



African Centre of Meteorological Applications for Development
Centre Africain pour les Applications de la Météorologie au Développement

Ten Days Climate Diagnostics Bulletin

N°09

Dekad 3, 21st – 31st March 2022

HIGHLIGHTS

- ✓ *During the third dekad of March 2022, the rainfall activities were observed over the northern to southern parts of Continent, parts of eastern Africa and eastern of the central regions with above-average to well above-average rainfall conditions observed over Morocco, Algeria, Tunisia, Ghana, central of Nigeria, much of South Sudan, Uganda, eastern DRC, western Tanzania, Zambia, most parts of Angola, Namibia, central western Botswana, southern Zimbabwe, Mozambique, central parts of South Africa and Madagascar. In the same dekad, below-average to well below-average rainfall was recorded over Algeria, Liberia, southern Nigeria, much of Cameroon, CAR, Gabon, Congo, DRC, northern Angola, eastern Zambia, northern and central Mozambique, eastern Botswana, and north and central eastern parts of South Africa.*
- ✓ *The second dekad of March was characterized by neutral to warm SSTs conditions in the Eastern parts the Continent. These SST conditions contributed to above 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 25-31 March to 1st -7th 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 1028hPa, Strengthened by 6hPa when compared to the previous dekad and by 8hPa compared to the climatological mean (1991-2020). The Azores high moved from north-eastern to the climatology over the North Atlantic Ocean and was located at 18°W and 43°N.
- **St. Helena High** observed a central pressure value of 1019hPa, a 2hPa weakened from the previous dekad and 1hPa to the climatological mean (1991-2020). It was located at 13°W/33°S. It moved slightly south-westward of its climatological position over the South Atlantic Ocean.
- **Mascarene High:** The central value for Mascarene High was 1022hPa. It weakened by 3hPa from the previous dekad and Strengthened by 2hPa to the climatological mean (1991-2020). Positioned at 56°E and 36°S, it moved to the West over the south Indian Ocean.
- **Heat Low:** Thermal it was formed by two cells, the first it is over the central of Chad with the value of 1003hPa, located at 16°E and 14°N, deepened to 1hPa to from last dekad and 3hPa to the climatology mean, the second cell was observed with 1004hPa it was stable from previous dekad and climatology located over South Sudan.

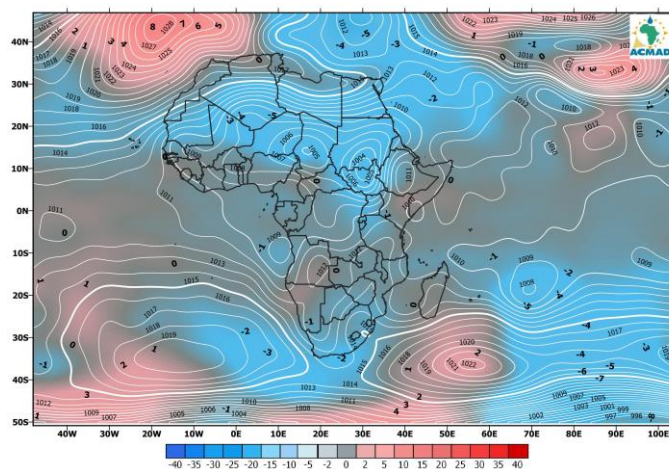


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) from 11th to 2nd March 2022

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 east south wind anomalies of about 8m/s - 12m/s average wind speed was observed over Egypt, southern Libya, Tunisia and Algeria.

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 and Central Africa, while the rest of the continent observed light to moderate wind anomalies of about 2m/s to 8m/s.

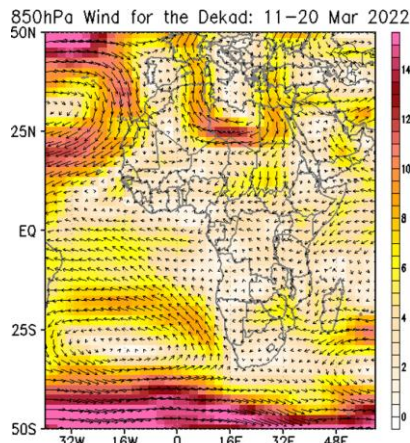


Figure 2a: Mean wind (m/s) at 850hPa from 11th to 20th March 2022
Source: NOAA/NCEP

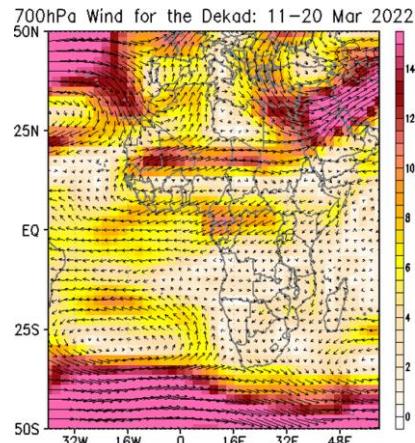


Figure 2b: Mean wind (m/s) at 700hPa from 11th to 20th March 2022
Source: NOAA/NCEP

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.

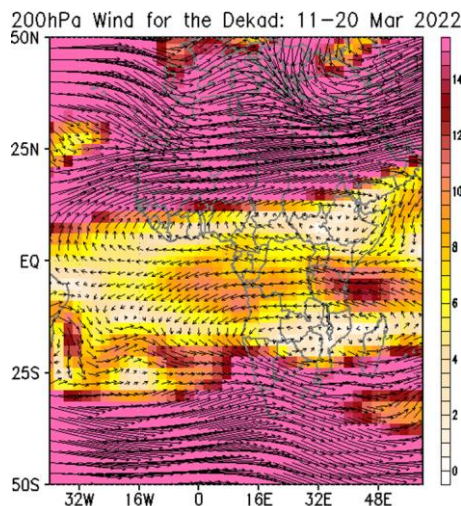


Figure 2c: Mean wind at 200 hPa (m/s) during the period 11th to 20th March 2022
(Source: NOAA/NCEP)

1.2.3 Relative Humidity (RH) at 850hPa

Figure 4 presents the dekadal observed relative humidity and anomalies at 850hPa for the second 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, Algeria, Uganda, western Kenya, Tanzania, south-east of DRC and most of the SADC regions. The rest of the continent observed RH values $\leq 60\%$.

Negative anomalies were observed during the second dekad of March 2022 over CAR, South-Sudan, Ethiopia, Kenya, Uganda, Rwanda, Burundi and DRC. Positive anomalies were recorded over the rest of the continent

RHum 850hPa Anom. Dekad: 11-20 Mar 2022

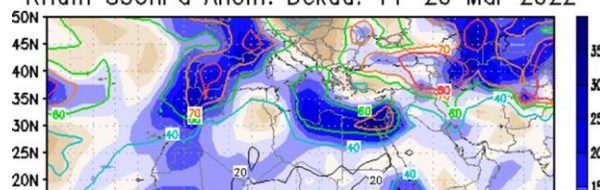


Figure 4. RH (%) at 850hPa (contour) and anomaly (shaded) during the period 11th to 20th March 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 Morocco, 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 southern Morocco, Libya, Egypt, northern Mauritania, Cameroon, Congo, CAR, DRC, Uganda, South-Sudan, Ethiopia, Somalia, Kenya, Tanzania and Madagascar. The rest of the continent observed positive anomalies.

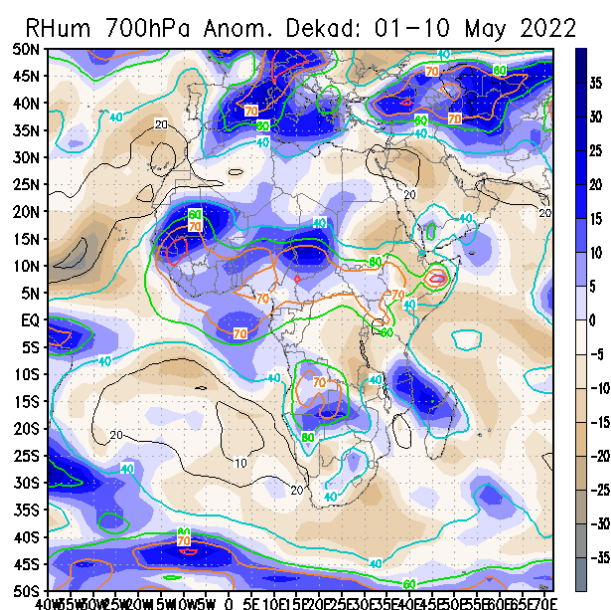


Figure 5. RH (%) at 700hPa (contour) and anomaly (shaded) during the period 11th to 20th March 2022
(SOURCE/. NOAA/. NCEP-CAR/. CDAS1)

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 second dekad of March 2022, the rainfall activities were observed over the 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 Côte d'Ivoire, central of Ghana, southernmost of CAR, southern DRC, Tanzania, central and eastern Angola, most of Zambia, Malawi, Mozambique, Zimbabwe, north and central Botswana, eastern Namibia, central and eastern parts of South Africa and most of the southern parts of Madagascar. In the same dekad, below-average to well below-average rainfall was recorded over southern parts of Guinea Gulf region, Cameroon, Gabon, Congo, DRC, Uganda, Ethiopia, Kenya, Tanzania, Rwanda, Burundi, northern Angola, south-east of Botswana, central of South Africa

Details:

- **North Africa:** This region experienced mostly near average rainfall conditions.
- **Gulf of Guinea countries:** The southern parts of the region received mostly on southern parts below-average to well below-average precipitation while central Cote d'Ivoire and 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, Ethiopia and Somalia observed below average to well below average rainfall conditions.
- **Southern Africa countries:** most parts of Zambia, Malawi, Mozambique, Zimbabwe, Botswana, north-eastern Namibia, South Africa, north and Madagascar observed above-average to well above-average precipitation. Northern Namibia, Zimbabwe, southern Botswana, central parts of South Africa recorded below-average to well below-average rainfall conditions.

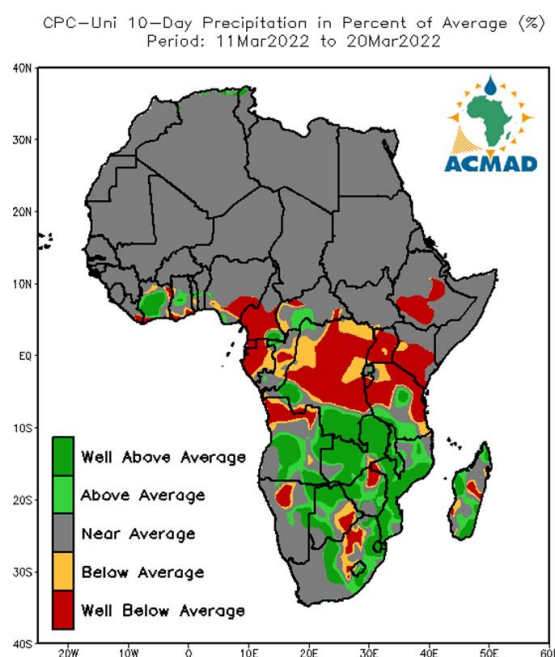


Figure 6: Precipitation in the percentage of the average for the third dekad 11th to 20th March 2022. The reference period used is 1991-2020. Source: NOAA/ NCEP/ CPC/ UNIFIED/ Africa/ DAILY/

3.0 OUTLOOK VALID FOR 25 MARCH TO 7 APRIL 2022

3.1 PRECIPITATION



The outlook for 25-31 March to 1st -7th 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..

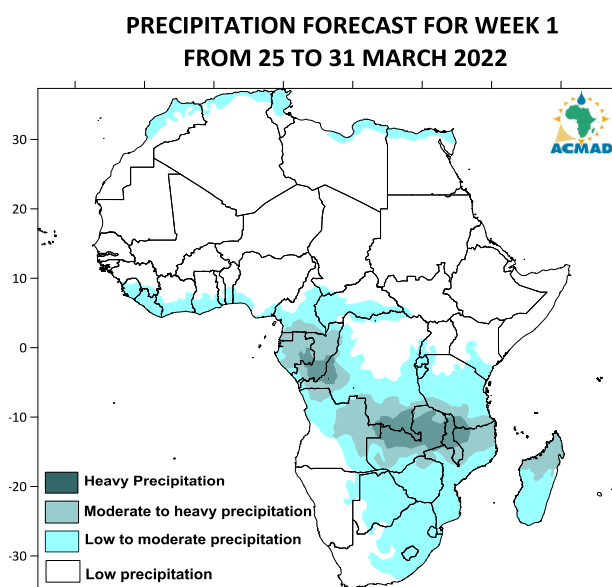


Figure 7a: Precipitation forecast for 25-31 March 2022

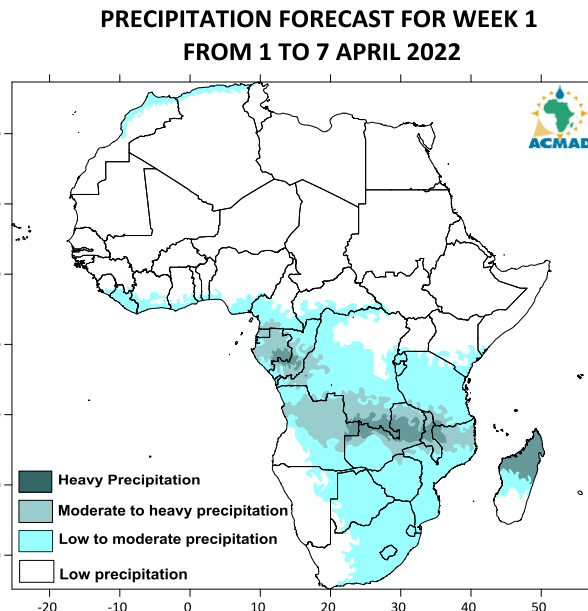


Figure 7b: Precipitation forecast for -1st-7th April 2022