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

Ten Days Climate Diagnostics Bulletin
N°16

Dekad 3, 21st – 30th June 2022

HIGHLIGHTS

- ✓ *During the third dekad of June 2022, rainfall activities were observed over central parts of the Continent, with above-average to well above-average rainfall conditions observed over eastern to central parts of Western Africa, central of Central Africa region and central parts of Eastern Africa. Below-average to well below-average rainfall was recorded over northern, south-western and south-eastern parts of Western Africa, northern DRC, southern Cameroon, western South-Sudan, and southern Ethiopia.*

- ✓ *The dekad was characterized by neutral SSTs conditions in the eastern parts of the Atlantic Ocean closer to the western coastline of the Continent. These SST conditions contributed to above average precipitation in some parts of 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 parts of East African countries.*

- ✓ *The outlook for 11 to 24 July 2022, depict a general tendency of deficit precipitation over western parts Of the Western Africa region and above average over central parts of the Eastern Africa first week. During the second week wet to very wet condition are expected Senegal, Mali, Burkina Faso, Niger, Ethiopia, South-Sudan, CAR and DRC, and wry condition is very likely over Sierra Leone, Liberia, southern Togo, Benin, and Nigeria .*

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 1026hPa, strengthened by 1hPa when compared to the previous dekad and 9hPa compared to the climatological mean (1991-2020). The Azores high moved to the north-western to the climatology over the North Atlantic Ocean and was located at 42°W and 41°N.
- **St. Helena High** observed a central pressure value of 1024hPa, a 3hPa strengthened from the previous dekad and 5hPa to the climatological mean (1991-2020). It was located at 31°E/29°S. It was moved to eastern of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1022hPa. It was weakened by 1hPa from the previous dekad and strengthened by 5hPa to the climatological mean (1991-2020). Positioned at 119°E and 32°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, located at 16°E and 115°N, deepened to previous dekad and stable compared to last dekad and its climatological mean.

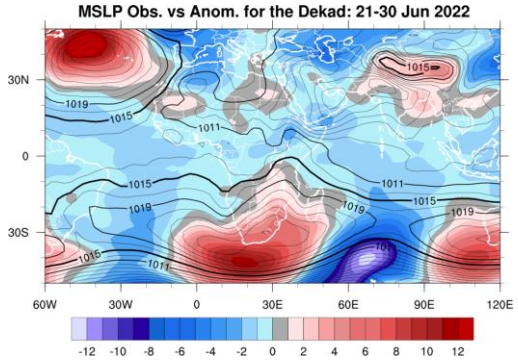

***Figure 1**. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21th to 30th June 2022*

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the dekadal average wind at 850hPa. Moderate to weak wind from north to north-easterly and east anomalies of about 6m/s - 8m/s average wind speeds were observed over parts of Libya, Egypt, and south-easterlies over coastal Kenya and Somalia.

Figure 2b: At the 700hpa level, western wind anomalies of 8m/s-14m/s dominated parts of Egypt, Libya, Algeria, Tunisia and Morocco, while north-easterlies were observed over south-western parts of West Africa and Central Africa, while the rest of the continent observed light to moderate wind anomalies of about 2m/s to 8m/s.

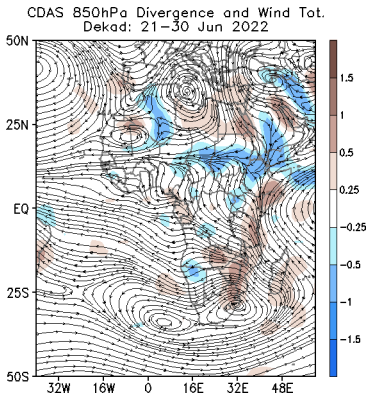

Figure 2a: Mean wind (m/s) at 850hPa from 21th to 30th June 2022
Source: NOAA/NCEP

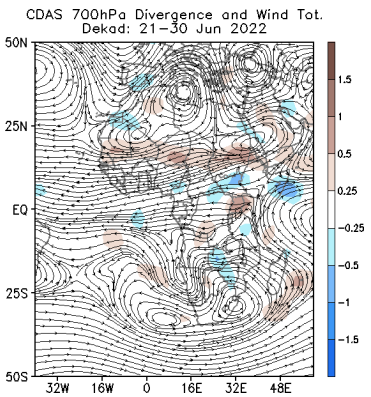

Figure 2b: Mean wind (m/s) at 700hPa from 21th to 30th June 2022
Source: NOAA/NCEP

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.

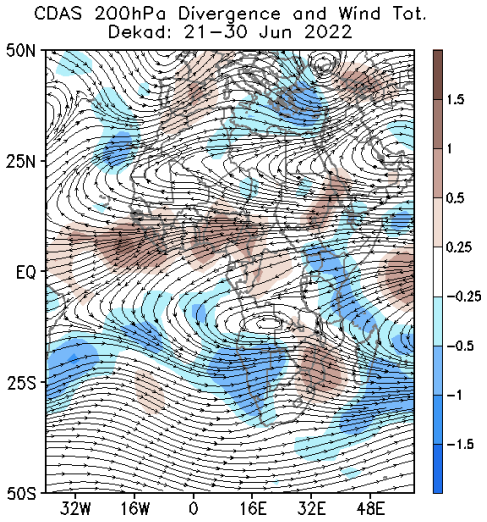

Figure 2c: ***Mean wind at 200 hPa (m/s) during*** *21th to320th June 2022*
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 shows the dekadal observed relative humidity and anomalies at 850hPa pressure level for the third dekad of June 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity ≥ 60%) were observed over most of the Gulf of Guinea countries, Central Africa and East African countries namely; Uganda, Kenya, Tanzania, Ethiopia, and parts of southern African countries such as Malawi, Mozambique and Madagascar. The rest of the continent observed RH values ≤ 60%.

Negative anomalies were observed during the third dekad of June 2022 over Algeria, Tunisia, Libya, Mali, Niger, Ethiopia, Uganda, DRC, Rwanda and Burundi. Positive anomalies were recorded over the other parts of the continent

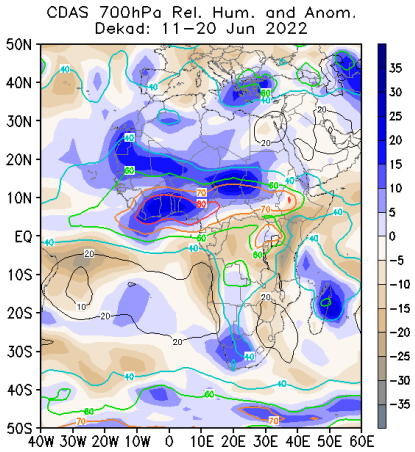

Figure 4*.* *RH (%) at 850hPa (contour) and anomaly (shaded) during the period 21tst to 30th June 2022*
SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the dekadal observed and anomalies of relative humidity at 700hPa. The figure shows that high relative humidity values ≥ 60% at 700hPa were observed over much of the Western, Eastern and Central African regions. The rest of the continent observed RH values ≤ 60%.

The relative humidity anomalies for the third dekad of June 2022 were negative over Algeria, Tunisia, Ethiopia, Somalia, Kenya, Uganda, DRC, Angola, Tanzania, Zambia, Zimbabwe, Namibia and South Africa. The rest of the continent observed positive anomalies.

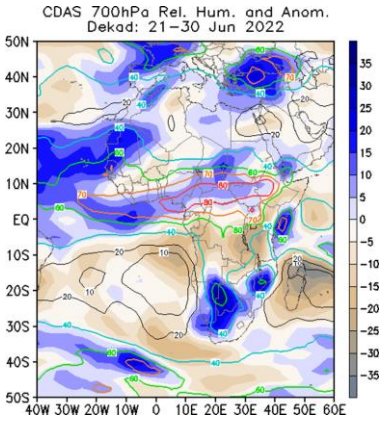

Figure 5. *RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21th to 30th June 2022 (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)*

2.0 PRECIPITATION

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

2.1 Precipitation

During the third dekad of June 2022, rainfall activities were observed over central parts of the Continent, with above-average to well above-average rainfall conditions observed over eastern to central parts of Western Africa, central of Central Africa region and central parts of Eastern Africa. Below-average to well below-average rainfall was recorded over northern, south-western and south-eastern parts of Western Africa, northern DRC, southern Cameroon, western South-Sudan, and southern Ethiopia.

Details:

- **North Africa**: This region experienced mostly near average rainfall conditions.
- **Sahel:** Near average rainfall conditions were experienced in this region below average to well below average observed over parts of Burkina Faso and Niger. South Senegal, eastern Mali, received above to well above average rainfall.
- **Gulf of Guinea countries**: Most eastern parts of the sub-region received Above-average to well above-average precipitation while below-average to well below-average rainfall were observed in parts of Guinea, Sierra Leone, Liberia, western Cote d'Ivoire and South-eastern Nigeria.
- **Central Africa countries**: most parts of Cameroon, southern Chad, north-western DRC, received above-average to well above-average precipitation. The north-eastern DRC received below-average to well below-average precipitation.
- **East African countries:** southern Ethiopia, western South-Sudan, and much of Uganda observed below average to well below average rainfall conditions, the southern Sudan, northern Ethiopia received above to well above precipitation.
- **Southern Africa countries:** most parts of the SADC region are off-season.
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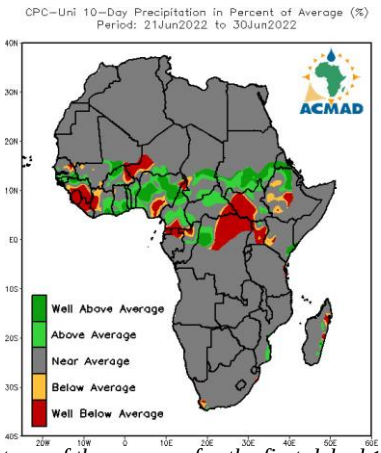

Figure 6: *Precipitation in the percentage of the average for the first dekad 11th to 20th June 2022. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. UNIFIED/. Africa/. DAILY/)*

3.0 OUTLOOK RAINFALL VALID FOR 11 TO 24 JJULY 2022

3.1 PRECIPITATION

The outlook for 11 to 24 July 2022, depict a general tendency of deficit precipitation over western parts Of the Western Africa region and above average over central parts of the Eastern Africa first week. During the second week wet to very wet condition are expected Senegal, Mali, Burkina Faso, Niger, Ethiopia, South-Sudan, CAR and DRC, and wry condition is very likely over Sierra Leone, Liberia, southern Togo, Benin, and Nigeria

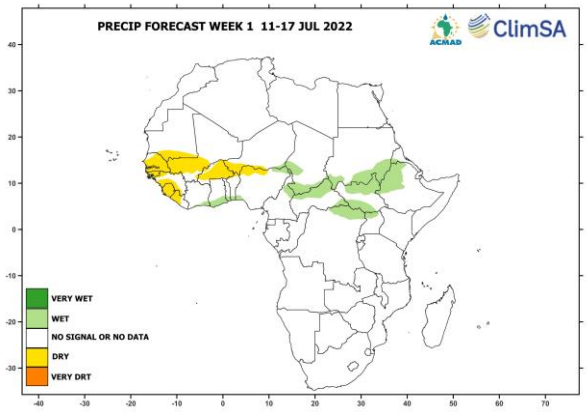

***Figure 7a**: Precipitation forecast for 11 to 17 Jul 2022*

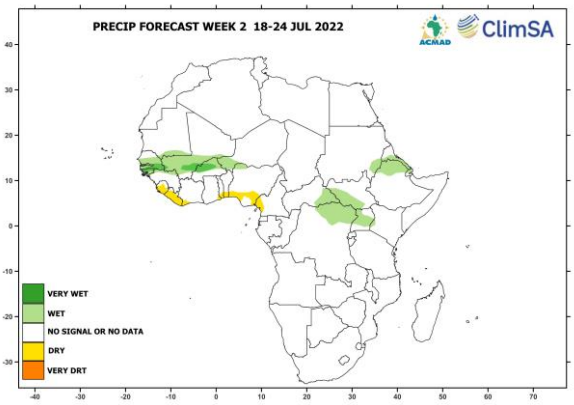

***Figure 7b**: Precipitation forecast for 18-24 July 2022*