FAMINE EARLY WARNING SYSTEMS NETWORK

Mali

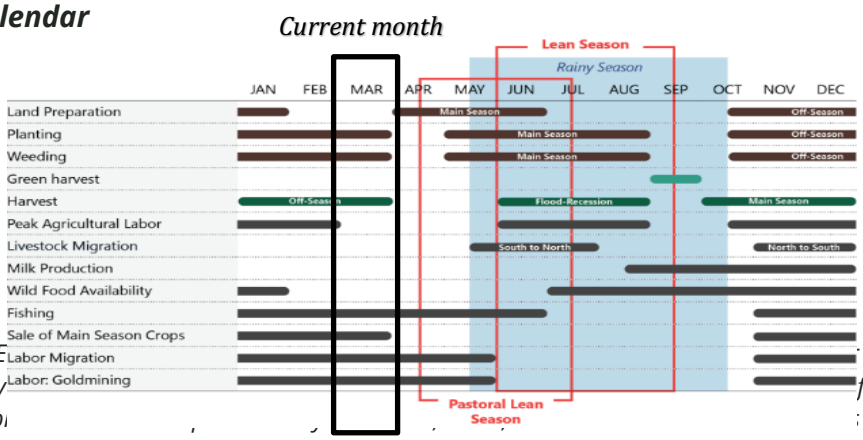
Monthly Climate and Weather

20 March 2025

Highlights

- La Niña conditions emerged in December 2024. However, ENSO-neutral conditions are expected to develop in the next month and persist through at least the June-August season, with a transition to ENSO-Neutral during March-May 2025 (66%).
- The rainy season in Mali typically begins in May and extends through October.
- During February, scattered patches of light rain less than 25 mm was observed across Mali.
- Minimum temperatures varied between 10°C and 30°C across Mali. Negative anomalies of 1°C to 4°C were registered across northern portions of Mali. In southern and central Mali, minimum temperatures were near to above average with anomalies between -1°C and 2°C. The country observed maximum temperatures between 25°C and 40°C with the warmer temperatures to the south. Positive temperature anomalies, ranging from 1°C to 3°C above average, were noted in Tombouctou, Gao, and Kidal regions.
- The NMME models predict no clear signal for above or below average rainfall across most of Mali during April 2025. This is because very little rainfall is climatologically expected during the upcoming month. The SPI forecast for the next 4 weeks shows dry-mask across the region due to the climatologically dry season.

Mali Seasonal Calendar



The FEWS NE and climate information and monthly flooding, and evapotranspi 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 Mali. **Source: FEWS NET**

Current Climate Modes and Teleconnections

- La Niña conditions are present, with below-average sea surface temperatures (SSTs) across the tropical central Pacific and above average SST spreading in the tropical East Pacific. According to the NOAA ENSO Diagnostic Discussion, as of early March 2025, La Niña conditions are present but expected to transition to ENSO-neutral with a 75% chance during the coming month (Fig. 1). ENSO-neutral is favored to last through at least the June-August season (62% chance). For the latest update from the NOAA Climate Prediction Center (CPC) on ENSO, check here.

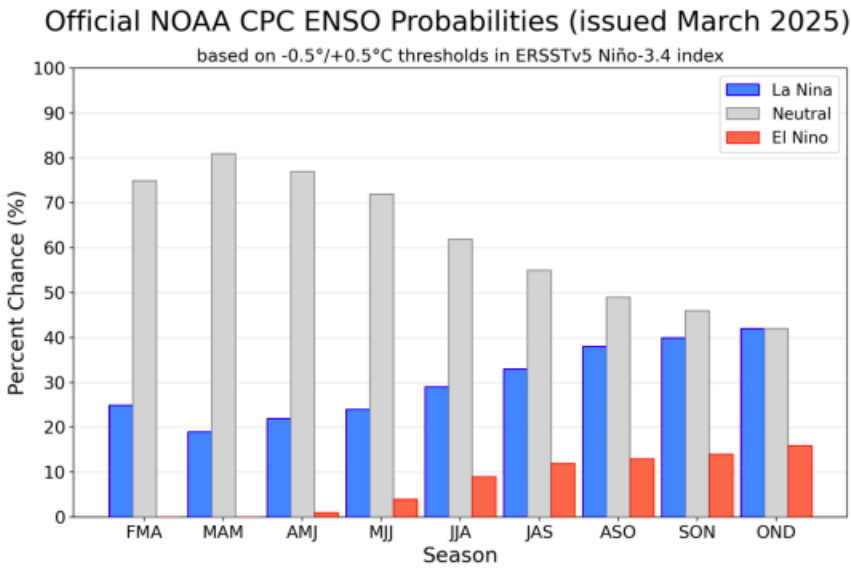


Figure 2. Official ENSO probabilities for the Niño 3.4 SST index (5°N-5°S, 120°W-170°W). Figure updated 13 March 2025. **Source: NOAA/CPC**

- Implications of ENSO conditions: As April – June (AMJ) includes the beginning of the wet season for Mali, La Niña may have some implication for rainfall during the season. Based on historical records, La Niña conditions are generally associated with slightly below-average rainfall in central Mali. Based on historical records, La Niña conditions are generally associated with above-average mean temperatures for central and southern Mali and below average temperatures in the North during the season. The ENSO-precipitation teleconnection pattern can be found here, and the pattern for temperature can be found here (**Fig. A1b** and **A1c**).

Extreme Events

- As Mali is experiencing its dry season and is at peak risk for wild fires there have been widespread reports of fire activity, but at a normal level across Mali during February and March. Activity is most concentrated in the southwestern parts of Mali

Rainfall/Precipitation

- In February, climatological rainfall is light with monthly totals less than 10mm and mainly concentrated across the North and in the Far-south of the country.

Past 3 months (December 2024 to February 2025):

- **Totals:** During the last 3 months, rainfall accumulations in Mali ranged from dry conditions to 10 – 25 mm. Rainfall accumulations exceeding 10 mm were registered in Tombouctou, northern Kayes, northern Koulikoro, as well as Sikasso.

- **Anomalies:** CMORPH satellite-based rainfall estimates indicate near to or slightly below average rainfall across Mali. Patches of negative anomalies (10 - 25 mm) were mainly scattered throughout northern parts of the country.

Past 1 Month (February 2025):

- **Totals:** During February, scattered patches of light rain less than 25 mm were observed across Mali (**Fig. 3a**).

- **Anomalies:** CMORPH satellite-based rainfall estimates indicate that rainfall was near average across Mali (**Fig. 3b**).

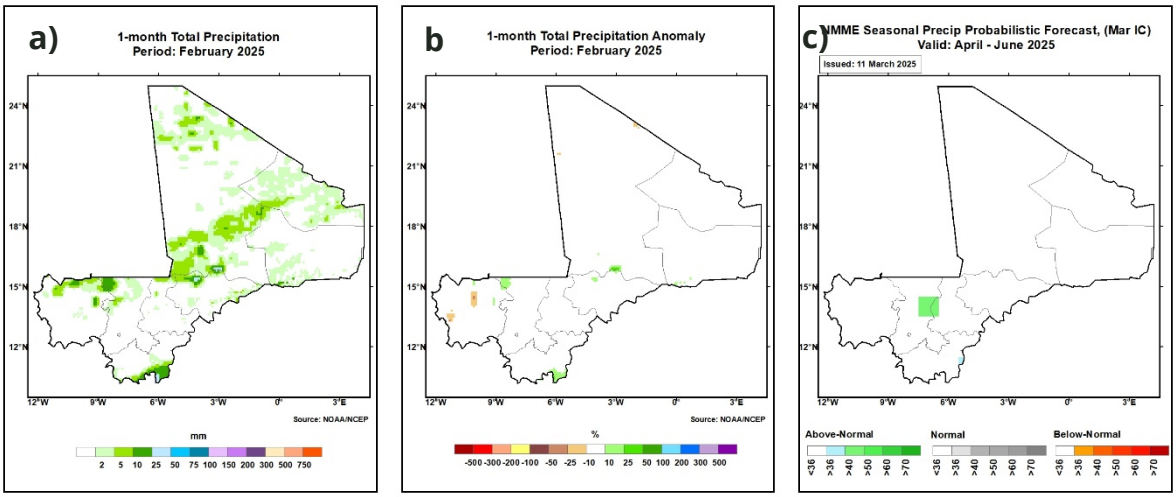


Figure 3. Satellite estimates of precipitation (CMORPH) for February 2025. **(a)** 1-month total accumulation and **(b)** 1-month anomaly. **(c)** NMME seasonal rainfall probabilistic forecast for April – June 2025. **Source: NOAA/NCEP**

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

- **Monthly:** Based on the North American Multi-Model Ensemble (NMME) models, utilizing observations from March 2025 for model initialization, the forecast indicates no dominant signal for above or below-average rainfall across Mali during April 2025. This is because very little rainfall is climatologically expected during the upcoming month.

- **Seasonal:** The NMME seasonal forecast for April – June 2025 suggests no dominant signal for above or below average rainfall across most of Mali. This is because very little rainfall is climatologically expected during the upcoming season. However, a small area of central Koulikoro favors above normal rainfall with a 40 – 50% chance (**Fig. 3c**).

Temperature

Past 3 months (December 2024– February 2025):

- **Maximums:** The country observed maximum temperatures between 25°C and 40°C with the cooler temperatures in the North and hottest temperatures in the South. Regarding anomalies, near-average conditions prevailed across most of southern and central Mali, with values primarily ranging from -1°C to 1°C. Meanwhile, warmer than average conditions were recorded in many parts of northern Mali, with temperature anomalies between 1°C and 3°C above average.

- **Minimums:** Minimum temperatures varied between 5°C and 25°C across Mali. The coolest temperatures, less than 10°C, were observed in northern Tombouctou. Mean minimum temperatures were near to or slightly warmer than average across most southern and central regions of Mali. However, 1°C to 4°C negative anomalies were observed in central and northern Tombouctou, northern Gao, and Kidal regions.

Past 1 Month (February 2025):

- **Maximums:** The country observed maximum temperatures between 25°C and 40°C with the warmer temperatures to the south. Positive temperature anomalies, ranging from 1°C to 3°C above average, were noted in Tombouctou, Gao, and Kidal regions. Southern and central Mali observed near-normal conditions (**Fig. 4a**).

- **Minimums:** Minimum temperatures varied between 10°C and 30°C across Mali. The cooler temperatures, less than 15°C, were observed across northern areas and the warmest temperatures were found in Kayes. Negative anomalies of 1°C to 4°C were registered across northern portions of Mali. In southern and central Mali minimum temperatures were near to above average with anomalies between -1°C and 2°C (**Fig. 4b**).

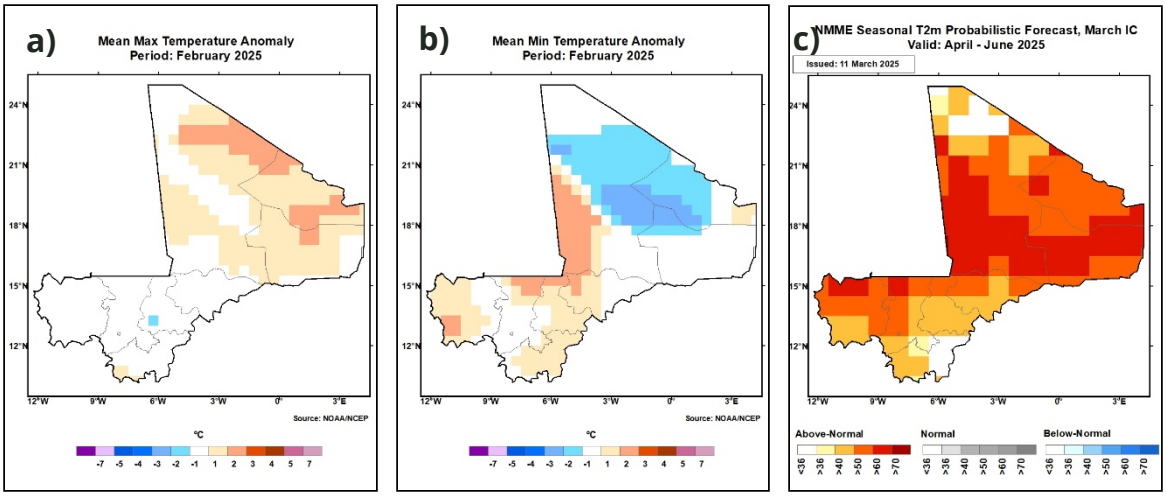


Figure 4. Spatial structure of temperature for February 2025. **(a)** Maximum temperature anomaly and **(b)** minimum temperature anomaly. **(c)** NMME probabilistic forecast of seasonal 2-m temperature anomaly for April – June 2025. **Source: NOAA/NCEP**

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

- **Monthly:** The NMME forecast indicates that above normal temperatures are favored across central and southern Mali with 40% to more than 80% chance during April 2025. The highest probabilities for above and below average temperatures exist in southeastern Kayes and southern Tombouctou. Parts of northern Mali exhibit no clear signal for above or below average temperatures during April.

- **Seasonal:** For the April – June 2025 season, there is a 40% to 70% chance of above-average temperatures over the majority of Mali. However, probabilities for above or below-average temperatures are low in portions of northern Tombouctou and eastern Sikasso regions (**Fig. 4c**).

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 (December 2024 - February 2025):

- 3-month SPI is dry masked over Mali during December - February due to the season's dry climatology (**Fig. 5a**).

Past 1 Month (February 2024):

- 1-month SPI is dry masked over Mali during February due to the month's dry climatology.

Current/Forecast (29 December 2024 to 28 March 2025):

- The SPI forecast for the next 4 weeks suggests shows dry-mask across the region due to the climatologically dry season (**Fig. 5b**).

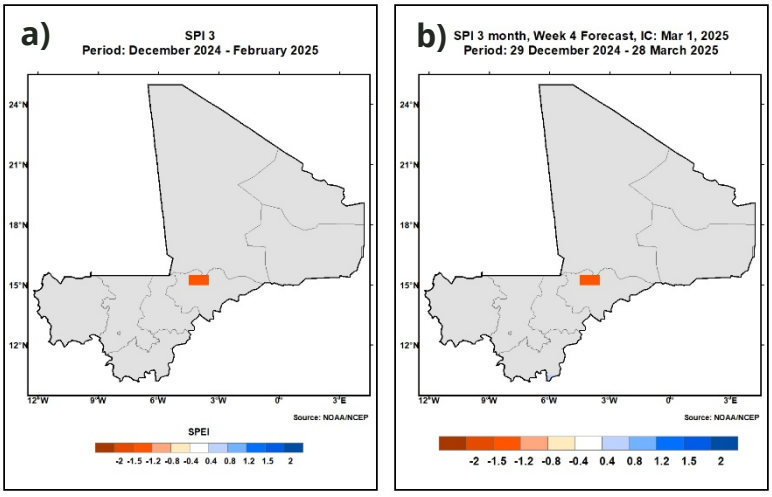


Figure 5. Spatial structure of (a) December 2024 - February 2025 Standardized Precipitation Index (SPI) and (b) SPI constructed from observations for 29 December 2024 to 28 February 2025 and 4 weeks forecast ending on 28 March 2025.**Source: NOAA/NCEP**

Water Requirement Satisfaction Index (WRSI)

- USGS/EROS crop WRSI the final updated conditions of the previous growing season during the 3rd Dekad of November 2024 depicted mostly '*Good*' to '*very Good*' crop conditions across southern portions of the country. Areas of Mopti region depicted '*Mediocre'* to *'average'* conditions.

GEOGLAM Crop Monitor

- The most recently updated GEOGLAM Crop Monitor synthesis conditions during February 2025 were marked by '*Favorable*' conditions across southern Mali, and '*poor*' conditions through central Mali.

Additional Resources

- https://protectioncivile.gouv.ht/
- https://www.meteo-haiti.gouv.ht/

Annex

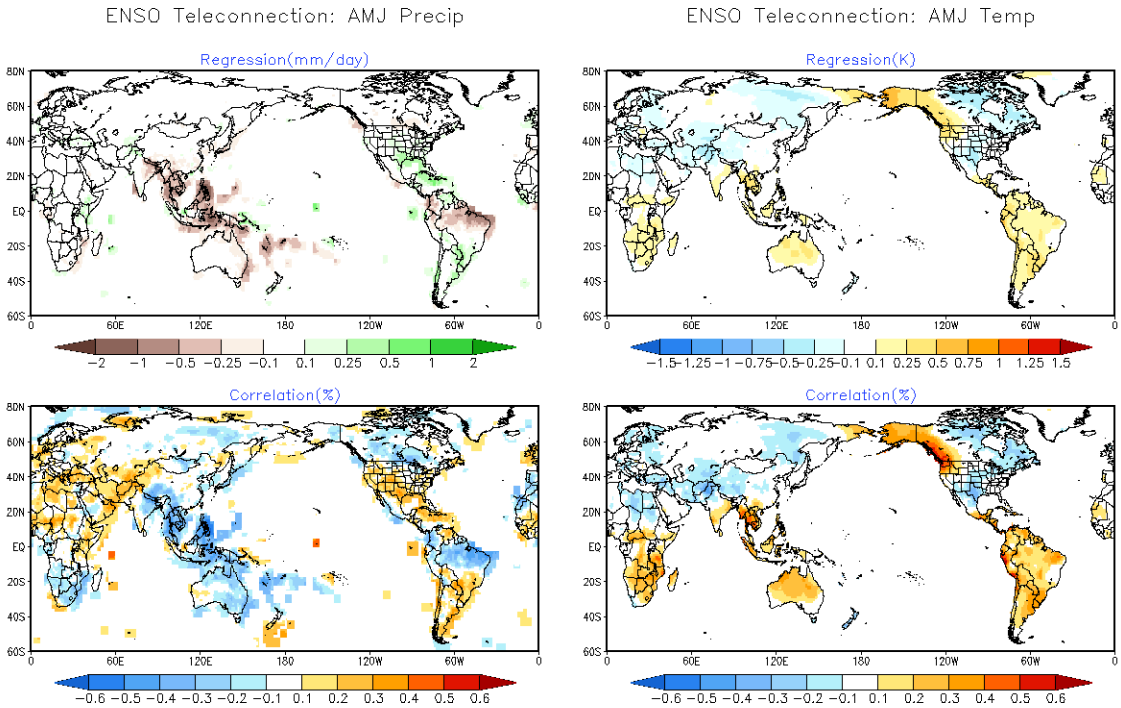


Figure A1. For three month season (April – June 2025; AMJ), precipitation and temperature anomalies are regressed onto the standardized Niño-3.4 index (upper panel). In the bottom panel, the correlation is calculated between Nino-3.4 and the anomalies.