ACCOF-16

Regional Climate Outlook for the SADC Region

Period:

Monitoring: December 2023 to February 2024

Forecast: April to June 2024

Issue Date: April 2024

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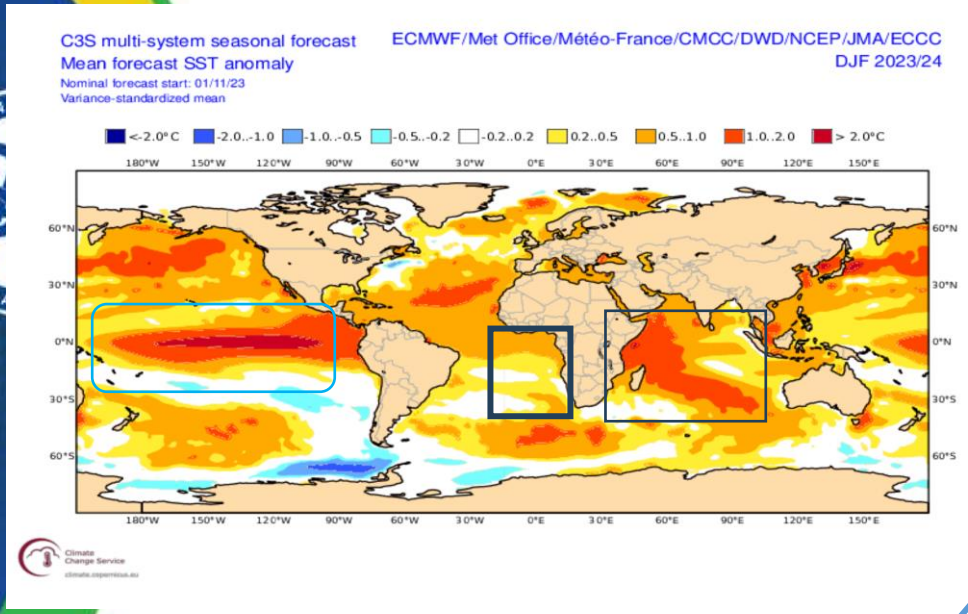
Outline

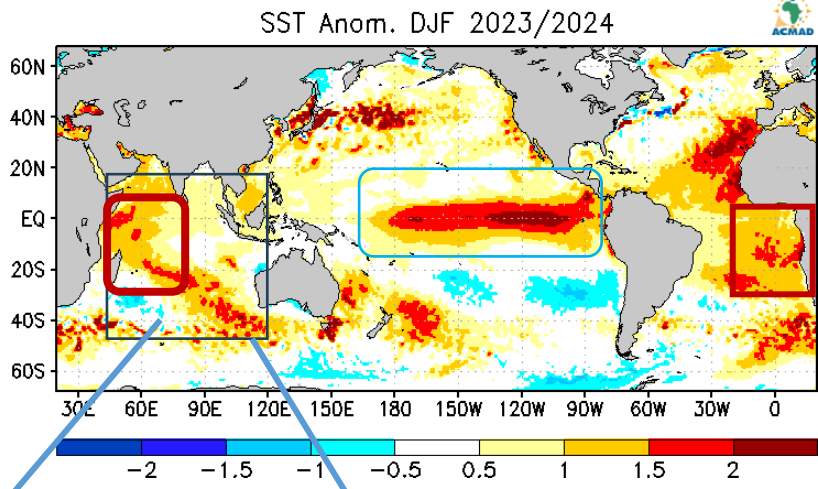
- **Performance and current state of regional climate drivers**
  1. **El Nino Southern Oscillation (ENSO) status and its forecast**
  2. **Indian Ocean Dipole (IOD) status and its forecast**
  3. **Status of other drivers and their forecasts**
- **Performance of the DJF 2023/24 period**
- **GPCs rainfall forecast for AMJ 2024 season**
- **SADC Regional Seasonal Climate Outlook for AMJ 2024 Season**

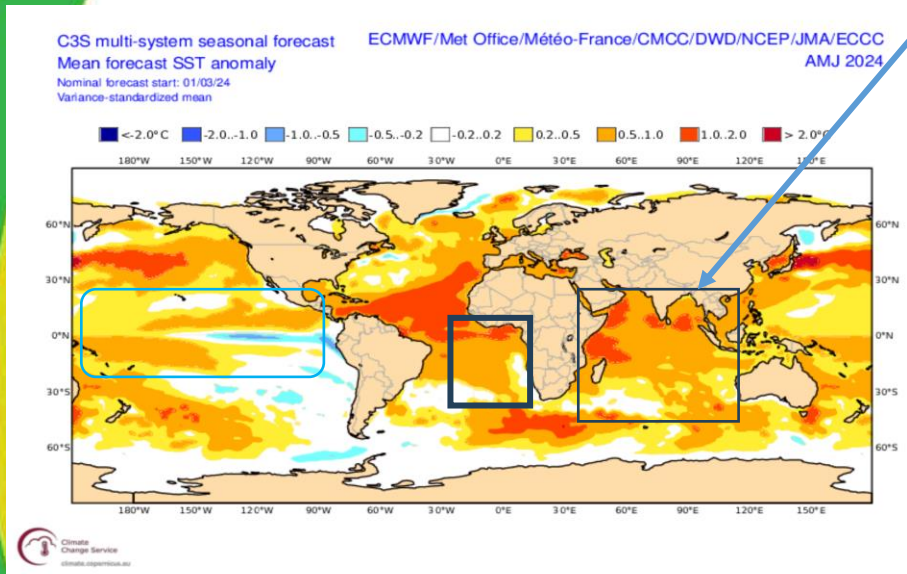
Teleconnections analysis (ENSO, TSA, Ben-Nino, IOD and SIOD)

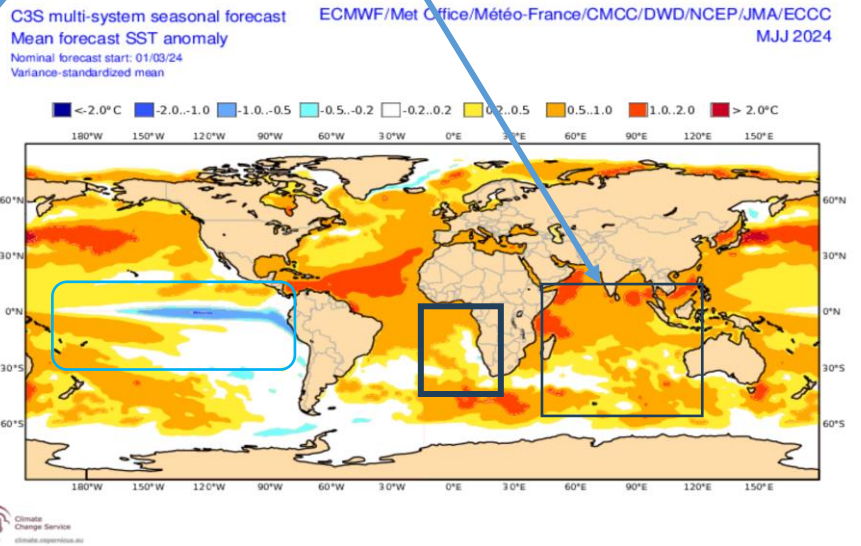
Sea Surface Temperatures mean anomaly outlook



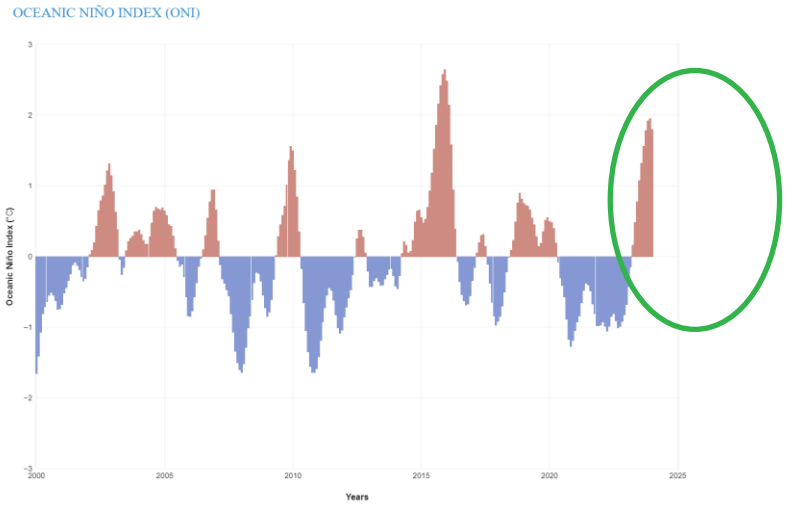
Observed Sea Surface Temperatures mean anomaly







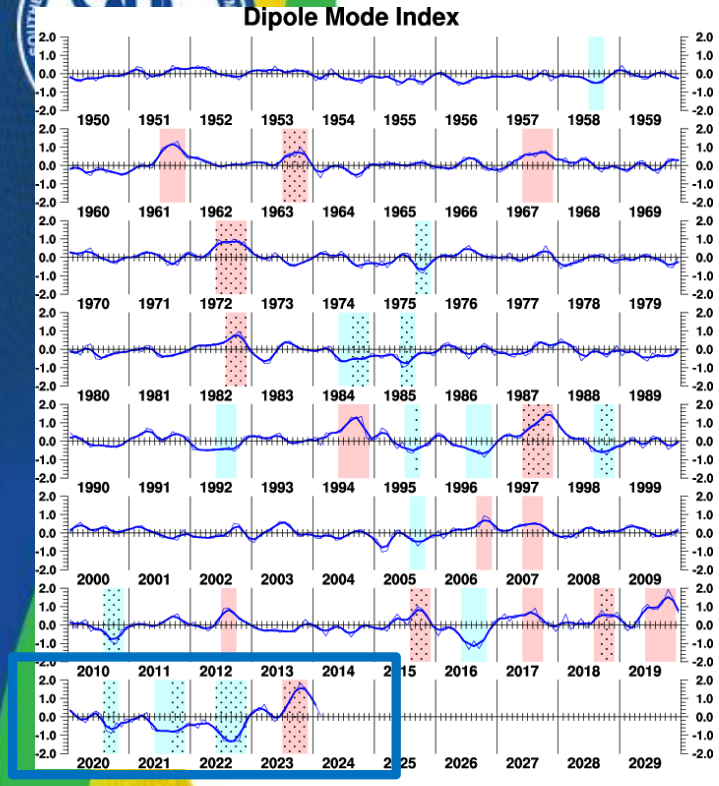
Driver Performance - ENSO



Second Highest since 2010

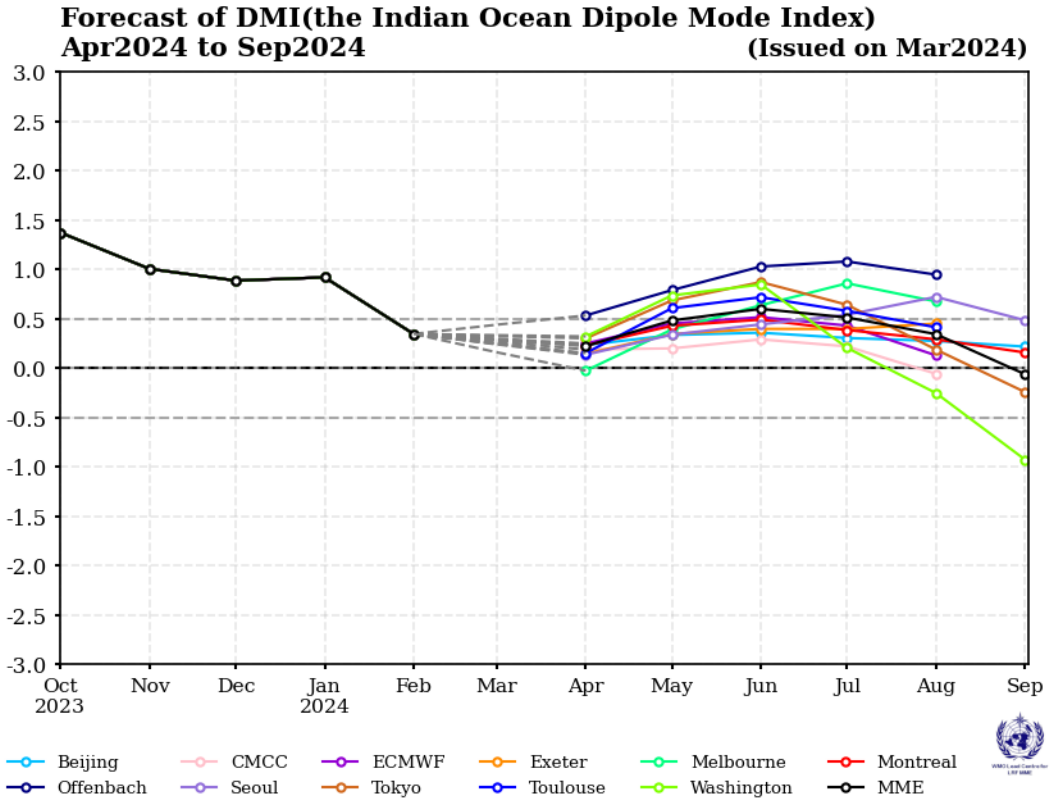
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2010	1.5	1.2	0.8	0.4	-0.2	-0.7	-1.0	-1.3	-1.6	-1.6	-1.6	-1.6
2011	-1.4	-1.2	-0.9	-0.7	-0.6	-0.4	-0.5	-0.6	-0.8	-1.0	-1.1	-1.0
2012	-0.9	-0.7	-0.6	-0.5	-0.3	0.0	0.2	0.4	0.4	0.3	0.1	-0.2
2013	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.5	-0.3	0.0	0.2	0.2	0.0	0.1	0.2	0.5	0.6	0.7
2015	0.5	0.5	0.5	0.7	0.9	1.2	1.5	1.9	2.2	2.4	2.6	2.6
2016	2.5	2.1	1.6	0.9	0.4	-0.1	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6
2017	-0.3	-0.2	0.1	0.2	0.3	0.3	0.1	-0.1	-0.4	-0.7	-0.8	-1.0
2018	-0.9	-0.9	-0.7	-0.5	-0.2	0.0	0.1	0.2	0.5	0.8	0.9	0.8
2019	0.7	0.7	0.7	0.7	0.5	0.5	0.3	0.1	0.2	0.3	0.5	0.5
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7	-0.4	-0.1	0.2	0.5	0.8	1.1	1.3	1.6	1.8	1.9	2.0
2024	1.8											

Observed evolution of IOD



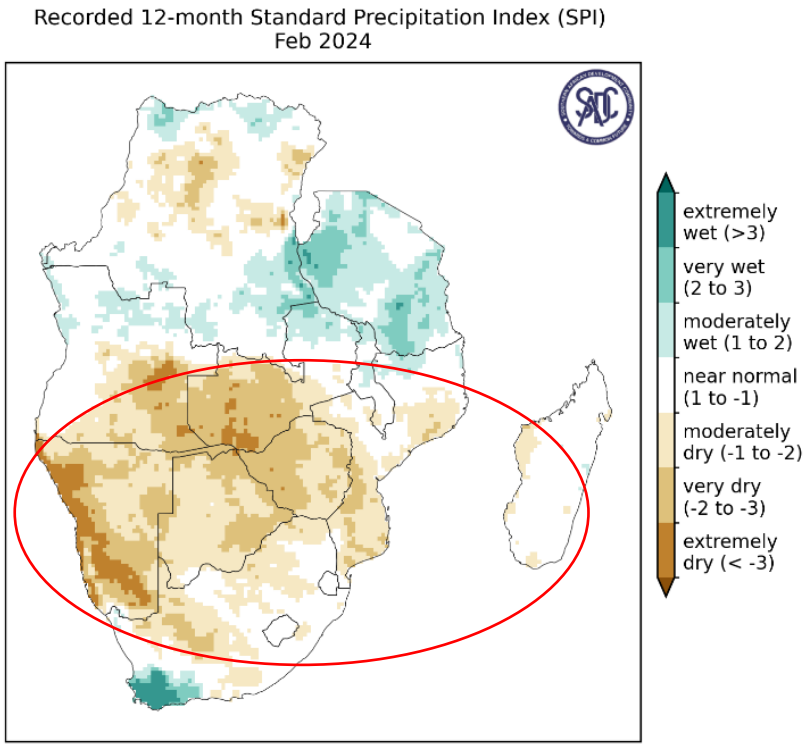
https://ds.data.jma.go.jp/tcc/tcc/products/elnino/iodevents.html

IOD Outlook



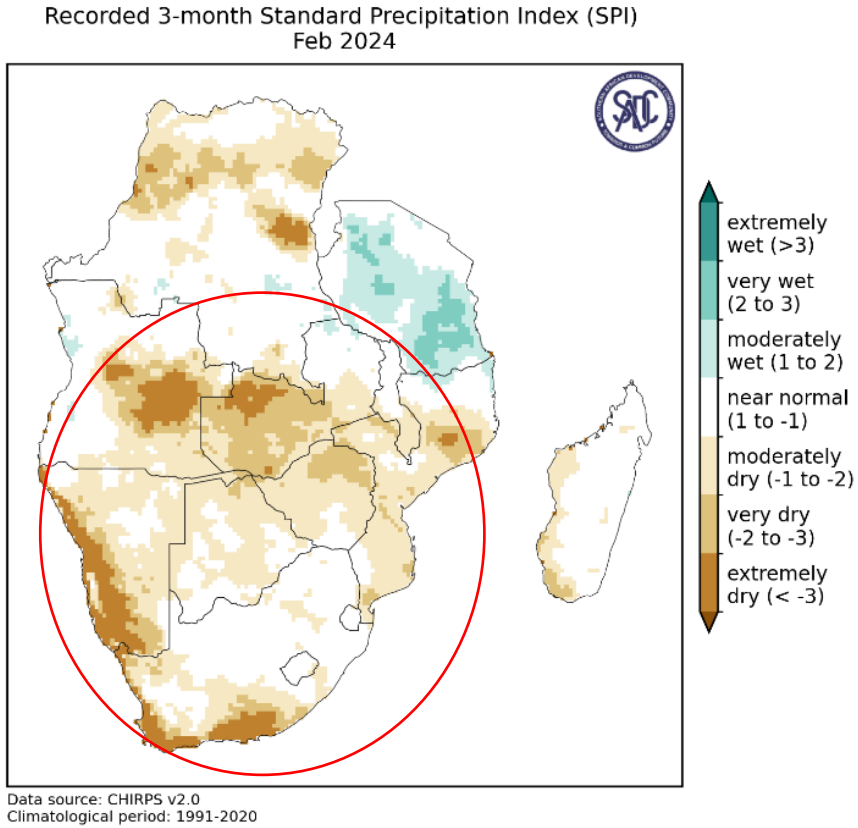
IMPACTS OF THE RAINFALL DISTRIBUTION - SPI

SPI-12



Data source: CHIRPS v2.0
Climatological period: 1991-2020

SPI-3

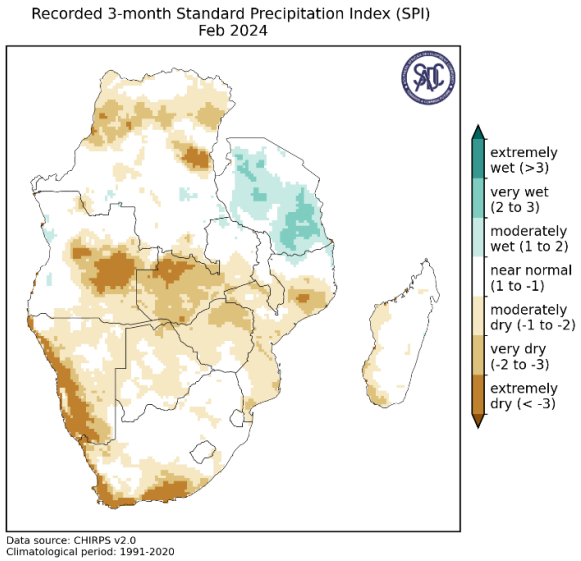


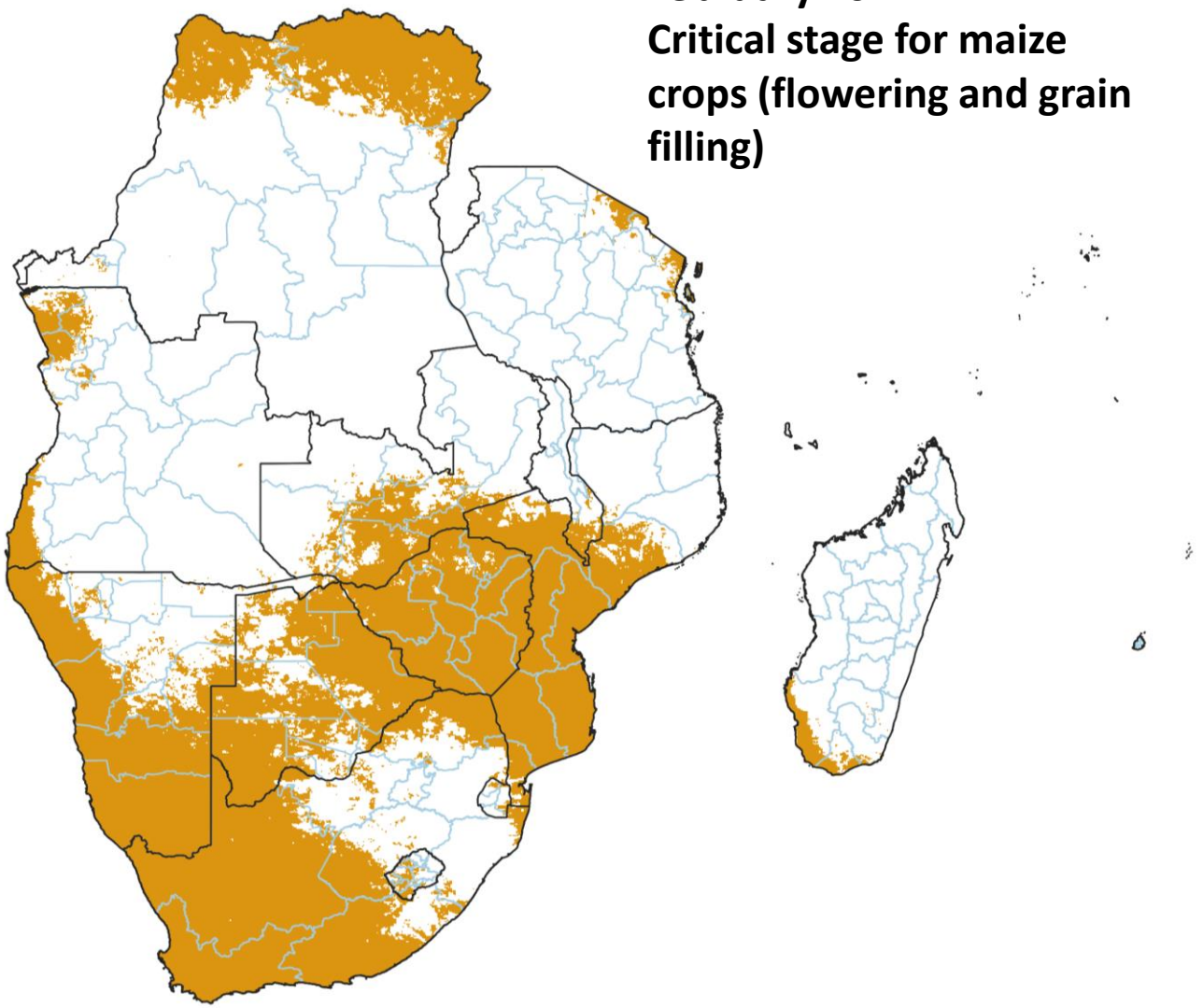
Data source: CHIRPS v2.0
Climatological period: 1991-2020

Impacts of the rainfall distribution - CDD

Consecutive dry days >30 days

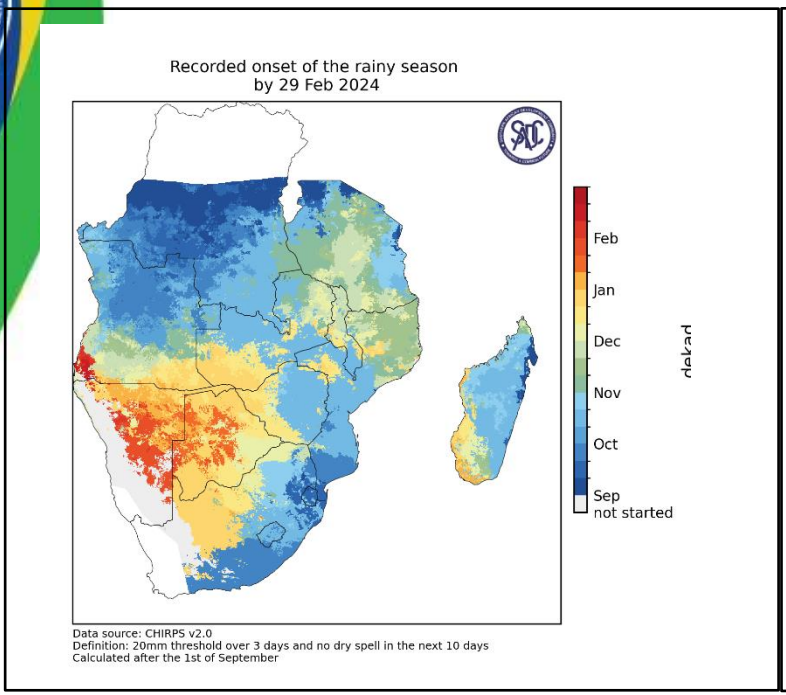
Between January and February 2024.
Critical stage for maize crops (flowering and grain filling)



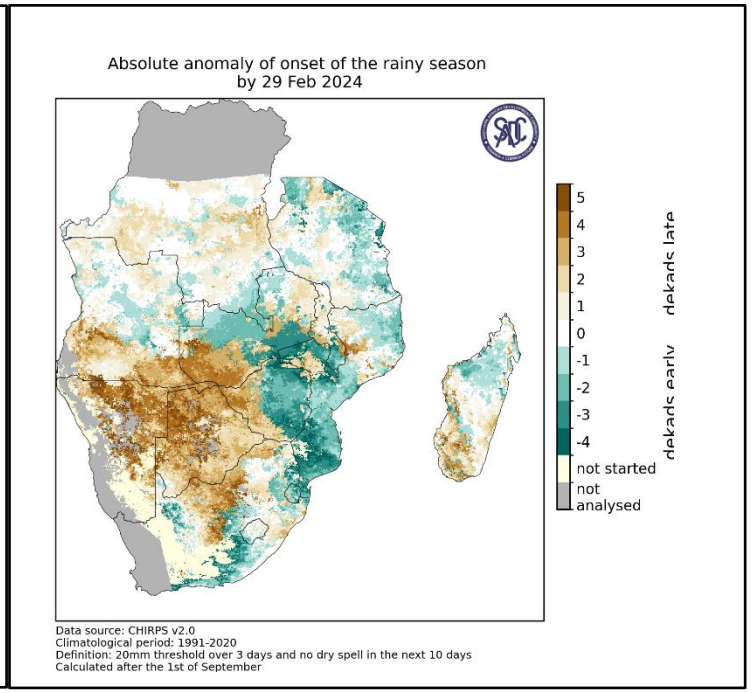


IMPACTS OF THE RAINFALL DISTRIBUTION - ONSET

ONSET – 2023/24 Season



Early or Late ONSET

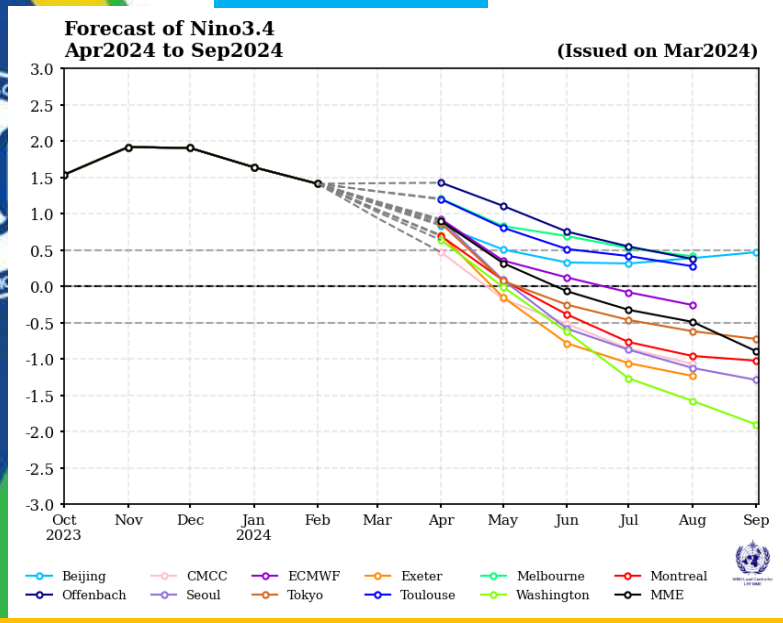


ONSET: Defined as accumulation of at least 20mm of rainfall over three days, which are not followed by a dry spell in the next 10 days (i.e. there is at least one rainfall event in the next 10 days)

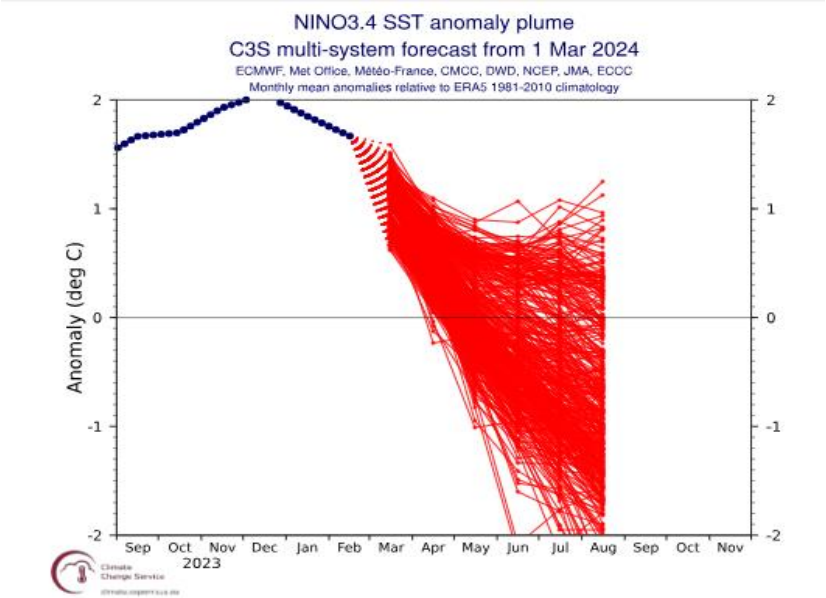
Current state of climate drivers – March 2024

Climate drivers - Index plumes Obs and Fcst

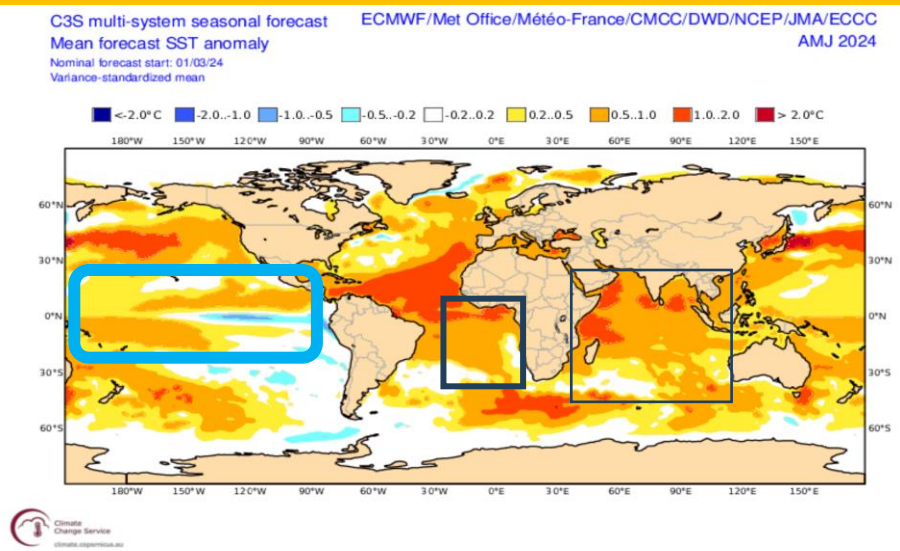
WMO-LC

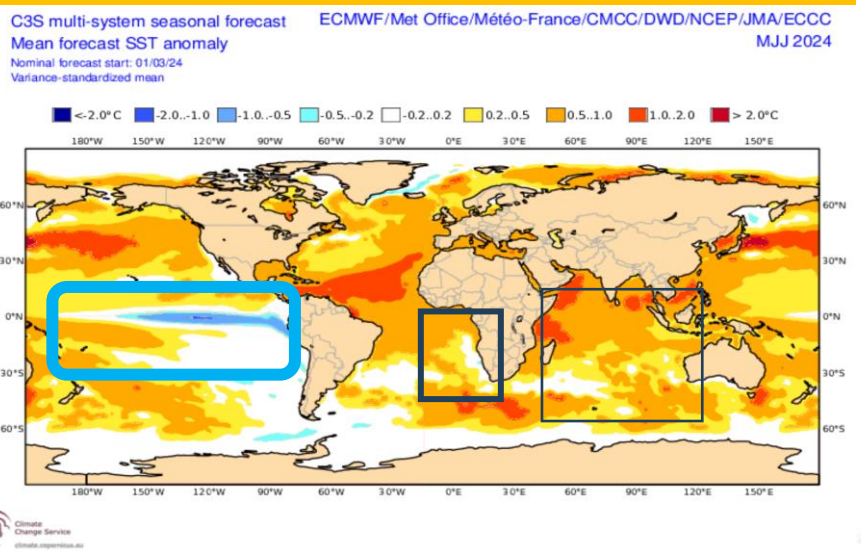


C3S



ENSO has begun a transition from: Warm (El Nino) to Neutral and later a Cold (La Nina) phase





Teleconnections analysis - Index plumes Obs and Fcst

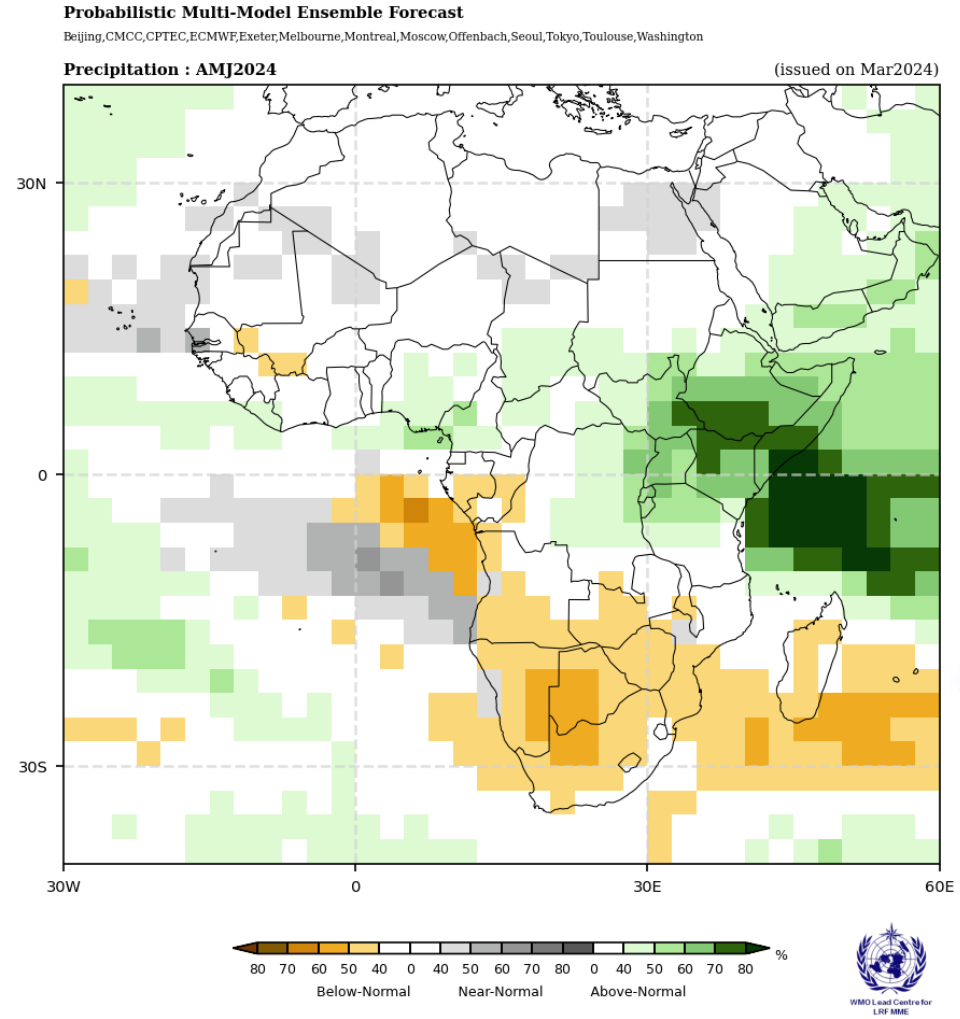
•**El Niño continues** and **is near its end**. Climate models indicate sea surface temperatures in the central tropical Pacific are expected to return to ENSO-neutral later in Autumn 2024.

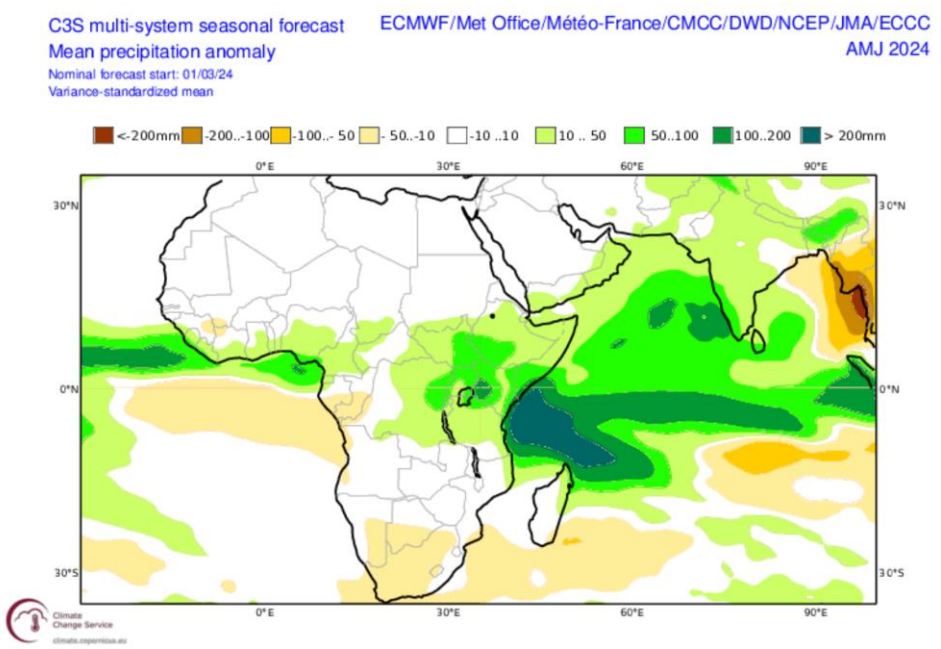
•While four out of seven international **models are predicting a La Niña** by late winter, the forecasts of the ENSO state beyond May **should be used with caution**. ENSO forecasts have historically had their lowest skill for forecasts issued in April, with skill increasing from May.

Seasonal Outlook for April to June 2024 (AMJ) period

GLOBAL PRODUCING CENTRES

April-May-June 2024

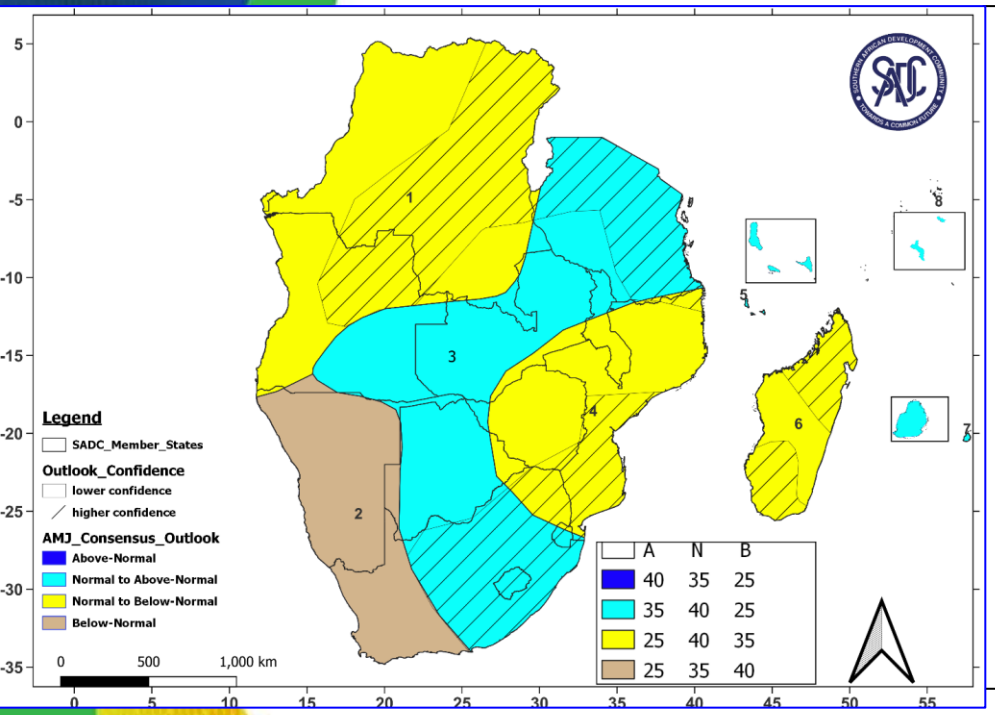




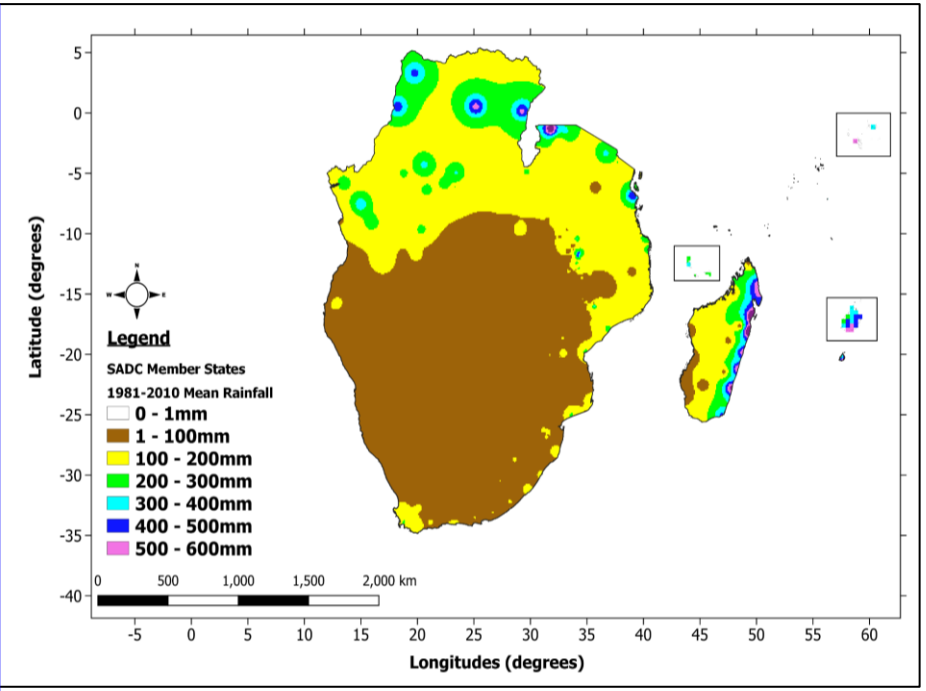
Seasonal Rainfall Long-term rainfall for AMJ 2024

Forecast issued in Jan 2024
at SARCOF 28, in Maputo,
Mozambique

April-May-June 2024 Outlook



April-May-June Climatology



Seasonal Outlook confidence

This year, SARCOF outlook maps are annotated with information on confidence of the forecast.

Forecasts carry a different level of certainty, which reflects factors such as:

- the relative role of the predictable vs. the non-predictable (random) component of climate
- the strength of climate processes that allow forecasters to make a prediction
- the quality of data and the level of understanding of climate drivers that affects the ability of the forecasting system, model or approach to capture all relevant processes that determine future climate

These factors vary in space and in time - they change slightly every year and depend on location and season that is forecasted.

As presented in the outlook maps, the confidence information has been derived based on:

- numerically assessed level of agreement of various forecasting approaches in terms of direction and magnitude of forecasted anomalies
- numerically assessed level of skill, or ability of these forecasting approaches to correctly forecast conditions during previous forecasts
- level of confidence in the forecast expressed by the forecasters

While the forecast for regions/seasons with higher confidence could be interpreted and acted upon with more assuredness, those with lower confidence should be considered with more caution. In any case, irrespective of confidence, the user is advised that the forecast, as presented in the outlook document, indicates only increased probability that the forecast category will occur (as per probabilities indicated in the maps), rather than give an assurance that it will occur.

THANK YOU

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