

Ten Days Climate Diagnostics Bulletin
N°20

Dekad 2, 10th to 20th July 2021

HIGHLIGHTS

During the second dekad of July the majority of equatorial countries and the Sahel areas received below average to well below average precipitation. While for parts like southern Cameroon, northern Senegal, central and North-eastern Nigeria and eastern Madagascar observed well above rainfall. over the rest west Africa region countries, northern Cameroon and RDC, southern Chad and Sudan, Sahel, RCA, South Sudan and north-western Ethiopia was observed above average to well above average precipitation. There's an improvement over the eastern part in countries like Ethiopia.

This situation was characterized by precipitable water conditions and the warm SSTs conditions in the Gulf of Guinea regions.

The forecasts show that during the week of 26th July to 1st August 2021 and, low to moderate/moderate to heavy precipitation is expected over western, central and eastern African countries.

The precipitation intensity is expected to reduce during the period of 3rd to 9th August 2021 as moderate to heavy precipitation is expected over few countries like Gambia, Guinea and parts of Ethiopia and Sudan.

Both weeks on figure 7a and 7b are showing dry conditions over countries like Ghana, Ivory coast and north of Niger.

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 on the troposphere and gives a brief on monsoon and relative humidity thresholds.

1.1 SURFACE

Pressure Systems

Figure 1 shows the map of decadal mean (isolines) and anomalies (colour) MSLP observed from NCEP reanalyses during the third dekad of November 2019.

- **The Azores High** observed a central value of 1026hPa, compared to the previous dekad is relaxed by 1hPa and 4hPa compared to the climatological mean (1991-2020). The high pressure was located at 48°W and 36°N and moving west of its climatological position over the North Atlantic Ocean.
- **St. Helena High** observed a central value of 1029hPa strengthened by 5hPa compared to the previous dekad and more than 4hPa compared to the climatological mean (1991-2020). It was located at 6°W and 32°S. It moved south eastwards from its climatological position over the South Atlantic Ocean.
- **Mascarene High** observed 1030hPa intensifying by 3hPa compared to the previous dekad. It equally moved north east of its climatological position over the Indian Ocean with 4hpa increase form climatology and was located at 64°E and 31°S.
- **Heat Low:** The low-pressure system at the west of Chad with a central value of 1008hPa deepened by 3hPa compared to the previous dekad, maintaining its position of 17°E and 18°N over the border of Chad and Niger..

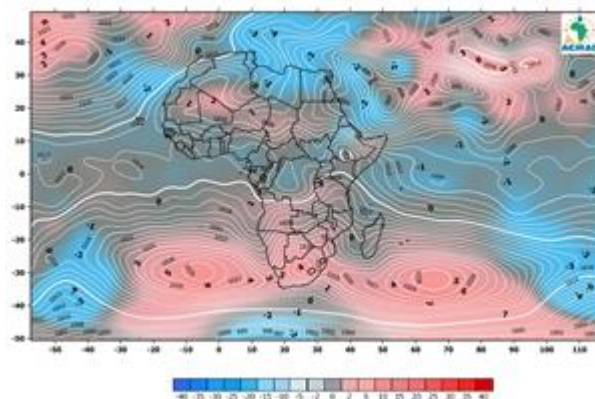


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 11th to 20th July 2010. Source: NOAA/NCEP

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average dekadal wind (m/s) at 850hPa. Light to moderate winds were observed over more areas. The highest intensity of the zonal winds was about 10-12m/s. Very strong cyclonic circulation was observed over the Indian Ocean at the East coast of Somalia and this has been maintained from the last dekad.

Figure 2b: At the 700hpa level, strong westerly winds of 12-14 m/s were observed over Libya and Algeria creating a cyclonic flow over Algeria. Strong easterly flows have maintained and observed over the countries along the Gulf of Guinea.

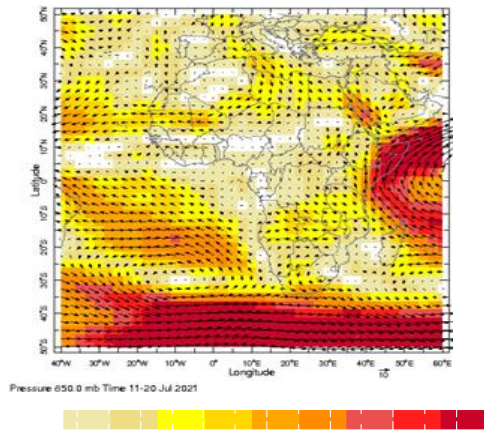


Figure 2a: Mean wind at 850 hPa (m/s) during the period from 11th to 20th July 2021.
(Source: NOAA/NCEP).

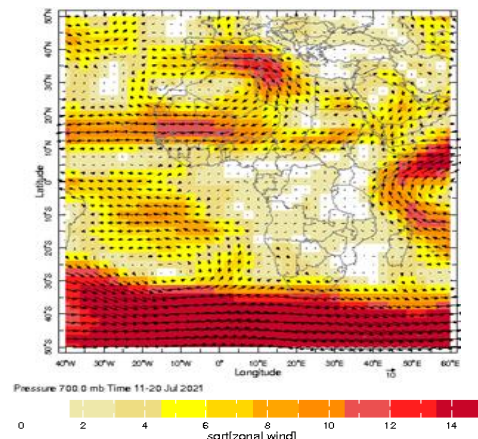


Figure 2b: Mean wind at 700 hPa (m/s) during the period from 11th to 20th July 2021.
(Source: NOAA/NCEP).

1.2.2 Wind at 200 hPa.

Figure 2c: shows the wind speed and direction at 200hPa. During the second dekad of July 2021, very strong westerly zonal winds were observed over North and South Africa. Countries over the east experienced strong easterly winds of about 14 m/s.

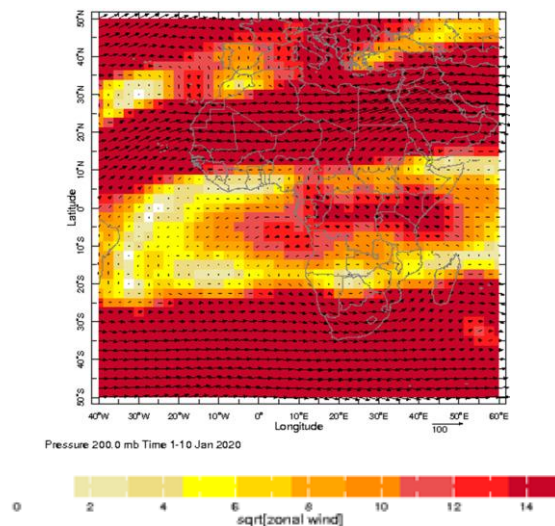


Figure 3: Mean wind at 200 hPa (m/s) during the period from 11th to 20th July 2021.
(Source: NOAA/NCEP)

1.2.5 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal mean of relative humidity at 850hPa for the second dekad of July 2021 and anomalies compared to the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq$

60%) were observed over the coast of Ghana, Chad and Sudan, as well as Mozambique, Malawi, Zambia and Madagascar.

The relative humidity anomalies for the second dekade of July 2021 were negative over Congo, DRC and parts of South Africa.

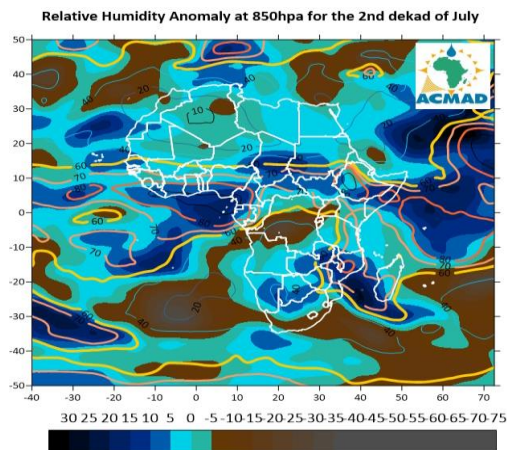


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 11th to 20th July 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.6 Relative Humidity at 700hPa

Figure 5 presents the dekadal mean and anomalies of relative humidity at 700 hPa. The figure shows that the high relative humidity belt with values $\geq 60\%$ at 700hPa covered the whole equatorial area and extended up to the south eastern part of Africa.

The relative humidity anomalies for the second dekade of July 2021 were negative over most parts Southern Africa countries with an exception of countries over the south eastern part like Malawi, Mozambique and Tanzania.

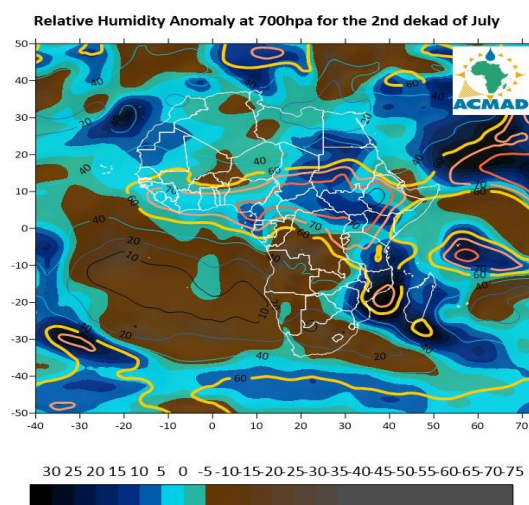


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period from 11th to 20th July 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 6 shows the observed precipitation estimate in percentage of average for the Second dekad of July 2021.

2.1 Precipitation

The second dekad of July witnessed a variety of climatological variations across the continent, ranging from an increase in precipitation in some regions like Ethiopia to a decrease in others mainly over the coast of Gulf of Guinea. The majority of Central Africa and the Gulf of Guinea countries received below-average rainfall, with pockets of above-average to well-above-average rainfall in locations like Ghana, Côte d'Ivoire and Sierra Leon. In Northern Ethiopia, rainfall was well above average.

Details:

- **North Africa:** This region experienced near average rainfall conditions during the dekad.
- **The Sahel countries:** The region observed above average to well above-average rainfall conditions.
- **Gulf of Guinea countries:** The region observed above average with some spots of well below average rainfall conditions. Some pockets of near to below average rainfall activities were equally observed.
- **Central Africa countries:** Above average to well above-average rainfall was received in many parts of this region like the northern part of the Democratic Republic of Congo. Southern Cameroon and some handful of areas recorded below-average rainfall.
- **East Africa countries:** The easternmost flank of East Africa observed near average rainfall. Well below average rainfall was experienced around the Southern part of Uganda. Most of Ethiopia and Sudan observed well above average rainfall in the dekad.
- **Southern Africa countries:** Most of the SADC countries experienced near average rainfall..

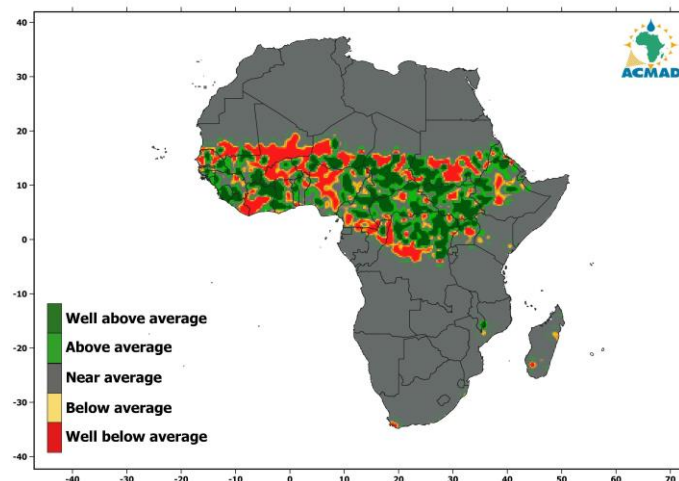


Figure 6: Precipitation in percent of average for first dekad 11th to 20th July 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

3. OUTLOOK VALID FOR 27th JULY– 2ND AUGUST 2021 AND 03RD-9TH AUGUST 2021

3.1 PRECIPITATION

During the period of 27th July to 2nd August 2021, low to moderate/moderate to heavy precipitation is expected to dominate over western, central and eastern African countries with dryness over the coast of Gulf of Guinea.

Figure 7b shows that during the week of 3rd to 9th August 2021, there is likelihood of reduction in precipitation over the coastal cities because of the Little Dry Season that may likely set in. Countries will continue to observe low to moderate/ moderate to heavy precipitation as in the previous week

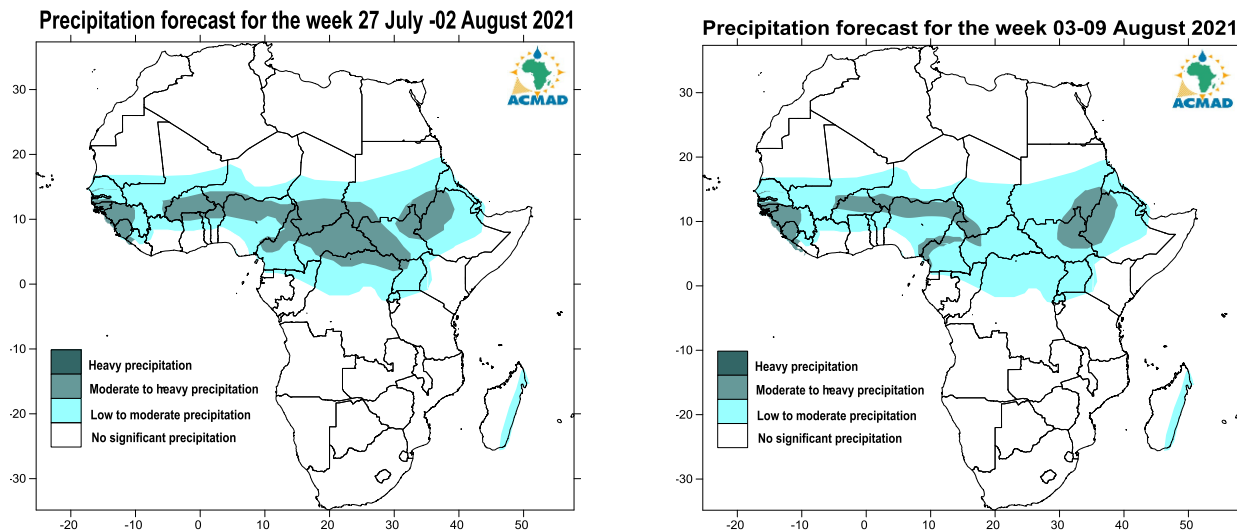


Figure 7a: Precipitation forecast from 26th July to 2nd August 2021 . (Source: ACMAD)

Figure 7b: Precipitation forecast from 3rd to 9th August 2021. (Source: ACMAD)

3.2 Temperature

Figure 8 presents the temperature anomalies forecasted for the week of 27th July to 4th August 2021. Temperatures are expected to be above average over the northern part of the Sahel countries of Burkina Faso, Niger, Mali, Mauritania, Chad, most of Central Africa like DR Congo, Congo Brazzaville, Gabon, Angola and Kenya. Cooler than normal temperatures are expected over countries along the Gulf of Guinea, north of central and eastern Africa, parts of Namibia, part of South Africa and east of Madagascar.

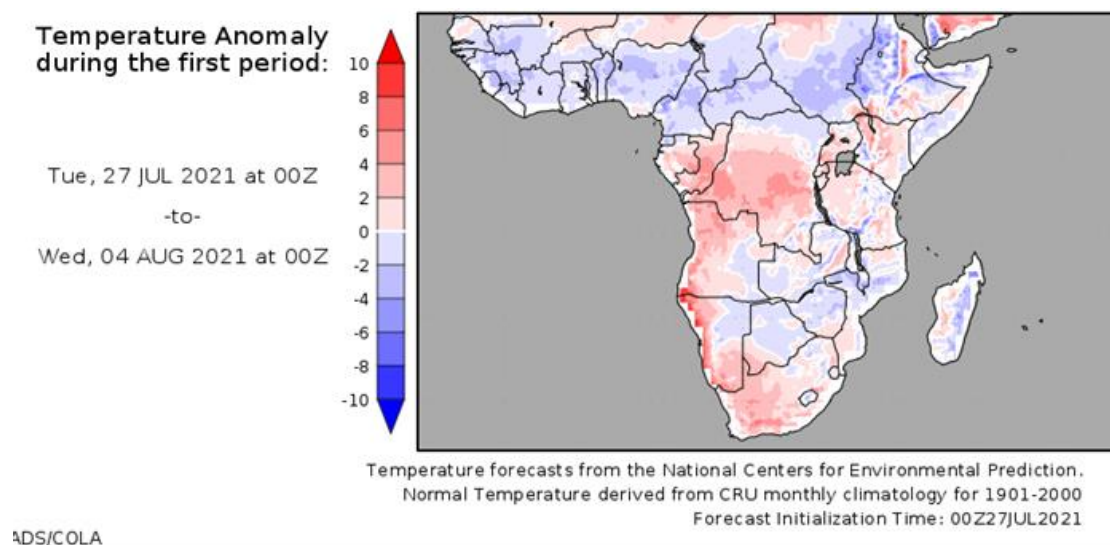


Figure 8: Temperature anomalies prospected from 27th July to 4th August 2021 (Source: COLA)

3.3 Soil Moisture

Figure 9 shows soil moisture anomalies forecast for the week of 27th July to 4th August 2021 where an increase in soil moisture is expected over western to the eastern parts of the continent mostly along the Sahelian band.

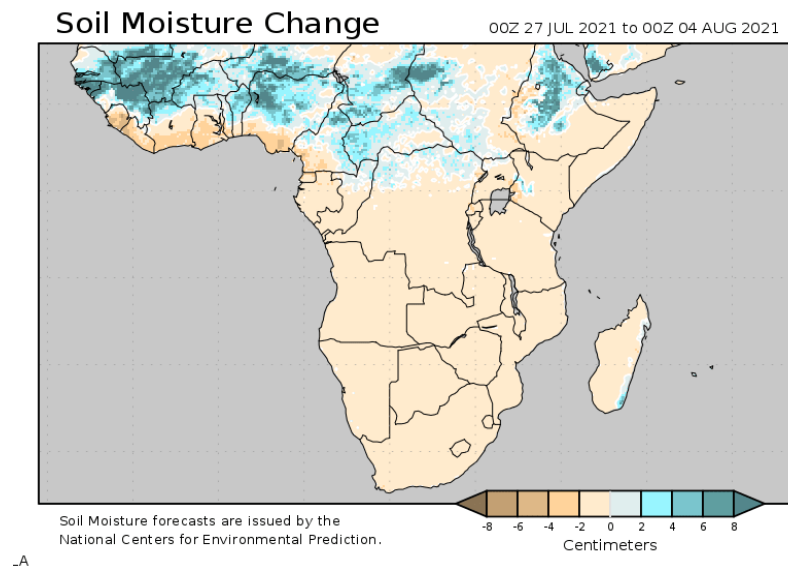


Figure 9: Soil moisture change prospected for the period from 27th July to 4th August 2021
(Source: COLA)