

Ten Days Climate Diagnostics Bulletin

N°24

Dekad 2, 11th to 20th August 2021

HIGHLIGHTS

The second dekad saw a further improvement of the rainfall situation over the continent with most countries recording an above average to well above average rainfall conditions while below average to well below average rainfall was observed over most of the Sahel region starting from Mauritania, Mali, Niger, Chad, South Sudan and the eastern part of North Sudan. The easternmost flank of East Africa observed well below average rainfall. Other parts of the region that experienced this condition were South Sudan, Djibouti and Uganda.

Rainfall was near average in both North and South Africa.

The temperature anomaly forecast for 25th August – 2nd September 2021 are expected to be above average over the Sahelian countries, the northern part of Nigeria and Burkina Faso, Central Africa such as DRC, Congo, parts of Gabon, and CAR and most of the SADC and East African countries. Countries of the Gulf of Guinea, southern Namibia and South Africa and some parts of Ethiopia, North/ South Sudan and Madagascar are expected to be cooler than normal.

The forecasts show that during the period of 30th August - 5th September 2021, low to moderate/moderate to heavy precipitation is expected to dominate over western, central and eastern African countries. Moderate to heavy precipitation is expected over the coastal cities of the Gulf of Guinea, Cameroun, Gabon, northern parts of Nigeria, Ghana, Togo, Benin, DRC, southern Mali and Burkina Faso, as well as over Central African Republic (CAR) and western Ethiopia.

In the week of 6th to 12th of September, there is likelihood of reduction in precipitation over the coastal cities of the Gulf of Guinea and the Sahel. South-eastern part of Nigeria, Sierra Leone, Liberia, Cameroon, Gabon, parts of CAR and DRC, as well as the western Ethiopia will continue to observe moderate to heavy precipitation during the forecast week.

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 summary on monsoon and relative humidity thresholds.

1.1 SURFACE

Pressure Systems

- **The Azores High** observed a central value of 1022hPa, weakening by 8hPa compared to the previous dekad and by 1hPa compared to the climatological mean (1991-2020). The high pressure was located at 13°W and 40°N. It moved eastward of its climatological position over the North Atlantic Ocean.
- **St. Helena High** observed a central value of 1027hPa, weakened by 4hPa compared to the previous dekad and by 3hPa compared to the climatological mean (1991-2020). It was located at 4°E and 34°S. It moved eastward from its climatological position over the South Atlantic Ocean.
- **Mascarene High** observed 1025hPa relaxing by 3hPa compared to the previous dekad. It moved eastward of its climatological position over the Indian Ocean and was located at 75°E and 30°S with a 1hPa decrease from climatology.
- **Heat Low:** The low-pressure system over Chad and Niger with a central value of 1010hPa filled by 1hPa compared to the previous dekad while the second low pressure system over of Mali, Mauritania and Algeria with the same central value filled by 3hPa compared to the previous dekad and maintained its position of 1°W and 28°N.

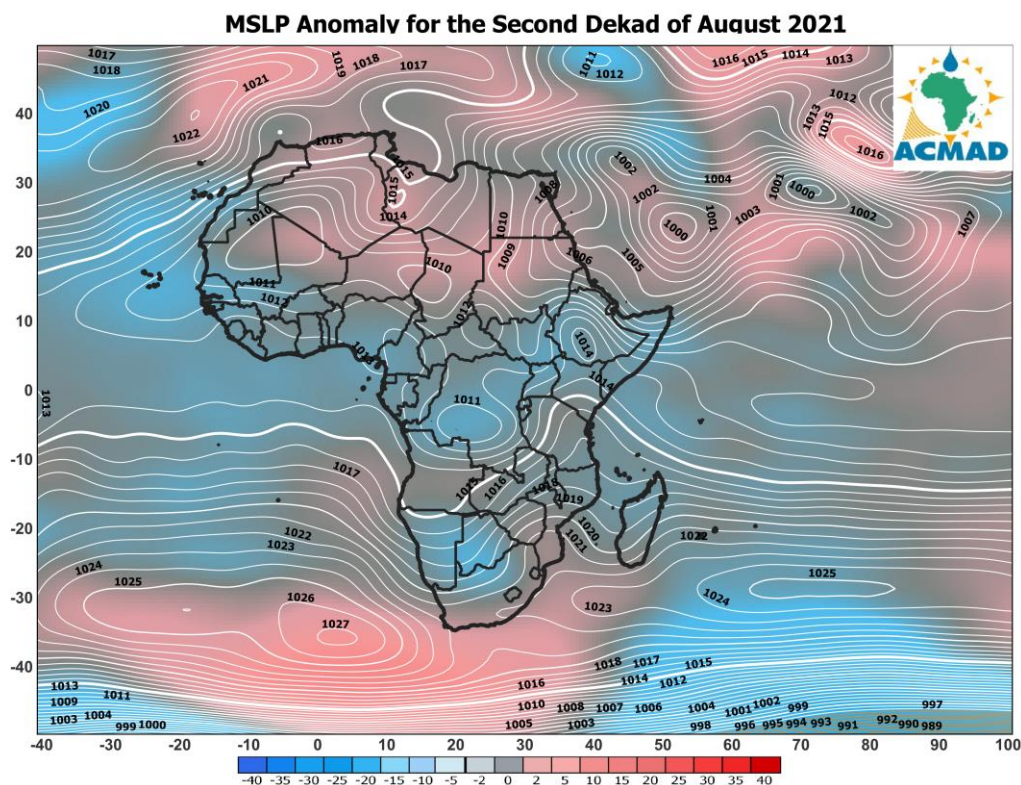


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 11 to 20 August 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average dekadal wind (m/s) at 850hPa. Strong anticyclone (high pressure) winds observed over northern Libya, Algeria and Tunisia. The intensity of the zonal winds was about 8m/s - 10m/s. Very strong cyclonic circulation persisted over the Indian Ocean at the East coast of Somalia.

Figure 2b: At the 700hpa level, strong Easterly winds of 14 m/s were observed across the Sahelian band from Ethiopia to Senegal. Strong anticyclonic circulation continued over northern Africa.

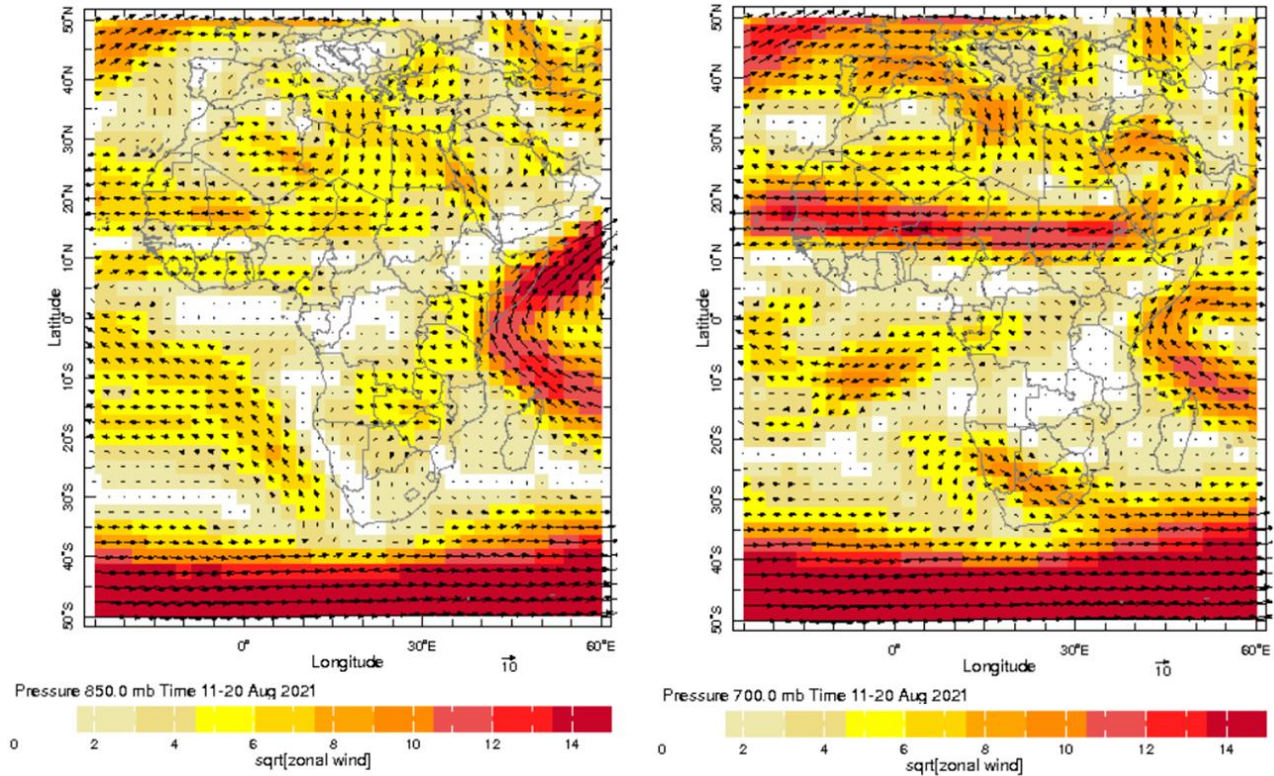


Figure 2a: Mean wind (m/s) at 850hPa from 11 – 20 August 2021
Source: NOAA/NCEP

Figure 2b: Mean wind (m/s) at 700hPa from 11 – 20 August 2021
Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850hPa

Figures 4 presents the dekadal mean of relative humidity at 850hPa for the second dekad of August 2021 and anomalies compared to the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over countries along the Gulf of Guinea, to the southern part of the Sahel cutting across Central to East Africa as well as the eastern part of southern Africa.

The relative humidity anomalies for the first dekad of August 2021 were negative over the northern part of the Sahel to North Africa, the coastal part of the Gulf of Guinea countries, and also over parts of Central and East Africa.

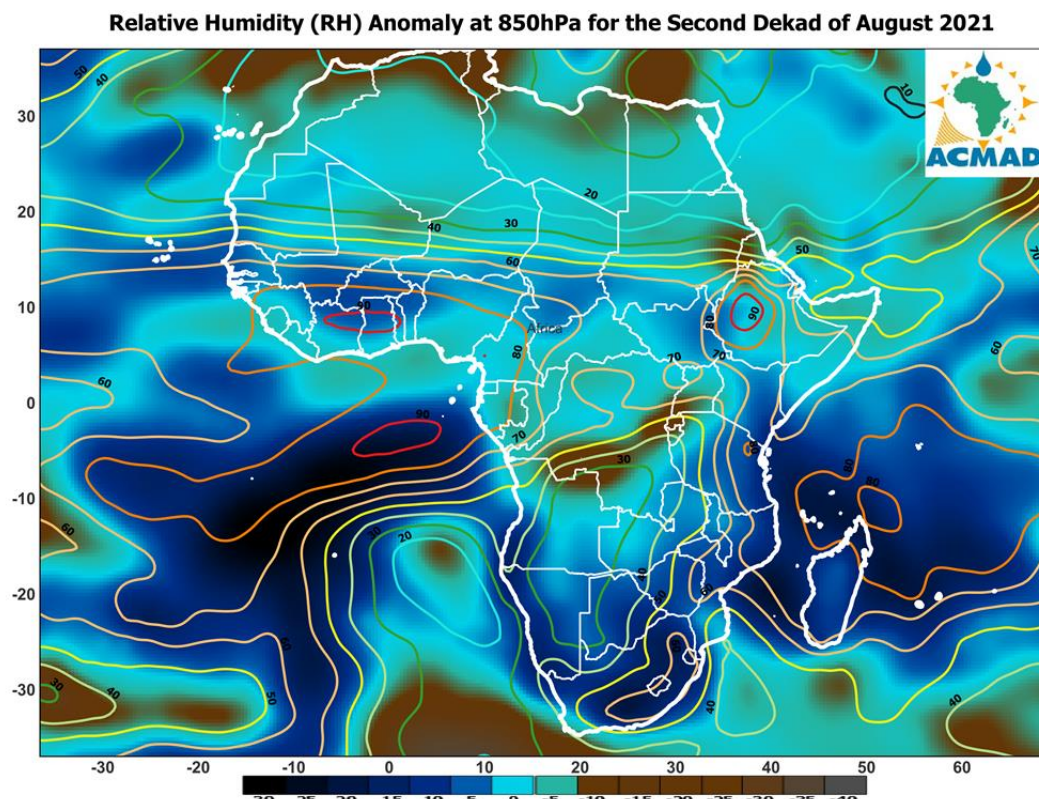


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period of 11 t- 20 August 2021
 SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.4 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 extended from Ethiopia in the East, widening to cover the entire central Africa and then narrowing towards the central Sahel..

The relative humidity anomalies for the first dekad of August 2021 were negative over the northern Sahel, most of northern and southern Africa, and also part of Central and East Africa.

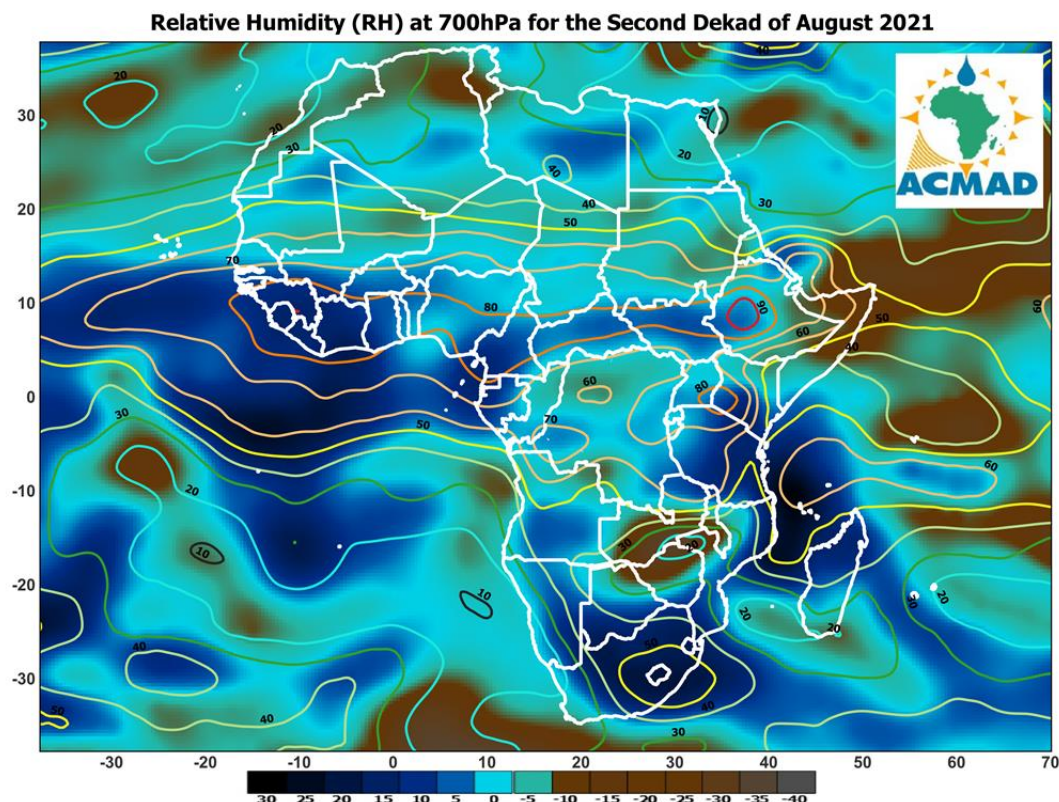


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period of 11 – 20 August 2021
 (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 6 shows the observed precipitation estimated in the percentage of average for the first dekad of July 2021.

2.1 Precipitation

The second dekad saw a further improvement of the rainfall situation over the continent with most countries recording an above average to well above average rainfall conditions while below average to well below average rainfall was observed over most of the Sahel region starting from Mauritania, Mali, Niger, Chad, South Sudan and the eastern part of North Sudan. Rainfall was near average in both North and South Africa.

Details:

- **North Africa:** This region experienced near average rainfall conditions during the dekad.
- **The Sahel countries:** Some parts of the region observed below average to well below-average rainfall conditions while other parts experienced above average to well above average rainfall activities.
- **Gulf of Guinea countries:** The region observed above average to well above average rainfall conditions. Pockets of near to below average rainfall activities were equally observed in countries such as Cote d'Ivoire, Ghana, Togo, southwestern, central and north-eastern Nigeria, Senegal, Sierra Leone and Burkina Faso.
- **Central African countries:** Above average to well above-average rainfall was received in many parts of this region. A pocket of below-average rainfall was observed in this region.
- **East African countries:** The easternmost flank of East Africa observed well below average rainfall. Other parts of the region that experienced this condition were South Sudan, Djibouti and Uganda. Ethiopia observed near average to well above average rainfall during the dekad.
- **Southern African countries:** Most of the SADC countries experienced near average rainfall, except for pockets of below average rainfall that was observed over northeast of Madagascar and southern South Africa.

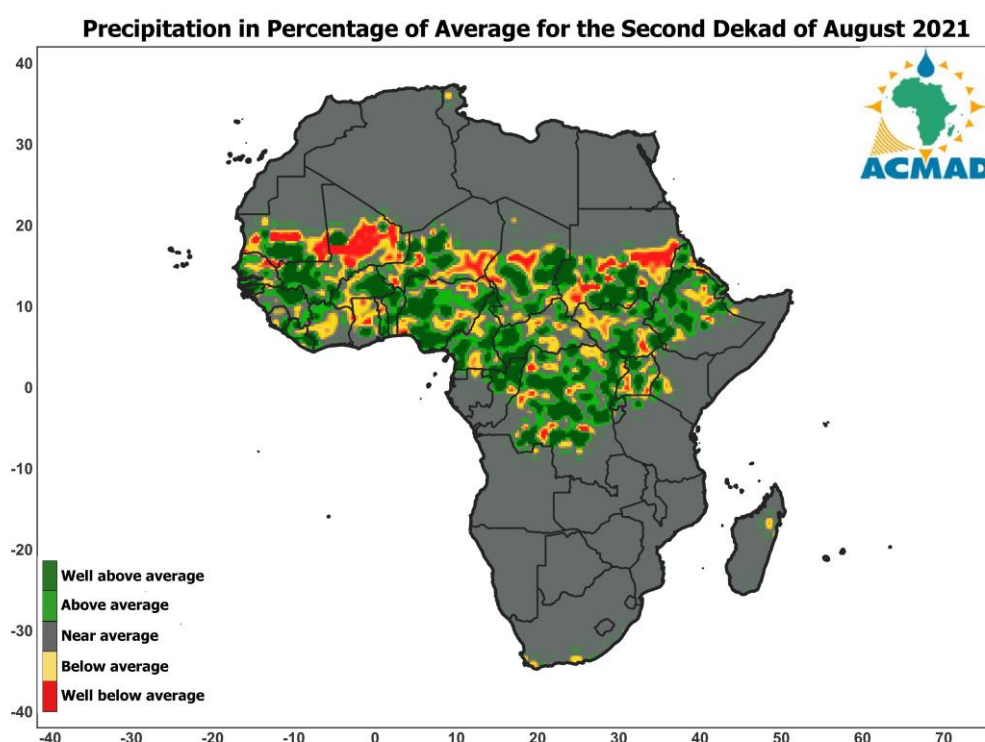


Figure 6: Precipitation in the percentage of average for the first dekad (1st to 10th) of August 2021. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

3.0 OUTLOOK VALID FOR 18th - 24th AND 25th -31st OF AUGUST 2021

3.1 PRECIPITATION

During the period of 30th August - 5th September 2021, low to moderate/moderate to heavy precipitation is expected to dominate over western, central and eastern African countries. Moderate to heavy precipitation is expected over the coastal cities of the Gulf of Guinea, Camerron, Gabon, northern parts of Nigeria, Ghana, Togo, Benin, DRC, southern Mali and Burkina Faso, as well as over Central African Republic (CAR) and western Ethiopia.

Figure 7b shows that during the week of 6th to 12th of September, there is likelihood of reduction in precipitation over the coastal cities of the Gulf of Guinea and the Sahel. South-eastern part of Nigeria, Sierra Leone, Liberia, Cameroon, Gabon, parts of CAR and DRC, as well as the western Ethiopia will continue to observe moderate to heavy precipitation during the forecast week.

Precipitation Forecast for the Week of 30 August - 5 September 2021

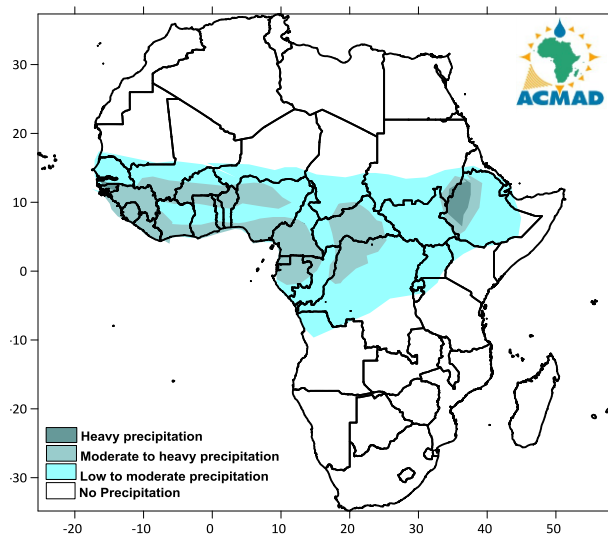


Figure 7a: Precipitation forecast for 30th August-5th September 2021

Precipitation Forecast for the Week of 06 - 12 September 2021

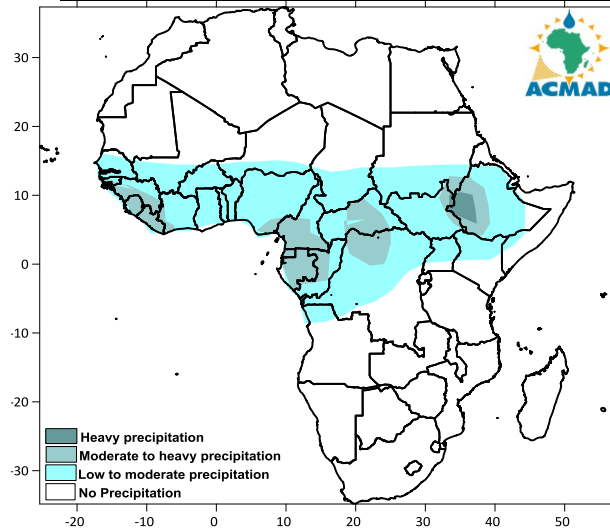


Figure 7b: Precipitation forecast for 6th-12th August 2021

3.2 TEMPERATURE

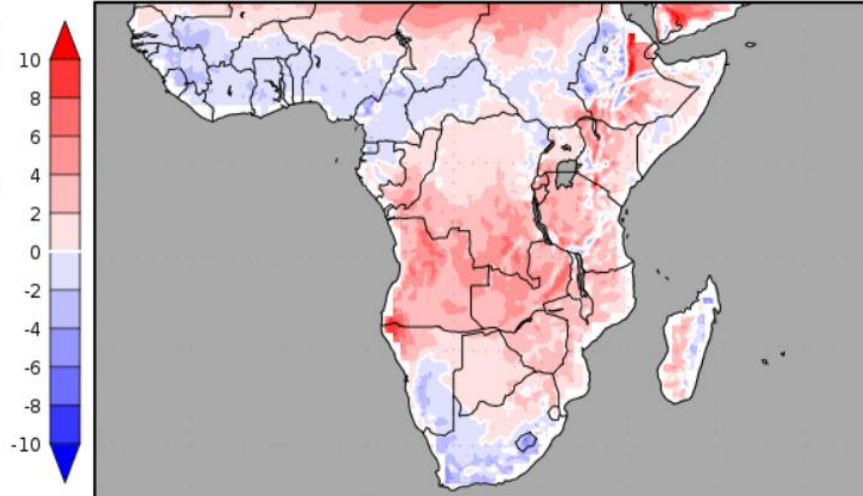
Figure 8 presents the temperature anomalies forecast of 25th August – 2nd September 2021. Temperatures are expected to be above average over the Sahelian countries, the northern part of Nigeria and Burkina Faso, Central Africa such as DRC, Congo, parts of Gabon, and CAR and most of the SADC and East African countries. Countries of the Gulf of Guinea, southern Namibia and South Africa and some parts of Ethiopia, North/ South Sudan and Madagascar are expected to be cooler than normal.

Temperature Anomaly
during the first period:

Wed, 25 AUG 2021 at 00Z

-to-

Thu, 02 SEP 2021 at 00Z

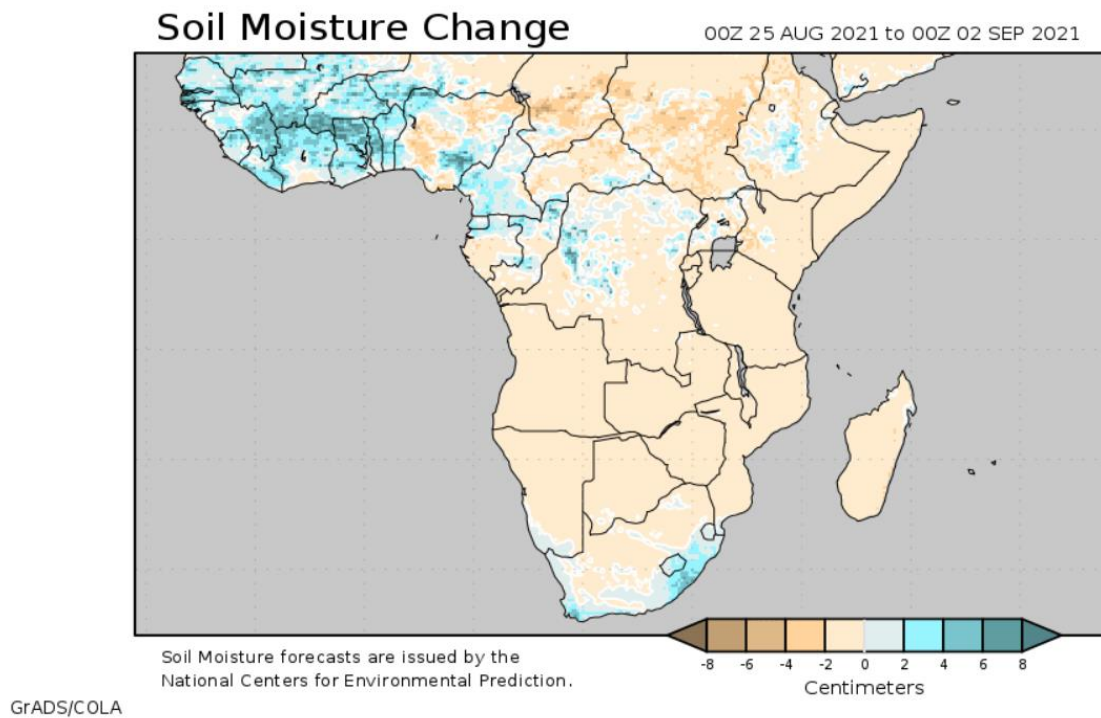


Temperature forecasts from the National Centers for Environmental Prediction.
Normal Temperature derived from CRU monthly climatology for 1901-2000
Forecast Initialization Time: 00Z25AUG2021

Figure 8: Temperature anomalies prospect for the period of 25 August – 2 September 2021
(Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 25th August – 2nd September 2021 where an increase in soil moisture is expected over western to the central parts of the continent also the south-eastern part of South Africa.



*Figure 9: Soil moisture change prospect for the period of 25 August – 2 September 2021
(Source: COLA)*