

Ten Days Climate Diagnostics Bulletin
N°07

Dekad 1, 1st to 10th March 2021

HIGHLIGHTS

During the first dekad of March 2021, above average and well above average rainfall were observed over part of northern Africa, parts of Gulf of Guinea countries, the southern section of central Africa, part of central Africa and some of the SADAC regions. Below average rainfall was observed over eastern parts of Gulf of Guinea countries, and most of the SADC subregions. As the same period, near average rainfall was observed over the rest parts of the continent.

During the period from 14th to 20th March 2021, low to moderate precipitation is very likely over the marginal areas in the Northern Africa, some of Gulf of Guinea countries, pocket areas of central, eastern and some of the SADC regions. Moderate to heavy precipitation is very likely over central part of Gulf of Guinea. Heavy precipitation is very likely across southern section of Gulf of Guinea, and place in the SADC sub-region. The rest part of the countinent are expected to receive low to no precipitation during the third week of March.

As the same period, negative temperature anomaly (cooler than average) condition is expected over the southern Mauritania, Mali, northern Guinea, southern Nigeria, Sera Leone, Liberia, Cameroon, Eq.Guinea, Gabon, Congo, DRC, Angola, Zambia, northern Zimbabiwe, northern Mozambique, Tanzania, Somalia and Madagascar. The rest part of the continent is expected to experience positive temperature anomaly (warmer than average) conditions

During the period from 21st to 27th March 2021, low to moderate precipitation is expected across marginal areas of Northern Africa, northern part of Gulf of Guinea, and part of of the SADC regions. Moderate to heavy precipitation is very likely over central part of Gulf of Guinea, some part central Africa and north of Madagascar. Heavy precipitation is very likely across southern section of Gulf of Guinea, Equatorial Guinea, Congo, NE Zambia, Malawi and part of northern Mozambique. The rest part of the countinent are expected to experience low to no precipitation during the fourth week of March.

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 1026 hPa strengthened to 1hPa compared to the previous dekad and strengthened to 4hPa compared to the climatological means (1981-2010). It was located at -32°W and 32°N. It moved westward compared to the climatology position over the North Atlantic Ocean.
- **St. Helena High** of 1019 hPa weakend to 5hPa compared to the previous dekad and weakend to 1hPa compared to the climatological mean (1981-2010). It was located at 38°W and 43°S. it shifted to the south compared to the climatology position over the South Atlantic Ocean.
- **Mascarene High** of 1018 hPa weakend to 2hPa compared to the previous dekad, and weakend to 3hPa compared to the climatological mean (1981-2010). It was located at 49°E and 38°S and moved toward the east compared with the climatological position over the Indian Ocean.
- **Heat Low** with 1004 hPa weakend to 2hpa compared to the previous dekad and weakend to 2hPa from the climatological means (1981-2010). It was located over South Sudan at 30°E and 8°N. It shifted its position to the south compared to its climatological positions.

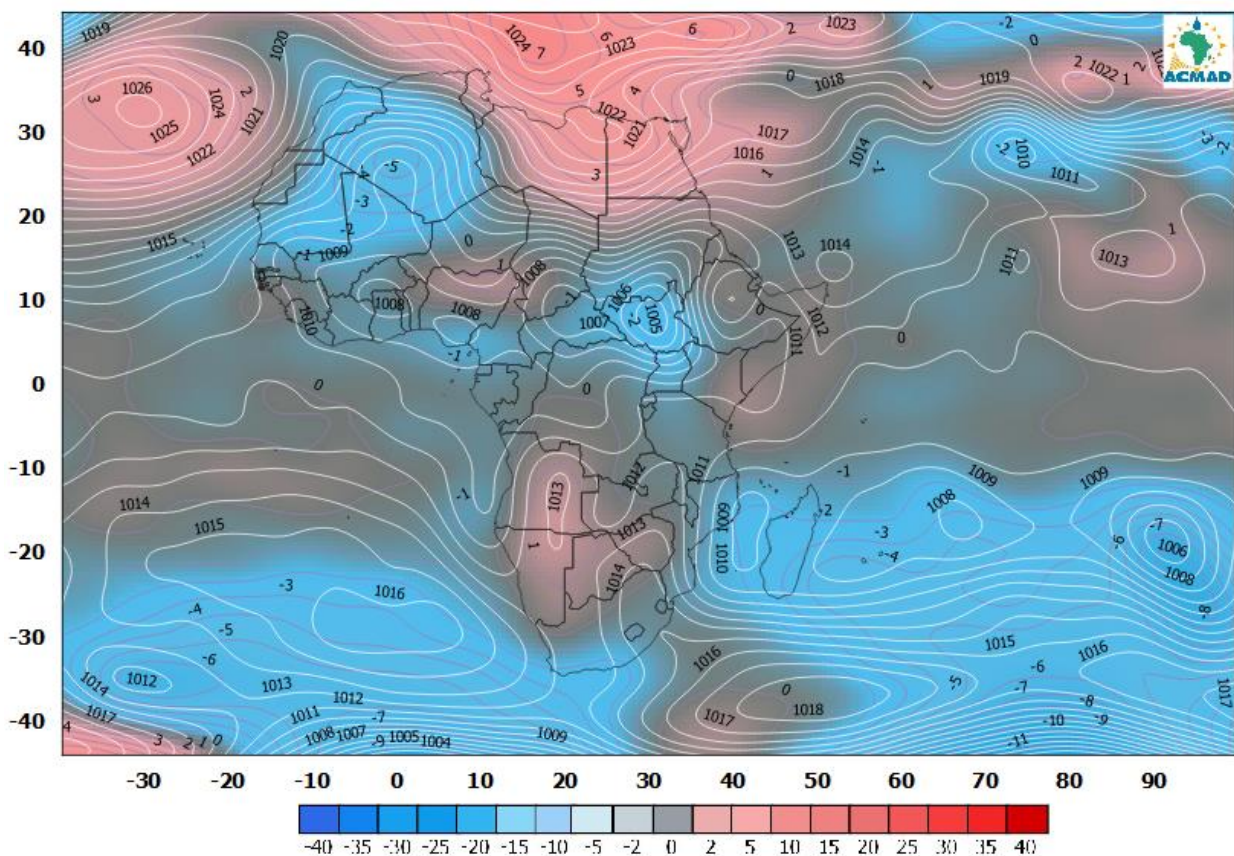


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) during the period from 1st to 10th March 2021

1.2 TROPOSPHERE

1.2.1 African Monsoon

In figure 2, the left pannel shows the average wind velocity during the first dekadal of March at 850 hPa atmospheric level. As depicted in the map, strong to moderate easterlies were observed over part of north Africa, the Sahel regions and the horn of eastern Africa regions. While the westerlies

dominated over southern Morocco, Mauritania and Mali. Weak easterlies and westerlies 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 moderate to strong westerly wind over south Morocco, Mauritania, north Mali, south Algeria, northern Libiya, Sudan and Egypt. While moderate easterlis were observed over Somalia, DRC, Congo, Gabon and Equatorial Guniea. Both weak easterlies and westerlies were observed over the rest of the continent.

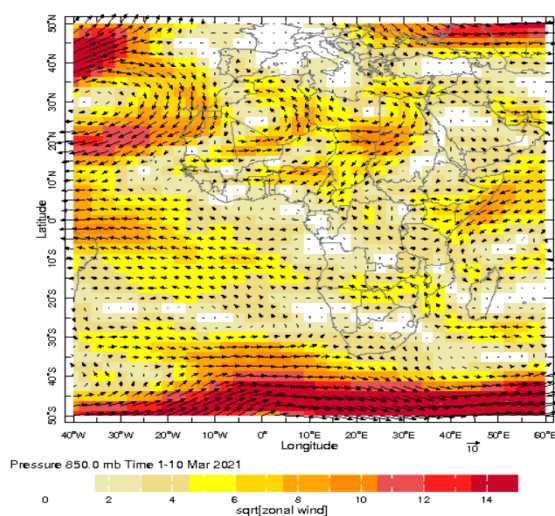


Figure 2: Mean wind at 850 hpa (m/s) during the period from 1st to 10th Mar 2021.
Source: NOAA/NCEP

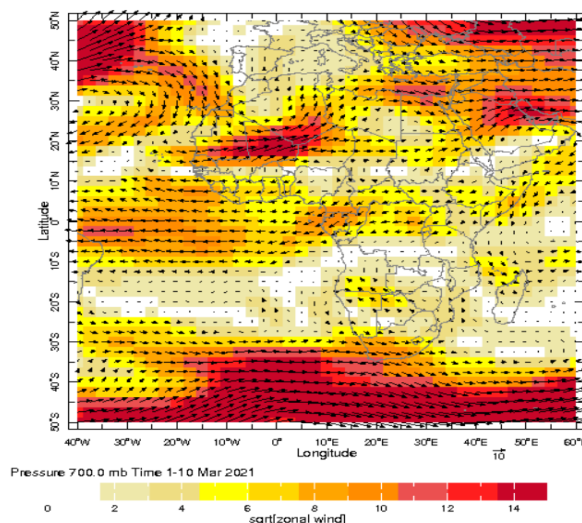


Figure 2: Mean wind at 700 hpa (m/s) during the period from 1st to 10th Mar 2021.
Source: NOAA/NCEP

1.2.3 Relative Humidity (RH) at 850 hPa

Figures 4 presents the dekadal relative humidity anomalies for the first dekad of March 2021 at 850 hPa to the reference period 2002-2011. Negative relative humidity anomalies were observed over eastern Algeria, most of Gulf of Guinea and equatorial Guinea countries, CAR, tip of northern DRC, south Sudan, much parts of Ethiopia, Somali, Uganda, south Angola, Botswana, Namibie, and south africa. The anomalies were determined based on the reference period: 2002-2011.

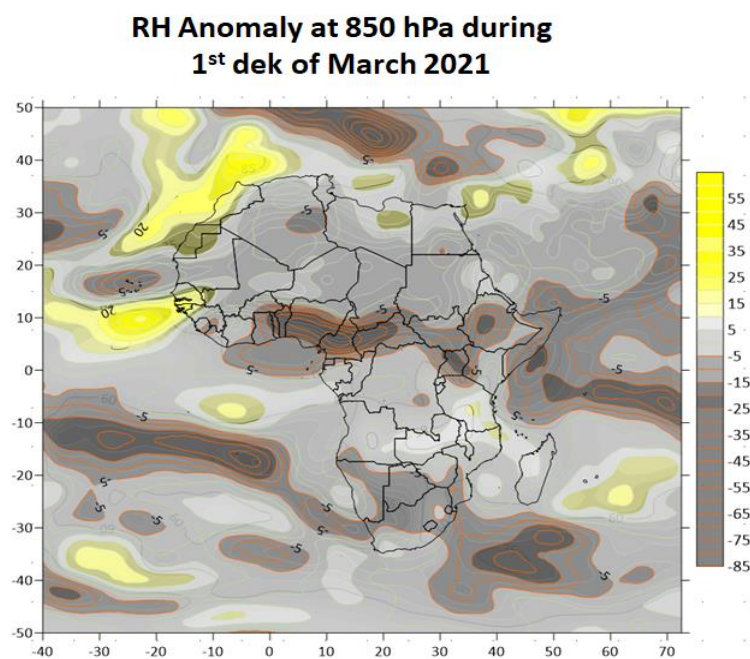


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period from 1st to 10th March 2021.SOURCE/. NOAA/. NCEP-CAR/. CDAS1

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the dekadal relative humidity anomalies for the third first dekad of March 2021 at 700 hPa to the reference period 2002-2011. Negative relative humidity anomalies were observed over south Morocco, Mauritania, south Tunisia, Mali, western Algeria, Tunisia, north-east Libya, Egypt, south Sudan, southern Ethiopia, northern Uganda, Kenya, Somalia, Zimbabwe, south Mozambique, Swaziland, and South Africa.

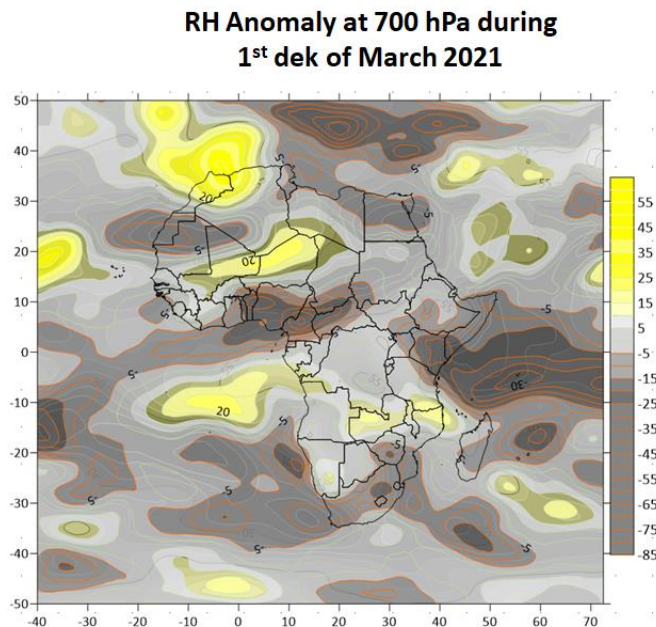


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 1th to 10th March 2021. (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the first dekad of March 2021, above average and well above average rainfall were observed over part of northern Africa, parts of Gulf of Guinea countries, the southern section of central Africa, part of central Africa and some of the SADAC regions. Below average rainfall was observed over eastern parts of Gulf of Guinea countries, and most of the SADC subregions. As the same period, near average rainfall was observed over the rest parts of the continent.

Details:

- **North Africa:** North of Morocco, Algeria and Tunisia received above to well above average rainfall, while some pocket places in Algeria experienced below average precipitation. 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:** most of the western and 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 to well below average rainfall was observed over central Cameroon, south of CAR, and northern of 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 margin of South Sudan, south-west of Ethiopia and Kenya. The near average precipitation was observed over the rest of this region.
- **Southern Africa countries:** The below average precipitation was observed over southern half of Angola, south-west Namibia, north of Botswana, south of Mozambique, Swaziland and north-east of South Africa. Near average precipitation was observed southern portion of Namibia, Botswana and South Africa. The rest part of the region experienced above to well above average precipitations.

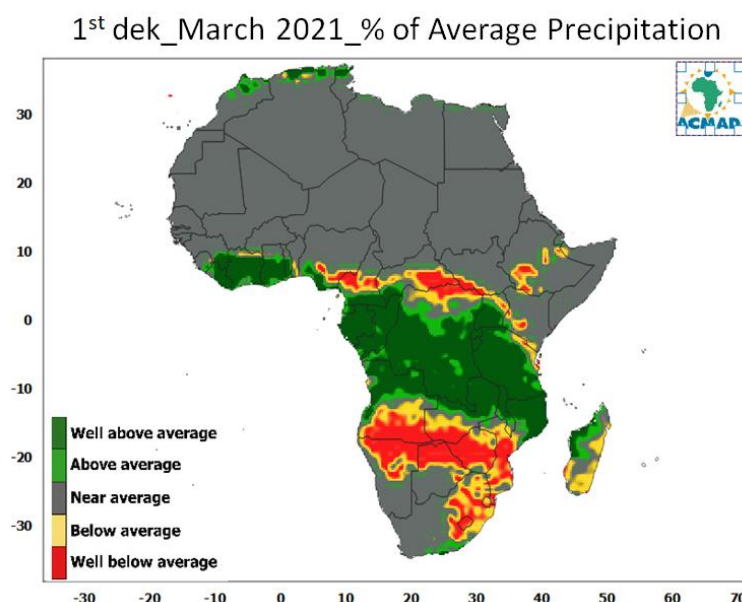


Figure 6: Precipitation in percent of average for first dekade of March 2021. The reference period used is 1981-2010. Source: NOAA/. NCEP/. CPC/. FEWS/. Africa/. DAILY/)

2.2. Impact of the previous dekade

In north Africa subregion, the received above average to well above average rainfall over the marginal land of the subregion are generally favourable toward fulfil the water need of crops which has been planted from last October. These crops are 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 addition, the received precipitation can benefit farmers to conduct land preparation for the MAM season agricultural activities.

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 above average precipitation over part of the subregion are positively impacting early time land preparation for MAM season agricultural activities.

In Central Africa, the received near average to well above average precipitation in the region are generally favourable for early time land preparation and planting. The wettest condition is favourable for crops which are planted from October to December and now are found from vegetative to flowering stage. While the dry condition in some part of region might favour to harvest fully matured crops. 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, mostly 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. Well below average rainfall over part of the region might delay planting of MAM season crops and also causes moisture stress for crops which have already planted.

In the Southern Africa region, the below average precipitation over the southern section of the region are favourable for drying of fully matured crops. However, late planted crops may experience series water shortage. The observed enhanced moistur in some parts of the region are generally favourable for crops at vegetative and flowering stage. 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 14th to 20th March 2021, low to moderate precipitation is very likely over northern Morocco, Algeria and Tunisia, north of Gulf of Guniea countries, pocket areas of central, eastern and some of the SADC regions. Moderate to heavy precipitation is very likely over central part of Gulf of Guniea, costal of equatorial Guniea, northern and southern margional areas of DRC, and some areas in the southern section, including Madagascar. Heavy precipitation is very likely across southern section of Gulf of Guinea, most parts of Cameroon, Equatorial Guinea and Congo, margional area of southern DRC, pocket areas in the eastern section of Angola, north-east Zambia, Malawi and north-west Mozambique. The rest part of the countinent are expected to receive low to no precipitation during the third week of March.

During the period from 21st to 27th March 2021, low to moderate precipitation is expected across northern tip of Morocco, Algeria, Tunisisa, and Libiya, north part of Gulf of Guniea countries, north of CAR, some part of DRC, Tanzania, Angola, south of Zambia, Zimbabwe, south of Mozambique, Swaziland and madagascar. Moderate to heavy precipitation is very likely over central part of Gulf of Guniea countries, some part of DRC, Rwanda, Burundi, south of Tanzania and north of Madagascar. Heavy precipitation is very likely across southern section of Gulf of Guinea, Equatorial Guinea, Congo, NE Zambie, Malawi and part of northern Mozambique. The rest part of the countinent are expected to experience low to no precipitation during the fourth week of March.

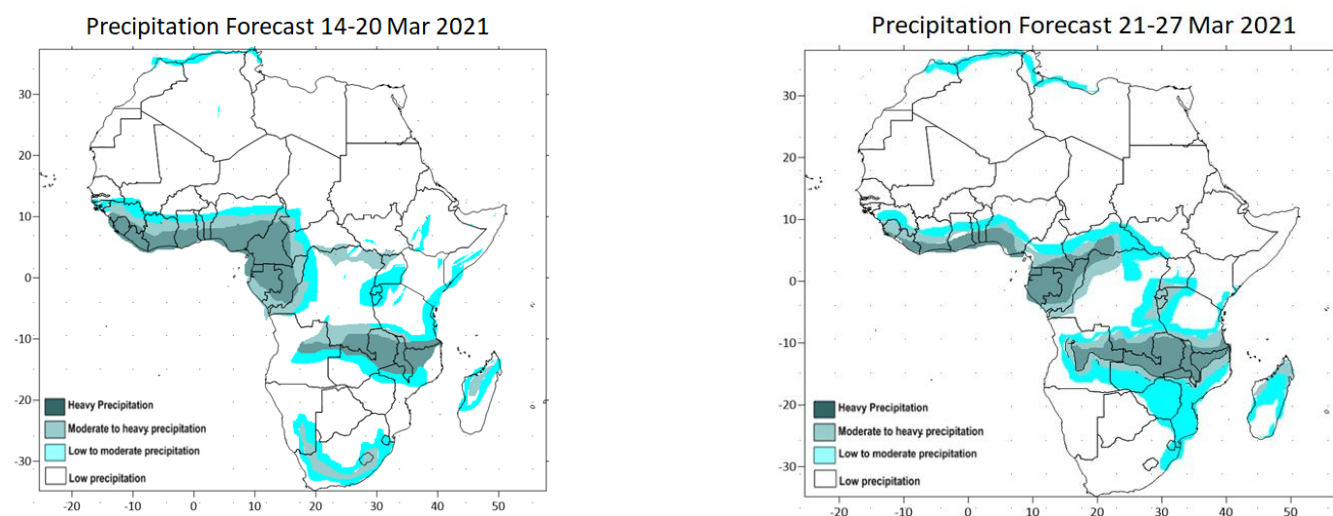


Figure 7: Precipitation forecast for week one (left pannel) and week two (right pannel) (Source: ACMAD)

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 14 - 20 March 2021,(week 1) and from 21 - 27 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 precepitaion. The impact summary and subsequent advisory are provided in table 1 below.

Sub Region	Precip Category	Impact		Measure need to be taken
		Negative	Positive	
North Africa	Mostly low to Moderate	Moisture stress for crops at vegetative and flowering; fresh forage likely to deteriorate	favorable for land preparation to plant maize and Millet	supplmental irrigation; agronomic practice to reduce the moisture loss through evaporation
Gulf of Guinea and Central Africa	Moderate to heavy	Heavy fall may cause soil erosion; Weed infestation may occure on prepared land for planting; germinated plant foliage can submerge with water logging, hence fungal crop disease; slow crop growth rate;	Good for land prepartation and planting of first/second season crops; Favorable for pernnial plants; ensure the avilability of pasture and drinking water for pastoral community	farmers need to take the advantage of early planting; Drain out excess water Harvesting and store excess water for use during the time of difficulty Postpone fertilizer application
East Africa	Low precip	water stress for early planted second season crops; delay of first season crops and may shorten the LGP; negatively impact the avaialbility of fresh pasture and drinking water	Reduce the possible out break and multiplication of desert locust.	Ex-situ Water harvesting for supplemental irrigation; · In-situ soil water conservation;opt for short cycle crop cultivars;Develop watering points and use paddock system
SADC Region	Mostly low	Moisture stress can be a broblem for crops at vegetitive and grainfilling stage, hence reduction of yield	favorable for harvest and post harvest practice; good drying of matured crops	farmers need to take the advantage to harvest fully matured crops; Ex-situ Water harvesting for supplemental irrigation; · In-situ soil water conservation

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 Mauritania, Mali, northern Guinea, southern Nigeria, Sera Leone, Liberia, Cameroon, Eq.Guinea, Gabon, Congo, DRC, Angola, Zambia, northern Zimbabiwe, northern Mozambique, Tanzania, Somalia and Madagascar. The rest part of the continent is expected to experience positive temperature anomaly (warmer than average) conditions.

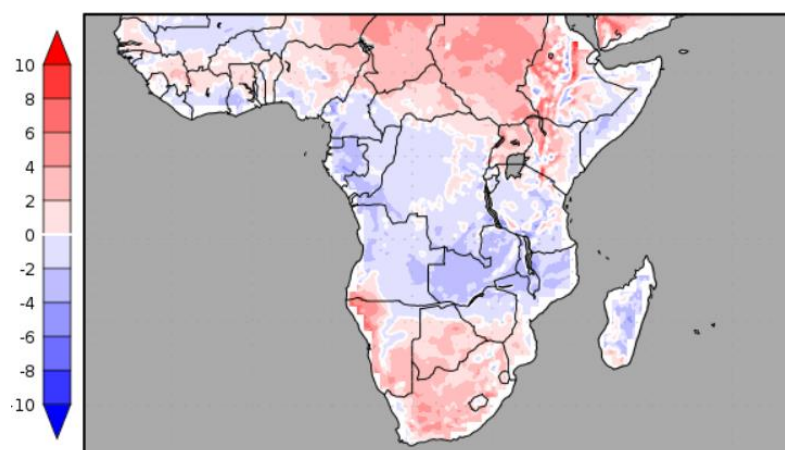
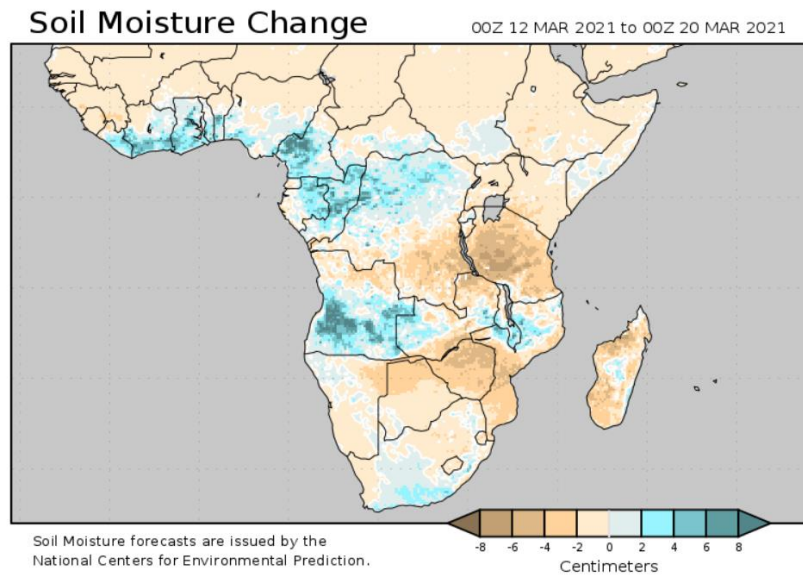


Figure 8: Temperature anomalies prospected from 12 - 20 March 2021
(Source: COLA)

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 most of Gulf of Guinea countries and in some of central and souther part including northern Guinea, southern Liberia, Sera Leone, Liberia, Cameroon, Eq.Guinea, Gabon, Congo, northern DRC, southern Angola, Zambia, northern Zimbabwe, and northern Mozambique. The rest part of the continent is expected to experience dry soil moisture.



*Figure 9: Soil moisture change prospected for the period 12 -20 March 20212021
(Source: COLA)*