

TEN-DAY CLIMATE DIAGNOSTICS BULLETIN

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HIGHLIGHTS

- ✓ During the second dekad of November 2022, rainfall activities were observed over some parts of subequatorial and tropical bands of the Continent, with above-average to well above-average rainfall conditions observed over parts of Central Africa, Southern Africa and East Africa regions. Below-average to well below-average rainfall was recorded over Central Africa and Southern Africa countries.
- ✓ The dekad was characterized by neutral to cold SSTs conditions in the eastern parts of the Atlantic Ocean closer to the western coastline of the Continent. In addition, in the equatorial pacific region, La Nina conditions persisted during most of the last four weeks. Over the Indian Ocean, the SSTs were mostly dominated by neutral to cold conditions over western parts that led to suppress rainfall over parts of the eastern side of East African countries.
- ✓ The outlook for 22 – 28 November 2022 depicts a general bias for below to normal precipitation Cameroon, southern parts of DRC, Zambia, Zimbabwe, Mozambique and southern parts of Tanzania. Above average precipitation is expected over Angola, eastern DRC, Gabon, Congo, Lesotho, Swaziland, east of South Africa, Uganda, Rwanda, Burundi and northern tips of Tanzania in the first week. Whereas during the second week normal to above precipitation can be expected in Gabon, Congo, northern DRC, Botswana, Zimbabwe and South Africa..

1.0 GENERAL CLIMATOLOGICAL SITUATION

Subsection 1.1 provides the strength of the surface pressure systems, ITD, CAB and ITCZ displacements, while subsection 1.2 is discussing the state of the troposphere and gives a summary of monsoon and relative humidity thresholds.

1.1 SURFACE

Pressure Systems

- **The Azores High** observed a central value of 1023hPa, a 6hPa strengthening compared to the climatological mean (1991-2020). It was located at 45°W and 32°N. It moved to the North West over the northern Antarctic Ocean.
- **St. Helena High** observed a central pressure value of 1021hPa; it lessening by 2hPa from previous dekad and the climatological mean (1991-2020). It was located at 16°W and 33°S.
- **Mascarene High:** The central value for Mascarene High was 1027hPa. It strengthening by 2hPa from the previous dekad and strengthening by 8hPa from the climatological means (1991-2020). Positioned at 92°E and 35°S, it moved to the east over the south Indian Ocean.
- **Heat Low:** Thermal low was observed with the value of 1011hPa over Sudan and Chad stable to its climatological mean.

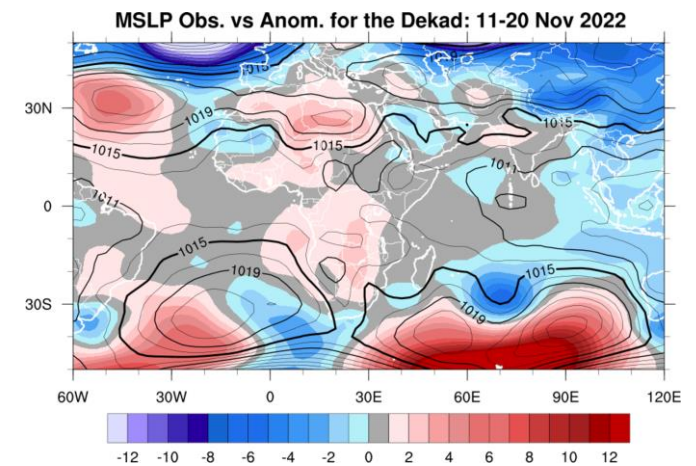


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 11th to 20th November 2022

1.2 TROPOSPHERE

1.2.1 African Monsoon

The African Monsoons combined influence of the Indo-Pacific and the Atlantic Oceans drive the inter-annual and the decadal monsoon variability over these regions.

Figure 2.a shows the dekad average wind at 850hPa. Positive wind from north-easterly to easterly anomalies were observed over Libya, Egypt, Sudan, Chad, Kenya, Somalia, Nigeria, Tanzania, Mozambique, Zimbabwe and Angola. Negative wind anomalies from east to south easterly and north easterly were observed over Chad, Uganda, Burundi, Rwanda, Namibia, Tanzania, Botswana, Zambia, Cameroon, Mali and South Africa.

At the 700hpa level (see Fig.2b), the vortex wind anomaly was observed over north west parts of North Africa, in the central parts of the Continent neutral wind from east to western were observed.

At 200hpa level (see Fig.2c), the vortex wind anomaly was observed over south west parts of East Africa. Very strong westerly wind vector anomalies at 200hPa observed mainly over Northern and Southern parts of Africa region.

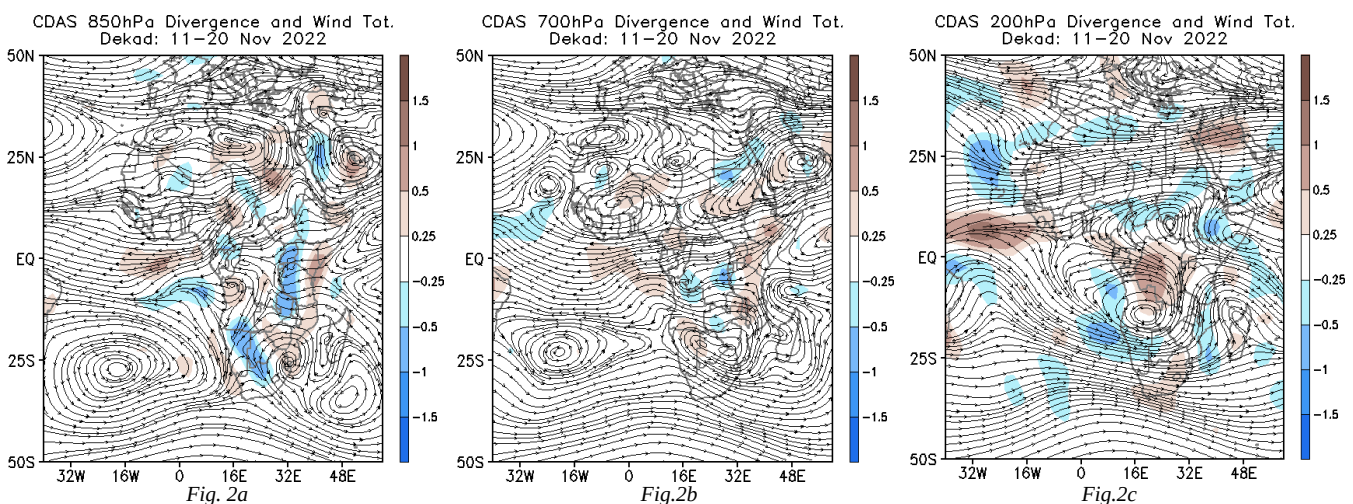


Figure 2: Mean wind (streamlines: m/s) and divergence (shaded: s^{-1}) observed at 850hPa (Fig.2a), 700hPa (Fig.2b) and 200hPa (Fig.2c) during the second dekads of November 2022 (from 11th to 20th Nov). Source: NOAA/NCEP

1.2.2 Relative Humidity (RH) at 850hPa and 700hPa

Figure 3.a and 3.b respectively show the dekadal observed relative humidity and related anomalies at 850hPa and 700hPa for the second dekads of November 2022 compared to the reference period of 1991-2020.

At 850hPa (see Fig.3a), wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over Gulf of Guiana, Central Africa, Southern Africa and East African regions. The rest of the continent observed RH values $\leq 60\%$. Negative anomalies were observed during the second dekads of November 2022 over most of Morocco, Ghana, Ivory Coast, Cameroon, Nigeria, Tanzania, Uganda, Ethiopia, Sudan and Kenya, while positive anomalies were recorded over the rest of the continent.

At 700hPa (Fig.3b), high relative humidity ($\geq 60\%$) were observed over South African countries, Central Africa and East African regions. Relative humidity anomalies for the second dekads of November 2022 were negative over Libya, Nigeria, Benin, Togo, Ghana, Ivory Coast, Niger, Cameroon, Chad, Egypt and Somalia. While the rest of the Country had positive moisture anomalies observed.

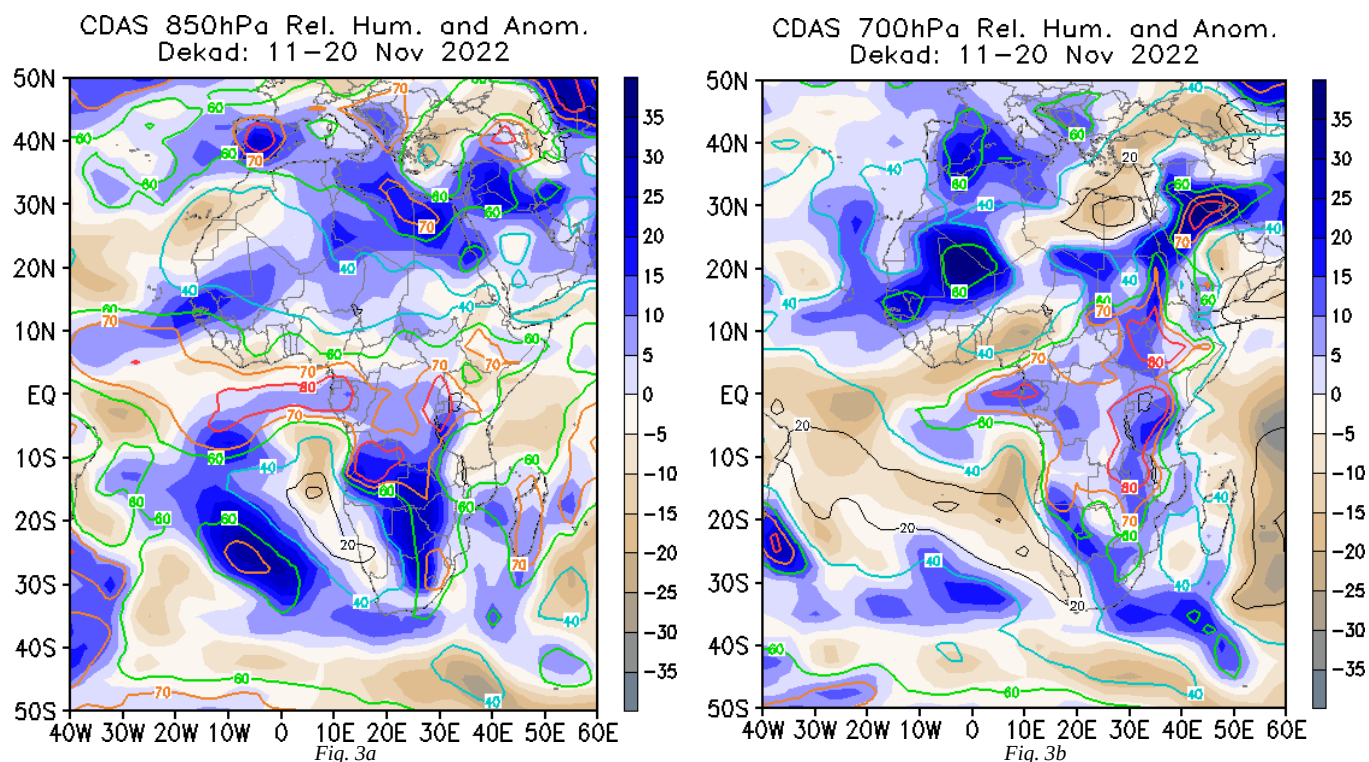


Figure 3. Relative Humidity (contour; %) and associated anomalies (shaded) observed at 850hPa (Fig.3a) and 700hPa (Fig.3b) during the second dekads of November 2022 (from 11th to 20th Nov). SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 8 shows the observed precipitation as a percentage of average for the second dekads of November 2022. During the second dekads of November 2022, rainfall activities were observed over some parts of subequatorial and tropical bands of the Continent, with above-average to well above-average rainfall conditions observed over parts of Central Africa, Southern Africa and East Africa regions. Below-average to well below-average rainfall was recorded over Central Africa and Southern Africa countries.

Details:

- **North Africa:** This region experienced mostly near average rainfall conditions.
- **Sahel:** This region received near average rainfall conditions.
- **Gulf of Guinea countries:** Some parts of the region received above to well above-average precipitation over Ghana, Ivory Cost and western parts of Cameroon; below to well below average rainfall over Cameroon and Gabon.
- **Central Africa countries:** experienced above to well above normal precipitation over Congo, western DRC and eastern Angola; below average rainfall over central parts of DRC and northern Angola.

- **East African countries:** some eastern parts observed above to well above average rainfall conditions over Kenya, Uganda, Rwanda and Tanzania; below to well below average rainfall were observed over Ethiopia, northern Kenya and eastern parts of Tanzania.
- **Southern Africa countries:** Some parts of the region received above to well above average precipitation over Angola, Zambia, Mozambique and some parts of South Africa.

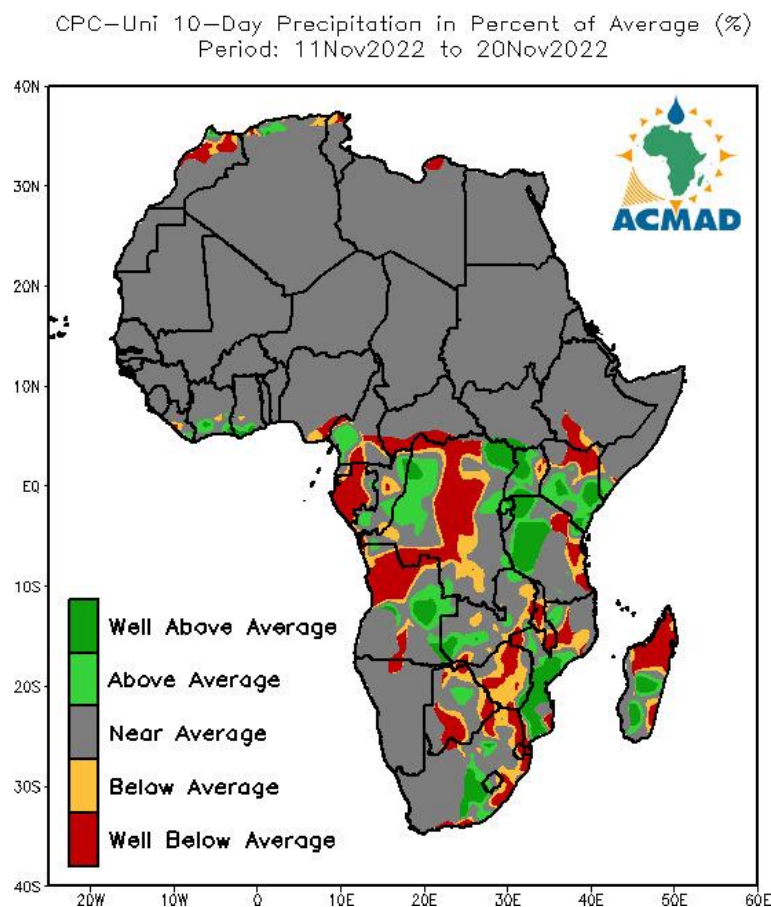


Figure 6: Precipitation in the percentage of the average for the first dekad 11th to 20th November 2022. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. UNIFIED/. Africa/. DAILY/)

3.0 RAINFALL OUTLOOK VALID FOR 22 - 28 November 2022

The outlook for 22 – 28 November 2022 depicts a general bias for below to normal precipitation Cameroon, southern parts of DRC, Zambia, Zimbabwe, Mozambique and southern parts of Tanzania. Above average precipitation is expected over Angola, eastern DRC, Gabon, Congo, Lesotho, Swaziland, east of South Africa, Uganda, Rwanda, Burundi and northern tips of Tanzania in the first week. Whereas during the second week normal to above precipitation can be expected in Gabon, Congo, northern DRC, Botswana, Zimbabwe and South Africa.

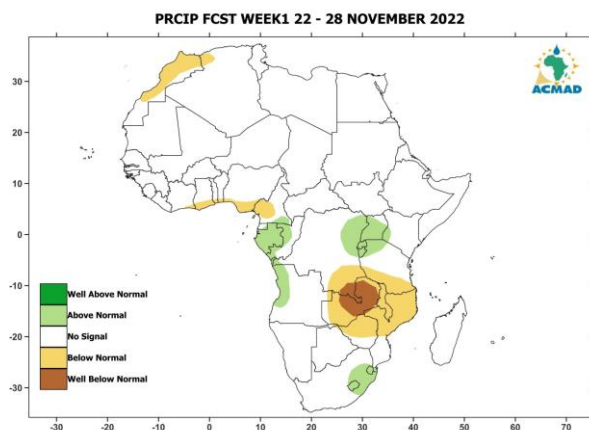


Figure 9a: Precipitation forecast for 22 – 28 November 2022

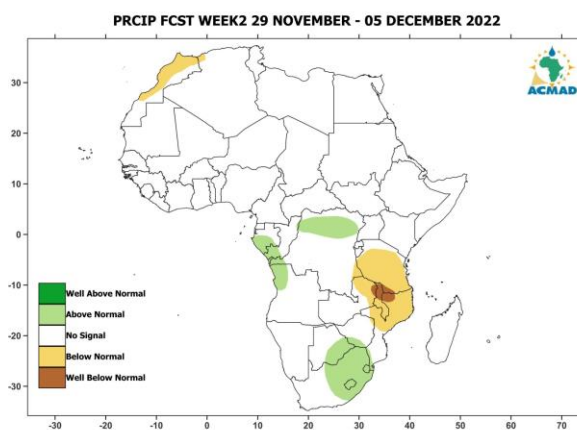


Figure 9b: Precipitation forecast for 29 November – 05 December 2022