



Ten Days Climate Diagnostics Bulletin

N°06

Dekad 3, 21 – 28 February 2022

HIGHLIGHTS

- ✓ *During the third dekad of February 2022, the rainfall activities were observed over the northern parts of North Africa, southern parts of countries in the Gulf of Guinea, parts of eastern Africa and much of the central and southern regions with above-average to well above-average rainfall conditions observed over the northern edges of Morocco, Algeria, Tunisia, Libya and Egypt, southern Liberia, Cote d'Ivoire, Ghana, western Kenya and Angola, parts of DRC, Namibia, Zambia South Africa, much of Rwanda, Tanzania, Madagascar and northern Mozambique. In the same dekad, below-average to well below-average rainfall was recorded over south of the Gulf of Guinea, regions of the east, central and south of the continent,*
- ✓ *The third dekad of February was characterized by neutral to cold SSTs conditions in the Eastern parts the Continent. These SST conditions contributed to below normal precipitation in the most parts Southern Africa regions. In addition, in the equatorial pacific region, below normal conditions have persisted for the past four weeks. Over the Atlantic, the SSTs were mostly dominate by warm conditions.*
- ✓ *The outlook for 5 - 11 March to 12 - 18 March 2022, depict a general tendency of low to moderate precipitation over parts of northern North Africa, countries in the Gulf of Guinea, as well as parts of the central and the southern African sub-region of the continent. During Week 1, moderate to heavy precipitation is expected over northern Mozambique, Malawi and Madagascar, southern Tanzania, western Zambia, as well as central Angola and South Africa while in Week 2, Gabon, central Angola and south-eastern Madagascar are likely to observe moderate to heavy and heavy precipitations during the forecast period.*

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 discussing the state of the troposphere and gives a summary of monsoon and relative humidity thresholds.

1.1 SURFACE

Pressure Systems

- **The Azores High** observed a central value of 1029hPa, weakening by 4hPa when compared to the previous dekad and by 6hPa compared to the climatological mean (1991-2020). The Azores high remained quasi-stationary over the North Atlantic Ocean and was located at 30°W and 35°N.
- **St. Helena High** observed a central pressure value of 1019hPa, a 2hPa weakened from the previous dekad and the climatological mean (1991-2020). It was located at 18°W/32°S. It moved slightly eastward of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1017hPa. It weakened by 1hPa from the previous dekad and 4hPa to the climatological mean (1991-2020). Positioned at 75°E and 41°S, it remained quasi-stationary over the south Indian Ocean.
- **Heat Low:** Twin heat-lows positioned over CAR and South Sudan had central values of 1007 and 1008hPa respectively. They were located at 22°N and 5°E, and 30°N and 5°E. A third heat-low positioned over Burkina Faso and northern Ghana with a central value of 1009hPa is located at 02°W and 10°N.

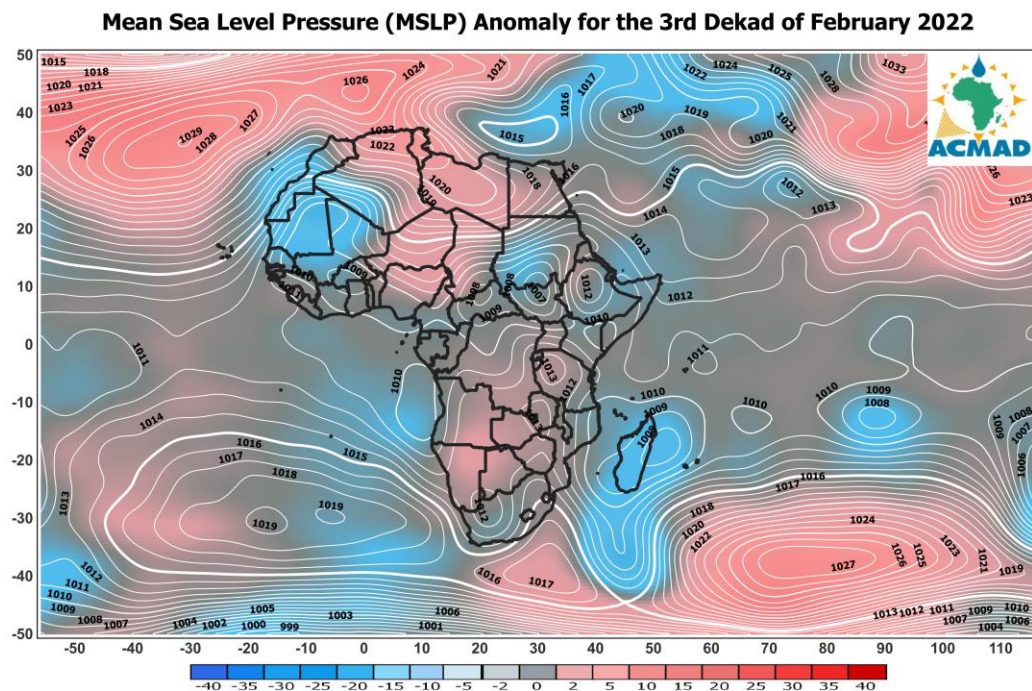


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21st to 28th February 2022

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average dekadal wind at 850hPa. Moderate to heavy westerly wind anomalies of about 8m/s - 12m/s average wind speed was observed over Tunisia, northern Libya and Egypt, western Algeria, central Morocco, most of the Sahel, Somalia, southern Ethiopia and northern Kenya.

Figure 2b: At the 700hpa level, western wind anomalies of 8m/s-14m/s dominated much of the northern region, the western part of West Africa, North Sudan and southern Angola, while the rest of the continent observed light to moderate wind anomalies of about 2m/s to 8m/s.

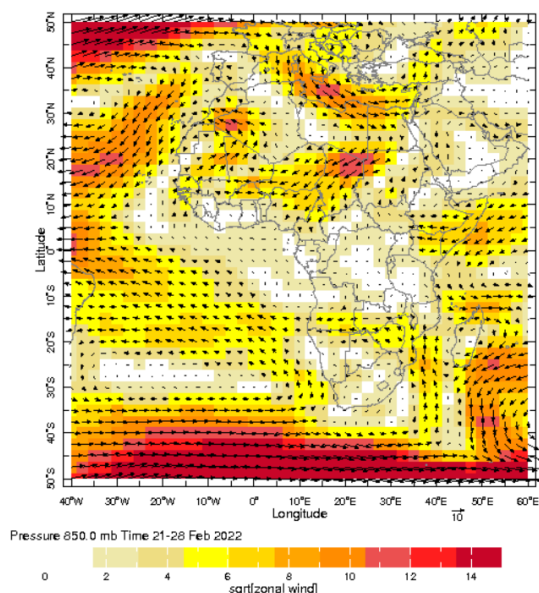


Figure 2a: Mean wind (m/s) at 850hPa from 21st to 28th February 2022

February 2022

Source: NOAA/NCEP

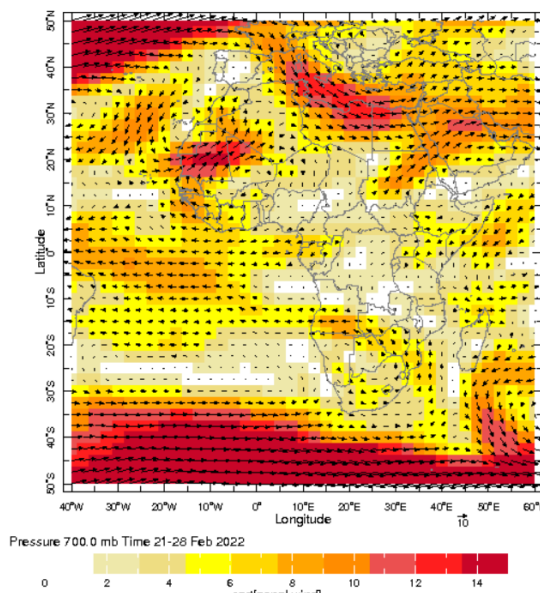


Figure 2b: Mean wind (m/s) at 700hPa from 21st to 28th

Source: NOAA/NCEP

Figure 2c: shows very strong westerly wind vector anomalies ≥ 14 m/s at 200hPa observed mainly over the continent except for much of the Gulf of Guinea and parts of the central and southern region that observed moderate wind speeds of about 6m/s-8m/s.

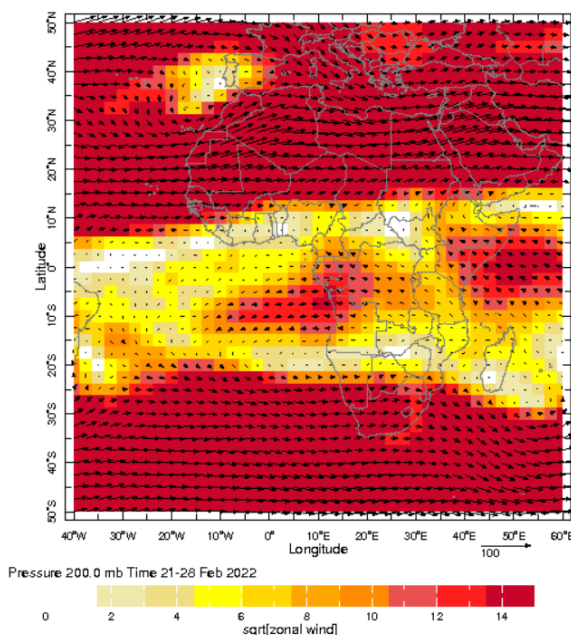


Figure 2c: Mean wind at 200 hPa (m/s) during the period 21st to 28th February 2022

(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the dekadal observed relative humidity and anomalies at 850hPa for the third dekad of February 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over the northern edges of Morocco and Algeria, Sierra Leone, Liberia, south-western Cote d'Ivoire, much of Guinea, southern Uganda, western Kenya, Tanzania, as well as over most countries in the central and southern Africa regions of the continent. The rest of the continent observed RH values $\leq 60\%$.

Negative anomalies were observed during the third dekad of February 2022 over central and northern Algeria, Togo, Benin, Cameroon, much of Ghana, Nigeria, CAR, southern Niger and Chad, central Ethiopia, southern Mozambique, northern South Africa and most parts of Botswana and Zimbabwe. Positive anomalies were recorded over the rest of the continent.

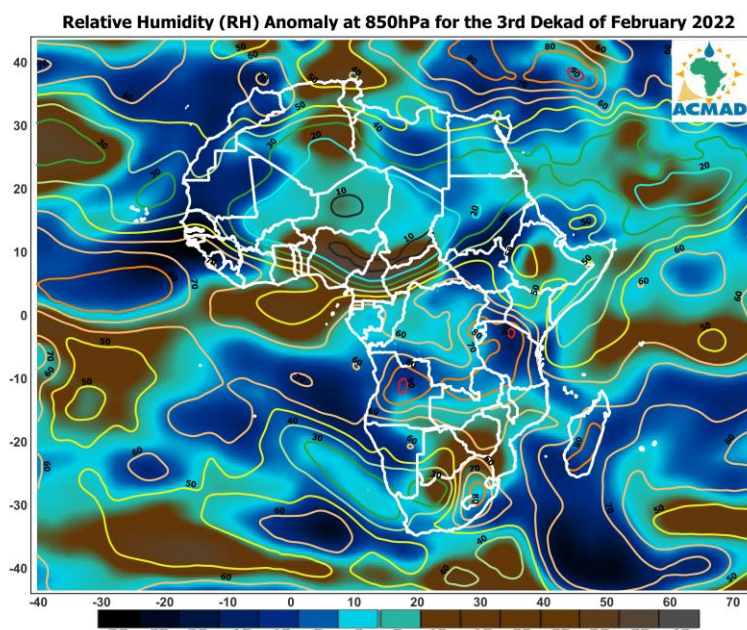


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period 21st to 28th February 2022
SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

1.2.4 Relative Humidity at 700hPa

Figure 5 presents the dekadal observed and anomalies of relative humidity at 700hPa. The figure shows that high relative humidity values $\geq 60\%$ at 700hPa were observed over much of Morocco, western Algeria, northern Mauritania and Mali, parts of Sierra Leone, Liberia, Cote d'Ivoire, and Guinea, as well as over much of the eastern, central Africa and southern African region. The rest of the continent observed RH values $\leq 60\%$.

The relative humidity anomalies for the third dekad of February 2022 were negative over much of Tunisia, Libya, Egypt, the Gulf of Guinea countries, the Sahel, Chad, Cameroon, Equatorial Guinea, Gabon, Congo, western CAR and DRC, as well as southern Mozambique and Zimbabwe. The rest of the continent observed positive anomalies.

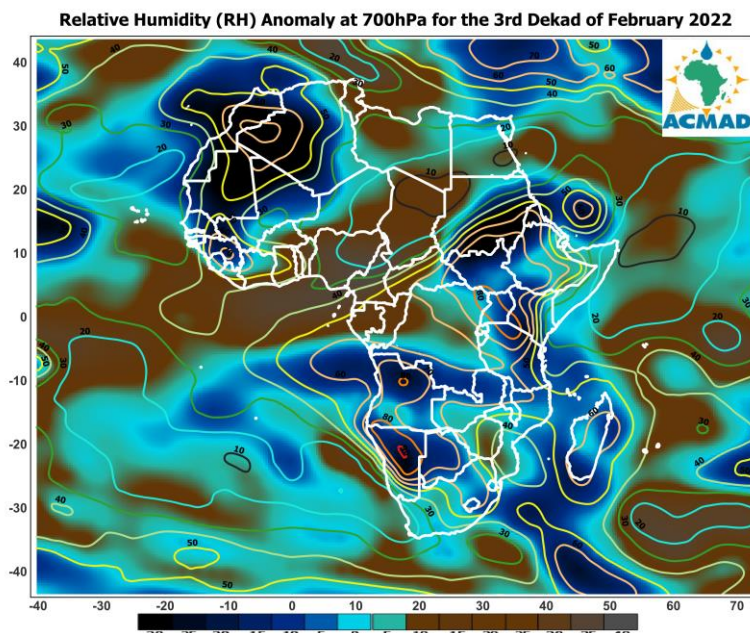


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 21st to 28th February 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 6 shows the observed precipitation as a percentage of average for the second dekad of February 2022.

2.1 Precipitation

During the third dekad of February 2022, the rainfall activities were observed over the northern parts of North Africa, southern parts of countries in the Gulf of Guinea, parts of eastern Africa and much of the central and southern regions with above-average to well above-average rainfall conditions observed over the northern edges of Morocco, Algeria, Tunisia, Libya and Egypt, southern Liberia, Cote d'Ivoire, Ghana, western Kenya and Angola, parts of DRC, Namibia, Zambia South Africa, much of Rwanda, Tanzania, Madagascar and northern Mozambique. In the same dekad, below-average to well below-average rainfall was recorded over the south of the Gulf of Guinea, regions of the east, central and south of the continent,

Details:

- **North Africa:** This region experienced mostly near average rainfall conditions. The northern edges of Morocco, Algeria, Tunisia, Libya and Egypt recorded below-average to well below-average and above-average to well above average rainfall conditions.
- **Gulf of Guinea countries:** The southern parts of the region received mostly below-average to well below-average precipitation while central Cote d'Ivoire and southern Ghana and Liberia recorded above average to well above average rainfall conditions
- **Central Africa countries:** Equatorial Guinea, Gabon, southern Cameroon, much of Congo, CAR, DRC, Burundi, eastern and western Angola, received below-average to well below-average precipitation while above-average to well above-average precipitation was observed over Rwanda, southern DRC, as well as eastern Angola.
- **East African countries:** Much of Tanzania and western Kenya observed above average to well above average rainfall conditions while southern Uganda and central Ethiopia observed below average to well below average rainfall conditions.
- **Southern Africa countries:** **northern Zambia**, Malawi and Mozambique, north-western Namibia, much of Madagascar and parts of South Africa observed above-average to well above-average precipitation. Southern Zambia, Malawi, Mozambique, eastern Namibia, much of Zimbabwe, Botswana, and South Africa recorded below-average to well below-average rainfall conditions.

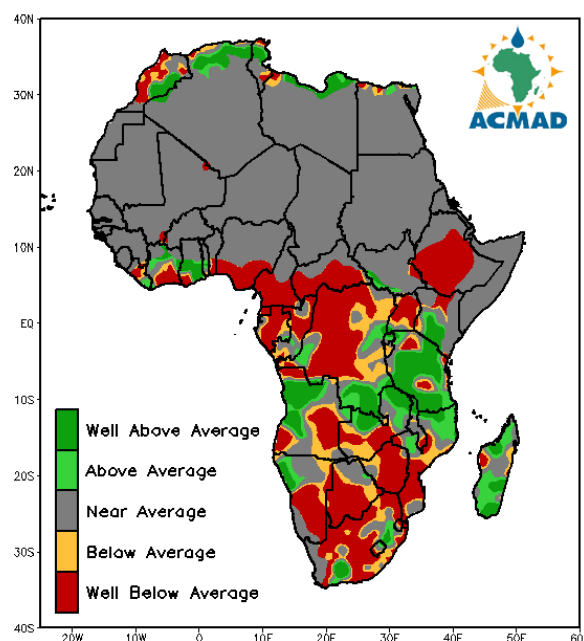


Figure 6: Precipitation in the percentage of the average for the third dekad 21st to 28th February 2022. The reference period used is 1991-2020. Source: NOAA/ NCEP/ CPC/ UNIFIED/ Africa/ DAILY/)

3.0 OUTLOOK VALID FOR 10 to 23 February 2022

3.1 PRECIPITATION

The outlook for 5 - 11 March to 12 - 18 March 2022, depicts a general tendency of low to moderate precipitation over parts of northern North Africa, countries in the Gulf of Guinea, as well as parts of the central and the southern African sub-region of the continent. During Week 1, moderate to heavy precipitation is expected over northern Mozambique, Malawi and Madagascar, southern Tanzania, western Zambia, as well as central Angola and South Africa while in Week 2, Gabon, central Angola and south-eastern Madagascar are likely to observe the same situation during the forecast period.

Precipitation Forecast for Week 1 (5 - 11 March, 2022)

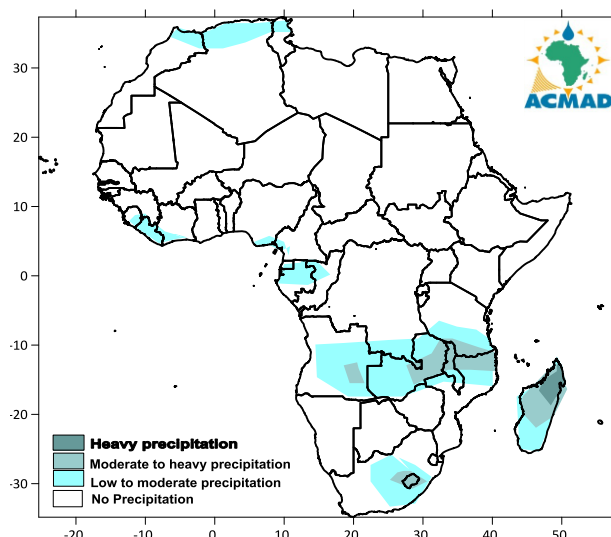


Figure 7a: Precipitation forecast for 5 - 11 March 2022

Precipitation Forecast for Week 2 (12 - 18 March, 2022)

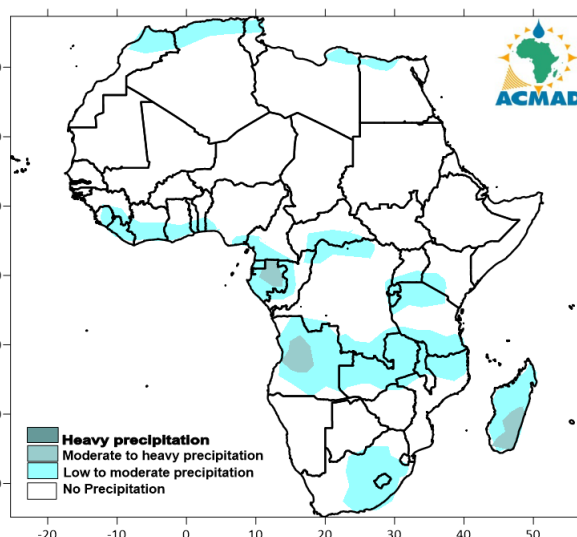
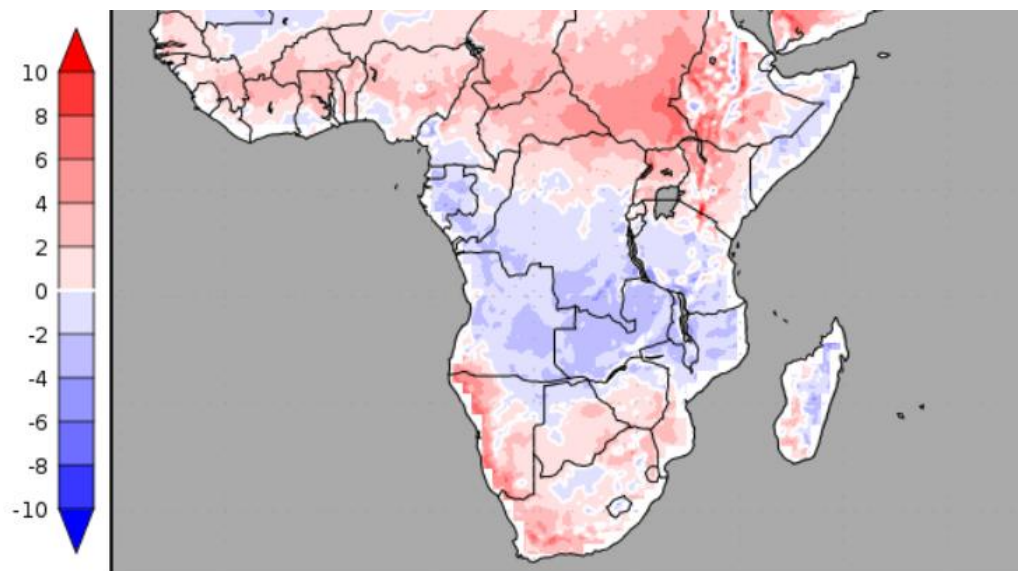


Figure 7b: Precipitation forecast for 12 - 18 March 2022

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecast for the week of 6th - 14th March 2022. Temperatures are expected to be below average over the southern part of the Gulf of Guinea, southern Cameroon, Equatorial Guinea, Gabon, Congo, DRC, Angola, Burundi, Rwanda, Somalia, Tanzania, Zambia, Malawi, northern Mozambique, and much Madagascar. The remaining part of the continent is expected to observe above-average temperatures.



Temperature forecasts from the National Centers for Environmental Prediction.
 Normal Temperature derived from CRU monthly climatology for 1901-2000
 Forecast Initialization Time: 12Z06MAR2022

Figure 8: Temperature anomalies prospect from 6th - 14th March 2022
 (Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 6th - 14th March 2022. Positive soil moisture is expected mostly over southern parts of the Gulf of Guinea, and parts of the central and southern regions of the continent. The rest of the continent is expected to observe negative soil moisture values during the forecast period.

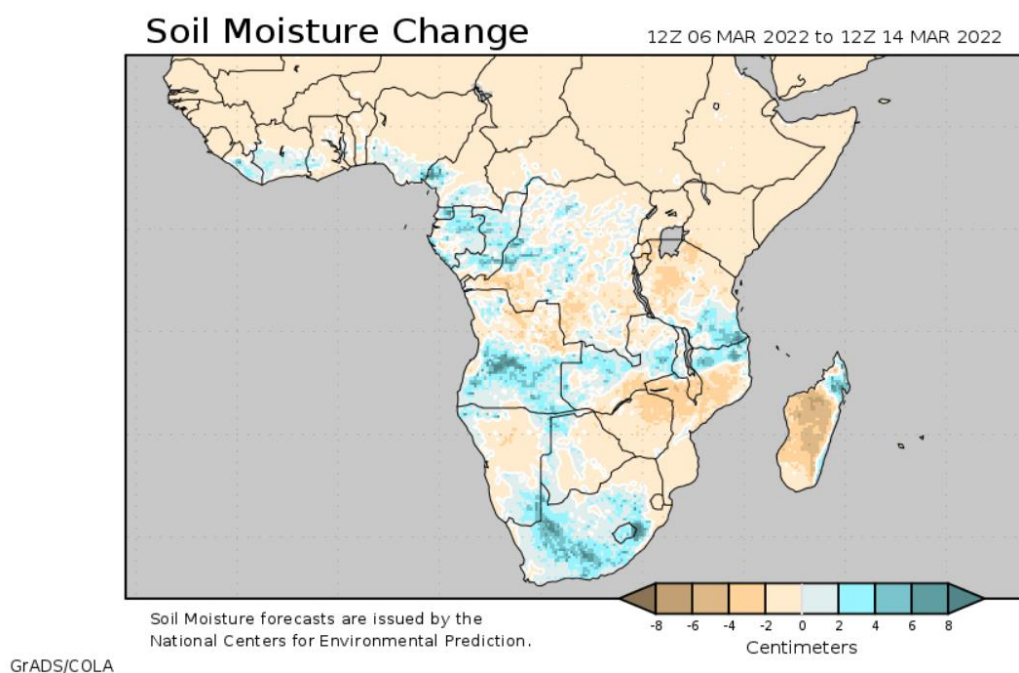


Figure 9: Soil moisture change prospect for the period 6th - 14th March 2022
 (Source: COLA)