FAMINE EARLY WARNING SYSTEMS NETWORK

Haiti

Monthly Climate and Weather

19 September 2024

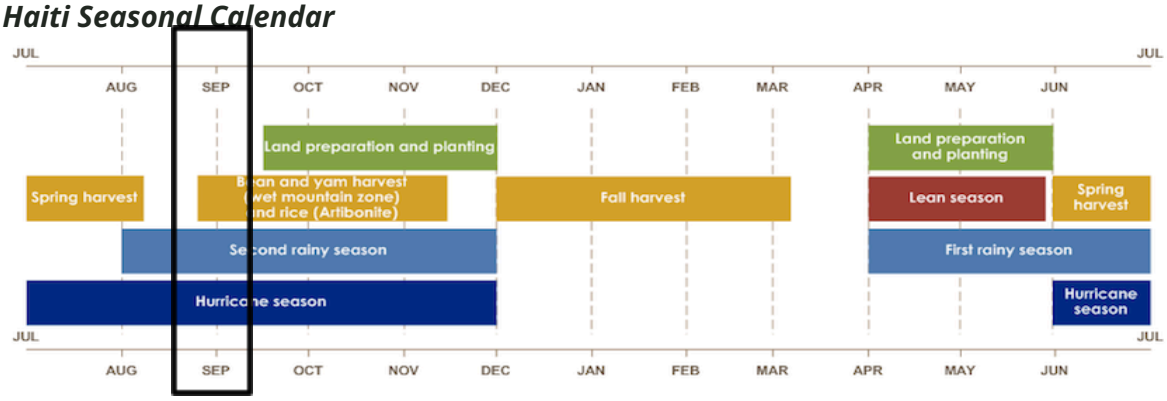
Highlights

- As of early September 2024, ENSO-neutral condition prevails in the tropical Pacific Ocean. La Niña is favored to emerge during September-November (71% 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 August 2024, light rainfall amounts of 5 – 25 mm were observed over Haiti. Rainfall totals varied from 25 mm to 50 mm in Artibonite, Centre, southern Nord, southern Nord-Est, and northern Ouest. Meanwhile, total rainfall of 05 – 25 mm was observed in the northern and southern departments. Rainfall deficits persisted in most parts of Haiti including most parts of Artibonite, Centre, southern Nord, and northwestern Ouest departments where the largest deficits of 100 – 200 mm was recorded.
- The NMME models predict a 40% to 50% chance for above-average rainfall in eastern Artibonite, southern Nord, southern Nord-Est, Centre, and northern Ouest departments. Meanwhile, equal chances are indicated for above-, near-, and below-average rainfall across the rest of the country during October 2024. The SPI forecast for the next 4 weeks suggests that below-average (drier) conditions will continue in Artibonite, southern Nord, western Centre, most of Ouest, the Gonâve Island, northern Grande-Anse, central and eastern Nippes, eastern Sud, and most

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.

of Sud-Est departments. Meanwhile, near-average SPI values are predicted elsewhere in the country.

Haiti Seasonal Calendar



Current Climate Modes and Teleconnections

- ENSO-neutral conditions are present. According to the NOAA ENSO Diagnostic Discussion, as of early September 2024, ENSO-neutral conditions are expected to continue for the next several months, with La Niña favored to emerge during September-November (71% chance) and persist into the Northern Hemisphere winter 2025 (63% chance during January-March). 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 sea surface temperatures (SSTs) from 28°C to 32°C (0.5 – 1.5°C higher than average).

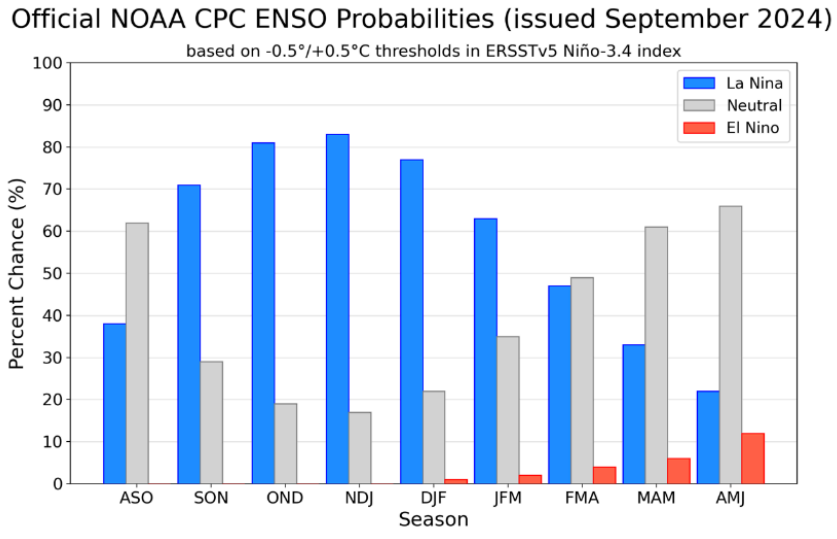


Figure 1. Official ENSO probabilities for the Niño 3.4 SST index (5°N-5°S, 120°W-170°W). Figure updated 12 September 2024. **Source: NOAA/CPC**

- Implications of ENSO conditions: Based on historical records, La Niña conditions are associated with above-average precipitation throughout most of Haiti from August – October. 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 October – December (OND) rainfall for eight La Niña years during the 1990 – 2019 period indicates that OND seasonal rainfall totals vary from 250 mm to 650 mm across Haiti, with amounts exceeding 650 mm over northwestern and southwestern Haiti (Fig. A1a in Annex). During La Niña years, above-normal rainfall anomalies dominate western portions of Haiti with values ranging from 10 – 40 mm (5% – 10% of average) and precipitation anomalies from 40 – 70 mm (10% – 35% of average) in northeastern and southeastern portions of Haiti (**Fig. A1b** and **A1c**).

Extreme Events

- During the end of August, Hurricane Ernesto reached Haiti. The interaction with Haiti's mountainous weakened Ernesto to a Tropical Storm. The storm brought heavy rainfall triggering coastal flooding in some areas of Haiti.

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

Rainfall/Precipitation

- In August, climatological rainfall values across Haiti range between 25 and 50 mm. The highest values occur in central portions of the country.

Past 3 months (May to August 2024):

- **Totals:** During the last three months, rainfall accumulations in Haiti ranged from 25 mm to 150 mm. Rainfall accumulations exceeding 100 mm were registered in southwestern Artibonite, eastern Centre, eastern Ouest, and eastern Sud-Est departments of Haiti.

- **Anomalies:** Below-normal rainfall anomalies prevailed during August across Haiti. Rainfall deficits of over 300 mm were observed in central Haiti, including most of Artibonite, southern Nord, southern Nord-Est, Center, and northern Ouest

departments. Conversely, positive rainfall anomalies ranging from 10 mm to 25 mm were confined to the southeastern Sud-Est department.

Past 1 Month (August 2024):

- **Totals:** In August, rainfall amounts of 5 – 25 mm were observed over Haiti. Rainfall totals varied from 25 mm to 50 mm in Artibonite, Centre, southern Nord, southern Nord-Est, and northern Ouest. Meanwhile, rainfall totals of 5 – 25 mm were observed in northern and southern 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 most parts of Artibonite, Centre, southern Nord, and northwestern Ouest 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.

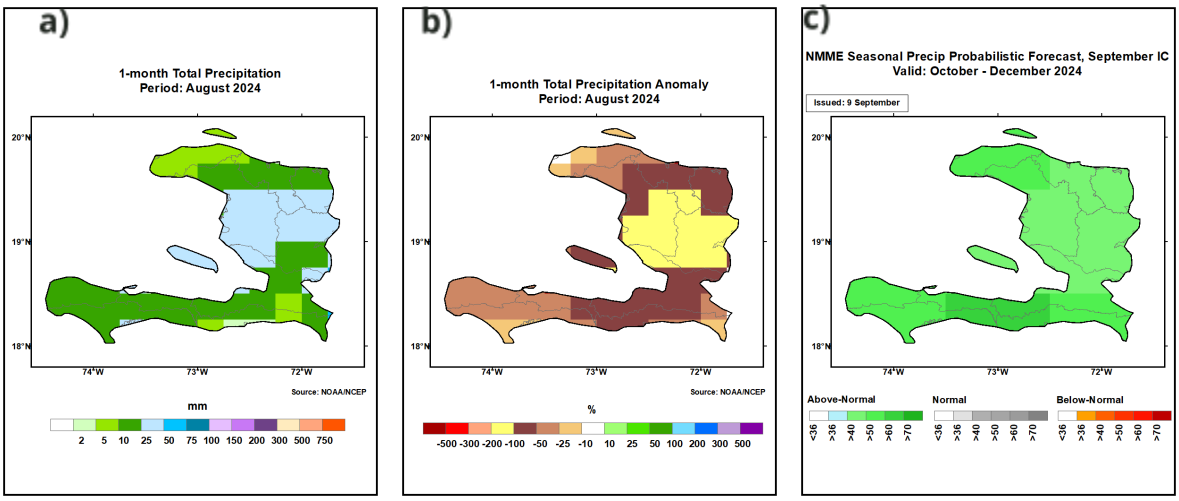


Figure 2. Satellite estimates of precipitation (CMORPH) for August 2024. **(a)** 1-month total accumulation and **(b)** 1-month anomaly. **(c)** NMME seasonal rainfall probabilistic forecast for October – December 2024. **Source: NOAA/NCEP**

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

- **Monthly:** Based on the North American Multi-Model Ensemble (NMME) models, utilizing observations from September 2024 for model initialization, the forecast indicates a 40% to 50% chance for above-average rainfall in eastern Artibonite, southern Nord, southern Nord-Est, Centre, and northern Ouest departments. Meanwhile, equal chances are indicated for above-, near-, and below-average rainfall across the rest of the country during October 2024.

- **Seasonal:** The NMME seasonal forecast for October–December 2024 suggests above-average rainfall across the country, with a 40% to 70% probability of above-average rainfall in most parts of the country. Meanwhile, most of Nippes, eastern Sud, southwestern Ouest, and western Sud-Est departments show a high chance (> 70%) of above-average rainfall (**Fig. 2c**).

Temperature

Past 3 months (June to August 2024):

- **Maximums:** Most of Haiti observed maximum temperatures between 30°C and 35°C. Regarding anomalies, near-average conditions were observed in most of the region, except in western Nord-Ouest, northwestern Artibonite, eastern Grande-Anse, Nippes, and most of Sud departments, which recorded warmer conditions with temperature anomalies between 1°C and 2°C above average.

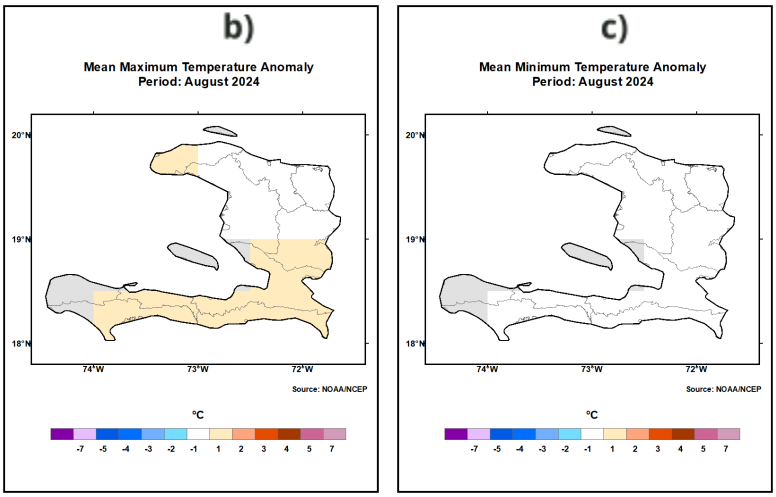
- **Minimums:** Minimum temperatures varied between 20°C and 25°C across most of Haiti. Temperatures between 25°C to 30°C were registered in western Nord-Ouest, central-western Artibonite, and northeastern Nord-Est, while temperatures ranging from 15°C and 20°C were observed in southeastern Ouest and eastern Sud-Est departments. Positive anomalies, ranging from 1°C to 2°C above average, were confined to western Nord-Ouest, northwestern Artibonite, eastern Grand-Anse, western Nippes, and western Sud departments. Meanwhile, most departments registered near-average temperatures, with anomalies confined between -1°C to 1°C of the average.

Past 1 Month (August 2024):

- **Maximums:** Temperature patterns during the past month were similar to those observed in the last three months. The country observed maximum temperatures between 30°C and 35°C. Positive temperature anomalies, ranging from 1°C to 2°C above average, were noted in western Nord-Ouest, southern Artibonite, Southern Centre, and Haiti's southern departments. Otherwise, northern and central parts of Haiti observed near-average conditions with values ranging between -1°C and 1°C of the average (**Fig. 3a**).

- **Minimums:** Minimum temperatures were between 25°C and 30°C in western Nord-Ouest and northwestern Artibonite. In southwestern Ouest and central and eastern Sud-Est, minimum temperatures were between 15°C and 20°C. Meanwhile, the rest of the country observed values between 20°C and 25°C. Haiti registered near-average minimum temperatures with anomalies between -1°C and 1°C (**Fig. 3b**).

a)



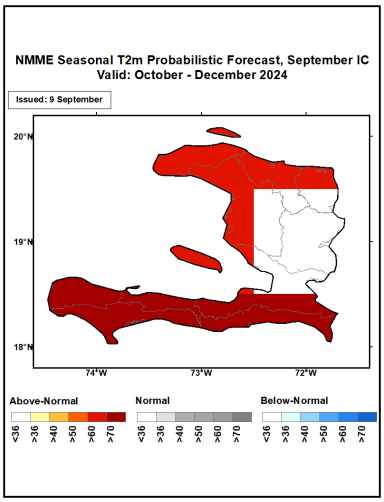


Figure 3. Spatial structure of temperature for August 2024. **(a)** maximum temperature anomaly and **(b)** minimum temperature anomaly. **(c)** NMME probabilistic forecast of seasonal 2-m temperature anomaly for October – December 2024. **Source: NOAA/NCEP**

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

- **Monthly:** The NMME forecast indicates no clear dominant signal for either below- or above-average temperatures during August 2024 across the country.

- **Seasonal:** For the October – December 2024 season, there is a 60% to 70% chance of above-average temperatures over the northern, western, and southern parts of Haiti. Further, the southern departments have a 70% chance of above-average temperatures. Meanwhile, there is no clear signal for near-, above- or below-average temperatures across 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 (June to August 2024):

- Haiti showed dry conditions (SPI values of 0.8 to 2 standard deviations below the mean) in the central departments of the country and the departments of Ouest and western Sud-Est during the June–August season. On the contrary, western Nord-Ouest, northwestern Artibonite, most of Grande-Anse, and western Sud-Est showed wetter than average conditions, with positive SPI values of 0.4 – 1.2 standard deviations above the mean.

Past 1 Month (August 2024):

- Most parts of Haiti experienced dry conditions during the last month. The central regions of Haiti showed drier conditions, with SPI values between 1.2 and 2 standard deviations below the average. Meanwhile, mild dryness, indicated by SPI values between 0.4 and 0.8 standard deviations below the mean, was observed in western Nord-Ouest, northwestern Artibonite, central Nord, mort of Grande-Anse, most of Sud, and Nippes departments. Near-normal conditions (SPI values between -0.4 and 0.4 standard deviations) were confined to parts of southwestern and southeastern Haiti.

Current/Forecast (07 August to 03 September 2024):

- The SPI forecast for the next 4 weeks suggests that below-average (drier) conditions (0.4 – 1.5 standard deviations below the mean) will prevail in Artibonite, southern Nord, western Centre, most of Ouest, the Gonâve Island, northern Grande-Anse, central and eastern Nippes, eastern Sud, and most of Sud-Est departments. Meanwhile, near-average SPI values are predicted elsewhere in the country.

Water Requirement Satisfaction Index (WRSI)

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

GEOGLAM Crop Monitor

- GEOGLAM Corp Monitor synthesis indicated 'Favorable' conditions across Haiti during August 2024 .

Additional Resources

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

Annex

- La Niña precipitation composites.

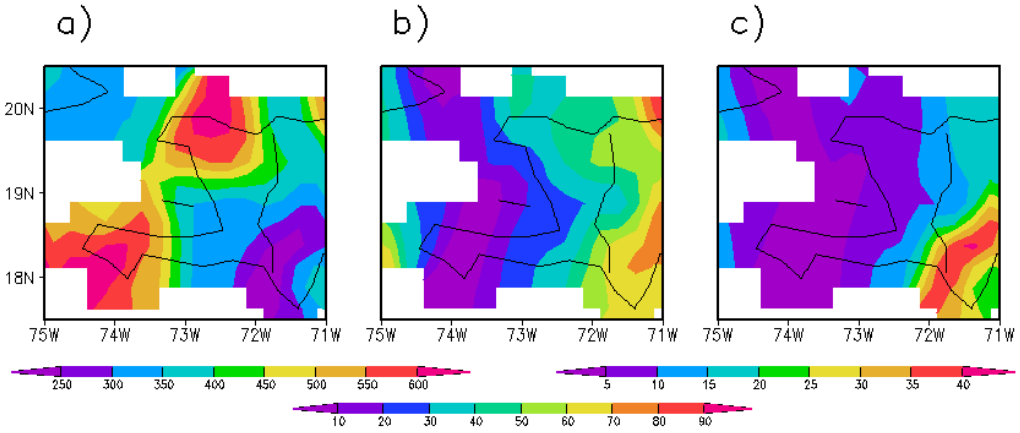


Figure A1. Composite maps of October – December (OND) precipitation based on eight La Niña years during 1990 – 2019 using the Global Precipitation Climatology Centre (GPCC) dataset (0.25° resolution). (a) OND total rainfall (mm), (b) OND rainfall anomalies (mm), and (c) OND anomalies expressed as percentage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