

FAMINE EARLY WARNING SYSTEMS NETWORK

Haiti

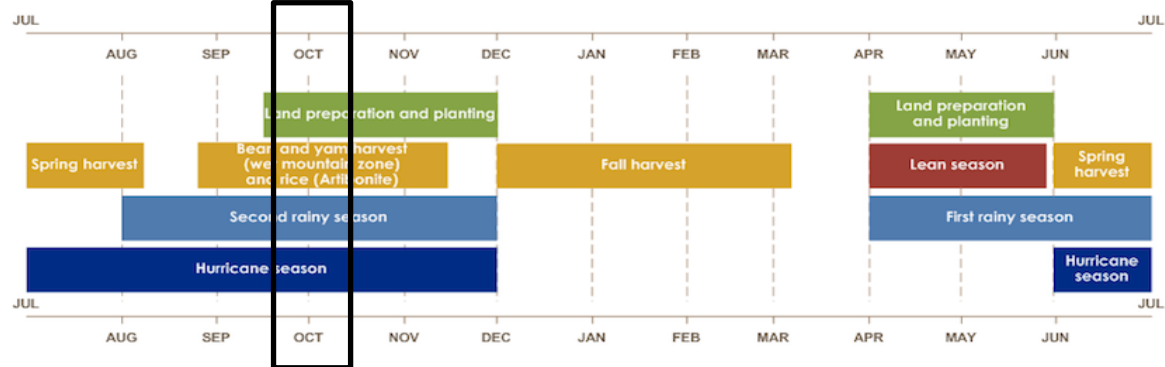
Monthly Climate and Weather

17 October 2024

Highlights

- As of early October 2024, ENSO-neutral condition prevails in the tropical Pacific Ocean. La Niña is favored to emerge during September-November ([60%](#) chance) and persist into the Northern Hemisphere winter of 2025 ([63%](#) 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 September 2024, 10 – 100 mm of rainfall was observed over Haiti, with northwestern Ouest, southern Grande-Anse, Nippes, Sud and western Ouest receiving 50 mm to 100 mm total rainfall. Meanwhile, light rainfall totals of 5 – 25 mm were observed in northern and southeastern departments. Rainfall deficits continued in most of the country, particularly in eastern Artibonite, southern Nord, and Centre departments, where 100 – 200 mm below-average rainfall anomalies were observed. On the other hand, rainfall surpluses between 10 mm and 50 mm were registered in Grand-Anse and northwestern.
- During November 2024, the NMME models predict equal chances for above-, near- and below-average rainfall across the country. Meanwhile for the November 2024 – January 2025 season, there are enhanced probabilities exceeding 70% for northern, western, and southern parts of Haiti to experience above-average temperatures. The SPI forecast suggests that wetter-than-average conditions may prevail in western Artibonite, northwestern Ouest, and Nippes departments.

Haiti Seasonal Calendar



Current Climate Modes and Teleconnections

- ENSO-neutral conditions are present. According to the NOAA ENSO Diagnostic Discussion, as of early October 2024, La Niña conditions are expected to emerge during the September - November season (60% chance) and continue through January - March 2025 (Fig. 2). 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 27°C to 31°C, where positive anomalies of 0.5 – 1.5 °C prevailed in the region.

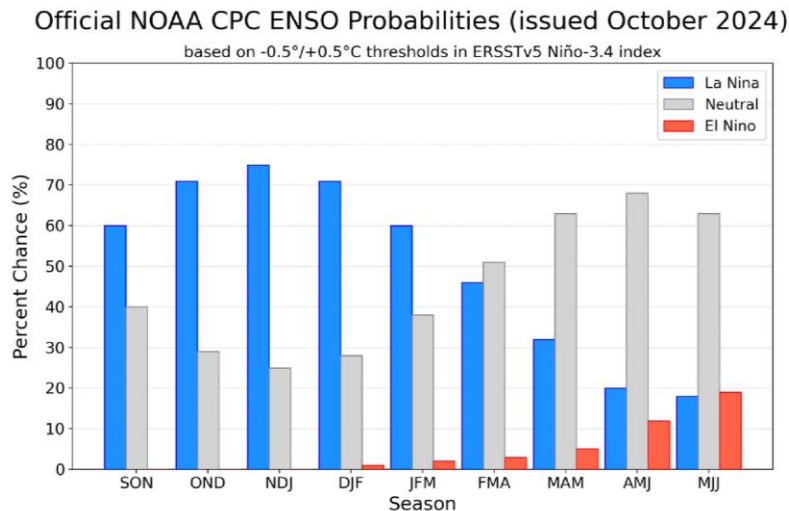


Figure 1. Official ENSO probabilities for the Niño 3.4 SST index (5°N-5°S, 120°W-170°W). Figure updated 10 October 2024. **Source: NOAA/CPC**

- Implications of ENSO conditions: Based on historical records, La Niña conditions are associated with above-average precipitation throughout most of Haiti from September – November. 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 November – January (NDJ) rainfall for eight La Niña years during the 1990 – 2019 period indicates that NDJ seasonal rainfall totals vary from 100 mm to 600 mm across Haiti, with amounts exceeding 500 mm over northern Haiti (Annex Fig. A1a). During La Niña years, above-normal rainfall anomalies dominate northeastern portions of Haiti, while below-normal precipitation anomalies prevail in southwestern Haiti (**Fig. A1b** and **A1c**).

Extreme Events

- During September, the erratic and deficient rains during the previous months affected the development of crops in some areas in Haiti. However, by the end of the month, the increase in rainfall amounts helped to alleviate the abnormally dry conditions in northern and southern Haiti.
- There have been no reports of fire activity in Haiti during September.

Rainfall/Precipitation

- In September, climatological rainfall values are between 50 mm and 75 mm in most parts of Haiti, except in northeastern where rainfall values range from 25 mm to 50 mm.

Past 3 months (July to September 2024):

- **Totals:** During the last three months, rainfall accumulations in Haiti ranged from 25 mm to 300 mm. Rainfall accumulations exceeding 100 mm were registered in southwestern Artibonite, northwestern Ouest, northeastern Centre, Grand-Anse, Sud and Nippes departments of Haiti.
- **Anomalies:** Below-normal rainfall conditions continued across Haiti during the last three months. Rainfall deficits of over 300 mm were observed in central Haiti, including most of the Artibonite, southern Nord, Center, and northern Ouest departments.

Past 1 Month (September 2024):

- **Totals:** In September, rainfall amounts of 10 – 100 mm were observed over Haiti. Rainfall totals varied from 50 mm to 100 mm in northwestern Ouest, southern Grande-Anse, Nippes, Sud and western Ouest. Meanwhile, light rainfall totals of 5 – 25 mm were observed in northern and southeastern departments (**Fig. 2a**).

- **Anomalies:** [CMORPH](#) satellite-based rainfall estimates indicate below-average conditions in most of the country (**Fig. 2b**). The largest deficits occurred in eastern Artibonite, southern Nord, and Centre departments, where negative rainfall anomalies of 100 – 200 mm were observed. Further, northern and southern departments observed below-average rainfall anomalies of 10-100 mm. On the other hand, rainfall surpluses between 10 mm and 50 mm were registered in Grand-Anse and northwestern.

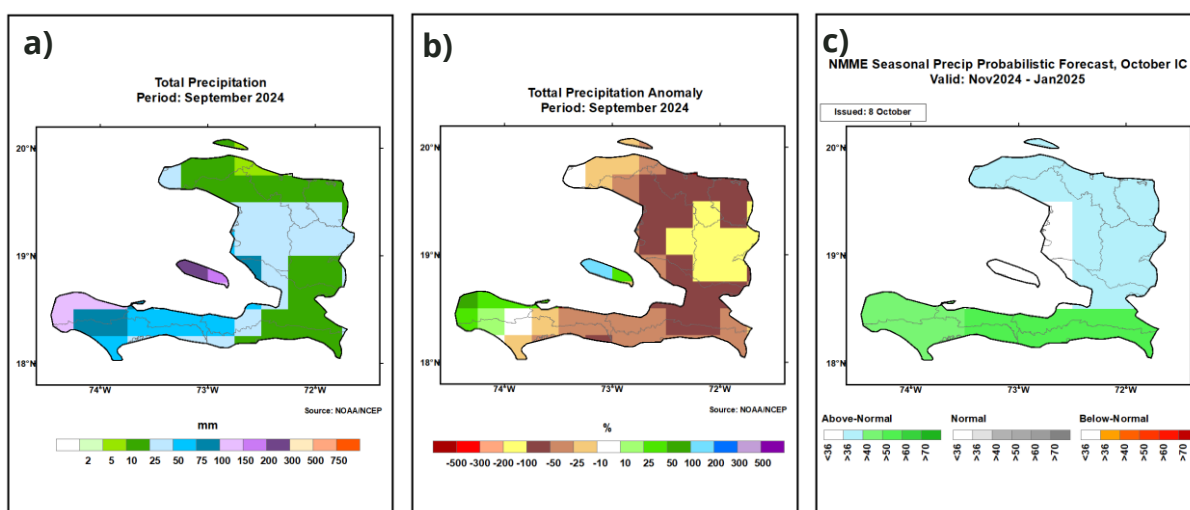


Figure 2. Satellite estimates of precipitation (CMORPH) for September 2024. **(a)** 1-month total accumulation and **(b)** 1-month anomaly. **(c)** NMME seasonal rainfall probabilistic forecast for November 2024 – January 2025. **Source: NOAA/NCEP**

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

- **Monthly:** Based on the North American Multi-Model Ensemble (NMME) models, utilizing observations from October 2024 for model initialization, the forecast indicates equal chances for above-, near-, and below-average rainfall across the country during November 2024.
- **Seasonal:** The NMME seasonal forecast for November 2024 – January 2025 suggests above-average rainfall in most parts of the country with a 36% to 40% probability of above-average rainfall. Meanwhile, Grande-Anse, Nippes, Sud, Southern Ouest, and Sud-Est show a 40% to 70% chance for above-average rainfall (**Fig. 2c**).

Temperature

Past 3 months (July to September 2024):

- **Maximums:** Most of Haiti observed temperatures between 30°C and 35°C. Regarding anomalies, western Nord-Ouest, northwestern Artibonite, eastern Grande-Anse, Nippes, most parts of Sud, southern Ouest, and Sud-Est departments recorded above-average temperature anomalies between 1°C and 2°C. Meanwhile, the rest of the country registered near-average conditions.
- **Minimums:** Minimum temperatures varied between 15°C and 30°C across Haiti. Temperatures between 25°C to 30°C were registered in western Nord-Ouest and northwestern Artibonite, while temperatures ranging from 15°C and 20°C were observed in southeastern Ouest and eastern Sud-Est departments. Meanwhile, near-average temperatures were registered across Haiti, with anomalies from -1°C to 1°C of the average.

Past 1 Month (September 2024):

- **Maximums:** Maximum temperature patterns during September were similar to those observed in July-September. The country observed maximum temperatures between 30°C and 35°C, with positive temperature anomalies ranging from 1°C to 2°C above-average across the country (**Fig. 3a**).
- **Minimums:** Minimum temperature patterns during the past month were similar to those observed in the last three months. Therefore, temperatures ranged from 20°C to 25°C in most parts of Haiti. Northwestern Haiti registered higher minimum temperatures between 25°C and 30°C, while southeastern Haiti observed lower values between 15°C and 20°C. Most places in Haiti registered near-average minimum temperatures anomalies between -1°C and 1°C, except in northwestern Haiti, where values of 1°C to 2°C were observed to be above average (**Fig. 3b**).

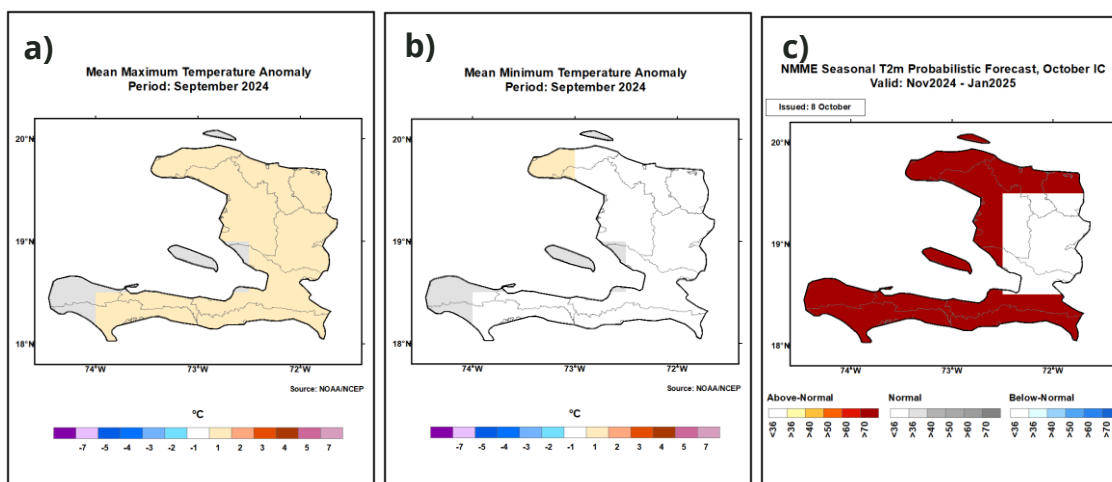


Figure 3. Spatial structure of temperature for September 2024. **(a)** Maximum temperature anomaly and **(b)** minimum temperature anomaly. **(c)** NMME probabilistic forecast of seasonal 2-m temperature anomaly for November 2024 – January 2025. **Source: NOAA/NCEP**

Monthly and Seasonal Forecasts (November 2024 and Nov2024 – Jan2025):

- **Monthly:** The NMME forecast indicates no clear dominant signal for either below- or above-average temperatures across the country during November 2024.
- **Seasonal:** For the November 2024 – January 2025 season, there is an enhanced chance exceeding 70% for above-average temperatures to exist across the northern, western, and southern parts of Haiti. Meanwhile, there is no clear signal for near-, above- or below-average temperatures over the central portions 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 July – 10 October 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 Artibonite, Centre, western Ouest, Nippes, and eastern Sud departments. Meanwhile, the rest of Haiti observed near-average conditions (SPI values of -0.5 to 0.5 standard deviations).

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

- During the past six pentads (30 days), localized areas in western and southern Haiti experienced [wetter-than-average conditions](#) (SPI values of 0.5 to 1.2 standard deviations above the mean). Meanwhile, the rest of Haiti observed near-average conditions (SPI values of -0.5 to 0.5 standard deviations).

Current/Forecast (11 July – 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 [wetter-than-average](#) conditions may prevail in western Artibonite, northwestern Ouest, and Nippes, while drier than average conditions are indicated in the far eastern parts of Ouest and Sud-Est departments.

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.

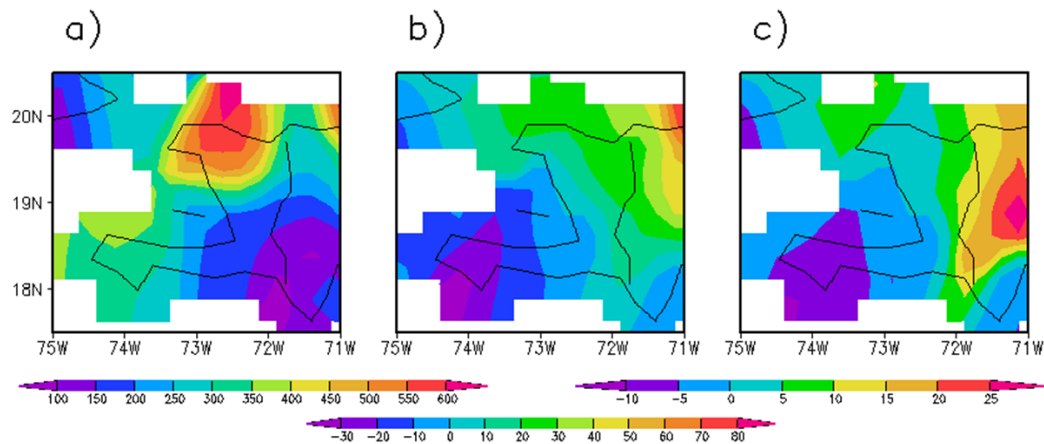


Figure A1. Composite maps of November – January (NDJ) precipitation based on eight La Niña years during 1990 – 2019 using the Global Precipitation Climatology Centre (GPCC) dataset (0.25° resolution). (a) NDJ total rainfall (mm), (b) NDJ rainfall anomalies (mm), and (c) NDJ anomalies expressed as a percentage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