African Centre of Meteorological Applications for Development
Centre Africain pour les Applications de la Météorologie au Développement

Ten Days Climate Diagnostics Bulletin
N°18

Dekad 1, 1st – 10th July 2022

HIGHLIGHTS

- ✓ *During the first dekad of july 2022, rainfall activities were observed over central parts of the Continent, with above-average to well above-average rainfall conditions observed over some western parts of Western Africa, western part of Central Africa region and eastern side of Eastern Africa. Below-average to well below-average rainfall was recorded over most parts of the Western Africa, Central Africa and western side of the Eastern Africa.*

- ✓ *The dekad was characterized by neutral to warm 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 have persisted for the past four weeks. Over the Indian Ocean, the SSTs were mostly dominated by neutral to cold conditions led to reduced rainfall over southern parts of East African countries. These SST conditions contributed to above average precipitation in some parts of the Equatorial and Subtropical band over tne Continent.*

- ✓ *The outlook for 13 to 19 July 2022, depict a general tendency of below to normal precipitation over southern parts of Western Africa, western Cameroon, much of Guinea Equatorial, northern Gabon, most parts of Rwanda, Burundi and eastern Uganda. During the same week above to well above average rainfall is expected over Senegal, Gambia, Guinea Bissau, Guinea, Mali, Burkina Faso, Niger, Nigeria, Chad, Cameroon, CAR, Congo, DRC, South Sudan, Sudan Ethiopia, Djibouti and Somalie. The rainfall during the second week is expected to be observe below normal over the same than the first week while above to well above precipitation is likely from western, central to the eastern part the Continent.*

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 1026 hPa, weakened by 7hPa when compared to the previous dekad and strengthened by 5hPa compared to the climatological mean (1991-2020). The Azores high moved to the north to the climatology over the North Atlantic Ocean and was located at 30°W and 36°N.
- **St. Helena High** observed a central pressure value of 1025hPa, a 4hPa weakened from the previous dekad and stable to the climatological mean (1991-2020). It was located at 5°w/28°S. It was moved to eastern of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1025hPa. It was strengthened by 1hPa from the previous dekad and 4 hPa to the climatological mean (1991-2020). Positioned at 56°E and 30°S, it moved to the west over the south Indian Ocean.
- **Heat Low:** Thermal low was observed with the value of 1007hPa over the western parts of Chad northern Mali, located at 15°E and 16°N and second at 1°W and 22°N filled to previous dekad and stable compared to last dekad and its climatological mean..

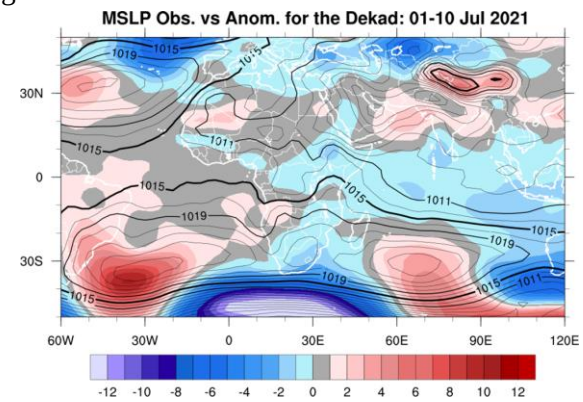


***Figure 1**. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 1st to 10th July 2022*

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the dekad average wind at 850hPa. Moderate wind from north to north-easterly and east anomalies of about 6m/s - 8m/s average wind speeds were observed over parts of Egypt, Libya, southern Algeria, Mali, Mauritania, to Senegal, over the Subtropical region the wind was normal to positive anomaly western side and in the eastern part of the Continent the negative wind anomaly have been observed with de direction from south-east to north.

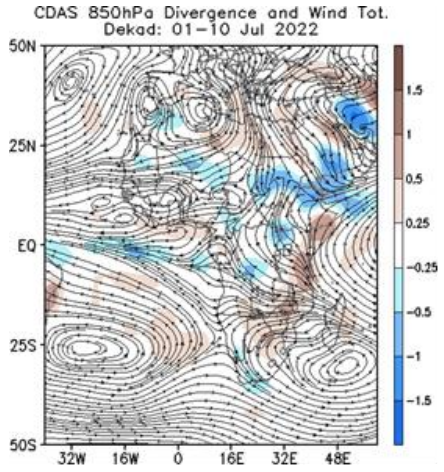


Figure 2a: Mean wind (m/s) at 850hPa from 1st to 10st July 2022 , Source: NOAA/NCEP

Figure 2b: At the 700hpa level, the vortex wind anomaly was observed over northern parts the North Africa and Sahel region, in the southern parts of the Continent the neutral wind from eastern to north-western have been observed.

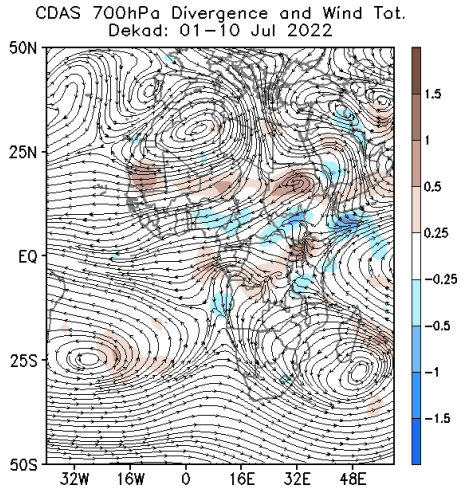


Figure 2b: Mean wind (m/s) at 700hPa from 1st to 10st July 2022, Source: NOAA/NCEP

Figure 2c: shows very strong westerly wind vector anomalies ≥14m/s at 200hPa observed mainly over the continent except for much of the Gulf of Guinea and parts of central, east and southern Africa that observed moderate wind speeds of about 6m/s-8m/s

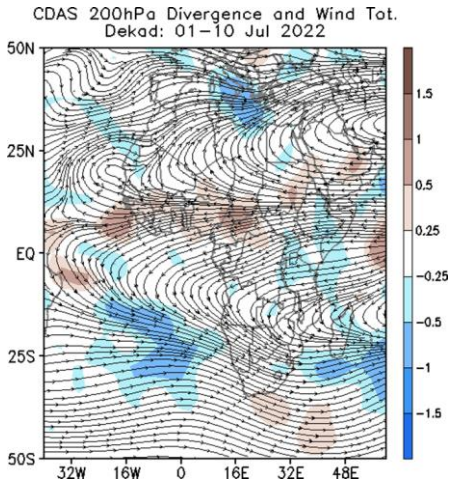


***Figure 2c: Mean wind at 200 hPa (m/s) during the period** 1st to 10st July 2022*
(Source: NOAA/NCEP)

1.3. Relative Humidity (RH) at 850hPa

Figure 4 shows the dekadal observed relative humidity and anomalies at 850hPa for the first dekad of July 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity ≥ 60%) were observed over southern parts of the Western Africa countries, the central parts of Central Africa, eastern side of East African and SADC region. The rest of the continent observed RH values ≤ 60%.

Negative anomalies were observed during the first dekad of July 2022 over DRC, Uganda, southern, Congo, north-west of Angola and western Madagascar. Positive anomalies were recorded over the rest of the continent

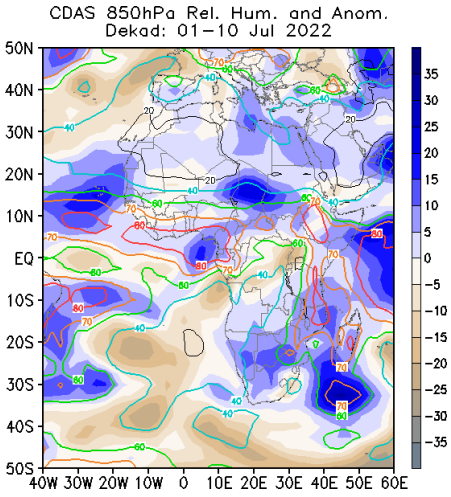


Figure 4. *RH (%) at 850hPa (contour) and anomaly (shaded) during the period 1st to 10st July 2022 SOURCE/. NOAA/. NCEP-CAR/. CDAS1)*

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the dekad observed relative humidity at 700hPa. The figure shows that high relative humidity values ≥ 60% at 700hPa were observed over most of Guinea Gulf and southern parts the Sahel Countries, northern and central parts of Central Africa region and Eastern Africa. The rest of the continent observed RH values ≤ 60%.

The relative humidity anomalies for the first dekad of July 2022 were negative over Congo, DRC, Angola, Tanzania, Zambia, Zimbabwe, Mozambique, South Africa, and Madagascar. The rest of the continent observed positive anomalies.

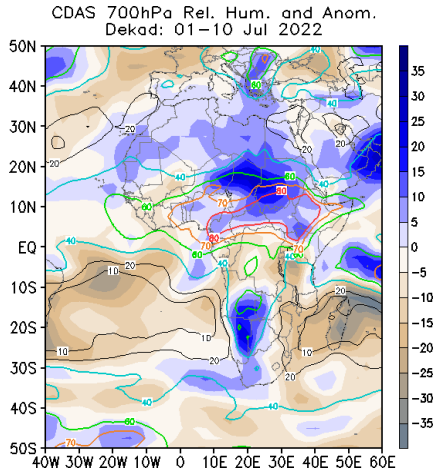


Figure 5. *RH (%) at 700hPa (contour) and anomaly (shaded) during the period 1st to 10st July 2022 (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)*

2.0 PRECIPITATION

Figure 6 shows the observed precipitation as a percentage of average for the third dekad of May 2022.

2.1 Precipitation

During the first dekad of July 2022, rainfall activities were observed over central parts of the Continent, with above-average to well above-average rainfall conditions observed over some western parts of Western Africa, western part of Central Africa region and eastern side of Eastern Africa. Below-average to well below-average rainfall was recorded over most parts of the Western Africa, Central Africa and western side of the Eastern Africa.

Details:

- **North Africa**: This region experienced mostly near average rainfall conditions..

- **Sahel:** Below to well below average rainfall conditions were experienced over southern Mali, Burkina Faso, , south-western Niger, and southern Chad. During the dekad above to well above average precipitation over eastern Senegal, western Burkina Faso and southern Niger,
- **Gulf of Guinea countries**: some parts the region received below to well below-average precipitation over Sierra Leone, northern Côte d'Ivoire western Ghana, north of Benin and most parts Nigeria, the region was experience above to well above average rainfall over Guinea, western Cote d'Ivoire, eastern Ghana, northern Togo, Benin and of Nigeria.
- **Central Africa countries**: experience below to well below normal precipitation over northern Cameroon, southern Chad, northern and eastern CAR, northern Gabon and DRC. As also above to well above normal precipitation was observed over southern Cameroon and northern Congo.
- **East African countries:** most of eastern parts observed above to well above average rainfall conditions over south-eastern Sudan, north-eastern South-Sudan, north and central of Ethiopia, and much of Djibouti and Eritrea.
- **Southern Africa countries:** most parts of the SADC region are off-season.

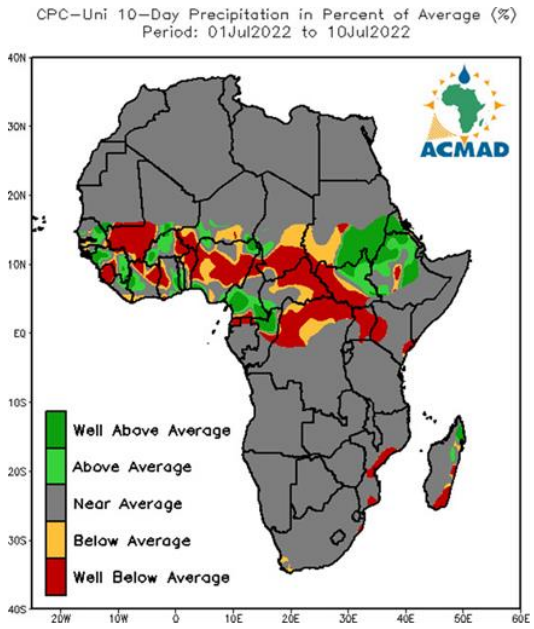


Figure 6: *Precipitation in the percentage of the average for the first dekad 1st to 10st July 2022. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. UNIFIED/. Africa/. DAILY/)*

3.0 OUTLOOK RAINFALL VALID FOR 13 TO 26 JULY 2022

3.1 PRECIPITATION

The outlook for 13 to 19 July 2022, depict a general tendency of below to normal precipitation over southern parts of Western Africa, western Cameroon, much of Guinea Equatorial, northern Gabon, most parts of Rwanda, Burundi and eastern Uganda. During the same week above to well above average rainfall is expected over Senegal, Gambia, Guinea Bissau, Guinea, Mali, Burkina Faso, Niger, Nigeria, Chad, Cameroon, CAR, Congo, DRC, South Sudan, Sudan Ethiopia, Djibouti and Somalia. The rainfall during the second week is expected to be observe below normal over the same than the first week while above to well above precipitation is likely from western, central to the eastern part the Continent

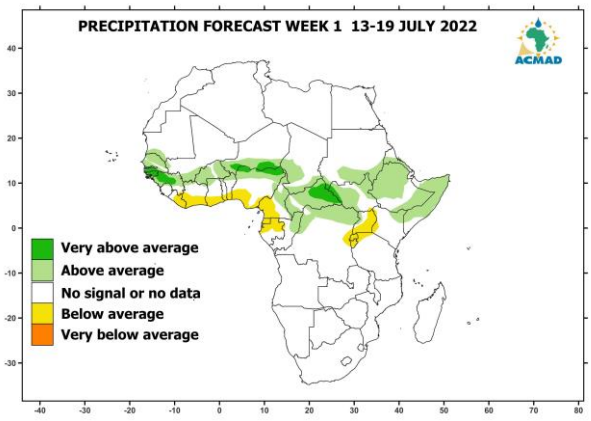


***Figure 7a**: Precipitation forecast for 13-19 July 2022*

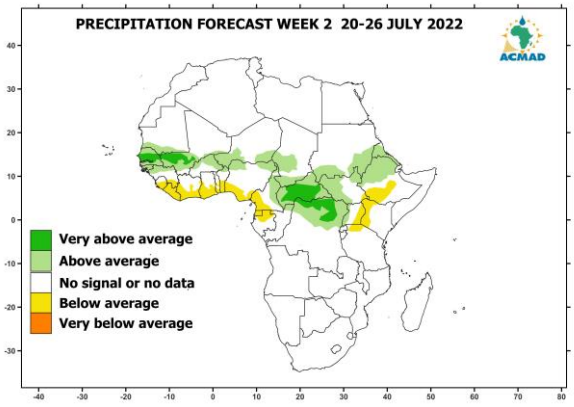


***Figure 7b**: Precipitation forecast for 20-26 July 2022*