FAMINE EARLY WARNING SYSTEMS NETWORK

Democratic Republic of Congo

Monthly Climate and Weather

16 January 2025

Highlights

- La Niña conditions emerged in December 2024. A weak La Niña is expected to persist with a 59% chance through February – April 2025, then transition with a 60% chance to El Niño Southern Oscillation (ENSO)-neutral conditions during March – May 2025, according to the latest ENSO outlook.

- In November, many areas in DRC received below-average **rainfall** (10-100 mm), with deficits of 50-100 mm in central and southern regions. Haut-Katanga province faced the highest deficit -- 100-200 mm below average. In February, below-average rainfall is expected in parts of the western and eastern regions. Local areas in Mai-Ndombe, Kongo-Central, Kwango, Nord-Kivu, and Sud-Kivu provinces are likely to have below-average rainfall with over 40% probability.

- The southern Haut-Katanga provinces experienced the highest **maximum temperature** anomaly, ranging from 5°C to 7°C. In contrast, localized areas recorded near-average maximum temperatures. Northeastern, central, and southern regions showed above-average **minimum temperature** anomalies of 1°C. Meanwhile, the south Haut-Katanga province had lower-than-average minimums, ranging from 2 to 3°C. Most of the country had normal minimum temperatures. In February 2025, the DRC is likely to see above-average temperatures, with some northern and central regions having over a 70% chance of above-average mean temperatures.

- The **Standardized Precipitation Index (**SPI) analysis for December 2024 shows that, In December, much of the DRC faced drier-than-usual conditions. Conversely, certain pocket areas in the country's west, east, and south experienced wetter-than-normal conditions. Meanwhile, isolated areas reported near-normal conditions throughout the nation. The SPI forecast from 8 January to 4 February to 7 January 2025 suggests that much of the DRC will experience drier-than-average conditions, except certain areas in the north, central, and eastern provinces, along with a few isolated spots that will see wetter-than-average conditions. Near-normal conditions are expected in select locations across the country.

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.

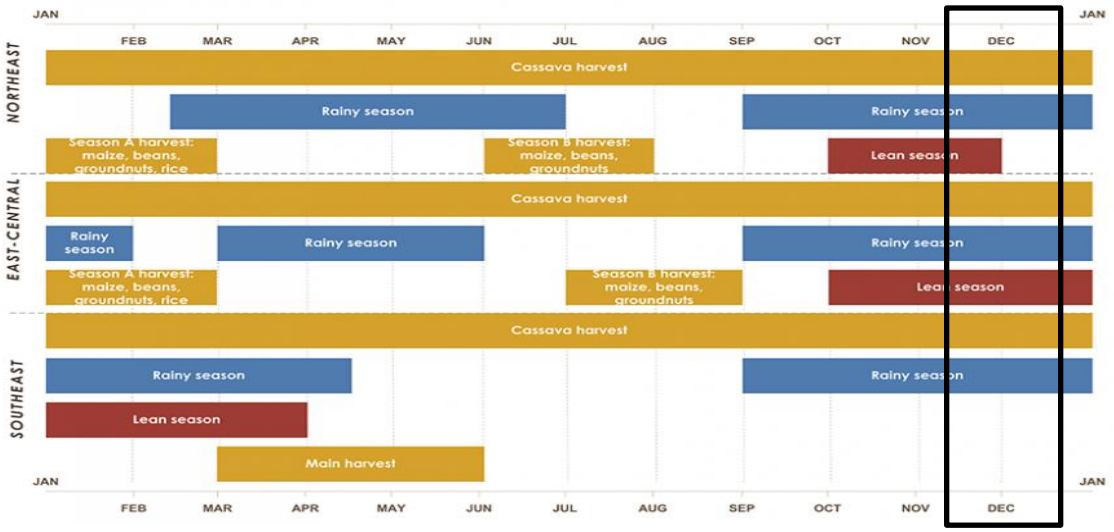


Figure 1: Seasonal calendar for DR Congo. **Source: FEWS NET**

Current Climate Modes and Teleconnections

- As of mid-January, La Niña conditions are present, as reflected by below-average SSTs across the central and east-central equatorial Pacific Ocean. Subsurface cooling strengthened across the equatorial Pacific, with below-average temperatures dominating the central and eastern equatorial Pacific. Low-level wind anomalies were easterly over the western and central Pacific, while upper-level wind anomalies were westerly over the central and eastern Pacific.

- The latest ENSO outlook indicates that a weak La Niña is expected to persist with a 59% chance through February – April 2025, then transition with a 60% chance to ENSO-neutral conditions during March – May 2025 (**Fig. 2**). The latest update of the NOAA Climate Prediction Center's ENSO diagnostic discussion can be found here.

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

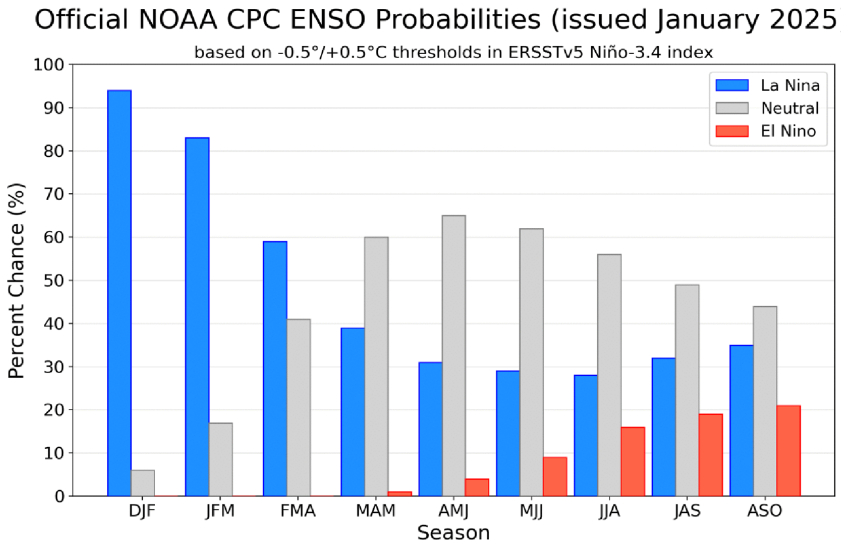


Figure 2: Official CPC ENSO probabilities outlook. **Source: NOAA/NCEP**

Extreme Events

- No widespread fires were reported in December 2024. Overall, around 106,285 high-confidence fire alerts have been reported by VIIRS from the 7th of January 2024 to the 5th of January 2025. In the past 4 weeks, the region with the most significant number of fire alerts was Mongala, with 40 fire alerts. This represents a 1.3% of all alerts detected in the Democratic Republic of the Congo.

Rainfall/Precipitation

Past 3 months (October 2024 to December 2024):

- **Total:** The DRC recorded extremely heavy precipitation (300-750 mm) over much of the country for the past 3 months. Localized areas in northern Nord-Ubangi, Bas-Uele, Lualaba, and Haut-Katanga received heavy rainfall between 200-300 mm. The heaviest rainfall (750 mm) was observed in the western and northern Equateur, western Nord-Kivu, and northern Sud-Kivu provinces (**Fig. 3a)**.

- **Anomalies:** Rainfall was above-average by 25-200 mm in parts of the north, western, and eastern regions of the DRC. Large rainfall surpluses reaching 500 mm were observed in Equateur province. In contrast, part of the north, central, and southern regions experienced below-average rainfall (25-200 mm). High rainfall deficits were noted in the southern region, with provinces like Kwilu, Kasai, Lualaba, and Haut-Lomami recording 100-200 mm of rainfall below the average (**Fig. 3b)**.

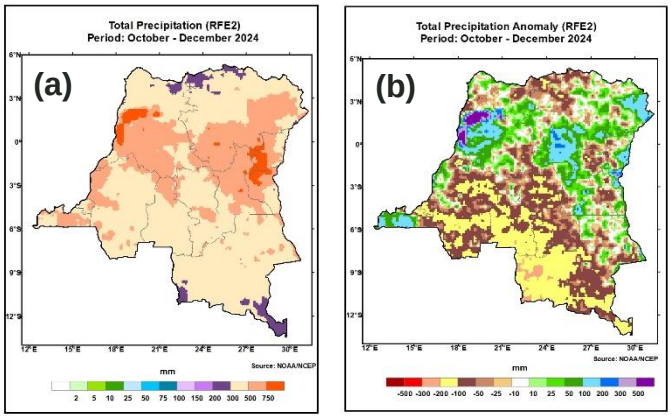


Figure 3: Spatial distribution for October-December 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Past 1 Month (December 2024):

- **Totals:** Much of the DRC experienced heavy rainfall, reaching between 100 and 300 mm and exceeding 300 mm in Equateur Province. The northern region received 5 to 100 mm of rainfall (**Fig. 4a**).

- **Anomalies:** Below-average rainfall (10-100 mm) was observed in many places in the DRC, with large rainfall deficits of 50-100 mm in some parts of the central and southern regions. The southern part of Haut-Katanga province recorded the highest rainfall deficit of 100-200 mm below average. A few areas in the west, central, and east recorded above-average rainfall (10-50 mm). Large rainfall surpluses of 50-100 mm were noted in Kongo-Central and western Tshopo provinces (**Fig. 4b**).

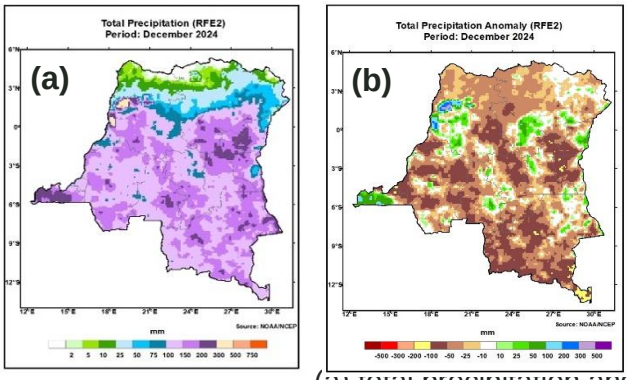


Figure 4: Spatial distribution for December 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Monthly (February 2025) and Seasonal (February 2025 – April 2025) Forecasts:

- **Monthly:** In February, below-average rainfall is favored in pocket areas in the western and eastern regions. Localized places in Mai-Ndombe, Kongo-Central, Kwango, Nord-Kivu, and Sud-Kivu provinces will likely experience below-average rainfall with greater than 40% probability. The monthly NMME precipitation forecast can be found here.

- **Seasonal:** Below-average rainfall is favored in many areas of the central and southern regions. A greater than 40% probability of below-average rainfall is likely to occur in Kongo-Central, Kwango, Kasai, west Mai-Ndombe, Kasai, northwest Sankuru, and central Haut-Katanga provinces (**Fig. 5**).

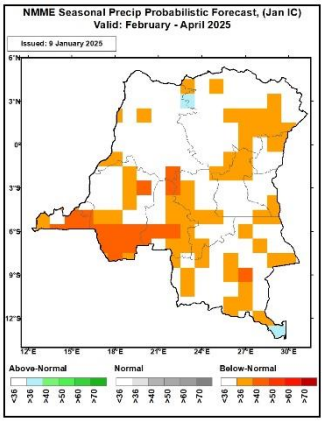


Figure 5: Rainfall forecast for (a) February 2025 and (b) February 2025 - April 2025. **Source: NOAA/NCEP**

Temperature

Past 3 months (October 2024 to December 2024):

- **Maximums:** Over the last three months, the DRC experienced maximum temperatures between 20 and 35°C, with most areas recording 1-3°C above average. Eastern Nord-Ubangi, eastern Mongala, western Bas-Uele, southern Lualaba, and southern Haut-Katanga saw 3°C above average. In contrast, Kongo-Central, western Mai-Ndombe, Kinshasa, western Kwango, eastern Tshopo, Nord-Kivu, southern Sud-Kivu, south Maniema, and northern Tanganika had near-average maximum temperatures (**Fig. 6a**).

- **Minimums:** The mean minimum temperatures in the DRC over the last 3 months were 20-25°C in most of the country and 15-20°C in parts of the southern region, along the eastern borders, and localized areas in the north and southwestern provinces. The southern part of Haut-Katanga province and localized areas in Sud-Kivu and Tanganyika provinces recorded the lowest minimum temperature of 10-15°C. Near-average minimum temperatures were recorded in many areas of the DRC, except in the northeastern and parts of the central and southern regions, which experienced slightly above-average minimum temperature anomalies of 1°C. Conversely, below-average minimum temperatures (2-4°C) were observed in southern Haut-Katanga province (**Fig. 6b)**.

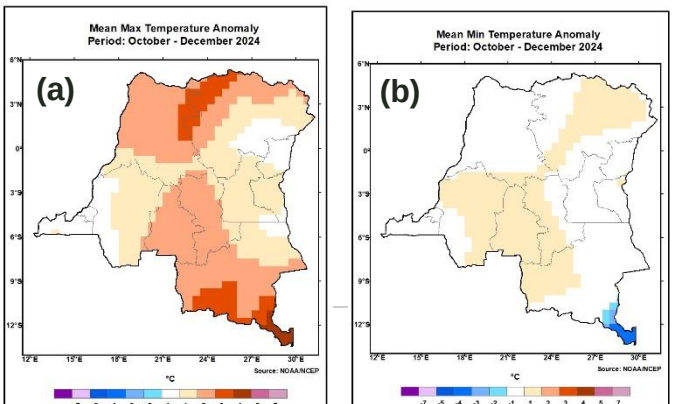


Figure 6: Spatial distribution for October – December 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Past 1 Month (December 2024):

- **Maximums:** Mean maximum temperatures in the DRC ranged from 20°C to 40°C. The country experienced above-average maximum temperatures, with anomalies ranging from 1°C to 4°C in many regions. The highest temperature anomaly of 5 to 7°C was observed in the southern Haut-Katanga provinces. Conversely, near-average maximum temperatures were recorded in localized areas in Kongo-Central, Kinshasa, western Mai-Ndombe, western Kwango, southern Ituri, and northern Nord-Kivu provinces (**Fig. 7a**).

- **Minimums:** In much of the DRC, the mean minimum temperature over the last month was 20-25°C. The northern and eastern borders and part of the southern regions experienced minimum temperatures of 15-20°C. Marginally above-average mean minimum temperature anomalies of 1°C were observed in parts of the northeastern, central, and southern regions. In contrast, below-average mean minimum temperatures were recorded in the southern Haut-Katanga province (2-3°C). Much of the country recorded near-normal minimum temperatures (**Fig. 7b)**.

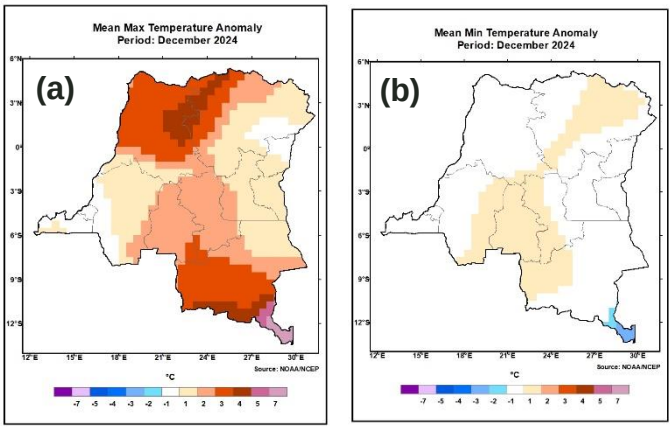


Figure 7: Spatial map for November 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Monthly (February 2025) and Seasonal (February 2025 – April 2025) Forecasts:

- **Monthly:** In February 2025, DRC is expected to have above-average temperatures. Pocket areas in north and central regions are favored to have a greater than 70% probability of above-average mean temperatures **(Fig. 8a)**.

- **Seasonal:** Above-average mean temperatures are expected in the DRC from January to April 2025. Parts of the northern and central provinces are favored to have a greater than 70% probability of above-average mean temperatures (**Fig. 8b)**.

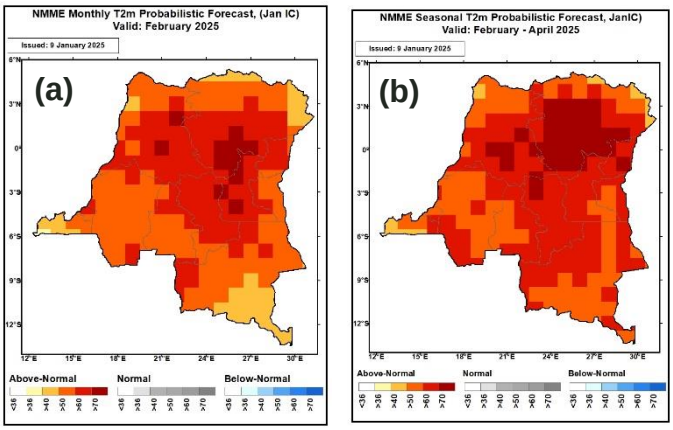


Figure 8: Spatial map for (a) February 2025 mean temperatures forecast and (b) February 2025 – April 2025 mean temperatures forecast. **Source: NOAA/NCEP**

Flooding and Areas of Inundation

- A recent heavy rainfall over the past week has impacted central DRC, especially in Maniema Province, leading to floods that have caused casualties and damage.

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 (October 2024 to December 2024):

- From October to December 2024, much of the DRC experienced drier-than-average conditions. Greater than an SPI of 2 standard deviations below the mean occurred in parts

of the northern, central, and southern provinces. In contrast, wetter-than-average conditions occurred in the eastern provinces. **(Fig. 9a)**.

Past 1 Month (November 2024):

- In December, much of the DRC experienced drier-than-average conditions. In contrast, wetter-than-average conditions were observed in pocket areas in the country's west, east, and southern regions. Near-normal conditions were reported in other isolated areas throughout the country **(Fig. 9b)**.

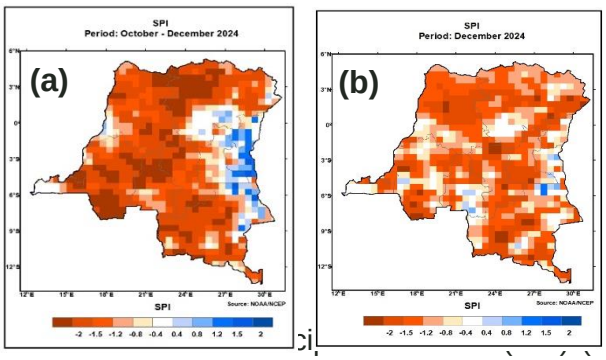


Figure 9: Spatial structur ci) October – December 2024 (b) December 2024. Source: NOAA/NCEP. **Source: NOAA/NCEP**

Current/Forecast (7 November 2024 to 4 February 2025):

- The SPI forecast, constructed from observed precipitation from 7 November 2024 to 7 January 2025 and forecasted rainfall data from 8 January to 4 February 2025, suggests that drier-than-average conditions will prevail over much of the DRC, except in isolated pockets in several provinces, which will experience wetter-than-average conditions. An SPI greater than 2.0 standard deviations above the mean is expected in the Nord-Ubangi, Bas-Uele, Kinshasa, Kongo-Central, and Haut-Katanga provinces and in isolated places. Near-normal conditions are anticipated in isolated locations throughout the country.

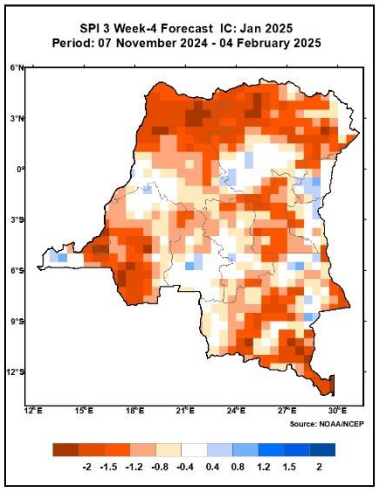


Figure 10: Spatial structure of SPI constructed from observations for 10 October to 10 December 2024 and 4

weeks forecast ending on 7 January 2025. **Source: NOAA/NCEP**

Water Requirement Satisfaction Index (WRSI)

- Not Available

GEOGLAM Crop Monitor

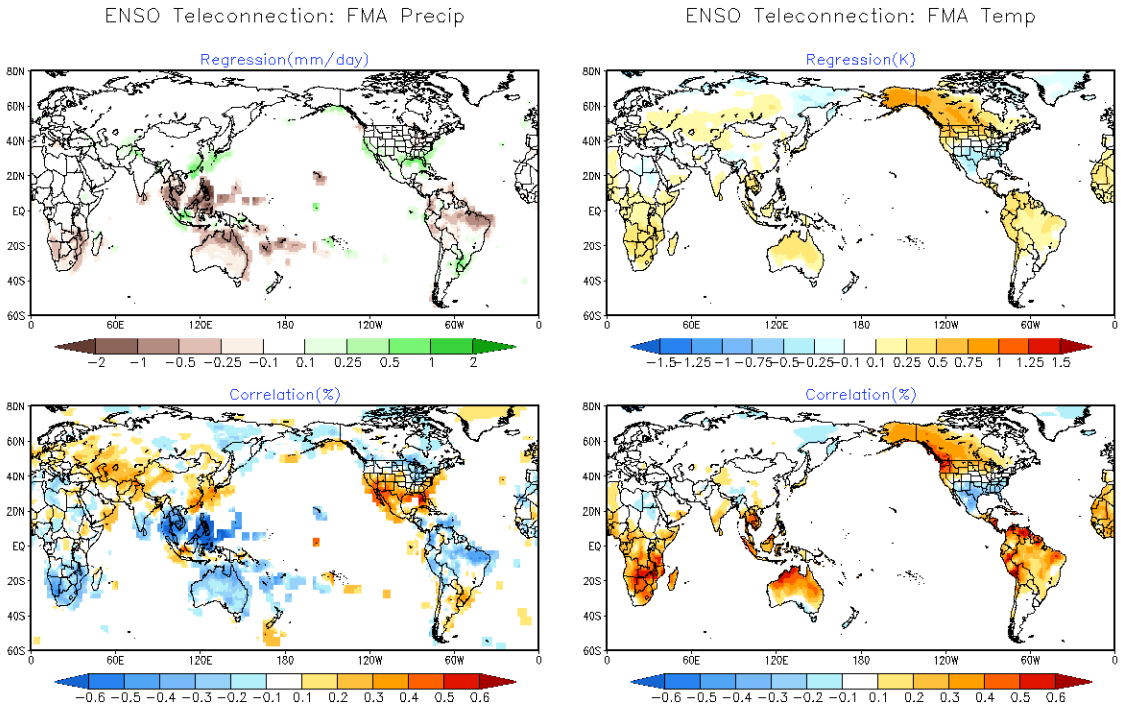
In the Democratic Republic of the Congo (DRC), harvesting main season cereals is complete or nearing completion in the country's north, west, and center, while planting and development continue in the east and southeast. Despite below-average rainfall received over the past few months, overall conditions remain favorable, with near-normal cropping outcomes expected.

Additional Resources

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

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

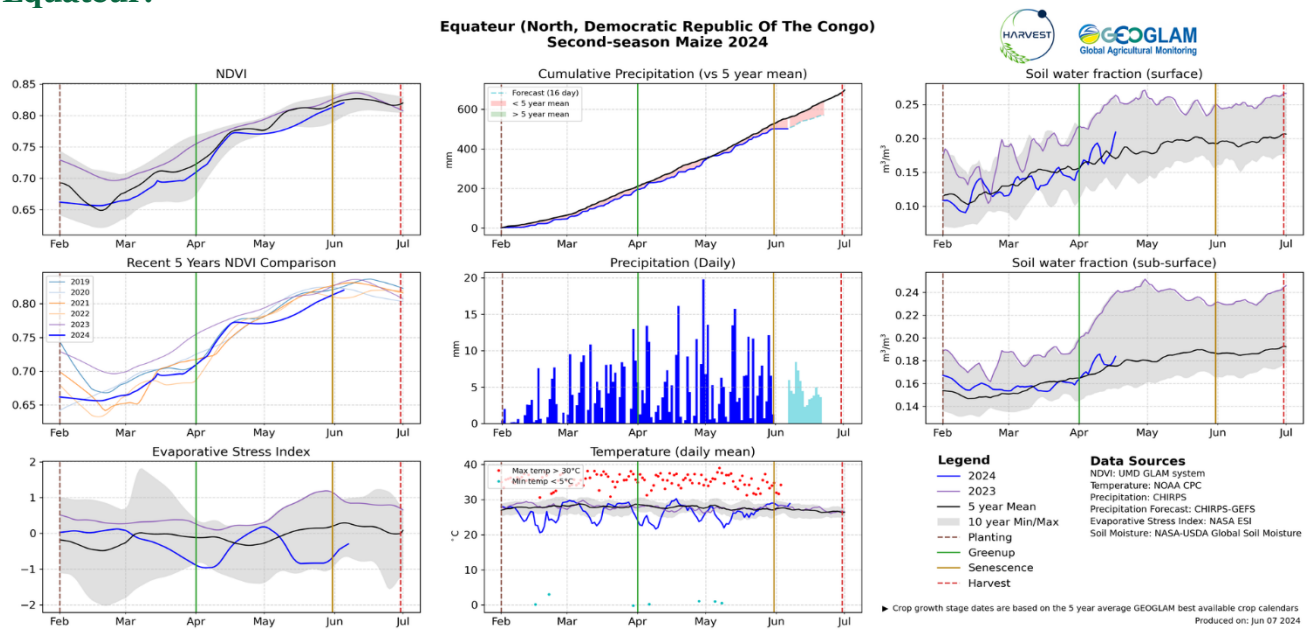
Annex



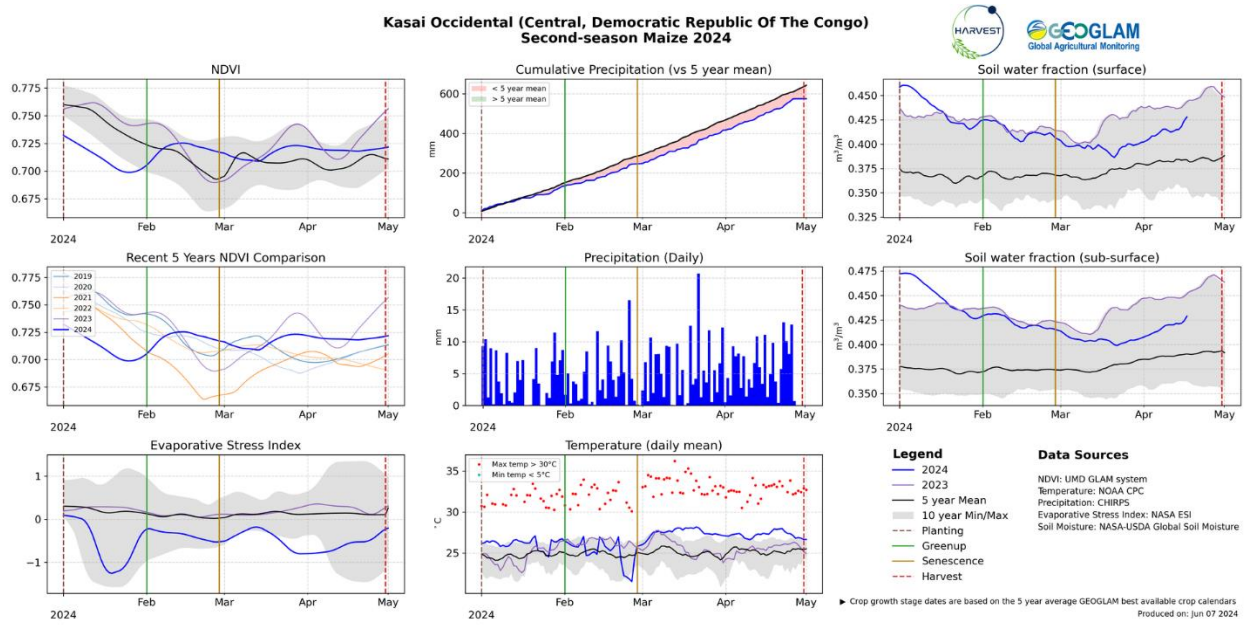
GEOGLAM Agro-meteorological Earth Observation Indicators:

Second-Season Maize

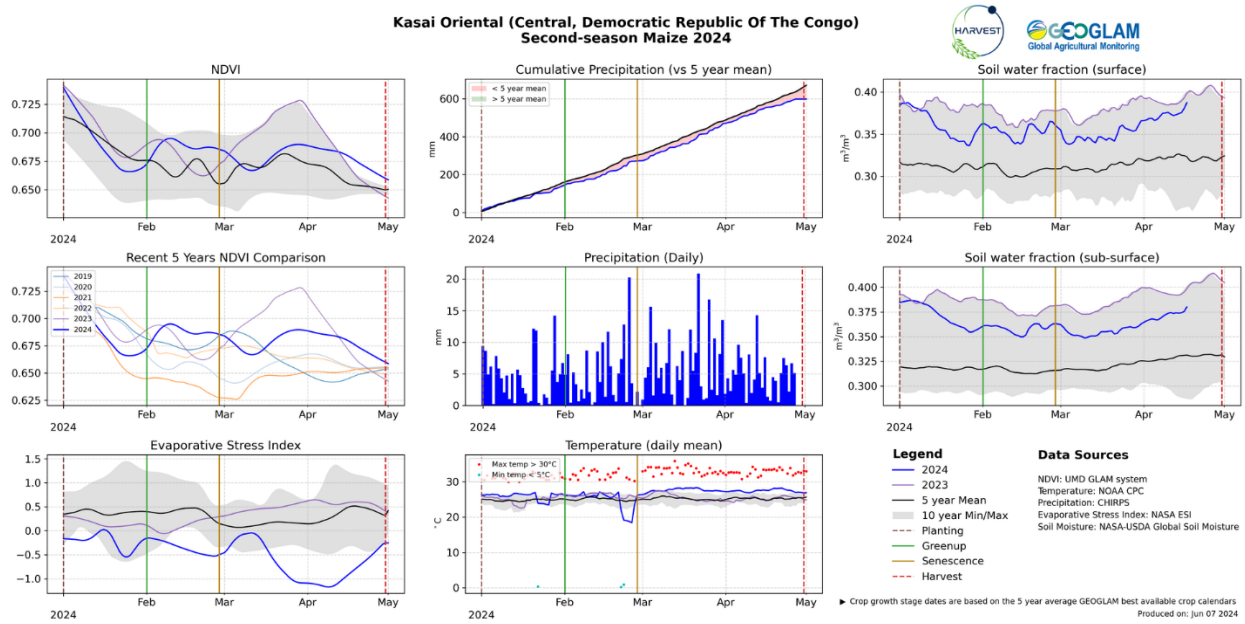
Equateur:



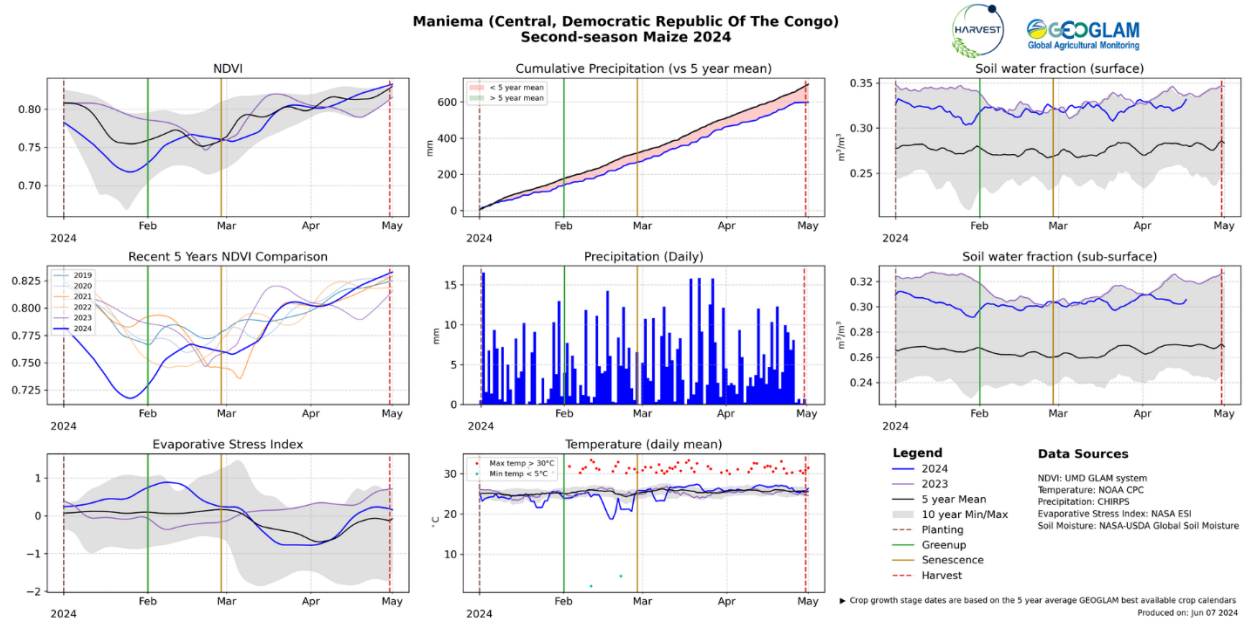
Kasai Occidental:



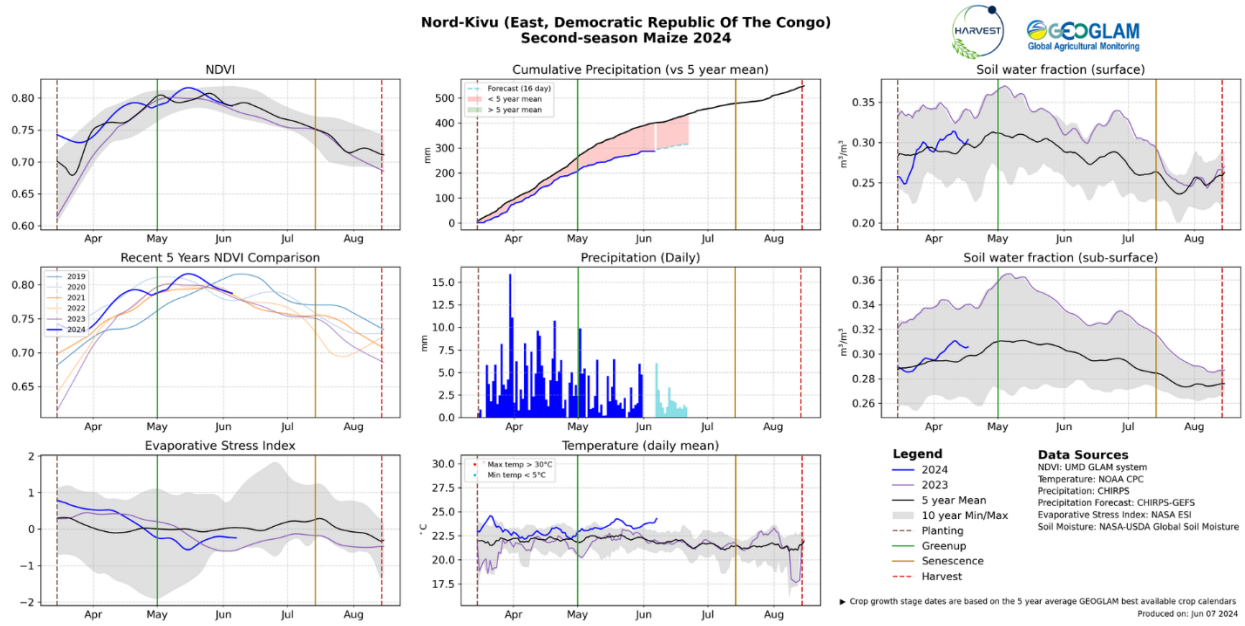
Kasai Oriental:



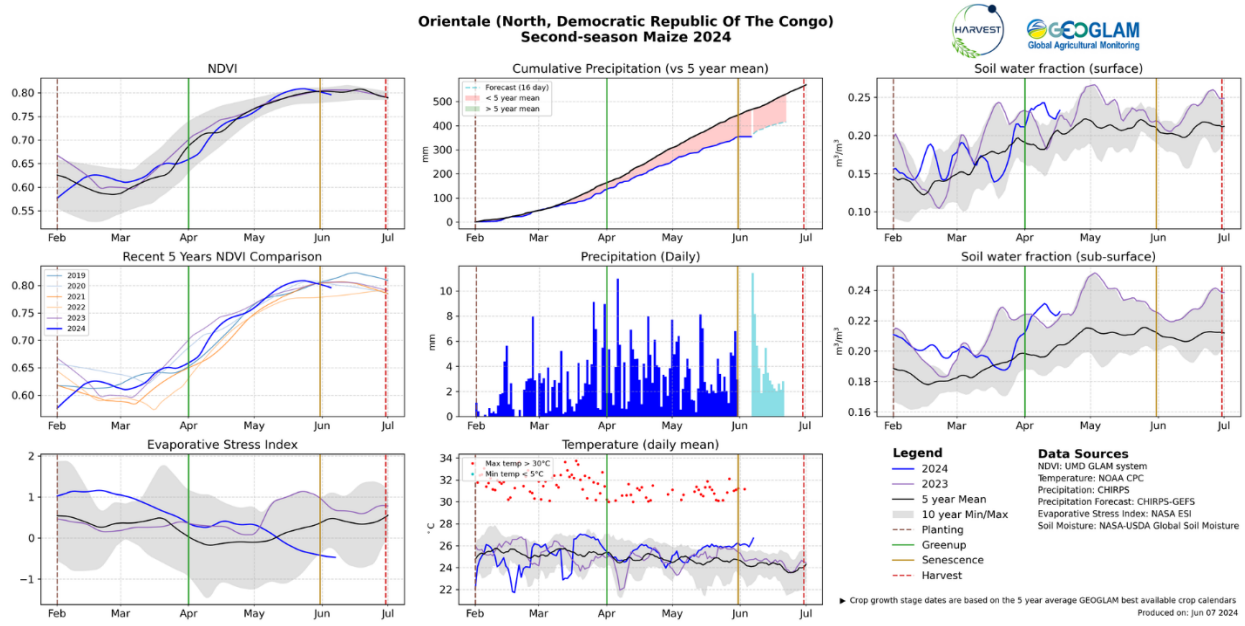
Maniema:



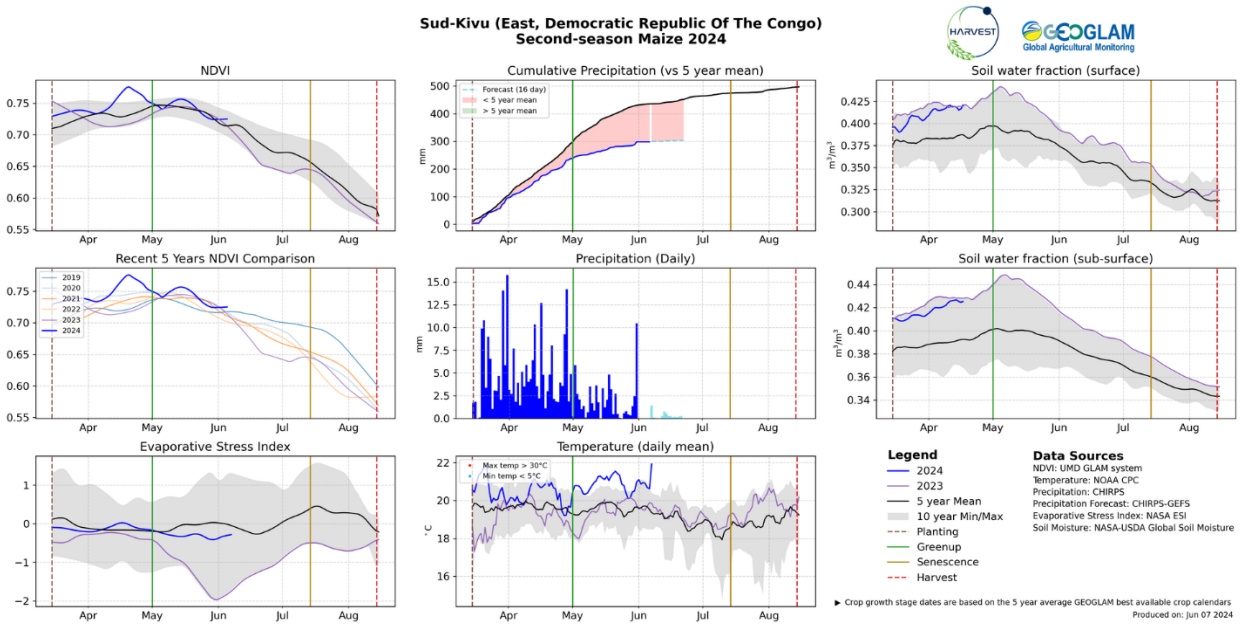
Nord-Kivu:



Oriental:



Sud-Kivu:


Sud-Kivu (East, Democratic Republic Of The Congo)
Second-season Maize 2024
HARVEST
GEOGLAM
Global Agricultural Monitoring
NDVI
Cumulative Precipitation (vs 5 year mean)
Forecast (16 day)
< 5 year mean
> 5 year mean
mm
Soil water fraction (surface)
m³/m³
Recent 5 Years NDVI Comparison
2019
2020
2021
2022
2023
2024
Precipitation (Daily)
Soil water fraction (sub-surface)
Evaporative Stress Index
Temperature (daily mean)
Max temp > 30°C
Min temp < 5°C
°C
Apr
May
Jun
Jul
Aug
Legend
2024
2023
5 year Mean
10 year Min/Max
Planting
Greenup
Senescence
Harvest
Data Sources
NDVI: UMD GLAM system
Temperature: NOAA CPC
Precipitation: CHIRPS
Precipitation Forecast: CHIRPS-GEFS
Evaporative Stress Index: NASA ESI
Soil Moisture: NASA-USDA Global Soil Moisture
► Crop growth stage dates are based on the 5 year average GEOGLAM best available crop calendars
Produced on: Jun 07 2024