

Ten Days Climate Diagnostics Bulletin

N°17

Dekad 2, 11th to 20th June 2021

HIGHLIGHTS

The second dekad of June witness an increase in precipitation over most countries. Most of the Central African and Gulf of Guinea countries had above-average to well-above-average rainfall, with some places receiving near-average rainfall. Rainfall was below average in central Ethiopia and western Kenya. The rest of the countries observed near-average rainfall.

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 26th June to 2nd 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 and Liberia, the coast of Cote d'Ivoire, Togo, Benin and Nigeria

Figure 7b shows that during the week of 3rd to 9th of July, there will be a reduction in precipitation over countries that experienced heavy precipitation in the previous week except over parts of western Ethiopia which is likely to observe an increase in precipitation. Other countries will continue to observe low to moderate/ moderate to heavy precipitation.

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** maintained its central pressure value of 1027hPa as compared to the previous dekad and continued to strengthen by 6hPa compared to the climatological means (1981-2010). The high pressure was located at 40°W and 33°N and maintained its climatological position over the North Atlantic Ocean.
- **St. Helena High** of 1013hPa has weakened by 10hPa compared to the previous dekad and by 9hPa compared to the climatological mean (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 1026hPa weakened by 2hPa compared to the previous dekad. It was located at 68°E and 45°S. It moved slightly southwards of its climatological position over the Indian Ocean.
- **Heat Low:** The three low-pressure systems have pressure values of 1009hPa, 1008hPa and 1006hPa respectively. Heat low 1 moved northward and extended into Algeria from Mali and is now positioned at 02°E and 20°N. The low-pressure system filled by 2hPa compared to the previous dekad and by 4hPa compared to the climatological means (1981-2010). The second heat low maintained its value of 1008hPa and position of 13°E and 12°N over the border of Chad and Niger as was the case in the previous dekad. Heat Low 3 also maintained its position over northeastern parts of North-Sudan at 33°E and 18°N. The low-pressure system deepened by 1hPa (1006hPa) and 3hPa compared to the previous dekad and climatological means (1981-2010) respectively.

MSLP Anomaly for the 2nd Dekad of June

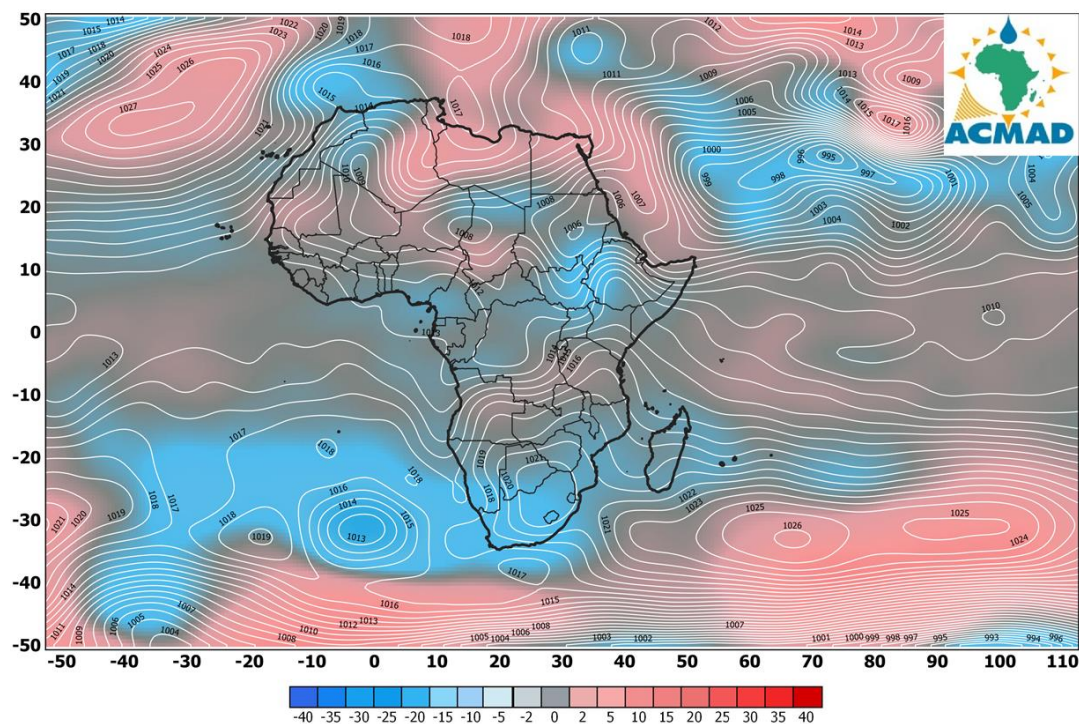


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 11 to 20th of June 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average decadal wind (m/s) at 850hPa. The cyclonic (low pressure) system that was seen over Libya has weakened and moved westward. Strong north-easterly winds of about 10 m/s were observed over the border of Libya and Algeria and also north-westerly winds over the border of Mauritania and Algeria.

Figure 2b: At the 700hpa level, strong westerly winds were observed over Morocco, Tunisia and the northern parts of Algeria, Libya and Egypt. Strong easterly flows were observed over the countries along the Gulf of Guinea.

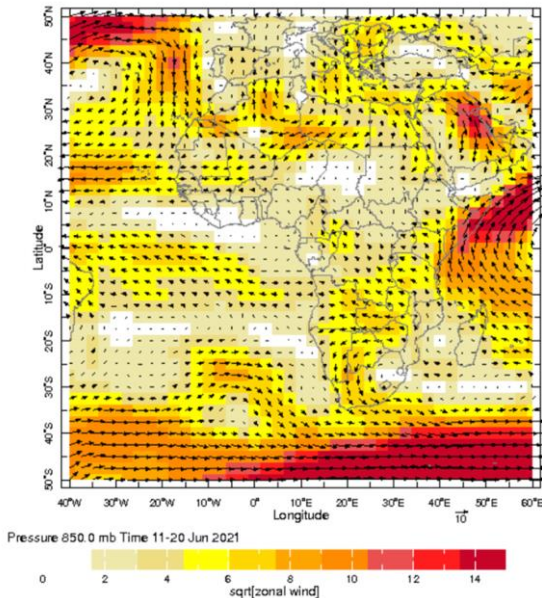


Figure 2a: Mean wind (m/s) at 850hpa from 11 – 20 June 2021
Source: NOAA/NCEP

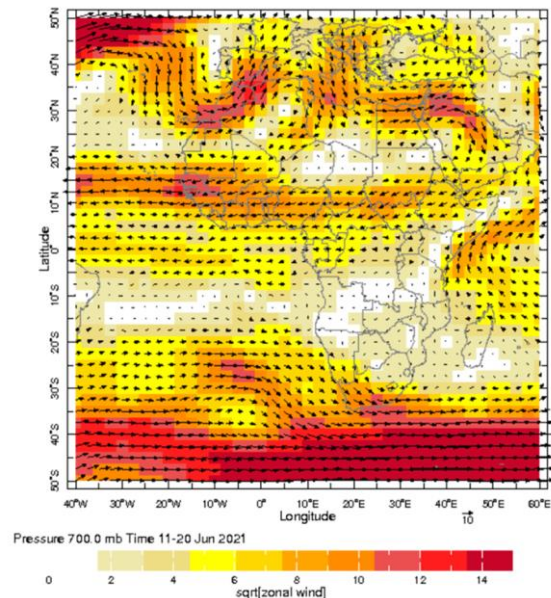


Figure 2b: Mean wind (m/s) at 700hpa from 11 – 20 June 2021
Source: NOAA/NCEP

1.2.2 Wind at 200 hPa.

Figure 3 shows the wind speed and direction at 200hPa. During the first dekad of June 2021, very strong easterly and westerly zonal winds were observed over North Africa. Countries along the Gulf of Guinea, the eastern and southern parts of the continent observed strong easterly winds while the Sahelian countries observed moderate winds of 4 – 6 m/s.

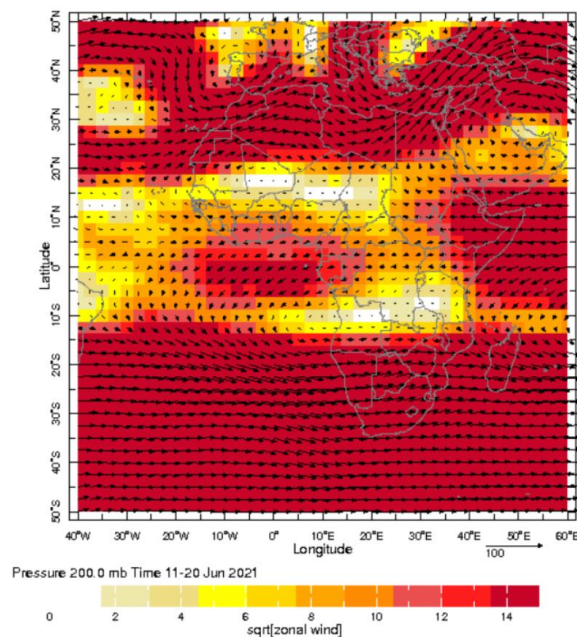


Figure 3: Mean wind at 200 hPa (m/s) during the period from 1st to 10th of June 2021.
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the decadal mean of relative humidity at 850hPa for the second decade of June 2021 and anomalies compared to the reference period 1971-2000. Wet atmospheric conditions (humidity relative $\geq 60\%$) were observed over countries along the Gulf of Guinea countries and also over Kenya, Somalia, Ethiopia, South Sudan and the western part of the Democratic Republic of Congo (DRC).

The relative humidity anomalies for the first decade of June 2021 were negative over western and central Africa as well as Ethiopia and Sudan

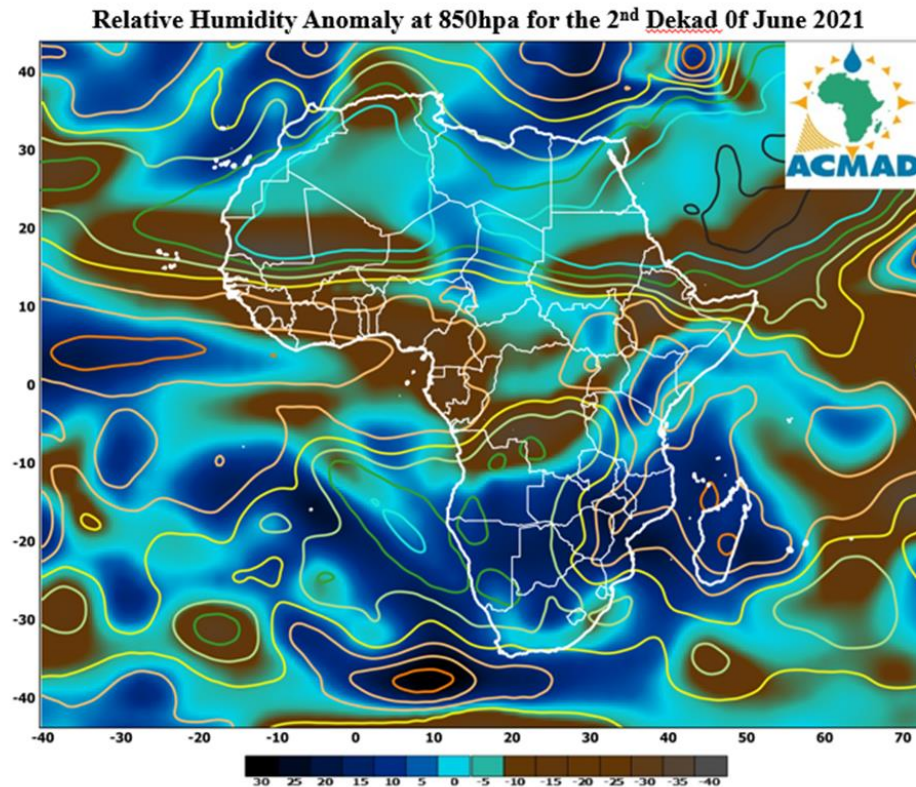


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 11th to 20th of June 2021
SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 while some parts of the Sahel observed RH of about 50%.

The relative humidity anomalies for the dekad of June 2021 were negative over parts of eastern Africa and western Africa.

Relative Humidity Anomaly at 700hpa for the 2nd Dekad Of June 2021

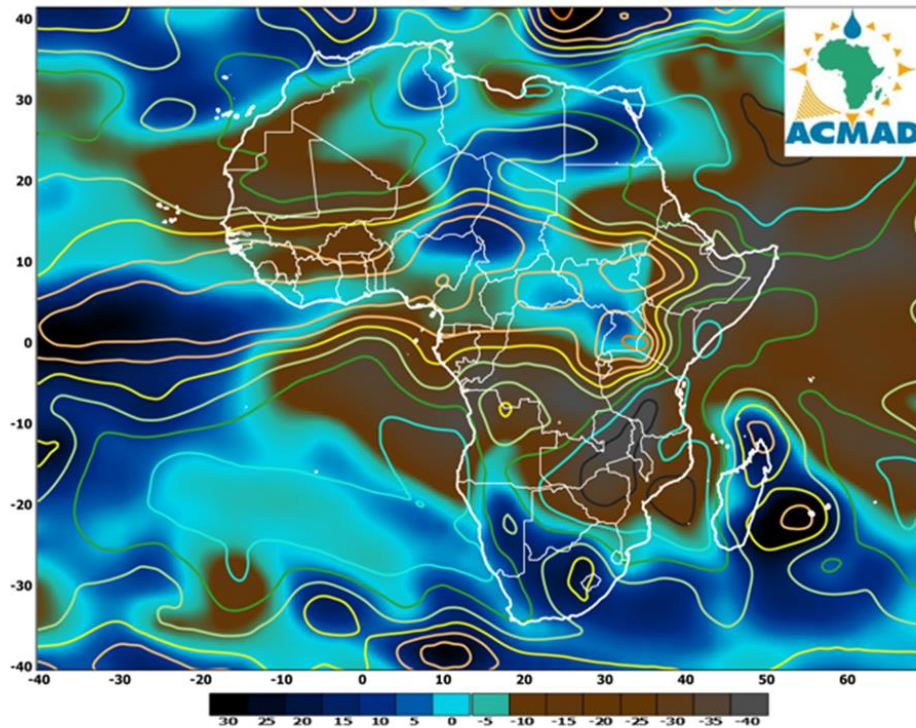


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 11th to 20th of June 2021 (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

The second dekad of June witness an increase in precipitation over most countries. Most of the Central African and Gulf of Guinea countries had above-average to well-above-average rainfall, with some places receiving near-average rainfall. Rainfall was below average in central Ethiopia and western Kenya. The rest of the countries observed near-average rainfall.

Details:

- **North Africa:** The extreme northern fringes of Algeria and Tunisia received pockets of above-average rainfall.
- **The Sahel countries:** The region observed near average to above-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:** Well above average to above-average rainfall was received in most of the countries in this region, except for a pocket of areas that received below-average rainfall. The central part of the Democratic Republic of Congo recorded below-average rainfall.
- **East Africa countries:** Central Ethiopia and western Kenya observed below-average rainfall conditions. The eastern part of the region observed near average rainfall while the western part recorded above-average to well above average rainfall.
- **Southern Africa countries:** Most of the SADC countries experienced near average rainfall, except for eastern Madagascar that observed below-average rainfall while the extreme southern fringes of South Africa observed above-average rainfall conditions.

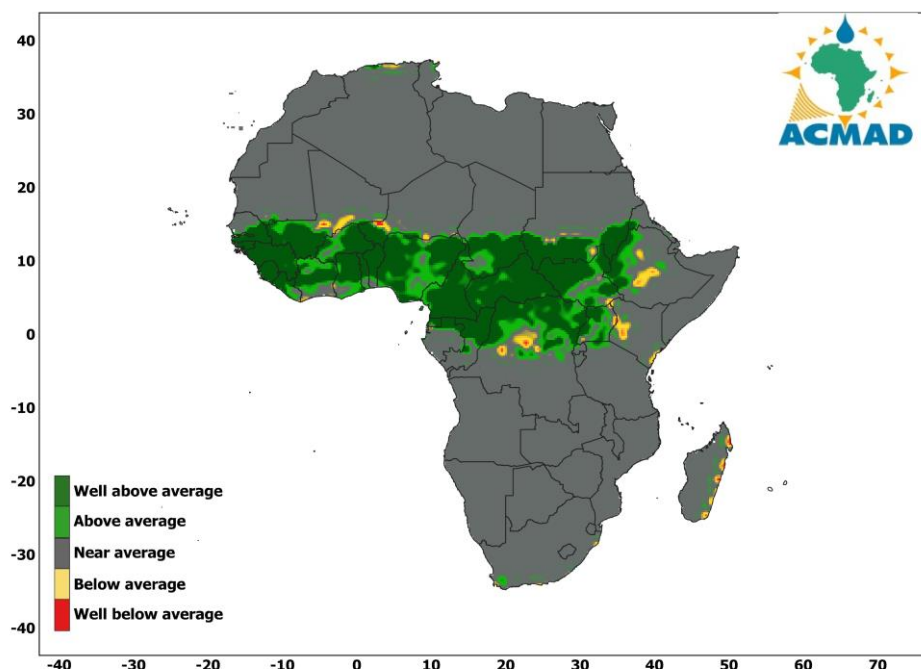


Figure 6: Precipitation in the percentage of average for second dekade 11th to 20th of June 2021. The reference period used is 1981-2010. Source: NOAA/, NCEP/, CPC/, FEWS/, Africa/, DAILY/)

3.0 OUTLOOK VALID FROM 17th – 23rd and 24th – 30th OF JUNE 2021

3.1 PRECIPITATION

During the period of 26th June to 2nd 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 and Liberia, the coast of Cote d'Ivoire, Togo, Benin and Nigeria.

Figure 7b shows that during the week of 3rd to 9th of July, there will be a reduction in precipitation over countries that experienced heavy precipitation in the previous week except over parts of western Ethiopia which is likely to observe an increase in precipitation. Other countries will continue to observe low to moderate/moderate to heavy precipitation.

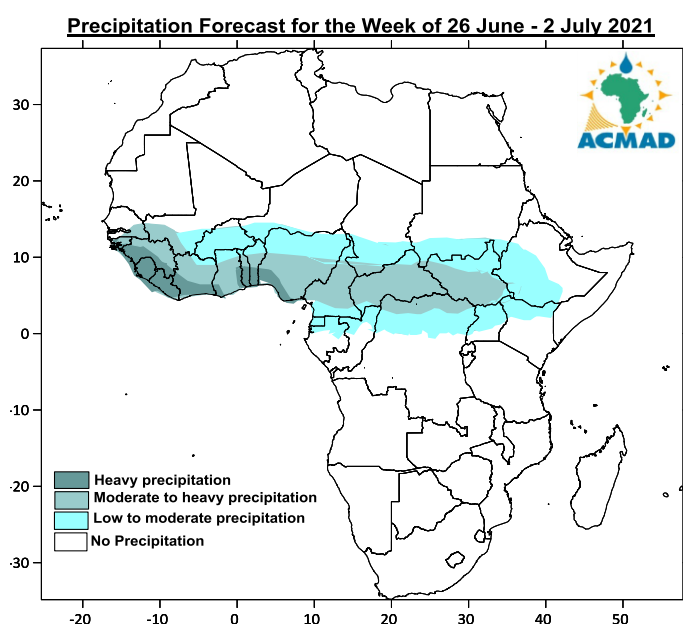


Figure 7a: Precipitation forecast from 26th June - 2nd July 2020

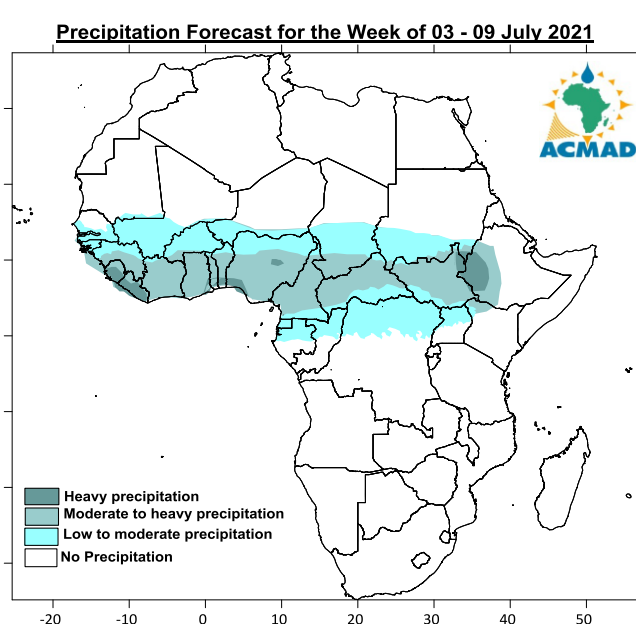


Figure 7b: Precipitation forecast 3rd to 9th July 2020

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecasted for the week of 25th June to 3rd 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, and parts of Madagascar, Mozambique and Tanzania where temperatures are expected to be cooler than average.

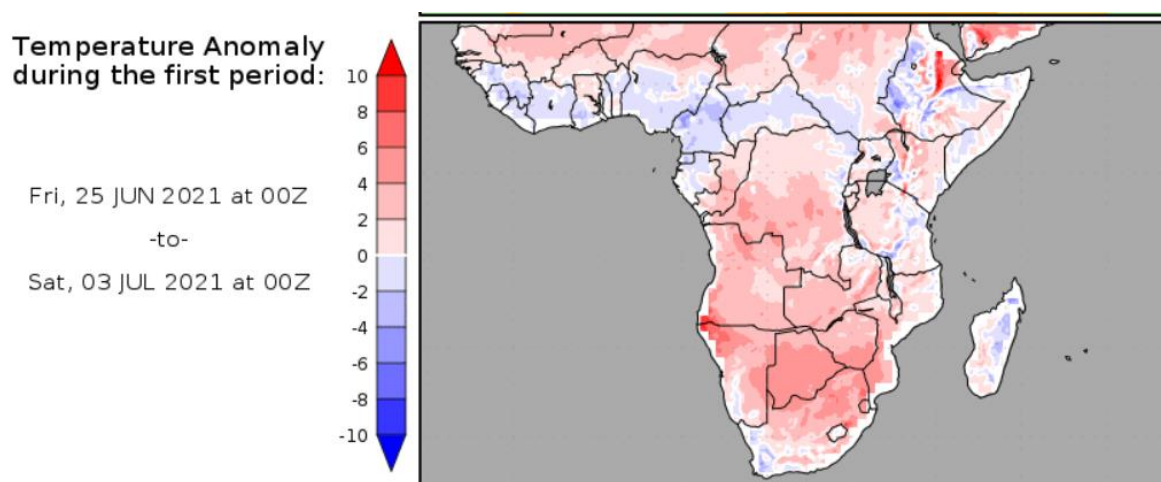


Figure 8: Temperature anomalies prospect from 25th June to 3rd of July 2021
(Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecasted for the week of 25th June to 3rd July 2021 where an increase in soil moisture is expected over western to the eastern parts of the continent.

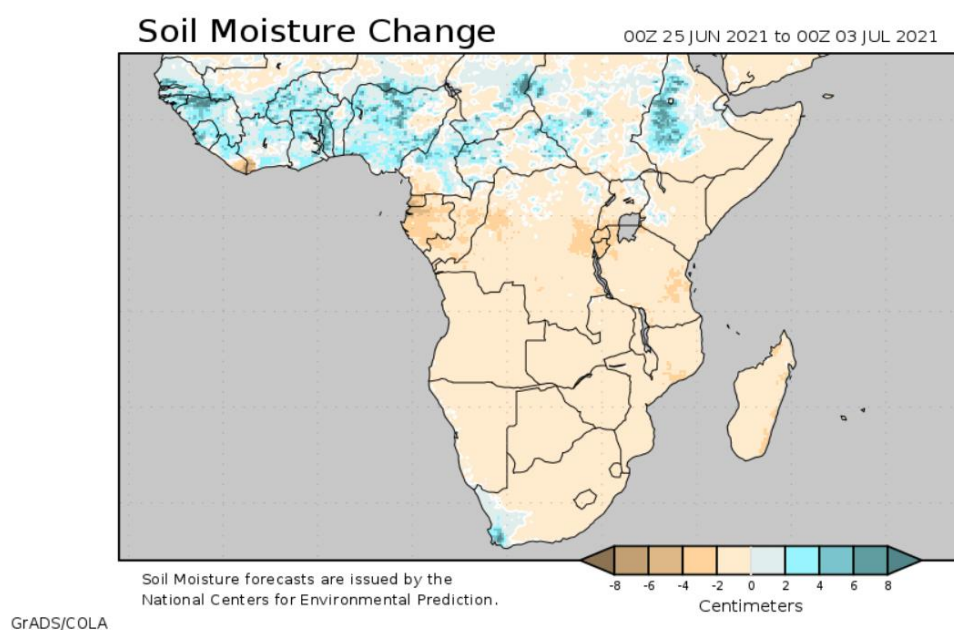


Figure 9: Soil moisture change prospect for the period 25th June to 3rd July 2021
(Source: COLA)

