

Ten Days Climate Diagnostics Bulletin

N°24

Dekad 3, 21th to 31st August 2021

HIGHLIGHTS

The third dekad saw a further persistence 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 11th-17th September 2021 are expected to be low to moderate rain over the southern Sahelian countries, western Côte d'Ivoire southern Ghana, Togo, Benin, central and southern Nigeria, most parts of eastern Cameroon, southernmost of Chad, much CAR, Guinea Equatorial, Gabon, northern and central DRC, western and southern South Sudan, western Uganda and much of Rwanda and Burundi. During the same period moderate to heavy rain is expected over western Guinea, much Sierra Leone, Liberia, northern Ghana, Togo, Benin, southern Nigeria, south-western Cameroon, most parts of Congo, westernmost of DRC, central south CAR, north-eastern South Sudan, and western Ethiopia

The forecasts show that during the period of 18th to 24th September 2021, low to moderate/moderate to heavy precipitation is expected over Guinea Bissau, northern Guinea, south-eastern Burkina Faso, south-western Niger, Côte d'Ivoire, southern Ghana, Togo, Benin, much of Nigeria, Cameroon, CAR, eastern Gabon, northern and central DRC, western South Sudan, Uganda, Ethiopia, much of Rwanda and Burundi. Moderate to heavy rain is very likely over western Guinea, much of Sierra Leone, Liberia, northern Ghana, Togo, Benin, southern Nigeria, western much of Congo and western DRC.

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 1023hPa, weakening by 1hPa compared to the previous dekad and by 7 hPa compared to the climatological mean (1991-2020). The high pressure was located at 7°W and 49 °N. It moved north of its climatological position over the North Atlantic Ocean.
- **St. Helena High** observed a central value of 1026hPa, weakened by 1hPa compared to the previous dekad and by 2hPa compared to the climatological means (1991-2020). It was located at 4°E and 34°S. It moved southward from its climatological position over the South Atlantic Ocean.
- **Mascarene High** observed 1025hPa it was stable compared to the previous dekad and strengthened 8hPa to climatology means (1991+2020). It moved northward of its climatological position over the Indian Ocean and was located at 66°E and 32°S with a 1hPa decrease from climatology.
- **Heat Low:** The low-pressure system over Chad with a central value of 1007hPa deepened by 3hPa compared to the previous dekad while the second low pressure system over of Mali, with the same central value deepened by 3hPa compared to the previous dekad and maintained its position of 1°W and 28°N.

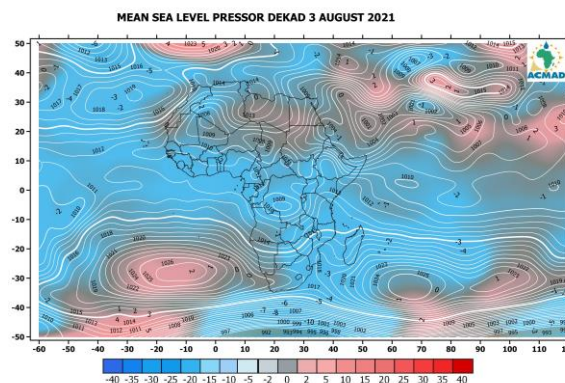


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21 to 31 August 2021

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.

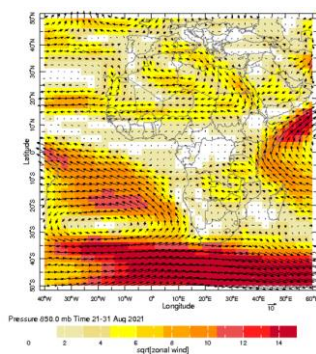


Figure 2a: Mean wind (m/s) at 850hPa from 21-31 August 2021
Source: NOAA/NCEP

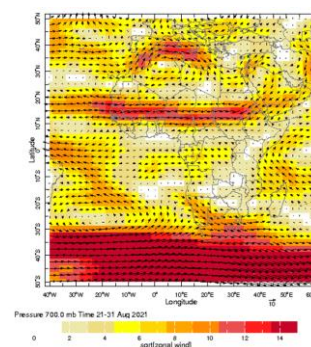


Figure 2b: Mean wind (m/s) at 700hPa from 21-31 August 2021
Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the dekadal mean of relative humidity at 850hPa for the third 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 third dekad of August 2021 were negative over the north-western part of the Sahel to North Africa, the Central Africa countries, and also over northern parts of SADC region.

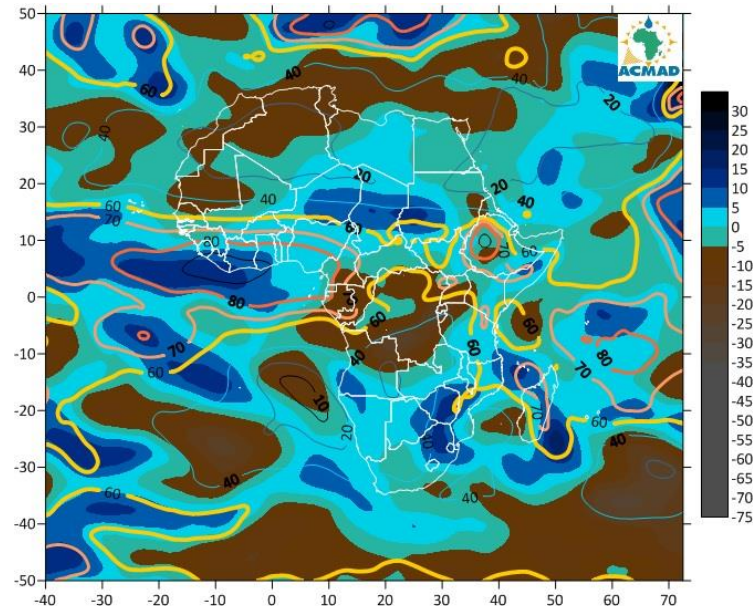


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period of 21- 31 August 2021
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the dekadal mean 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 third dekad of August 2021 were negative over the northern and central of the Northern Africa region, western Sahel, and also part of Central and East Africa.

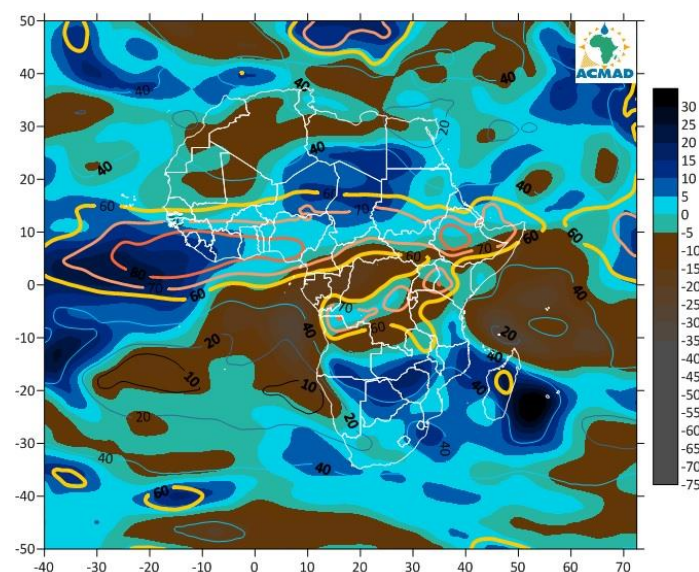


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period of 21-31 August 2021
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 third dekad saw a further persistence 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.

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.

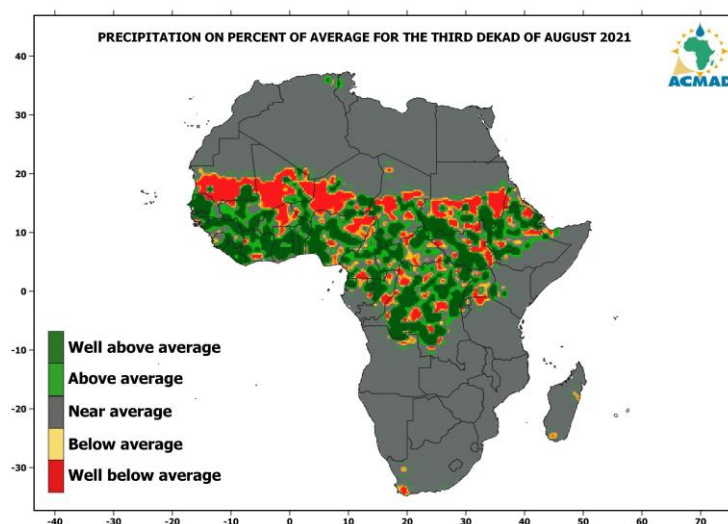


Figure 6: Precipitation in the percentage of average for the first dekad (21st to 31th) of August 2021. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

3.0 OUTLOOK VALID FOR 11th-24th OF SEPTEMBER 2021

3.1 PRECIPITATION

The temperature anomaly forecast for 11th-17th September 2021 are expected to be low to moderate rain over the southern Sahelian countries, western Côte d'Ivoire southern Ghana, Togo, Benin, central and southern Nigeria, most parts of eastern Cameroon, southernmost of Chad, much CAR, Guinea Equatorial, Gabon, northern and central DRC, western and southern South Sudan, western Uganda and much of Rwanda and Burundi. During the same period moderate to heavy rain is expected over western Guinea, much Sierra Leone, Liberia, northern Ghana, Togo, Benin, southern Nigeria, south-western Cameroon, most parts of Congo, westernmost of DRC, central south CAR, north-eastern South Sudan, and western Ethiopia

The forecasts show that during the period of 18th to 24th September 2021, low to moderate/moderate to heavy precipitation is expected over Guinea Bissau, northern Guinea, south-eastern Burkina Faso, south-western Niger, Côte d'Ivoire, southern Ghana, Togo, Benin, much of Nigeria, Cameroon, CAR, eastern Gabon, northern and central DRC, western South Sudan, Uganda, Ethiopia, much of Rwanda and Burundi. Moderate to heavy rain is very likely over western Guinea, much of Sierra Leone, Liberia, northern Ghana, Togo, Benin, southern Nigeria, western much of Congo and western DRC.

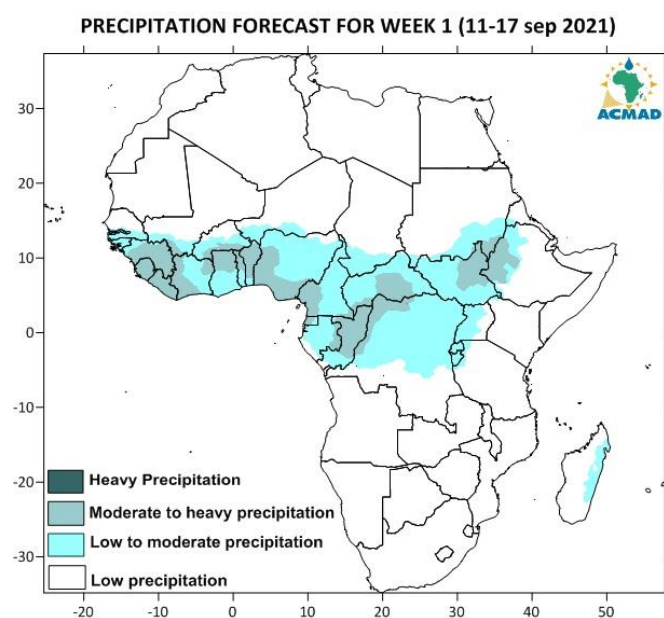


Figure 7a: Precipitation forecast for 30th August-5th September 2021

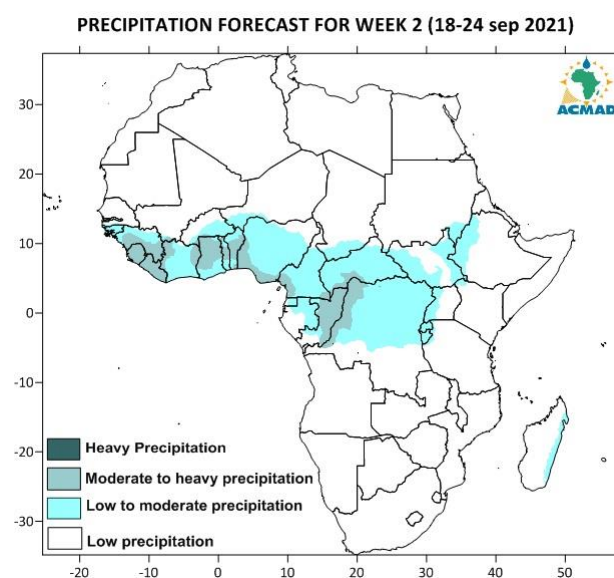


Figure 7b: Precipitation forecast for 6th-12th August 2021

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecast of 10th -18th 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 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.

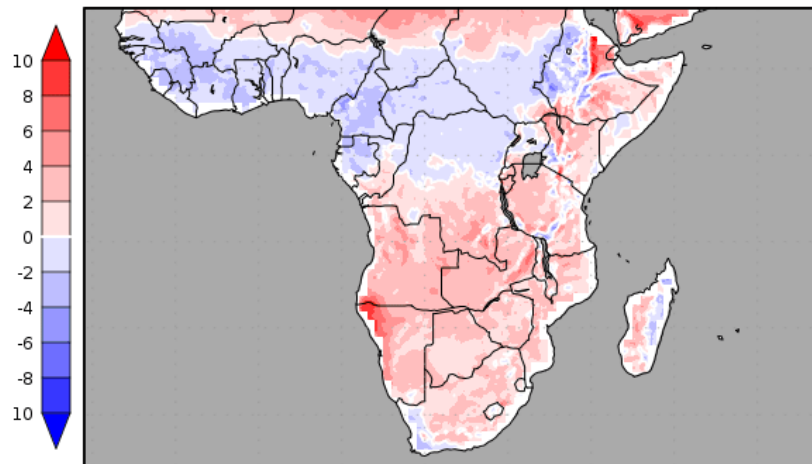


Figure 8: Temperature anomalies prospect for the period of 10-18 September 2021
(Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 10th -18th 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.

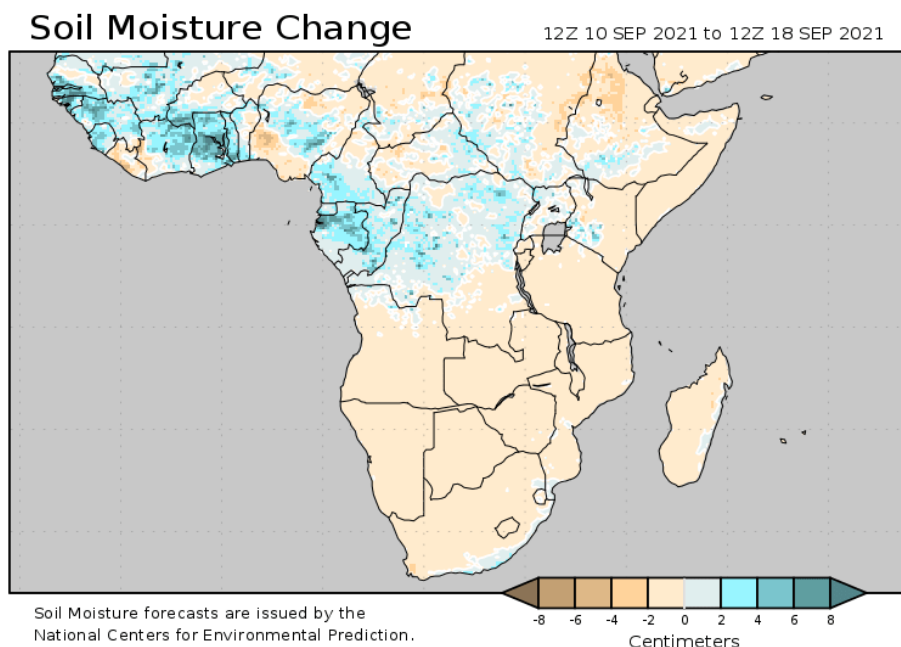


Figure 9: Soil moisture change prospect for the period of 10th -18th September 2021
(Source: COLA)