



**Ten Days Climate Diagnostics Bulletin**

**N°20**

**Dekad 3, 21<sup>st</sup> – 31<sup>st</sup> July 2022**

**HIGHLIGHTS**

- ✓ *During the third dekad of July 2022, rainfall activities were observed over most of Subtropical and tropical band of the Continent, with above-average to well above-average rainfall conditions observed over some westernmost and central parts of Western Africa, most of the central part of Central Africa and western side of the Eastern Africa regions. Below-average to well below-average rainfall was recorded over western and eastern parts of Western Africa, northern side of the Central Africa and north and eastern parts of the Eastern Africa.*
- ✓ *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 have persisted during most of the four last weeks. Over the Indian Ocean, the SSTs were mostly dominated by neutral to cold conditions led to reduced rainfall over the most the eastern side of East African countries. These conditions of the above average precipitation were led by easterly wave in some parts of the Equatorial and Subtropical band over the Continent.*
- ✓ *The outlook for 08 to 14 August 2022, depict a general tendency of below to normal precipitation over western part of the Western Africa. But during the first to second week above average precipitations are expected to be observe from Senegal, Guinea, Burkina Faso, most the northern parts Côte d'Ivoire, Ghana, Togo and Benin, Niger, Nigeria, Chad, Cameroon, Guinea Equatorial, CAR, Congo, DRC, South-Sudan, Sudan and Ethiopia. South-Sudan, Ethiopia.*

## 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 1025 hPa, it was weakened by 1hPa when compared to the previous dekad and strengthened by 2hPa compared to the climatological mean (1991-2020). The Azores high moved to the east to climatology over the North Atlantic Ocean and was located at 30°W and 36°N.
- **St. Helena High** observed a central pressure value of 1026hPa, a 2hPa weakened from the previous dekad and strengthened by 2hPa the climatological mean (1991-2020). It was located at 6°w/30°S. It was moved to eastern of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1028hPa. It was weakened by 2hPa from the previous dekad and strengthened by 3hPa to the climatological mean (1991-2020). Positioned at 64°E and 30°S, it moved to the south over the south Indian Ocean.
- **Heat Low:** Thermal low was observed with the value of 1007hPa over the western parts of Chad, located at 15°E and 16°N stable to previous dekad and its climatological mean..

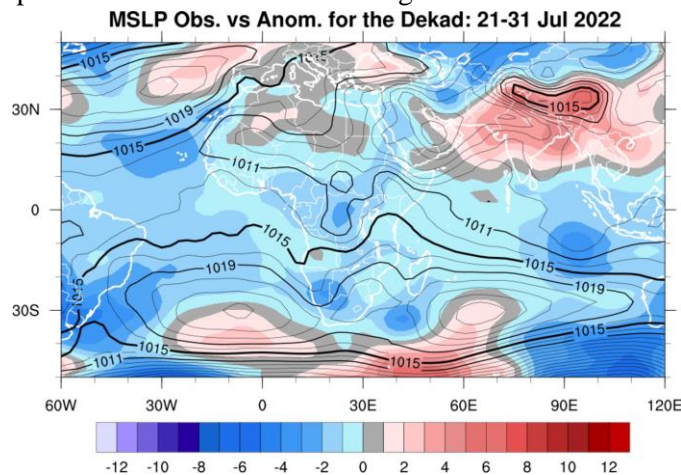


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 11<sup>th</sup> to 20<sup>th</sup> July 2022

## 1.2 TROPOSPHERE

### 1.2.1 African Monsoon

Figure 2a: This figure shows the dekad average wind at 850hPa. negative wind from north to north-easterly and east anomalies of about 6m/s - 8m/s average wind speeds were observed over Morocco, Algeria, Niger, Chad, Sudan, Ethiopia, South-Sudan, CAR, DRC, Uganda and Namibia. The positive anomaly from north, south-eastern and eastern was observed over Libya, Egypt, Ethiopia, Somalia, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa, Botswana and Angola.

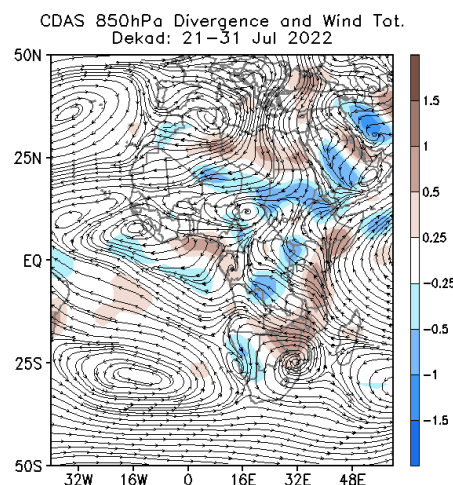


Figure 2a: Mean wind (m/s) at 850hPa from 21<sup>st</sup> to 31<sup>st</sup> July 2022, Source: NOAA/NCEP

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.

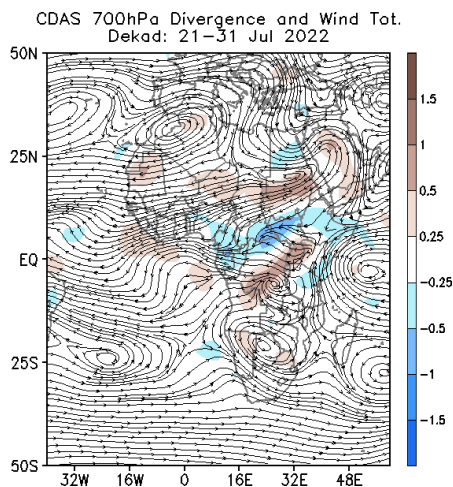


Figure 2b: Mean wind (m/s) at 700hPa from 21<sup>st</sup> to 31<sup>st</sup> Jull 2022, Source: NOAA/NCEP

Figure 2c: shows very strong westerly wind vector anomalies  $\geq 14\text{m/s}$  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

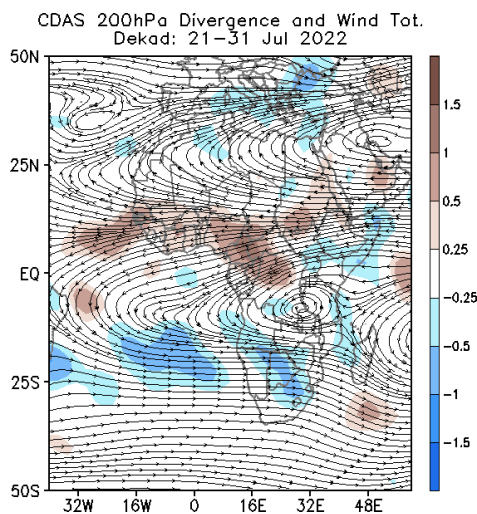
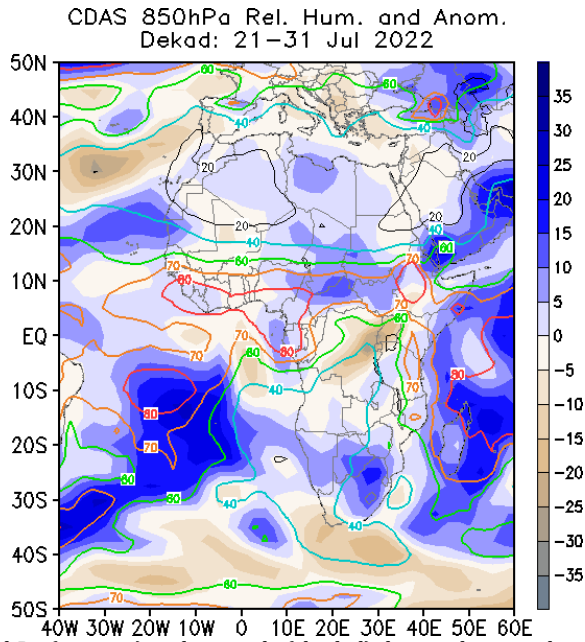


Figure 2c: Mean wind at 200 hPa (m/s) during the period 21<sup>st</sup> to 31<sup>st</sup> Jull 2022 (Source: NOAA/NCEP)

### 1.3. Relative Humidity (RH) at 850hPa

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

Negative anomalies were observed during the third dekad of July 2022 over DRC, Uganda, southern Congo, the positive anomalies were recorded over the rest of the continent

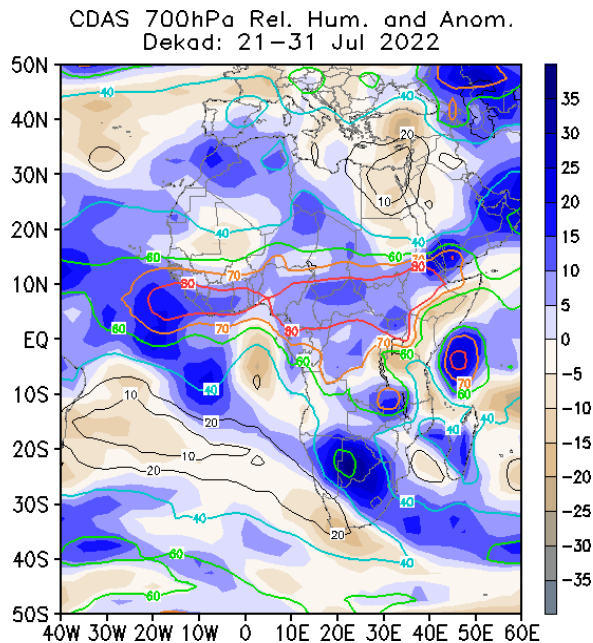


**Figure 4.** RH (%) at 850hPa (contour) and anomaly (shaded) during the period 21<sup>st</sup> to 31<sup>st</sup> Jul 2022  
SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

#### 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  $\geq 60\%$  at 700hPa were observed over most of Guinea Gulf and most parts parts the Sahel Countries, northern and central and southern of Central Africa region and Eastern Africa. The rest of the continent observed RH values  $\leq 60\%$ .

The relative humidity anomalies for the second dekad of July 2022 were negative over Egypt, Mauritania, Mali, DRC, Rwanda, Burundi, Tanzania, Kenya, Somalia, Ethiopia, and Madagascar. The rest of the continent observed positive anomalies.



**Figure 5.** RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21<sup>st</sup> to 31<sup>st</sup> Jul 2022  
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

## 2.0 PRECIPITATION

Figure 8 shows the observed precipitation as a percentage of average for the third dekad of July 2022.

### 2.1 Precipitation

During the third dekad of July 2022, rainfall activities were observed over most of Subtropical and tropical band of the Continent, with above-average to well above-average rainfall conditions observed over some westernmost and central parts of Western Africa, most of the central part of Central Africa and western side of the Eastern Africa regions. Below-average to well below-average rainfall was recorded over western and eastern parts of Western Africa, northern side of the Central Africa and north and eastern parts 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 eastern Mauritania, most of Mali, western Burkina Faso, and Niger. During the same dekad above to well above average precipitation over south-western Mauritania, most parts of Senegal, Gambia, north-western Guinea, south-eastern Mali, northern Burkina Faso, central and south-easternmost of Niger and southern Chad.
- **Gulf of Guinea countries:** some parts the region received below to well below-average precipitation over Sierra Leone, Liberia, western Côte d'Ivoire, southernmost of Ghana, most of part Nigeria, the region was experience above to well above average rainfall over eastern Cote d'Ivoire, most parts Ghana, Togo, Benin and western Nigeria.
- **Central Africa countries:** experience above to well above normal precipitation was observed over much CAR, Cameroon, northern Congo and DRC.
- **East African countries:** most of eastern parts observed above to well above average rainfall conditions over southern parts of Sudan, much of South-Sudan, north and west of Ethiopia, below to well below average was observed over the central of Sudan, Eritrea, Djibouti, Ethiopia, Kenya and Uganda.
- **Southern Africa countries:** most parts of the SADC region are off-season.

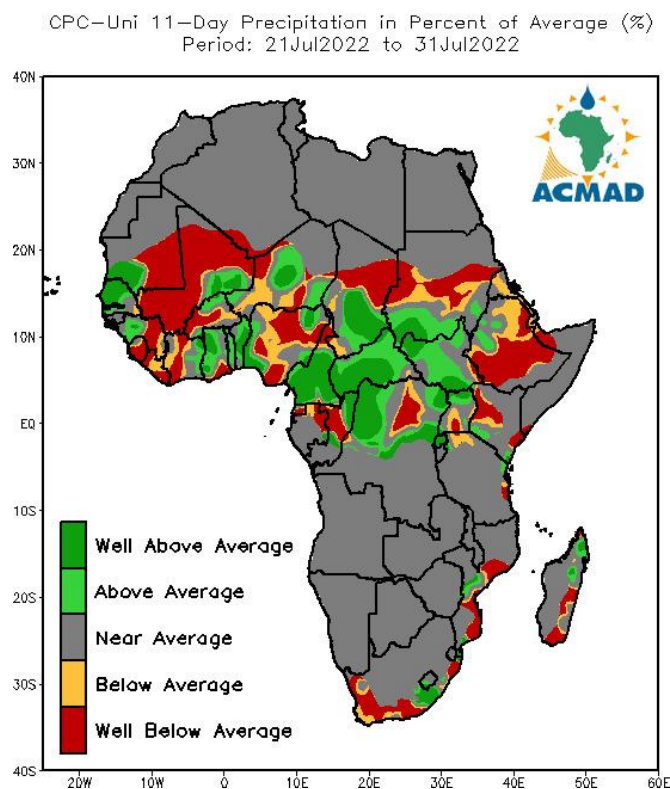


Figure 6: Precipitation in the percentage of the average for the first dekad 21<sup>st</sup> to 31<sup>st</sup> July 2022. The reference period used is 1991-2020. Source: NOAA/ NCEP/ CPC/ UNIFIED/ Africa/ DAILY/



### 3.0 OUTLOOK RAINFALL VALID FOR 08 TO 21 AUGUST 2022

#### 3.1 PRECIPITATION

The outlook for 08 to 14 August 2022, depict a general tendency of below to normal precipitation over western part of the Western Africa. But during the first to second week above average precipitations are expected to be observe from Senegal, Guinea, Burkina Faso, most the northern parts Côte d'Ivoire, Ghana, Togo and Benin, Niger, Nigeria, Chad, Cameroon, Guinea Equatorial, CAR, Congo, DRC, South-Sudan, Sudan and Ethiopia. South-Sudan, Ethiopia.

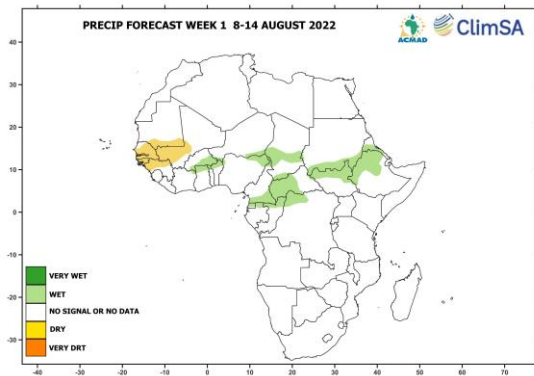


Figure 9a: Precipitation forecast for 08-14 August 2022

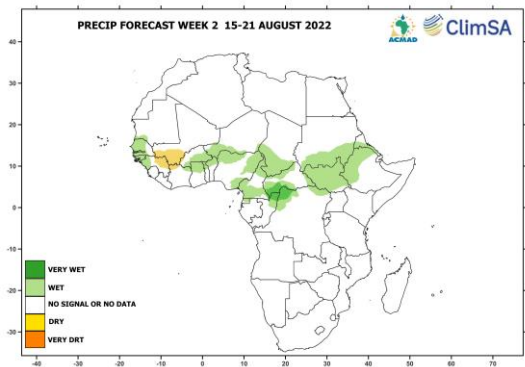


Figure 9b: Precipitation forecast for 15-21 August 2022