FAMINE EARLY WARNING SYSTEMS NETWORK

Democratic Republic of Congo

Monthly Climate and Weather

17 October 2024

Highlights

- **El Niño Southern Oscillation (ENSO)-neutral conditions** continued during September 2024. Equatorial sea surface temperatures (SSTs) are above average in the western Pacific and near-to-below-average in the east-central and eastern Pacific Ocean. Based on dynamical models, La Niña is favored to emerge in September-November 2024 (60% chance) and is expected to persist through January-March 2025 (60% chance).

- In September, **rainfall** in the Democratic Republic of the Congo (DRC) was above average in the northern, western, and central regions, with significant surpluses in northern Equateur, Bas-Uele, and Haut-Uele. However, some areas, particularly in northwestern and central regions, experienced 10 to 200 mm deficits. Southern Haut-Katanga had near-normal conditions. For November, below-average rainfall is expected in the northeast and southern regions, while the northwest, central, and southern areas may see above-average rainfall.

- The DRC has experienced above-average **maximum temperatures** of 1 to 3°C in most areas and exceptional anomalies of 4 to 5°C in several provinces, including Kasai-Central and Haut-Katanga. **Minimum temperatures** have been above average in northern and central regions but below average in southern Haut-Katanga. For November 2024, above-average temperatures are expected across much of the DRC, particularly in the northern and central regions, with a greater than 60% probability.

- Analysis of the Standard Precipitation Index (SPI) for September 2024 showed significant negative SPI values of 2 standard deviations below the mean in Lualaba province, indicating extremely dry conditions. The SPI forecast for October 11 to October 25, 2024, suggests a continuation of drier-than-average conditions for central and southern regions, particularly in Lualaba province. Conversely, northern and southeastern regions are expected to be wetter-than-average, while the rest of the country will likely experience near-normal conditions.

The FEWS NET Monthly Climate and Weather information bulletin is based on current weather and climate information and monthly and seasonal outlooks from the NOAA CPC. Information on crops, soil moisture, flooding, and evapotranspiration data were produced by FEWS NET, USGS, NASA and USDA. Various sources were used to assess impacts of extreme conditions. Questions or comments about this product may be directed to Dr. Wassila Thiaw, Head, International Desks/NOAA, wassila.thiaw@noaa.gov. Questions about the USAID FEWS NET activity may be directed to Dr. James Verdin, Program Manager, FEWS NET/USAID, jverdin@usaid.gov.

Figure 1: Seasonal calendar for DR Congo. **Source: FEWS NET**

Current Climate Modes and Teleconnections

- As of mid-October, ENSO-neutral conditions continued with near-average SSTs across the east-central and eastern equatorial Pacific Ocean. Low-level wind anomalies were easterly over the east-central Pacific, whereas upper-level wind anomalies were westerly over the eastern Pacific.

- The latest outlook suggests that La Niña is favored to emerge with a 60% chance during September – November 2024 and persist through January – March 2025 (**Fig. 2**). The latest update of the NOAA Climate Prediction Center's El Niño/Southern Oscillation diagnostic discussion can be found here.

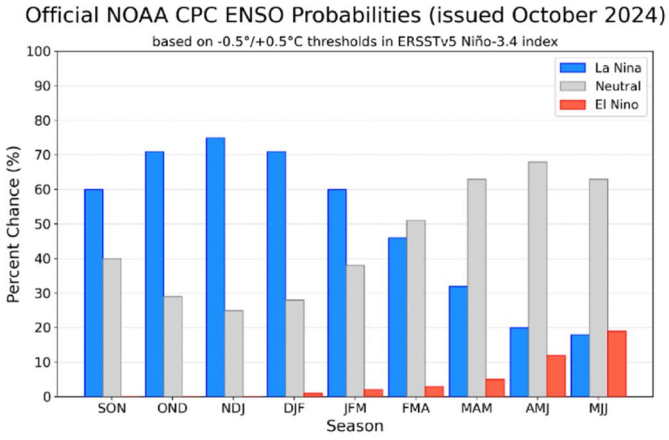

Figure 2: Official CPC ENSO probabilities outlook. **Source: NOAA/NCEP**

- Based on historical records, La Niña conditions are associated with above-average rainfall in eastern DRC and above-average mean temperatures in the South from November to January. The La Niña-precipitation teleconnection pattern can be found here, and the pattern for temperature can be found here.

Extreme Events

- No widespread fires were reported in September 2024. Overall, around 99,388 high-confidence fire alerts have been reported by VIIRS so far in 2024. In the past 4 weeks in the Democratic Republic of the Congo, the region with the most significant number of fire alerts was Tshopo, with 11 fire alerts. This represents 0.98% of all alerts detected in the Democratic Republic of the Congo.

Rainfall/Precipitation

Past 3 months (July 2024 to September 2024):

- **Total:** The northern region received extremely heavy rainfall, ranging between 300 and 750 mm. The central region received 75-300 mm of rainfall, while the western tip and the southern region received 2-75 mm of rainfall. The northern part of Equateur and northwestern Bas-Uele provinces received the highest total rainfall reaching 750 mm. There was no rainfall in southern Haut-Katanga province (**Fig. 3a)**.

- **Anomalies:** The accumulated rainfall was above-average (10-100 mm) over parts of the northern, western, and central regions of DRC. High rainfall surpluses greater than 100 mm were experienced in the northern Equateur, Bas-Uele, and Haut-Uele provinces. In contrast, rainfall deficits between 10-100 mm were recorded in the northwestern, central, and southern regions of DRC. The northern part of Sud-Ubangi and central Equateur provinces recorded the highest rainfall deficits of 100-200 mm. Near normal conditions were observed in southern Haut-Katanga province (**Fig. 3b)**.

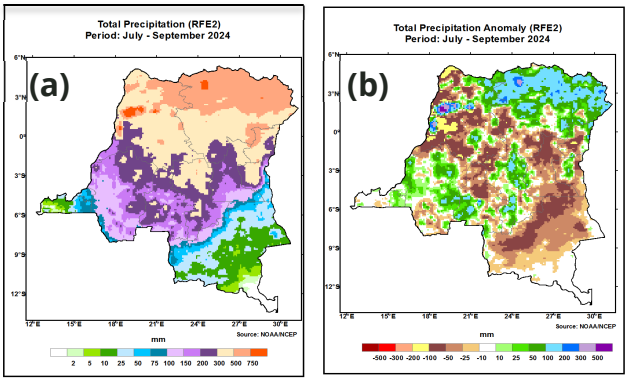

Figure 3: Spatial distribution for July-September 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Past 1 Month (September 2024):

- **Totals:** The northern and central regions received heavy rainfall between 100-300 mm. The west-central (around Kongo-Central) and the southern regions experienced rainfall ranging between 2-100 mm. Kongo-Central, Haut-Lomami, southern Lualaba, and northern Haut-Katanga provinces recorded light rainfall (2-10 mm). The southern part of Haut-Katanga province received no rain (**Fig. 4a**).

- **Anomalies:** Much of DRC has experienced 10-100 mm above-average rainfall, particularly in the northern and central areas. However, some regions in the northwestern, central, eastern, and southern parts saw 10 to 50 mm deficits, with the highest deficits over 100 mm in Sud-Ubangi, Maniema, Lomami, Tanganyika, and Haut-Lomami provinces. Overall, dryness has improved since last month, and near-normal conditions returned in southern Haut-Katanga province (**Fig. 4b**).

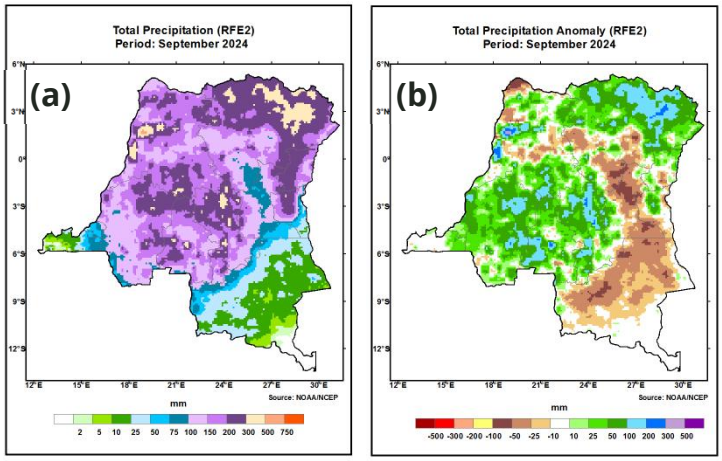

Figure 4: Spatial distribution for September 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Monthly (November 2024) and Seasonal (November 2024 – January 2024) Forecasts:

- **Monthly:** In November, below-average rainfall is favored in pocket areas in the northeast and southern regions. Pocket areas in the northwest, central, and southern regions will likely experience above-average rainfall **(Fig. 5a**).

- **Seasonal:** Between November 2024 and January 2025, below-average rainfall is favored in the northeast and pocket areas in the southern regions. A greater than 40% probability of below-average rainfall will be favored in Bas-Uele and Haut-Uele

provinces. Conversely, above-average rainfall is favored in pocket areas in the Sud-Ubangi, Nord-Ubangi, Kwango, and Haut-Katanga provinces (**Fig. 5b**).

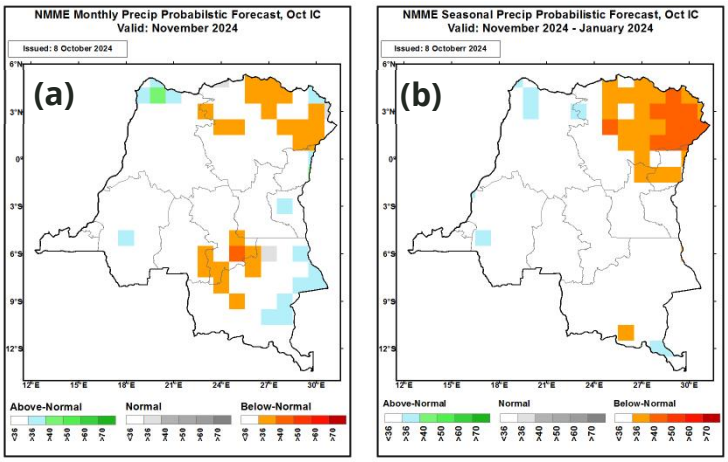

Figure 5: Rainfall forecast for (a) November 2024 and (b) November 2024 - January 2025. **Source: NOAA/NCEP**

Temperature

Past 3 months (July 2024 to September 2024):

- **Maximums:** Over the past three months, DRC has experienced average maximum temperatures ranging from 20 to 30°C. Most regions have recorded above-average temperatures, except for eastern Tshopo, Ituri, and northern Nord-Kivu, which have experienced near-normal conditions. The provinces of Lualaba, Haut-Lomami, and Haut-Katanga reported the highest temperatures, with mean maximums exceeding the average by 5°C (**Fig. 6a**).

- **Minimums:** The mean minimum temperatures in the DRC over the last 3 months was 20°C in the north and central regions and 10-15°C in the southern region. The southern part of Haut-Katanga province recorded the lowest temperature of 5°C. Above-average minimum temperatures (1-2°C) were recorded in most of the north and central regions. Bas-Uele and Tshopo experienced the highest anomaly of 3°C above-average minimum temperature. Conversely, below-average minimum temperature (2°C) was observed in southern Haut-Katanga province. Near-normal conditions were recorded in the reminder areas of DRC (**Fig. 6b)**.

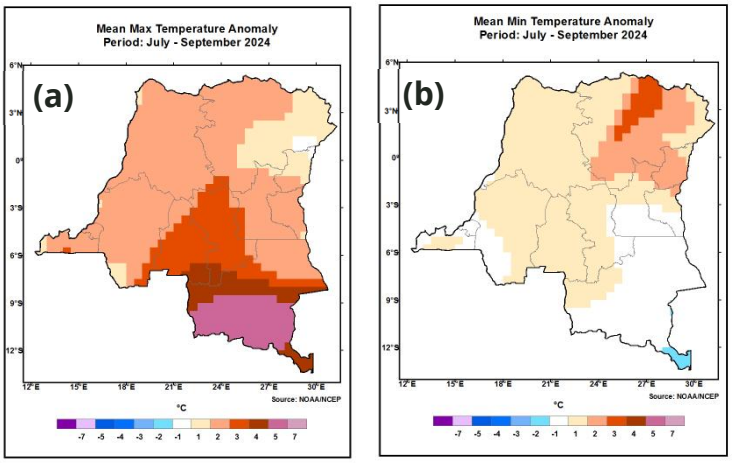

Figure 6: Spatial distribution for July – September 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Past 1 Month (September 2024):

- **Maximums:** Mean maximum temperatures were between 20-30°C in most of DRC. Maximum temperatures exceeded 30°C in pocket areas in the South. Anomalies were 1-3°C above-average across much of the country. The largest anomalies of 4-5°C above the average maximum temperature was recorded in the provinces of Kasai-Central, Lomami, Haut-Lomami, Tanganika, Lualaba, and Haut-Katanga (**Fig. 7a**).

- **Minimums:** The mean minimum temperatures in DRC over the last month was 20°C in the north and central regions and 10-15°C in the southern region. Above average mean minimum temperatures (1-2°C) were observed in much of the northern and central regions. Conversely, below-average mean minimum temperatures were experienced in southern Haut-Katanga province. The northwestern, west-central, and southeastern regions recorded near-normal conditions (**Fig. 7b)**.

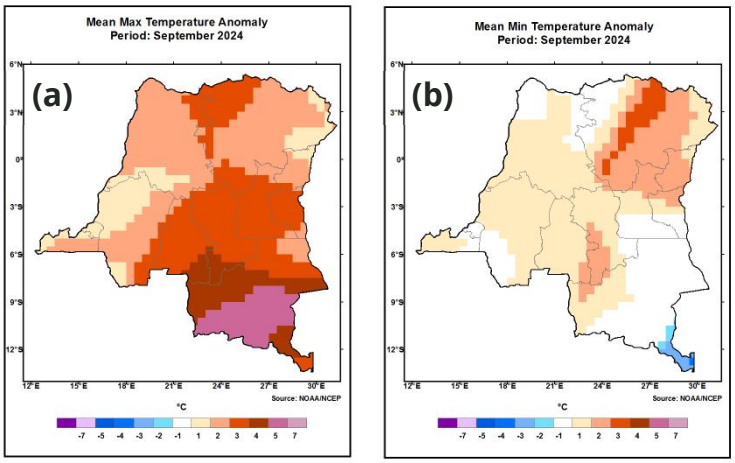

Figure 7: Spatial map for September 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Monthly (November 2024) and Seasonal (November 2024 – January 2024) Forecasts:

- **Monthly:** In November 2024, much of DRC is expected to have above-average temperatures. Parts of the northern and central regions are favored to have a greater than 60% probability for above-average mean temperatures **(Fig. 8a)**.

- **Seasonal:** Above-average mean temperatures are expected in DRC from November 2024 to January 2025. Parts of the west, central, and pocket areas in the southern regions are favored to have a greater than 70% probability for above-average mean temperatures (**Fig. 8b)**.

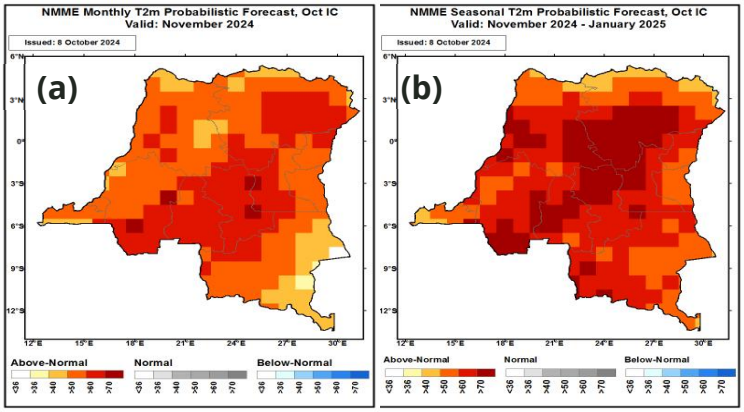

Figure 8: Spatial map for (a) November 2024 mean temperatures forecast and (b) November 2024 – January 2025 mean temperatures forecast. **Source: NOAA/NCEP**

Flooding and Areas of Inundation

- There have been no reports of flooding in the past month.

Drought and Dryness

The Standardized Precipitation Index (SPI) is used to characterize meteorological drought. SPI compares the precipitation over a specific period of time with the climatology from that same period. Therefore, the SPI values can be thought of as the number of standard deviations the observed anomaly deviates from the climatology. The 1-month SPI values are a good representation of the monthly precipitation anomaly as well as the soil moisture and vegetation health. The 3-month SPI values are a good representation of seasonal precipitation anomalies. The Standardized Precipitation Evapotranspiration Index (SPEI) is similar to the SPI, but it also takes evapotranspiration into account (and therefore the impact of temperatures on water demand).

Past 3 Months (July 2024 to September 2024):

- From July to September 2024, most parts of the DRC experienced drier-than-average conditions. In contrast, wetter-than-average conditions were experienced in the Bas-Uele, Haut-Uele, Ituri, Kinshasa, and Tanganika provinces. Near-normal conditions were prevailed over localized areas in the north, west, and eastern regions.

Past 1 Month (September 2024):

- During September, the DRC experienced wetter-than-average conditions in parts of the north, west, and eastern regions. Drier-than-average conditions were observed in the central and southern areas. Notably, Lualaba province recorded an SPI of 2.0 standard deviations below the mean.

Current/Forecast (11 July 2024 to 25 October 2024):

- SPI forecast, which is constructed from observed precipitation from 11 July 2024 to 10 October 2024 and forecasted rainfall data from 11 October to 25 October 2024, suggests that drier-than-average conditions will occur in parts of the central and southern regions with Lualaba province likely recording an SPI of 2.0 standard deviations below the mean. In contrast, wetter-than-average conditions will occur in parts of the northern and southeastern regions. Near-normal conditions are expected in the remainder parts of the country.

Water Requirement Satisfaction Index (WRSI)

- Not Available

GEOGLAM Crop Monitor

In the Democratic Republic of the Congo, the planting and development of main-season cereals are continuing under generally favorable conditions.

Additional Resources

https://www.sadc.int/pillars/meteorology

https://fews.net/node/32023/print/download

Annex