



Ten Days Climate Diagnostics Bulletin

N°01

Dekad 1, 1 – 10 February 2022

HIGHLIGHTS

- ✓ *During the first dekad of February 2022, the rainfall activities over the central and southern regions with above-average to well above-average rainfall conditions observed over southern DRC, much of Zambia and Tanzania, northern Malawi, Mozambique, southernmost of Uganda, Angola, central parts of Namibia, South Africa, northern and southern Madagascar. In the same dekad, below-average to well below-average rainfall was observed over northern Morocco, Algeria, Tunisia, much of Equatorial Guinea, Gabon, northern Congo, central of DRC, most part of Angola, Botswana, Zimbabwe, Mozambique, eastern part of South Africa and central part of Madagascar.*
- ✓ *The first 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 16th -22nd and 23rd February to 1st March 2022, depict a general tendency of low to moderate precipitation over parts of the central and the southern African sub-region of the continent. From Week 1 to 2, moderate to heavy precipitation is expected over south-western DRC, central of Zambia, southern Tanzania, Malawi, northern Zimbabwe, Mozambique, central parts of South Africa. During the same two weeks, the heavy rain is expected over eastern Zambia, Malawi, southernmost of Tanzania, northern Mozambique.*

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 1026hPa, weakened by 1hPa when compared to the previous dekad and intensifying by 3hPa compared to the climatological mean (1991-2020). Over the North Atlantic Ocean, the high pressure was located at 43°W and 31°N. The Azores High moved westward of its climatological position.
- **St. Helena High** observed a central pressure value of 1022hPa, a 1hPa weakened from the previous dekad and intensifying 2hPa to the climatological mean (1991-2020). It was located at 11°W/30°S. It moved Northward of its climatological position n over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1025hPa. It strengthened by 3hPa from the the previous dekad and and 4hPa to the climatological means (1991-2020). Positioned at 84°E and 37°S, it moved eastward of its climatological position over the south Indian Ocean.
- **Heat Low**, with 1006hPa, deepened compared to the previous dekad, and maintained to the climatological mean (1981-2010). It located at 30°N and 7°E over center south sudan stable to the climatological position.

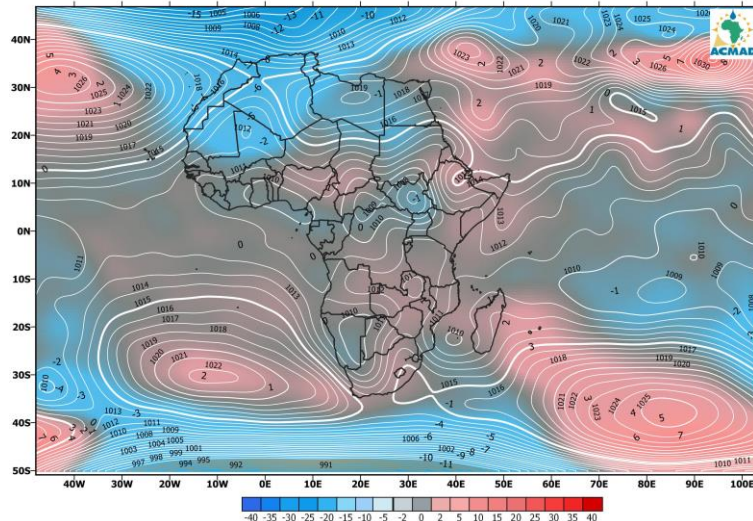


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 1th to 10th February 2022

1.2 TROPOSPHERE

1.2.1 African Monsoon

Figure 2a: This figure shows the average dekadal wind at 850hPa. Moderate to heavy from westerly wind anomalies of about 8m/s - 12m/s average wind speed was observed over Libya and Egypt, low to moderate wind anomalies from easterly was observed over northern Chad and eastern Niger.

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

850hPa Wind for the Dekad: 01–10 Feb 2022

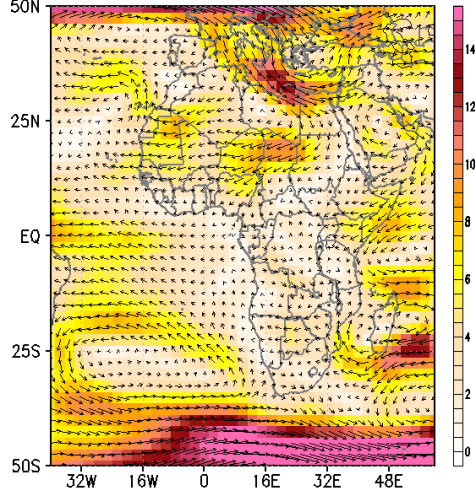


Figure 2a: Mean wind (m/s) at 850hPa from 1st to 10th February 2022
Source: NOAA/NCEP

700hPa Wind for the Dekad: 01–10 Feb 2022

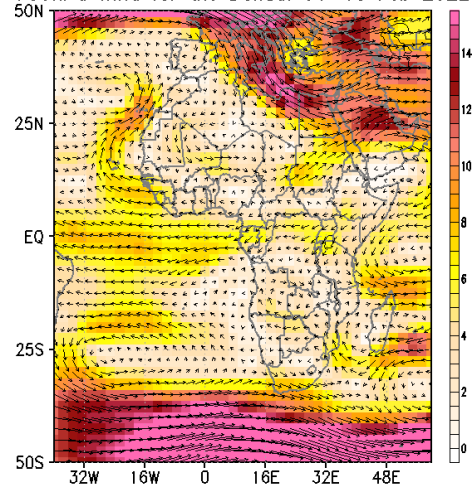


Figure 2b: Mean wind (m/s) at 700hPa from 1st to 10th February 2022
Source: NOAA/NCEP

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.

200hPa Wind for the Dekad: 01–10 Feb 2022

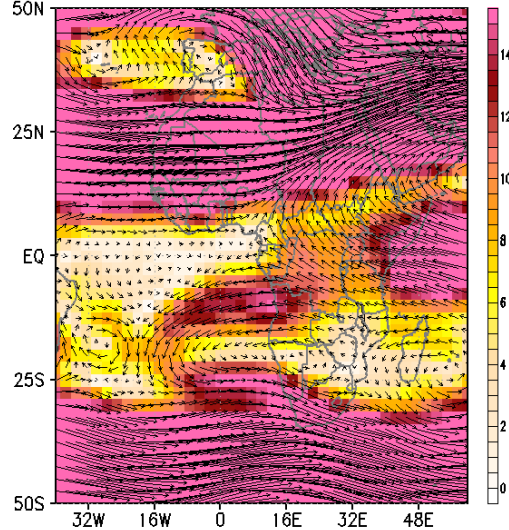


Figure 2c: Mean wind at 200 hPa (m/s) during the period 1st to 10th February 2022
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the dekadal observed relative humidity and anomalies at 850hPa for the first dekad of February 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over Central and Southern Africa regions as well as parts of eastern Africa. The rest of the continent observed RH values $\leq 60\%$.

Negative anomalies were observed during the First dekad of February 2022 in most of the Northern Africa, Western Africa region, respectively. Positive anomalies were recorded over the rest of the continent.

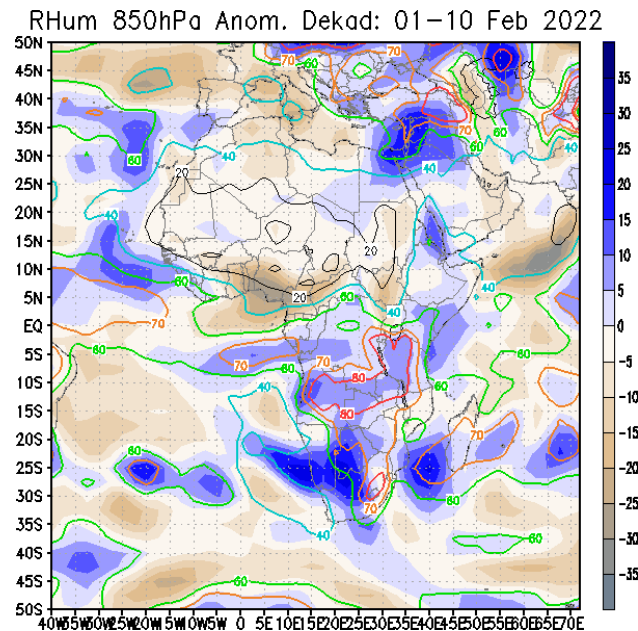


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period 1st to 10th February 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 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 First dekad of February 2021 were negative over the central and eastern of the Northern Africa, Western Africa, Central Africa. Positive anomalies were reported in countries south of the equator.

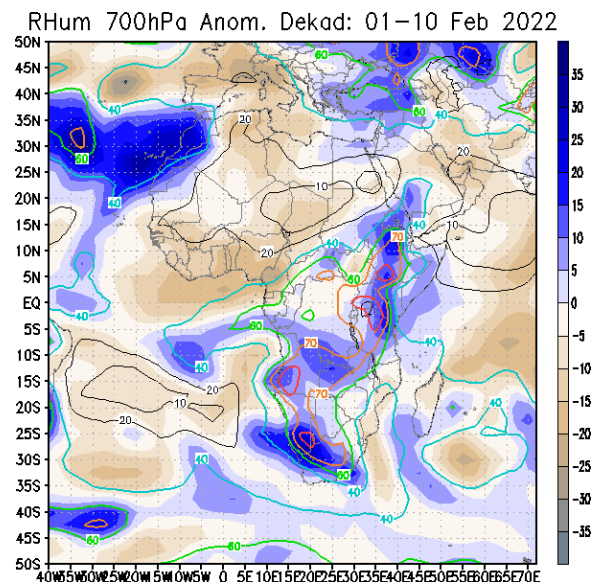


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 1st to 10th February 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

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

2.1 Precipitation

During the first dekad of February 2022, the rainfall activities over the central and southern regions with above-average to well above-average rainfall conditions observed over southern DRC, much of Zambia and Tanzania, northern Malawi, Mozambique, southernmost of Uganda, Angola, central parts of Namibia, South Africa, northern and southern Madagascar. In the same dekad, below-average to well below-average rainfall was observed over northern Morocco, Algeria, Tunisia, much of Equatorial Guinea, Gabon, northern Congo, central of DRC, most part of Angola, Botswana, Zimbabwe, Mozambique, eastern part of South Africa and central part of 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.
- **Gulf of Guinea countries:** The region received near-average precipitation.
- **Central Africa countries:** Equatorial Guinea, Gabon, much of Angola and northern Congo and central and south-eastern DRC received below-average to well below-average precipitation while above-average to well above-average precipitation was observed over most of the southern DRC.
- **East African countries** eastern Rwanda, Tanzania, and southernmost of Uganda observed above average to well above average rainfall conditions while the central part Uganda and south-western Kenya observed below average to well below average rainfall conditions.
- **Southern Africa countries:** northern Mozambique, Malawi, most parts of Zambia, central South Africa, northern and southern Madagascar observed above-average to well above-average precipitation. Below-average to well below-average rainfall was experienced in north-eastern Namibia, northern and central Botswana, much of Zimbabwe, central and southern Mozambique, central and eastern parts of South Africa and central parts of Madagascar.

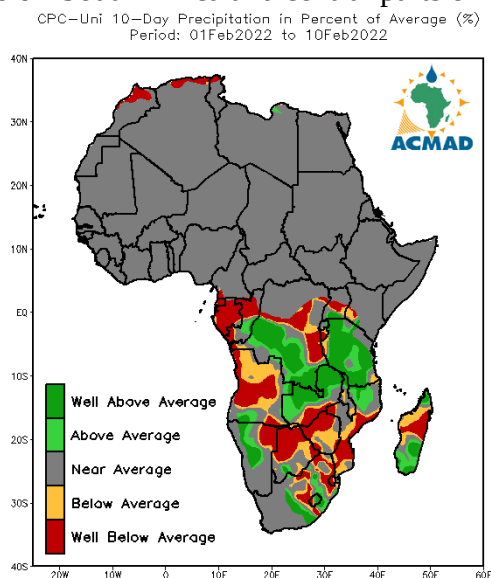


Figure 6: Precipitation in the percentage of average for the third dekad 1st to 10th February 2022. The reference period used is 1991-2020. Source: NOAA/, NCEP/, CPC/, UNIFIED/, Africa/, DAILY/)

3.0 OUTLOOK VALID FOR 10 to 23 February 2022

3.1 PRECIPITATION

The outlook for 16th -22nd and 23rd February to 1st March 2022, depict a general tendency of low to moderate precipitation over parts of the central and the southern African sub-region of the continent. From Week 1 to 2, moderate to heavy precipitation is expected over south-western DRC, central of Zambia, southern Tanzania, Malawi, northern Zimbabwe, Mozambique, central parts of South Africa. During the same two weeks, the heavy rain is expected over eastern Zambia, Malawi, southernmost of Tanzania, northern Mozambique..

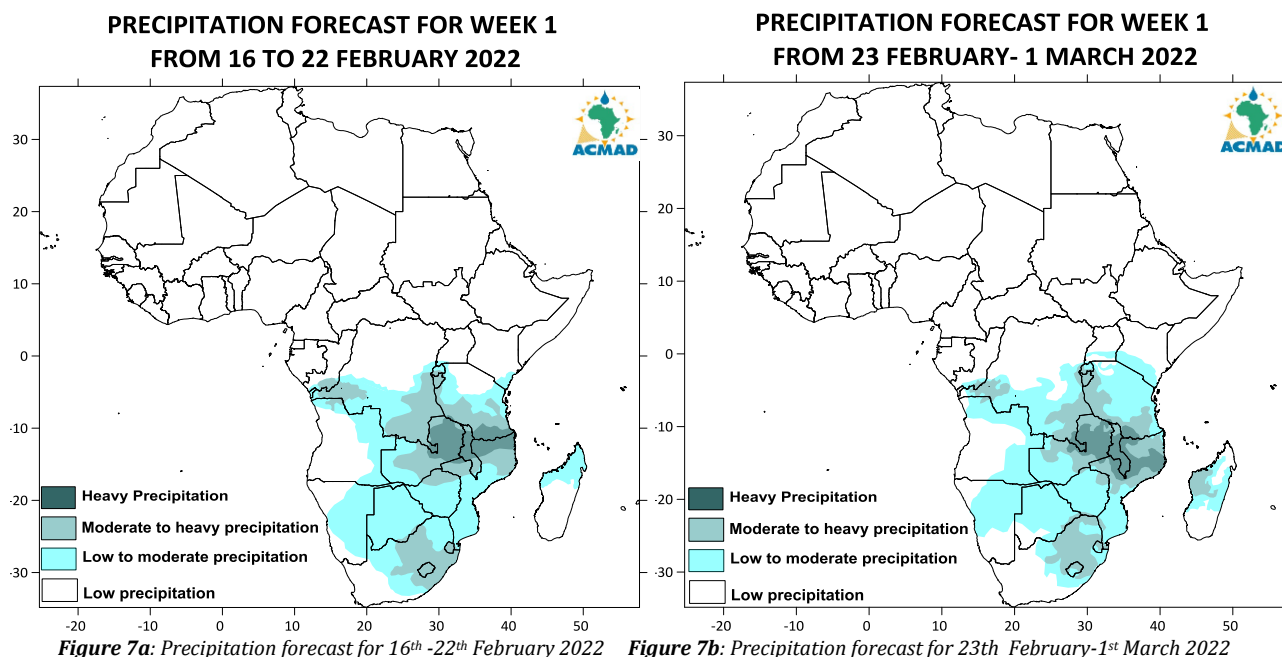


Figure 7a: Precipitation forecast for 16th -22th February 2022

Figure 7b: Precipitation forecast for 23th February-1st March 2022

3.2 TEMPERATURE

Figure 8 presents the temperature anomalies forecast for the week of 15-23 February 2022. Temperatures are expected to be below average over Niger, Chad, Sudan, Guinea Equatorial, Gabon, southern Congo, DRC, Tanzania, Zambia, Malawi, Angola, northern Mozambique, and eastern Madagascar. The remaining part of the continent is expected to observe above-average temperatures.

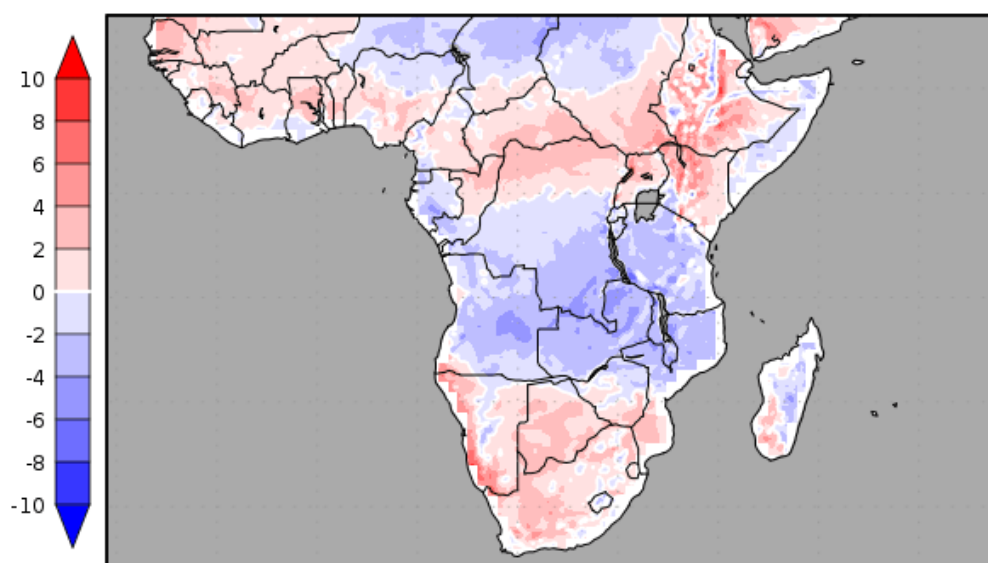
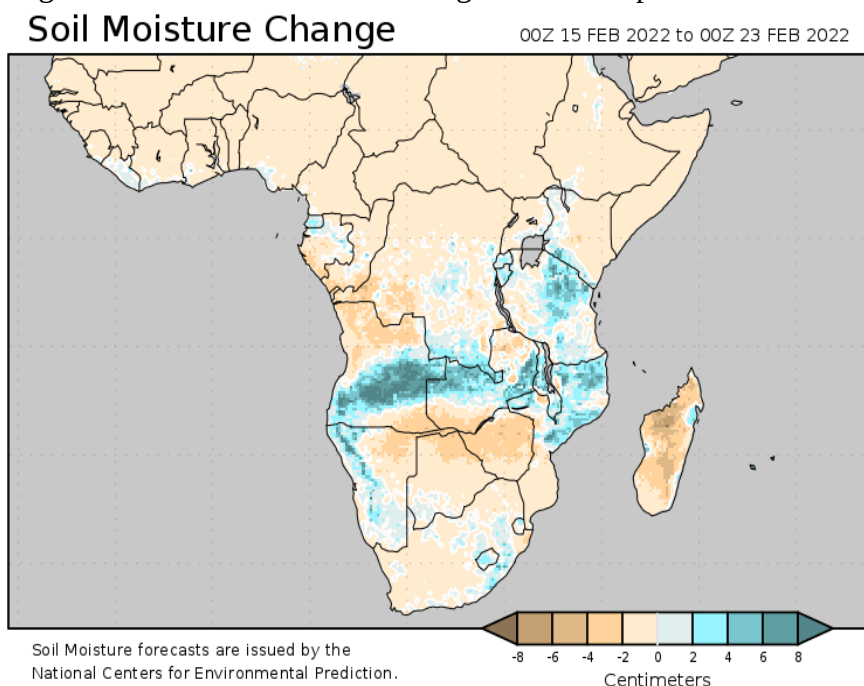


Figure 8: Temperature anomalies prospect from 15-23 February 2022
(Source: COLA)

3.3 SOIL MOISTURE

Figure 9 shows soil moisture anomalies forecast for the week of 15-23 February 2022. Positive soil moisture is expected mostly over south-easternmost of DRC, 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 15-23 February 2022
(Source: COLA)*