African Centre of Meteorological Applications for Development
Centre Africain pour les Applications de la Météorologie au Développement

Ten Days Climate Diagnostics Bulletin N°11

Dekad 3, 21th to 30th April 2021

HIGHLIGHTS

During the third dekad of April 2021, above average and well above average rainfall were observed over northern fring areas of north Africa, most parts of the Gulf of Guinean countries, most part of central Africa, most of east Africa sub-region south-west costal area of South Africa and northern tip of Madagascare. Below average rainfall was observed over central Guinea-Bissau, pocket of Burkina Faso and Nigeria, south of Ethiopia, most of Kenya, northeastern Tanzania and southeastern Madagascare. Near average rainfall was observed over the rest of the continent.

During the period from 5th ot 11th May 2021, low to moderate precipitation is very likely over most of the east margin of Ethiopia, parts of Somalia, east coast of South Africa, and north-east of Madagascar. Moderate to heavy rainfall are very likely over northern Coastal area of Morocco, Algeria, Tunisia, and Egypt, central Nigeria, south of Cameroon, south half of Cameroon, most part of Congo, Gabon, south of CAR, northern of DRC, part of South Sudan, Uganda, Ruwanda and Burundi. Heave precipitation is mainly anticipated over western half of Ethiopia, central Kenya, western Angola, Gabon, the sothern coast of Nigeria, Benin, Togo, Laberia, and Siera Leon.

Figure 8 presents the temperature anomalies prospect for the week from 04-12 May 2021. As shown in the Figure, negative temperature anomaly (cooler than average) condition is expected over the south parts of Gulf of Guinea, most of southern half of Cameroon, most of CAR, south Sudan, part of Ethiopia, part of Somalia, Eq.Guinea, Congo, DRC, Uganda, Tanzania, north of Zambia, northwest of Angola, northern half of Mozanbique, and Madagascar. Areas expected to experience positive temperature anomaly (warmer than average) conditions are the Sahelian zone and places in the SADC region. The rest of the continent is expected to experience normal temperature anomaly (no change) conditions.

During the period from 12th to 18th May 2021, heavy precipitation is expected across central parts of Ethiopia, eastern parts of DRC, north of Tanzania, north of Angola, Part of Gabon, southwest of CRA, north of Cameroon, part of Nigeria, south half of Benin, most of Togo and Ivry Coast. Low to moderate precipitation is likely over south east of Ethiopia, northeast of Kenya, south of Somalia, eastern fring of South Africa and north east coast of Madagascar.

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:** The pressure systems at the Azores high recorded 1022 hPa, strengthening by 1hPa compared to the previous dekad. However, its magnitude remained same compared to its climatological mean (1981-2010). It was located at 42°W and 30°N. It moved south-westward compared to the climatology position over the North Atlantic Ocean.
- **St. Helena High**: The pressure systems at the St. Helena High high recorded 1020 hPa, weakend by 2 hPa compared to the previous dekad and remaind with same magnitude compared to its climatological mean (1981-2010). It was located at 2°W and 33°S. There is significan shift from its climatological position over the South Atlantic Ocean.
- **Mascarene High** The pressure systems at the Mascarene high recorded 1027 hPa, weakend by 1 hPa compared to the previous dekad whiles it weakend by 5 hPa compared to its climatological mean (1981-2010). It was located at 58°E and 35°S and it made a slight shift toward the west compared to the climatological position over the Indian Ocean.
- **Heat Low:** The low pressure at Sudan, recorded 1006 hPa, was nither strengthening nor weakening compared to the previous dekad and it remaind at same magnitude and position compared to its climatological mean (1981-2010). It was located at 31°E and 16°S.

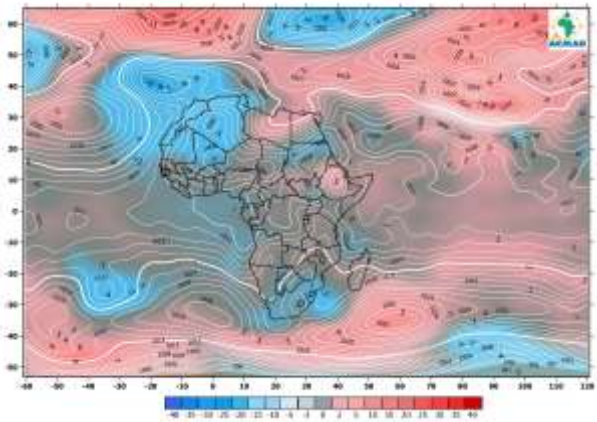

Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 21th to 30th April 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

In Figure 2, the left pannel shows the average wind velocity during the third dekad of April at 850 hPa atmospheric level. Strong to moderate north-easterlies winds were prevailed over Egypt, Libya. Whilist, strong to moderate south easterlies have dominated across the south-west Ethiopia, north of Kenya, Tanzania, south of DRC, parts of Angola, north of Zambia, and north of Madagascare.

The right pannel in figure 2 shows the observed mean dekadal wind velocity at 700 hPa. The figure indicates a moderate to strong north westerly wind were observed over most of Mauritana, Morocco, north of Mali, Most of Algeria, Tunisia, north of Libiya and Egypt whilist south westerlies were observed across southern Namibia, and south Africa. Moderate to stronge north and south easterlies prevailed across south of Libiya, north of DRC, Tanzania, Ruwanda, Burundi, Cameroon, Nigeria, Benini, Togo, Ivori Coast, and Madagascar. The weak to moderate wind were observed over the rest of the continent.

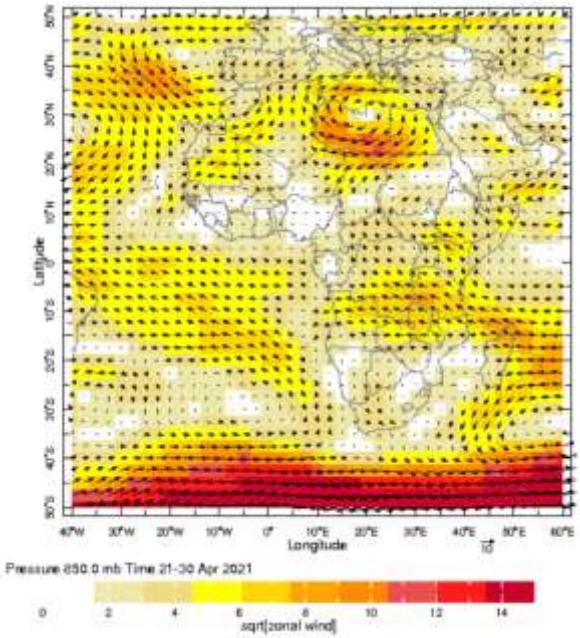

Figure 2: Mean wind at 850 hpa (m/s) during the period from 21th to 30th April 2021. Source: NOAA/NCEP

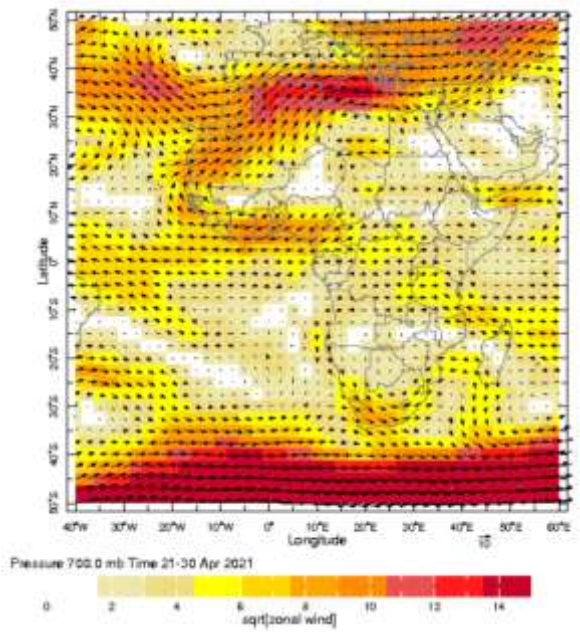

Figure 2: Mean wind at 700 hpa (m/s) during the period from 21th to 30th April 2021. Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal relative humidity anomalies for the third dekad of April 2021 at 850 hPa to the reference period 2002-2011. Negative relative humidity anomalies were observed over the northern fring of Algeria, Libiya and Egypt, southern DRC, Angola, Zambia, Mozambique, and northern South Africa. Positve RH (Indicating moist condition) was observed over the rest most parts of the continent was subjected under normal relative humidity. The anomalies were determined based on the reference period: 2002-2011.

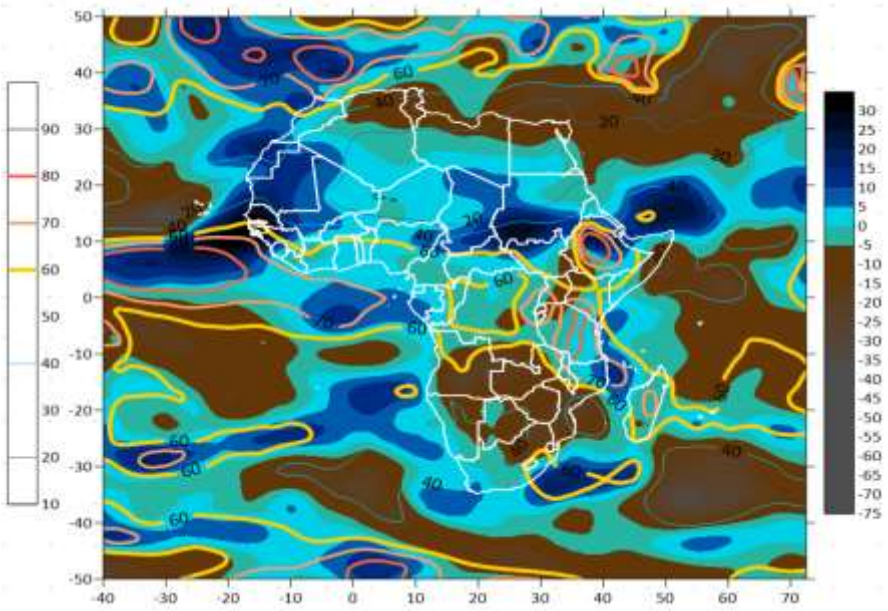

Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 21th to 30th April 2021.SOURCE/. NOAA/. NCEP-CAR/. CDAS1

1.2.4 Relative Humidity at 700hPa

Figures 5 presents the dekadal relative humidity anomalies for the third dekad of April 2021 at 700 hPa to the reference period 2002-2011. Negative relative humidity anomalies were observed over central Africa, eastern Cameroon, southern Ethiopia, Kenya, Somalia, northern Tanzania, north of Zambia, southern Botswana and northern Africa. The rest most parts of the continent was subjected under positive relative humidity. The anomalies were determined based on the reference period: 2002-2011.

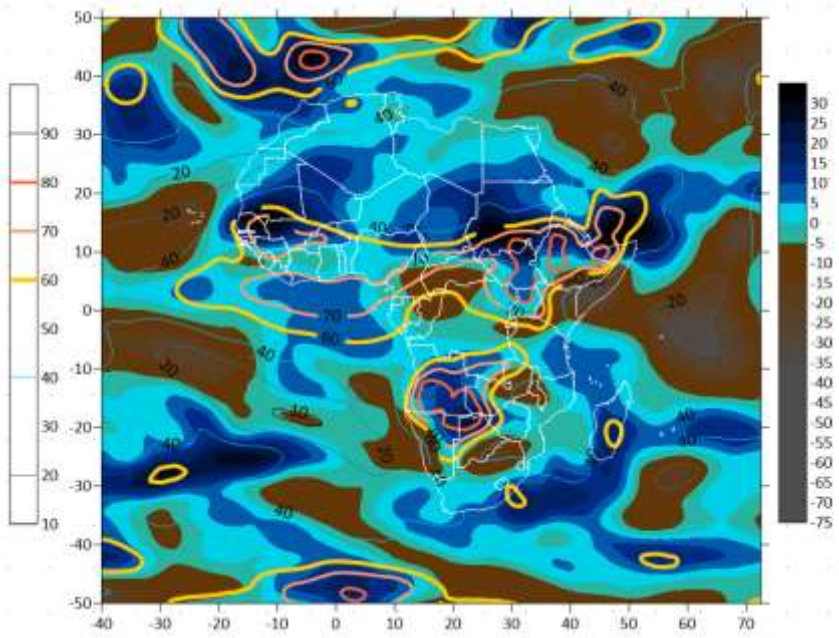

Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21th to 30th April 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the third dekad of April 2021, above average and well above average rainfall were observed over northern fring areas of north Africa, most parts of the Gulf of Guinean countries, most part of central Africa, most of east Africa sub-region south-west costal area of South Africa and northern tip of Madagascare. Below average rainfall was observed over central Guinea-Bissau, pocket of Burkina Faso and Nigeria, south of Ethiopia, most of Kenya, northeastern Tanzania and southeastern Madagascare. Near average rainfall was observed over the rest of the continent.

Details:

- North Africa: north-west cost of Morcco, frings area of north Algeria and Tunisia received above average rainfall, while below to well below average precipitation was observed in some pockets areas of Algeria and Tunisia. The rest of the region experienced near average rainfall.
- **The Sahel countries:** Most of the sub-region received near average rainfall.
- **Gulf of Guinea countries**: except some pocket places, most of the sub region experienced above to well-above average precipitations.
- **Central Africa countries**: Above average to well above average rainfall was observed over most of DRC, south of CAR and southern half of Cameroon. Near average rainfall was observed over the rest of the sub-region.

- **East Africa countries:** Above to well above average rainfall was recorded over most of east Africa except south of Ethiopia and most of Kenya. The near average precipitation was observed over the Eritria and central parts of Ethiopia.
- **Southern Africa countries:** Above to well above average precipitation was observed over few places in northern Angola, southern Tanzania, southeast coast of South Africa. The rest of the region experienced near average average precipitations.

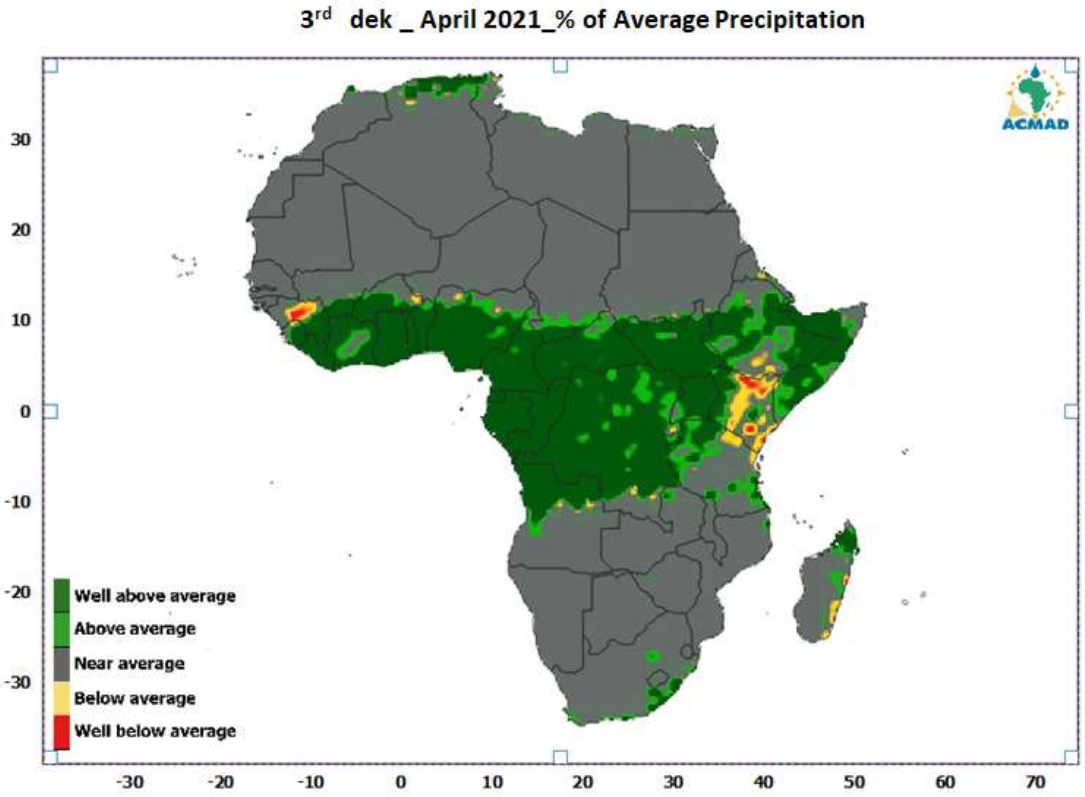

Figure 6: *Precipitation in percent of average for third dekad of April 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)*

3. OUTLOOK FOR PRECIPITATION, AIR TEMPERATURE AND SOIL MOISTURE

3.1 PRECIPITATION

During the period from 5th ot 11th May 2021, low to moderate precipitation is very likely over most of the east margin of Ethiopia, parts of Somalia, east coast of South Africa, and north-east of Madagascar. Moderate to heavy rainfall are very likely over northern Coastal area of Morocco, Algeria, Tunisia, and Egypt, central Nigeria, south of Cameroon, south half of Cameroon, most part of Congo, Gabon, south of CAR, northern of DRC, part of South Sudan, Uganda, Ruwanda and Burundi. Heave precipitation is mainly anticipated over western half of Ethiopia, central Kenya, western Angola, Gabon, the sothern coast of Nigeria, Benin, Togo, Laberia, and Siera Leon.

During the period from 12th to 18th May 2021, heavy precipitation is expected across central parts of Ethiopia, eastern parts of DRC, north of Tanzania, north of Angola, Part of Gabon, southwest of CRA, north of Cameroon, part of Nigeria, south half of Benin, most of Togo and Ivry Coast. Low to moderate precipitation is likely over south east of Ethiopia, northeast of Kenya, south of Somalia, eastern fring of South Africa and north east coast of Madagascar.

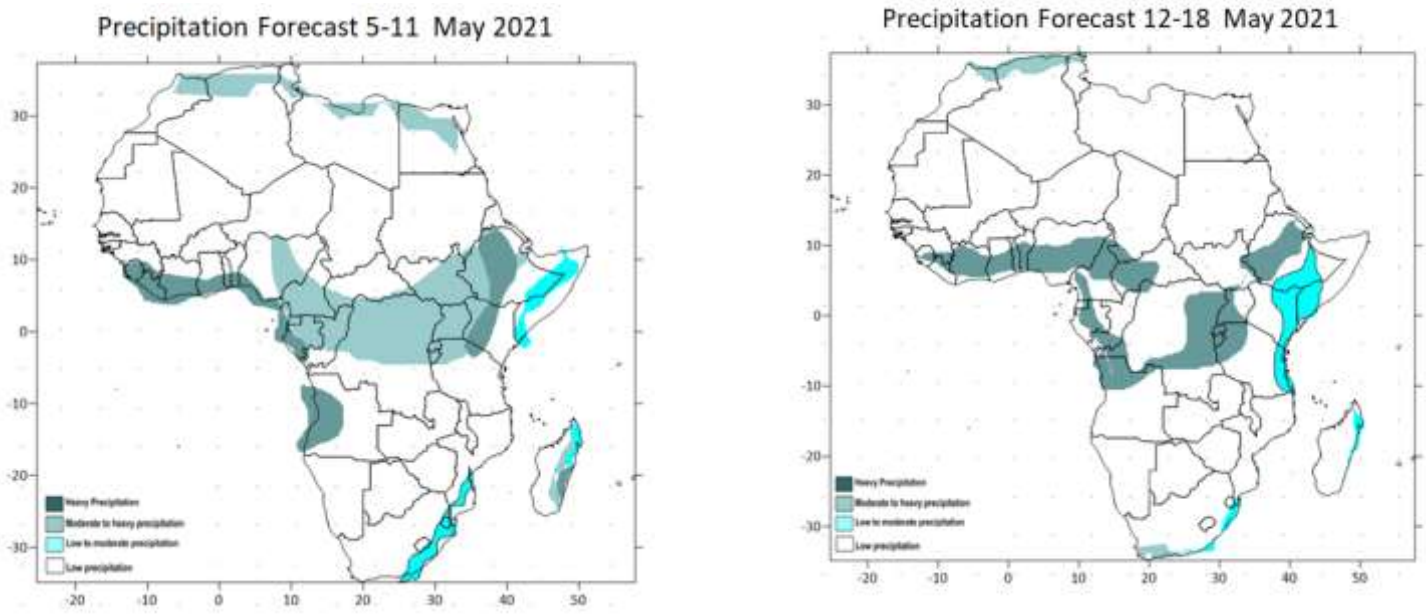

Fig 7*: Precipitation forecast for weeks one (left pannel) & two (right pannel) (Source: ACMAD)*

3.2 Temperature

Figure 8 presents the temperature anomalies prospect for the week from 04-12 May 2021. As shown in the Figure, negative temperature anomaly (cooler than average) condition is expected over the south parts of Gulf of Guinea, most of southern half of Cameroon, most of CAR, south Sudan, part of Ethiopia, part of Somalia, Eq.Guinea, Congo, DRC, Uganda, Tanzania, north of Zambia, northwest of Angola, northern half of Mozanbique, and Madagascar. Areas expected to experience positive temperature anomaly (warmer than average) conditions are the Sahelian zone and places in the SADC region. The rest of the continent is expected to experience normal temperature anomaly (no change) conditions.

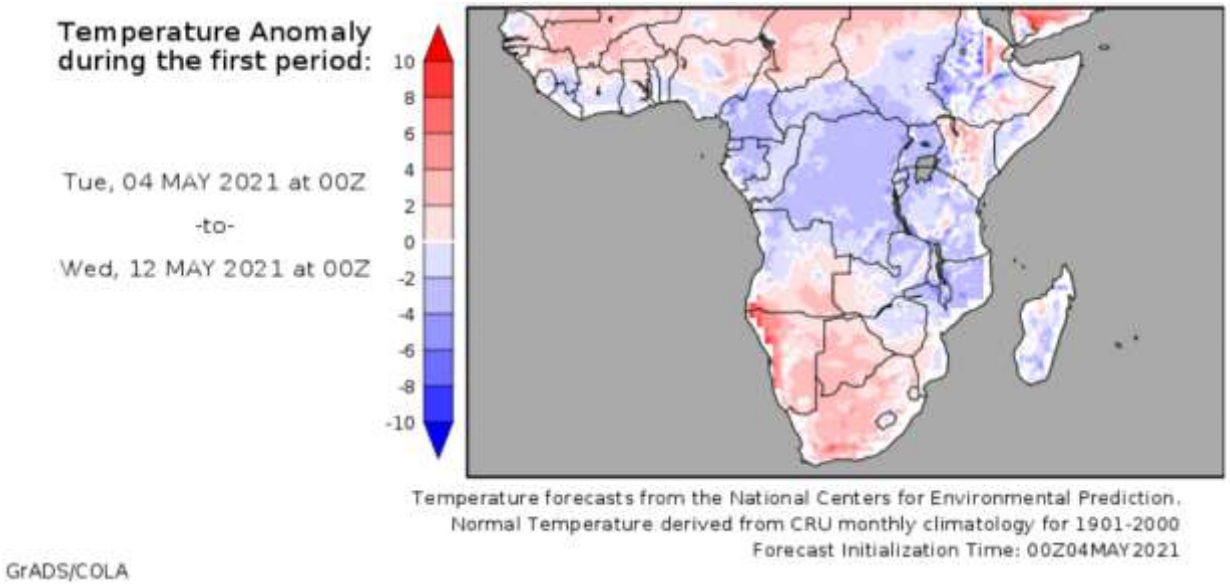

Figure 8: *Temperature anomalies prospected from 04* - 12 May, 2021: *(Source: COLA)*

3.3. Soil Moisture

Figure 9 shows soil moisture anomalies prospect for the week from 04 -12 April 2021. As depicted in the figure below, positive soil moisture change is predicted over most parts of Gulf of Guinea, northern half of Congo, north-east of Angola, most of DRC, most parts of Ethiopia, part of Somalia, southeast of Kenya, Uganda, Rwanda, Burundi and part of Tanzania. Areas experienced soil moisture deficit

includes south of Tanzania, south of DRC, part of Zambia, north of Mozambique, Malawi, east of Angola and north of Madagascar. The rest of the continent is expected to experience normal soil moisture conditions.

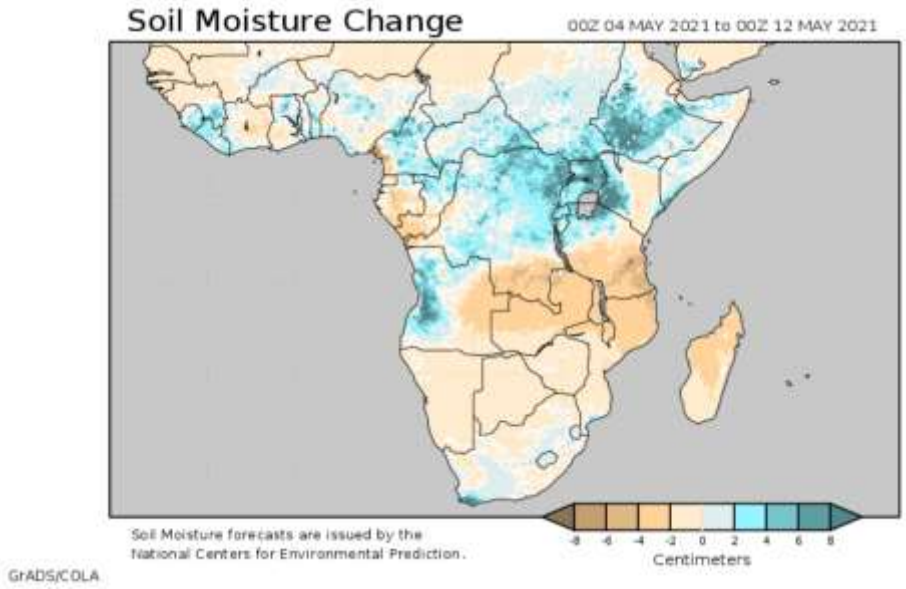

Figure 9: Soil moisture change prospected for the period 04-12 MAy, 2021 *(Source: COLA)*