

Ten Days Climate Diagnostics Bulletin

N°03

Dekad 3, 31st to 31st January 2021

HIGHLIGHTS

During the third dekad of January 2021, above average and well above average rainfall were observed over SADC region countries and the southern of Central Africa region . Below average rainfall was observed over northern Morocco, south-western Angola, North-eastern Tanzania and eastern Madagascar.

As the same period near average rainfall was observed over the rest of continent.

During the period from the 12th to 19th February 2021, low to moderate precipitation is expected very likely over southern of Guinea gulf countries, northern DRC, southern Cameroon, Uganda, southern Kenya, western Angola, western Namibia, northern Morocco, northern Tunisia and southern of South Africa. Moderate to heavy precipitation is very likely over Gabon, Equatorial Guinea, central DRC, eastern Angola, North-eastern Namibia, northern Tanzania, Rwanda, Burundi and southern Uganda. Heavy precipitation is very likely over across most Zimbabwe, Mozambique, southern DRC, Madagascar, Zambia, Botswana, southern Tanzania and Malawi.

As the same period, the positive anomalies temperature is expected over across the West Africa region, northern DRC, CAR, South Sudan, Uganda, southern Namibia, southern Botswana, South-Africa, southern Chad, northern Kenya, Rwanda, south and central parts Ethiopia. The negative temperature anomaly is very likely over Gabon, Equatorial Guinea, eastern Angola, southern DRC, north-eastern Namibia, Zambia, northern Botswana, Burundi, Malawi, Tanzania, southern Congo, Lesotho, Mozambique, southern Somalia and central Madagascar. An increase in soil moisture is expected over over Swaziland, southern Mozambique, northern Tanzanian, western Namibia, Liberia, southern Guinea, western Madagascar and eastern South Africa . The rest of the area represented in this figure could indicate dry soil moisture.

During the period from the 20th to 26th February 2021, low to moderate precipitation is expected over western Namibia, western Angola, northern DRC, southern Cameroon, Uganda, southern Kenya, Southern South-Africa, northern Morocco, southern of the Guinea gulf countries and southern CAR. Moderate to heavy precipitation is very likely over across most Equatorial Guinea, Gabon, eastern Angola, eastern Namibia, central and coastal parts of the DRC, Rwanda, Burundi, northern Tanzania , southern Botswana, eastern South Africa, Lesotho, Swaziland and southern Madagascar. Heavy precipitation is very likely over across most Zambia, Malawi, Mozambique, Zimbabwe, central parts Madagascar and southern 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 on monsoon and relative humidity thresholds.

1.1 SURFACE

Pressure Systems

- **The Azores High** of 1024 hPa weakened to 6hPa compared to the previous dekad and strengthened to 1hPa compared to the climatological means (1981-2010). It was located at 19°W and 32°N. It is stable compared to the climatology position over the North Atlantic Ocean.
- **St. Helena High** of 1023hPa strengthened to 4hPa compared to the previous dekad and 5hPa compared to the climatological mean (1981-2010). It was located at 21°W and 32°S; it was North-eastern to the climatological position over South Atlantic Ocean.
- **Mascarene High** of 1021hPa weakened to 2hPa compared to the previous dekad and 4hPa compared to the climatological means (1981-2010). It was located at 84°E and 36°S , it was Western to the climatological position over the Indian Ocean.
- **Libyan High of 1023** hPa strengthened to 1hPa compared to the climatological means (1981-2010). It was located over Libya at 16°E and 26°N. It was stable compared to the climatological position
- **Heat Low** with 1006hPa, is strengthened to 1hpa compared to the previous dekad and weakened to 3hPa compared to the climatological means (1981-2010). It was located over South Sudan at 30°E and 8°N. It was southern to the climatological position.
- **Heat Low** with 1008 hPa. It is strengthened to 1hpa compared to the previous dekad and weakened to 1hPa compared to the climatological means (1981-2010). It is located over the border Namibia-Botswana at 20°E and 23°S; it was western to compared to the climatological position.

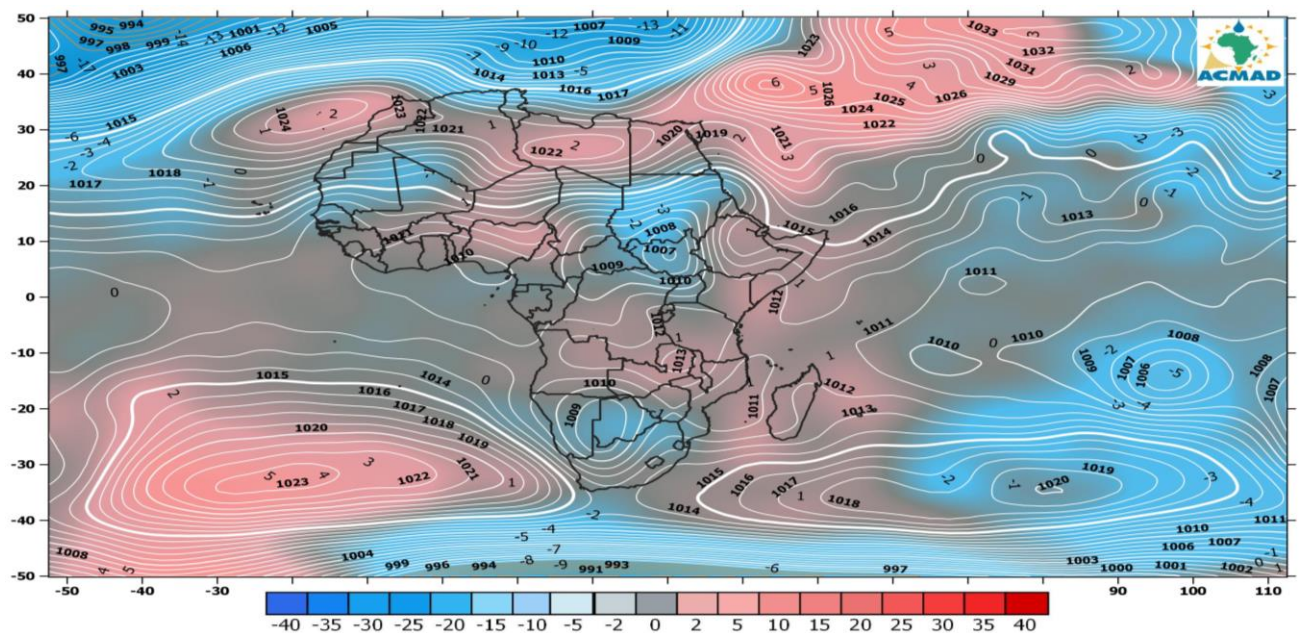


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 21st to 31st January 2021.Source:

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a shows the average wind dekadal at 850 hPa. North-Western and North-Eastern wind with strong intensities were observed, over northern southern Morocco, Algeria, Libya, Tunisia and Egypt , northern Chad, costal parts of Somalia and westerly Mauritania . The weak wind from north-eastern and eastern was prevailed over the rest of the continent.

Figure 2b shows the observed dekadal mean wind at 700 hPa. The figure indicates a moderate to strong westerly wind over northern parts of North Africa, Central Africa region, Sudan and southern parts of South Africa. The weak wind from north-eastern and eastern was observed over the rest of the continent.

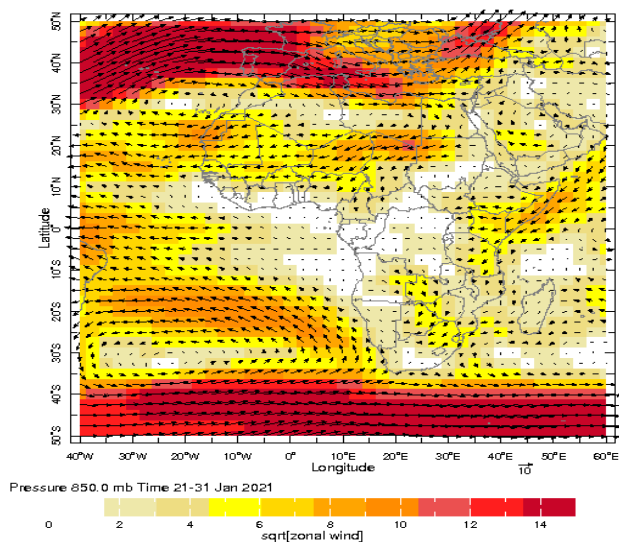


Figure 2 a: Mean wind at 850 hPa (m/s) during the period from 21st to 31st January 2021.
Source: NOAA/NCEP

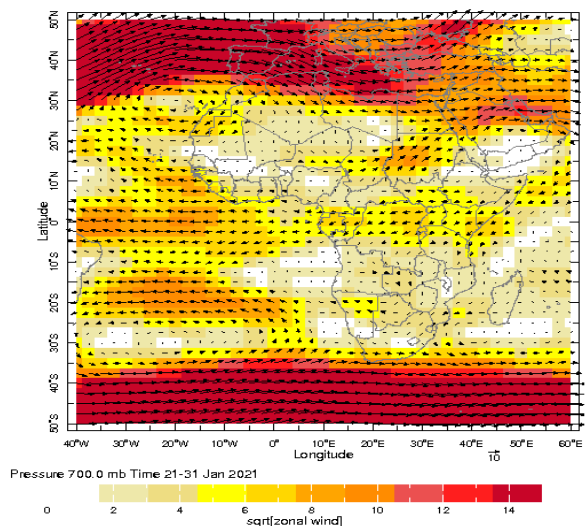


Figure 2b: Mean wind at 700 hPa (m/s) during the period from 21st to 31st January 2021.
Source: NOAA/NCEP

1.2.2 Wind at 200 hPa.

Figure 3 shows the wind speed and direction at 200 hPa. During the second third of January 2021, weak to moderate windq were observed over Somalia, Ethiopia, Kenya, South Sudan, Botswana, Namibia and northern South Africa. The strong westerly wind was prevailed over the rest of the continent.

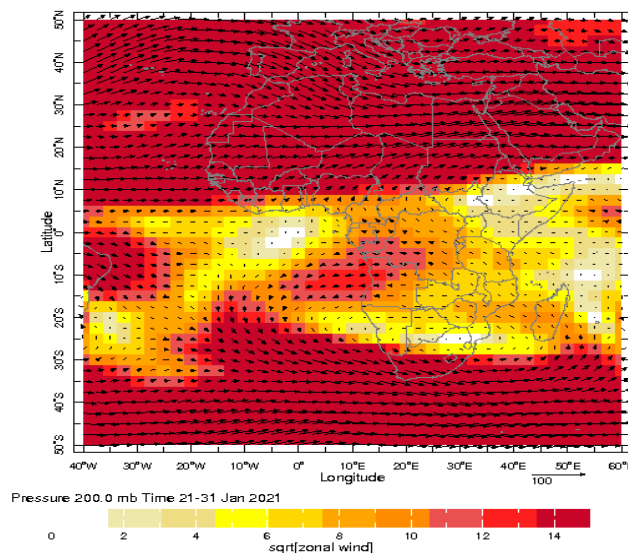


Figure 3: Mean wind at 200 hPa (m/s) during the period from 21st to 31st January 2021.
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal mean of relative humidity at 850 hPa the third dekad of January 2021 and anomalies compared to the reference period 2002-2011. Wet atmospheric conditions (humidity relative $\geq 60\%$) were observed over the central region countries, SADC region countries, northern of North Africa region and southern of the Guinea Gulf countries. Dry air (humidity relative between 20 and 40%) was observed over the rest of continent.

The relative humidity anomalies for the third dekad of January 2021 were negative over Guinea gulf region countries, East Africa region Countries, Egypt and Madagascar. The anomalies were determined based on the reference period: 2002-2011

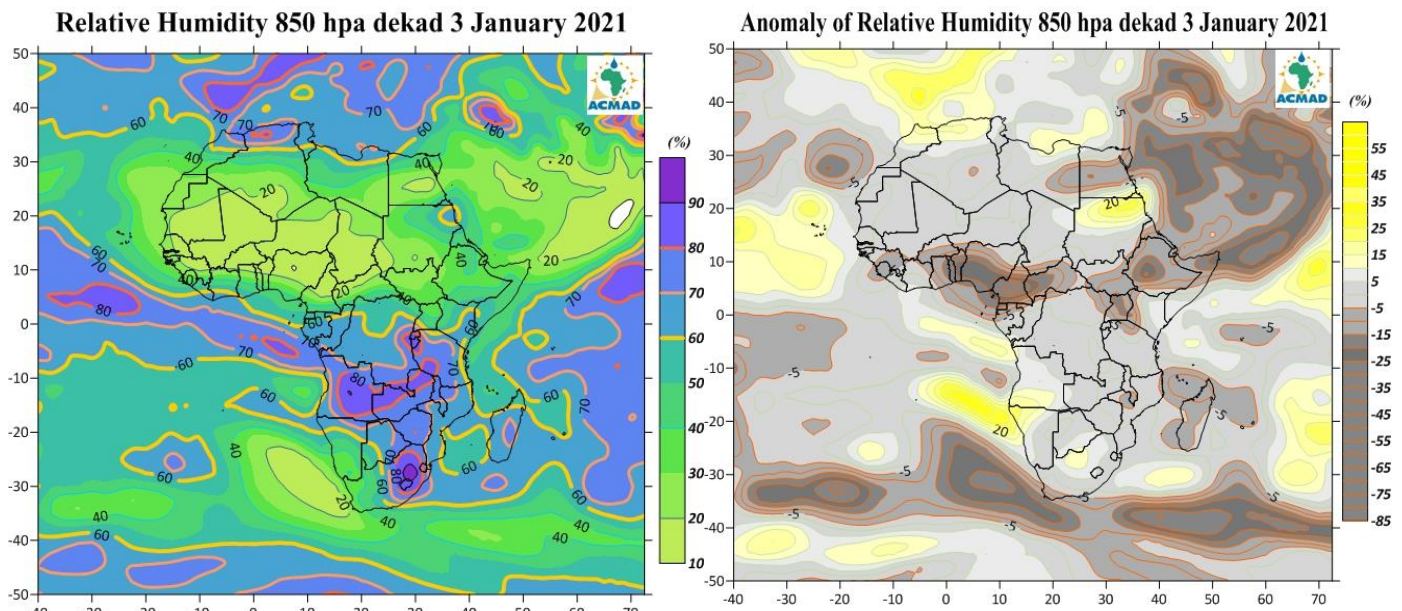


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 21st to 31st January 2021. SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 with values $\geq 60\%$ at 700hPa were observed over the central region countries , Central and western of the SADC region and the Madagascar. Dry air (humidity relative between 20 and 50%) was observed over the rest of continent.

The relative humidity anomalies for the third dekad of January 2021 were negative over West Africa region, Libya, Egypt, costal parts of Angola, Madagascar and East Africa region. The positive relative humidity anomalies were observed over northern Sudan, North-western Namibia and South-western Angolo.The anomalies were determined based on the reference period: 2002-2011

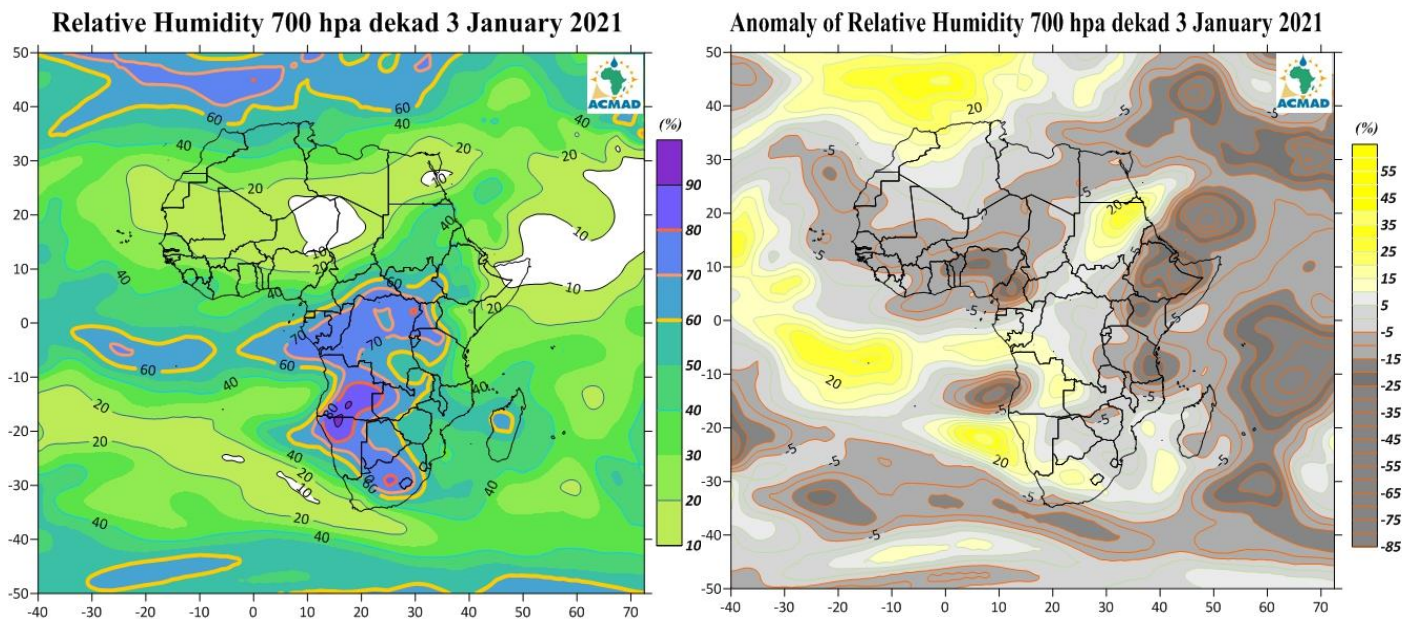


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21st to 31st January 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the third dekad of January 2021, above average and well above average rainfall were observed over SADC region countries and the southern of Central Africa region . Below average rainfall was observed over northern Morocco, south-western Angola, North-eastern Tanzania and eastern Madagascar.

As the same period near average rainfall was observed over the rest of continent.

Details:

- **North Africa:** Northern Morocco and north-western Algeria saw observed below to well below average rainfall. North-eastern Algeria and northern Tunisia was observed above average precipitation. The rest of the region saw registered near average rainfall.
- **The Sahel countries:** The region saw observed near average rainfall.
- **Gulf of Guinea countries:** The near average rainfall were observed over all the region
- **Central Africa countries:** Near average rainfall was observed over Chad, CAR, Cameroon. The Below average rainfall to well below average rainfall were observed south-western Angola. The above average and well above average precipitations was energized over the rest of the region.
- **East Africa countries:** The below average precipitation was observed over north-eastern Tanzania. The above average and well above average precipitation were observed over southern Uganda and southern Tanzania .The near average average precipitation was observed over the rest of this region.
- **Southern Africa countries:** The below average precipitation was prevailed over eastern Madagascar. The near average rainfall were observed over western South Africa and western Namibia. The Above average and well above average precipitation were observed over the rest of the region.

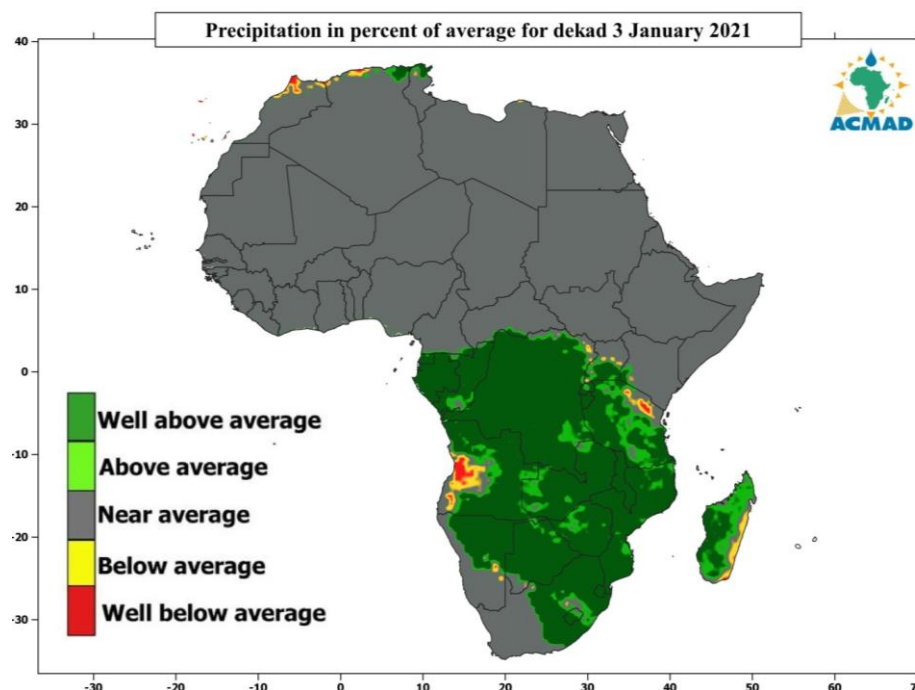


Figure 6: Precipitation in percent of average for first dekad 11th to 20 January 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

3. Outlook valid from

3.1 PRECIPITATION

During the period from the 12th to 19th February 2021, low to moderate precipitation is expected very likely over southern of Guinea gulf countries, northern DRC, southern Cameroon, Uganda, southern Kenya, western Angola, western Namibia, northern Morocco, northern Tunisia and southern of South Africa. Moderate to heavy precipitation is very likely over Gabon, Equatorial Guinea, central DRC, eastern Angola, North-eastern Namibia, northern Tanzania, Rwanda, Burundi and southern Uganda. Heavy precipitation is very likely over across most Zimbabwe, Mozambique, southern DRC, Madagascar, Zambia, Botswana, southern Tanzania and Malawi.

During the period from the 20th to 26th February 2021, low to moderate precipitation is expected over western Namibia, western Angola, northern DRC, southern Cameroon, Uganda, southern Kenya, Southern South-Africa, northern Morocco, southern of the Guinea gulf countries and southern CAR. Moderate to heavy precipitation is very likely over across most Equatorial Guinea, Gabon, eastern Angola, eastern Namibia, central and coastal parts of the DRC, Rwanda, Burundi, northern Tanzania, southern Botswana, eastern South Africa, Lesotho, Swaziland and southern Madagascar. Heavy precipitation is very likely over across most Zambia, Malawi, Mozambique, Zimbabwe, central parts Madagascar and southern DRC.

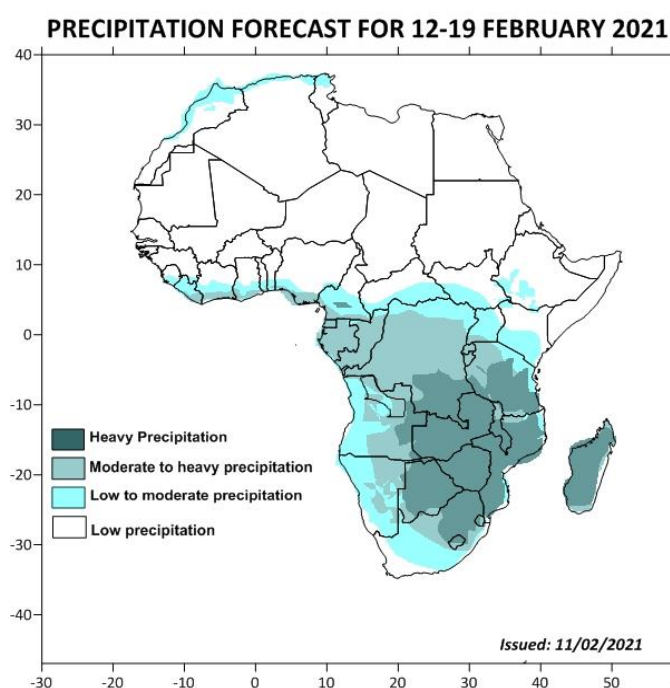


Figure 7a: Precipitation forecast from 12th to 19th February 2021 (Source: ACMAD)

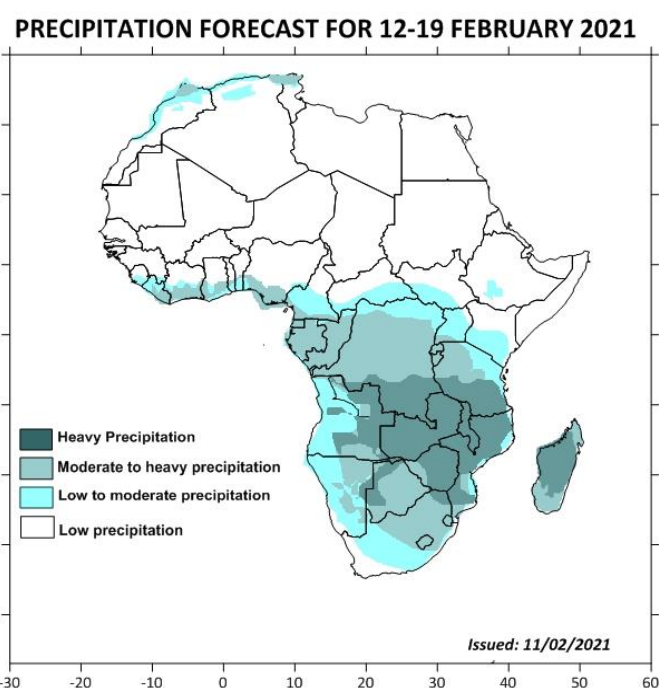


Figure 7b: Precipitation forecast from 20th to 26th February 2021. (Source: ACMAD)

3.2 Temperature

Figure 8 presents the temperature anomalies prospected for the week from the 11th to 19th February 2021. This figure shows that positive anomaly temperature is expected over across the West Africa region, northern DRC, CAR, South Sudan, Uganda, southern Namibia, southern Botswana, South-Africa, southern Chad, northern Kenya, Rwanda, south and central parts Ethiopia. The negative temperature anomaly is very likely over Gabon, Equatorial Guinea, eastern Angola, southern DRC, north-eastern Namibia, Zambia, northern Botswana, Burundi, Malawi, Tanzania, southern Congo, Lesotho, Mozambique, southern Somalia and central Madagascar.

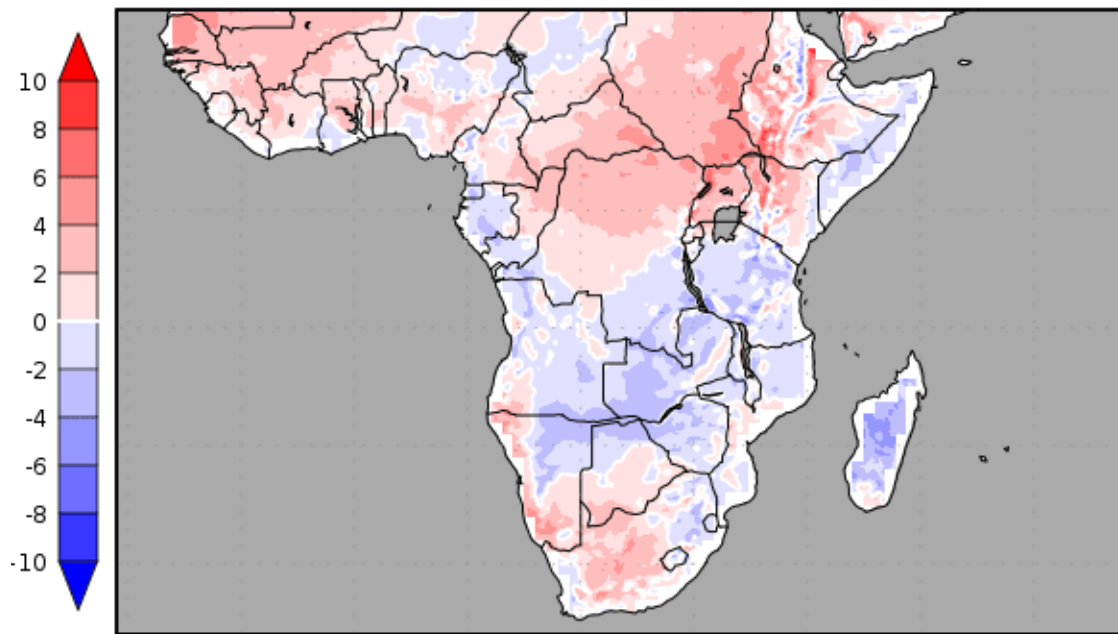


Figure 8: Temperature anomalies prospected from 11st to 18 February 2021
(Source: COLA)

3.3 Soil Moisture

Figure 9 shows soil moisture anomalies prospect for the week from 11th to 19th February. The map indicate that during this period an increase in soil moisture is expected over over Swaziland, southern Mozambique, northern Tanzanian, western Namibia, Liberia, southern Guinea, western Madagascar and eastern South Africa . The rest of the area represented in this figure could indicate dry soil moisture.

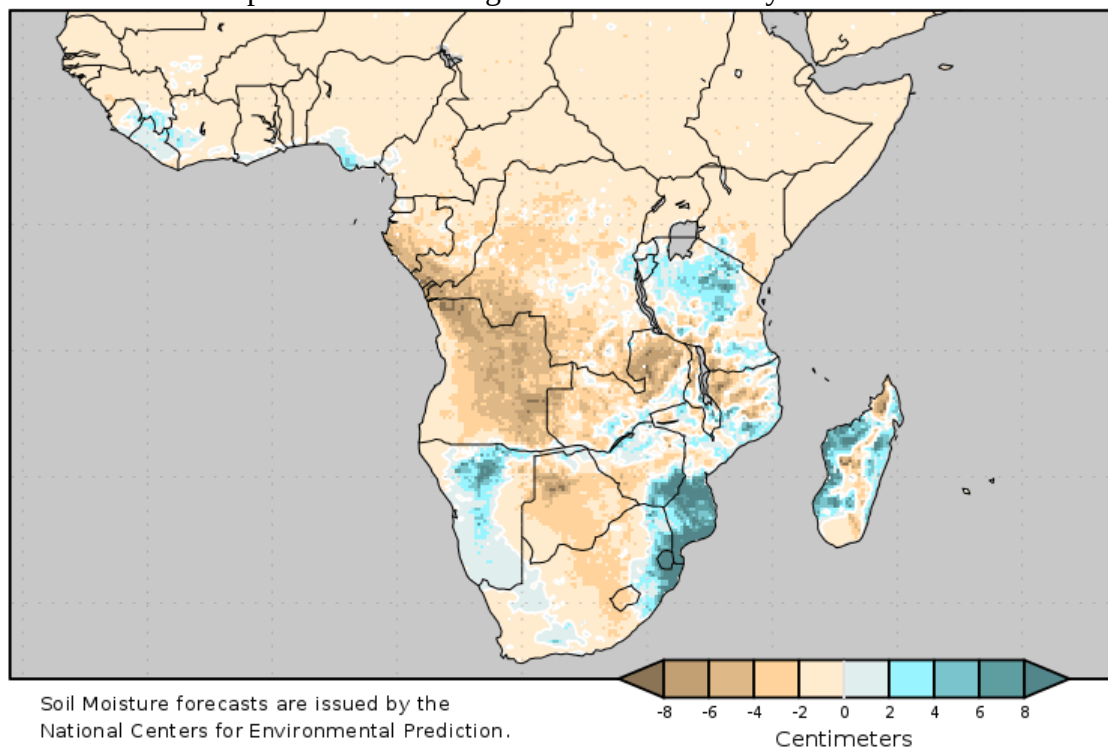


Figure 9: Soil moisture change prospected for the period 11st to 18th February 2021
(Source: COLA)