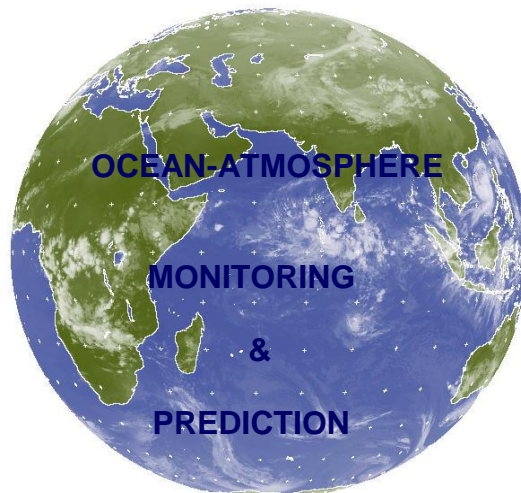


CLIMATE DIAGNOSTIC BULLETIN FOR AFRICA

NO. 4
APRIL, 2022



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SUMMARY OF APRIL 2022 AND OUTLOOK FOR MJJ 2022

The precipitation during April 2022, above-average to well above average was observed over the eastern Côte d'Ivoire, western Ghana, southern Togo, Benin, Nigeria, much of Congo, western and eastern parts of DRC, most parts Rwanda, northernmost and southern Tanzania and eastern Madagascar.

Below to well below-average precipitation was observed over southern Cameroon, much of Gabon, central of northern part of DRC, Uganda, Ethiopia, Kenya and Tanzania.

The precipitation in the percent of average for February-March-April 2022 season was above to well above average over the northern Algeria, most parts of Guinea Gulf Countries, southern DRC, Rwanda, Kenya, central and southern Tanzania and much of SADC countries.

Below-average precipitation was observed over northern Algeria, Tunisia, south-eastern Nigeria, southern Cameroon, central of northern DRC, south-western Ethiopia, eastern Kenya and northern Zimbabwe.

Positive temperature anomalies, greater than or equal to 1.5°C were observed during April 2022 over Senegal, Guinea, Guinea Bissau, southern Mali, much Libya, Egypt, Chad, Sudan, while over the northern South Africa observed -1°C.

During the February-March-April 2022 season, positive temperature anomalies greater than or equal to 1.5°C were observed over Senegal, Guinea, Gambia, Mali, Mauritania.

During April 2022, over Liberia, south-eastern Nigeria, Cameroon, Gabon, south-western Congo and DRC, western Zambia, northern Zimbabwe, eastern Tanzania, south-eastern Kenya and eastern and central parts of Ethiopia experienced below normal precipitation. Above average was observed over DRC, the western parts of Eastern Africa, most of the central and eastern SADC region and parts of Madagascar.

The outlooks for the rainfall season during the May to August 2022 period favour a normal to below rainfall over eastern Sierra Leone, Liberia, south-western Côte d'Ivoire, Cameroon, Gabon, northern Ethiopia, much of Djibouti and southern Madagascar.

Above precipitation is very likely over southern Mali, Niger, Burkina Faso, northern Nigeria, central Chad, southern Sudan, northern South-Sudan and westernmost of Ethiopia during the May to August 2022 period.

Above average temperature is very likely over northern Morocco, Algeria during May to August 2022.

Near to above average temperature is very likely over Morocco, much of Algeria, Tunisia, Libya, and north Mauritania, northernmost of Mali, eastern Botswana, southern Zimbabwe and northern South Africa.

1. SYNOPTIC SITUATION FOR APRIL 2022

This section shows the intensity of pressure centres, circulation and the associated anomalies at 850hPa, the wind direction and speed at the middle and higher levels, relative humidity at 850hPa and 700hPa, Sea Surface Temperature (SST) and El Nino/Southern Oscillation (ENSO).

1.1 Pressure Centres:

Figure 1 shows the locations and status of the surface pressure systems.

- **The Azores high:** The pressure systems at the Azores high recorded 1019hPa, weakened by 2hPa when compared to the previous month and intensifying by 4hPa than its climatology mean (1991-2020). The centre was located at 55°W, 28°N. It moved westward of its climatological position over the North Atlantic Ocean.
- **St. Helena High:** Observed a central value of 1025hPa, intensifying by 3hPa when compared to the previous month and by 9hPa than its climatological mean (1991-2020). The centre was located at 36°S, 2°E, and it moved westward of its climatological position over South Atlantic Ocean.
- **Mascarene High:** The Mascarene high-pressure system observed a value of 1023hPa, intensifying by 1hPa when compared to the previous month and by 7hPa compared to its climatological mean (1991-2020). It moved eastward and was located at 88°E and 35°S.
- **Heat Low:** Twin heat-low located over Sudan and the Chad had central values of 1004hPa respectively. The central values deepened compared to the previous month of 1006hPa. The heat-lows were located at 30°E and 14°N and also at 16°E and 13°N respectively.

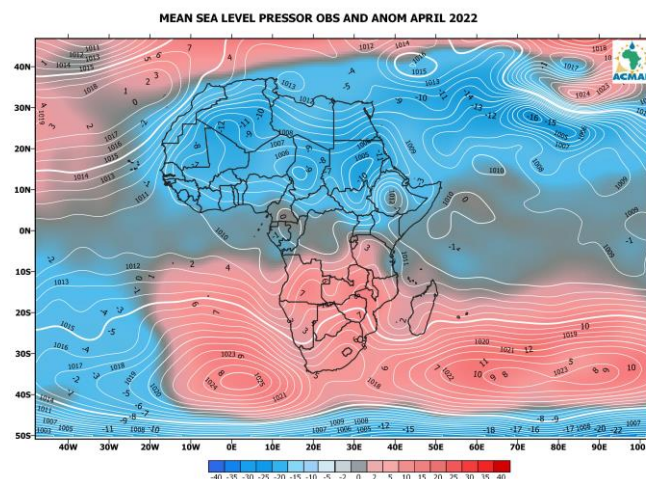


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) for April 2022 (Source: NOAA/NCEP)

1.2 Wind Anomalies (m/s) at 850hPa

Figure 2 shows wind anomalies at 850hPa. Light to moderate westerly winds was observed over the coastal part Algeria, Tunisia, Libya, Egypt. The anomalies winds from north-east to eastward weak to moderate over Sudan, Ethiopia, Somalia, Kenya, South-Sudan, CAR, Chad, Nigeria, Niger, Mali, and Mauritania. while the rest of the continent observed easterly wind anomalies.

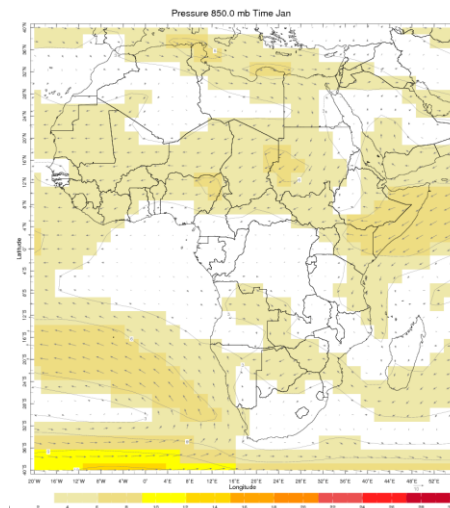


Figure 2a: Wind anomalies (m/s) at 850hPa for April 2022 (source: NOAA/NCEP)

1.2 Relative Humidity (RH) at 850hPa

In April 2022, high RH $\geq 60\%$ at 850hPa (fig.3) was observed over Western African Countries, Central Africa and most of the western and central parts of the SADC region. The rest of the continent observed RH values less than 60%.

Negative anomalies (1991-2020 mean) of relative humidity were observed over Libya, Egypt, Sudan, South-Sudan, CAR, DRC, Burundi, Rwanda, Uganda, Kenya, Ethiopia Tanzania, northern Mozambique, Madagascar and Angola. The rest of the continent observed positive anomalies of RH (above 1991-2020 mean) during January 2022.

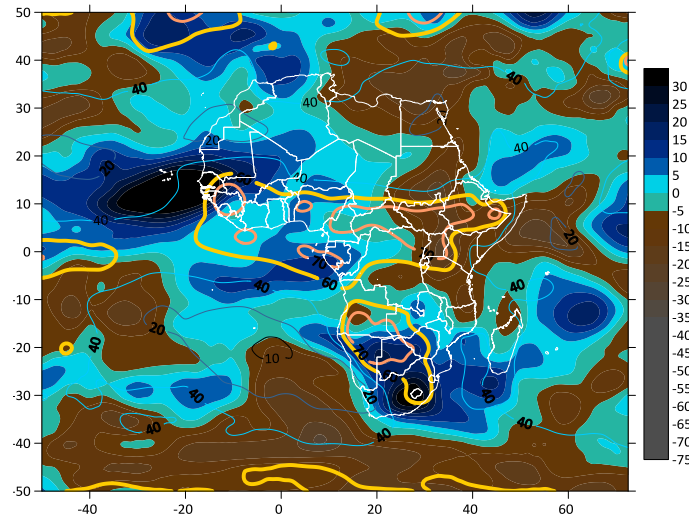


Figure 3. Relative humidity (%) at 850hPa (contour) and anomaly (shaded) for April 2022 (SOURCE: NOAA/NCEP)

1.4 Relative Humidity at 700 hPa

High RH $\geq 60\%$ at 700hPa (fig.4) was observed during April 2022 over most of the Western, eastern, central and southern regions of Africa. The rest of the continent observed RH values were less than 60%.

Negative anomalies (1991-2020 mean) of RH were observed over eastern Morocco, western Algeria, northern Egypt, much of Sudan, southern Cameroon, Ethiopia, most parts of Kenya, Tanzania, south-eastern DRC, north-eastern Angola, northern and central of Zambia, Malawi, central parts of Madagascar. The rest of the continent observed positive anomalies (greater than the 1991-2020 mean) of RH during the month under review.

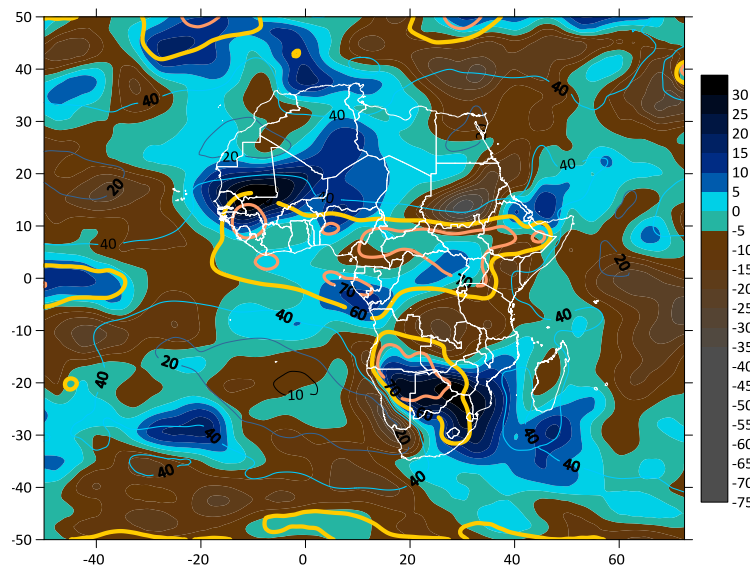


Figure 4. Relative humidity (%) at 700hPa (contour) and anomaly (shaded) for April 2022 (SOURCE: NOAA/NCEP)

1.5 Sea Surface Temperature (SST) and El Nino/Southern Oscillation (ENSO)

Over eastern to central parts of the Equatorial Pacific, near to below-average SSTs were observed during April 2022. Neutral to below-average SST were noted over Tropical North Atlantic (TNA) area. In the Gulf of Guinea, neutral conditions prevailed during April 2022 with some negative conditions further south. Over the Indian Ocean, neutral to warm SSTs conditions were recorded over the south-western Indian Ocean and neutral to cold SSTs were observed over the north to the south-eastern Indian Ocean.

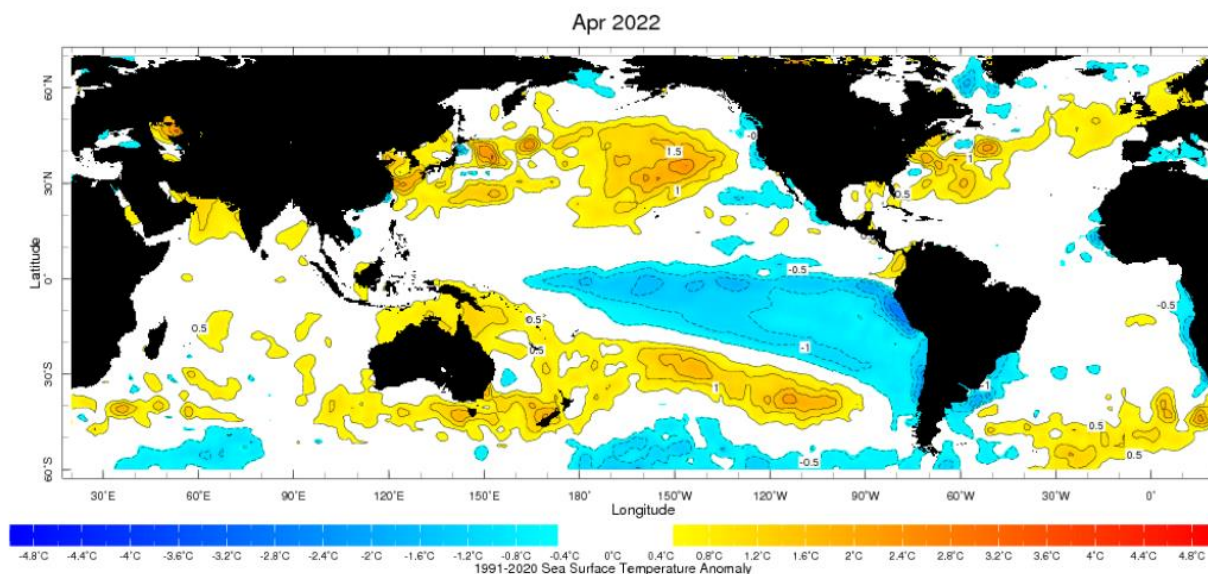


Figure 5: Sea surface temperature anomalies for april 2022 (source: IRI)

2. CLIMATOLOGICAL SITUATION AND IMPACTS DURING APRIL 2022

This section provides the general climatological situation and its impacts, covering two major parameters; temperature and precipitation.

2.1 Precipitation

2.1.1 Monthly Precipitation

The precipitation during April 2022, above-average to well above average was observed over the eastern Côte d'Ivoire, western Ghana, southern Togo, Benin, Nigeria, much of Congo, western and eastern parts of DRC, most parts Rwanda, northernmost and southern Tanzania and eastern Madagascar.

Below to well below-average precipitation was observed over southern Cameroon, much of Gabon, central of northern part of DRC, Uganda, Ethiopia, Kenya and Tanzania..

2.1.2 Seasonal Precipitation

The precipitation in the percent of average for February-March-April 2022 season was above to well above average over the northern Algeria, most parts of Guinea Gulf Countries, southern DRC, Rwanda, Kenya, central and southern Tanzania and much of SADC countries.

Below-average precipitation was observed over northern Algeria, Tunisia, south-eastern Nigeria, southern Cameroon, central of northern DRC, south-western Ethiopia, eastern Kenya and northern Zimbabwe.

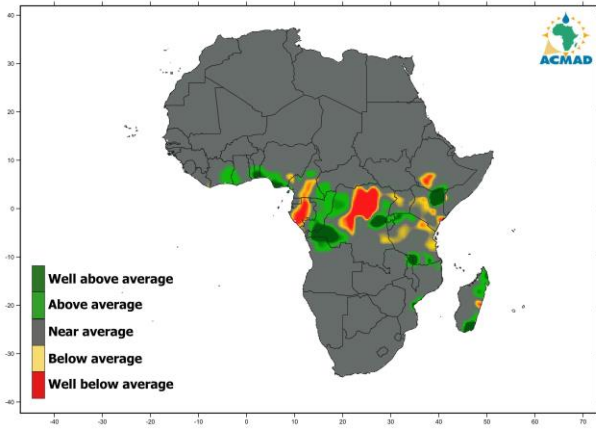


Figure 6a: Monthly precipitation in the percentage of the average for April 2022 (Source: NOAA/NCEP)

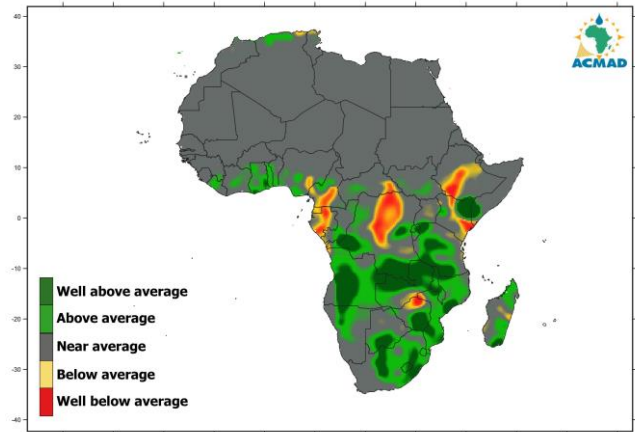


Figure 6b: Precipitation in the percentage of the average for February-March-April 2022 (Source: NOAA/NCEP)

2.2 Surface Temperature

2.2.1 Monthly Temperature Anomalies

Positive temperature anomalies, greater than or equal to 1.5°C were observed during April 2022 over Senegal, Guinea, Guinea Bissau, southern Mali, much Lybia, Egypt, Chad, Sudan, while over the northern South Africa observed -1°C.

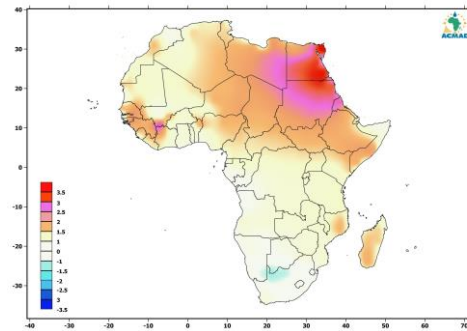


Figure 7: Temperature anomaly for April 2022 (Source: NOAA/NCEP)

2.2.2 Seasonal Temperature Anomalies

During the February-March-April 2022 season, positive temperature anomalies greater than or equal to 1.5°C were observed over Senegal, Guinea, Gambia, Mali, Mauritania.

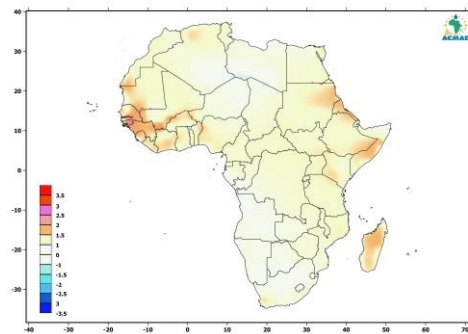


Figure 8: Seasonal temperature anomaly February-March-April 2022 (Source: NOAA/NCEP)

3. OUTLOOK

3.1 El Niño/La Niña

This section provides the predicted Sea Surface Temperature (SST) anomalies, exhibiting the future characteristics of ENSO and the precipitation outlook for the coming months.

Figure 12 shows the forecasts by dynamic and statistical models over Niño3.4 (5°N–5°S, 120°W–170°W).

In mid-April, Sea Surface Temperatures remain below average in the central-eastern equatorial Pacific. A large majority of the models in the plume predict SSTs to stay below-normal at the level of a weak La Niña until April and then return to ENSO-neutral levels in May-September 2022. Similar to the most-recent official CPC/IRI ENSO Outlook issued on April 10, 2022, this objective model-based ENSO outlook also predicts a continuation of the weak La Niña event with a high probability during May-July.

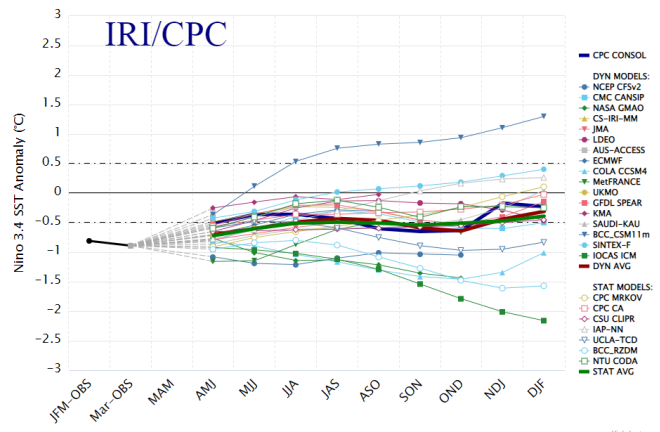


Figure 12: Ensemble multi-model forecast from April 2022 (Source: IRI)

3.2. Seasonal Precipitation Forecast for May-June-July 2022

The precipitation forecast for May-June-July 2022 season (fig.13), issued on April 30, 2022, reveals that:

During April 2022, over Liberia, south-eastern Nigeria, Cameroon, Gabon, south-western Congo and DRC, western Zambia, northern Zimbabwe, eastern Tanzania, south-eastern Kenya and eastern and central parts of Ethiopia experienced below normal precipitation. Above average was observed over DRC, the western parts of Eastern Africa, most of the central and eastern SADC region and parts of Madagascar.

The outlooks for the rainfall season during the May to August 2022 period favour a normal to below rainfall over eastern Sierra Leone, Liberia, south-western Côte d'Ivoire, Cameroon, Gabon, northern Ethiopia, much of Djibouti and southern Madagascar.

3.3. Seasonal Temperature Forecast for May-June-July 2022

The temperature forecast for April 2022 season (fig.14), issued on April 30, 2022, shows that:

Above average temperature is very likely over northern Morocco, Algeria during May to August 2022.

Near to above average temperature is very likely over Morocco, much of Algeria, Tunisia, Libya, and north Mauritania, northernmost of Mali, eastern Botswana, southern Zimbabwe and northern South Africa.

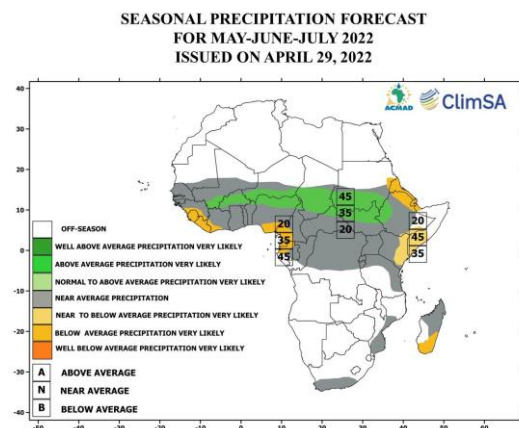


Figure 13: Seasonal precipitation forecast for May-June-July, 2022

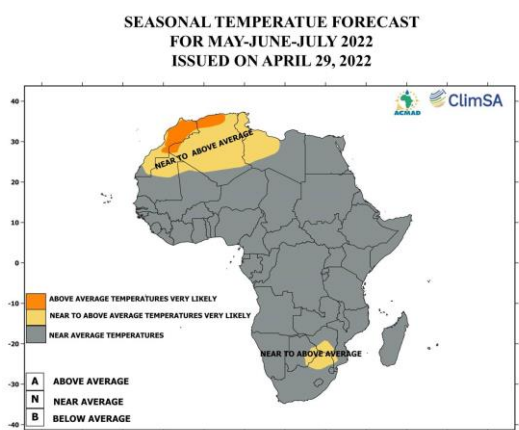


Figure 14: Temperature forecast for May-June-July, 2022

