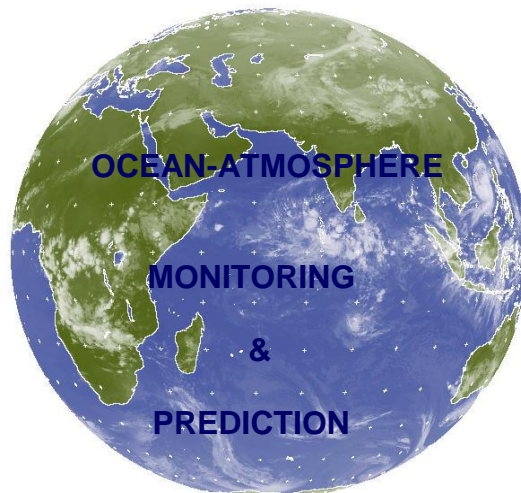


CLIMATE DIAGNOSTIC BULLETIN FOR AFRICA

NO. 7
JULY, 2022



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SUMMARY OF JUNE 2022 AND OUTLOOK FOR JAS 2022

The precipitation during July 2022, above-average to well above average was observed over Senegal, Guinea Bissau, Guinea, Liberia, southern Niger, southern Côte d'Ivoire, north-eastern Nigeria, Cameroon and Gabon, southern Chad, most parts of Central African republic, north of Congo, South Sudan, Most parts of Sudan and western of Ethiopia.

Below to well below-average precipitation was observed over south-east Mauritania, Mali, Guinea, west Niger, Nigeria, Sierra Leone, Uganda, central of Mozambique and south of South Africa.

The precipitation in the percent of average for May-June-July 2022 season was above to well above average over Guinea Bissau, Senegal, central Burkina Faso, eastern Côte d'Ivoire, Ghana, Togo, Benin, western and southern Niger, northern Nigeria, southern Chad, most parts of CAR, eastern Cameroon, eastern Gabon, much of Congo, western and central DRC, southern Sudan, north-eastern Ethiopia, northern Tanzania and central Mozambique.

Below-average precipitation was observed over Sierra Leone, south-eastern Nigeria, western Gabon, southern and central Ethiopia, western Kenya and eastern Uganda..

Positive temperature anomalies, greater than or equal to 1.5°C were observed during July 2022 over Morocco, Algeria, Tunisia, Libya, Egypt, most parts of SADC, and Madagascar while over the northern Somalia less than or equal to -1°C.

During the May-June-July 2022 season, positive temperature anomalies greater than or equal to 1.5°C were observed over Morocco, Algeria, Tunisia, Libya, Niger, Mauritania, Senegal, Gambia, Mali, Burkina faso, Nigeria, Sudan, Ethiopia, Somalia and South Africa.

Below average to Normal-to-below normal rainfall is expected over south-eastern Nigeria, western Cameroon, north-western Guinea Equatorial, north-eastern DRC, south-western South-Sudan and western Uganda during the July to October 2022 season.

Above average precipitation is very likely over much of Senegal, Gambia, Guinea Bissau, northern Guinea, Sierra Leone, southern Mauritania, Mali, Niger, most parts of Burkina Faso, southern Niger, northern Benin, Nigeria, south-western parts of Chad, Sudan, and northern South-Sudan and Ethiopia during August to October 2022.

Near to above average is expected over Morocco, Algeria, Tunisia, Libya, Egypt and northernmost of Mauritania, Mali, Niger, Chad, Sudan and near to below average is very likely southern Zimbabwe and Mozambique, most parts South Africa from August to October 2022.

Above average Temperature is very likely over northern Morocco, Algeria and northern Mauritania during August to October 2022.

1. SYNOPTIC SITUATION FOR MAY 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 1026hPa, no intensify when compared to the previous month and by 2hPa than its climatology mean (1991-2020). The centre was located at 33°W, 37°N. It moved north-eastern of its climatological position over the North Atlantic Ocean.
- **St. Helena High:** Observed a central value of 1026hPa, intensifying by 5hPa than its climatological mean (1991-2020). The centre was located at 30°S, 11°W, and it moved eastward of its climatological position over South Atlantic Ocean.
- **Mascarene High:** The Mascarene high-pressure system observed a value of 1029hPa, intensifying by 8hPa when compared to the previous month and by 5hPa compared to its climatological mean (1991-2020). It moved eastward and was located at 61°E and 31°S.
- **Heat Low:** Twin heat-low located over Mali, eastern Niger and western Chad with 1009hPa respectively. The central values remained when compared to the previous month. The heat-lows were located at 1°E and 19°N and 15°E and 17°N respectively.

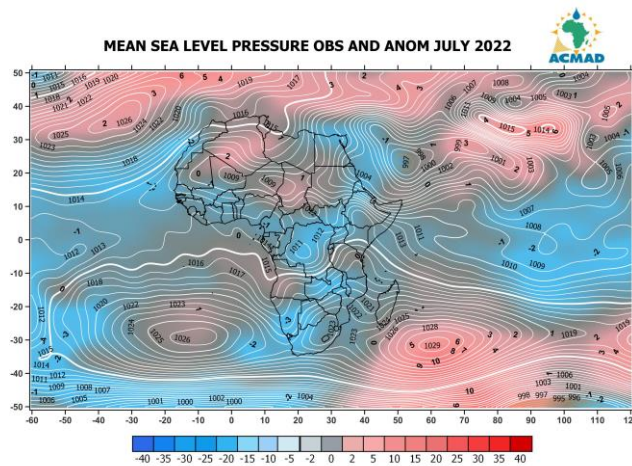


Figure 1. Observed Mean Sea Level Pressure (Contour) and anomaly (shaded) for July 2022 (Source: NOAA/NCEP)

1.2 Wind Anomalies (m/s) at 850hPa

Figure 2 shows wind anomalies at 850hPa. Light to moderate easterly winds was observed over Mauritania, Mali, Algeria, Chad, DRC, Uganda, Rwanda, Burundi, Zambia, and Namibia.

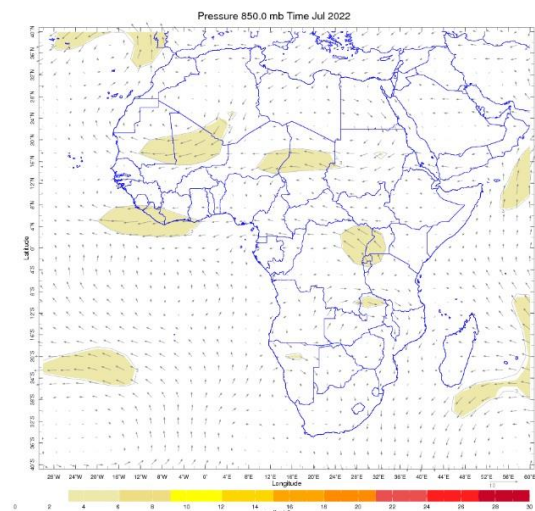


Figure 2a: Wind anomalies (m/s) at 850hPa for July 2022 (source: NOAA/NCEP)

1.2 Relative Humidity (RH) at 850hPa

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

Negative anomalies (1991-2020 mean) of relative humidity were observed over Mauritania, Mali, DRC, Angola, Tanzania, Burundi, Rwanda, Uganda, Kenya and Ethiopia. The rest of the continent observed positive anomalies of RH (above 1991-2020 mean) during July 2022.

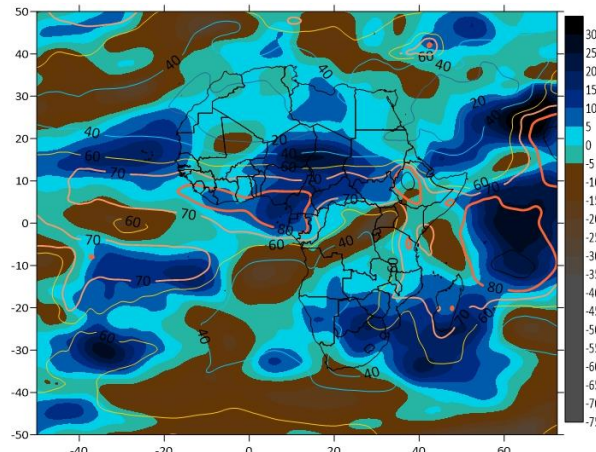


Figure 3. Relative humidity (%) at 850hPa (contour) and anomaly (shaded) for July 2022 (SOURCE: NOAA/NCEP)

1.4 Relative Humidity at 700 hPa

High RH $\geq 60\%$ at 700hPa (fig.4) was observed during July 2022 over southern and Western Africa, Central Africa and Eastern Africa region. The rest of the continent observed RH values were less than 60%.

Negative anomalies (1991-2020 mean) of RH were observed over Mauritania, Mali, Egypt most parts of Central Africa, Eastern Africa, and most parts of SADC region. The rest of the continent observed positive anomalies (greater than the 1991-2020 mean) of RH during the month under review.

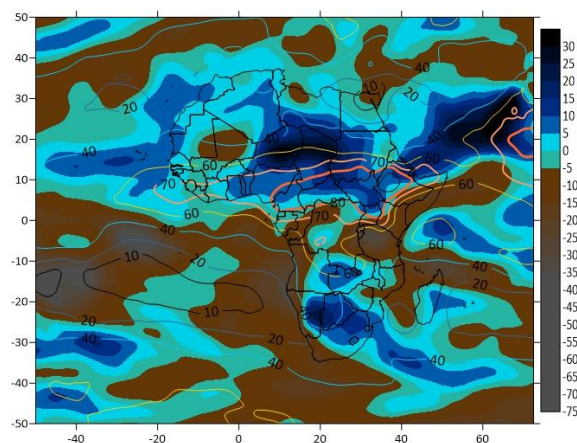


Figure 4. Relative humidity (%) at 700hPa (contour) and anomaly (shaded) for July 2022 (SOURCE: NOAA/NCEP)

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 July 2022. Neutral to warm SST were noted over Tropical North Atlantic (TNA) area. In the Gulf of Guinea, neutral conditions prevailed during July 2022 with some positive conditions further south. Over the Indian Ocean, neutral to cold SSTs conditions were recorded over the south-western Indian Ocean and neutral to warm SSTs were observed over the north to the south-eastern Indian Ocean.

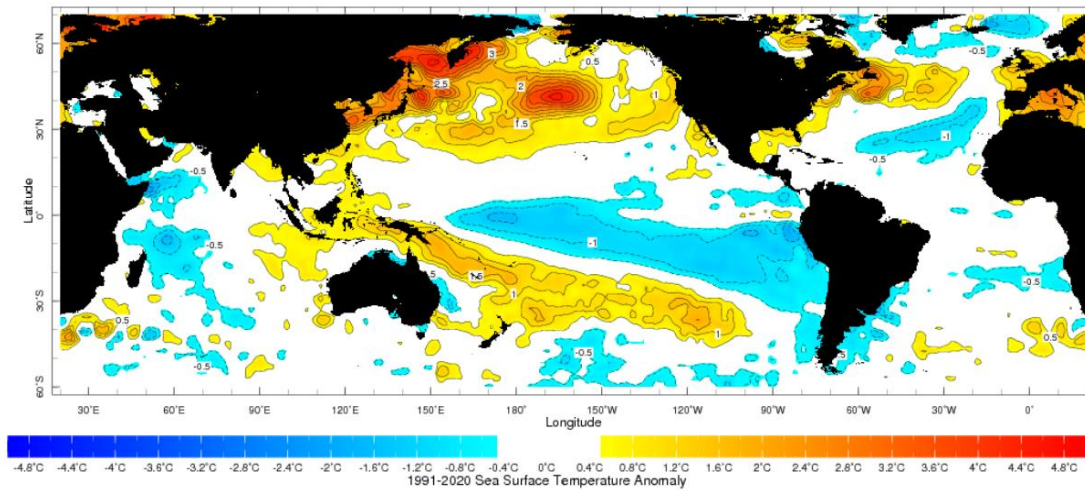


Figure 5: Sea surface temperature anomalies for July 2022 (source: IRI)

2. CLIMATOLOGICAL SITUATION AND IMPACTS DURING JULY 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 July 2022, above-average to well above average was observed over Senegal, Guinea Bissau, Guinea, Liberia, southern Niger, southern Côte d’Ivoire, north-eastern Nigeria, Cameroon and Gabon, southern Chad, most parts of Central African republic, north of Congo, South Sudan, Most parts of Sudan and western of Ethiopia.

Below to well below-average precipitation was observed over south-east Mauritania, Mali, Guinea, west Niger, Nigeria, Sierra Leone, Uganda, central of Mozambique and south of South Africa.

2.1.2 Seasonal Precipitation

The precipitation in the percent of average for May-June-July 2022 season was above to well above average over Guinea Bissau, Senegal, center Burkina Faso, eastern Côte d’Ivoire, Ghana, Togo, Benin, western and southern Niger, northern Nigeria, southern Chad, most parts of CAR, eastern Cameroon, eastern Gabon, much of Congo, western and center DRC, southern Sudan, north-eastern Ethiopia, northern Tanzania and center Mozambique.

Below-average precipitation was observed over Sierra Leone, south-eastern Nigeria, western Gabon, southern and central Ethiopia, western Kenya and eastern Uganda.

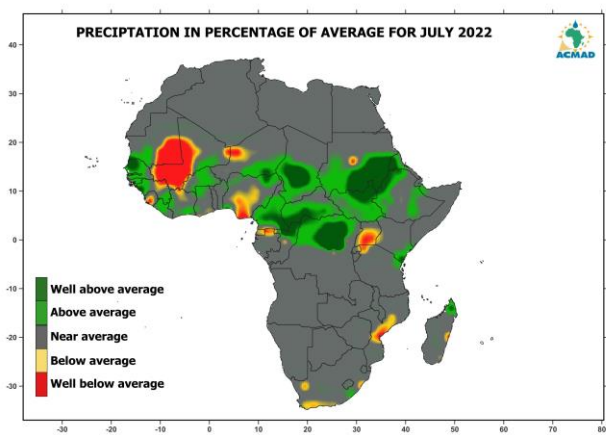


Figure 6a: Monthly precipitation in the percentage of the average for July 2022 (Source: NOAA/NCEP)

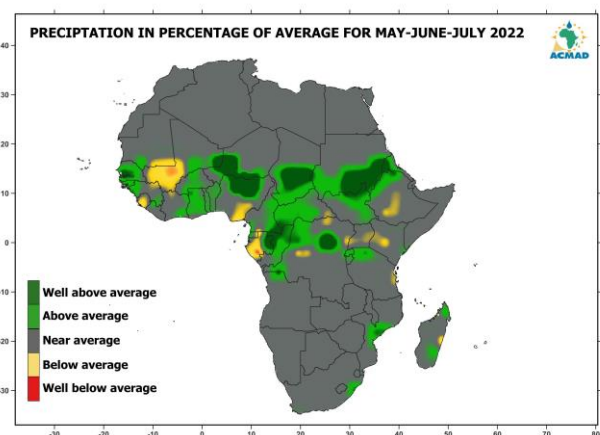


Figure 6b: Precipitation in the percentage of the average for May-June-July 2022 (Source: NOAA/NCEP)

2.2 Surface Temperature

2.2.1 Monthly Temperature Anomalies

Positive temperature anomalies, greater than or equal to 1.5°C were observed during July 2022 over Morocco, Algeria, Tunisia, Libya, Egypt, most parts of SADC, and Madagascar while over the northern Somalia less than or equal to -1°C.

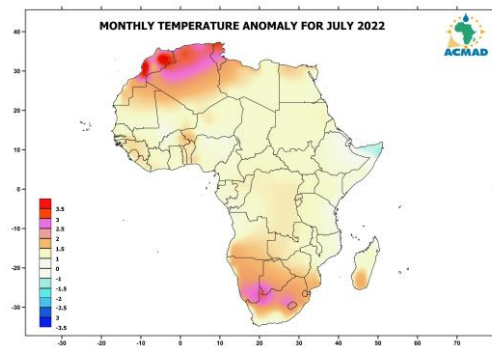


Figure 7: Temperature anomaly for July 2022 (Source: NOAA/NCEP)

2.2.2 Seasonal Temperature Anomalies

During the May-June-July 2022 season, positive temperature anomalies greater than or equal to 1.5°C were observed over Morocco, Algeria, Tunisia, Libya, Niger, Mauritania, Senegal, Gambia, Mali, Burkina faso, Nigeria, Sudan, Ethiopia, Somalia and South Africa.

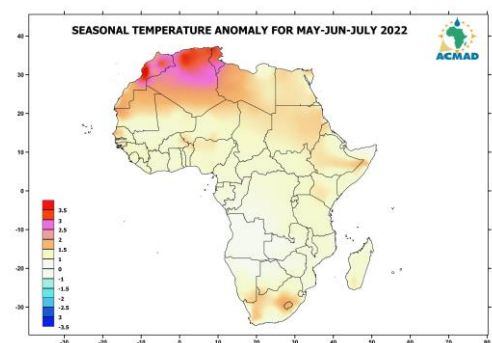


Figure 8: Seasonal temperature anomaly May-Jun-July 2022 (Source: NOAA/NCEP)

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-July, sea surface temperatures in the central-eastern equatorial Pacific remain below-average. Key oceanic and atmospheric variables have remained consistent with La Niña conditions, although weakened. A La Niña Advisory still remains in place for July 2022. A large majority of the models in the plume predict SSTs to remain below-normal at the level of a weak La Niña until at least Sep-Nov 2022. Similar to the most-recent official CPC/IRI ENSO Outlook issued on July 14, 2022, the objective model-based ENSO outlook forecasts a continuation of the La Niña event with moderate probability (68% chance) during Aug-Oct 2022.

Model Predictions of ENSO from Jul 2022

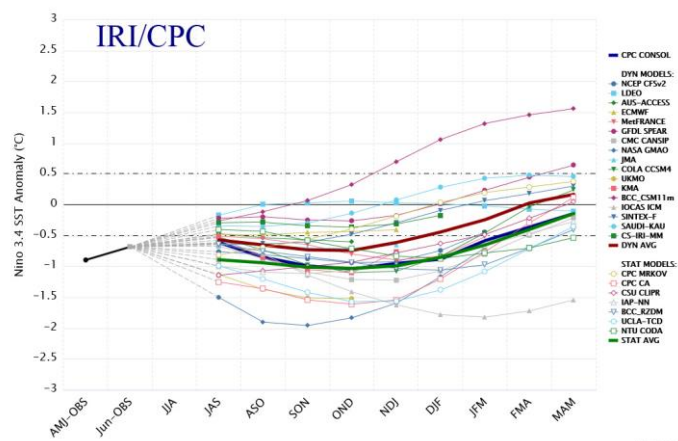


Figure 12: Ensemble multi-model forecast from July 2022 (Source: IRI)

3.2. Seasonal Precipitation Forecast for August-September-October 2022

The precipitation forecast for August-September-October 2022 season (fig.13), issued on July 31, 2022, reveals that:

Below average to Normal-to-below normal rainfall is expected over south-eastern Nigeria, western Cameroon, north-western Guinea Equatorial, north-eastern DRC, south-western South-Sudan and western Uganda during the July to October 2022 season.

Above average precipitation is very likely over much of Senegal, Gambia, Guinea Bissau, northern Guinea, Sierra Leone, southern Mauritania, Mali, Niger, most parts of Burkina Faso, southern Niger, northern Benin, Nigeria, south-western parts of Chad, Sudan, and northern South-Sudan and Ethiopia during August to October 2022.

SEASONAL PRECIPITATION FORECAST FOR AUGUST-SEPTEMBER-OCTOBER 2022 ISSUED ON JUNE 30, 2022

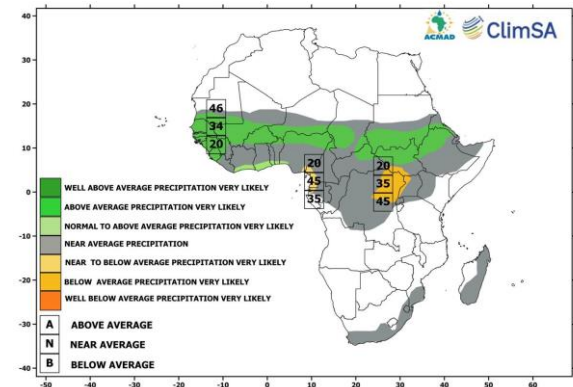


Figure 13: Seasonal precipitation forecast for August-September-October, 2022

3.3. Seasonal Temperature Forecast for August-September-October 2022

The temperature forecast for August-September-October 2022 season (fig.14), issued on July 31, 2022, shows that:

Near to above average is expected over Morocco, Algeria, Tunisia, Libya, Egypt and northernmost of Mauritania, Mali, Niger, Chad, Sudan and near to below average is very likely southern Zimbabwe and Mozambique, most parts South Africa from August to October 2022.

Above average Temperature is very likely over northern Morocco, Algeria and northern Mauritania during August to October 2022.

SEASONAL TEMPERATURE FORECAST FOR AUGUST-SEPTEMBER-OCTOBER 2022 ISSUED ON JUNE 30, 2022

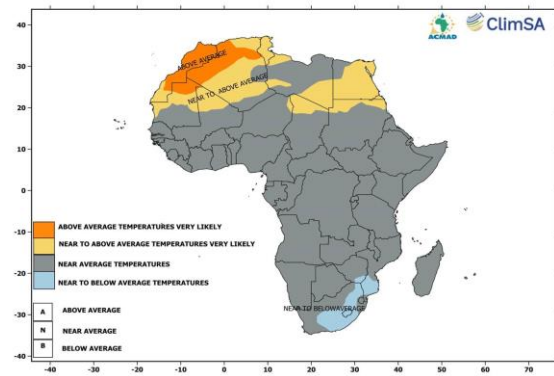


Figure 14: Temperature forecast for August-September-October, 2022