

Ten Days Climate Diagnostics Bulletin

N°18

Dekad 3, 21th to 30th June 2021

HIGHLIGHTS

The third dekad of June observed a variety of seasonal changes across the continent, ranging from an increase in precipitation in some regions to a decrease in others. The majority of Central Africa and the Gulf of Guinea countries received above-average to well-above-average rainfall, with pockets of below-average to well-below-average rainfall in some locations. In eastern Ethiopia, rainfall was well above average. Rainfall was near average in both North and South Africa.

This situation was characterized by low pressure activities over mid-latitude and equatorial regions with warm SSTs conditions in the Gulf of Guinea regions.

The forecasts show that during the period of 08th to 15th July 2021, low to moderate/moderate to heavy precipitation is expected over western, central and eastern African countries. Heavy precipitation is expected over Sierra Leone, southern Chad and the western flank of Ethiopia.

Figure 7b shows that during the week of 15th to 21st of July, there will be a reduction in precipitation over the coastal cities because of the Wet Spell (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.

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

- **The Azores High** had a central pressure value of 1024hPa thus, weakened by 3hPa compared to the previous dekad and strengthened by 3hPa compared to the climatological means (1981-2010). The high pressure was located at 28°W and 32°N and maintained its climatological position over the North Atlantic Ocean.
- **St. Helena High** of 1018hPa strengthened by 5hPa compared to the previous dekad and by 9hPa compared to the climatological means (1981-2010). It was located at 03°W and 28°S. It moved slightly eastwards from its climatological position over the South Atlantic Ocean.
- **Mascarene High** of 1025hPa weakened by 1hPa compared to the previous dekad. It moved slightly westward and was located at 60°E and 38°S. It moved slightly southwards of its climatological position over the Indian Ocean.
- **Heat Low:** The low-pressure system with a central value of 1009hPa filled up by 1hPa compared to the previous dekad on a position of 15°E and 16°N over the border of Chad and Niger.

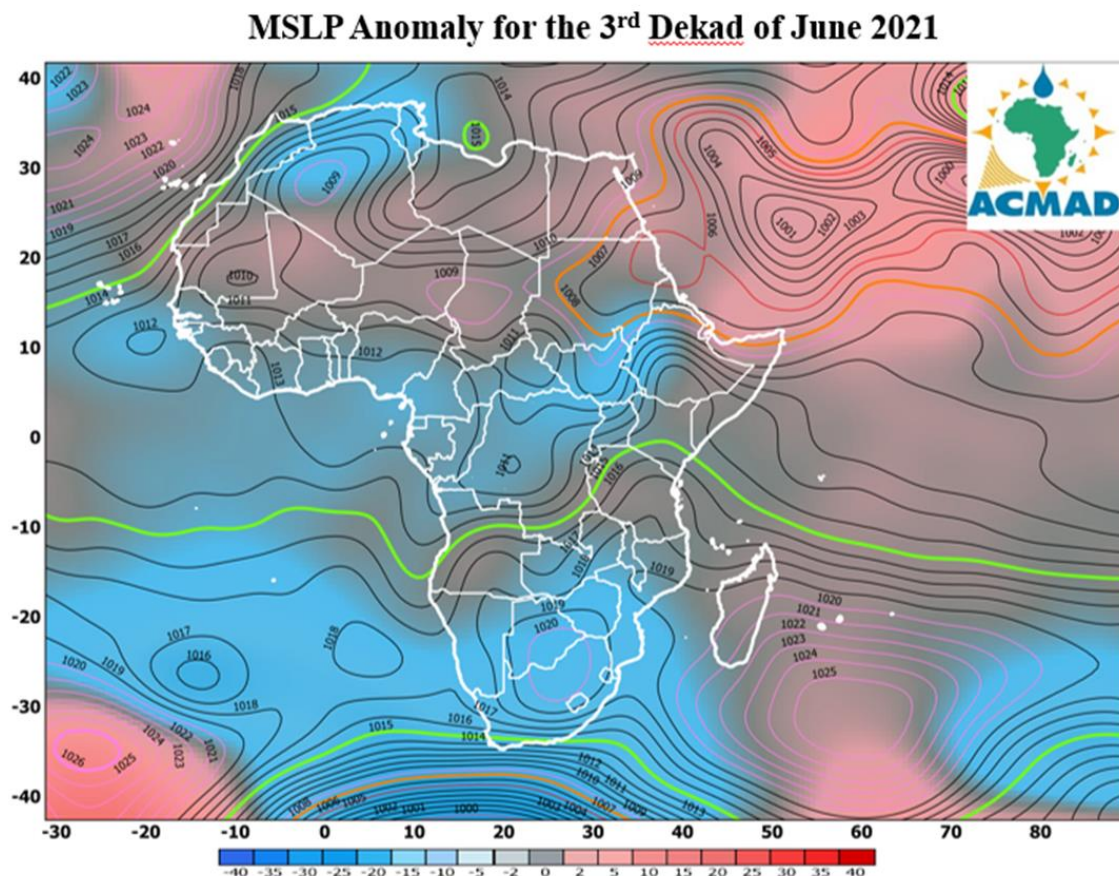


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21 to 30 June 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average decadal wind (m/s) at 850hPa. Strong cyclonic (low pressure) winds were observed over Lybia, Algeria and Tunisia. The intensity of the zonal winds was about 11ms. Strong westerly winds were also observed over the border of Mauritania and Mali.

Figure 2b: At the 700hpa level, strong westerly winds of 14 m/s were observed over Libya, Algeria and Tunisia. Strong easterly flows were observed over the countries along the Gulf of Guinea.

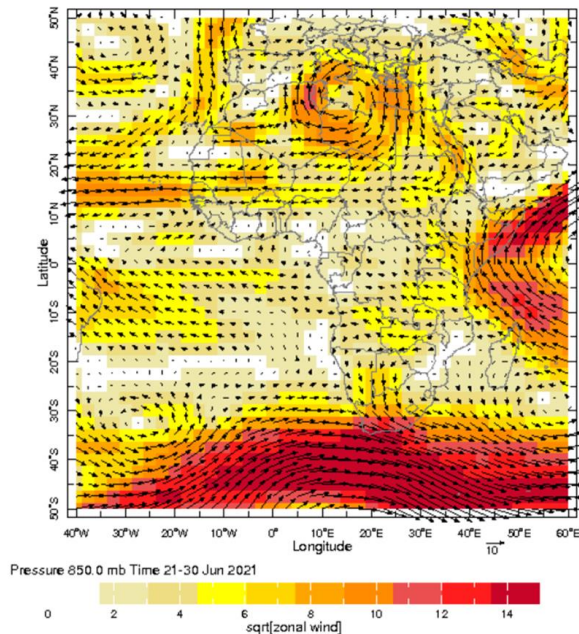


Figure 2a: Mean wind (m/s) at 850hpa from 21 – 30 June 2021
Source: NOAA/NCEP

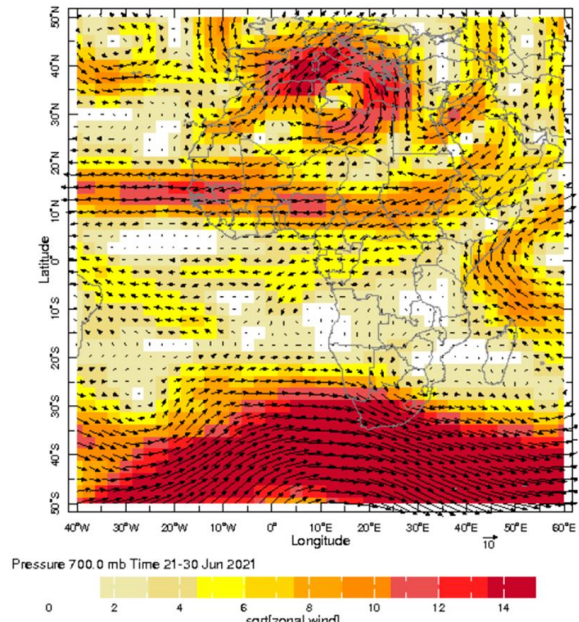


Figure 2b: Mean wind (m/s) at 700hpa from 21 – 30 June 2021
Source: NOAA/NCEP

Figure 2c: shows the wind speed and direction at 200hPa. During the first dekad of June 2021, very strong westerly zonal winds were observed over North and South Africa. Countries along the Gulf of Guinea observed south-westerly winds while the Sahelian countries observed westerly winds of about 8 m/s.

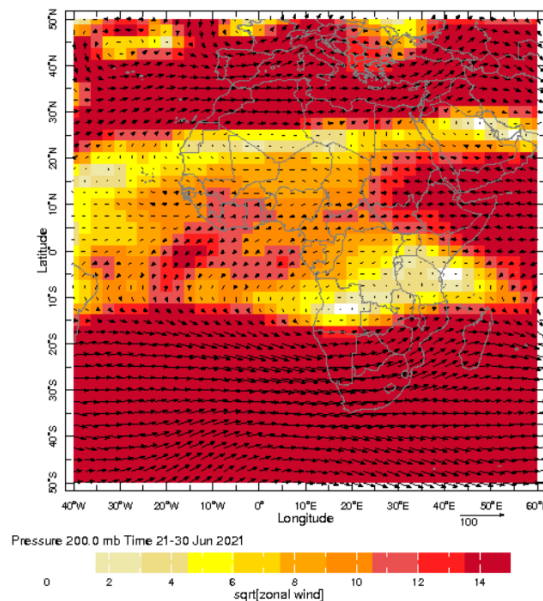


Figure 2c: Mean wind at 200 hPa (m/s) during the period from 21 to 30 of June 2021
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the decadal mean of relative humidity at 850hPa for the third decade of June 2021 and anomalies compared to the reference period 1991-2020. Wet atmospheric conditions (humidity relative $\geq 60\%$) were observed over countries along the Gulf of Guinea, Central Africa, East Africa as well as Tanzania, Mozambique and Madagascar.

The relative humidity anomalies for the third decade of June 2021 were negative over Sierra Leone, Liberia, Cote d'Ivoire, Gabon, the coast of Ghana, Togo, Benin, Nigeria and Cameroon and some parts of Ethiopia, Kenya and Tanzania.

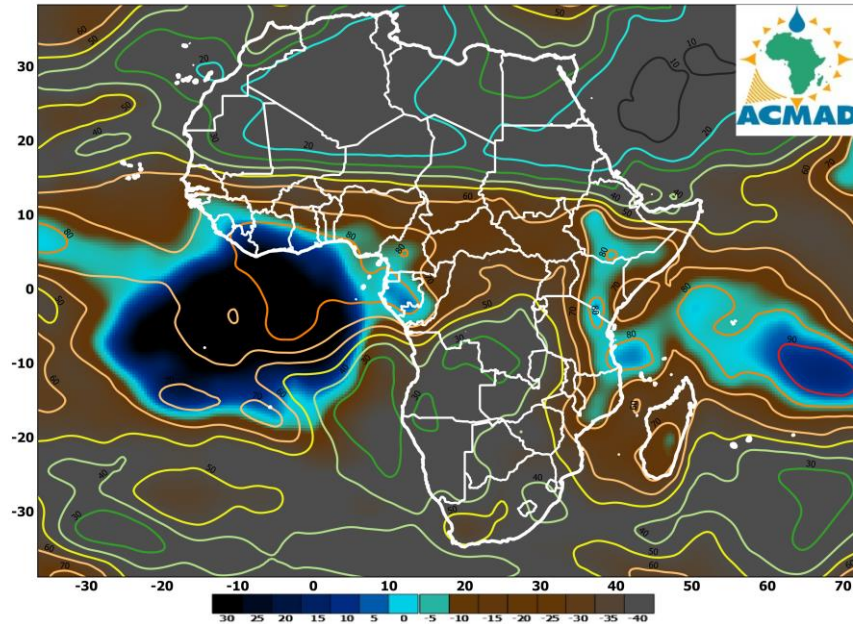


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 21th to 30th of June 2021
SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the decadal 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 to Senegal in the West and also the southern part of the Sahel.

The relative humidity anomalies for the decade of June 2021 were negative over the coast of West Africa, Cameroon, Central African Republic and southern Chad.

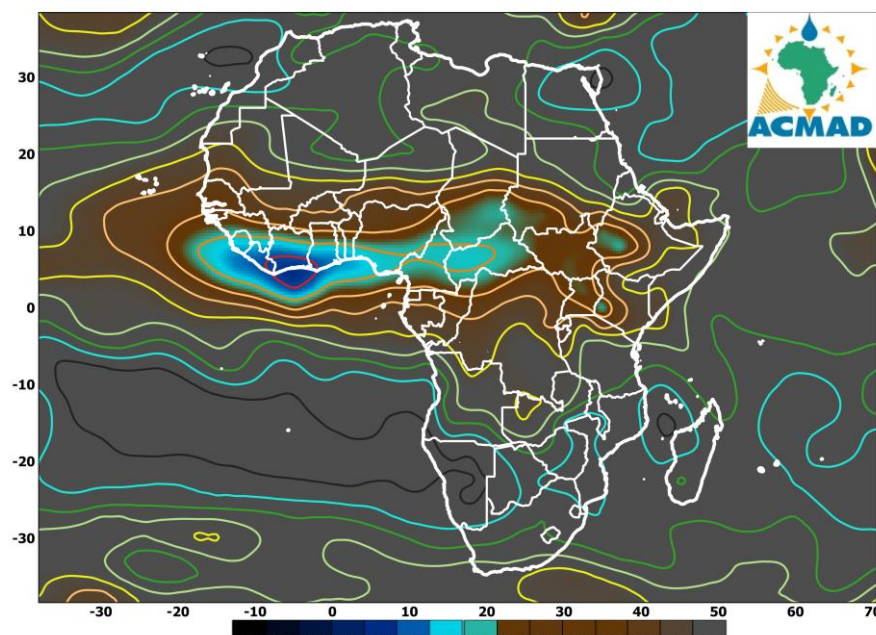


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21st to 30th of June 2021

2.0 PRECIPITATION

Figure 6 shows the observed precipitation estimated in the percentage of average for the third dekad of June 2021.

2.1 Precipitation

The third dekad of June witnessed a variety of seasonal changes across the continent, ranging from an increase in precipitation in some regions to a decrease in others. The majority of Central Africa and the Gulf of Guinea countries received above-average to well-above-average rainfall, with pockets of below-average to well-below-average rainfall in some locations. In eastern Ethiopia, rainfall was well above average. Rainfall was near average in both North and South Africa.

Details:

- **North Africa:** This region experienced near average rainfall conditions in the dekad.
- **The Sahel countries:** The region observed below average to well below-average rainfall conditions.
- **Gulf of Guinea countries:** The region observed above average to well above average rainfall conditions. Some pockets of areas recorded near average rainfall activities.
- **Central Africa countries:** Above average to well above-average rainfall was received in many parts of this region. The northern part of the Democratic Republic of Congo 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 western part of Uganda and South Sudan and a pocket of areas in the region. Eastern Ethiopia observed well above average rainfall in the dekad.
- **Southern Africa countries:** Most of the SADC countries experienced near average rainfall, except for eastern Madagascar that observed below-average rainfall.

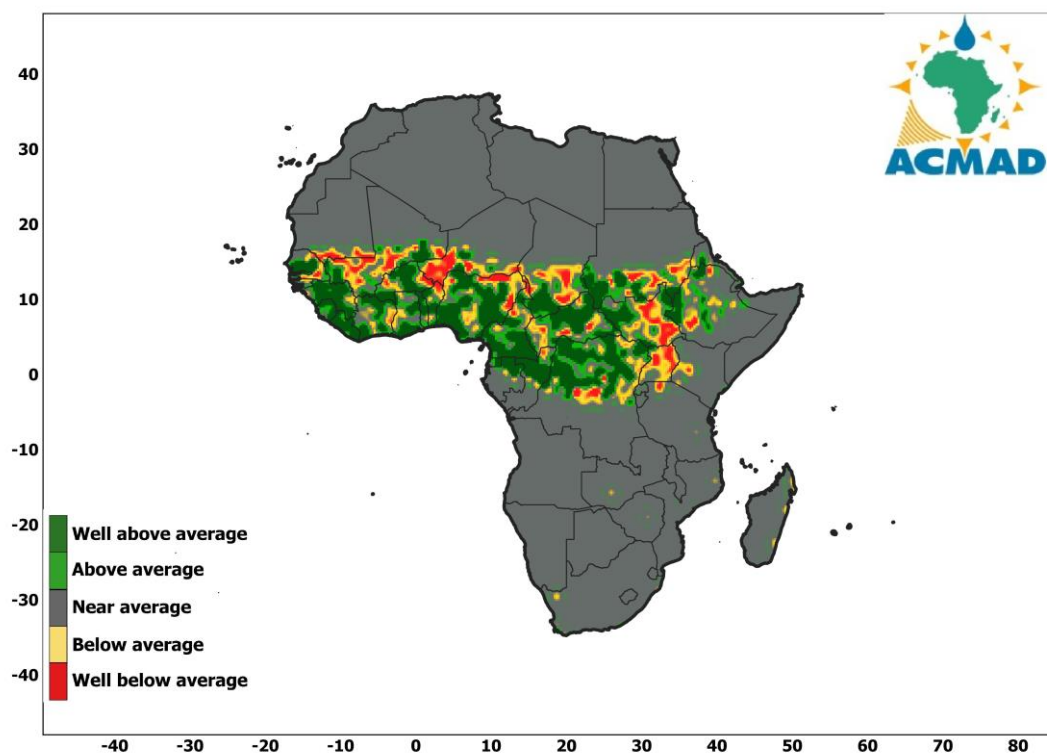


Figure 6: Precipitation in the percentage of average for the third dekad 21st to 30th of June 2021. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

3.0 OUTLOOK VALID FROM 08th – 14th and 15th – 21st OF JUNE 2021

3.1 PRECIPITATION

During the period of 08th to 15th July 2021, low to moderate/moderate to heavy precipitation is expected over western, central and eastern African countries. Heavy precipitation is expected over Sierra Leone, southern Chad and the western flank of Ethiopia.

Figure 7b shows that during the week of 15th to 21st of July, there will be a reduction in precipitation over the coastal cities because of the Wet Spell (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.

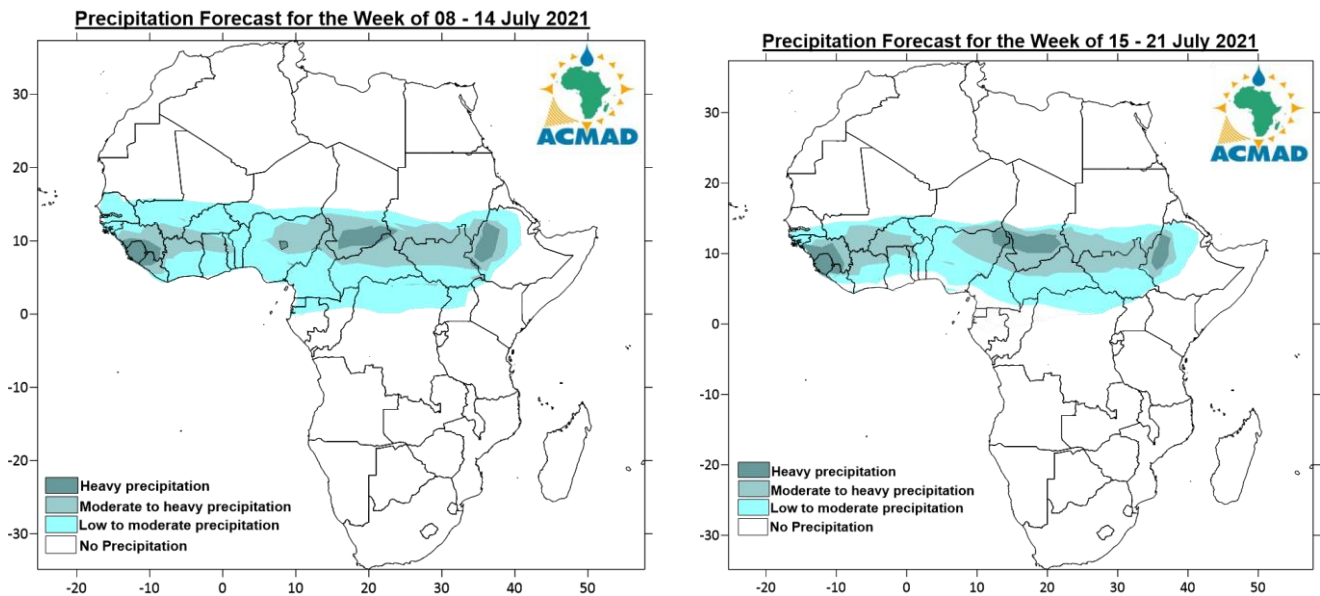


Figure 7a: Precipitation forecast for 08th - 14th July 2020 **Figure 7b:** Precipitation forecast for 15th to 21st July 2020

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecasted for the week of 07th to 15th July 2021. Temperatures are expected to be above average over most of the continent, except over the countries along the Gulf of Guinea, central and eastern Africa, parts of Namibia, southern South Africa, Madagascar and Tanzania where temperatures are expected to be cooler than average.

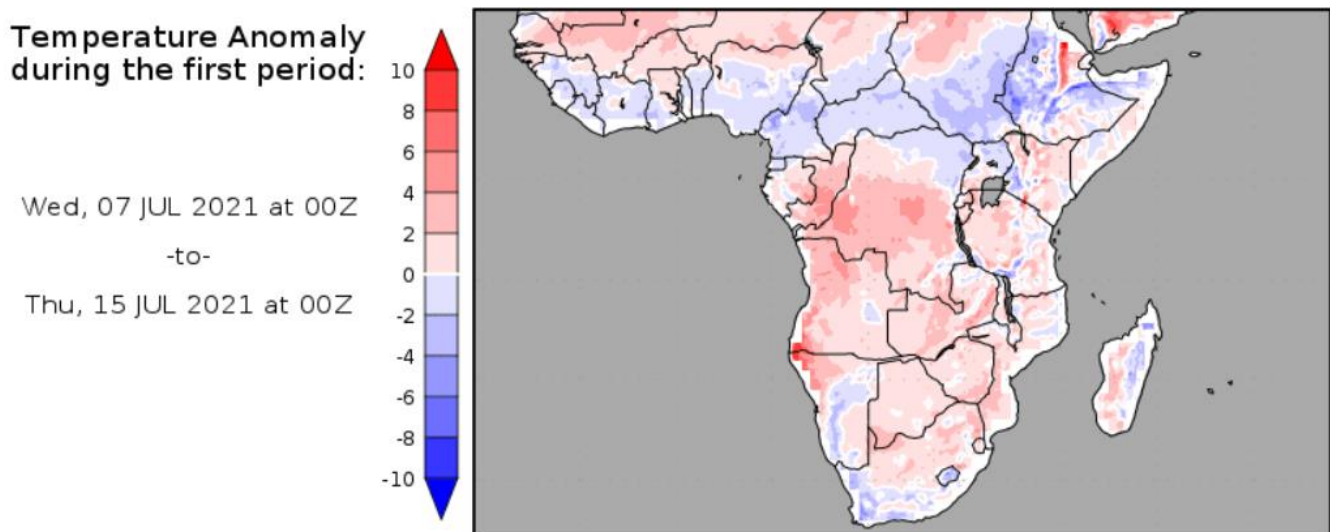


Figure 8: Temperature anomalies prospect from 07th to 15th of July 2021
(Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 07th to 15th July 2021 where an increase in soil moisture is expected over western to the eastern parts of the continent.

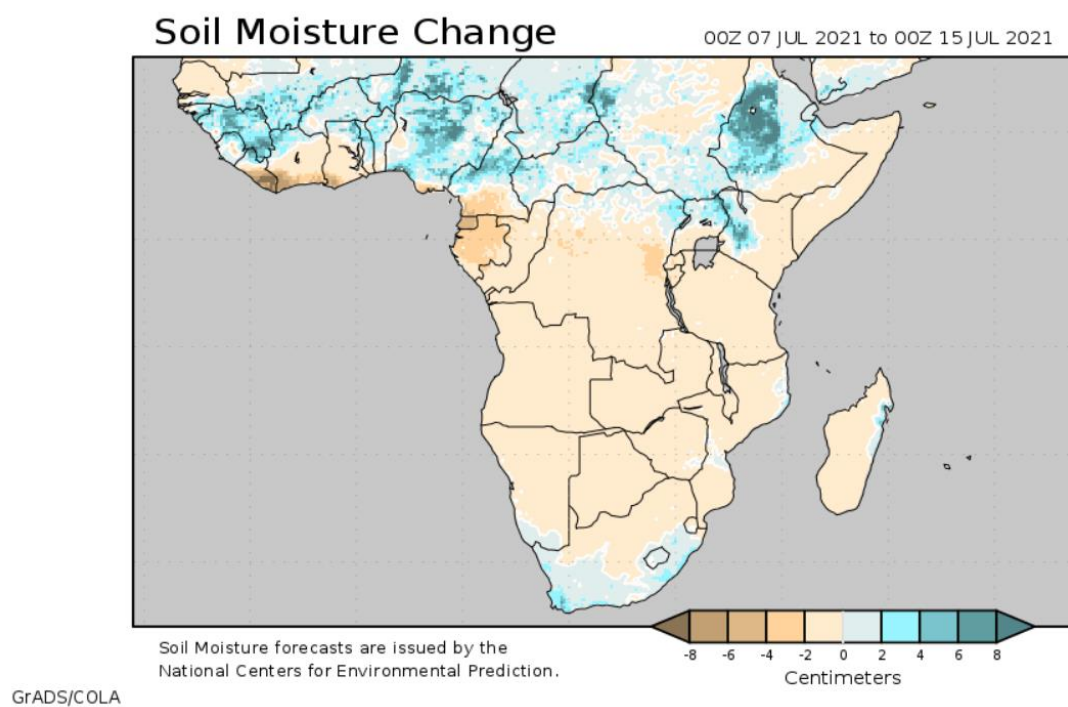


Figure 9: Soil moisture change prospect for the period 07th to 15th July 2021
(Source: COLA)

