FAMINE EARLY WARNING SYSTEMS NETWORK

Democratic Republic of Congo

Monthly Climate and Weather

19 September 2024

Highlights

- **El Niño Southern Oscillation (ENSO)-neutral conditions** continued during August 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 during September-November (71% chance) and is expected to persist through January-March 2025 (63% chance).

- In August 2024, most areas in the Democratic Republic of Congo (DRC) received below-average **rainfall**, with 50-100 mm deficits recorded in several provinces. Conversely, the northern region experienced above-average rainfall, with localized areas receiving over 100 mm. In October 2024, below-average rainfall is favored in pocket areas in the northern and western regions. Most places in eastern DRC are likely to experience above-average rainfall.

- In the DRC during August, many areas experienced above-average **maximum temperatures**. Parts of the southern provinces recorded anomalies of up to 5°C. Additionally, above-average mean **minimum temperatures** were observed in the north and parts of the central and western regions, with near-normal conditions in the remainder of the country. In October 2024, above-average mean temperatures are expected in much of DRC.

- In August, the DRC experienced drier-than-average conditions in the north and parts of central DRC, with near-average conditions covering the southern region. Localized areas in Maniema, Nord-Kivu, and Sud-Kivu recorded near-normal to wetter-than-average conditions. The forecast for the **Standardized Precipitation Index (SPI)** from 2 September to 29 September suggests that drier-than-average conditions will occur in the northern, eastern, and pocket areas in the western regions. In contrast, near-normal to wetter-than-average conditions will occur in parts of western, southern, and northeastern regions of DRC.

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.

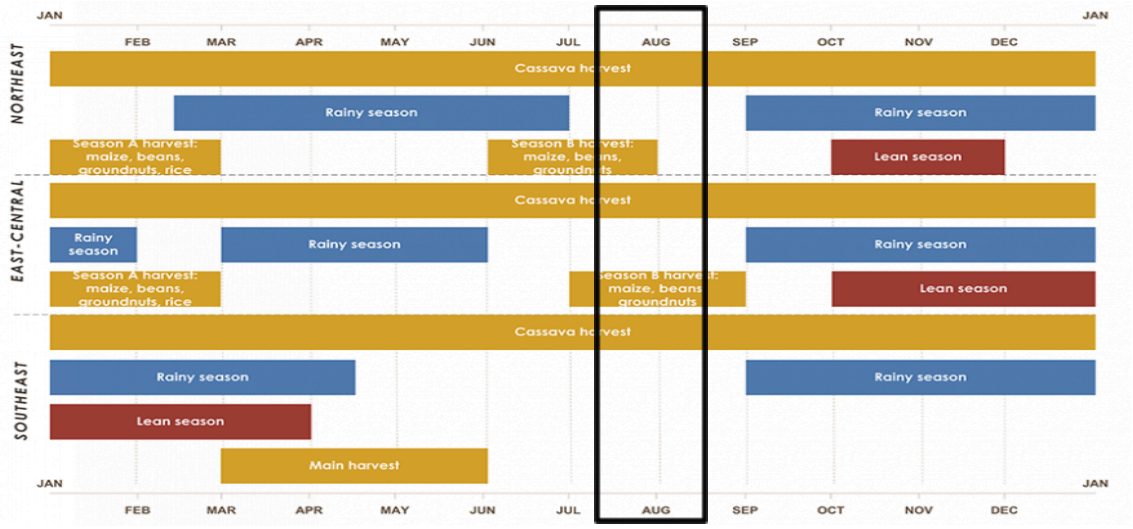


Figure 1: Seasonal calendar for DR Congo. **Source: FEWS NET**

Current Climate Modes and Teleconnections

- As of early-September 2024, ENSO-neutral conditions are present over the equatorial Pacific Ocean. The SSTs are above-average in the western Pacific and near-to-below-average in the east-central and eastern Pacific Ocean. Low-level wind anomalies were easterly in most of the Pacific Ocean, whereas upper-level wind anomalies were cross-equatorial and easterly over the east-central equatorial Pacific Ocean.

- The latest outlook indicates La Niña is favored to emerge in September-November (71% chance) and is expected to persist through January-March 2025 (63% chance) (Fig. 2). The latest update of the NOAA Climate Prediction Center's El Niño/Southern Oscillation diagnostic discussion can be found here.

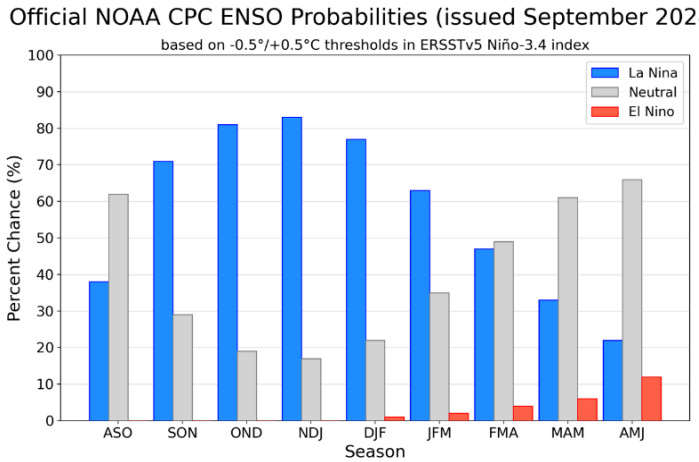


Figure 2: Official CPC ENSO probabilities outlook. **Source: NOAA/NCEP**

- Based on historical records, La Niña conditions are associated with near-average rainfall and near-average mean temperatures in DRC from October to December. 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 July 2024. Overall, around 97,568 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 (DRC), the region with the most significant number of fire alerts was Nord-Kivu, with 127 fire alerts. This represents 1.2% of all alerts detected in the DRC.

Rainfall/Precipitation

Past 3 months (June 2024 to August 2024):

- **Total:** The northern region received extremely heavy (300-750 mm) rainfall in the northern DRC. Equateur province received the highest total rainfall exceeding 750 mm. Central regions received moderate to heavy (25-300 mm) rainfall, while southern DRC recorded light rainfall (2-25mm) during the past three months. There was no rainfall in much of Lualaba, Haut-Lomami, and Haut-Katanga provinces (**Fig. 3a)**.

- **Anomalies:** The accumulated rainfall was below-average over the western, central and southern parts of DRC. The highest deficit (100-200 mm) was registered in Mai-Ndombe, Kasai, Sankuru, Tshuapa, and Nord-Kivu provinces. In contrast, parts of northern DRC received 25-200 mm above-average rainfall. The highest surpluses of 300-500 mm were recorded in Equateur province (**Fig. 3b)**.

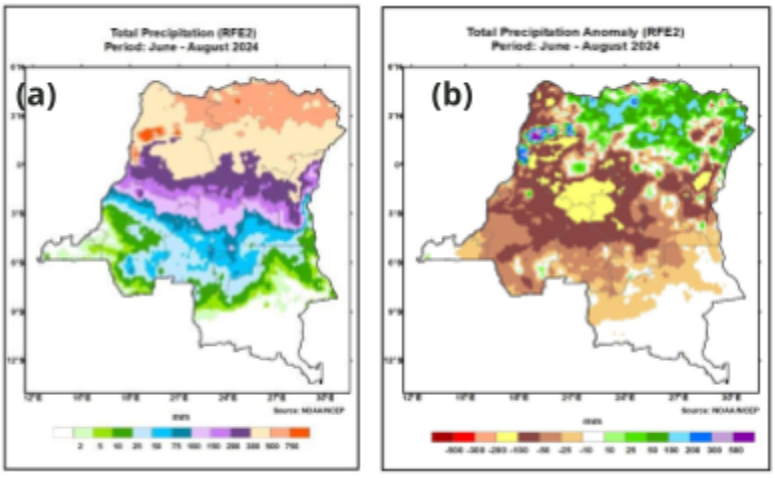


Figure 3: Spatial distribution for June-August 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Past 1 Month (August 2024):

- **Totals:** The northern region received extremely heavy rainfall of 100-300 mm. The central region experienced light to moderate rainfall ranging between 10-100 mm. Light rain (2-10 mm) was received in the southern region, with a more significant portion recording no rain (**Fig. 4a**).

- **Anomalies:** Much of DRC recorded 10-100 mm below-average rainfall. The highest deficit (50-100 mm) was experienced in Mai-Ndombe, Kasai, Sankuru, Tshuapa, and Nord-Kivu provinces. In contrast, the northern region recorded 10-100 mm above-average rainfall, with localized areas receiving over 100 mm (**Fig. 4b**).

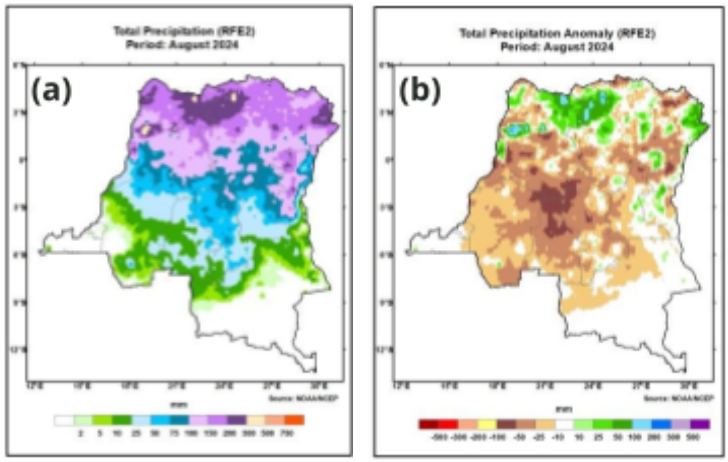


Figure 4: Spatial distribution for August 2024 (a) total precipitation and (b) total precipitation anomaly. **Source: NOAA/NCEP**

Monthly (October 2024) and Seasonal (October 2024 – December 2024) Forecasts:

- **Monthly:** In October, below-average rainfall is favored in pocket areas in the northern and western regions. The eastern region and isolated places in the northern, central, and southern regions are likely to experience above-average rainfall **(Fig. 5a**).

- **Seasonal:** During October and December 2024, above-average rainfall is favored in northeast, southeast, and pocket areas of central DRC. A greater than 40%

probability of above-average will be favored in Bas-Uele and Haut-Uele provinces. Conversely, below-average rainfall is favored in pocket areas in the Tshopo, Kongo-Central and Kasai-Central provinces (**Fig. 5b**).

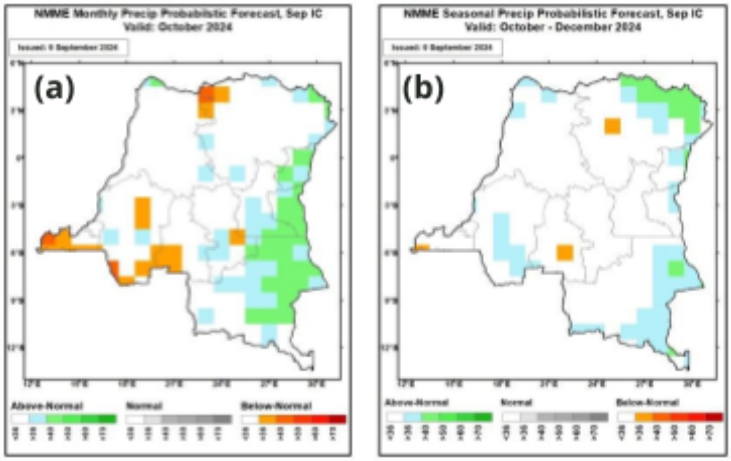


Figure 5: Rainfall forecast for (a) October 2024 and (b) October - December 2024.
Source: NOAA/NCEP

Temperature

Past 3 months (June 2024 to August 2024):

- **Maximums:** In the past 3 months, DRC has experienced average maximum temperatures ranging between 20-35°C. Most areas of DRC recorded above-average temperatures except in eastern Tshopo, Ituri and northern Nord-Kivu, which experienced near-normal conditions. The provinces of Lualaba, Haut-Lomami, and Haut-Katanga recorded the highest maximum temperature anomalies of 5°C above the average (**Fig. 6a**).

- **Minimums:** Mean minimum temperatures ranged from 20-25°C in northern and central DRC over the last 3 months. Meanwhile, in the south, mean minimum temperatures ranged from 5-15°C. Haut-Katanga recorded the lowest temperature of 5°C. Minimum temperatures were 1-3°C above-average in the northern and parts of central regions. Bas-Uele province registered the highest anomaly of 3°C above-average minimum temperature. Conversely, below-average minimum temperatures (2-3°C) were observed in southern Maniema, eastern Lomami, Tanganika, and northern Haut-Katanga provinces (**Fig. 6b)**.

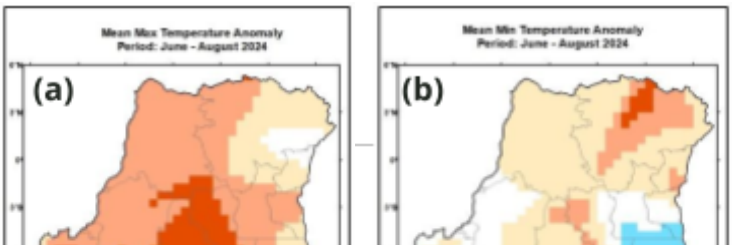


Figure 6: Spatial distribution for June – August 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Past 1 Month (August 2024):

- **Maximums:** Mean maximum temperatures were between 25-35°C in most of DRC. Greater than 35°C maximum temperature was observed in pocket areas in the South. Much of DRC observed 1-4°C above-average maximum temperature. An exceptional 5°C above the average anomaly of the mean maximum temperature was recorded in the provinces of Lualaba, Haut-Lomami, and Haut-Katanga. Near-normal conditions were experienced in pocket areas of Ituri and Nord-Kivu provinces (**Fig. 7a**).

- **Minimums:** Mean minimum temperatures ranged from 20-25°C in northern and central DRC over the last month, while most of the southern and parts of the central and eastern regions recorded relatively low temperatures ranging from 5-15°C. Above-average mean minimum temperatures were observed in much of the northern and parts of central and western regions. Near-normal conditions prevailed in much of central and southern DRC (**Fig. 7b)**.

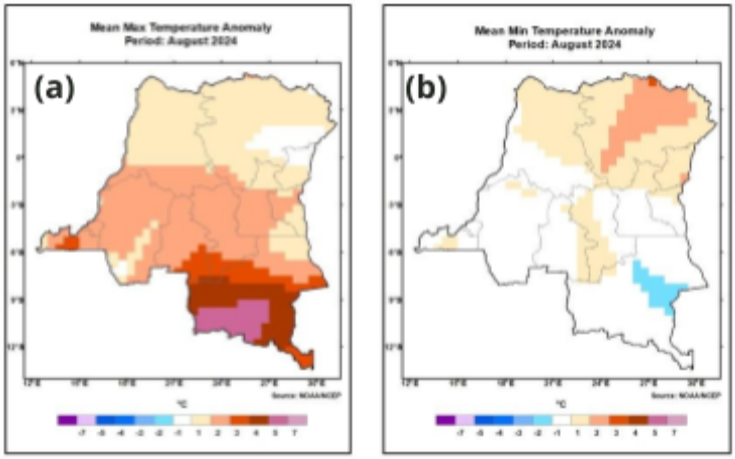


Figure 7: Spatial map for August 2024 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Monthly (October 2024) and Seasonal (October 2024 – December 2024) Forecasts:

- **Monthly:** In October 2024, much of DRC is expected to have above-average temperatures. Parts of the western 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 October to December 2024. Pocket areas in the western, central, and northeastern regions are favored to have a greater than 70% probability for above-average mean temperatures (**Fig. 8b)**.

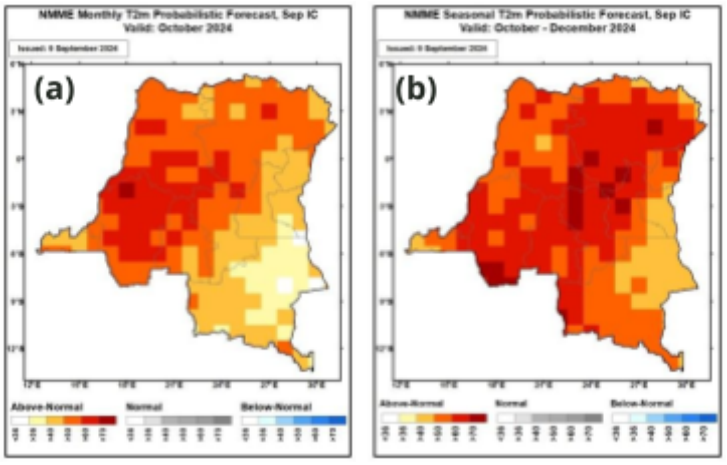


Figure 8: Spatial map for (a) October 2024 mean temperatures forecast and (b) October – December 2024 mean temperatures forecast. **Source: NOAA/NCEP**

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 (June 2024 to August 2024):

- From June to August 2024, most parts of DRC experienced drier-than-average conditions, except parts of the Lualaba, Haut-Lomami, and Haut-Katanga provinces, which recorded near-average conditions. In contrast, wetter-than-average conditions were experienced in eastern Ituri province **(Fig. 9a)**.

Past 1 Month (August 2024):

- During August, DRC experienced drier-than-average conditions in the northern and parts of central regions, with near-average conditions occurring in southern DRC. Localized areas in Maniema, Nord-Kivu, and Sud-Kivu experienced near-normal to wetter-than-average conditions **(Fig. 9b)**.

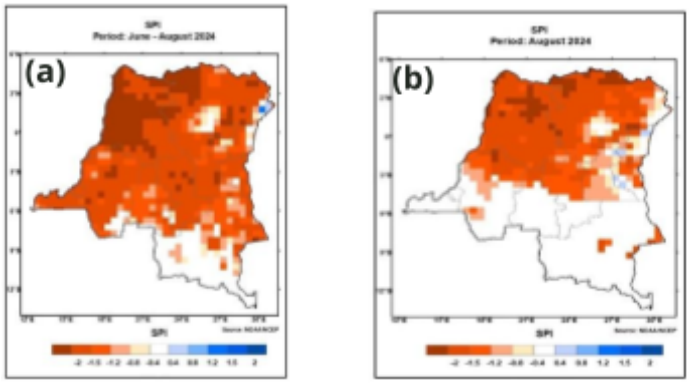


Figure 9: Spatial structure of Standardized Precipitation Index (SPI) (a) June – August 2024 (b) August 2024. Source: NOAA/NCEP. **Source: NOAA/NCEP**

Current/Forecast (2 July 2024 to 29 September 2024):

- SPI forecast, which is constructed from observed precipitation from 2 July 2024 to 1 September 2024 and forecast rainfall data from 2 September to 29 September 2024, suggests that drier-than-average conditions will occur in the northern, eastern, and pocket areas in the western regions. In contrast, near-normal to wetter-than-average conditions will occur in parts of the western, southern, and northeastern regions of DRC **(Fig. 10)**.

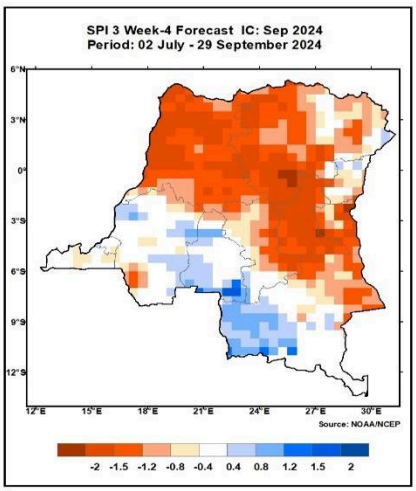


Figure 10: Spatial structure of SPI constructed from observations for 2 July to 1 September 2024 and 4 weeks forecast ending on 29 September 2024. **Source: NOAA/NCEP**

Water Requirement Satisfaction Index (WRSI)

- Not Available

GEOGLAM Crop Monitor

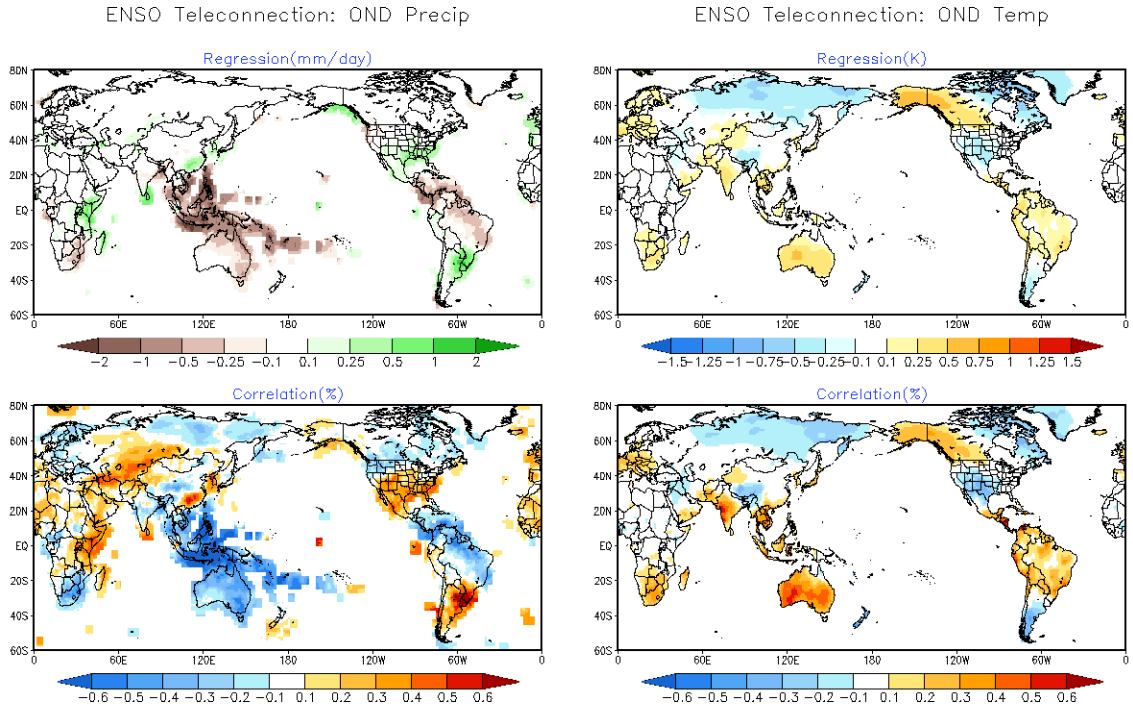
In the Democratic Republic of the Congo, harvesting of second season maize is nearing completion in the east, and harvesting of main season sorghum is just beginning in the north. Elsewhere, planting and development of main season cereals are underway, and agro-climatic conditions remain favorable for cropping activities.

Additional Resources

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

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

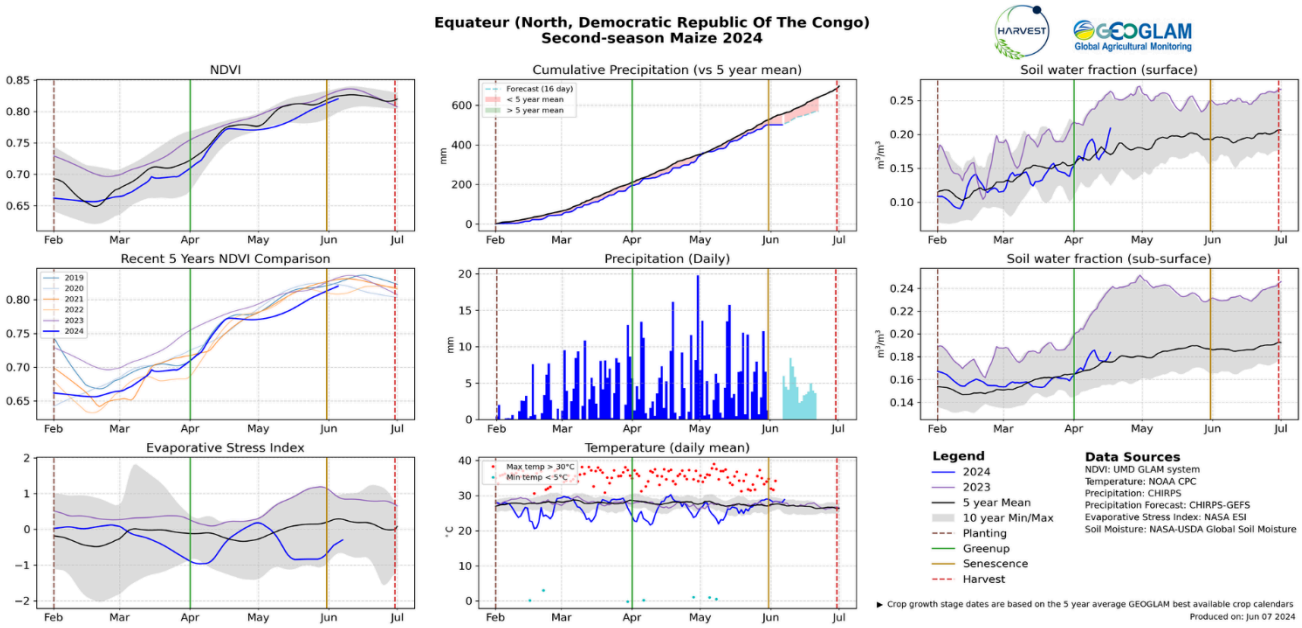
Annex



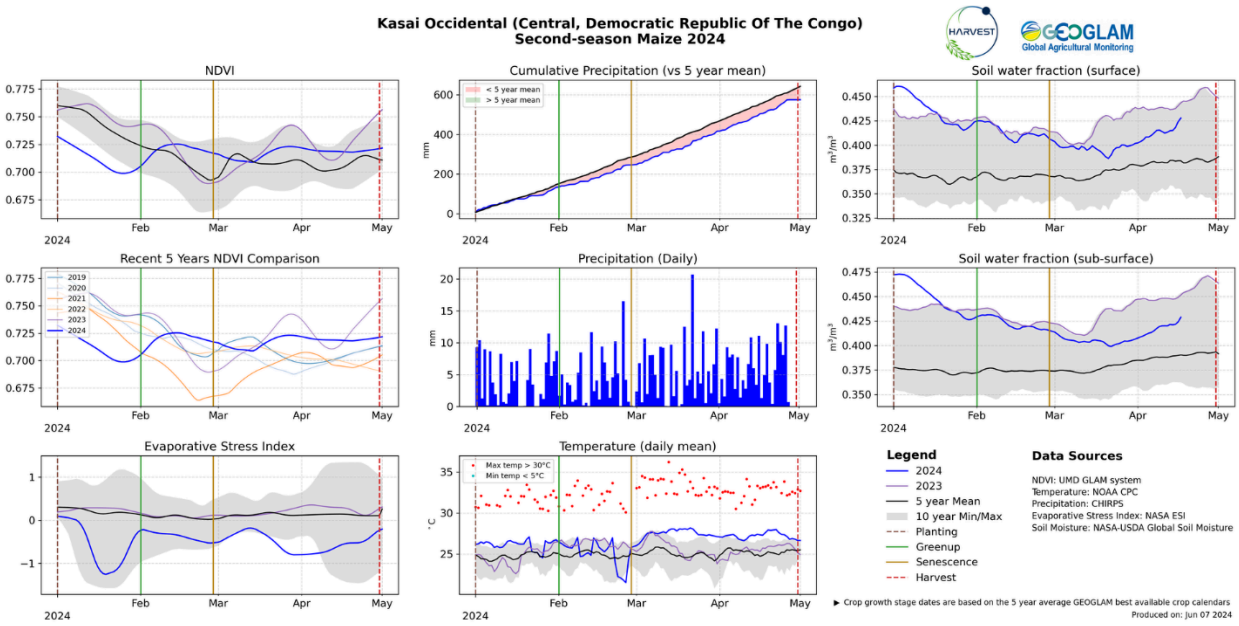
GEOGLAM Agro-meteorological Earth Observation Indicators:

Second-Season Maize

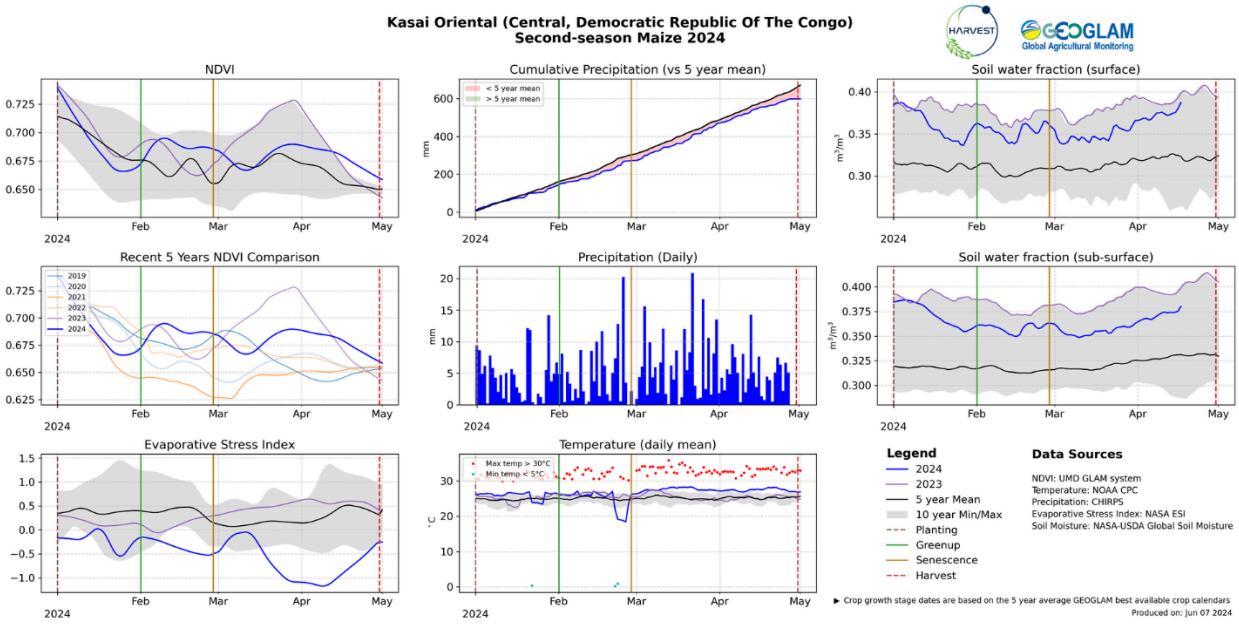
Equateur:



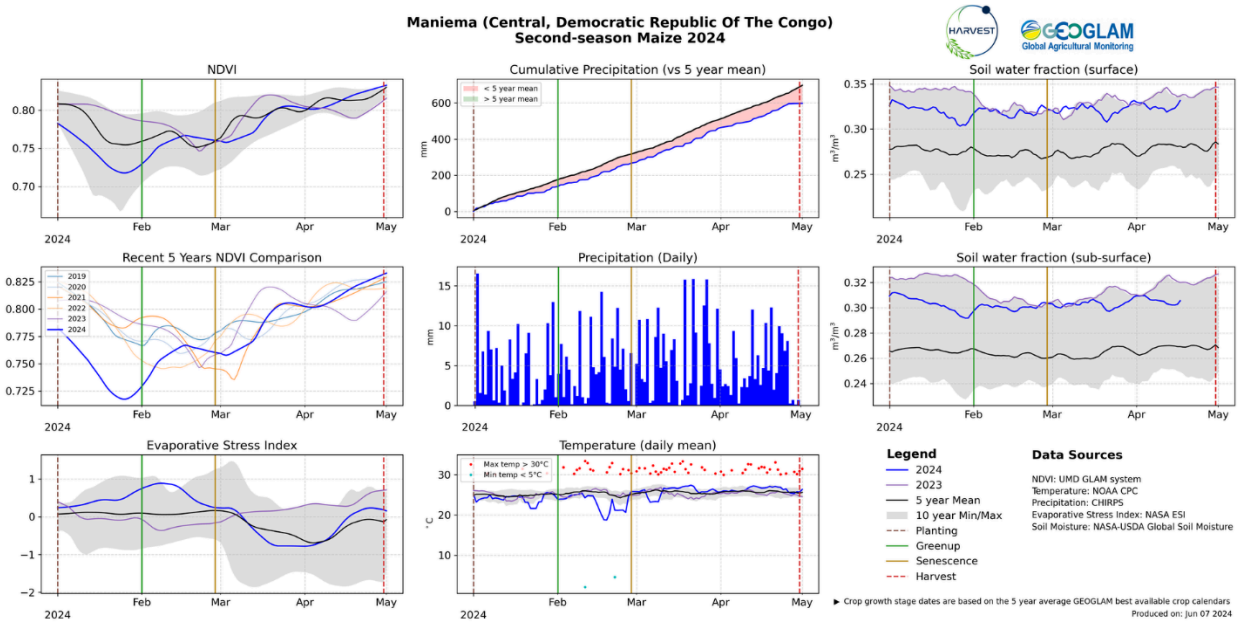
Kasai Occidental:



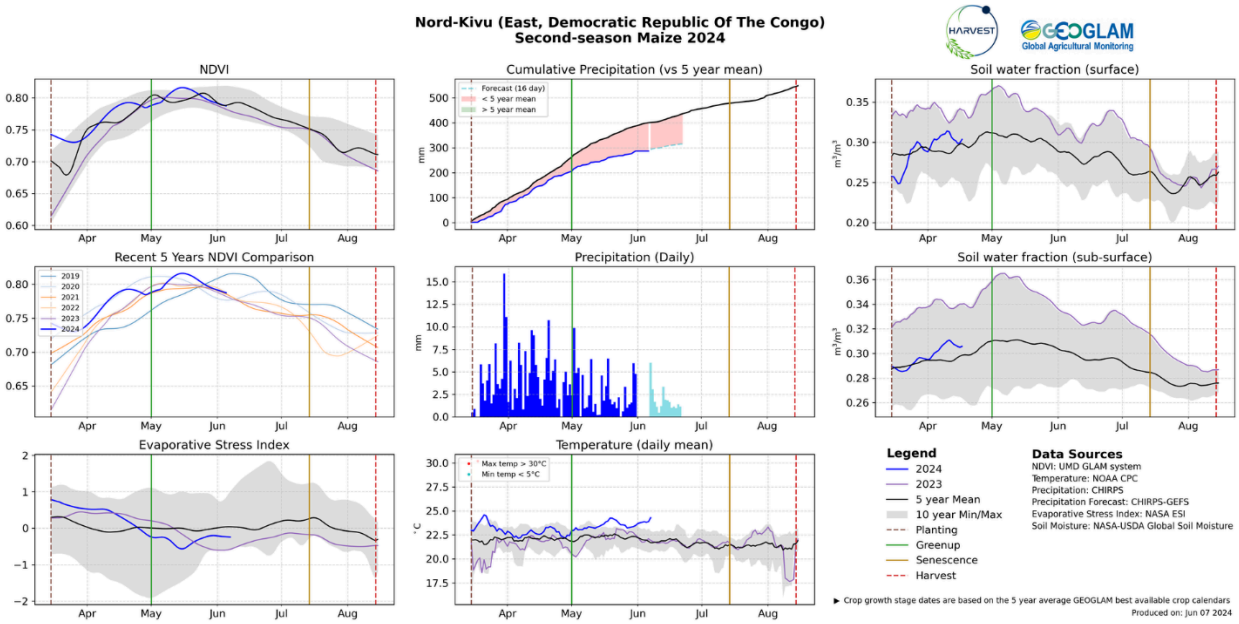
Kasai Oriental:



Maniema:



Nord-Kivu:


Nord-Kivu (East, Democratic Republic Of The Congo)
Second-season Maize 2024
HARVEST
GEOGLAM
Global Agricultural Monitoring
NDVI
Cumulative Precipitation (vs 5 year mean)
Soil water fraction (surface)
Recent 5 Years NDVI Comparison
Precipitation (Daily)
Soil water fraction (sub-surface)
Evaporative Stress Index
Temperature (daily mean)
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

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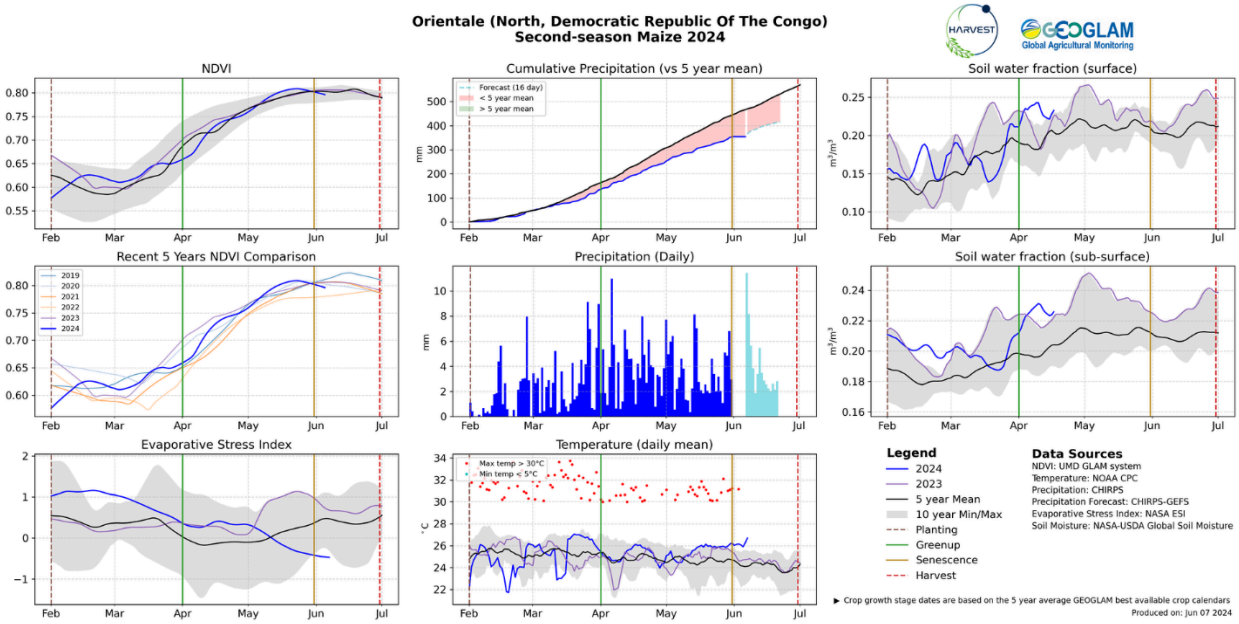
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Soil Moisture: NASA-USDA Global Soil Moisture
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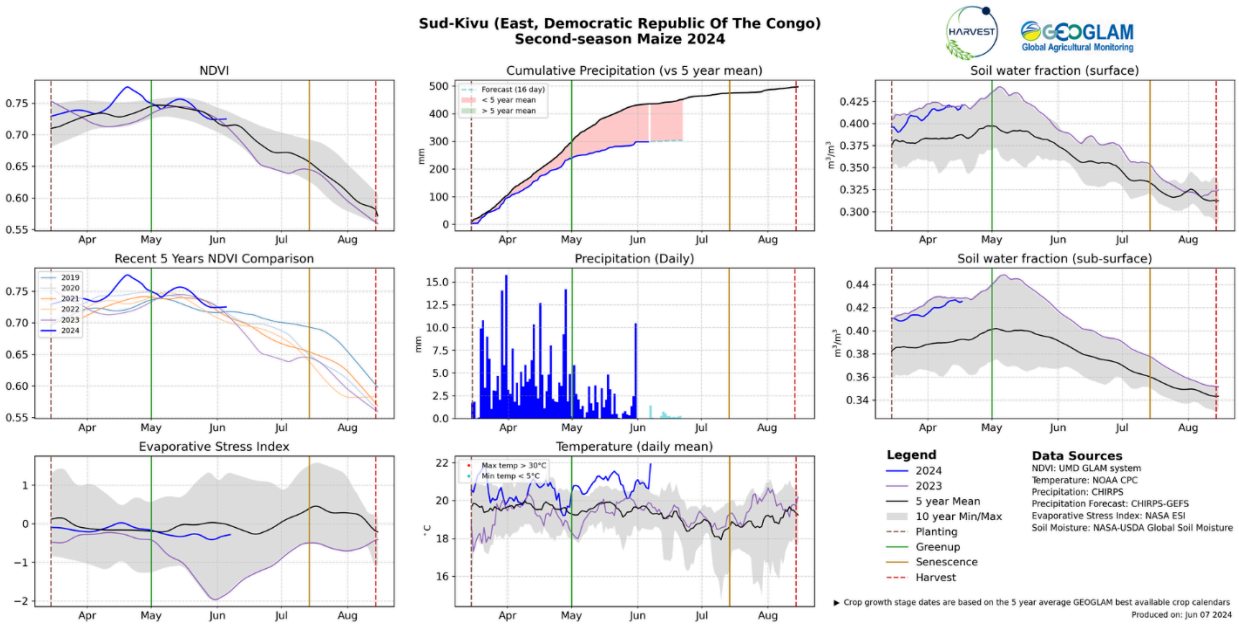
Sud-Kivu:


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
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