

Ten Days Climate Diagnostics Bulletin
N°04

Dekad 1, 1st to 10th February 2021

HIGHLIGHTS

During the first dekad of February 2021, above average and well above average rainfall were observed over most of the SADC region countries and Central and southeaster parts of Africa region . Below average rainfall was observed over tip of northern Morocco and Algeria, south-western Angola, pocket areas of RDC, central Gabon and eastern Namibia. As the same period, near average rainfall was observed over the rest parts of the continent.

During the period from the 15th to 21th February 2021, low to moderate precipitation is expected very likely over central rif valley of Ethiopia, norther half of Congo, southern of Guinea gulf countries, northern DRC, southern Uganda, western and central Angola, central parts of Gabon, western Namibia and north of South Africa. Moderate to heavy precipitation is very likely over Liberia, south of Gabon, Equatorial Guinea, souther DRC, most of Zambia, southeastern Angola, North-eastern Namibia, western half of Tanzania, most of Rwanda, Burundi southern Uganda and most of Madagascar. Heavy precipitation is very likely across some pocket areas of Angola, Zambia, southern Mozambic and the southeastrn Madagascar.

As the same period, the positive anomaly temperature is expected across the north-western Africa region, northern DRC, southern CAR, South Sudan, Uganda, northern Kenya, central and south-eastern Ethiopia northern and southern Namibia, southern Botswana, South-Africa, and southern Madagascar. The negative temperature anomaly is very likely over Niger, northern Nigeria, Chad, Soudan, Gabon, Equatorial Guinea, eastern Angola, central and southern DRC, north-eastern Namibia, Zambia, northern Botswana, Burundi, Malawi, Tanzania, Mozambique, Somalia Ertirea and southern margin of South Africa

During the period from the 22th to 28th February 2021, low to moderate precipitation is expected over western Namibia, western Angola, northern DRC, Uganda, southern Kenya, CRV of Ethiopia, Southern South-Africa, northern Morocco, northern Algeria, northern Tunsia, southern of the Guinea gulf countries and eastern half of Madagascar. Moderate to heavy precipitation is very likely over across soth western Angola, Central Namibie, northern Zambie, northern Botswana, northern Tanzania, north-eastern Mozambique, northern South Africa and western Madagascar. Heavy precipitation is very likely over across most Zambia, souther DRC, Malawi, central Mozambique, southern Zimbabwe, Equatorial Guinea, southern Kenya and south-western Ethiopia.

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 1027 hPa strengthened to 3hPa compared to the previous dekad and strengthened to 4hPa compared to the climatological means (1981-2010). It was located at 42°W and 32°N. It moved eastward compared to the climatology position over the North Atlantic Ocean.
- **St. Helena High** of 1022hPa weakened to 1hPa compared to the previous dekad and strengthened to 2hPa compared to the climatological mean (1981-2010). It was located at 12°W and 30°S; it was at the western to the climatological position over South Atlantic Ocean.
- **Mascarene High** of 1025hPa strengthened to 4hPa compared to the previous dekad and weakened to 4hPa compared to the climatological means (1981-2010). It was located at 85°E and 37°S, it was southwestern to the climatological position over the Indian Ocean.
- **Libyan High** of 1024 hPa strengthened to 1hPa compared to the the previous dekad and strengthened to 4hpa form climatical means (1981-2010). It was located over Libya at 16°E and 27°N. It was stable compared to the climatological position
- **Heat Low** with 1007 hPa strengthened to 1hpa compared to the previous dekad and weakened to 1hPa compared to the climatological means (1981-2010). It was located over South Sudan at 31°E and 7°N. It situated nearest to its climatological position.

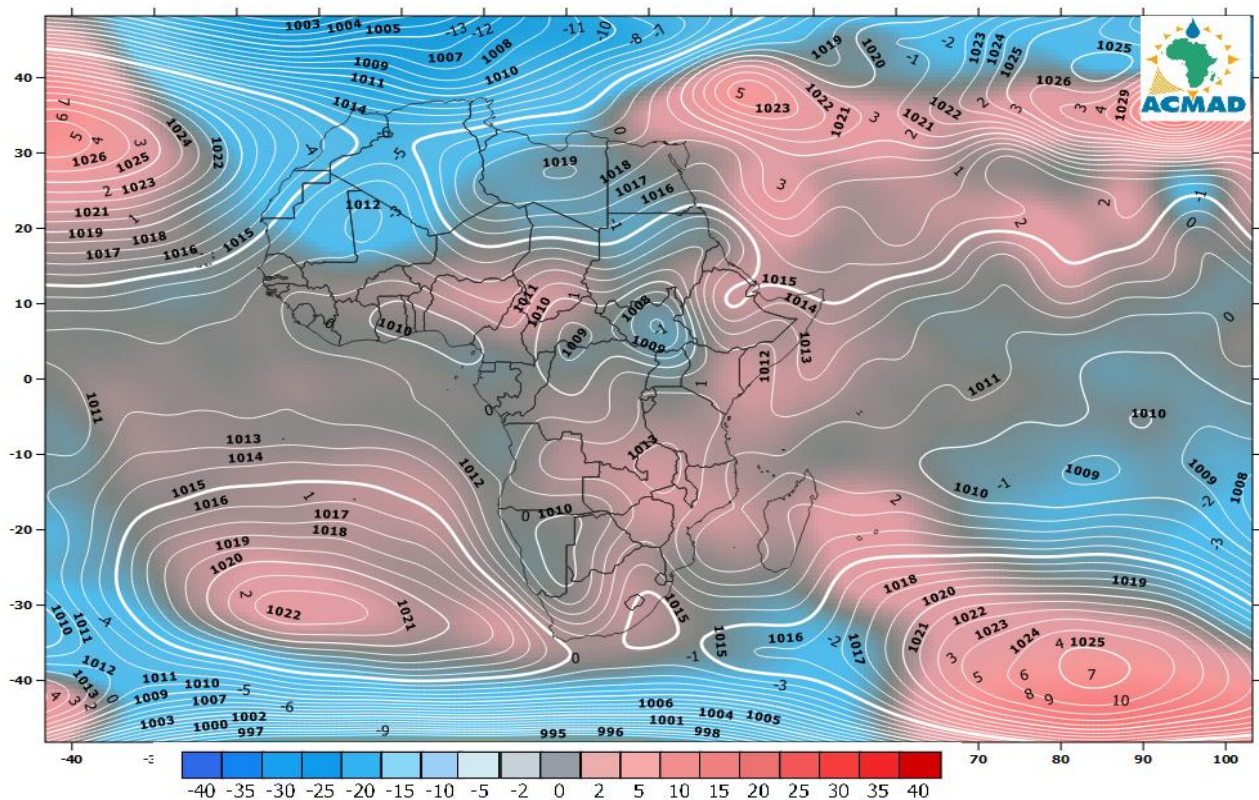


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 1st to 10th February 2021

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 Morocco, Algeria, Tunisia, costal parts of Somalia and Botswana. . 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 over northern Morocco, Algeria, Tunisia, Moritania, Senegal and Mali. The weak wind from north-eastern and eastern was observed over the rest of the continent.

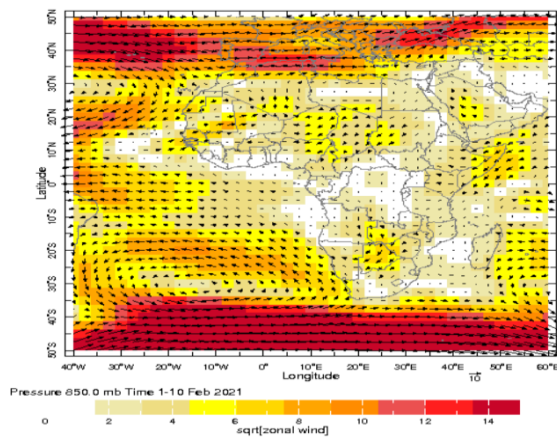


Figure 2 a: Mean wind at 850 hpa (m/s) during the period from 1st to 10th Feb 2021.
Source: NOAA/NCEP

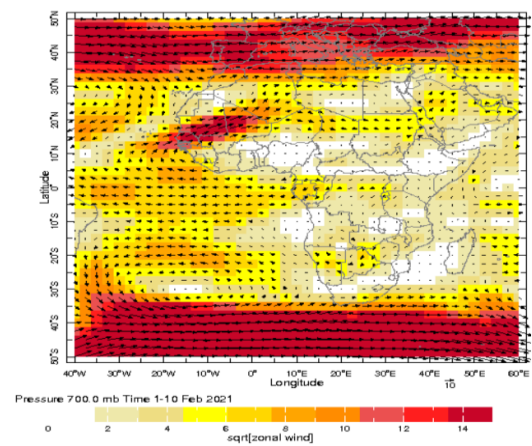


Figure 2b: Mean wind at 700 hpa (m/s) during the period from 1st to 10th Feb 2021.
Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal mean of relative humidity at 850 hPa for first dekad of February 2021 and anomalies compared to the reference period 2002-2011. Wet atmospheric conditions ($RH \geq 60\%$) were observed over the central region countries, SADC region countries, Dry air (humidity relative between 20 and 50%) was observed over the rest of continent.

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

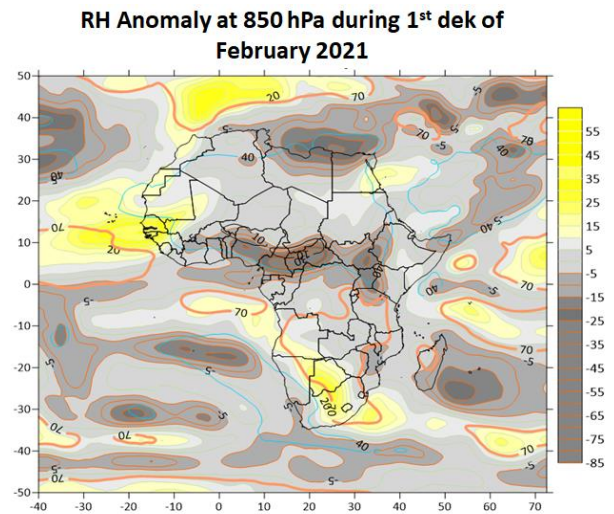
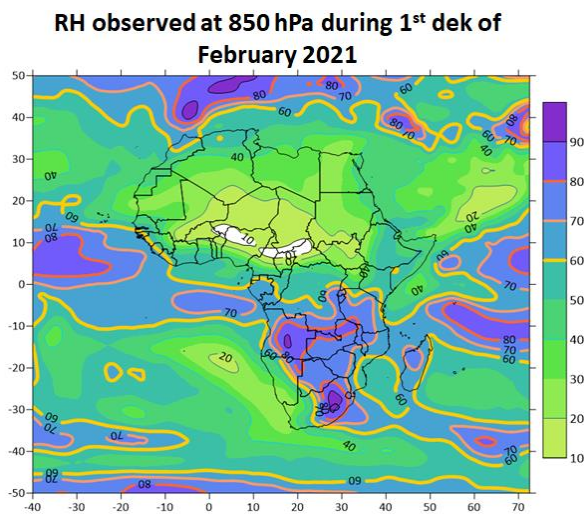


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 1st to 10th February 2021.SOURCE/. NOAA/. NCEP-CAR/. CDAS1

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 wet relative humidity with values $\geq 60\%$ at 700hPa were observed over the southwestern East Africa region Countries and western of the SADC region. Dry air (humidity relative between 20 and 50%) was observed over the rest of continent.

The relative humidity anomalies for the first dekad of February 2021 were negative over West Africa region, Libya, costal parts of Nambia, Mauritania, Madagascar and East Africa region. Strong positive relative humidity anomalies were observed over eastern Egybt, north-eastern Morocco, Algeria, Mali, eastern parts of Tanzania, North-eastern Namibia, Southern Angolo, wetern half of Botswana, Swaziland, and south Africa. The anomalies were determined based on the reference period: 2002-2011

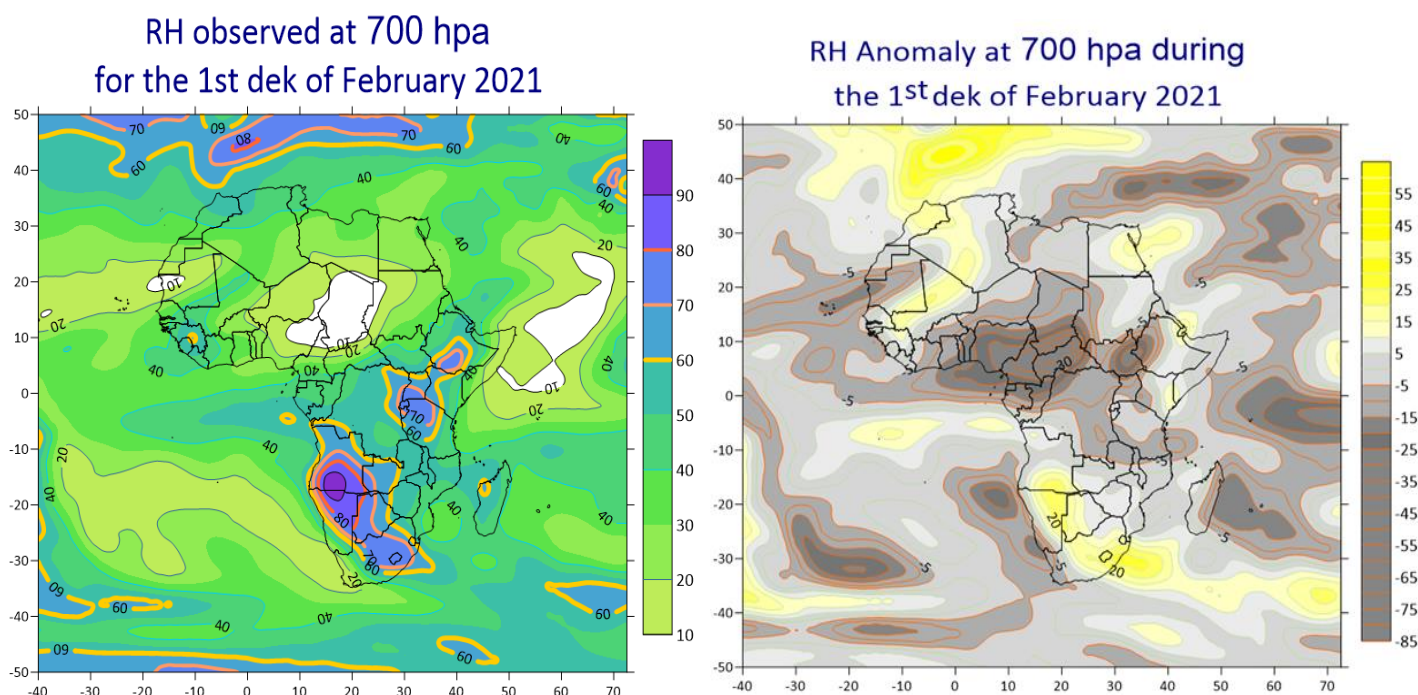


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 1st to 10th February 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the first dekad of February 2021, above average and well above average rainfall were observed over tip of northern Algeria and Tunisia, most of SADC region countries, the south-eastern portion of the continent and Madagascar. Below average rainfall was observed over northern Morocco, some pocket areas of DRC, northern Botswana, south-western Angola, central and eastern Namibia. 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 to well 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 pocket areas of DRC,. 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 eastern Uganda. The above average and well above average precipitation were observed overs southern Uganda and Tanzania .The near average average precipitation was observed over the rest of this region.
- **Southern Africa countries:** The below average precipitation was over tip of south-eastern Botswana, south-western Angola, central and eastern Namibia. The near average rainfall were observed over western South Africa, southern Botswana and south-western Namibia. The Above average and well above average precipitation were observed over the rest of the region.

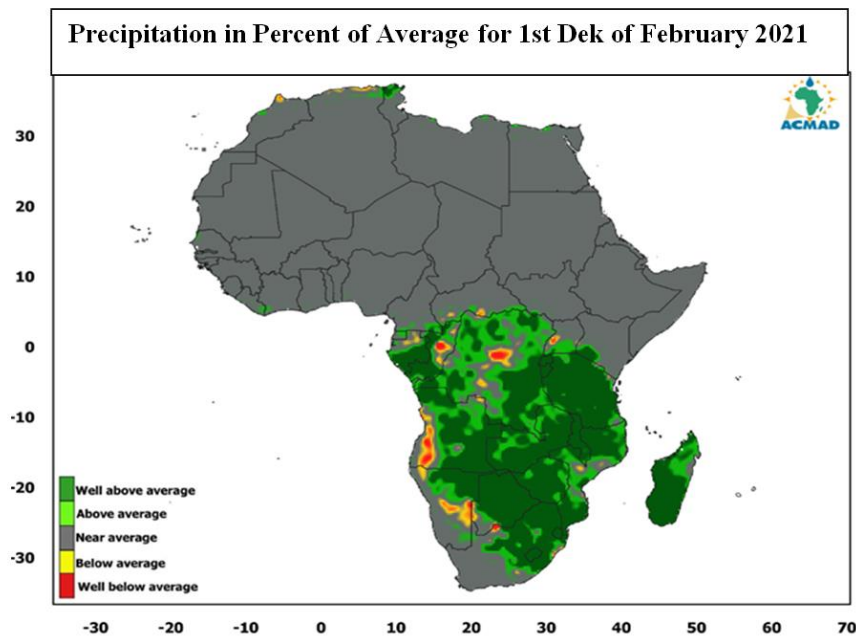


Figure 6: Precipitation in percent of average for first dekad 1st to 10 February 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

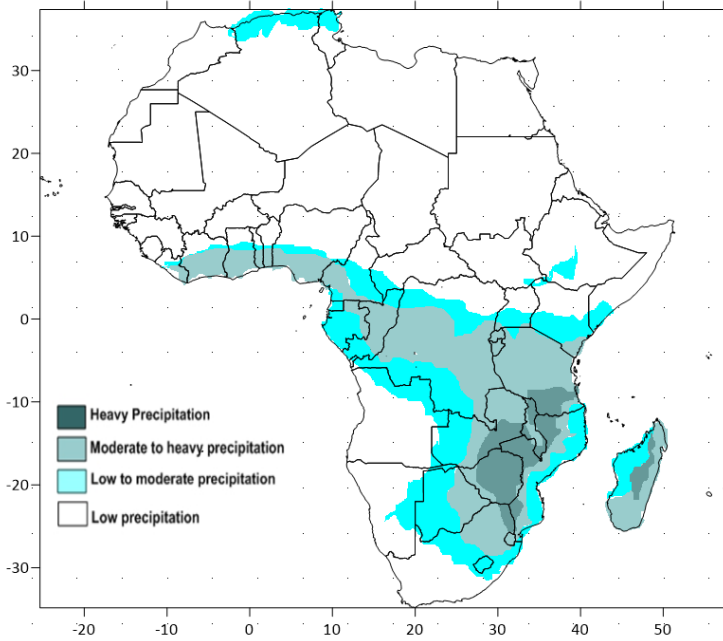
3. OUTLOOK FOR PRECIPITATION, AIR TEMPERATURE AND SOIL MOISTURE

3.1 PRECIPITATION

During the period from the 15th to 21th February 2021, low to moderate precipitation is expected very likely over northern Morocco, northern Tunisia, Equatorial Guinea, southern Cameroon, southern Uganda, southern Kenya, south-western Ethiopia, northern and southern DRC, northern Angola, western Zambia, eastern Namibia, central South Africa, eastern Mozambique and western Madagascar. Moderate to heavy precipitation is very likely over southern of Guinea gulf countries, central DRC, northern Zambia, most of Tanzania, eastern Botswana, northern South Africa and north-eastern and southern Madagascar. Heavy precipitation is very likely over across most Zimbabwe, Malawi, north-western Swaziland and central Madagascar.

During the period from the 22th to 28th February 2021, low to moderate precipitation is expected over western Namibia, western Angola, northern DRC, Uganda, southern Kenya, CRV of Ethiopia, Southern South-Africa, northern Morocco, northern Algeria, northern Tunisia, southern of the Guinea gulf countries and eastern half of Madagascar. Moderate to heavy precipitation is very likely over across south western Angola, Central Namibia, northern Zambia, northern Botswana, northern Tanzania, north-eastern Mozambique, northern South Africa and western Madagascar. Heavy precipitation is very likely over across most Zambia, southern DRC, Malawi, central Mozambique, southern Zimbabwe, Equatorial Guinea, southern Kenya and south-western Ethiopia.

Precipitation Forecast for 15-21 February 2020



Precipitation Forecast for 22-28 February 2020

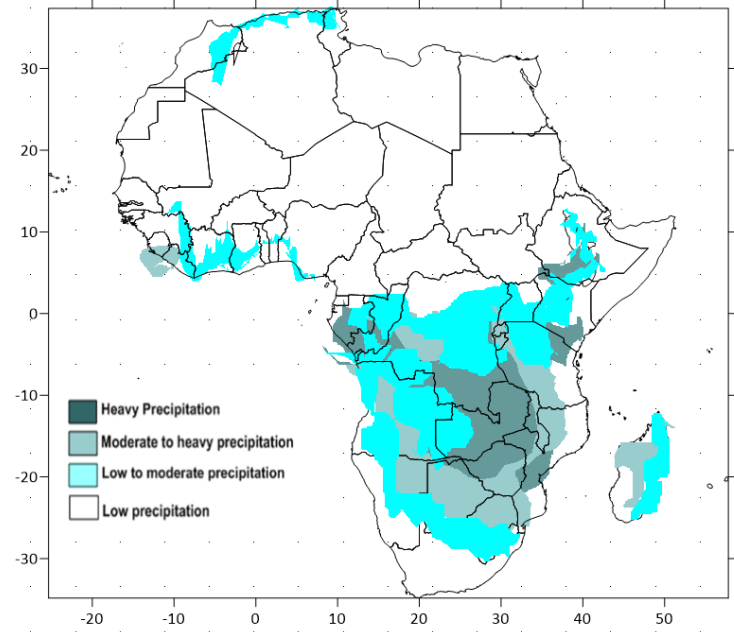


Figure 7a: Precipitation forecast from 15th to 21th February 2021 (Source: ACMAD)

Figure 7b: Precipitation forecast from 22th to 28th February 2021. (Source: ACMAD)

3.2 Temperature

Figure 8 presents the temperature anomalies prospected for the week from the 17th to 26th February 2021. This figure shows that positive anomaly temperature is expected across the north-western Africa region including Mauritania, Senegal, Mali, Guinea-Bissau, northern Ivoir, southern Benin, southern Nigeria, south-eastern Cameroun, northern DRC, southern CAR, south-western Angola, northern and southern Namibia, southern Botswana, southern Malawi, northern and north-eastern South-Africa, south-western Mozambique, southern Madagascar, South Sudan, Uganda, Rwanda, northern and central Kenya, central and south-eastern Ethiopia. The negative temperature anomaly is very likely over Niger, northern Nigeria, Chad, Soudan, Gabon, southern Equatorial Guinea, Angola, central and southern DRC, north-eastern Namibia, Zambia, northern Botswana, northern Zumbabe, Burundi, Malawi, Tanzania, Mozambique, Somalia, Ertirea and southern margin of South Africa.

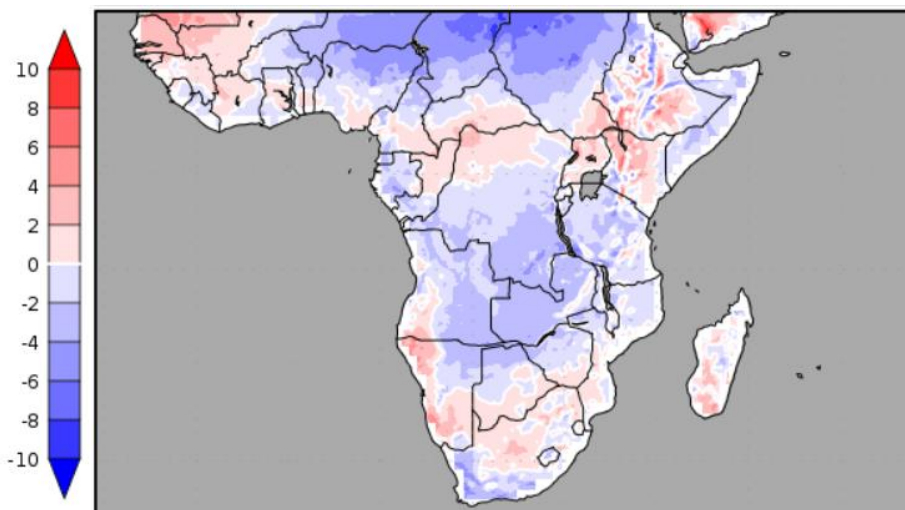
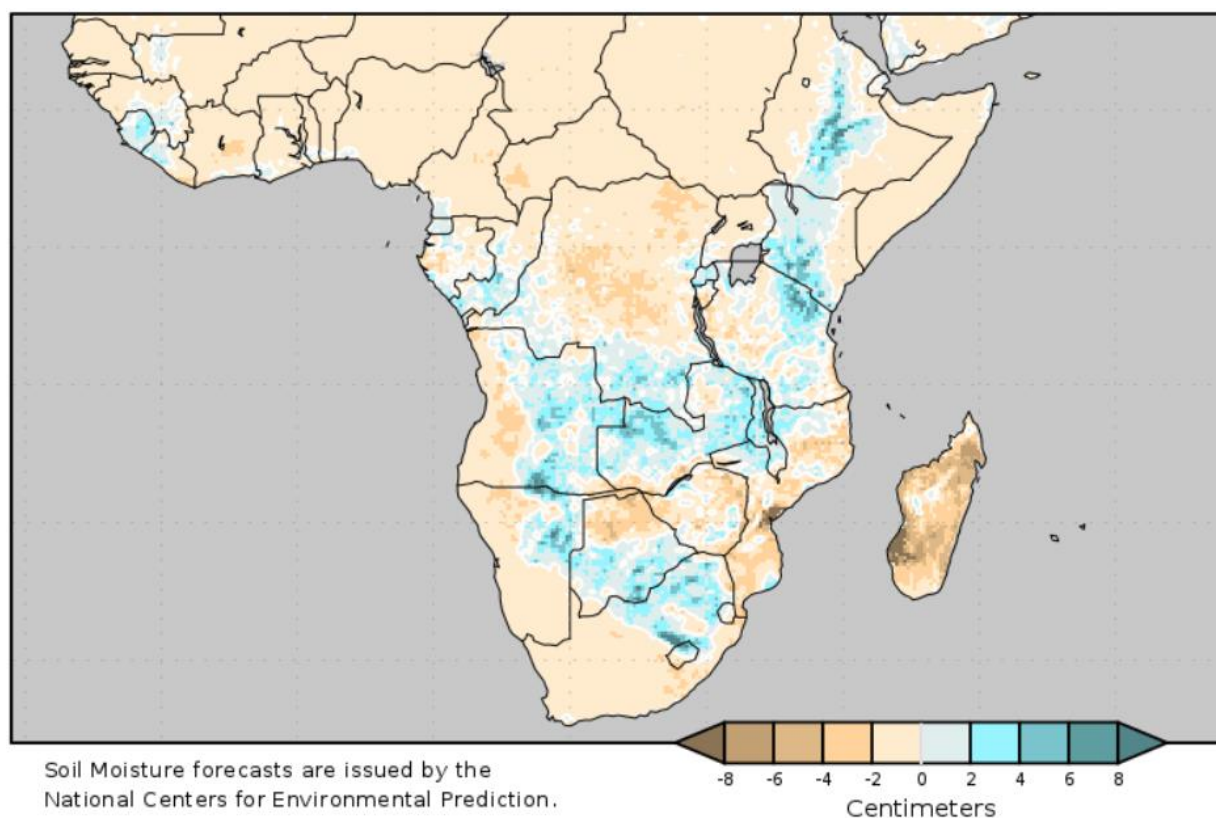


Figure 8: Temperature anomalies prospected from 17th to 26 February 2021 (Source: COLA)

3.3 Soil Moisture

Figure 9 shows soil moisture anomalies prospect for the week from 17th to 26th February 2021. The map indicate that during this period an increase in soil moisture is expected over south-western Mali, southern Guinea-Bissaw, Sera Laon, north-western Liberia, southern Gabon, western and southern DRC, eastern half of Angola, north-eastern Tanzania, Rwanda, southern Kenya, the RV of Ethiopa, most of Zambia, Malawi, eastern Namibie, northern and eastern Mozambique, southern Botswana, and northern 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 17th to 26th February 2021
(Source: COLA)*