

Ten Days Climate Diagnostics Bulletin
N°06

Dekad 3, 21th to 28th February 2021

HIGHLIGHTS

During the third dekad of February 2021, above average and well above average rainfall were observed over part of northern Africa, southern tip of Gulf of Guinea, the southern section of GHA region, part of central Africa and most of the SADAC regions. Below average rainfall was observed over central parts of Gulf of Guinea, northern section of central Africa, south-western and south-eastern marginal areas and eastern Madagascar. As the same period, near average rainfall was observed over the rest parts of the continent.

During the period from the 9th-16th of March 2021, low to moderate precipitation is very likely over northern Morocco, Algeria and Tunisia, south of Gulf of Guinea countries, northern parts of central Africa and the southern section of SADC regions. Moderate to heavy precipitation is very likely over tip of north Morocco, Liberia, south of Equatorial Guinea and Gabone, south of DRC, most of Angola, northern and north-eastern Zambia, and central Mozambique and Madagascar. Heavy precipitation is very likely across central and eastern Angola, NE Zambia, Tanzania, Malawi, NE Mozambique and northern Madagascar.

As the same period, negative temperature anomaly (cooler than average) condition is expected over the southern part of Gulf of Guinea countries, most part of Equatorial Guinea, southern half of DRC, most of Angola, Zambia, Tanzania, Somalia, most of Mozambique, Zimbabwe and Madagascar. The rest part of the continent is expected to experience positive temperature anomaly (warmer than average) conditions.

During the period from the 17th to 24th March 2021, low to moderate precipitation is expected across central DRC, southern Uganda, NE Angola and Tanzania, SW Zambia, most of Botswana, southern Mozambique, Swaziland, NE South Africa and southern half of Madagascar. Moderate to heavy precipitation is very likely over southern DRC, central part of Tanzania, most of Mozambique and the northern section of Madagascar. Heavy precipitation is very likely over NE Zambia, northern Malawi, tip of SE Tanzania, Rwanda and Burundi.

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 1025 hPa weakend to 1hPa compared to the previous dekad and strengthened to 3hPa compared to the climatological means (1981-2010). It was located at -26°E and 30°N. It moved westward compared to the climatology position over the North Atlantic Ocean.
- **St. Helena High** of 1025 hPa weakend to 1hPa compared to the previous dekad and strengthened to 6 hPa compared to the climatological mean (1981-2010). It was located at 4°W and 36°S. it was at the north south-eastern to the climatological position over South Atlantic Ocean.
- **Mascarene High** of 1020 hPa weakend to 5hPa compared to the previous dekad, but it shows no significant change compared to the climatological means (1981-2010). It was located at 66°E and 40°S, it moved westward form the climatological position over the Indian Ocean.
- **Heat Low** with 1006 hPa strengthened to 1 hpa compared to the previous dekad and weakend to 1hPa from the climatological means (1981-2010). It was located over South Sudan at 30°E and 7°N. It shifted its position to the north compared to its climatological positions.

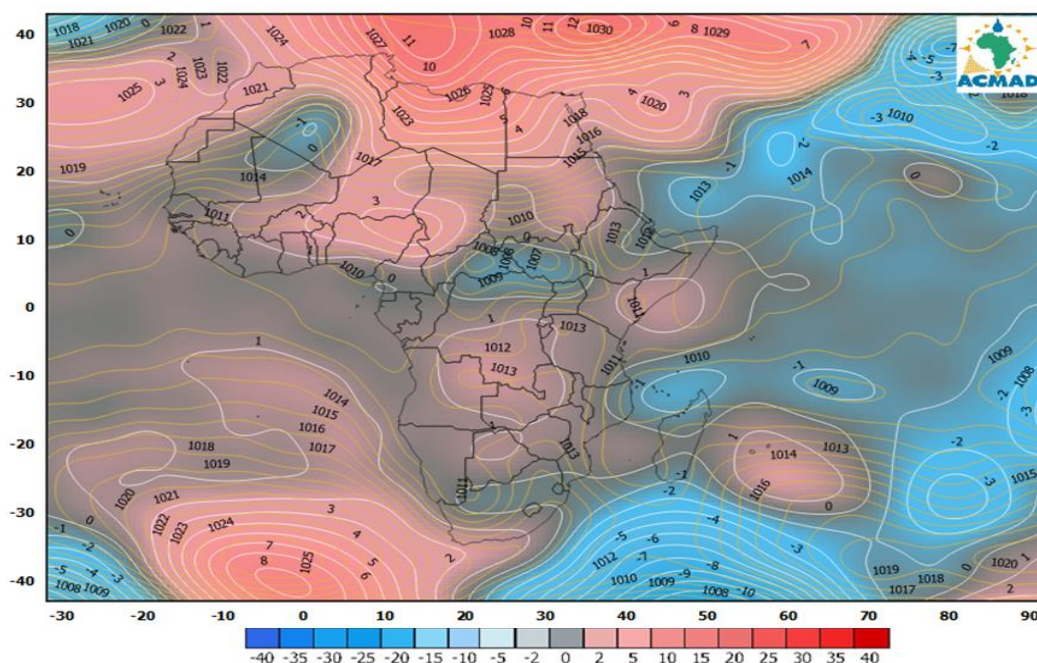


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 21st to 28th February 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

In figure 2, the left pannel shows the average wind velocity during the third dekad of February at 850 hPa atmospheric level. As depicted in the map, strong north-easterlies were observed over over Algeria, Tunisia, Libya, Egypt, Sudan, Tchad, Cameroun, Niger, Nigeria, Somalia, Kenya and southern Ethiopia. While moderate westerlies dominated over Morocco. The weak south-easterlies were observed over Mozambique and Botswana.

The right pannel of figure 2 shows the observed mean dekadal wind velocity at 700 hPa. The figure indicates a moderate to strong westerly wind over Mauritania, Mali, Niger, Nigeria, Tchad, Egypt and

Sudan. While moderate easterlies were observed over Somalia, Ethiopia, Uganda, DRC and Equatorial Guinea. Both weak easterlies and westerlies were observed over the rest of the continent.

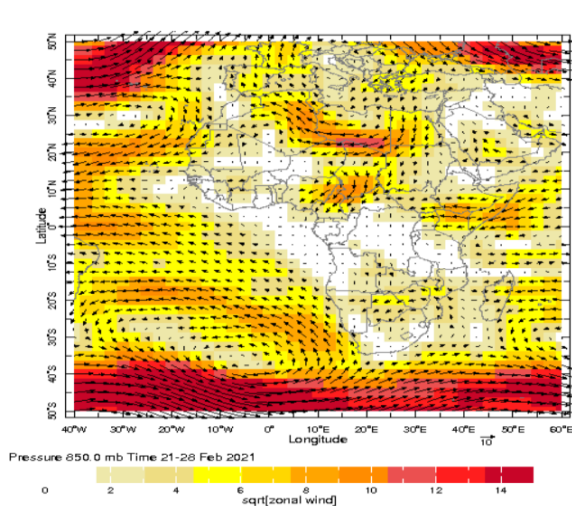


Figure 2: Mean wind at 850 hpa (m/s) during the period from 21th to 28th Feb 2021.
Source: NOAA/NCEP

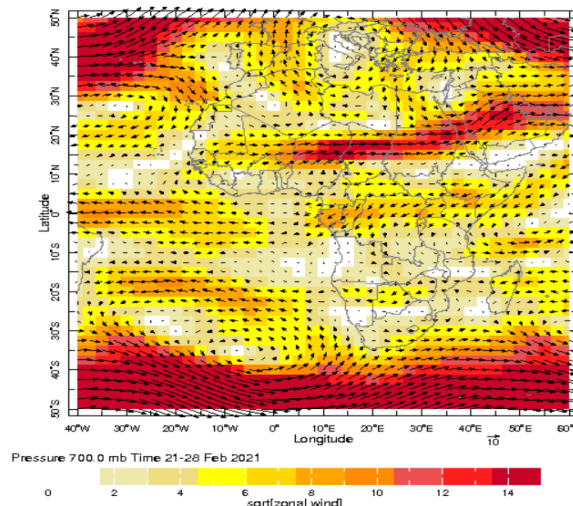


Figure 2: Mean wind at 700 hpa (m/s) during the period from 21th to 28th Feb 2021.
Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal relative humidity anomalies for the third dekad of February 2021 at 850 hPa, compared to the reference period 2002-2011. Negative relative humidity anomalies were observed over Alergia, Tunisia, Benin, Nigeria, Cameroun, CAR, northern DRC, south Sudan, north-west Ethiopia, Uganda, south Namibie, and eastern Madagascar. The anomalies were determined based on the reference period: 2002-2011.

RH observed at 850 hPa during 3rd dek of February 2021

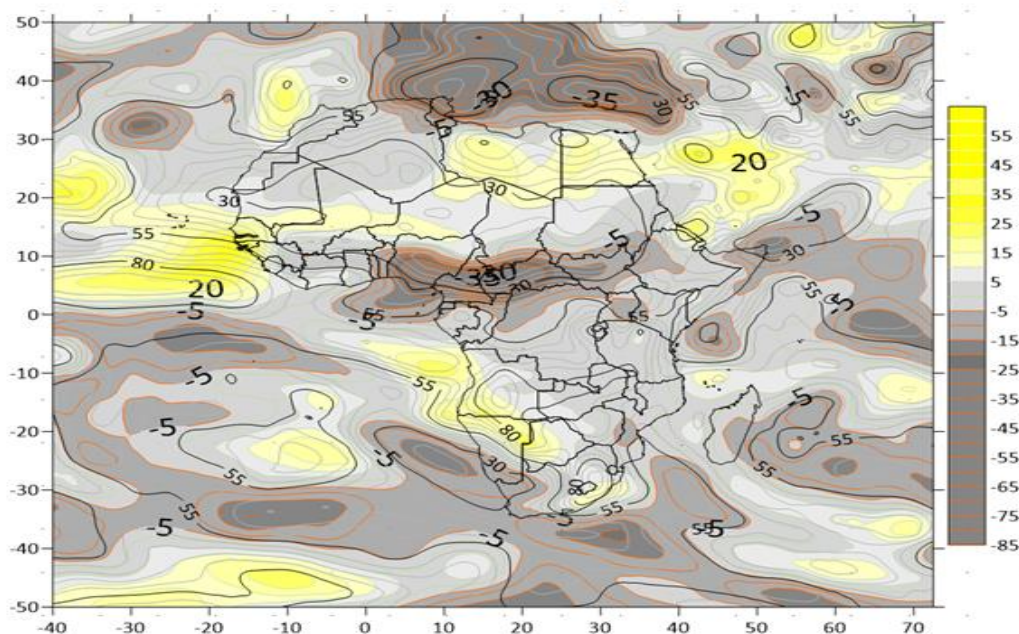


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 21th to 28th February 2021.SOURCE/. NOAA/. NCEP-CAR/. CDAS1

1.2.4 Relative Humidity at 700hPa

Figures 5 presents the dekadal relative humidity anomalies for the third dekad of February 2021 at 700 hPa, compared to the reference period 2002-2011. Negative relative humidity anomalies were observed over Mali, north-eastern Algeria, Tunisia, Libiya, Egypt, Ertirea, south Sudan, Kemya, somaliia, southern Tchad, Nigeria, Cameroun, CRA, Equatorial Guinea, Gabone and South Africa.

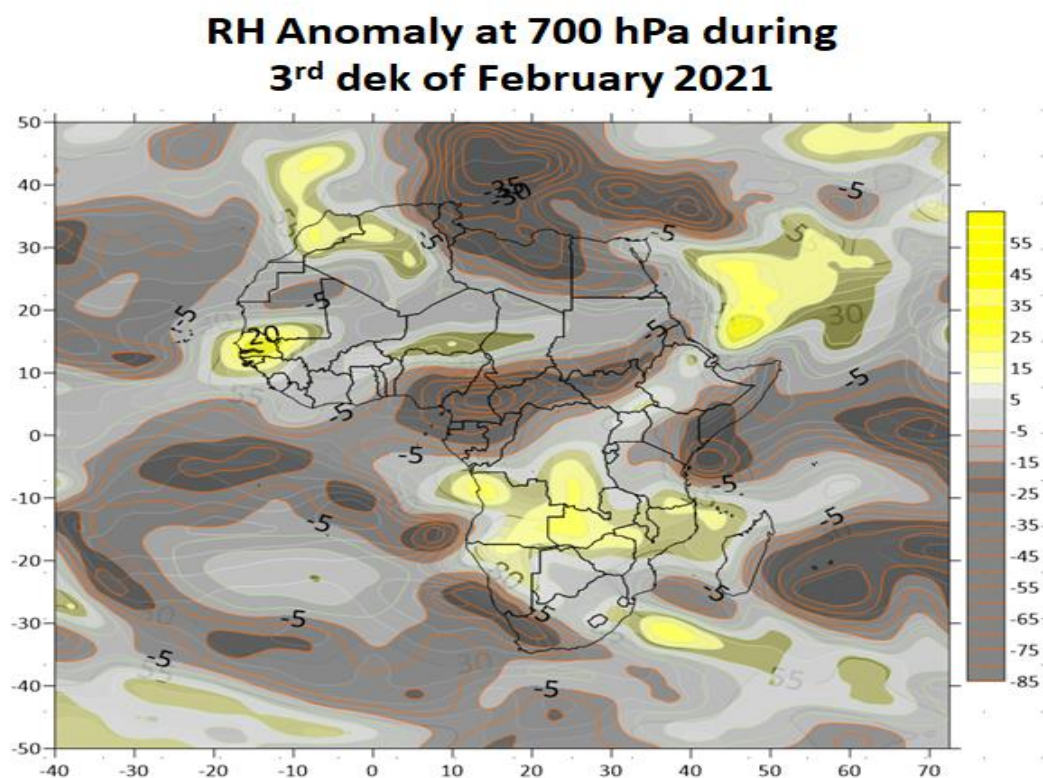


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21th to 28th February 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the third dekad of February 2021, above average and well above average rainfall were observed over part of northern Africa, southern tip of Gulf of Guinea, the southern section of GHA region, part of central Africa and most of the SADAC regions. Below average rainfall was observed over central parts of Gulf of Guinea, northern section of central Africa, south-western and south-eastern marginal areas and eastern Madagascar. As the same period, near average rainfall was observed over the rest parts of the continent.

Details:

- **North Africa:** Northern tip of Morocco, Algeria and Tunisia received above to well above average rainfall. The rest of the region experienced near average rainfall.
- **The Sahel countries:** Most of the region, except some pocket areas, received near average rainfall.
- **Gulf of Guinea countries:** The southern portion of the region experienced above average and well above average precipitations while the rest portion of the region received near to below average rainfall.
- **Central Africa countries:** Near average rainfall was observed over Tchad, part of DRC, part of CAR and northern Cameroon. Below average rainfall to well below average rainfall were observed over south-eastern Cameroun, south of CAR, and northern DRC. The above average and well above average precipitations was observed over the rest parts of the region.
- **East Africa countries:** The below average precipitation was observed over southern marginal parts South Sudan, south-west tip of Ethiopia and Uganda. The above average and well above average precipitation were observed overs Rwanda, Burundi, south-western

Kenya, much of Tanzania and the southern high land of Ethiopia. The near average average precipitation was observed over the rest of this region.

- **Southern Africa countries:** The below average precipitation was observed over north-western part of Gabon, north-eastern and central of Namibia, eastern South Africa, Swaziland, eastern and south-eastern Mozambique and eastern Madagascar. Near average precipitation was observed southern portion of Namibia, the southern half of South Africa, northern and southern tip of Botswana. The rest part of the region experienced above to well above average precipitations.

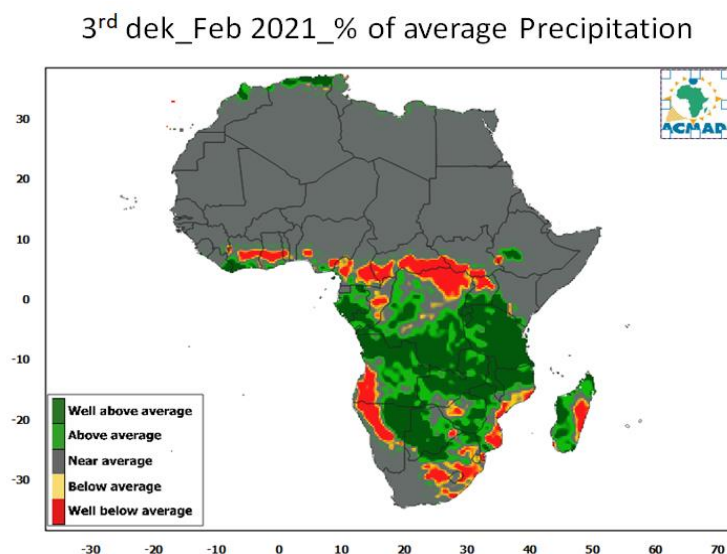


Figure 6: Precipitation in percent of average for third dekad of February 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

2.2. Impact of the previous dekad

In north Africa subregion, the received above average to well above average rainfall over the marginal land of the subregion are generally favourable to satisfy the daily water demand of the crop. Wheat crops which is normally planted during early of last November are found at vegetative to reproductive stage in the region so the received rainfall during the last ten-days can sustain the development of the crops.

In west Africa (Sudan Shael zone), near average to well below average precipitations are generally favourable for post harvest activities. However, there is concern in the subregions dry condition are impacting on the availability of pasture and drinking water .

In west Africa (Guinea Gulf zone), the observed well below average precipitation at the central of the subregion are negatively impacting early time land preparation for planting during March.

In Central Africa, the received near average to well above average precipitation in the northern section of the subregion are generally favourable for early time land preparation and planting of crops from early of March. However, there are concerns of dry condition over southern section of the subregion where crops are at vegetative and grainfilling stages.

In east Africa region, the observed well above average rainfall over the south-western part and near average rainfall across the second season crop growing areas are generally favourable for land preparation and planting of second season crops. The near average rainfall across the south of the subregion might favour to start land preparation. The observed well below average rainfall over southern of South Sudan and Uganda may delay the planting time.

In the Southern Africa region, crops are found at the stage of vegetative to maturity. Therefore, the observed above to well above average precipitation are generally favourable toward satisfying the daily water requirement of the crops. However, there is also a concern in the subregions excess wet condition may disrupt harvest and post harvest activities where crops are fully matured.

3. OUTLOOK FOR PRECIPITATION, AIR TEMPERATURE AND SOIL MOISTURE

3.1 PRECIPITATION

During the period from 9th to 16th of March 2021, low to moderate precipitation is very likely over northern Morocco, Algeria and Tunisia, south of Gulf of Guinea countries, northern parts of central Africa and the southern section of SADC regions. Moderate to heavy precipitation is very likely over tip of north Morocco, Liberia, south of Equatorial Guinea and Gabone, south of DRC, most of Angola, northern and north-eastern Zambia, and central Mozambique and Madagascar. Heavy precipitation is very likely across central and eastern Angola, NE Zambia, Tanzania, Malawi, NE Mozambique and northern Madagascar.

During the period from 17th to 24th March 2021, low to moderate precipitation is expected across central DRC, southern Ouganda, NE Angola and Tanzania, SW Zambia, most of Botswana, southern Mozambique, Swaziland, NE South Africa and southern half of Madagascar. Moderate to heavy precipitation is very likely over southern DRC, central part of Tanzania, most of Mozambique and the northern section of Madagascar. Heavy precipitation is very likely over NE Zambia, northern Malawi, tip of SE Tanzania, Rwanda and Burundi.

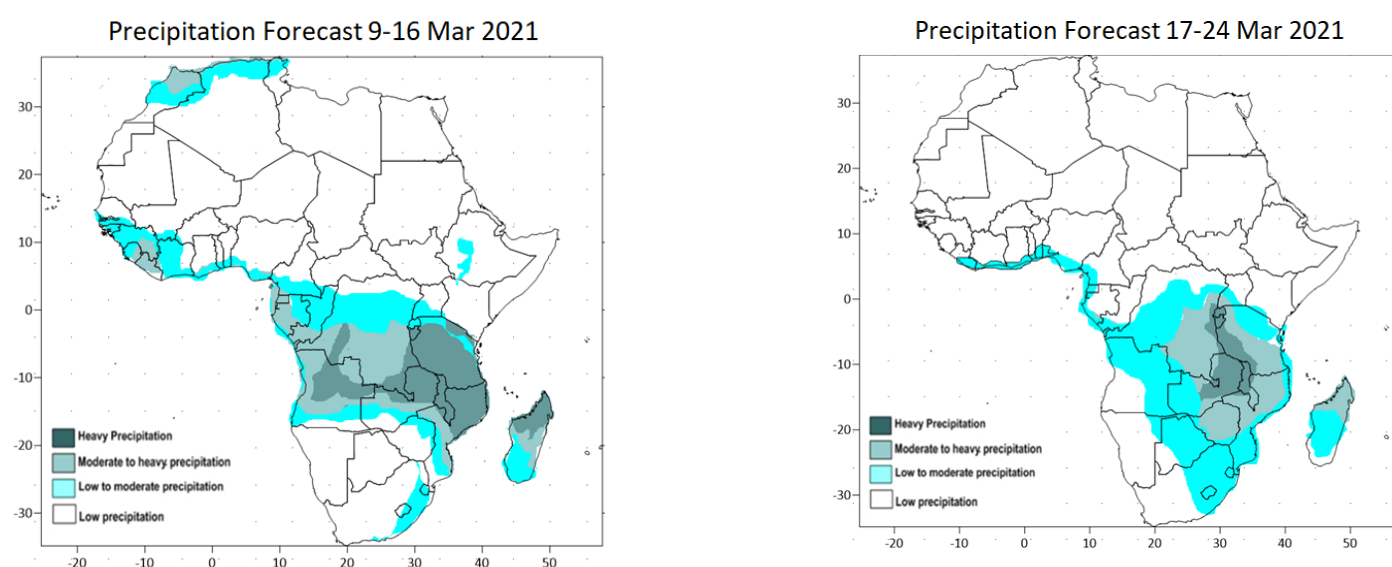


Figure 7: Precipitation forecast for week one (left pannel) and week two (right pannel) (Source: ACMAD)

3.1.1. Impact outlook for the coming two weeks on the sectoral activities and advisories

As indicated in the weekly weather forecast, during the week from 9 – 16 March 2021,(week 1) and from 17 -24 March 2021 (week 2) most parts of the central and some parts of the northern and western subregions are expected to receive low to heavy preceipitaion. The impact summary and subsequent advisory are provided in table 1 below.

3.2 Temperature

Figure 8 presents the temperature anomalies prospected for the week from 4-12 March 2021. As shown in the map, negative temperature anomaly (cooler than average) condition is expected over the southern part of Gulf of Guinea countries, most part of Equatorial Guinea, southern half of DRC, most of Angola, Zambia, Tanzania, Somalia, most of Mozambique, Zimbabwe and Madagascar. The rest part of the continent is expected to experience positive temperature anomaly (warmer than average) conditions.

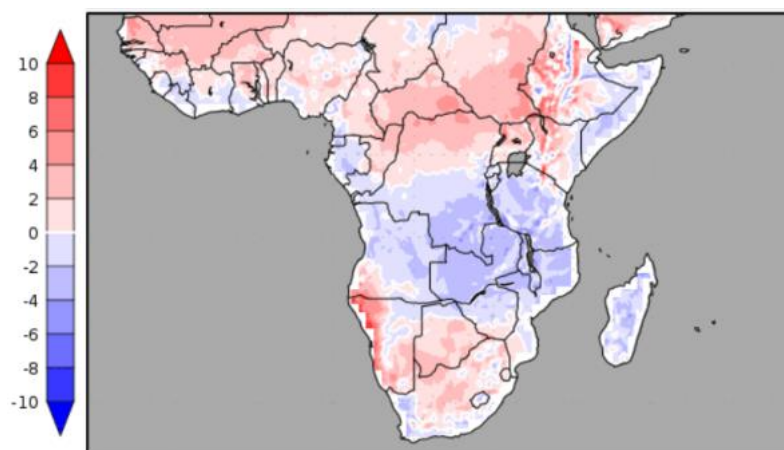


Figure 8: Temperature anomalies prospected from 4-12 March 2021
(Source: COLA)

3.3 Soil Moisture

Figure 9 shows soil moisture anomalies prospect for the week from 4-12 March 2021. As depicted in the map, increase in soil moisture (positive value) is expected over Gulf of Guinea countries, southern tip of Nigeria and Cameroun, guinea, eastern section of Gabon, western and eastern Angola, northern Zambia, Tanzania, Rwanda, Brandi, northern Mozambique, Swaziland, north-eastern of SA and northern half of Madagascar. The rest part of the continent is expected to experience dry soil moisture.

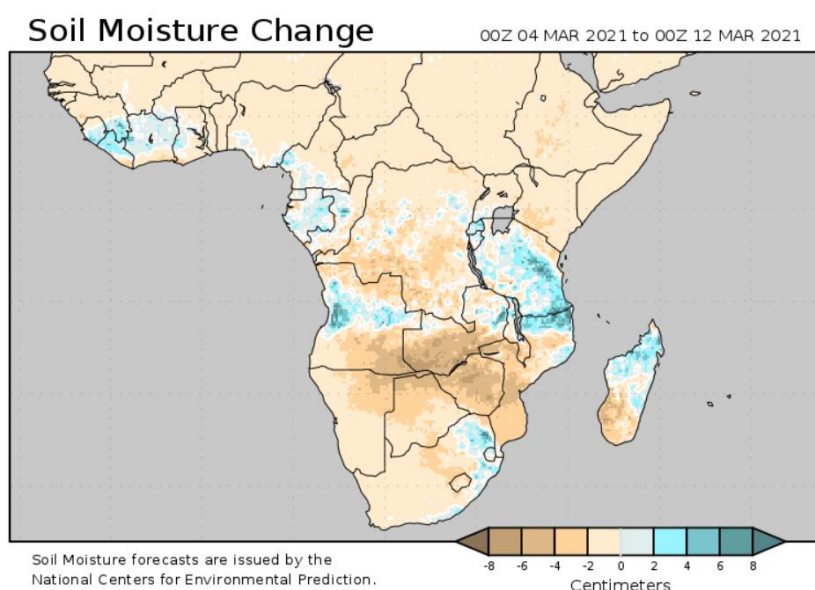


Figure 9: Soil moisture change prospected for the period 4-12 March 20212021
(Source: COLA)