

TEN-DAY CLIMATE DIAGNOSTICS BULLETIN

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REPORTING PERIOD: Dekad 1; 01st –10th November 2022

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HIGHLIGHTS

- ✓ *During the first 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 and South Africa regions. Below-average to well below-average rainfall was recorded over East Africa countries and Central 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 some parts of the eastern side of East African countries.*
- ✓ *The outlook for 12 – 18 November 2022 depicts a general bias for below to normal precipitation Cameroon, Gabon, Guinea Bissau, CAR, western parts of DRC and south east of Tanzania. Above average precipitation is expected over Angola, DRC, Zambia, Zimbabwe, Botswana, Lesotho, Swaziland, South Africa, Tanzania, Uganda, Rwanda, Burundi, Kenya and Madagascar in the first week. Whereas during the second week normal to above precipitation can be expected in Gabon, Congo, DRC, northern DRC, Southern Ethiopia and Lesotho.*

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 1021hPa, a 2hPa strengthening compared to the climatological mean (1991-2020). It was located at 23°W and 32°N. It moved to the North East over the northern Antarctic Ocean.
- **St. Helena High** observed a central pressure value of 1023hPa; it lessening by 2hPa from the climatological mean (1991-2020). It was located at 6°W and 34°S.
- **Mascarene High:** The central value for Mascarene High was 1025hPa. It lessening by 2hPa from the previous dekad and strengthening by 4hPa from the climatological means (1991-2020). Positioned at 85°E and 32°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 Central Africa Republic and stable to its climatological mean.

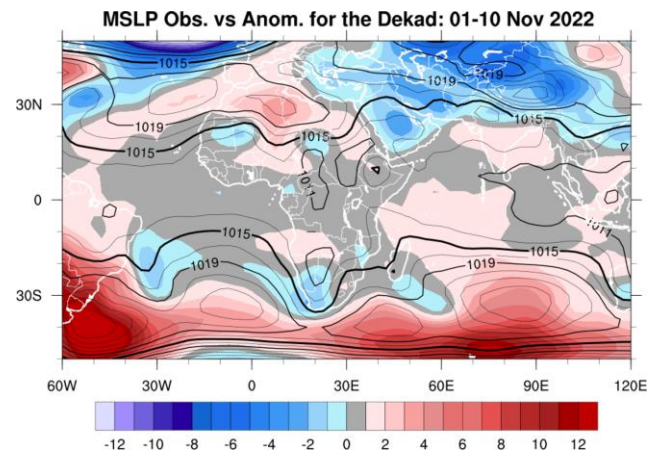


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 01st to 10th November 2022

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, Kenya, Somalia, Nigeria, Tanzania, South Sudan, Mozambique, Zimbabwe and Madagascar. Negative wind anomalies from east to south easterly and north easterly were observed over Chad, Uganda, Burundi, Rwanda, Namibia, Tanzania, Botswana, Zambia and South Africa.

At the 700hpa level (see Fig.2b), the vortex wind anomaly was observed over northern 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 north-eastern parts of East Africa. Very strong westerly wind vector anomalies at 200hPa observed mainly over Northern and Southern parts of Africa region.

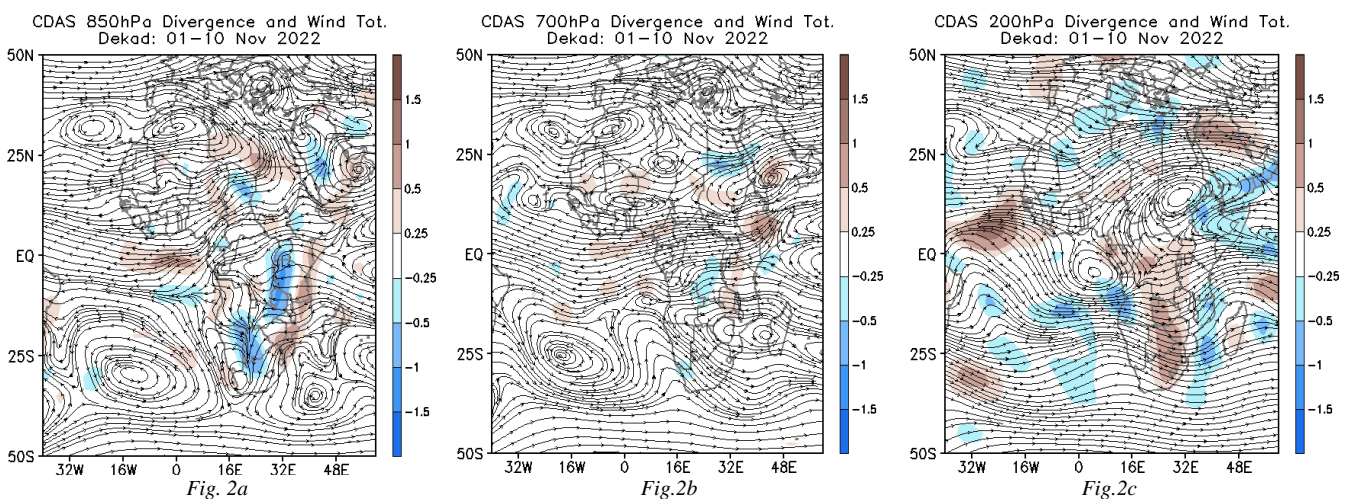


Figure 2: Mean wind (streamlines: m/s) and divergence (shaded: s^{-1}) observed at 850hPa (Fig.2a), 700hPa (Fig.2b) and 200hPa (Fig.2c) during the first dekads of November 2022 (from 01st to 10th Nov). Source: NOAA/NCEP

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 first dekad 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 first dekad of November 2022 over most of Algeria, Morocco, Tunisia, Mali, Mauritania, Burkina Faso, Ghana, Ivory Coast, Benin, Togo, Nigeria, Gabon, 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 first dekads of November 2022 were negative over Angola, Tanzania, Algeria, Libya, Tunisia, Nigeria, Niger, Cameroon, Central Africa, Egypt, Somalia and Ethiopia. While the rest of the Country had positive moisture anomalies observed.

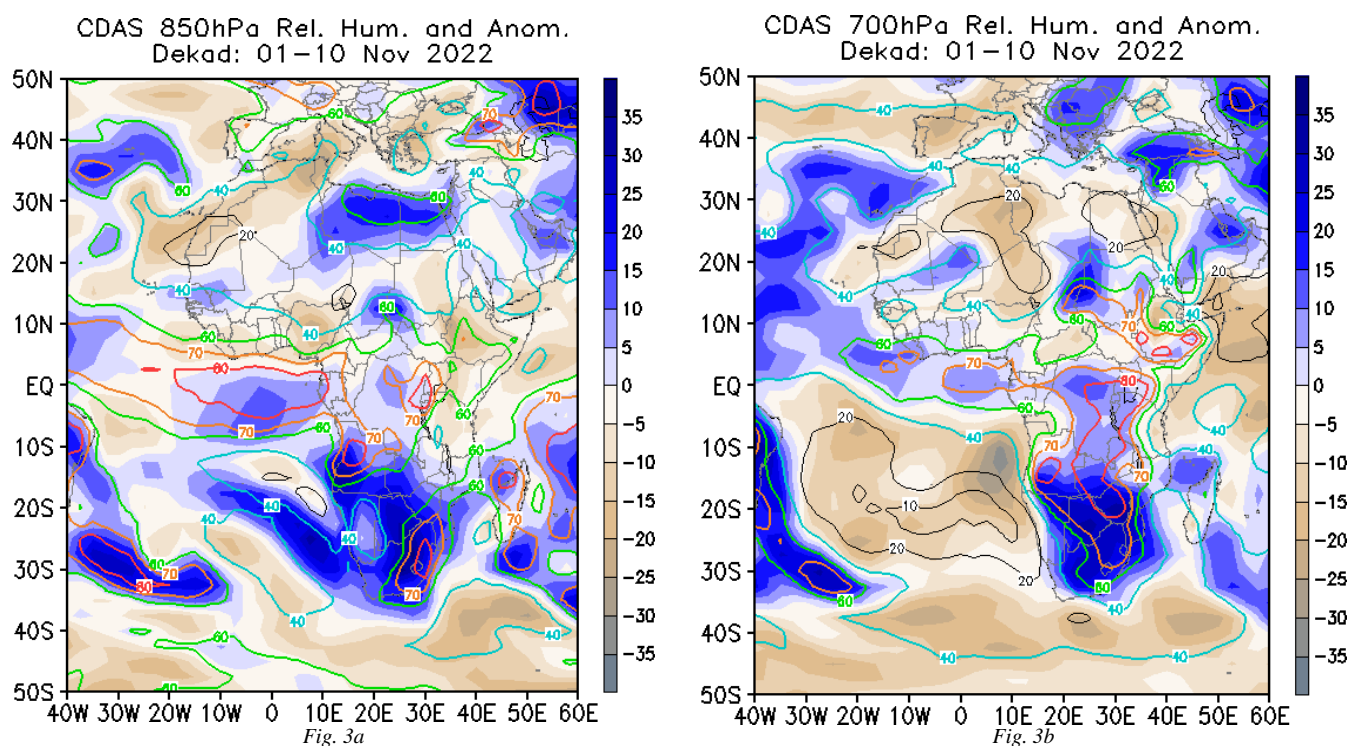


Figure 3. Relative Humidity (contour; %) and associated anomalies (shaded) observed at 850hPa (Fig.3a) and 700hPa (Fig.3b) during the first dekads of November 2022 (from 01st to 10th Nov). SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 8 shows the observed precipitation as a percentage of average for the first dekad of November 2022. During the first 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 and South Africa regions. Below-average to well below-average rainfall was recorded over East Africa countries and Central 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 Liberia and southern parts of Ghana; below to well below average rainfall over Cameroon, Gabon and Nigeria.
- **Central Africa countries:** experienced above to well above normal precipitation over Congo, western and southern DRC and northern Angola.

- **East African countries:** some eastern parts observed above to well above average rainfall conditions over some parts of Kenya and Tanzania; below to well below average rainfall were observed over Uganda, South Sudan, Rwanda and Burundi.
- **Southern Africa countries:** Most parts of the region received above to well above average precipitation over Botswana, Zimbabwe, Namibia, Mozambique, South Africa, Eswatini and Lesotho.

CPC-Uni 10-Day Precipitation in Percent of Average (%)
 Period: 01Nov2022 to 10Nov2022

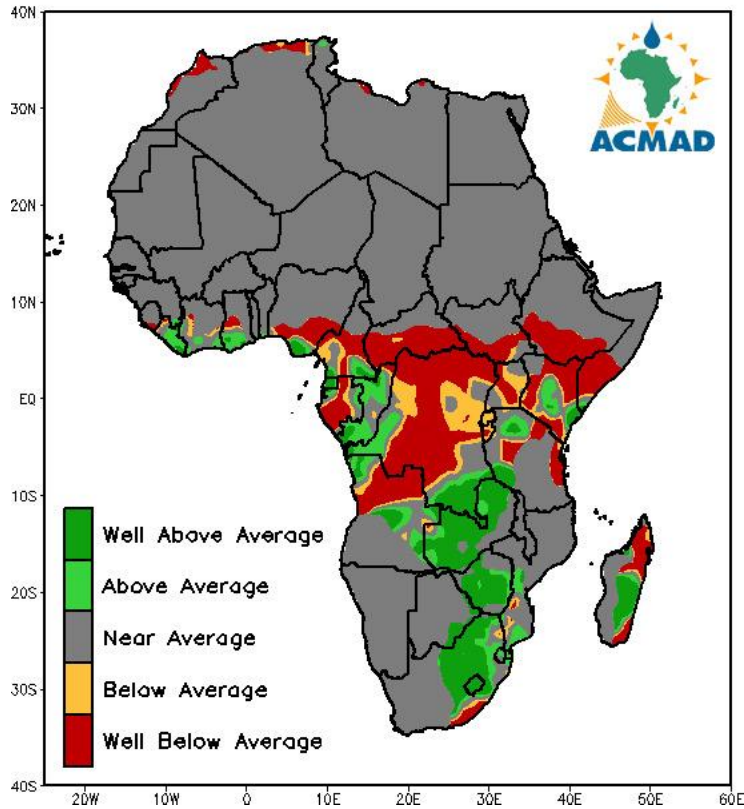


Figure 6: Precipitation in the percentage of the average for the first dekad 01st to 10th November 2022. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. UNIFIED/. Africa/. DAILY/)

3.0 RAINFALL OUTLOOK VALID FOR 12 - 18 November 2022

The outlook for 12 – 18 November 2022 depicts a general bias for below to normal precipitation Cameroon, Gabon, Guinea Bissau, CAR, western parts of DRC and south east of Tanzania. Above average precipitation is expected over Angola, DRC, Zambia, Zimbabwe, Botswana, Lesotho, Swaziland, South Africa, Tanzania, Uganda, Rwanda, Burundi, Kenya and Madagascar in the first week. Whereas during the second week normal to above precipitation can be expected in Gabon, Congo, DRC, northern DRC, Southern Ethiopia and Lesotho.

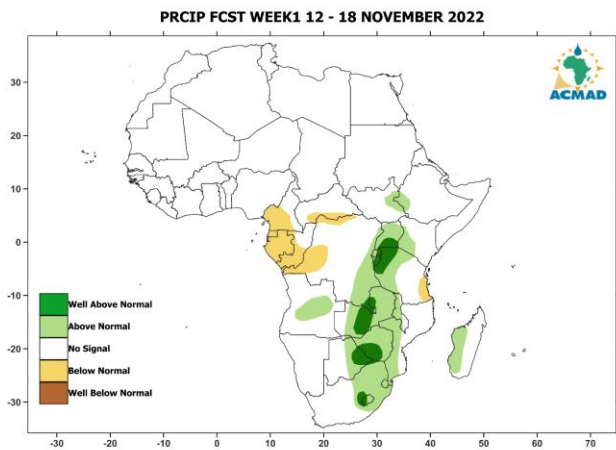


Figure 9a: Precipitation forecast for 12 – 18 November 2022

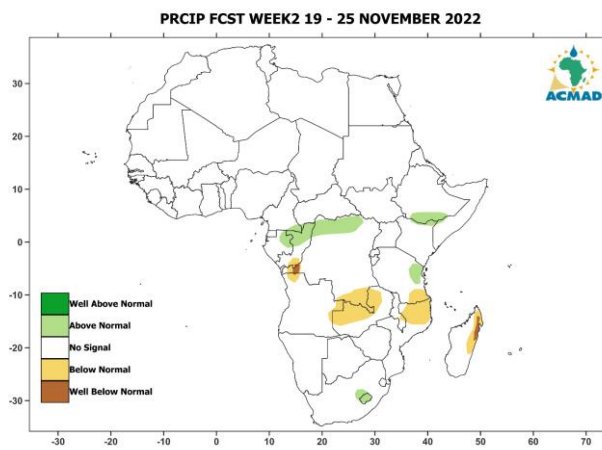


Figure 9b: Precipitation forecast for 19 – 25 November 2022