



Ten Days Climate Diagnostics Bulletin

N°03

Dekad 3, 21 – 31 January 2022

HIGHLIGHTS

- ✓ *During the third dekad of January 2022, there was an increase in the temporal as well as spatial coverage of rainfall activities over the central and southern regions with above-average to well above-average rainfall conditions observed over Zambia, Malawi, most of Rwanda, Tanzania, northern Madagascar, Libya, Egypt, and Angola, central of South Africa, southern and Eastern DRC, and Mozambique. In the same dekad, below-average to well below-average rainfall was observed over southern Cameroon, much of Equatorial Guinea, Gabon, northern Morocco, Algeria, Tunisia, Congo and DRC, southern Angola, southern Botswana, and parts of Uganda, Tanzania, Mozambique, Zimbabwe, South Africa and Madagascar.*
- ✓ *This dekad was characterized by neutral to warm SSTs conditions in the Eastern parts the Continent. These SST conditions contributed to above normal precipitation in the above 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 neutral to warm.*
- ✓ *The outlook for 10th -16th and 17st-23th February 2022, depict a general tendency of low to moderate precipitation over parts of the central and the southern African sub-region of the continent. In Week 1, moderate to heavy precipitation is expected over Zambia, Malawi, and Zimbabwe, most of Mozambique, parts of Angola, DRC, and Madagascar. During the Week 2, the same is expected over Malawi, most of Tanzania, northern Mozambique, Zambia and Angola. Heavy precipitation is likely over central Zambia and Mozambique, northern Zimbabwe and southern Malawi during Week 1.*

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 1025hPa, weakened by 8hPa when compared to the previous dekad and intensifying by 2hPa compared to the climatological mean (1991-2020). Over the North Atlantic Ocean, the high pressure was located at 17°W and 32°N. The Azores High moved eastward of its climatological position.
- **St. Helena High** observed a central pressure value of 1023hPa, a 5hPa intensifying from the previous dekad and 4hPa to the climatological mean (1991-2020). It was located at 18°W/31°S. It moved westward of its climatological position n over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1020hPa. It weakened by 2hPa from the the previous dekad and and 1hPa to the climatological means (1991-2020). Positioned at 82°E and 33°S, it moved eastward of its climatological position over the south Indian Ocean.
- **Heat Low:** No heat low was located over the continent during the dekad under review.

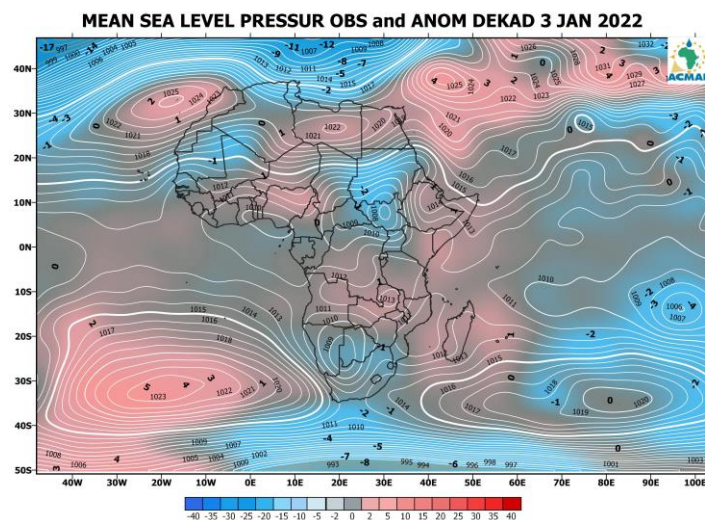


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 21th to 31th January 2022

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average dekadal wind at 850hPa. Moderate to heavy from north to easterly wind anomalies of about 5m/s - 8m/s average wind speed was observed over Libya, Sudan, Chad, Niger, Nigeria, CAR, Somalia, Kenya, Botswana and Zimbabwe.

Figure 2b: At the 700hpa level, western wind anomalies of 10m/s-14m/s dominated the northern Africa, Guinea Gulf, western part of Central Africa, while the rest of the continent observed light to moderate wind anomalies of about 2m/s to 8m/s.

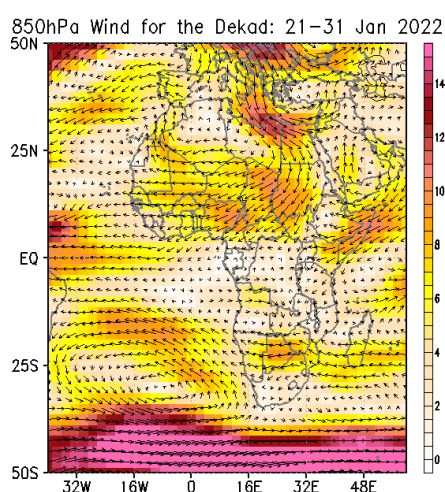


Figure 2a: Mean wind (m/s) at 850hPa from 21-31 January 2022
Source: NOAA/NCEP

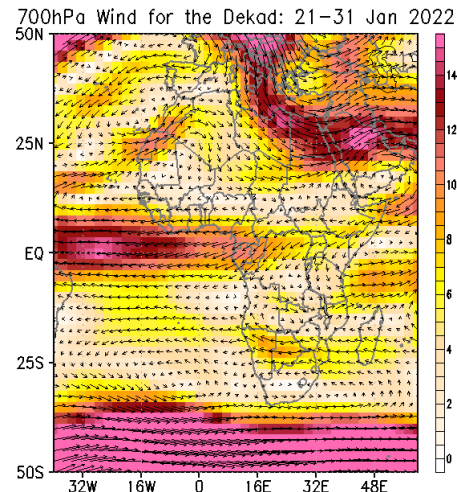


Figure 2b: Mean wind (m/s) at 700hPa from 21-31 January 2022
Source: NOAA/NCEP

Figure 2c: shows very strong westerly wind vector anomalies $\geq 14\text{m/s}$ at 200hPa observed mainly over the continent except for parts of the central and southern region that observed moderate wind speeds of about 6m/s-8m/s.

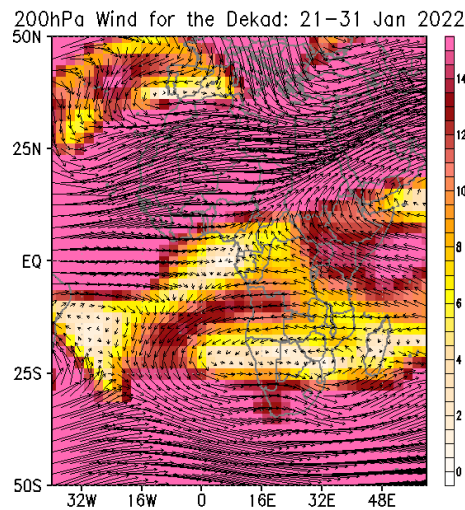


Figure 2c: Mean wind at 200 hPa (m/s) during the period 21-31 January 2022
(Source: NOAA/NCEP)

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 January 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over most of northern and southern Africa as well as parts of central and eastern Africa. The rest of the continent observed RH values $\leq 60\%$.

Negative anomalies were observed during the Third dekad of January 2022 in north-western of the Northern Africa, Guinea Gulf region, Central Africa, central of the Eastern Africa and western of the South Africa respectively. Positive anomalies were recorded over the rest of the continent.

RHum 850hPa Anom. Dekad: 21–31 Jan 2022

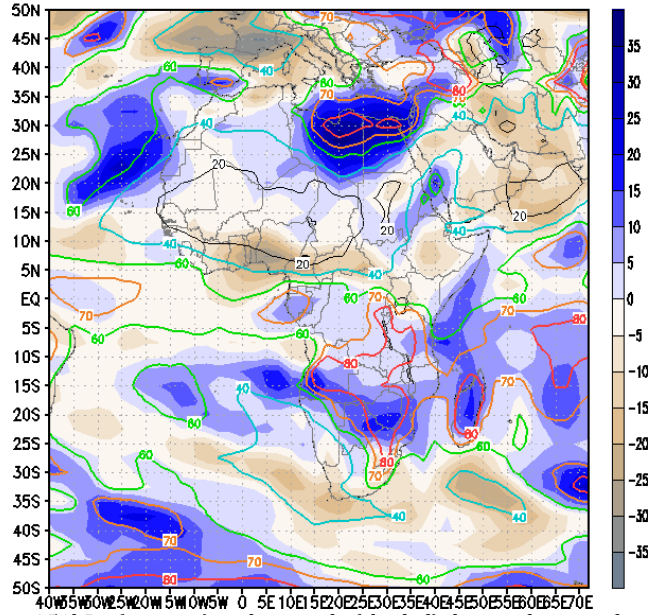


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period 11-20 January 2022
 SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 part of eastern and central Africa and most of southern Africa. The rest of the continent observed RH values $\leq 60\%$.

The relative humidity anomalies for the Third dekad of January 2021 were negative over the eastern of the Northern Africa, Western Africa, Central Africa. Positive anomalies were reported in countries south of the equator, with the exception of Somalia.

RHum 700hPa Anom. Dekad: 21–31 Jan 2022

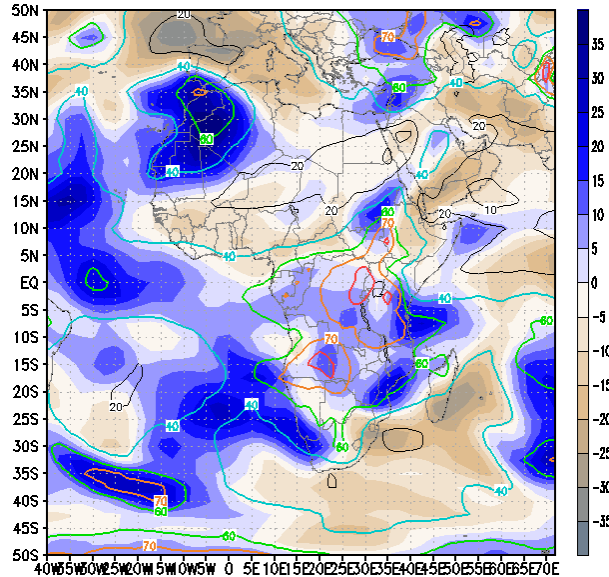


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 11-20 January 2022
 (SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the third dekad of January 2022, there was an increase in the temporal as well as spatial coverage of rainfall activities over the central and southern regions with above-average to well above-average rainfall conditions observed over Zambia, Malawi, most of Rwanda, Tanzania, northern Madagascar, Libya, Egypt, and Angola, central of South Africa, southern and Eastern DRC, and Mozambique. In the same dekad, below-average to well below-average rainfall was observed over southern Cameroon, much of Equatorial Guinea, Gabon, northern Morocco, Algeria, Tunisia, Congo and DRC, southern Angola, southern Botswana, and parts of Uganda, Tanzania, Mozambique, Zimbabwe, South Africa and Madagascar.

Details:

- **North Africa:** This region experienced mostly near average rainfall conditions. Below-average to well below-average rainfall was recorded over the northern fringes of Morocco, Algeria and Tunisia while above average rainfall conditions were observed over the northern edges of Libya and Egypt.
- **Gulf of Guinea countries:** The region received near-average precipitation.
- **Central Africa countries:** Equatorial Guinea, Gabon, southern Angola and northern Congo and DRC received below-average to well below-average precipitation while above-average to well above-average precipitation was observed over southern and Eastern DRC.
- **East African countries** most of Rwanda, Tanzania, and parts of Kenya and Uganda observed above average to well above average rainfall conditions while parts of Uganda and western Kenya observed below average to well below average rainfall conditions.
- **Southern Africa countries:** Much of Mozambique, Malawi, eastern Zambia, Zimbabwe, central South Africa, northern Madagascar observed above-average to well above-average precipitation. Below-average to well below-average rainfall was experienced in south of Angola, north and central of Namibia, southern Botswana, south-western Zimbabwe, eastern South Africa and southern parts of Madagascar.

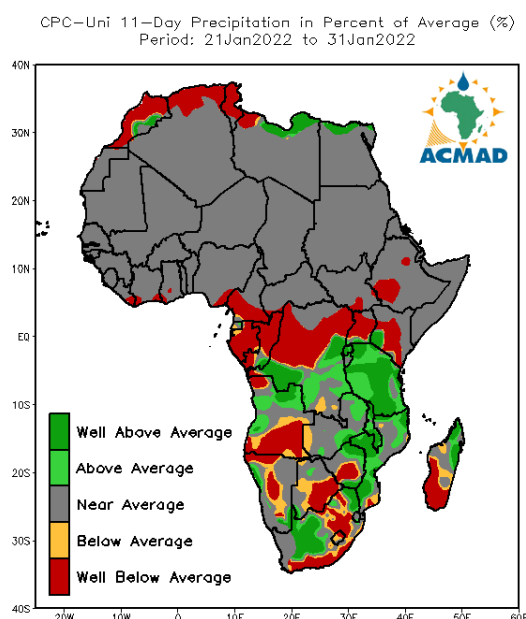


Figure 6: Precipitation in the percentage of average for the third dekad 21th - 31th January 2022. The reference period used is 1991-2020. Source: NOAA/ NCEP/ CPC/ UNIFIED/ Africa/ DAILY/)

3.0 OUTLOOK VALID FOR 10 to 23 February 2022

3.1 PRECIPITATION

The outlook for 10th -16th and 17st-23th February 2022, depict a general tendency of low to moderate precipitation over parts of the central and the southern African sub-region of the continent. In Week 1, moderate to heavy precipitation is expected over Zambia, Malawi, and Zimbabwe, most of Mozambique, parts of Angola, DRC, and Madagascar. During the Week 2, the same is expected over Malawi, most of Tanzania, northern Mozambique, Zambia and Angola.

Heavy precipitation is likely over central Zambia and Mozambique, northern Zimbabwe and southern Malawi during Week 1.

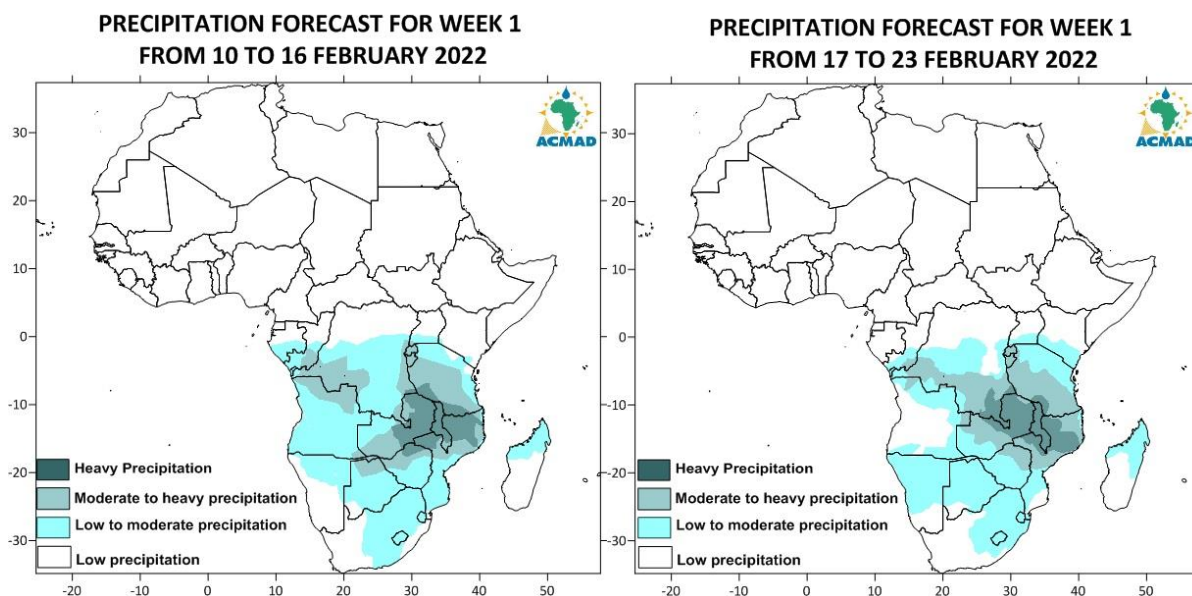


Figure 7a: Precipitation forecast for 10th -16th February 2022 Figure 7b: Precipitation forecast for 17th -23th February 2022

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecast for the week of 10-18 February 2022. Temperatures are expected to be below average over the Sahel, most of central Africa as well as over parts of eastern and southern Africa. The remaining part of the continent is expected to observe above-average temperatures.

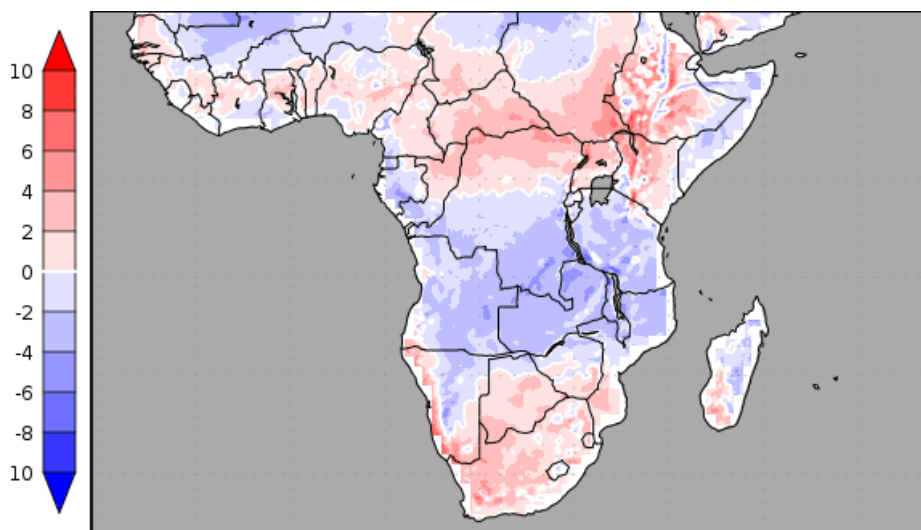


Figure 8: Temperature anomalies prospect from 10-18 February 2022 (Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 10-18 February 2022. Positive soil moisture is expected mostly over Tanzania, Zambia and Malawi, northern Mozambique, southern Angola, Lesotho, South Africa and western Namibia and Botswana. The rest of the continent is expected to observe negative soil moisture values during the forecast period.

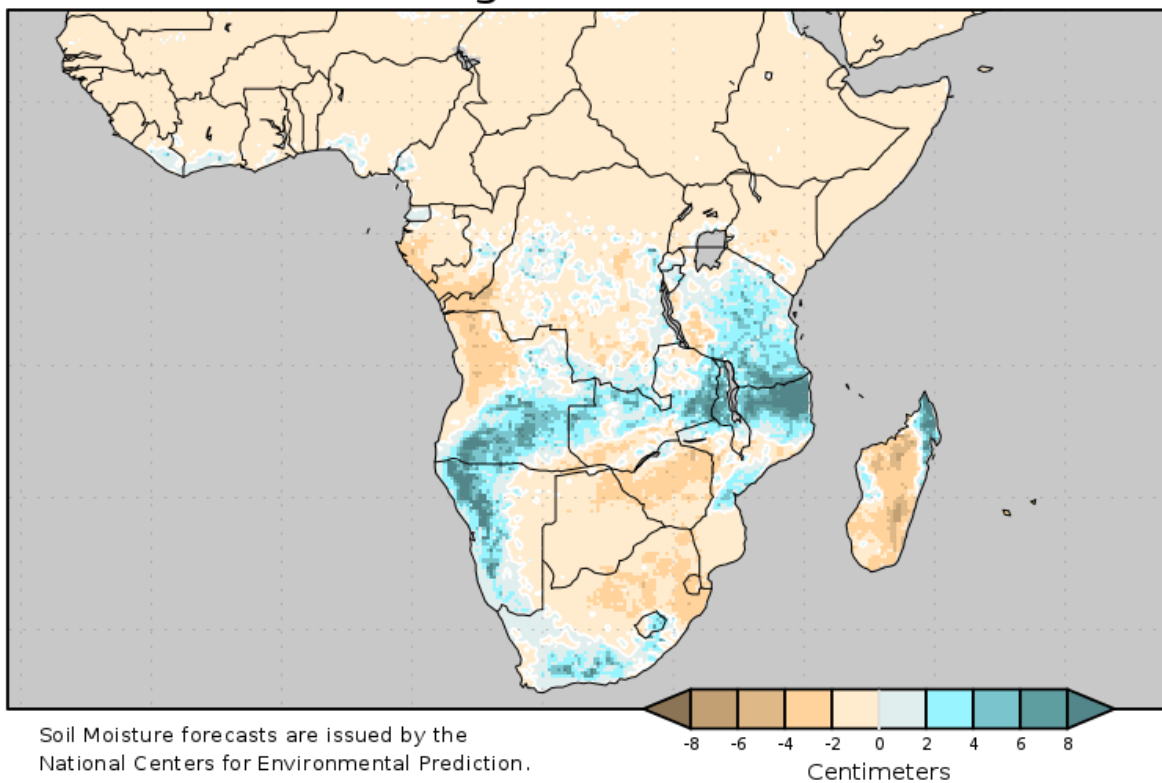


Figure 9: Soil moisture change prospect for the period 25th January - 02 February 2022 (Source: COLA)