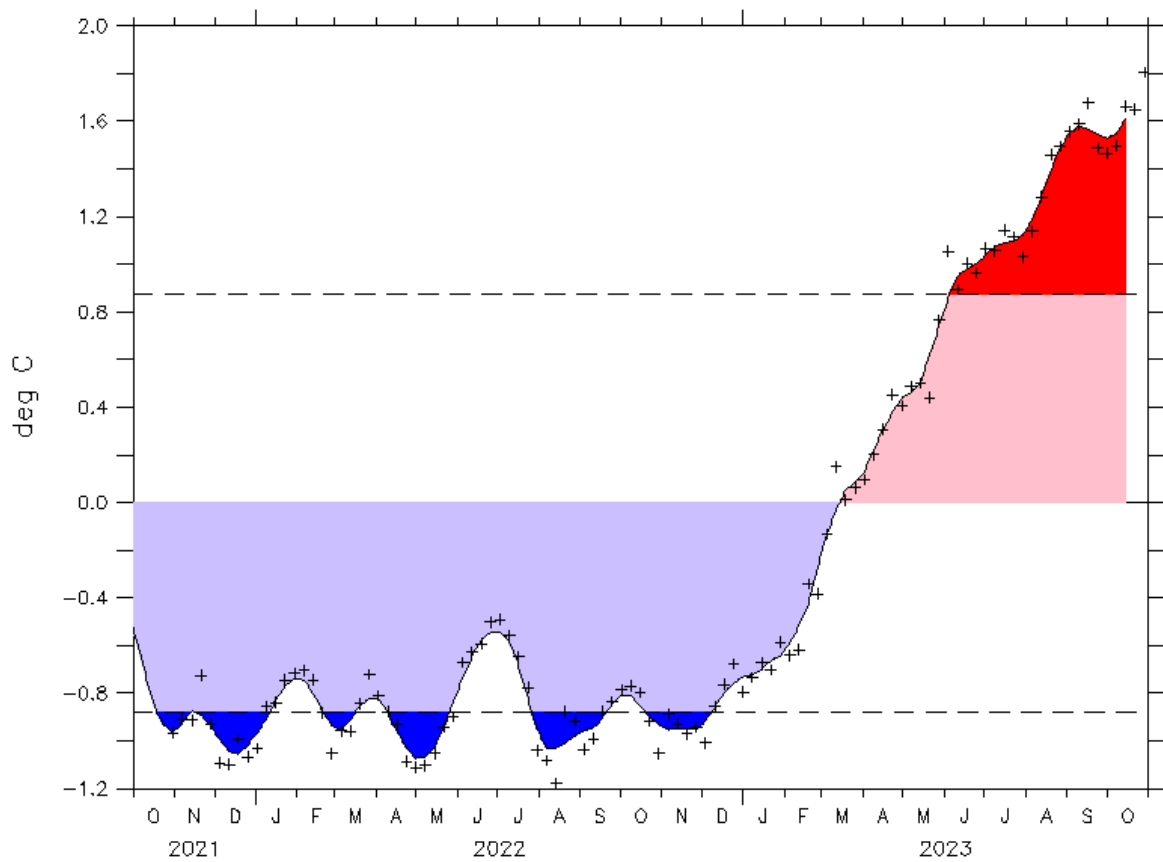
Validity: 2023-09-10

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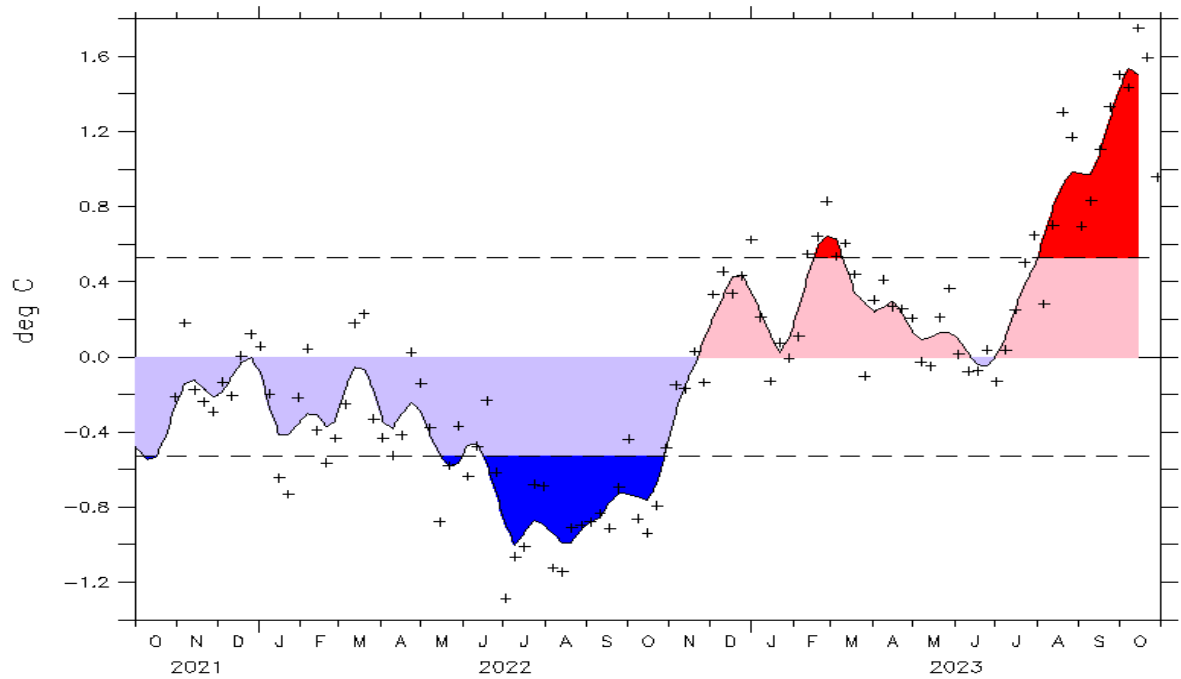


 Rain	 Wind	 Dust	 Meningitis
Very heavy >100mm	Very strong >80kmh ⁻¹	Very heavy >1000µg m ⁻³	Very likely
Heavy 50-100mm	Strong >65kmh ⁻¹	Heavy >600µg m ⁻³	Likely
Moderate 10 - 49mm	Moderate >50kmh ⁻¹	Moderate >400µg m ⁻³	Less likely
Light 1 - 10mm	Light <50kmh ⁻¹	Light <200µg m ⁻³	

ACMAD's Vigilance product three (3) days ahead of the Libyan Flood in September 2023.



Observed SST anomaly time series from the Ocean Observations Panel for Climate. Data source: <https://stateoftheocean.osmc.noaa.gov/sur/pac/nino34.php> (NOAA. gov, Dec 2023)



Indian Ocean Dipole Mode Index time series from the Ocean Observations Panel for Climate.

Data source: <https://stateoftheocean.osmc.noaa.gov/sur/ind/dmi.php>

