

## TEN DAYS CLIMATE DIAGNOSTICS BULLETIN

N°24/2022

Dekad 3, 21<sup>st</sup> –31<sup>th</sup> August 2022

### HIGHLIGHTS

- ✓ *During the third dekad of August 2022, rainfall activities were observed over most of the subtropical and tropical band of the Continent, with above-average to well above-average rainfall conditions observed over most of Western Africa, most of the northern part of Central Africa and some western parts of Eastern Africa regions. These conditions of above average precipitation were as a result of an easterly wave over parts of the Equatorial and Subtropical band of the Continent. Below-average to well below-average rainfall was recorded over western and central parts of Western Africa and central parts of Central Africa and northern side of East 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 last four weeks. Over the Indian Ocean, the SSTs were mostly dominated by neutral to cold conditions that led to reduced rainfall over most of the eastern side of East African countries.*
- ✓ *The outlook for August 07 – 13 September 2022 depicts a general tendency of below to normal precipitation over Guinea, Sierra Leone, Liberia, Ivory Coast, Cameroon, Gabon and west of Republic of the Congo. But during the first and second week above average precipitation is expected to be observed over east of Mali, north of Burkina Faso, south Niger, north Nigeria, Chad, some parts of Cameroon, CAR, DRC, South-Sudan, Uganda and west of 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 1021 hPa, a 2hPa weakening from the previous dekad and weakened by 1hPa compared to the climatological mean (1991-2020). The Azores high moved to the west to climatology over the North Atlantic Ocean and was located at 43°W and 35°N.
- **St. Helena High** observed a central pressure value of 1025hPa; a 1hPa weakening from the previous dekad and strengthened by 3hpa from the climatological mean (1991-2020). It was located at 25°W and 30°S. It moved to the west of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1033hPa. It strengthened by 6hPa from the previous dekad and by 10hpa from the climatological mean (1991-2020). Positioned at 85°E and 36°S, it moved to the east over the south Indian Ocean.
- **Heat Low:** Thermal low was observed with the value of 1007hPa over the southern parts of north part of Mali, located at 4°W/24°N stable to previous dekad and its climatological mean.

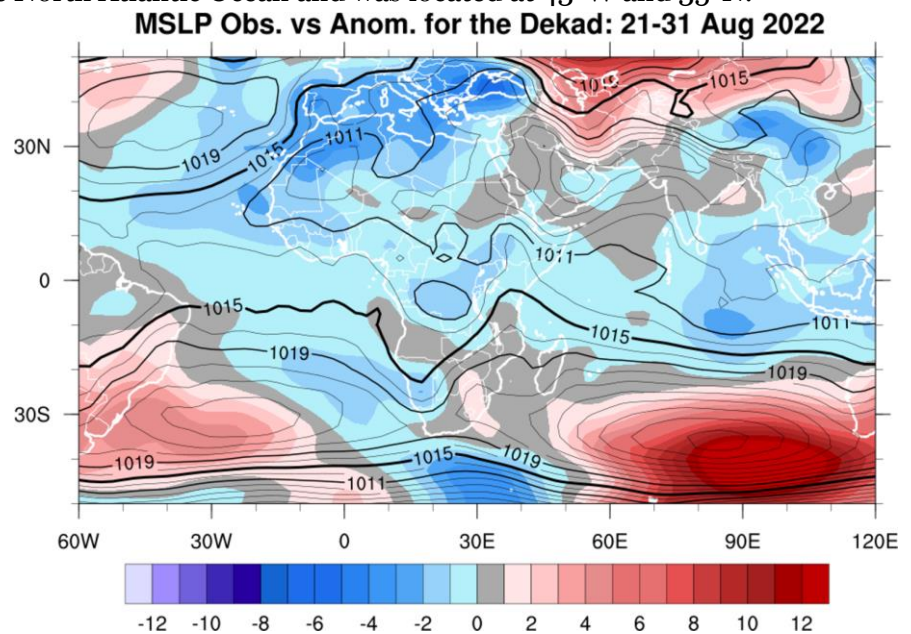


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21<sup>th</sup> to 31<sup>th</sup> August 2022

## 1.2 TROPOSPHERE

### 1.2.1 African Monsoon

This figure 2.a shows the dekad average wind at 850hPa. Positive wind from north to south easterly and southerly anomalies observed over Angola, Zambia, Botswana, Cameroon, Equatorial Guinea, DRC, Tanzania and Kenya. Negative wind anomaly observed over Chad, Nigeria, Namibia and DRC.

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

At the 200hpa level (see Fig.2c), the vortex wind anomaly was observed over north-western parts of North Africa. Very strong easterly wind vector anomalies at 200hPa observed mainly over the continent Central Africa region.

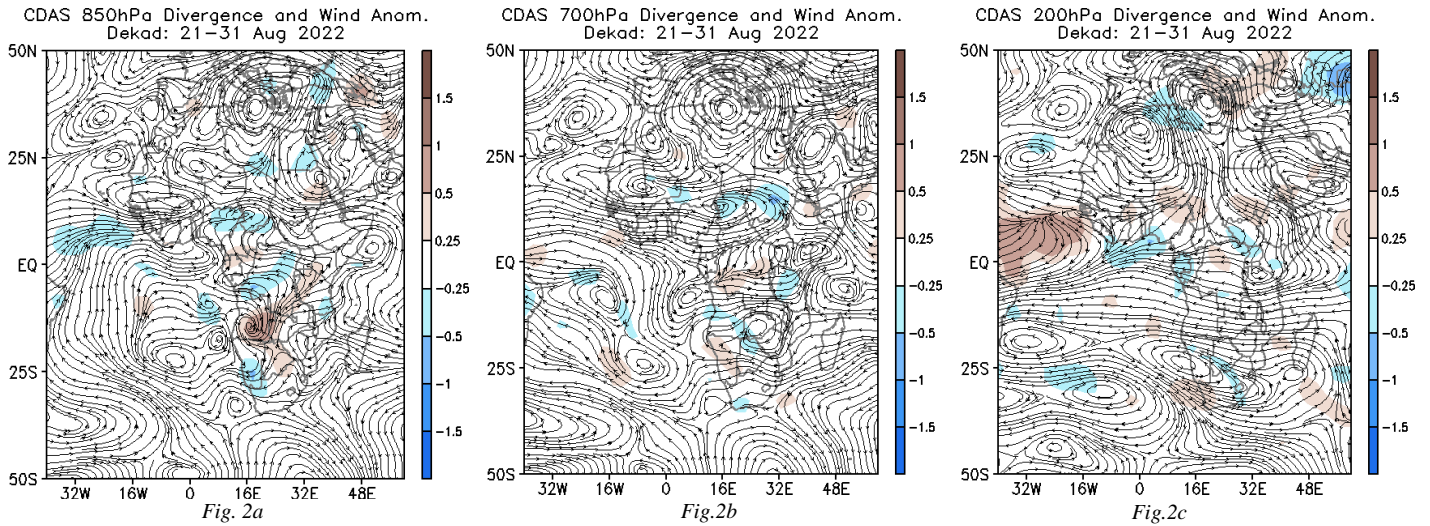


Figure 2: Mean wind (streamlines: m/s) and divergence (shaded;  $s^{-1}$ ) observed at 850hPa (Fig.2a), 700hPa (Fig.2b) and 200hPa (Fig.2c) during the third dekad of August 2022 (from 21<sup>st</sup> to 31<sup>st</sup> Aug). Source: NOAA/NCEP

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

Figure 3.a and 3.b shows respectively the dekadal observed relative humidity and related anomalies at 850hPa and 700hPa for the third dekad of August 2022 for the reference period 1991-2020.

At 850hPa (see Fig.3a), wet atmospheric conditions (relative humidity  $\geq 60\%$ ) were observed over Western Africa countries, most of Central Africa, north-eastern parts of Southern Africa and northern parts of the East African region. The rest of the continent observed RH values  $\leq 60\%$ . Negative anomalies were observed during the third dekad of August 2022 over most of DRC, Angola, southern parts of Namibia, South Africa, southern parts of Botswana, western parts of Algeria and Morocco, whilst positive anomalies were recorded over the rest of the continent.

At 700hPa (Fig.3b), high relative humidity ( $\geq 60\%$ ) were observed over Western Africa countries, north-eastern parts of Southern Africa region, most of Central Africa and East African region. Relative humidity anomalies for the third dekad of August 2022 were negative over Angola, south parts of Zambia, Zimbabwe, Botswana, most parts of South Africa, Eswatini, and north Madagascar. While the rest of the continent received a surplus of moisture.

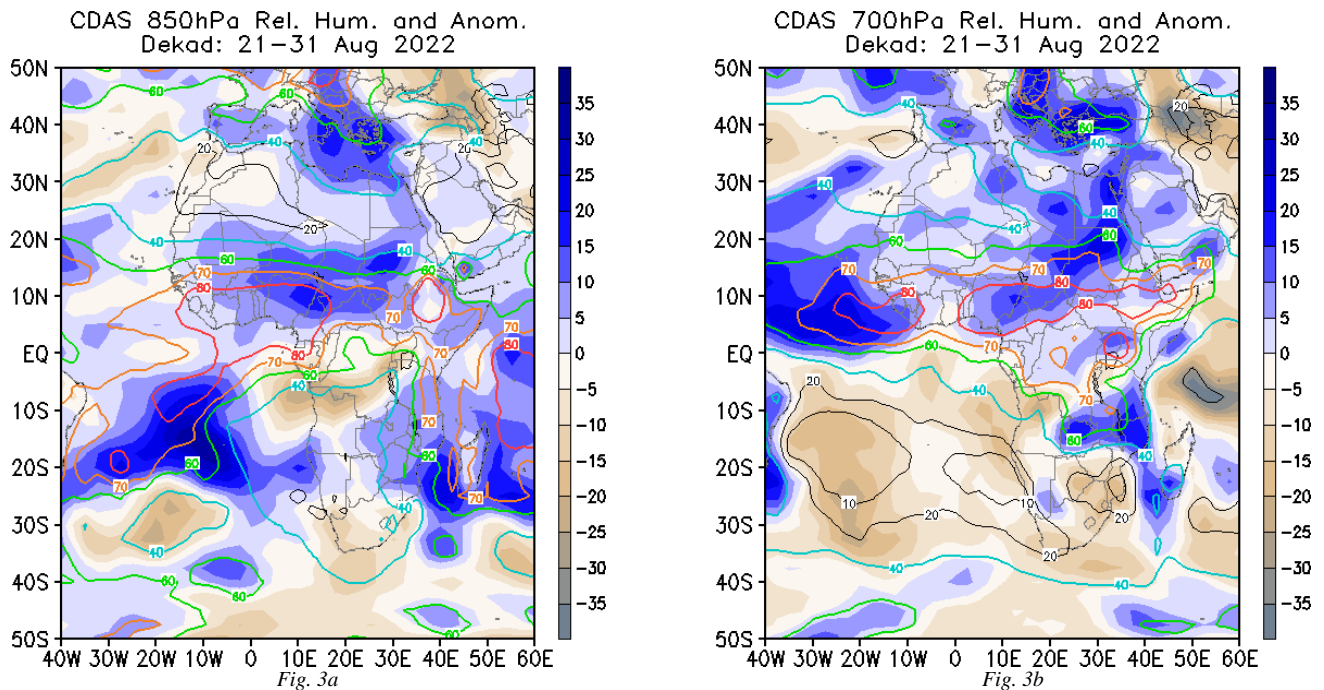


Figure 3. Relative Humidity (contour; %) and associated anomalies (shaded) observed at 850hPa (Fig.3a) and 700hPa (Fig.3b) during the period 21<sup>th</sup> to 31<sup>th</sup> August 2022. SOURCE/. NOAA/. NCEP-CAR/. CDAS1)



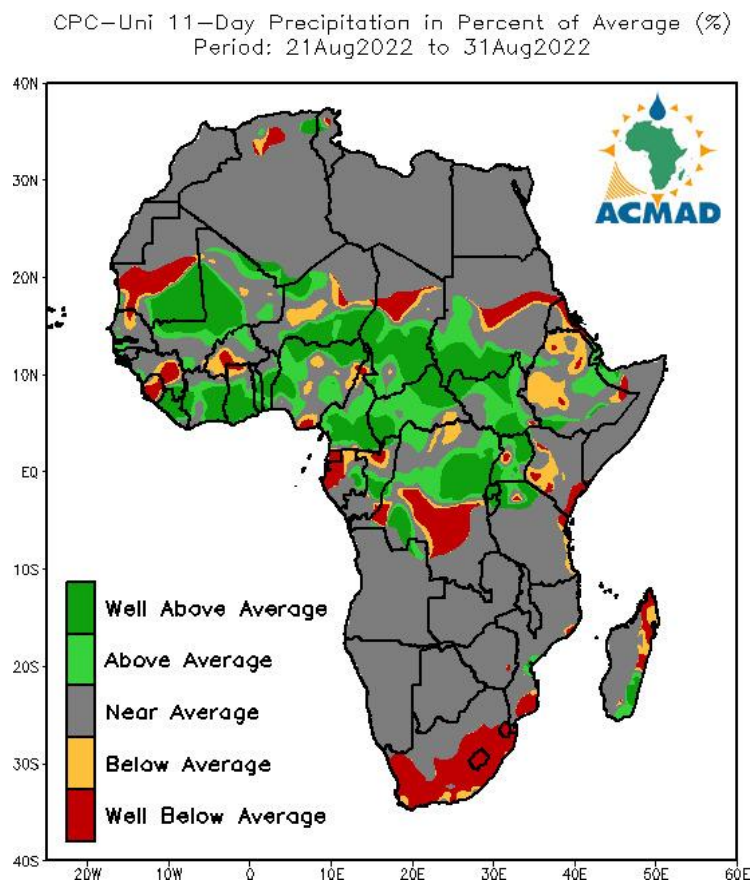
## 2.0 PRECIPITATION

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

During the third dekad of August 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 most of Western Africa, most of the northern parts of Central Africa and some western parts of Eastern Africa regions. Below-average to well below-average rainfall was recorded over western and central parts of Western Africa and central parts of Central Africa and northern side of East Africa.

### Details:

- **North Africa:** This region experienced mostly near average rainfall conditions.
- **Sahel:** Below to well below average rainfall conditions were experienced over south-eastern Mauritania. During the same dekad above to well above average precipitation over south eastern parts of Mauritania, Mali, Niger, Chad and Sudan.
- **Gulf of Guinea countries:** Most parts of the region received above to well above-average precipitation over Ivory Coast, Ghana, Benin, Nigeria, Togo, Nigeria and Cameroon.
- **Central Africa countries:** experienced below to well below normal precipitation over south of DRC.
- **East African countries:** most of eastern parts observed above to well above average rainfall conditions over south-western parts of Sudan, South-Sudan, Uganda, Burundi, Rwanda and northern Tanzania, below to well below average rainfall was observed in the north and western parts of Ethiopia.
- **Southern Africa countries:** most parts of the SADC region are off-season.



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

### 3.0 RAINFALL OUTLOOK VALID FOR 07 TO 20 SEPTEMBER 2022

The outlook for August 07 – 13 September 2022 depicts a general tendency of below to normal precipitation over Guinea, Sierra Leone, Liberia, Ivory Coast, Cameroon, Gabon and west of Republic of the Congo. But during the first and second week above average precipitation is expected to be observed over east of Mali, north of Burkina Faso, south Niger, north Nigeria, Chad, some parts of Cameroon, CAR, DRC, South-Sudan, Uganda and west of Ethiopia.

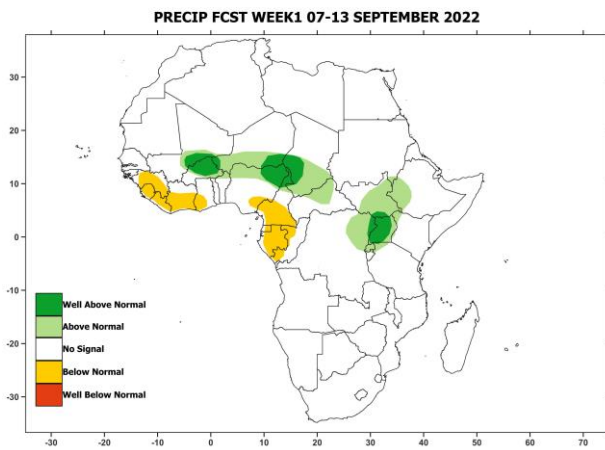


Figure 9a: Precipitation forecast for 07 – 13 September 2022

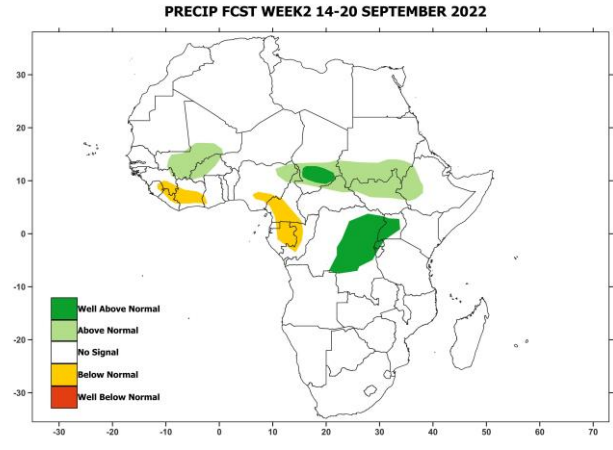


Figure 9b: Precipitation forecast for 14 - 20 September 2022