FAMINE EARLY WARNING SYSTEMS NETWORK

Haiti

Monthly Climate and Weather

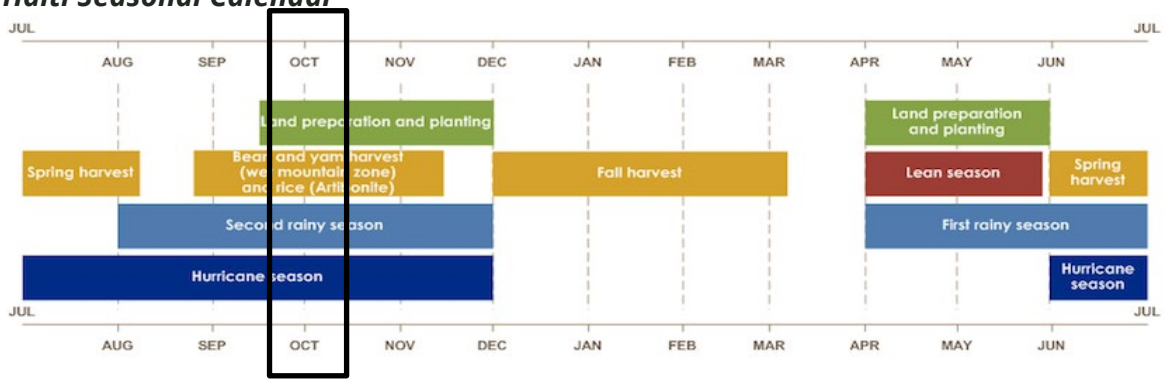
21 November 2024

Highlights

- As of early November 2024, ENSO-neutral conditions prevailed in the tropical Pacific Ocean. La Niña is most likely to emerge during October–December 2024 (57% chance) and persist through January–March 2025 (61% chance during January-March). Historically, El Niño has been associated with drier-than-average conditions, while La Niña tends to bring wetter-than-average conditions to Haiti.
- The second rainy season in Haiti typically begins in August and extends through November.
- In October 2024, rainfall across Haiti ranged from 10 mm to 200 mm. Western Haiti recorded rainfall totals between 50 mm and 200 mm, while eastern Haiti received lighter rainfall, ranging from 10 mm to 25 mm. During this month, most of the country experienced drier conditions. The largest rainfall deficits were observed in eastern central Haiti, with negative rainfall anomalies of 100 mm to 200 mm. Northern and southern departments also experienced below-average rainfall, with negative anomalies ranging from 25 mm to 100 mm. In contrast, rainfall surpluses of 10 mm to 100 mm were recorded in Grand-Anse and the northwestern regions.
- For December 2024, the NMME models predict above-average rainfall in the eastern central Haiti and equal chances for above-, near-and below-average rainfall across the rest of the country. For the December 2024 – February 2025 season, the forecasts indicate above-average rainfall in the southern regions, and for the rest of the country, there are equal chances for above-, near-, or below-average rainfall. The SPI forecast suggests that wetter-than-average conditions may prevail in northern, western, and southern Haiti, and average conditions in the southeast.

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.

Haiti Seasonal Calendar



Current Climate Modes and Teleconnections

- ENSO-neutral conditions are present. According to the NOAA ENSO Diagnostic Discussion, as of early November 2024, La Niña conditions are expected to emerge during the October–December 2024 season (57% chance) and continue through January–March 2025 (Fig. 1). For the latest update from the NOAA Climate Prediction Center (CPC) on ENSO, check here.

- Much of the Caribbean Sea and Gulf of Mexico experienced SSTs from 26°C to 30°C, where positive anomalies of 0.5–2°C prevailed in the region.

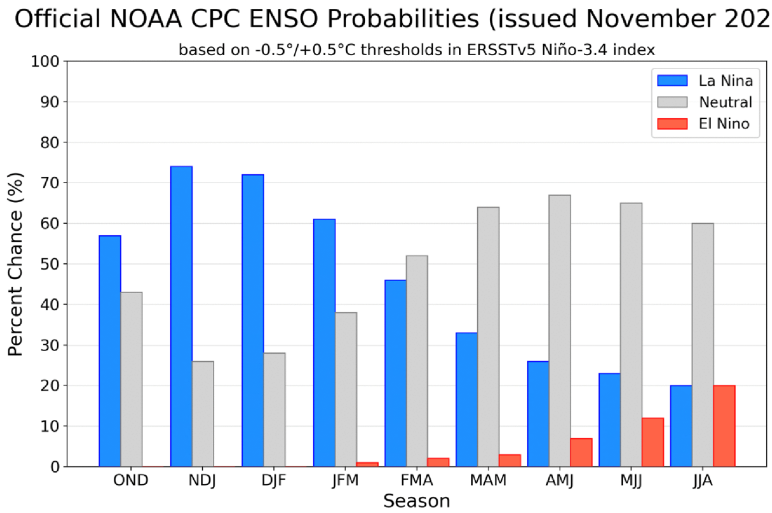


Figure 1. Official ENSO probabilities for the Niño 3.4 SST index (5°N-5°S, 120°W-170°W). Figure updated 14 November 2024. **Source: NOAA/CPC**

- Implications of ENSO conditions: Based on historical records, La Niña conditions are associated with above-average precipitation throughout most of Haiti. In addition, La Niña conditions are associated with near-average mean temperatures for most of

Haiti. The ENSO-precipitation teleconnection pattern can be found here, and the pattern for temperature can be found here.

- Highlighting analogous years/events: Composites of December–February (DJF) rainfall for eight La Niña years during the 1990–2019 period indicates that DJF seasonal rainfall totals vary from 50 mm to 500 mm across Haiti, with amounts exceeding 300 mm over northern Haiti (Annex Fig. A1a). During La Niña years, above-normal rainfall anomalies dominate in the northern portions of Haiti, while below-normal precipitation anomalies prevail in southern Haiti (**Fig. A1b** and **A1c**).

Extreme Events

- No reports of flooding have been recorded in Haiti during October 2024. The country experienced below-average rainfall during this period.

- There have been no reports of fire activity in Haiti during October 2024.

Rainfall/Precipitation

- October is one of the wettest months in Haiti. During this month, climatological rainfall values are above 200 mm in the southwest (Grand-Anse and Sud). Mean precipitation is between 150 mm and 200 mm in central and northern Haiti, except in the southeast where rainfall values range from 90 mm to 120 mm.

Past 3 months (August to October 2024):

- **Totals:** Over the last three months, rainfall accumulations in Haiti ranged from 100 mm to 300 mm in the western regions, and from 25 mm to 100 mm in the east. Rainfall totals exceeding 300 mm were recorded in the northwest of Grand-Anse and western Gonave Island.

- **Anomalies:** Below-normal rainfall persisted across Haiti over the past three months. Central Haiti experienced rainfall deficits exceeding 300 mm. In other areas, negative rainfall anomalies ranged from 200 mm below the mean in the east to 50 mm below the mean in the west. In contrast, small areas in the far west saw positive rainfall anomalies of 25 mm to 100 mm above the mean.

Past 1 Month (October 2024):

- **Totals:** In October, rainfall across Haiti ranged from 10 mm to 200 mm. Western Haiti saw rainfall totals between 50 mm and 200 mm, while eastern Haiti received lighter rainfall, ranging from 10 mm to 25 mm (**Fig. 2a**).

- **Anomalies:** CMORPH satellite-based rainfall estimates indicate below-average conditions across most of the country (**Fig. 2b**). The largest deficits were observed in eastern central Haiti, with negative rainfall anomalies of 100 mm to 200 mm. Northern and southern departments also experienced below-average rainfall, with anomalies ranging from 25 mm to 100 mm below the mean. In contrast, rainfall surpluses of 10 mm to 100 mm were recorded in Grand-Anse and the northwestern regions.

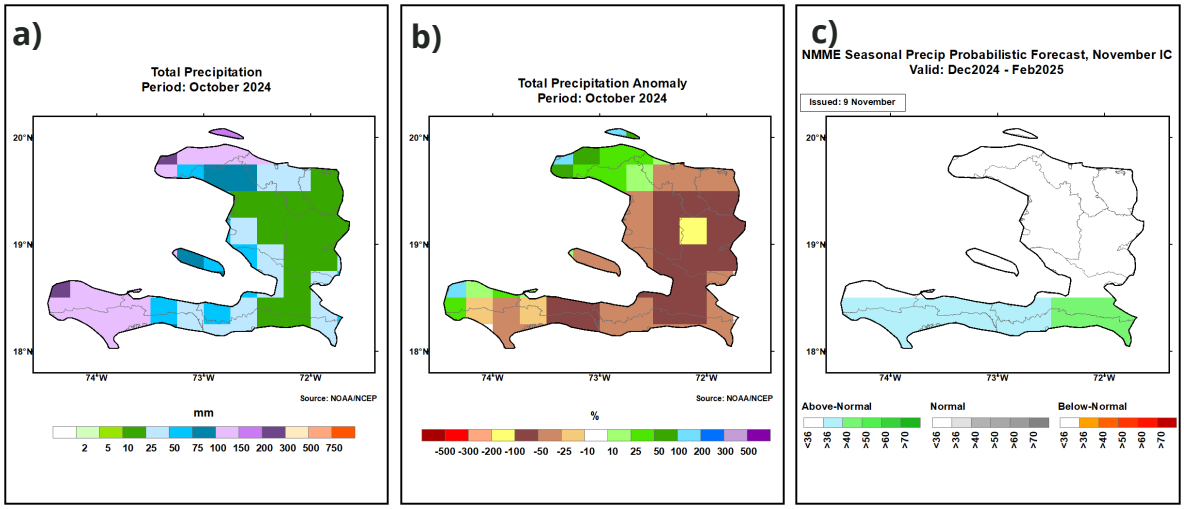


Figure 2. Satellite estimates of precipitation (CMORPH) for October 2024. **(a)** 1-month total accumulation and **(b)** 1-month anomaly. **(c)** NMME seasonal rainfall probabilistic forecast for December 2024 – February 2025. **Source: NOAA/NCEP**

Monthly and Seasonal Forecasts (December 2024 and December–February 2025):

- **Monthly:** Based on the North American Multi-Model Ensemble (NMME) models, utilizing observations from November 2024 for model initialization, the forecast indicates a 36% to 40% chance of above-normal precipitation over eastern central Haiti. No dominant category is indicated in the rest of the country during December 2024.

- **Seasonal:** The NMME seasonal forecast for December 2024 – February 2025 suggests above-average rainfall in the southern regions, with a 36% to 50% probability. For the rest of the country, there are equal chances for above-, near-, or below-average rainfall (**Fig. 2c**).

Temperature

Past 3 months (August to October 2024):

- **Maximums:** Most of Haiti experienced temperatures ranging from 30°C to 35°C, with above-average temperature anomalies of 1°C to 2°C.

- **Minimums:** Minimum temperatures across Haiti ranged from 15°C to 30°C. Most of the country recorded temperatures between 20°C and 25°C, while the southeast saw temperatures between 15°C and 20°C, and the northwest ranged from 25°C to 30°C. Overall, near-average temperatures were observed across Haiti, with anomalies ranging from -1°C to 1°C, and between 1°C and 2°C in the northwest.

Past 1 Month (October 2024):

- **Maximums:** The maximum temperature patterns in October were similar to those observed from August to October. The country experienced maximum temperatures ranging from 30°C to 35°C, with positive temperature anomalies of 1°C to 2°C above average across most of the country. In central Grand-Anse and Sud, anomalies exceeded 2°C (**Fig. 3a**).

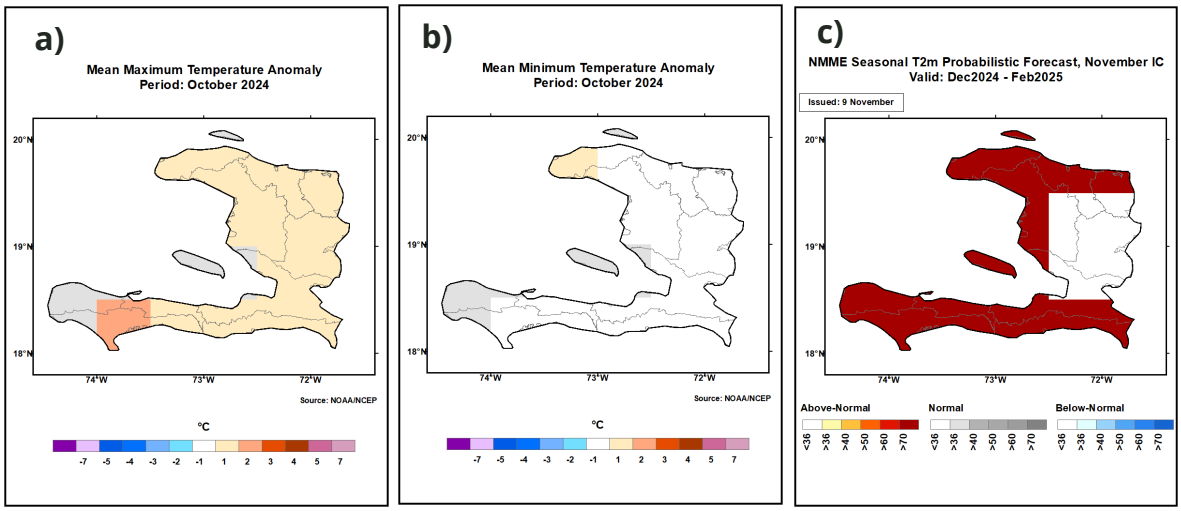


Figure 3. Spatial structure of temperature for October 2024. **(a)** Maximum temperature anomaly and **(b)** minimum temperature anomaly. **(c)** NMME probabilistic forecast of seasonal 2-m temperature anomaly for December 2024 – February 2025. **Source: NOAA/NCEP**

- **Minimums:** Minimum temperature patterns in October closely mirrored those of the past three months. Temperatures ranged from 20°C to 25°C across most parts of Haiti. Southeastern Haiti recorded lower minimums between 15°C and 20°C, while northwestern Haiti experienced higher temperatures ranging from 25°C to 30°C.

Overall, most of Haiti registered near-average minimum temperatures anomalies of -1°C to 1°C, except in northwestern Haiti, where anomalies ranged from 1°C to 2°C (**Fig. 3b**).

Monthly and Seasonal Forecasts (December 2024 and December 2024 – February 2025):

- **Monthly:** The NMME forecast shows no clear dominant signal for either below- or above-average temperatures across Haiti during December 2024.

- **Seasonal:** For the December 2024 – February 2025 season, there is an increased likelihood (over 70%) of above-average temperatures in the northern, western, and southern regions of Haiti. In contrast, there is no clear signal for near-, above- or below-average temperatures in the central part of the country (**Fig. 3c**).

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 (11 August – 10 November 2024):

- During the past 18 pentads (90 days), Haiti showed wet conditions (SPI values of 0.5 to 1.2 standard deviations above the mean) in areas of Nord-Ouest, Nord, parts of Haiti department, and eastern Grand-Anse and Sud, and western Ouest and Sud-Est. Meanwhile, the rest of Haiti observed near-average conditions (SPI values of -0.5 to 0.5 standard deviations), except in a small area in the southeast that has negative SPI values of 0.5 to 1.2 standard deviations below the mean.

Past 1 Month (11 October – 10 November 2024):

- During the past six pentads (30 days), areas in northern Haiti experienced wetter-than-average conditions (SPI values of 0.5 to 2.0 standard deviations above the mean) and 0.5 to 1.5 in southwestern Haiti. Meanwhile, the rest of Haiti observed near-average conditions (SPI values of -0.5 to 0.5 standard deviations).

Current/Forecast (11 August – 25 November 2024):

- SPI forecast, which is constructed from observed precipitation from 11 August 2024 to 10 November 2024 and forecasted rainfall data from 11 November to 25 November 2024 suggests that wetter-than-average conditions may prevail in northern, central, and southern Haiti, with SPI values ranging from 0.5 to 2.0σ. Average conditions are indicated in the southeast.

Water Requirement Satisfaction Index (WRSI)

- USGS/EROS crop WRSI Current conditions during the 3rd Dekad of September 2024 depicted '*Average*' to '*Good*' crop conditions across much of the country. Local areas of Centre and southern Ouest departments depicted '*Very good*' conditions, while areas in Nord-Ouest, northwestern Artibonite, and northern Ouest departments depicted '*Mediocre*' conditions.

GEOGLAM Crop Monitor

- GEOGLAM Crop Monitor synthesis indicated 'Favorable' conditions across Haiti during September 2024.

Additional Resources

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

Annex

- La Niña precipitation composites.

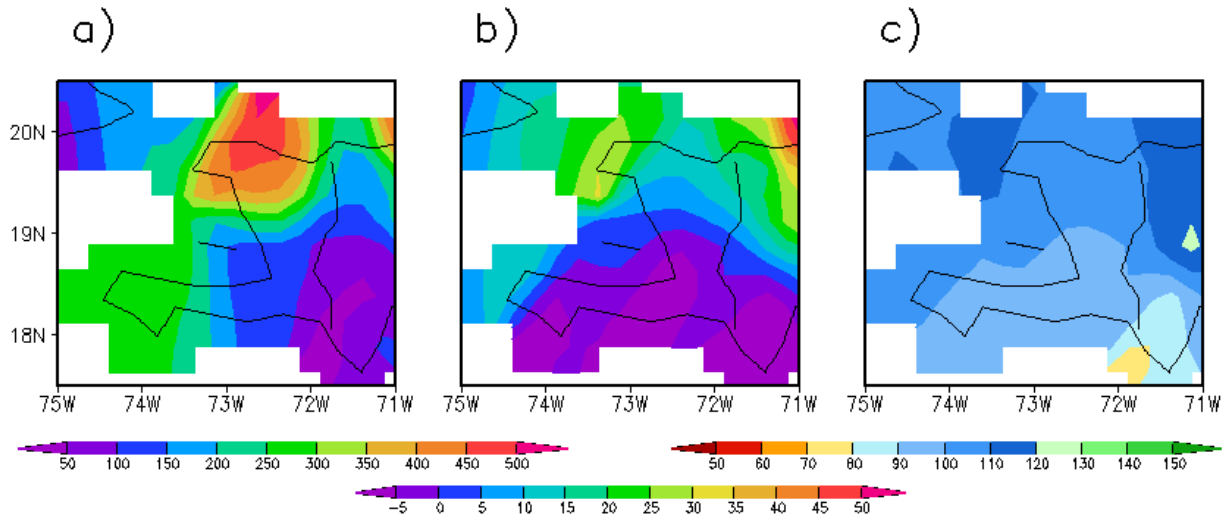


Figure A1. Composite maps of December – February (DJF) precipitation based on eight La Niña years during 1990 – 2019 using the Global Precipitation Climatology Centre (GPCC) dataset (0.25° resolution). (a) DJF total rainfall (mm), (b) DJF rainfall anomalies (mm), and (c) DJF total rainfall expressed as a percentage (%) of mean precipitation.