



Ten Days Climate Diagnostics Bulletin

N°07

Dekad 1, 1st – 10th March 2022

HIGHLIGHTS

- ✓ *During the first dekad of March 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, southern Ghana, western and south-eastern parts of DRC, most parts of Angola and Zambia, south-western Tanzania, north and eastern Botswana, north-eastern Namibia, central parts of South Africa and Madagascar. In the same dekad, below-average to well below-average rainfall was recorded over northern to eastern parts of Morocco, Algeria and Tunisia, southern Côte d'Ivoire, Cameroon, Gabon, Congo, DRC, Uganda, Mozambique, Zimbabwe, north-eastern of South Africa and Eswatini.*
- ✓ *The first dekad of March 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, neutral conditions have persisted for the past four weeks. Over the Atlantic, the SSTs were mostly dominated by warm conditions.*
- ✓ *The outlook for 19 - 25 March to 26 March-1st April 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 to Week 2, moderate to heavy precipitation is expected over Gabon, Congo, DRC, Angola, Zambia, Tanzania, Malawi, Zimbabwe, and Madagascar. During the same period of these two weeks, the heavy precipitation is very likely over south-eastern DRC, Angola, Zambia, Malawi and Tanzania.*

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 1022hPa, weakening by 2hPa when compared to the previous dekad and Strengthened by 6hPa compared to the climatological mean (1991-2020). The Azores high moved from north to the climatology over the North Atlantic Ocean and was located at 35°W and 31°N.
- **St. Helena High** observed a central pressure value of 1021hPa, a 2hPa Strengthened from the previous dekad and the climatological mean (1991-2020). It was located at 9°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 1025hPa. It Strengthened by 7hPa from the previous dekad and 3hPa to the climatological mean (1991-2020). Positioned at 100°E and 37°S, it moved to the East over the south Indian Ocean.
- **Heat Low:** Thermal was observed over South Sudan had central values of 1003 respectively. They were located at 30°E and 9°N.

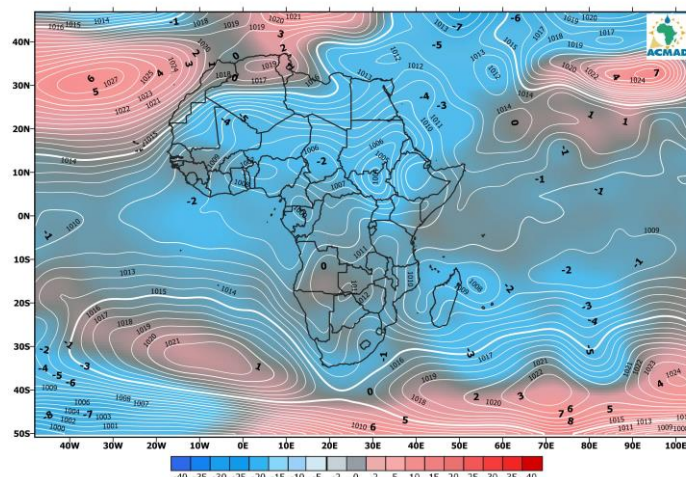


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 1st to 10th March 2022

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 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.

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

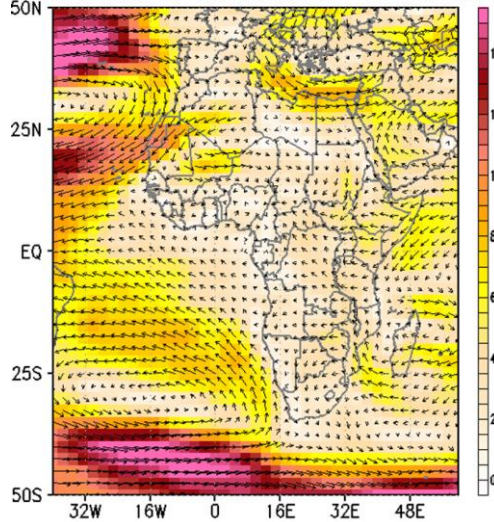


Figure 2a: Mean wind (m/s) at 850hPa from 1st to 10th March 2022
Source: NOAA/NCEP

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

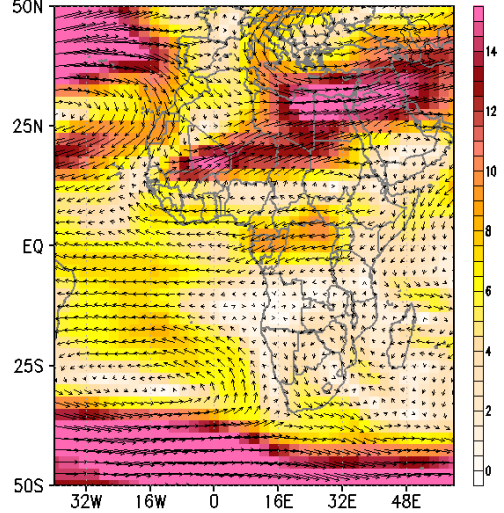


Figure 2b: Mean wind (m/s) at 700hPa from 1st to 10th March 2022
Source: NOAA/NCEP

Figure 2c: shows very strong westerly wind vector anomalies $\geq 14\text{m/s}$ at 200hPa observed mainly over the continent except for 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 .

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

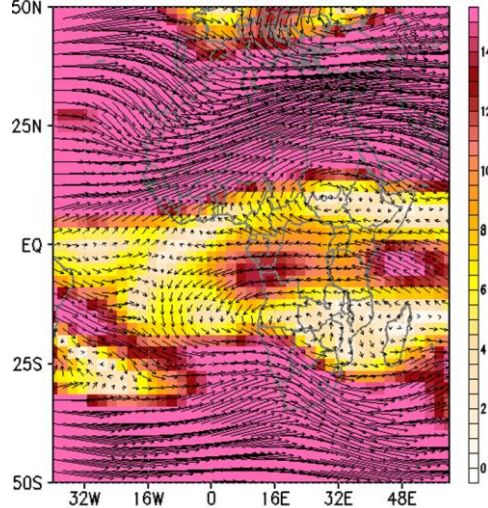


Figure 2c: Mean wind at 200 hPa (m/s) during the period 1st to 10th March 2022
(Source: NOAA/NCEP)

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 March 2022 for the reference period 1991-2020. Wet atmospheric conditions (relative humidity $\geq 60\%$) were observed over the northern edges of Morocco and Algeria, 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 first dekad of March 2022 over Ethiopia, South-Sudan, Uganda, Rwanda, Burundi, DRC, Angola, Zambia, Mozambique, and Zimbabwe. Positive anomalies were recorded over the rest of the continent

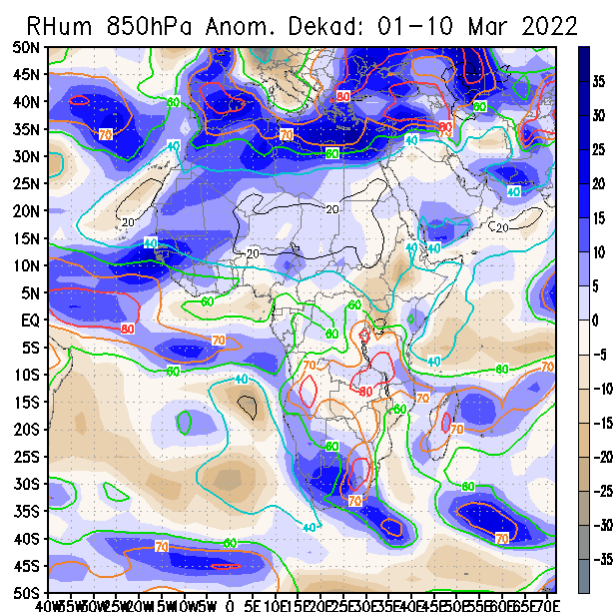


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period 1st to 10th March 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 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 first dekad of March 2022 were negative over Morocco, Mauritania, Cameroon, Equatorial Guinea, Gabon, Congo, western CAR and DRC, Rwanda, Burundi, Uganda, South-Sudan, Ethiopia, Somalia, Kenya, Tanzania, Zambia, Mozambique and Zimbabwe. The rest of the continent observed positive anomalies.

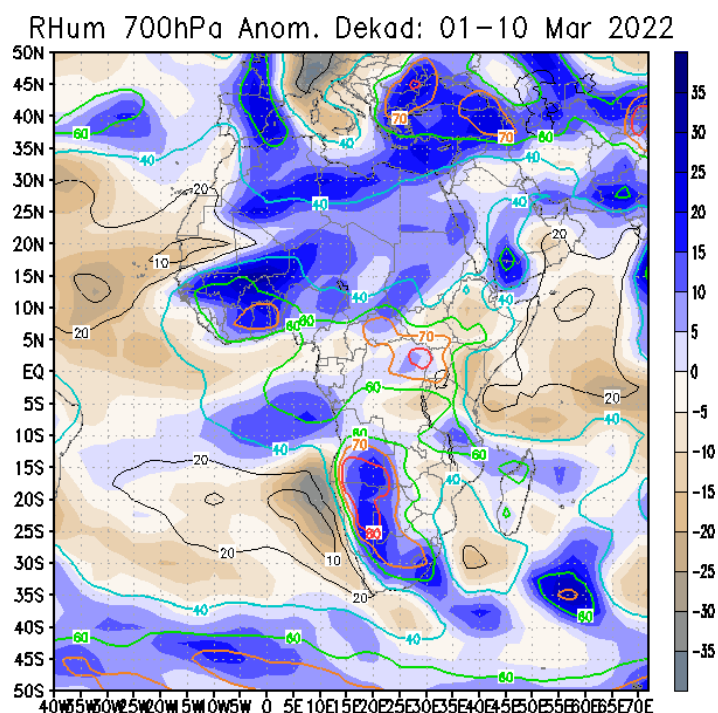


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 1st to 10th March 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

2.0 PRECIPITATION

Figure 6 shows the observed precipitation as a percentage of average for the first dekad of March 2022.

2.1 Precipitation

□ During the first dekad of March 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, southern Ghana, western and south-eastern parts of DRC, most parts of Angola and Zambia, south-western Tanzania, north and eastern Botswana, north-eastern Namibia, central parts of South Africa and Madagascar. In the same dekad, below-average to well below-average rainfall was recorded over northern to eastern parts of Morocco, Algeria and Tunisia, southern Côte d'Ivoire, Cameroon, Gabon, Congo, DRC, Uganda, Mozambique, Zimbabwe, north-eastern of South Africa and Eswatini

Details:

- **North Africa:** This region experienced mostly near average rainfall conditions. The northern edges of Morocco, Algeria and Tunisia 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 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:** western Tanzania observed above average to well above average rainfall conditions while Uganda, Kenya, and central Ethiopia observed below average to well below average rainfall conditions.
- **Southern Africa countries:** most parts of Zambia, north Malawi, Botswana, north-eastern Namibia, South Africa, north and central Madagascar observed above-average to well above-average precipitation. Southern Zambia, Malawi, Mozambique, central Namibia, much of Zimbabwe, South Africa recorded below-average to well below-average rainfall conditions.

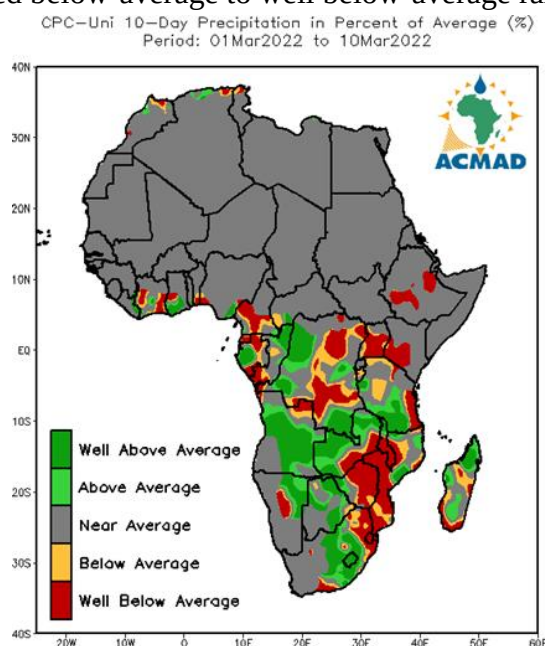


Figure 6: Precipitation in the percentage of the average for the third dekad 1st to 10th March 2022. The reference period used is 1991-2020. Source: NOAA/. NCEP/. CPC/. UNIFIED/. Africa/. DAILY/)

3.0 OUTLOOK VALID FOR 10 to 23 February 2022

3.1 PRECIPITATION

The outlook for 19 - 25 March to 26 March-1st April 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 to Week 2, moderate to heavy precipitation is expected over Gabon, Congo, DRC, Angola, Zambia, Tanzania, Malawi, Zimbabwe, and Madagascar. During the same period of these two weeks, the heavy precipitation is very likely over south-eastern DRC, Angola, Zambia, Malawi and Tanzania.

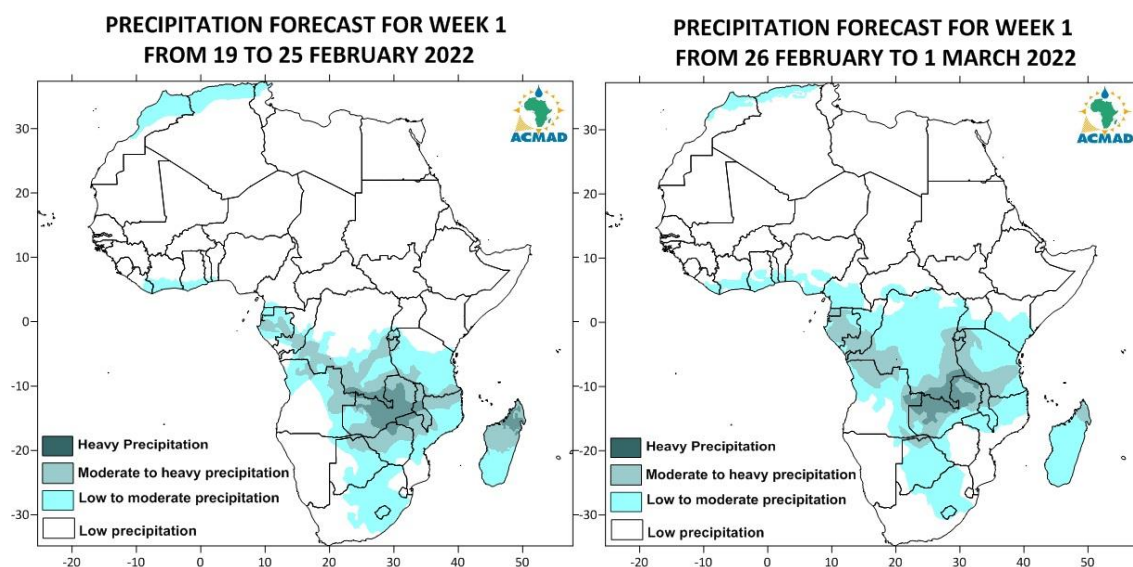


Figure 7a: Precipitation forecast for 19 -251 March 2022

Figure 7b: Precipitation forecast for 26 March -1st April 2022